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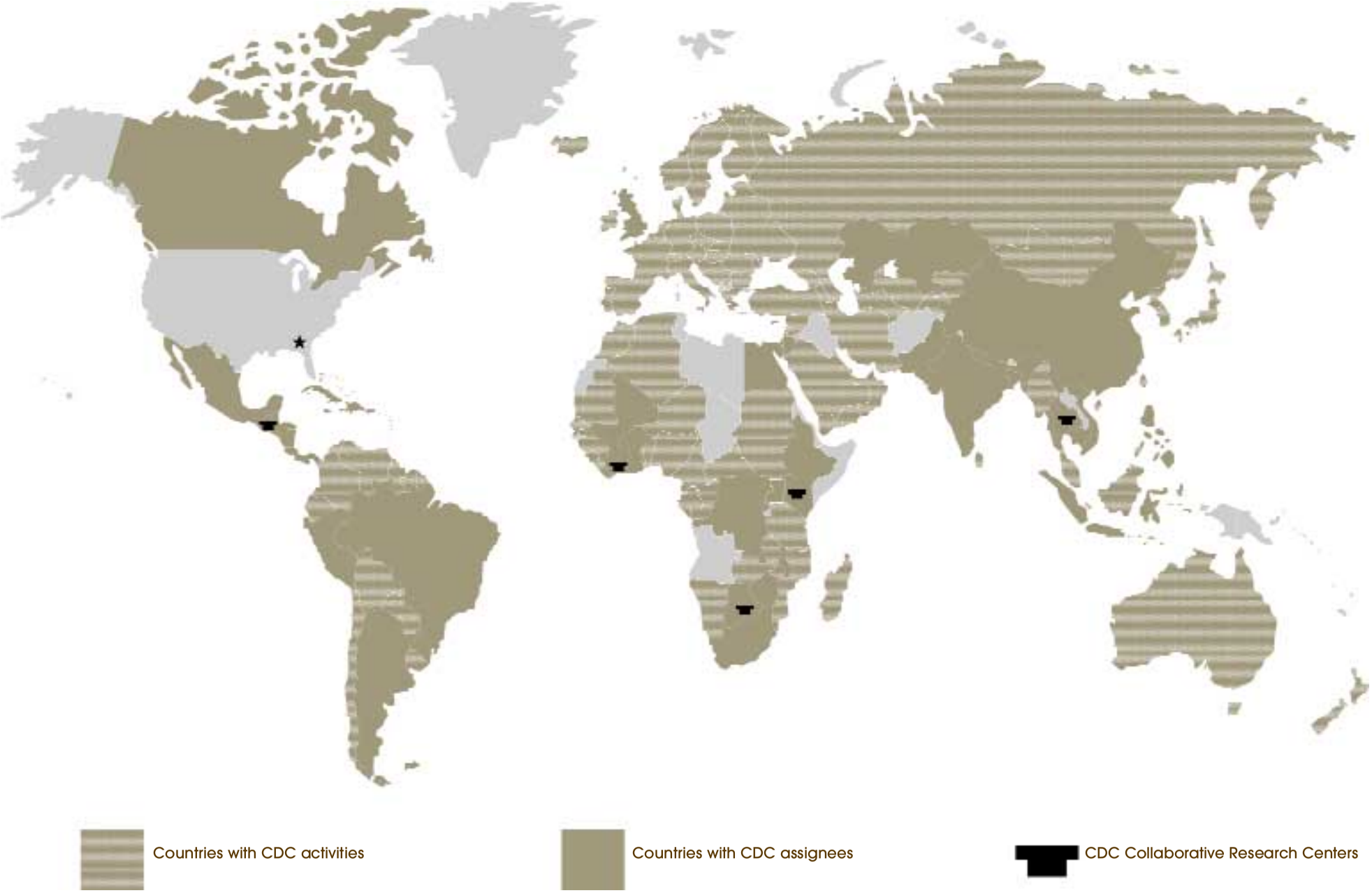
Global Health

GLOBAL HEALTH ACTIVITIES REPORT

1999–2000

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

CDC'S GLOBAL PRESENCE, FFY 99-00



Global Health Activities Report
Fiscal Years 1999-2000
(October 1, 1998-September 30, 2000)

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

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Since its origins as a World War II-era malaria control center 55 years ago, the Centers for Disease Control and Prevention (CDC) has always been engaged in global health. Over the years, both the scope and nature of that engagement have changed dramatically. From a focus on a single disease and a single purpose (protecting American troops from the ravages of malaria), the agency's global health mandate has expanded to include numerous diseases and conditions as well as a much more ambitious and complex mission – protecting the U.S. population from global threats, while sharing our science to assist people around the world.

This report describes CDC's global health activities between October 1998 and September 2000, documenting CDC's ongoing commitment to its global health strategy articulated in the document *Working with Partners to Improve Global Health: A Strategy for CDC and ATSDR*.

Every day, 2 million people cross national borders for tourism, business, and migration. Jets transport many people quickly to every corner of the earth, often to and from formerly remote places – along with infectious diseases that were once geographically contained. Global shipping of foods and other products is also a major transporter of disease vectors. These rapid and constant movements of people and goods have contributed to a broader sharing of organisms, exposures, risk factors, and vectors seen around the world.

As diseases and risk factors converge, we must recognize our interdependencies and work with each other to find solutions that transcend national borders. We know that a nipavirus outbreak in Malaysia has implications for hog farmers in North Carolina. Effective tuberculosis control in India and Mexico affects TB rates in the United States. Dengue fever control in Mexico and the Caribbean affects disease rates within our borders. Foodstuffs contaminated with pathogens or pesticides abroad can appear on a kitchen counter anywhere in the country. And just as microbes and trends from outside our borders affect us here in the United States, so do our actions and policies affect the rest of the world – and not always for the better. Tobacco use, high-fat diets, and sedentary lifestyles are just some of the health-related exports that our country has contributed to in recent times.

I hope that the health challenges the United States shares with other countries will help focus our efforts and increase our ability to share information and innovation with our counterparts elsewhere, and that we will continue to accelerate the improvements we already have achieved here and abroad in reducing morbidity and mortality. For example, around the world, a strengthened public health surveillance system can help alert us to new and emerging threats, or old threats in new places. Health promotion and health education, social marketing, creative applications of new technology, and strong regulatory and political action hold promise for preventing unnecessary deaths and diminished quality of life.

CDC's Global Health Activities Reports, of which this is the latest edition, help document these and other types of global health activities. This roster of CDC global activities – encompassing every part of the agency and emanating from its long-standing roots in global public health – are a source of both pride and optimism for what can be accomplished in the future.

We hope that this document will be useful to CDC staff and to our many partners here and abroad who share our vision of a safer, healthier world, and we look forward to future collaboration that will bring us closer to making that vision a reality around the world.

Stephen Blount, M.D., M.P.H.

Associate Director for Global Health
Centers for Disease Control and Prevention

KEY ELEMENTS OF CDC'S GLOBAL HEALTH STRATEGY

To achieve these goals, CDC's global health strategy emphasizes five critical areas. Collectively, these critical areas build on effective public health practice and position the United States and its partners around the world to address global public health problems as – and preferably before – they arise. They include:

- **Public health surveillance and response.** Before we can respond appropriately to diseases and their causes, they must first be detected and investigated. A strong and evenly distributed global surveillance capacity holds the promise of detecting disease and injury patterns as they emerge or change. Once patterns are detected, CDC and its partners can devise effective responses, drawing from successful interventions of the past or crafting new innovations.
- **Public health infrastructure and capacity building.** A trained workforce, effective data and information systems, and sound public health organizations are the essential framework through which public health programs are delivered.
- **Disease and injury prevention and control.** As the causes and burden of disease become more similar around the world, collaboration with other countries and international partners can generate mutually beneficial strategies for addressing major public health problems and evaluating the effectiveness of policies and programs.
- **Applied research for effective health policies.** Global public health programs must meet the tests of effectiveness and efficiency under varying and often difficult conditions. Adding to the knowledge base about what works (and how) is an important contribution to replicating successful programs around the world.
- **Exchange of information and lessons learned.** In addition to scientific advances and programmatic knowledge, a wide variety of useful data and information can help resolve technical problems or help others avoid the time- and resource-consuming task of "reinventing the wheel."

SPECIFIC PRIORITY PROGRAM AREAS

In addition to the cross-cutting areas outlined above, CDC's global health programs address 13 priority areas. These reflect the major causes of the global burden of disease, the availability of effective interventions, and areas where CDC can make unique contributions because of its current surveillance capacity, partnerships, leadership role, communications strengths, or other assets. The priority program areas include:

- Emergency response
- Emerging infectious diseases
- Vaccine-preventable diseases
- HIV/AIDS, STDs, and TB
- Non-vaccine eradication and elimination programs
- Reproductive health
- Health promotion and chronic disease prevention
- Tobacco use prevention and control

INTRODUCTION

The 1999-2000 Global Health Activities Report is a compendium of Centers for Disease Control and Prevention (CDC) activities around the world that occurred between October 1998 and October 2000. Like its predecessors, this edition serves several purposes. First, brief descriptions of the many CDC activities around the world – organized by region and public health topic – form a comprehensive listing of CDC's global health activities. As described below, the report's organizations should be useful to readers interested in a particular topic – whether it is CDC's activities in a country or region, activities related to a particular disease or approach, or a summary of how CDC's organizational units are engaged in global health work.

To better serve these multiple needs, sections containing brief descriptions of individual projects (which form the bulk of the report) are preceded by two types of summaries: summaries of activities supported by each of CDC's Centers, Institutes, and Offices (CIOs) and summaries of activities by region. (The summaries of each CIO's activities follow this introduction, while the summaries of regional activities serve as introductions to each region's chapter.) Both types of summaries reflect CDC's overall global health strategy. Key elements of CDC's strategy for global health are described below, followed by a more detailed guide to using the report.

WORKING WITH PARTNERS TO IMPROVE GLOBAL HEALTH

At any given moment, health events unfold far from our shores, with the potential to affect not only the areas in which they originate but the United States as well. A world of people and goods in constant motion means that in terms of disease, nothing remains geographically isolated for long. Because of this fact of modern life, the health of Americans is inextricably linked to the health of people in other countries. It behooves us to consider some aspects of the health of other countries as if they were our own.

This approach has important benefits, as well as implications. Improving health abroad directly affects the health of Americans by halting the spread of disease, detecting new diseases as early as possible, and sharing new knowledge rapidly and efficiently. In addition, contributing to global health efforts supports America's national security, altruistic, and economic interests.

In practice, this means working to improve health around the world and exchanging knowledge and expertise with counterparts from other countries. The best chance we have of keeping pace with the relentless mutations and adaptations of diseases and risk factors is to share and disseminate knowledge, both to respond to inevitable public health emergencies and to continue the day-to-day work of preventing disease and promoting health.

CDC's global health strategy, *Working with Partners To Improve Global Health: A Strategy for CDC and ATSDR,* recognizes and responds to these trends. Our own health is linked inextricably to the health of people in other countries and, as a result, we must collaborate closely and meaningfully with those working to improve health and prevent disease around the world.

- Micronutrient malnutrition
- Childhood lead poisoning
- Toxic substances and hazardous wastes
- Occupational safety and health
- Injury

PHILOSOPHICAL APPROACH

In each of these areas, CDC's work is consistent with principles that guide the agency's work overall. First, the agency's programs, recommendations, and technical assistance respond to local needs. CDC's contributions are based on sound science and adherence to bioethical principles. CDC devotes its resources to those areas in which the agency has established both expertise and credibility, and supports global health efforts with trained staff and administrative support to ensure effective implementation.

Partnerships are the cornerstone of CDC's global health efforts. Whether CDC's partnerships build on existing relationships or forge new alliances, they bring different strengths and perspectives to global health activities. These partnerships also represent a practical approach to accomplishing the vast amount of coordinated, overlapping work that global health improvements demand.

In some cases, CDC's global health partnerships involve bilateral long-term relationships with other countries. CDC also works in concert with other federal agencies – notably the Department of State, the United States Agency for International Development (USAID), and within the Department of Health and Human Services, the Office of International and Refugee Health and the National Institutes of Health.

CDC has worked closely with foundations active in global health. These include the Rockefeller Foundation (a supporter of Public Health Schools Without Walls, a training program linked to CDC's Field Epidemiology Training Program) and the Bill and Melinda Gates Foundation (a major funder of global vaccine delivery efforts).

In other partnerships, CDC's role is to collaborate alongside multilateral global health agencies, providing support and technical assistance to the World Health Organization, the World Bank, and UNICEF, among others. In addition to partnerships with these agencies, CDC also collaborates closely with U.S.-based nongovernmental organizations (NGOs), such as CARE and The Carter Center.

ANTICIPATED OUTCOMES

If CDC's global health strategy is implemented successfully in the decade to come, it will yield an array of improvements in nearly every aspect of global health, across disease categories, risk factors, and regions of the world. Most importantly, these outcomes will be the result of a strengthened global health infrastructure, better equipped to address not only current but future challenges.

Specific outcomes anticipated from this strategy include:

- Improved country surveillance systems for identifying critical public health problems
- An expanded research capacity, generating new knowledge that can be applied to resolving those problems
- A broader array of global partners with whom CDC actively collaborates
- Worldwide eradication of polio and Guinea worm
- Regional elimination of measles and lymphatic filariasis
- Improved immunization coverage and introduction of new childhood vaccines in many countries
- Reduction of HIV infection rates in Africa
- Improved TB cure rates through expanded use of directly observed therapy, short course (DOTS)
- Successful prevention measures leading to reduced malaria infection rates and mortality
- Health promotion programs functioning in the largest countries of the world to prevent tobacco use among youth.

With a global health strategy in place, CDC and its partners can strengthen their collective contributions to a shared vision, captured in CDC's vision statement: "Healthy people in a healthy world, through prevention."

HOW TO USE THE GLOBAL HEALTH ACTIVITIES REPORT

The 1999-2000 Global Health Activities Report contains a vast amount of information, organized in several different ways.

CIO Summaries

As noted above, the report begins with summaries highlighting the activities of each of CDC's Centers, Institutes, and Offices (CIOs). Collectively, the CIOs work together to fulfill CDC's global health strategy, yet each has a distinct emphasis and contribution.

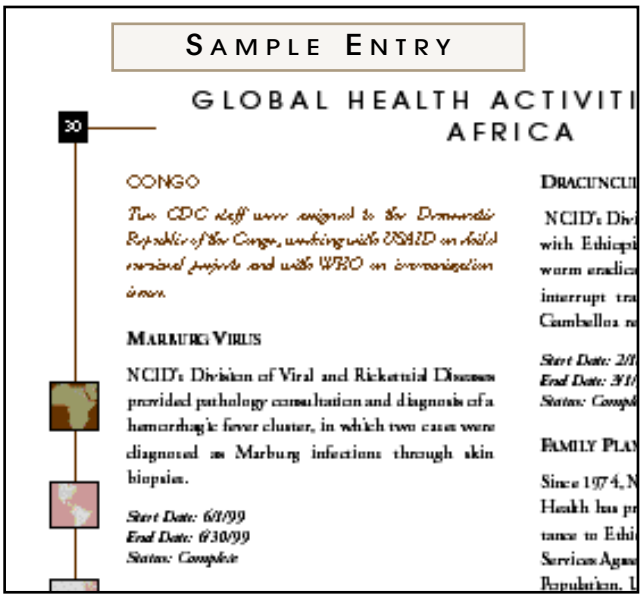
By Region

The bulk of the report includes brief descriptions of specific activities. These descriptions are organized by geographic region, in the following order:

- Africa
- The Americas
- Asia and the Pacific
- Europe
- Middle East and North Africa
- New Independent States of the former Soviet Union
- Multinational activities.

Each regional section begins with a brief summary of CDC's global health activities in that particular region.

Appendix B shows which countries are included in each region and where to find each country's activities. An activity that occurs in multiple countries is listed multiple times – once in each country's section. In some cases, this makes the report longer and more repetitive, but it allows each country's listings to be self-contained.


Sample Entry

GLOBAL HEALTH ACTIVITI
AFRICA

30

CONGO

Two CDC staff were assigned to the Democratic Republic of the Congo, working with USAID on child survival projects and with WHO on onchocerciasis (river blindness).

Marburg Virus

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnosis of a hemorrhagic fever cluster, in which two cases were diagnosed as Marburg infections through skin biopsies.

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Most of CDC's global health work occurs overseas in projects ranging from brief technical consultations to multi-year commitments. In some cases, the work takes place in the United States – for example, when a visiting scholar spends time at CDC or CDC's laboratories test samples from other countries. These types of activities are listed separately at the end of each country's section and designated as "U.S.-based collaborations."

During FY 1999 and 2000, over 100 CDC staff were assigned to overseas locations to work with partners on a long-term basis. In some cases, they worked alongside colleagues in collaborative research centers already in place in Botswana, Guatemala, Ivory Coast,

Kenya, and Thailand. In other countries, CDC staff members served as ongoing consultants, engaged in wide array of activities ranging from helping the ministries of health in host countries set up surveillance systems to investigating specific health problems. In addition, many CDC staff serve overseas in connection with the Global AIDS Program (formerly known as the Leadership in Fighting an Epidemic, or LIFE Initiative).

The presence of collaborative research centers and/or CDC assignees is noted in this report at the beginning of the relevant country sections.

By Topic

Within each section, the various projects, collaborations, and technical support activities are listed in alphabetical order by topic or theme – such as antimicrobial resistance, birth defects, diabetes, HIV, injuries, and so on. Note that each entry could only be listed under one topic. In some cases, this means that a particular topic area is descriptive for one purpose, but not another. (For example, an entry listed under "laboratory methods" is indeed about those methods, but the methods are in place to improve detection of HIV, STDs, and TB – or vice versa.) To address this potential problem, the report's index cross-references many entries.

ADDITIONAL INFORMATION

Each entry lists the date on which the activity began. If the activity has been completed, an end date is given and its status is listed as "complete." Otherwise, the activity is listed as "ongoing." Note that because this report covers activities from FY 1999-2000, some activities described as ongoing may have ended during FY 2001.

APPENDICES AND INDEX

Several appendices and an index are included to make the voluminous information in the report more accessible.

Appendix A: Acronyms

Any report on global health quickly accumulates a long list of acronyms. These are defined in Appendix A. Most abbreviations are explained each time they are used. The exceptions are the acronyms for some organizations that appear frequently in multiple entries. These include the World Health Organization (WHO); U.S. Agency for International Development (USAID); Pan-American Health Organization (PAHO); National Institutes of Health (NIH); acronyms for CDC's Centers, Institutes, and Offices; and of course CDC itself.

Although the document is intended primarily as an internal resource for use within CDC, the names of Divisions (the main organizational units within Centers, Institutes, and Offices) are listed in their entirety each time they are used, for readers who may not be familiar with them.

Appendix B: Countries, by Region

The countries of the world are sometimes listed with slight variations, depending on the organization. Appendix B shows how they are listed in this report.

Appendix C: WHO Collaborating Centers at CDC, by CIO

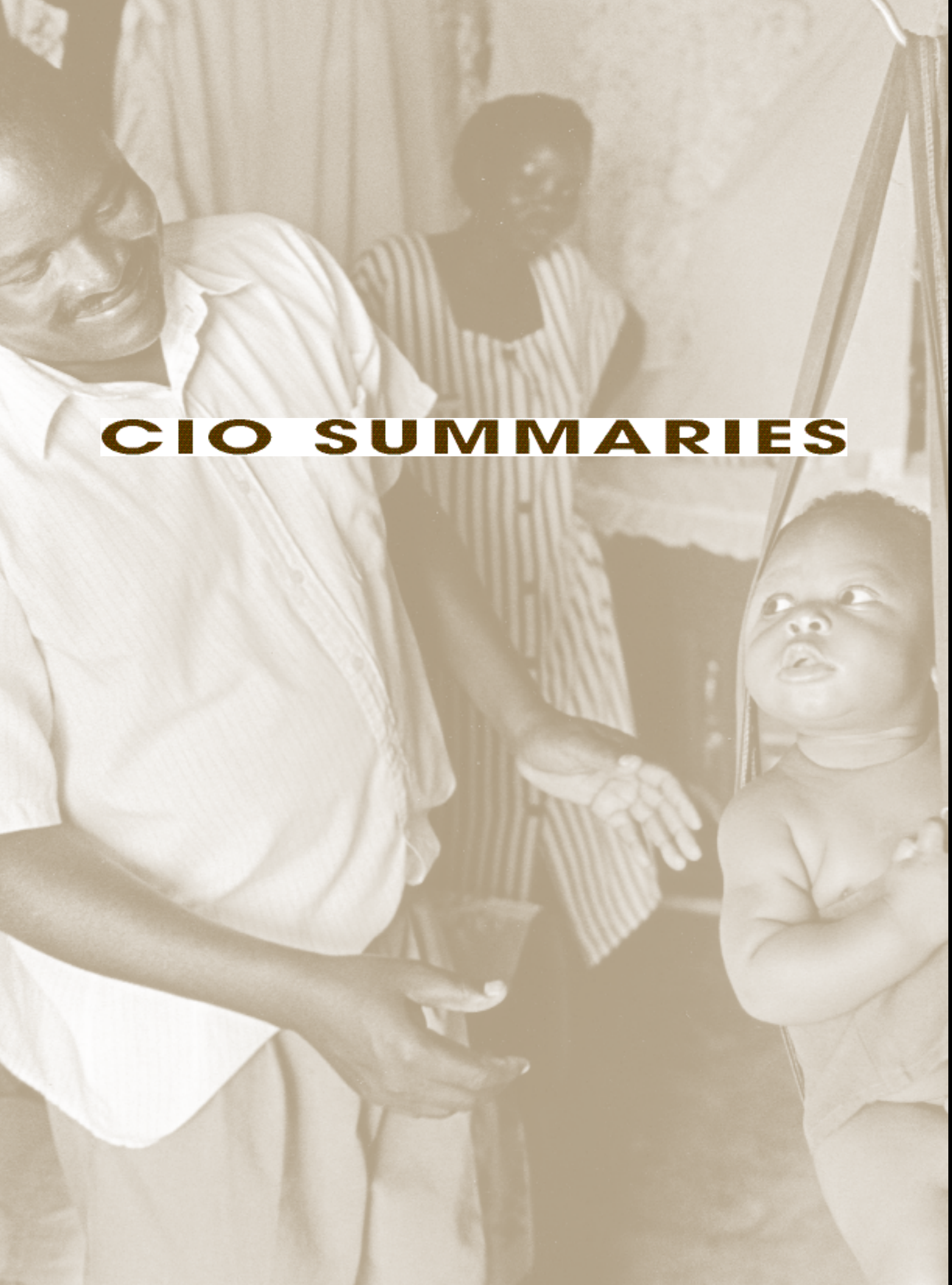
CDC contributes to WHO's efforts through the secondment of CDC staff to strategic posts within the WHO structure, with special attention to the WHO Regional Offices (e.g. PAHO, AFRO). In addition, a number of WHO Collaborative Centers are based within CDC, sharing staff, research initiatives, and publications for use by the global health community. Appendix C provides a list of WHO Collaborating Centers at CDC, by CIO.

Index

The index lists entries by main topic (e.g., tuberculosis), cross-references entries when they address multiple topics (such as laboratory methods and HIV surveillance), and suggests additional terms under which entries may be listed (such as dracunculiasis and Guinea worm disease).

The staff of CDC's Office of Global Health hope that this report will be useful to CDC colleagues and to CDC's many global health partners around the world. It represents only a glimpse of their ongoing work to protect and promote health, but serves as a reminder of how extensive this work must be and how closely the world's nations are connected – connections that are bound to intensify as the world moves further into the 21st century.

CIO SUMMARIES



CDC'S CENTERS, INSTITUTES, AND OFFICES (CIOS)

Agency for Toxic Substances and Disease Registry (ATSDR) prevents exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances.

Epidemiology Program Office (EPO) strengthens the public health system by coordinating public health surveillance; providing support in scientific communications, statistics, and epidemiology; and training in surveillance, epidemiology, and prevention effectiveness.

National Center on Birth Defects and Developmental Disabilities (NCBDDD) provides national leadership for preventing birth defects and developmental disabilities and for improving the health and wellness of people with disabilities.

National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) prevents premature death and disability from chronic diseases and promotes healthy personal behaviors.

National Center for Environmental Health (NCEH) provides national leadership in preventing and controlling disease and death resulting from the interactions between people and their environment.

National Center for Health Statistics (NCHS) provides statistical information that will guide actions and policies to improve the health of the American people.

National Center for HIV, STD, and TB Prevention (NCHSTP) provides national leadership in preventing and controlling human immunodeficiency virus infection, sexually transmitted diseases, and tuberculosis.

National Center for Infectious Diseases (NCID) prevents illness, disability, and death caused by infectious diseases in the United States and around the world.

National Center for Injury Prevention and Control (NCIPC) prevents death and disability from nonoccupational injuries, including those that are unintentional and those that result from violence.

National Institute for Occupational Safety and Health (NIOSH) ensures safety and health for all people in the workplace through research and prevention.

National Immunization Program (NIP) prevents disease, disability, and death from vaccine-preventable diseases in children and adults.

Public Health Practice Program Office (PHPPO) strengthens community practice of public health by creating an effective workforce, building information networks, conducting practice research, and ensuring laboratory quality.

THE GLOBAL HEALTH ACTIVITIES OF

THE AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

The Agency for Toxic Substances and Disease Registry (ATSDR) assesses toxic waste sites, unplanned releases of toxins, and other sources of pollution so that exposure and adverse health effects can be prevented. Although most of ATSDR's work focuses on hazardous substances and waste sites in the United States, the agency collaborates with international health agencies (such as PAHO and WHO) and with health and environmental agencies in other countries – including India, Mexico, Brazil, and South Africa, among others – to help prevent similar adverse health effects in other countries.

Examples of how ATSDR contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

ATSDR has provided training to health and environmental officials from several countries in assessing the health hazards of waste sites and in responding to emergencies such as spills of hazardous substances. For example, ATSDR staff members conducted training courses in basic health assessment and emergency response in Taiwan and Spain. The agency's staff also are responsible for emergency preparedness and response in the U.S.-Mexico border area. As a participant in the U.S./Mexico Joint Response Team, ATSDR works with other federal, state, and local officials and industry representatives to achieve this mission.

Public Health Infrastructure and Capacity-Building

ATSDR has assisted other countries in building their capacity to deal with the health threats posed by hazardous substances. For example, ATSDR staff visited Mexico to conduct a workshop on hazardous substances for a group of 25 physicians. The workshop was part of an effort to organize a regional poison information and treatment system in Mexico. ATSDR also works with health and environmental agencies in South Africa to increase the country's capacity to control environmental hazards. This assistance will include supplying ATSDR technical documents to South Africa and providing training on using the documents. ATSDR is also developing a plan for collaborating with India on environmental and occupational health programs.

Disease and Injury Prevention and Control

ATSDR has provided technical assistance upon request to other countries in their efforts to prevent people from being exposed to hazardous substances. For example, ATSDR held a one-week health risk communication workshop in Pachuca, Mexico, to help develop a health risk communication plan for two rural communities that were contaminated by manganese. ATSDR staff also recently assisted PAHO, the U.S. Environmental Protection Agency, and the Brazilian Ministry of Health in evaluating the public health impacts of releases from a pesticide plant in Brazil.

Applied Research for Effective Health Policies

ATSDR is involved in several projects that promote applied research for effective health policies. ATSDR provided funds to the University of Texas School of Medicine's Department of Dermatology to conduct an investigation of the human health effects from environmental exposures to arsenic, in collaboration with the Inner Mongolia Arsenic Program. The project is making use of previously collected data from local drinking water wells in three villages with known levels of arsenic in the water and is evaluating skin lesions of persons exposed at lower levels of arsenic. ATSDR provided technical assistance to researchers from Kazakhstan in making revisions to their protocol for an epidemiological study designed to examine the health of young children living near a former Soviet nuclear test site. ATSDR is developing a cooperative agreement with the Center for Substances and Risk Assessment at the National Institute of Public Health and the Environment in Bilthoven, Netherlands, to work collaboratively on assessing the health risks of various chemical mixtures.

Exchange of Information and Lessons Learned

ATSDR promotes the exchange of information and lessons learned with a number of other countries, academic researchers in other countries, and international organizations. Its Great Lakes Human Health Research Program has produced findings that have had an impact on both Canada and the United States. In connection with its Great Lakes Human Health Effects Research Program, ATSDR participates in several committees or organizations involving the United States and Canada, including the Human Health Subcommittee of the Lake Erie Lakewide Management Plan (LaMP), the Lake Superior LaMP Human Health Subcommittee, and the International Joint Commission. ATSDR assists WHO's International Programme on Chemical Safety in developing Concise International Chemical Assessment Documents (CICADs). CICADs, which provide summaries of the relevant scientific information concerning potential effects of specific chemicals upon human health and/or the environment, often rely on ATSDR's toxicological profiles as their primary data source. ATSDR developed the CICAD for manganese and is currently involved in the development of three additional CICADs – for mercury, polychlorinated biphenyls (PCBs), and hydrogen sulfide.

THE GLOBAL HEALTH ACTIVITIES OF

CDC'S EPIDEMIOLOGY PROGRAM OFFICE (EPO)

Epidemiology – the discipline at the core of public health practice – combines surveillance, research and analytic methods with the effective use of technology and communication. In each of these areas, CDC's Epidemiology Program Office (EPO) coordinates and supports the practice of public health in the United States and around the world.

A variety of EPO training programs in applied epidemiology, preventive medicine, and public health management work in tandem to build public health capacity at many levels. The officers in the Epidemic Intelligence Service and Preventive Medicine Residency and the Prevention Specialists in the Public Health Prevention Service programs have responded to both domestic and global requests for assistance in a variety of disease investigations. For example, they have been a key source of well-trained staff for investigations of rotavirus and West Nile virus, polio eradication efforts, on-going outbreak investigations, and program development consultations.

EPO's staff also help ensure that CDC and its partner organizations have access to sound analytic and research methods, so that public health decisions can be based on rigorous science and research. As technology becomes more sophisticated, EPO staff work with others at CDC and in partner organizations to ensure that information systems support both the collection and analysis of public health data, advancing the frontiers of public health research still further. For example, Epi Info is made up of a series of computer programs for questionnaire design, data entry, epidemiologic analysis, mapping, and graphing provided in the public domain and supported by EPO. It is a global resource, providing informatics and educational tools to users registered from more than 120 countries. Finally, to communicate the conclusions of these analyses and studies, EPO contributes to public health practice by publishing premiere public health news, recommendations, and surveillance summaries in the *Morbidity and Mortality Weekly Report* (*MMWR*), read around the world in both electronic and print versions.

Examples of how EPO contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

A comprehensive surveillance system, capable of collecting data and revealing patterns and unusual events, forms the early warning system that allows public health agencies to detect epidemics and respond quickly. Helping to develop this capacity in Africa, EPO actively participates in the Integrated Disease Surveillance Project, currently operating in Uganda, Ghana, Zimbabwe, and Tanzania. Working with ministries of health in those countries and with schools of public health throughout the region, the program is one of many EPO initiatives designed to enhance surveillance systems around the world.

Public Health Infrastructure and Capacity-Building

The Field Epidemiology Training Program (FETP) builds public health capacity by training cadres of epidemiologists and other public health practitioners to apply public health methods to health issues in their own countries. The FETP's "train-the-trainer" approach has been in place in some countries for over a decade, with training capacity gradually transferred entirely from CDC advisors to staff within that country. For example, in recent years, the FETP program in Saudi Arabia has been staffed by Saudi nationals. The

program's graduates now hold positions throughout the Ministry of Health's central and district offices, further expanding public health capacity with the knowledge gained through this program.

A similar effort has just been launched in China, where a class of between 10 and 15 trainees – selected in part based on their potential to become future leaders in applied field epidemiology, public health policy, and training – will begin two years of coursework and field assignments. Like their counterparts in Saudi Arabia and many other nations, the Chinese FETP graduates will contribute their own talents to building public health capacity in China and serve as sources of knowledge and innovation for their peers throughout the country's public health system.

Disease and Injury Prevention and Control

In Egypt, EPO-supported activities (primarily linked to Egypt's FETP program) have focused on active surveillance for acute poliomyelitis, as well as outbreak investigations of Rift Valley Fever virus, typhoid, tetanus, rabies, and lead poisoning. A combination of enhanced surveillance systems, field investigations, and laboratory quality control programs contributed to marked progress in both detecting and responding to these outbreaks. Nepal is one of many other countries that offers similar examples of how EPO's global health activities translate into specific disease prevention and control outcomes. For example, a partnership with Nepal's Ministry of Health (supported by WHO, USAID, and other partners) focused on control of three major vector-borne diseases: malaria, kala-azar, and Japanese encephalitis.

Applied Research for Effective Health Policies

EPO's training programs emphasize practical application and extensive fieldwork, both to augment classroom learning and to provide tangible benefits to participants and their sponsoring organizations. Often, class-related fieldwork takes the form of applied research projects, which not only illustrate the application of different methods and tools but also yield results applicable in both the country itself and in other settings. For example, EPO's work with Nepali public health officials on the control of vector-borne diseases led to assessments of the sensitivity of the country's malaria surveillance system, a case control study of the risk factors and potential interventions for kala-azar, and an assessment of malarial treatment efficacy.

Exchange of Information and Lessons Learned

Each week, EPO staff are responsible for compiling reports from CDC surveillance systems and publishing them – along with the results of specific studies and recommendations – in the *Morbidity and Mortality Weekly Report* (*MMWR*). For example, the first cases of the disease that later came to be known as AIDS were reported in a June 1981 issue of *MMWR*. The publication relies not only on surveillance data but also on contributions from public health partners from every level of government and from global health agencies. In 2000, over 30 *MMWR* articles addressed issues of international significance; its guidelines and recommendations are used by public health practitioners around the world. Now available via the Internet, the *MMWR* is an effective tool for rapidly communicating current public health trends and recommendations.

THE GLOBAL HEALTH ACTIVITIES OF

CDC'S NATIONAL CENTER FOR CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION (NCCDPHP)

CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) works with dozens of countries directly and with international organizations (such as The World Bank and WHO) to promote health and prevent the costly, avoidable toll of chronic disease. To accomplish this, the Center helps assess and modify behavioral risk factors that lead to chronic diseases, such as tobacco use, diet, and lack of physical activity.

In addition to chronic disease prevention, the Center's health promotion work includes reproductive health and family planning services, HIV education and prevention activities, and health promotion programs geared to the specific needs of school-aged children and adolescents.

Examples of how NCCDPHP contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

NCCDPHP provided technical assistance to various countries in the administration and analysis of youth and adult behavioral risk factor surveys and in the establishment of chronic disease surveillance systems. In Hungary, NCCDPHP staff helped the Budapest Municipal government administer the Student Health Behavior Survey, which measures five categories of priority health risk behaviors among secondary school students. In Russia, NCCDPHP staff collaborated with the Russian Ministry of Health in the development of a behavioral risk factor surveillance system. In Jordan, NCCDPHP staff worked with the Ministry of Health to establish chronic disease surveillance for several chronic conditions. The Center's staff also provided guidance to the Gore-Chernomyrdin Bilateral Commission in the development of a diabetes surveillance system and overall strengthening of Russia's public health infrastructure.

Public Health Infrastructure and Capacity-Building

NCCDPHP helped several countries strengthen their public health systems by providing training and in-country consultations. In Beirut, the Center's staff trained medical students and health professionals in biostatistics and epidemiology. NCCDPHP staff trained Bahrain Ministry of Health personnel on nutritional epidemiology, EpiInfo software, and surveillance techniques. NCCDPHP staff convened the International Workshop on Certification of Causes of Death to support the upgrading of India's vital statistics registration and cause-of-death systems. In addition, an NCCDPHP team helped assess national family planning logistics systems, used to forecast contraceptive requirements. The team made specific recommendations to improve logistics management systems in Bangladesh, Egypt, Ethiopia, Indonesia, and Zimbabwe.

Disease and Injury Prevention and Control

NCCDPHP collaborated with various countries and international partners to address priority health problems. With the National Center for HIV, STD, and TB Prevention (NCHSTP), NCCDPHP is developing partnerships to design, implement, and evaluate innovative behavioral interventions to prevent new HIV infections in Ghana, Ethiopia, Zimbabwe, Botswana, and Lesotho. NCCDPHP is providing technical assistance to China to improve HIV/AIDS/STD prevention, reduce helminth (parasitic worm) infections, and

prevent tobacco use. In its efforts to address iron deficiency in Russia, NCCDPHP is collaborating with public health partners to implement iron fortification of breads in Moscow. Additionally, Center staff are helping Egypt and Lebanon strengthen their national tobacco control and prevention efforts.

Applied Research for Effective Health Policies

NCCDPHP is helping various countries conduct applied research to improve the effectiveness of their public health policies and programs. In Kenya, Center staff are conducting a randomized trial of diaphragm use for prevention of STDs. Center staff are also working on a project in Tanzania designed to decrease maternal mortality and improve the health status of infants through interventions after pregnancy. NCCDPHP is continuing a study in Scotland to investigate compliance barriers to free-of-charge colorectal flexible sigmoidoscopy screening and follow-up diagnostic and treatment services. In collaboration with PAHO, the Center provided technical assistance in the design and implementation of research and training activities to develop policies for cost-effective fluoridation programs to more than 15 countries in Central and South America.

Exchange of Information and Lessons Learned

In Taiwan, NCCDPHP staff published a number of manuscripts to focus attention on prevalence, mortality, and ethnic variation in diabetes prevalence among the Taiwanese population. Additionally, Center staff have compiled and analyzed epidemiological data concerning morbidity and mortality caused by tobacco use, and is making these data available to Latin American countries for use in their tobacco control and prevention efforts.

WHO Collaborating Centers

- *WHO Collaborating Center for Development of Integrated Primary Care Programs for Community Practice*
- *WHO Global Collaborating Center for Health Promotion*
- *WHO Collaborating Center on Health Education and Promotion of School-Aged Children and Adolescents*
- *WHO Collaborating Center on Monitoring Trends and Determinants of Cardiovascular Disease (MONICA) Projects Optional Study of Physical Activity (MOSPA)*
- *WHO Collaborating Center on Physical Activity*
- *WHO Collaborating Center for Tobacco or Health*
- *WHO Collaborating Center in Perinatal Care and Health Services Research in Maternal and Child Health**
- *WHO Collaborating Center for Development of Integrated Primary Care Programs for Community Practice**

* *Note: These two Collaborating Centers were combined in April 2001 to form the WHO Collaborating Center for Reproductive Health.*

THE GLOBAL HEALTH ACTIVITIES OF

CDC'S NATIONAL CENTER FOR ENVIRONMENTAL HEALTH (NCEH)

The environment in which we live affects us constantly and in a myriad of complex ways. Air, water, food, chemicals, radiation, and many other aspects of the environment - all of these have the potential to affect our health. At CDC's National Center for Environmental Health (NCEH), this complex interaction between humans and environmental hazards is the focus of research studies and innovative laboratory methods. In addition, the Center coordinates CDC's response to requests for emergency assistance related to both natural and man-made disasters.

Examples of how NCEH contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

In the Federated States of Micronesia, health officials were concerned about micronutriet deficiency, specifically vitamin A, and developmental delays among young children, possibly due to exposure to lead. NCEH staff helped FSM health officials design and conduct surveys of children and their female caregivers to determine levels of vitamin A. The rates were indeed low; as a result, a vitamin A supplementation program was implemented. Another phase of this surveillance effort found that 15% of the children surveyed had elevated blood lead levels, confirming results found previously among the children who participated in the vitamin A study. The team concluded that children were exposed to lead through the reclaiming of used car batteries. In both cases, the initial surveillance revealed problems that were addressed with appropriate interventions and provided a baseline so that future levels of both vitamin A deficiency and lead exposure can be monitored to evaluate the effectiveness of the actions adopted.

Public Health Infrastructure and Capacity-Building

Accurate and sophisticated laboratory testing is an integral part of public health capacity. Often, the laboratory aspects of public health surveillance and research are particularly demanding, because they involve new techniques that are not commonly used or standardized. NCEH staff play an active role in building this important aspect of the global health infrastructure by assisting laboratories around the world in improving screening and diagnostic methods. For example, as part of an international quality assurance program, NCEH staff provide dried blood spot quality control and performance evaluation materials for screening for a number of metabolic and other neonatal diseases. Another example is the Center's work with laboratories worldwide that test iodine levels as part of global efforts to eliminate iodine deficiency disorders, which affect more than a billion people worldwide. The program helps laboratories monitor the degree of variability and bias in their urinary iodine assays.

As chronic diseases become more prevalent around the world, precise and accurate laboratory measurement of risk factors, such as cholesterol and related lipids is required to address this disease burden. NCEH staff, along with partners at NIH and WHO, provide standardization assistance to laboratories around the world involved in cardiovascular disease research and development.

Disease and Injury Prevention and Control

Part of NCEH's purview includes responding to both natural and man-made disasters and working with partners in stricken areas, both to respond to immediate health needs and to prevent further disease and injury that may result from disrupted living conditions, such as those that follow earthquakes and floods. This work always takes place in tandem with partners in the host country and with other international organizations offering assistance. As a result, one of the most immediate tasks is that of coordinating various responses. For example, Hurricane Mitch – one of the strongest and most devastating hurricanes recorded in 200 years – battered Central America for several days, causing widespread and catastrophic damage. At the request of the American Red Cross, an NCEH team identified immediate housing, health, and food needs and helped to coordinate emergency health care for the affected areas. Similarly, when southern Africa was struck by massive flooding in early 2000, NCEH staff were asked to conduct an inventory of resources in the affected provinces and to assess their varying abilities to respond. The effort led to a long-term plan of operation for health and water/sanitation teams that helped the various organizations provide resources quickly to those areas most in need.

Applied Research for Effective Health Policies

Although environmental health hazards exist for populations around the world, those who live in developing countries often face a combination of greater exposure and fewer resources to detect and combat these hazards. To help remedy both situations, NCEH staff were invited by Bangladesh's Ministry of Health to measure blood lead levels among school children, since the government was planning to switch from leaded to unleaded gasoline. By describing the prevalence and severity of pediatric lead poisoning, the project provided a baseline against which future progress could be measured, NCEH staff helped design the cross-sectional study, and provided training and supplies.

Exchange of Information and Lessons Learned

Like other aspects of public health, the health threats posed by environmental hazards are often poorly understood, making it more difficult to garner support for interventions of all kinds. In India, NCEH helped address this problem by co-sponsoring an international conference with an Indian foundation designed to bring lead poisoning to the attention of the media, government, and general population. Before the conference, NCEH staff had worked with Indian counterparts to conduct surveys to determine children's lead and hemoglobin measurements, using portable blood lead analyzers. This technique, which had not been used in India before, helped increase the technical capacity of Indian colleagues, while providing convincing evidence for the need for a national plan to prevent lead poisoning in India.

WHO Collaborating Centers

- *WHO Collaborating Center for Emergency Preparedness and Response*
- *WHO Collaborating Center for Reference and Research in Blood Lipids*

THE GLOBAL HEALTH ACTIVITIES OF
CDC'S NATIONAL CENTER FOR HEALTH STATISTICS (NCHS)

The focus of the National Center for Health Statistics (NCHS) global program is to enhance the collection of public health data in other countries, to improve the comparability of health data across countries, and to apply lessons learned in other nations to improve surveillance and data collection in the United States. NCHS works closely with WHO on international health statistics activities, serving as the North American Collaborating Center for the International Classification of Diseases. As part of the U.S.-Russia collaboration, NCHS works with Russian colleagues on the improvement, analysis and diffusion of Russian health information. Collaboration with Mexican counterparts ensures the collection and diffusion of health data from both sides of the U.S.-Mexico border. A particular focus of the NCHS global program has been the promotion of multinational scientific collaborations on various public health topics, collectively known as International Collaborative Efforts (ICEs).

Examples of how NCHS contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

An important part of the NCHS global mission is to improve the collection, analysis, and diffusion of health data in other countries. Staff of NCHS's Health Interview Survey, with financial assistance from the World Bank, are assisting the Hungarian Ministry of Health in conducting a national health interview survey in Hungary. NCHS staff, as part of the U.S.-Russia Health Committee, have worked with the Russian Ministry of Health to analyze vital statistics and other health data to identify factors underlying the dramatic rise in mortality in Russia since the breakup of the Soviet Union. Health and Nutrition Examination Survey staff assisted Pakistan's Ministry of Health in the design and execution of a national health examination survey. The ICE on Injury Statistics brings together international experts on the collection and analysis of injury data to identify new data collection techniques and methods of analysis useful for improving the quality of injury data in the United States as well as in other countries.

Public Health Infrastructure and Capacity-Building

As part of its commitment to technical cooperation, NCHS has assisted other countries in the development or improvement of a national capacity for health data collection. In many developing countries, this assistance has focused on national civil registration/vital statistics systems. The ICE on Automating Mortality Statistics has facilitated the development of automated coding systems for cause of death data in both developed and developing countries. NCHS also has provided training on the use of the International Classification of Diseases for the coding of morbidity and mortality data to coders from other countries. In addition, NCHS has actively assisted numerous countries with the execution of large-scale health surveys – including Egypt, Pakistan, Hungary, Portugal, and others – and has provided consultation, survey materials, and general survey information to many other countries considering national health surveys.

Disease and Injury Prevention and Control

NCHS serves as a major partner in the national Healthy People 2010 program, providing health data from its own and other data sources for the measurement of progress towards national health objectives. In collaboration with the Office of Disease Prevention and Health Promotion and with funding from USAID,

NCHS is assisting Egypt's Ministry of Health in the development of a similar program, known as "Healthy Egyptians." On the U.S.-Mexico border, NCHS is working with the U.S.-Mexico Border Health Commission to implement a binational health promotion project known as the "Healthy Border Program." NCHS staff also have held exploratory meetings with the InterAmerican Development Bank regarding the establishment of similar Healthy People programs in Chile, Argentina, and Uruguay.

Applied Research for Effective Health Policies

The NCHS program of international collaboration promotes applied research on a variety of health statistics topics that are relevant to the United States and other countries. This program has facilitated collaborative research on the measurement of perinatal and infant mortality, international differences in health and health care of the elderly, and injury morbidity and mortality. Participants have included scientists from NCHS, other parts of CDC and DHHS, as well as government and university researchers from a variety of industrialized countries. NCHS also has disseminated survey methodologies to many countries. For example, the ICE on Automating Mortality Statistics has worked to disseminate automated coding systems to other nations.

Exchange of Information and Lessons Learned

NCHS promotes the exchange of information by actively providing reports, data, and information on survey methodology to a wide range of foreign partners and colleagues. Another important source of global information exchange has been the NCHS program of international collaboration on various health statistics topics. NCHS staff have worked with ministries of health in other countries to apply survey methodologies successfully developed or used for many years at NCHS. For example, health examination surveys in both Egypt and Pakistan have been designed and conducted with assistance from NCHS staff. With financial assistance from the World Bank, NCHS currently is assisting Hungary's Ministry of Health with a national health interview survey. NCHS produces a biennial report, the *International Health Data Reference Guide*, that summarizes the availability of international health data from 35 countries.

WHO Collaborating Centers

- *WHO Collaborating Center for Classification of Diseases for North America*

THE GLOBAL HEALTH ACTIVITIES OF

CDC'S NATIONAL CENTER FOR HIV, STD, AND TB PREVENTION (NCHSTP)

The diseases addressed by the National Center for HIV, STD, and TB Prevention (NCHSTP) are a threat around the world, posing difficult challenges not only to infected people and their families but also to scientists, public health workers, and entire economies and governments. In close collaboration with USAID, WHO, UNAIDS, and the World Bank, NCHSTP provides both long- and short-term technical assistance and expertise to ministries of health around the world to help prevent and control the multiple – and often simultaneous – threats of HIV, sexually transmitted infections, and tuberculosis.

In 2001, the Center's Global AIDS Program (formerly known as the LIFE Initiative), provided support for HIV/AIDS prevention, care, and treatment in 24 countries in Sub-Saharan Africa, Southeast Asia, Latin America, the Caribbean, and in India. In addition to the Global AIDS Program, NCHSTP staff contribute to global HIV, STI, and TB prevention efforts through collaborative research projects as resident technical advisors and through a variety of short-term technical assistance assignments. Projects address the interaction between HIV and other sexually transmitted infections. CDC is a founding member of the WHO-hosted "STOP TB Initiative," a global program to control and prevent TB – especially in the 22 high-burden countries that report 80 percent of all reported TB cases.

Examples of how NCHSTP contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

NCHSTP provides technical assistance and training for host countries to strengthen HIV, STI, and TB surveillance. The Center's staff help develop surveillance programs capable of tracking the spread of infection, targeting prevention and treatment programs, and assessing the effects of interventions.

Public Health Infrastructure and Capacity-Building

STIs, HIV, and TB, are distinct diseases with their own clinical manifestations, yet they also share some characteristics – especially in terms of prevention strategies. To help leverage scarce resources, NCHSTP advisors have helped countries integrate HIV/AIDS projects with other efforts. For example, in Malawi, a resident technical advisor has helped the Ministry of Health's AIDS Control Program integrate its efforts with maternal health, family planning, and STI interventions. In Latvia, which faces one of the world's highest rates of multidrug resistant TB, NCHSTP staff are providing resources for a center of excellence, which will support the development of a local infrastructure to diagnose, treat, and control the spread of this form of TB.

Disease and Injury Prevention and Control

In Zimbabwe, NCHSTP helped the country establish the National Microbiology Reference Laboratory in Harare and has implemented a broad quality assurance program for national expansion of HIV rapid testing. NCHSTP staff are working closely with Russian health officials to control outbreaks of multidrug resistant TB by developing extensive diagnostic and treatment protocols.

Applied Research for Effective Health Policies

NCHSTP has carried out applied research in collaboration with the governments of Ivory Coast, Botswana, Thailand, Kenya, Uganda, and Mali to inform policies on the provision of chemoprophylaxis for opportunistic infections associated with HIV/AIDS, directly observed therapy (DOTS) for TB, prophylaxis for TB in HIV-infected persons, prevention of mother-to-child transmission of HIV, syndromic treatment for STIs, and the combined use of biomedical and behavioral surveillance data in disease control programs.

Exchange of Information and Lessons Learned

NCHSTP has worked with collaborating countries to develop model computer software for managing TB and other infectious diseases and has promoted the use of Internet-based and other communication tools for the dissemination and exchange of information. For example, NCHSTP staff have worked with other CDC staff and with WHO to create a monograph on measures that can be used to protect health care workers in low-resource countries from TB. The guide has been translated into French and Spanish; over 3,000 copies have been distributed around the world.

WHO Collaborating Centers

- *WHO Collaborating Center on HIV/AIDS*

THE GLOBAL HEALTH ACTIVITIES OF
CDC'S NATIONAL CENTER FOR INFECTIOUS DISEASES (NCID)

In an age of air travel and international trade, infectious microbes are transported across borders every day, carried by infected people, animals, and insects and contained within commercial shipments of contaminated food and merchandise. New diseases like acquired immunodeficiency diseases (AIDS) and new forms of old diseases (such as multidrug-resistant tuberculosis and malaria) can emerge in one region and spread throughout the world; diseases common in one area can spread to another. The urgency of the situation is illustrated by the emergence of unforeseen disease problems in recent years: multidrug-resistant *Streptococcus pneumoniae* infections throughout the world and vancomycin-resistant *Staphylococcus aureus* infections in the United States and Japan, avian influenza in Hong Kong, Nipah virus encephalitis in Malaysia, the threat of new variant Creutzfeldt-Jakob disease from contaminated meat in Europe, and West Nile virus infection in North America.

Examples of how NCID contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

In 2000, NCID researchers were asked to join or lead investigations of 11 outbreaks of global significance, including tularemia in Kosovo, cholera in Micronesia, clostridial sepsis in Scotland and Ireland, Rift Valley fever in Saudi Arabia, Ebola hemorrhagic fever in Uganda, and dengue in El Salvador. Regional surveillance networks have recently been established in Asia, Africa, and Latin America. NCID seeks to improve regional surveillance and response networks by providing technical assistance, evaluating regional progress, and working with WHO, other U.S. agencies, and other interested groups and institutions to strengthen the networks' telecommunications capacities and encourage the use of common software tools and harmonized standards for disease reporting. For example, the U.S.-Mexico Border Infectious Disease Surveillance system (BIDS) was established to monitor diseases carried by persons who travel between the United States and Mexico. In September 1999, BIDS coordinated a binational investigation of dengue transmission in the sister cites of Laredo, Texas, and Nuevo Laredo, Tamaulipas. In another example, CDC's influenza experts are working with the WHO international network of collaborating laboratories to detect new antigenic variants of influenza that may signal a need to update the formulation of the influenza vaccine.

Public Health Infrastructure and Capacity-Building

NCID is collaborating with many countries to improve their public health infrastructure and capacity to recognize and treat infectious diseases. For instance, bacterial disease specialists are working with the WHO Regional Office for Africa (AFRO) and African Ministries of Health as well as CDC's Epidemiology Program Office (EPO) to develop an integrated infectious disease surveillance system with laboratory capability in four West African countries and southern Sudan. They have collaborated with the WHO Antimicrobial Resistance Monitoring Program in China by conducting laboratory training courses to ensure the proper performance of antimicrobial susceptibility testing.

Disease and Injury Prevention and Control

NCID is involved in major initiatives to control and eradicate infectious diseases around the world, including polio, malaria, HIV/AIDS, and tuberculosis. Through the expansion of global vaccination efforts under

the Global Alliance for Vaccines and Immunizations (GAVI) and other partnerships, NCID is working with CDC's National Immunization Program (NIP) to eliminate such diseases as polio, measles, meningococcal meningitis, and hepatitis B. Infant mortality is being reduced in developing countries through enhanced delivery and use of vaccines against respiratory illnesses and other childhood diseases and through innovative interventions such as the distribution of insecticide-treated bed nets to prevent malaria. Malaria is a deadly contributor to infant mortality, especially among African children, with disease and mortality burdens comparable to the toll taken by diarrhea, respiratory infections, and HIV/AIDS. Insecticide-treated bed nets are an example of disease prevention strategies that are effective, relatively low-cost, and widely accepted by populations at risk.

Applied Research for Effective Health Policies

NCID's patient safety specialists have collaborated with the CDC Office in Bangkok, Thailand, the Field Epidemiology Training Program in the Thailand Ministry of Health, and with USAID and the Malawi Ministry of Health, in characterizing fever in hospitalized patients in both countries. Results of these collaborative studies indicate that occult bacteremia is very common among inpatients in large teaching hospitals in both countries and that there is enormous potential for hospital transmission of *Mycobacterium tuberculosis*. CDC staff also have been working with the Vietnam Ministry of Health to characterize priority hospital infections. They have worked with Vietnamese researchers to assess hospital-wide prevalence rates of surgical site infections, hospital-acquired pneumonia, and bloodstream infections. Future plans include development of guidelines for antimicrobial prophylaxis in patients undergoing surgery and development of surveillance systems for surgical site infections.

Exchange of Information and Lessons Learned

In September 2000, several athletes fell ill after returning home from the Eco-Challenge-Sabah multisport expedition race in Malaysian Borneo. Clinics in Idaho, California, New York City, Toronto, and London – all of which participate in GeoSentinel, the global surveillance network initiated by the International Society of Travel Medicine (ISTM) and quarantine experts from NCID – reported a cluster of illness among Eco-Challenge racers and helped identify leptospirosis, a bacterial disease caused by coming into contact with contaminated water. (Untreated, leptospirosis can lead to kidney and liver failure or meningitis.) Through electronic dissemination, the GeoSentinel network and ISTM members were alerted about the outbreak, athletes were warned of their possible exposure, and public health authorities were notified in each country represented. An additional seven cases were discovered. The likely source of infection (a contaminated river) was found, and prevention measures were taken.

WHO Collaborating Centers

- *WHO Collaborating Center for Antimicrobial Resistance*
- *WHO Collaborating Center for Arthropod-Borne Viruses in the Western Hemisphere*
- *WHO Collaborating Center for Clostridium botulinum*
- *WHO Collaborating Center for Dengue and Dengue Hemorrhagic Fever*
- *WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis*
- *WHO Collaborating Center for HIV/AIDS*

- *WHO Collaborating Center for Reference and Reagents for Human Immunoglobulin Subclasses*
- *WHO Collaborating Center for Foodborne Disease Surveillance*
- *WHO Collaborating Center for Surveillance, Epidemiology, and Control of Influenza*
- *WHO Collaborating Center for Evaluating and Testing New Insecticides*
- *WHO Collaborating Center for Leptospirosis*
- *WHO Collaborating Center for Control and Elimination of Lymphatic Filariasis*
- *WHO Collaborating Center for Malaria Control in Africa*
- *WHO Collaborating Center for Production and Distribution of Malaria Sporozoite ELISAs*
- *WHO Collaborating Center for Mycoses in North America*
- *WHO Collaborating Center for Reference and Research on Plague Control*
- *WHO Collaborating Center for Poliovirus and Enterovirus Surveillance*
- *WHO Collaborating Center for Reference and Research on Rabies*
- *WHO Collaborating Center for Respiratory Viruses Other than Influenza*
- *WHO Collaborating Center for Rickettsial Diseases*
- *WHO Collaborating Center for Shigella*
- *WHO Collaborating Center for Smallpox and Other Poxviruses Infections*
- *WHO Collaborating Center for Reference and Research in Syphilis Serology*
- *WHO Collaborating Center for Viral Hemorrhagic Fevers*
- *WHO Collaborating Center for Reference and Research on Viral Hepatitis*

Tentative WHO Approval

- *WHO Collaborating Center for Lyme Borreliosis*
- *WHO/PAHO Collaborating Center for Rotavirus and the Agents of Viral Gastroenteritus*
- *WHO Collaborating Center for Public Health Systems and Practice*

Proposed New Centers

- *WHO Collaborating Center for Cysticercosis*
- *WHO Collaborating Center for Molecular Identification and Typing of Insect Disease Vectors*
- *WHO Collaborating Center for Measles Virus Diagnostics (also serves as the PAHO Regional Measles Reference Laboratory)*
- *WHO Collaborating Center for Prevention and Control of Epidemic Meningitis*
- *WHO Collaborating Center for Prevention and Control of Mycobacterium ulcerans (Buruli ulcer)*
- *WHO Collaborating Center for Insecticide Resistance*
- *WHO Collaborating Center for Infectious Disease Pathology*
- *WHO Collaborating Center for Salmonella Surveillance*
- *WHO Collaborating Center for Streptococcus*
- *WHO Collaborating Center for Vibrio cholerae O1 and O139*

THE GLOBAL HEALTH ACTIVITIES OF

CDC'S NATIONAL CENTER FOR INJURY PREVENTION AND CONTROL (NCIPC)

The National Center for Injury Prevention and Control (NCIPC) works to understand and prevent injuries and deaths caused by both intentional injuries (those resulting from violence and abuse) and unintentional injuries (those caused by falls, motor vehicle crashes, fires, and drowning). In addition, the Center coordinates research on acute care and rehabilitation of people who have been disabled by an injury.

NCIPC's injury prevention program is based on a comprehensive, interdisciplinary approach: identifying the extent of the problem and who is at risk; conducting research on causes of injury and risk factors that can be modified; designing prevention programs that address what puts people at risk for injury; and evaluating what works. NCIPC works with international partners – including WHO, PAHO, and Ministries of Health in countries around the world – sharing knowledge of what works in epidemiology, prevention, acute care, rehabilitation, information gathering and dissemination, and training.

Examples of how NCIPC contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

During 1999 and 2000, NCIPC responded to requests for assistance in the development and evaluation of injury-related surveillance systems in South Africa, Jamaica, Kosovo, Nicaragua, the Bahamas, and Latin America. In South Africa, NCIPC staff helped the Ministry of Health develop mechanisms for identifying and collecting violence-related data, including a pilot system for monitoring fatal and non-fatal injuries. A school violence prevention program is also planned. In Kosovo, NCIPC staff helped evaluate a landmine-injury surveillance system.

NCIPC has worked with international organizations such as WHO, PAHO, the World Bank, InterAmerican Development Bank, UNESCO, UNICEF, and the Organization of American States to identify mechanisms for collecting data on fatal and non-fatal injuries, monitoring trends among injuries, and planning strategies for prevention.

Public Health Infrastructure and Capacity-Building

NCIPC is working with Vietnam's Ministry of Health to train the agency's workforce in the collection and use of injury data. NCIPC has collaborated with UNICEF and Vietnam's Ministry of Health to jointly fund the assignment of an injury prevention specialist to work on transport and occupational injury and to begin developing a national plan to deal with injury in the home, school, and community.

Disease and Injury Prevention and Control

In the Netherlands, NCIPC staff are contributing to the publication *Guidelines for Safe Recreational-water Environments: Swimming Pools, Spas and Similar Recreational-water Environments.* In addition, staff are working with their Dutch counterparts to convene the World Congress on Drowning, including preparing a document on drowning prevention, chairing a task force on the epidemiology of drowning, and helping to design the June 2002 meeting to be held in Amsterdam.

• CHRONIC DISEASE PREVENTION • INFECTIOUS DISEASE PROTECTION • IMMUNIZATION • INJURY PREVENTION • PR
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Applied Research for Effective Health Policies

NCIPC staff participated in a Traffic and Workplace Safety Roundtable in Vietnam, where research findings and lessons learned regarding motor vehicle injury prevention in the United States were shared as potential models for safety programs.

Exchange of Information and Lessons Learned

NCIPC has been active in efforts to exchange accurate technical information on global injury-related health problems. For example, the Center is collaborating with WHO in the development of the first *World Report on Violence and Health*. The report focuses on violence as a public health problem and explores those aspects of violence that are most likely to be effectively addressed by the public health sector.

WHO Collaborating Centers

- *WHO Collaborating Center for Injury Prevention and Control*
- *WHO Collaborating Center for Neurotrauma*

THE GLOBAL HEALTH ACTIVITIES OF

CDC'S NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

In farms, factories, stores, and office buildings around the world, the everyday task of earning a living can turn from routine to dangerous. Each year, an estimated 120 million people worldwide are injured at work; approximately 200,000 of these injuries are fatal. In addition, between 68 and 157 million new cases of illness are caused by workplace exposures to chemicals or other toxins.

How can workplace deaths, injuries, and illnesses be prevented? An important first step is the development of basic occupational safety and health (OSH) capacity in every country. These programs – designed to identify, assess, and control workplace hazards – have the potential to protect working populations around the world, benefit overall public health by reducing the toll of injury and disease, and contribute to improved socioeconomic status by improving productivity and reducing the costs associated with these hazards.

CDC's National Institute for Occupational Safety and Health (NIOSH) works with partners in countries around the world and with international organizations (such as WHO, PAHO, and ILO) to help build OSH infrastructure and capacity around the world. This includes building the capacity for monitoring injuries and diseases to identify risk factors, designing engineering or other solutions to help prevent these hazards, sharing up-to-date information about work-related threats to health and safety, and pooling resources so that research findings can be applied quickly and effectively wherever hazards pose a threat to the safety of workers.

Examples of how NIOSH contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

NIOSH staff often respond to requests for assistance from their counterparts in other countries, leading to the transfer of knowledge and skills as well as improved understanding of specific occupational health hazards. For example, NIOSH staff recently assisted with investigations of mercury exposures among gold miners in Venezuela and Ecuador, lead exposures at a smelter facility in Peru, and asbestos exposure at schools and health facilities in Trinidad. NIOSH laboratories also host visiting scientists who receive long-term training in OSH-specific surveillance techniques.

Public Health Infrastructure and Capacity-Building

Building OSH-specific infrastructure and capacity is a central feature of NIOSH's global health work. Recent collaborations with OSH counterparts in South Africa, South Korea, Mexico, and Vietnam have helped build OSH capacity in these countries through visits by NIOSH researchers, long-term assignments, training workshops, equipment loans, and an exchange of information and ideas. In addition, NIOSH staff work closely with WHO and the National Institutes of Health's Fogarty International Center to support international training and infrastructure development. In connection with the WHO collaboration, NIOSH has seconded a senior scientist who is serving as the Team Leader for the Occupational Health Group within WHO's Office of Occupational Environmental Health in Geneva.

Disease and Injury Prevention and Control

Along with partners from the United States, Mexico, and Canada, NIOSH staff helped develop the *North American Guidelines for Children's Agricultural Tasks (NAGCATs)*, which are designed to prevent injuries among youth by helping farmers make safer decisions about the farm tasks assigned to this vulnerable age group. NIOSH scientists also have helped develop and install engineering controls to prevent tuberculosis transmission to hospital staff and patients. NIOSH staff have been actively involved in mine safety projects in Australia, Canada, Poland, and South Africa.

Applied Research for Effective Health Policies

Through a collaboration with Scandinavian occupational health institutes, NIOSH staff have developed a series of research-based recommendations for occupational safety and health standards. In China, NIOSH staff collaborated with Chinese scientists to assess early declines in lung function among coal miners during the first years of employment in the mining industry. This research will be used to develop screening recommendations for miners and other workers exposed to dusts.

Exchange of Information and Lessons Learned

NIOSH works closely with a variety of international agencies and organizations to share information on occupational health and safety and to help develop international standards to monitor and prevent work-related injury and disease. These include a partnership with WHO's Prevention and Control Exchange (PACE) project (which disseminates affordable and effective hazard control techniques to small business around the world); working with WHO's International Programme on Chemical Safety (IPCS); developing international ergonomics guidelines with the International Ergonomics Association; harmonizing international standards through participation in the International Standards Organization (ISO); providing training and workshops on a variety of OSH topics; and convening researchers from around the world so they can share innovative ideas and research results with one another.

WHO Collaborating Centers

- *WHO Collaborating Center for Occupational Safety and Health*

THE GLOBAL HEALTH ACTIVITIES OF
CDC'S NATIONAL IMMUNIZATION PROGRAM (NIP)

The National Immunization Program (NIP) provides national leadership to reduce disability and death resulting from diseases that can be prevented through vaccination and supports global efforts dedicated to the same goal. NIP's global partnerships include scientific and programmatic involvement in the global efforts to eradicate polio, eliminate measles, and control other vaccine-preventable diseases. In addition, NIP coordinates advocacy efforts with global partners; conducts research, monitoring, and evaluation projects; and provides technical assistance to other countries and global agencies and funding for vaccines. NIP is the lead CIO within CDC coordinating CDC's involvement in the Global Alliance for Vaccines and Immunization (GAVI), an alliance of all major immunization partners whose mission is to improve routine immunization globally, expand the use of available vaccines, accelerate development of new vaccines for developing countries, and make immunization coverage an integral part of design and assessment of health systems.

NIP's key global partners include the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the Pan American Health Organization (PAHO), the U.S. Agency for International Development (USAID), Rotary International, the International Federation of Red Cross/Red Crescent Societies (IFRC), American Red Cross, World Bank, UN Foundation, Gates Children's Vaccine Program, and other international agencies.

Examples of how NIP contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

NIP's efforts to strengthen global surveillance systems for all vaccine-preventable diseases have involved more than 100 countries through both short-term consultations and longer-term technical assistance. The program's surveillance support has emphasized polio, measles, and rubella. For example, the success of polio eradication efforts depends on an effective surveillance system capable of detecting acute flaccid paralysis cases even in the absence of wild poliovirus. Thousands of health staff all over the world are involved in both facility- and community-based surveillance so that no case of polio goes undetected. Along with its partners in WHO, NIP has trained surveillance medical officers, developed new tools, and assisted with the implementation, evaluation, and improvement of surveillance systems. These efforts have yielded not only steady progress toward the goal of polio eradication, but also surveillance systems capable of monitoring other diseases (such as mortality rates for measles, rubella, neonatal tetanus, and meningitis) and trends in adverse events following vaccination.

Public Health Infrastructure and Capacity-Building

NIP is working with a number of countries to build and maintain strong immunization delivery systems, primarily for polio eradication and measles elimination/control. In these programs, surveillance and capacity-building go hand-in-hand as national medical officers and volunteers receive training and support in order to effectively prevent diseases. By improving these systems and building the appropriate infrastructure, staffing, and systems, countries are expanding their surveillance systems to include other diseases (such as tetanus), making these systems more efficient in the process. In addition, NIP participates in GAVI by providing technical support to partners and countries to introduce new vaccines and improve routine immunization coverage in the poorest countries.

• CHRONIC DISEASE PREVENTION • INFECTIOUS DISEASE PROTECTION • IMMUNIZATION • INJURY PREVENTION • PR
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ALTH EDUCATION • EPIDEMIOLOGY • WORKPLACE HEALTH • IMMUNIZATION • WORKPLACE SAFETY • TRAINING •

Disease and Injury Prevention and Control

NIP has been involved in projects with other countries to eradicate polio, eliminate measles, and control Hib disease, rubella and congenital rubella syndrome, hepatitis B, and other vaccine preventable diseases. All projects are in collaboration with the affected countries and various international partners, such as WHO, UNICEF, Rotary International, IFRC, and other donor countries. NIP supports these disease prevention efforts through technical assistance (including secondment of staff, short-term consultants, and cooperative agreements), research collaboration, vaccine funding, and laboratory support. During the past 2 years, assignments by over 300 NIP epidemiologists, programmatic and technical consultants, and technical officers have helped host country officials organize National Immunization Days and other supplemental vaccination activities.

Polio eradication is now the largest of these disease control efforts. In addition to the numerous technical assistance efforts undertaken during the last 2 years, CDC (through UNICEF) supplied over 1.1 billion doses of polio vaccine to campaigns working to stop the transmission of polio. These efforts have contributed to recent progress, including the fact that over 190 countries have successfully eradicated polio. The number of reported polio cases has decreased by 99% since 1988, when the World Health Assembly expanded polio eradication efforts beyond the Americas. Now, efforts will focus on approximately 20 countries in Africa and Asia in which wild poliovirus transmission continues or has recently occurred.

Applied Research for Effective Health Policies

NIP conducted research in collaboration with a number of countries on congenital rubella syndrome, Hib, measles, pertussis, and polio. Findings from these studies are being used to develop and evaluate effective interventions. For example, measles elimination programs face the logistical challenge of administering vaccines by injecting large numbers of children in supplementary vaccination programs. Scientists are exploring how this can be done most effectively, including research into innovative alternatives, such as aerosol vaccine delivery methods. In addition, some countries have sought help from NIP staff in evaluating the impact of Hib vaccine and hepatitis B vaccine, which are not commonly available in developing countries.

Exchange of Information and Lessons Learned

NIP disseminates relevant findings from research or field experience as quickly as possible, so that public health officials and other scientists can act on the information. Up-to-date information and resources are posted on NIP's website and links are provided to a number of other related sites. NIP participates with WHO in a quarterly newsletter on polio eradication that highlights key issues, successes, and challenges. NIP's Deputy Director is co-chair of the Immunization Working Group for the U.S.-Mexico Binational Commission and another NIP epidemiologist serves on the Commission's Aging Workgroup, providing technical assistance regarding adult immunization issues. Program staff also have developed with Spanish colleagues a Spanish translation of *The Epidemiology and Prevention of Vaccine-Preventable Diseases*, which will be useful not only in Spanish-speaking countries but in the United States as well. NIP staff coordinate CDC's participation on the GAVI Board, and disseminate key GAVI information to other technical agencies that support global immunization.

THE GLOBAL HEALTH ACTIVITIES OF
CDC'S PUBLIC HEALTH PRACTICE PROGRAM OFFICE (PHPPO)

A strong global public health system is the best guarantee that each component of the system will be able to respond to both existing and emerging public health threats. The mission of the Public Health Practice Program Office (PHPPO) is to strengthen the national and global public health infrastructure – its people, systems, and organizations – so that the global public health community will be as prepared as possible to respond to a range of health hazards.

To accomplish this, PHPPO provides management and leadership development training as well as more specific technical training designed to improve the performance of the public health workforce around the world. PHPPO also develops performance measures and standards that can be used to compare and upgrade different components of the public health infrastructure, helps improve the quality of laboratory testing for public health purposes, and expands the scientific knowledge base for prevention.

Examples of how NCEH contributes to CDC's global health objectives in each of five strategic areas are provided below.

Public Health Surveillance and Response

Improving the quality of laboratory systems is one of PHPPO's important contributions to strengthening global surveillance networks. With other CDC partners and the Association of Public Health Laboratories (APHL), PHPPO staff are developing laboratory training and quality assurance systems for the Leadership and Investment for Fighting an Epidemic (LIFE) Initiative – a response to HIV/AIDS that began in 14 sub-Saharan African countries and in India, and recently expanded to 10 other countries in other parts of Africa and in Latin America, the Caribbean, and Southeast Asia. (The LIFE Initiative is now known as the Global AIDS Program, or GAP.) Starting in Zimbabwe and later adding other countries participating in the initiative, the laboratory component includes training for laboratory staff and implementing quality systems for widespread testing of HIV, TB, STD, and opportunistic infections. The quality of testing – especially because of the high volume created by the scope of the epidemic in these countries – is critical to tracking this cluster of health threats.

Public Health Infrastructure and Capacity-Building

The public health workforce faces an increasingly complex set of challenges around the world. To help keep pace, PHPPO supports a wide variety of training in public health management and practice to help build public health capacity. This includes programs such as the Sustainable Management Development Program (SMDP) and the Management for International Public Health (MIPH) course, offered in Atlanta for public health professionals from developing countries. Many training events and curricula are customized to the needs of specific countries; others are made available via distance learning mechanisms to expand the pool of public health workers who can benefit from new knowledge. For example, PHPPO staff have helped the Caribbean Epidemiology Centre (CAREC) develop a distance learning system for its member countries that features courses on laboratory management and outbreak investigations.

In Nicaragua, the joint CARE-CDC Health Initiative (CCCHI), funded by the Woodruff Foundation, has developed a cadre of public health management trainers to meet the training needs of Ministry of Health officials and staff in other health-related organizations. Similar efforts are underway to offer graduates of SMDP and MIPH train-the-trainer courses a resource kit and video that can be used to provide high-caliber management training around the world at a relatively low cost.

Disease and Injury Prevention and Control

With technical assistance from SMDP staff, MIPH alumni in the Philippines Department of Health have developed a Field Management Training Program (FMTP). Local participants in the FMTP are trained in a series of short workshops and are then required to demonstrate competence in their newly acquired skills through an applied management project of practical benefit at their workplaces. Examples of completed projects include those that have improved the adequacy of TB sputum samples, eliminated supply stock-outs, improved the timely submission of disease reporting, and increased patient counseling for family planning services. SMDP staff assisted similar programs in Nigeria and Vietnam to support disease control efforts addressing river blindness, guinea worm, tuberculosis, and family planning. All SMDP-affiliated programs emphasize application of managerial skills to yield measurable changes of practical benefit to public health programs.

Applied Research for Effective Health Policies

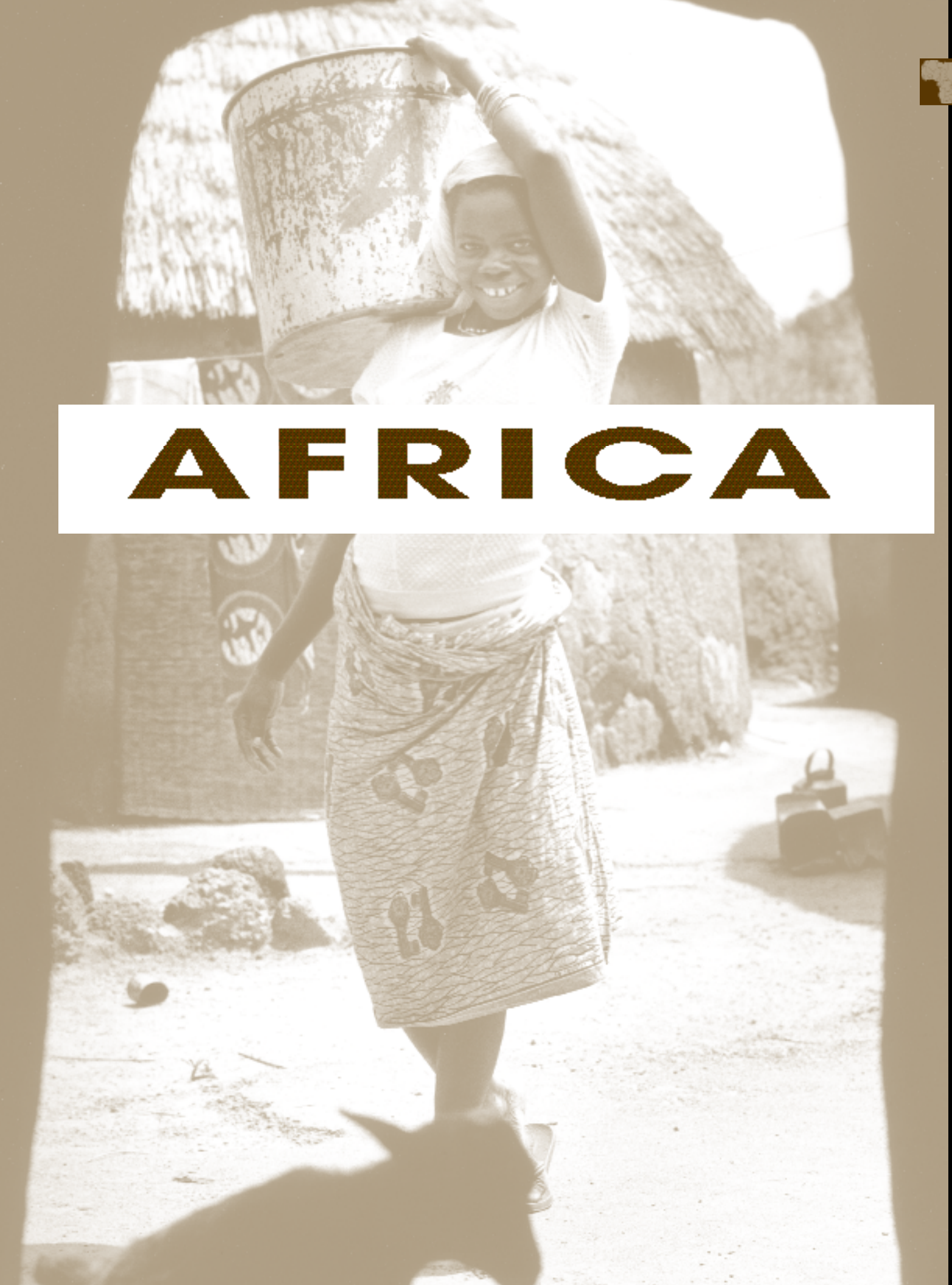
In most countries, the primary diagnostic tool used to identify cases of TB and monitor the effectiveness of treatment is direct acid fast bacilli (AFB) microscopy. In Mexico, PHPPO staff worked with Mexico's National Laboratory Institute to improve the country's national external quality assessment (EQA) program for AFB microscopy. A series of studies was conducted to compare proficiency testing and re-checking methods; a statistical sampling method (Lot Quality Assurance Sampling) was then implemented in two Mexican states to compare results with standard re-checking programs. The results have informed an international workgroup convened to develop guidelines for national EQA programs for AFB microscopy networks in resource-poor countries. These guidelines offer, for the first time, practical guidance for national programs seeking to monitor and promote quality testing at the clinic level; the result will be a more efficient use of scarce resources, more easily detected (and thus rapidly corrected) testing problems, and higher overall testing quality.

Exchange of Information and Lessons Learned

In order to improve the public health infrastructure, it first must be defined and measured in a standard way. These measures, in turn, must be linked to the performance expected of the public health system around the world, so that gaps can be addressed. The National Public Health Performance Standards Program (NPHPSP) is one approach to accomplishing these objectives. Working with PAHO through its "Public Health in the Americas" initiative, PHPPO staff have helped design an instrument that consistently measures the degree to which essential public health services are provided throughout the Americas. This tool will anchor an integrated system of infrastructure surveillance and performance measurement throughout the region, helping to define public health's role and providing each country with a national focus for developing optimal public health practice standards.

WHO Collaborating Centers

- *PHPPO has applied for formal designation as a WHO Collaborating Center for Public Health Systems and Practice.*



AFRICA

THE WORK OF CDC IN AFRICA

Sub-Saharan Africa – already a region beset by intertwined forces of poverty, war, and famine – has been further devastated by the HIV/AIDS epidemic. Although there are some hopeful signs of progress – notably in Uganda – in much of Africa, HIV/AIDS has eroded and overwhelmed previous advances. For example, in Zimbabwe, life expectancy for men hovered at 56 in the mid-1980s. Today, it is only 40. A Japanese baby girl, fortunate to have the world's highest life expectancy of 84 years, will live 46 years longer than a Zambian baby will. By Zambian standards, this constitutes an entire extra lifetime.

CDC's global health work in Africa includes a large, multi-faceted initiative to combat the HIV/AIDS epidemic, which is stealing years and decades of life from so many Africans. In addition, many other efforts seek to build the continent's fragile public health infrastructure, control infectious diseases and injuries, and address the risk factors that lead to chronic disease as well as the environmental and occupational hazards that impose further health burdens on African nations.

Examples of CDC's global health activities in Africa in each of five strategic areas are provided below.

Public Health Surveillance and Response

To many observers, intentional violence – homicide, suicide, and assaults – seem outside the purview of public health. However, these events not only have immediate (and often lethal) health consequences; they also are amenable to a public health approach that examines the circumstances and risk factors that lead to violence, with the goal of preventing it in the first place. As with other public health problems, the first step is to document the extent of the problem and to gather as much information as possible about the circumstances surrounding the event and its consequences. In South Africa, the National Center for Injury Prevention and Control (NCIPC) is working with South African health authorities to learn more about the surge in violence by developing a surveillance system capable of measuring, documenting, and monitoring it. Initially tested in several pilot facilities before possible expansion across the country, the system will monitor both fatal injuries (collected from mortuaries) and non-fatal injuries (collected through emergency rooms in hospitals and community health centers).

Public Health Infrastructure and Capacity-Building

CDC has joined with USAID, DHHS, and other federal agencies to support the ministries of health in 14 African countries (and in India) as they struggle to respond to the HIV/AIDS pandemic. The LIFE (Leadership and Investment in Fighting the HIV/AIDS Epidemic) Initiative, now known as the Global AIDS Program or GAP, recently expanded to another 10 countries in other parts of Africa and in Southeast Asia, the Caribbean, and Latin America. The program includes primary prevention, community and home-based care and treatment, and care for children affected by AIDS, but a cornerstone that makes the other components possible and sustainable is capacity and infrastructure development.

Capacity-building related to the LIFE/GAP initiative includes the development and enhancement of surveillance systems, managerial and other technical public health training, and support for upgrading and/or building laboratory facilities to allow rapid, accurate detection of STDs, HIV/AIDS, TB, and opportunistic infections.

Disease and Injury Prevention and Control

In addition to the LIFE Initiative, CDC supports a number of disease and injury prevention projects throughout Africa. For example, the National Center for Infectious Diseases (NCID) works with several African countries to implement the USAID-funded Africa Integrated Malaria Initiative, designed to reduce malaria's impact through improved management of febrile illness at home and at health facilities. In addition, the Initiative promotes the widespread use of insecticide-impregnated bed nets, as well as chemoprophylaxis during pregnancy.

Applied Research for Effective Health Policies

In 1995, at the invitation of Botswana's Ministry of Health, CDC established a TB/HIV collaborating center called BOTUSA. Over time, the site's staff and partners have developed innovative approaches to surveillance and disease prevention that have become models for other resource-poor countries. For example, a software tool for TB surveillance initially was developed through the site's efforts. BOTUSA also contributed new methods of improving TB diagnosis in low-resource settings. The site has served as a base for regional USAID-funded activities throughout southern Africa, with its innovations now in place in South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and Tanzania. In addition, it offers invaluable training opportunities for CDC EIS officers and students of medicine and public health – ensuring that knowledge gained in one place can be transferred to many different settings and countries.

Most of CDC's HIV/AIDS-related efforts in Africa have focused, appropriately, on the millions of people and families affected by the disease and its progression, either by providing treatment or working to prevent transmission to others. Another group profoundly affected by the epidemic includes health care workers who face the risk of occupational exposure through their work with the many patients infected with HIV/AIDS and/or TB. To help minimize the risk of occupational exposure, the National Institute for Occupational Safety and Health (NIOSH) is involved in a collaborative effort with counterparts in South Africa to develop a functional model that will achieve multiple goals: protecting health care providers, yet doing so without extensive resources and in a manner that is culturally applicable in other developing countries. Like the BOTUSA and other initiatives in which CDC participates, this effort promises to reduce risks not only in its "home" country, but to expand its benefits many times over by being adapted elsewhere as well.

Exchange of Information and Lessons Learned

Usually, the exchange of critical public health information and valuable lessons occurs among a group of scientists, sharing their insights in journal articles, or perhaps gathered in a conference room. In other cases, the exchange of information may have more entertainment value – by design. In partnership with WHO and the Population Media Center, staff from CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) are involved in an innovative effort that uses serial radio dramas to convey information about reproductive health, family planning, and HIV/STD prevention. The project involves production of a 2-year serialized drama in one country, as well as workshops and technical assistance for five other African countries sharing an interest in extending public health's reach through the radio.

BENIN

Child Survival

NCID's Division of Parasitic Diseases collaborated with Africare and the Basic Support for Institutionalizing Child Survival (BASICS) Project to provide assistance to the Benin Ministry of Public Health with operations research projects in Oueme Department, Benin for the USAID-funded Africa Integrated Malaria Initiative. The project's goal was to reduce the impact of malaria through improved management of febrile illness at home and at health facilities, the widespread use of insecticide impregnated bed nets, and malaria chemoprophylaxis during pregnancy. Baseline studies have been completed to evaluate implementation of the WHO/UNICEF Integrated Management of Childhood Illness (IMCI) guidelines and the project's impact on mortality among children under 5 years of age. Strategies to accomplish project goals include the promotion of insecticide-treated nets at antenatal visits and implementation of an affordable package of interventions to support health workers after IMCI training.

Start Date: 3/1/97
Status: Ongoing

BOTSWANA

Botswana houses BOTUSA, a collaborative research effort that addresses HIV and TB surveillance and interventions. Three CDC staff, all from NCHSTP, were assigned to BOTUSA.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

CDC's HIV/AIDS activities in Botswana are known collectively as the BOTUSA Project. BOTUSA includes Botswana's National AIDS Coordinating Agency, Ministry of Health, and local governments, as well as UN agencies, USAID, universities, radio stations, arts organizations, and HIV/AIDS support organizations. The program is working to expand HIV/AIDS prevention services (particularly voluntary counseling and testing and maternal-to-child transmission prevention programs) across the country, supported by social marketing and mass media prevention education efforts. BOTUSA also supports Botswana's surveillance and laboratory programs and several specific research initiatives.

Start Date: 1/1/00
Status: Ongoing

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health has developed partnerships with organizations in several African countries, including Botswana, to design, implement, and evaluate innovative behavioral interventions using entertainment/education strategies. In collaboration with these partners, the Division is developing both international and domestic interventions that use radio and television serialized dramas to promote reproductive health and HIV/STD prevention.

Start Date: 5/1/99
Status: Ongoing

HIV/STD Prevention

Staff from NCCDPHP's Division of Reproductive Health have developed the Global AIDS Activity Technical Strategy for Behavior Change Communications (BCC). Through this initiative, NCCDPHP staff will be providing technical assistance on the development and evaluation of BCC projects in Botswana, Ethiopia, and Zimbabwe. Other countries also have requested this type of assistance; the program will be expanded to include them in subsequent years.

Start Date: 5/1/99
Status: Ongoing

Tuberculosis

In FY 2000, CDC, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program recently expanded to 10 additional countries. Improving TB prevention and control efforts is an important component of the LIFE/GAP initiative. Staff from NCHSTP's Division of TB Elimination have been actively involved in developing project "best practice" blueprints, participating in site visits to LIFE/GAP countries, and convening an expert group to provide input into the selection of countries for initial TB efforts and the content of country-specific TB projects. Initial TB efforts focused on six countries, including Botswana.

Start Date: 1/1/98
Status: Ongoing

Tuberculosis

PHPPO's Division of Laboratory Systems (DLS) is engaged in an international cross-training in TB laboratory science in Botswana, Jamaica, Mexico, and Zimbabwe. A CDC/Association of Public Health Laboratories (APHL) cooperative agreement involves training selected international participants in U.S. state public health laboratories (SPHL) and sending U.S. experts to provide specialized training in selected international laboratories in these countries.

Start Date: 1/1/97
Status: Ongoing

BURKINA FASO

HIV

Laboratories in Burkina Faso, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

CAMEROON

Dracunculiasis (Guinea Worm)

An NCID Division of Parasitic Diseases consultant worked with officials of the Cameroon eradication program to accelerate ending transmission of dracunculiasis in the last remaining foci in the Mandara Mountains, near the Nigerian border.

Start Date: 8/1/98
End Date: 10/31/98
Status: Complete

HIV

NCID's Division of AIDS, STD, and TB Laboratory Research, as part of the global HIV/AIDS monitoring program and in collaboration with investigators in Cameroon, conducted surveillance of circulating HIV and HIV-like strains. This activity is particularly important

because of the great genetic diversity of HIV strains present in Cameroon.

Start Date: 10/1/98
Status: Ongoing

HIV

Laboratories in Cameroon, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Cameroon, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

CAPE VERDE ISLANDS

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) has been providing technical assistance for international reproductive health surveys for more than 20 years under its Participating Agencies Service Agreement (PASA) with USAID. DRH staff work with USAID, in-country implementing agencies, Ministries of Health, international organizations, and NGOs to provide programmatically important information on a wide array of topics in reproductive health. DRH staff assisted in virtually all aspects of these surveys, including conceptualization, design, planning, training, implementation, data processing, analysis, report writing, and dissemination activities. In 1999 and 2000, assistance was provided for surveys carried out in Romania, Ukraine, Russia, the Republic of Georgia, and Ecuador. Reports on the survey results in Cape Verde and El Salvador were completed and published in 1999. Planning is underway for surveys that will take place in 2001 in Mozambique, Azerbaijan, Honduras, and Paraguay.

Start Date: 1/1/97
Status: Ongoing

CENTRAL AFRICAN REPUBLIC

HIV

Laboratories in Chad, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

CONGO

Two CDC staff were assigned to the Democratic Republic of the Congo, working with USAID on child survival projects and with WHO on immunization issues.

Marburg Virus

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnosis of a hemorrhagic fever cluster, in which two cases were diagnosed as Marburg infections through skin biopsies.

Start Date: 6/1/99
End Date: 6/30/99
Status: Complete

Marburg Virus

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and assistance during an outbreak of Marburg virus disease in Durba.

Start Date: 1/1/00
End Date: 3/1/00
Status: Complete

ETHIOPIA

An NIP staff member was assigned to Ethiopia to assist in polio and other immunization activities.

Complex/Humanitarian Emergencies

NCEH sent three team members to assist in the humanitarian crisis in Ethiopia. Team members served as nutrition coordinators for UNICEF, funded by the Office of Foreign Disaster Assistance (OFDA), and played a key role in coordination assessment and relief efforts in this population.

Start Date: 7/1/00
Status: Ongoing

Dracunculiasis (Guinea Worm)

NCID's Division of Parasitic Diseases staff worked with Ethiopian officials on the national Guinea worm eradication program to intensify activities to interrupt transmission in the South Omo and Gambelloa regions.

Start Date: 2/1/99
End Date: 3/1/99
Status: Complete

Family Planning Management Training

Since 1974, NCCDPHP's Division of Reproductive Health has provided various types of technical assistance to Ethiopia through a Participating Agencies Services Agreement (PASA) with USAID's Office of Population. Under the current PASA (covering FY 98-02), the logistics component of this multifaceted agreement supported and promoted effective Family Planning (FP)/Reproductive Health (RH) program interventions by providing assistance in assessing national FP logistics systems, forecasting contraceptive requirements, and recommending specific improvements in logistics management systems. In addition, a *Pocket Guide to Managing Contraceptive Supplies* was published. A French translation was also prepared, and a Spanish version is nearing completion.

Start Date: 10/1/97
Status: Ongoing

HIV

Ethiopian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

In Ethiopia, CDC works with the Ethiopian Ministry of Health, USAID and its partners, UN agencies, WHO, universities, and foundations on several initiatives. These include improving access to high-quality HIV counseling and testing services (including social marketing to promote these services), improving the quality and availability of surveillance data (for HIV/AIDS, STDs, and TB), expanding data collection to rural areas and high-risk groups, enhancing laboratory capacity, strengthening information systems to improve coordination of services, and implementing a package of basic support and treatment services. CDC and its partners also serve as a technical resource for the Ethiopian government's HIV/AIDS, STD, and TB research agenda.

Start Date: 4/1/00
Status: Ongoing

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health has developed partnerships with organizations in several African countries, including Ethiopia, to design, implement, and evaluate innovative behavioral interventions using entertainment/education strategies. In collaboration with these partners, the Division is developing both international and domestic interventions that use radio and television serialized dramas to promote reproductive health and HIV/STD prevention.

Start Date: 5/1/99
Status: Ongoing

HIV/STD Prevention

Staff from NCCDPHP's Division of Reproductive Health have developed the Global AIDS Activity Technical Strategy for Behavior Change Communications (BCC). Through this initiative, NCCDPHP staff will be providing technical assistance on the development and evaluation of BCC projects in Botswana, Ethiopia, and Zimbabwe. Other countries also have requested this type of assistance; the program will be expanded to include them in subsequent years.

Start Date: 5/1/99
Status: Ongoing

Reproductive Health

An NCCDPHP study of reproductive health (RH) outcomes among displaced persons in 52 post-emergency phase camps was conducted in 7 countries (Azerbaijan, Ethiopia, Myanmar, Nepal, Tanzania, Thailand and Uganda). The objective of the study was to provide data on these outcomes and compare them to the host country and country-of -origin populations as well as to determine programmatic factors that affect RH outcomes. The main outcome measures were crude birth rate, neonatal mortality rate, maternal mortality ratio, incidence of complications of unsafe and spontaneous abortion, and percent low birth weight.

Start Date: 10/1/98
Status: Ongoing

GABON

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including Gabon, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

GHANA

A CDC Office of Global Health medical officer was assigned to USAID/Ghana to assist in child survival activities. A technical advisor was assigned to Ghana's Guinea Worm Eradication Program, sponsored by The Carter Center.

Dracunculiasis (Guinea Worm)

Staff from NCID's Division of Parasitic Diseases planned and conducted an external evaluation of the Ghanaian Guinea worm eradication program in four of the most endemic districts of the country. Subsequently, an NCID consultant visited Ghana twice to assist Ghanaian colleagues in improving detection and containment of cases, with emphasis on the country's northern region.

Start Date: 12/1/98
End Date: 2/28/99
Status: Complete

HIV

Ghanaian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health has developed partnerships with organizations in several African countries, including Ghana, to design, implement, and evaluate innovative behavioral interventions using entertainment/education strategies. In collaboration with these partners, the Division is developing both international and domestic interventions that use radio and television serialized dramas to promote reproductive health and HIV/STD prevention.

Start Date: 5/1/99
Status: Ongoing

HIV/STD Prevention

With the support from the CARE/CDC Health Initiative, DRH has collaborated with CARE-Ghana to design an intervention targeted towards adopting positive behaviors regarding HIV. CDC's Divison of Reproductive Health worked with CARE-Ghana to conduct formative research leading to the development of a serialized drama focused on HIV/STD prevention in Ghana.

Start Date: 5/1/99
Status: Ongoing

Immunization

In 2000, NIP began participating as part of a consulting team in Ghana to evaluate the feasibility of introducing rubella vaccine, estimate the burden of congenital rubella syndrome (CRS), and gauge the potential impact and cost effectiveness of vaccination. These activities will inform a decision regarding whether rubella vaccine should be introduced into the vaccination program. NIP staff will continue to work with the Ghanaian Ministry of Health program to establish CRS surveillance using two methods: (1) surveillance for clinical disease focusing on the most specific clinical defects (e.g., congenital cataracts) and the centers most likely to identify those defects; and (2) surveillance for rubella infection among women of childbearing age, using cross-sectional serosurveys (so that rates of infection can be defined based on differences in seroprevalence of antibody to rubella among women in different childbearing age groups).

Start Date: 9/1/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from Gabon attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Guinea, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Rubella and Congenital Rubella

NIP helped establish congenital rubella syndrome (CRS) surveillance and estimated the burden of CRS in three different regions in Ghana.

Start Date: 9/1/00
Status: Ongoing

Surveillance

The main goal of EPO's Global Surveillance and Response Project is to improve infectious disease surveillance, epidemic preparedness, and response systems. In an effort to develop model surveillance systems, the project is focusing primarily on four African countries: Uganda, Ghana, Zimbabwe,

and Tanzania. Surveillance system assessments were carried out in Tanzania, Uganda, and Ghana. Workshops to develop action plans to strengthen each country's surveillance system took place in Tanzania in March 1999, in Uganda in May 2000, and in Ghana in October 2000. Project staff have worked closely with both the Ministry of Health and the School of Public Health Without Walls (PHSWOW) in Uganda, where the project hired a local epidemiologist and a trainer from the PHSWOW to help in the implementation of the action plan as well as with the ministries of health and public health schools in the other targeted countries.

Start Date: 11/1/98
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Ghana. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

GUINEA

Health Surveillance

At the request of the International Rescue Committee, NCEH fielded a mission to Guinea to assess the health of a post-emergency phase displaced population.

Start Date: 10/6/99
End Date: 11/2/99
Status: Complete

HIV

Two NCEH staff went on a coalition-building and site-selection mission to Guinea, Kenya, and Uganda to lay the groundwork for investigations into HIV and HIV-related issues in complex emergency settings.

Start Date: 9/1/99
Status: Ongoing

IVORY COAST

Four CDC staff were assigned to a major collaborative research project in the Ivory Coast, known as RETRO-CI. From this base, CDC/NCHSTP staff conducted numerous research projects with an emphasis on those related to HIV, STD, and TB prevention.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Ivory Coast

participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that . detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Dracunculiasis (Guinea Worm)

An NCID Division of Parasitic Diseases consultant worked with the national Guinea worm eradication program to the improve village-level programs with respect to interventions, planning, and evaluation.

Start Date: 1/1/99
End Date: 1/31/99
Status: Complete

Epidemiology Training

Public health professionals from Ivory Coast were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Laboratories in the Ivory Coast, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

Ivory Coast is the West African country most heavily affected by the HIV/AIDS epidemic. CDC works with the Ivory Coast Ministry of Health, USAID, UN agencies, and French, Canadian, and

Belgian agencies to support the government's HIV/AIDS initiatives. These include establishing STD diagnosis and treatment facilities (including an initiative targeting female sex workers), implementing programs to prevent maternal-to-child transmission, coordinating HIV rapid testing, strengthening the country's sentinel surveillance system and establishing sentinel surveillance for drug-resistant TB, and developing appropriate biologic and clinical monitoring algorithms for patients receiving antiretroviral therapy.

Start Date: 5/1/00
Status: Ongoing

HIV

Project RETRO-CI is a collaborative research project supported by CDC, the Ivory Coast Ministry of Health and Social Affairs, and the Institute of Tropical Medicine in Antwerp, Belgium. Research projects are conducted to: define the magnitude of the national HIV epidemic; describe clinical manifestations and the epidemiology of HIV-1 and HIV-2 infections; define causes of death in HIV-infected persons; study the response to TB therapy and the prevention of other opportunistic infections in HIV-infected persons; study the laboratory serologic diagnosis and molecular epidemiology of HIV-1 and HIV-2 infections; conduct clinical trials to develop and implement effective interventions to prevent HIV transmission from mother-to-child and through heterosexual exposure; evaluate the impact and experience of the UNAIDS initiative to make antiretroviral therapy more available; and conduct virologic and preliminary work for adaptation and possible field trials of an HIV vaccine. The program also provides training for Ivoirian epidemiologists and laboratory scientists. Technical and laboratory support is provided for voluntary HIV counseling and testing for TB patients throughout the country and to an NGO site serving the general population in Abidjan.

Start Date: 1/1/88
Status: Ongoing

Laboratory Diagnostics

As part of CDC's LIFE (Leadership and Investment in Fighting an Epidemic) Initiative (now known as the Global AIDS Program, or GAP), Office of Health and Safety staff have provided technical assistance to laboratories in Uganda, Kenya, and Ivory Coast as these countries seek to upgrade existing Level 2 and 3 facilities or build new ones. Current technical assistance bolsters the capacity of these laboratories to meet standards for testing for HIV/AIDS and to apply laboratory safety principles in resource-poor conditions. Laboratories in these and other countries are also expanding their TB testing capabilities, with assistance from CDC staff.

Start Date: 1/1/92
Status: Ongoing

Management Training

In FY 99 and 00, participants from Guinea attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-

country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Nosocomial Infections

NCID staff conducted the following assessments: risks of TB among healthcare workers; usefulness of CDC guidelines in reducing nosocomial TB transmission; effectiveness and feasibility of ultraviolet germicidal irradiation (UVGI) in reducing nosocomial TB transmission; usefulness of serial TB skin testing among healthcare workers with prio (infancy or more recently) BCG vaccination.

Start Date: 10/1/99
End Date: 9/1/00
Status: Complete

Water Vessel Project

NCID's Division of Bacterial and Mycotic Diseases evaluated the microbiologic safety of stored water among low-income women in Abidjan served by the Project RETRO-CI's Maternal Health Clinic.

Start Date: 3/1/99
End Date: 6/1/00
Status: Complete

KENYA

Through the Kenya Medical Research Institute (KEMRI), CDC's collaborative research center in Kenya, six CDC staff conducted research on malaria, anemia, immunizations, HIV/AIDS, and other public health topics.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Kenya and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Child Survival

NCID's Division of Parasitic Diseases (with funding from USAID's Africa Integrated Malaria Initiative and in collaboration with the African Medical Research Foundation and the Basic Support for Institutionalizing Child Survival Project) provided technical assistance to the Kenya Ministry of Health in implementing a model malaria control program in Bungoma District. Division staff assisted with the introduction, strengthening, and evaluation of health worker adherence to WHO/UNICEF Integrated Management of Childhood Illnesses (IMCI) guidelines by health workers; studies of malaria in pregnancy; the use of microscopy; referral completion rates and obstacles to referral; evaluation of the project's impact on child mortality, project planning; and a mid-term evaluation.

Start Date: 3/1/98
Status: Ongoing

Child Survival

With support from the CARE/CDC Health Initiative, NCID's Division of Parasitic Diseases collaborated on evaluation and operations research with the staff of CARE/Kenya's Community Initiatives for Child Survival in Saiya (CISS) project in Saiya District. Collaborative activities included two reviews of the project's health and management information system, annual evaluations of the clinical skills of community health workers, a study of the completeness of reporting of child deaths to the vital registration system, training in epidemiology for project staff, a study

of how often and for what reasons project interventions failed to occur during terminal illnesses of children in the project area, and evaluation of the project's impact on mortality among children under 5 years of age.

Start Date: 5/1/97
Status: Ongoing

Child Survival

NCID conducted a study to determine whether palmar pallor (an indication for antihelminthic treatment in the WHO/UNICEF Integrated Management of Childhood Illness [IMCI] guidelines) or other clinical signs could be used to identify helminth-infected children and to evaluate the nutritional benefit of treating sick children without pallor with an antihelminthic.

Start Date: 11/1/97
End Date: 7/1/00
Status: Completed

Cyclospora

NCID's Division of Parasitic Diseases initiated a broad study with the Kenya National Primate Center in Nairobi of Cyclospora infections in primates to address issues regarding the relationship of these primate species to human *C. Cayetanensis*. The study will define the range of animals infected, the species of organism infecting different animals, and develop primate models as sources of organisms for laboratory-based studies.

Start Date: 1/1/98
Status: Ongoing

Diarrheal Diseases

NCID's Division of Bacterial and Mycotic Diseases provided laboratory-based surveillance for diarrheal diseases among patients attending outpatient clinics in western Kenya and investigated the etiology of diarrheal illness in children born to HIV-infected mothers.

Start Date: 9/1/97
Status: Ongoing

Diarrheal Diseases

NCID's Division of Bacterial and Mycotic Diseases provided statistical consultation for modeling of longitudinal data regarding risk factors for diarrheal illness in children, where the data were obtained at irregularly spaced times and were subject to substantial measurement error.

Start Date: 10/1/98
End Date: 12/1/98
Status: Complete

HIV

Kenyan laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

Two NCEH staff went on a coalition-building and site-selection mission to Guinea, Kenya, and Uganda to lay the groundwork for investigations into HIV and HIV-related issues in complex emergency settings.

Start Date: 9/1/99
Status: Ongoing

HIV

CDC coordinates several HIV/AIDS epidemiologic research studies in Kenya. Specific areas include descriptive epidemiology of HIV infection, including studies designed to characterize HIV incidence; evaluating HIV surveillance; prevention of perinatal HIV transmission; assurance of blood safety;

and the development of systems for the implementation of future HIV vaccine trials.

Start Date: 2000
Status: Ongoing

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs. In Kenya, project activities emphasize access to voluntary HIV counseling and testing in both urban and rural settings, expanded access to services to prevent maternal-to-child transmission, improved national surveillance, and integration of TB and HIV services.

Start Date: 4/1/00
Status: Ongoing

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health will conduct a randomized trial of diaphragm use for prevention of STDs following a pilot phase to evaluate acceptability and patterns of use. The randomized trial will recruit 410 women with acute gonorrhea and/or chlamydia infection. Analysis will be performed in an intention-to-treat manner, measuring differences in reinfection rates for the intervention group compared to the non-intervention group. The study is powered to detect a 50% or greater reduction in gonorrhea and/or chlamydia reinfection in diaphragm users (since most experts agree a method must reduce the risk of infection by at least 50% to become widely accepted by women at risk).

Start Date: 9/1/00
Status: Ongoing

Intestinal Parasites

Staff from NCID's Division of Parasitic Diseases initiated several studies of the role of parasitic infections as causes of diarrheal illness. The studies are part of two surveillance studies of diarrhea, one in a community-based population and the other in a clinic-based population. Both studies looked for the presence of Cyclospora, as this infection has not been reported in Africa with any regularity. Only one infection, in an HIV-positive person, was detected in any of the examined samples.

Start Date: 1/1/98
End Date: 7/1/00
Status: Complete

Laboratory Diagnostics

As part of CDC's LIFE (Leadership and Investment in Fighting an Epidemic) Initiative, CDC Office of Health and Safety staff have provided technical assistance to laboratories in Uganda, Kenya, and Ivory Coast, as these countries seek to upgrade existing Level 2 and 3 facilities or build new ones. Current technical assistance bolsters the capacity of these laboratories to meet standards for testing for HIV/AIDS and to apply laboratory safety principles in resource-poor conditions. Laboratories in these and other countries are also expanding their TB testing capabilities, with assistance from CDC staff.

Start Date: 1/1/92
Status: Ongoing

Lymphatic Filariasis

The Kenya Medical Research Institute staff, with technical assistance from NCID's Division of Parasitic Diseases, conducted a community-based

study of host immunity and chemotherapy for lymphatic filariasis.

Start Date: 4/1/94
End Date: 12/1/99
Status: Complete

Malaria

NCID's Division of Parasitic Diseases, in collaboration with the Kenya Medical Research Institute, continued research into clinical, epidemiologic, and immunobiologic studies of malaria infection in western Kenya. These activities are part of an ongoing, multidisciplinary longitudinal and prospective project that is studying a cohort of women and children naturally exposed to malaria in an area of intense malaria transmission. The immunologic and molecular biologic investigations include: (1) studies aimed at delineating characteristics of natural immunity that confer immunity against clinical illness; (2) studies aimed at assessing genetic diversity in the natural population of infectious agents; and (3) studies aimed at developing and field testing new diagnostic tools.

Start Date: 10/1/92
Status: Ongoing

Malaria

NCID's Division of Parasitic Diseases participated in a John D. and Catherine T. MacArthur Foundation Biology of Disease Vectors Course by providing lectures on malaria and molecular methods, laboratory training in methods for *Anopheles gambiae* polytene chromosome in situ hybridization, and microsatellite mapping in the same vector.

Start Date: 1/1/93
Status: Ongoing

Malaria

NCID's Division of Parasitic Diseases carried out a multifaceted program of malaria research at its research station in Kenya, in collaboration with the Kenya Medical Research Institute (KEMRI). This included continued training in malaria vector insecticide resistance detection and assessment for a scientist from KEMRI. An NCID scientist also served as an external examiner for a KEMRI scientist on his Ph.D. dissertation at the University of Nairobi.

Start Date: 1/1/95
Status: Ongoing

Malaria

NCID Division of Parasitic Diseases staff analyzed bed net samples for deltamethrin content for a Kenya Medical Research Institute (KEMRI) investigator, assisted KEMRI's laboratory staff in setting up high-performance liquid chromatography, and established methods for analyzing bed nets for insecticides. NCID staff also analyzed bed net samples for the content of various insecticides for the PSI (Population Services International)/ Malawi bed net project.

Start Date: 10/1/98
Status: Ongoing

Malaria

Staff from NCID's Division of Parasitic Diseases, in collaboration with Department of Defense entomologists, have scheduled the field evaluation of a rapid (5-minute) wick assay for identification of malaria vectors.

Start Date: 1/1/99
Status: Ongoing

Malaria

Staff from NCID's Division of Parasitic Diseases staff participated extensively in the development of the Bungoma District Initiative (BDI), a 5-year integrated malaria control project in Western Province (and a site of the USAID-sponsored Africa Integrated Malaria Initiative). NCID staff served as members of the BDI design team, conducted pre-design assessment activities (along with local officials and staff from other collaborating

agencies), presented the findings of these activities to the District Health Management Team, and participated in the BDI planning workshop.

Start Date: 7/1/97
Status: Ongoing

Micronutrient Malnutrition

NCEH staff conducted a nutritional survey of adolescents in refugee camps of Central Africans in Kakuma, Kenya. The study looked at specific indicators of macro- and micronutrient malnutrition among adolescents. Results demonstrated the inadequacy of WHO recommendations for the assessment of protein energy malnutrition in adolescents. In this survey, 195 sets of specimens were analyzed on male and female adolescent Sudanese and Somali refugees from Kenya for serum folate, vitamin B12, and vitamin A. The results indicated a high incidence of micronutrient malnutrition. By learning more about the nutritional status of adolescents, an historically under-examined group, this effort could support other organizations by leading to policies to improve the nutritional status of adolescents living in refugee camps. In addition, CDC methods for examining nutritional status in refugee settings were adopted.

Start Date: 7/1/00
Status: Ongoing

Schistosomiasis

NCID's Division of Parasitic Diseases staff were co-investigators in a study that examined the immunologic status of patients in Brazil, Ecuador, Egypt, and Kenya with *Schistosomia mansoni*. The study evaluated whether patients who were resistant to reinfection after a chemotherapeutic cure had different cellular and humoral immune profiles than those who were still susceptible. The effects of the number of treatments on resistance were determined. This study also investigated the cytokine profiles of patients with asymptomatic versus hepatosplenic disease, as well as how HIV-1 co-infection affects these various aspects of schistosomiasis.

Start Date: 9/1/95
Status: Ongoing

Spotted Fever

NCID's Division of Viral and Rickettsial Diseases provided immunohistochemical testing and diagnostic pathology consultation for a case of spotted fever in Kenya.

Start Date: 2/1/99
End Date: 5/1/99
Status: Complete

Water/Sanitation/Hygiene-General

NCID's Division of Bacterial and Mycotic Diseases reviewed the design aspects and analysis strategies for components of an ongoing longitudinal study examining a variety of public health issues in a large surveillance area in Kenya. A large body of information has been collected on diarrheal incidents among children presenting at clinics for both scheduled and unscheduled visits, including child and maternal HIV status. Much of this longitudinal data contains missing values within observation sequences, so it will require fairly sophisticated strategies for modeling temporal and perhaps spatial covariance structures.

Start Date: 4/1/00
End Date: 4/30/00
Status: Complete

Water Vessel Project

Through the CARE/CDC Health Initiative, NCID's Division of Bacterial and Mycotic Diseases collaborated with CARE/Kenya to launch a CDC Safe Water System in a rural setting. The objectives of this project included: (1) improve water quality; (2) reduce the prevalence of diarrheal diseases; and (3) create a project that can be sustained through local management and partial cost recovery. A unique feature of the project is the implementation of an adjunct clay pot study. Due to cultural practices regarding clay pot usage in the

region and the likelihood that people would reject plastic storage containers, locally produced pots were tested for their ability to store water.

Start Date: 3/1/00
Status: Ongoing

LESOTHO

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health has developed partnerships with organizations in several African countries, including Lesotho, to design, implement, and evaluate innovative behavioral interventions using entertainment/education strategies. In collaboration with these partners, the Division is developing both international and domestic interventions that use radio and television serialized dramas to promote reproductive health and HIV/STD prevention.

Start Date: 5/1/99
Status: Ongoing

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

MADAGASCAR

Cysticercosis

NCID's Division of Parasitic Diseases, in collaboration with the Pasteur Institute and local health authorities, conducted a small pilot survey for cysticercosis in Madagascar. The results indicated that a significant problem exists. NCID is now considering a more thorough survey of the island's population.

Start Date: 7/1/98
Status: Ongoing

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Madagascar, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Water Vessel Project

Through the CARE/CDC Health Initiative, NCID's Division of Bacterial and Mycotic Diseases collaborated with CARE Madagascar to implement a CDC Safe Water System project in Antananarivo. The safe water system improves water quality by using a locally produced sodium hypochlorite disinfection (Sue Eau), safe water storage, and community education. Population Services International, a third collaborator in the project, provides social marketing expertise for the

project's disinfectant solution and water storage vessel cost recovery component. In less than a year, the project has grown to a national scale.

Start Date: 2/1/00
Status: Ongoing

MALAWI

Two CDC staff were assigned to Malawi, assisting with HIV/AIDS, TB, and STD prevention efforts as well as maternal health and family planning activities.

HIV

As part of an international quality assurance program, NCEH Division of Laboratory Sciences staff conducted evaluations for HIV antibody testing on dried blood spots from laboratories in 5 countries, including Malawi.

Start Date: Ongoing in various countries since January 1988.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs. In Malawi, CDC works with the Malawi Ministry of Health and Population and numerous local HIV service organizations to promote voluntary counseling and testing, conduct research on specific populations (such as itinerant peddlers and mobile market vendors), strengthen Malawi's laboratory and surveillance infrastructure, and expand access to care and treatment.

Start Date: 4/1/00
Status: Ongoing

Malaria

Staff from NCID's Division of Parasitic Diseases analyzed bed net samples for the content of various insecticides for the PSI (Population Services International)/ Malawi bed net project. NCID staff also analyzed bed net samples for deltamethrin content for a Kenya Medical Research Institute (KEMRI) investigator and assisted KEMRI's laboratory in setting up high-performance liquid chromatography and establishing methods and analyzing bed nets for insecticides.

Start Date: 10/1/98
Status: Ongoing

Malaria

NCID's Division of Parasitic Diseases established a coordination unit for a USAID-supported district-level integrated malaria control program in Malawi's Blantyre District.

Start Date: 10/1/98
Status: Ongoing

Management Training

In FY 99 and 00, participants from Malawi attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, pri-

ority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

In early 1999, NCEH staff analyzed approximately 135 serum specimens from children in Malawi who had been hospitalized with sepsis. These analyses – which examined the specimens for vitamins A and E, carotenoids, and transferring receptors – were conducted to determine whether malnutrition was a contributing factor in the children's hospitalizations. The children in Malawi had severe iron deficiency anemia and possible vitamin A deficiency (which would cause them to be immunocompromised, more susceptible to disease, and less responsive to immunization and iron supplementation). Three separate papers on the research findings and implications are currently being prepared for publication.

Start Date: 1/1/99
End Date: 4/1/00
Status: Complete

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

MALI

An NCHSTP technical advisor was assigned to Malawi to assist with STD and HIV/AIDS prevention efforts.

Epidemiology Training

Public health professionals from Mali were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Laboratories in Mali, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV/STD Prevention

NCHSTP's HIV/STD activities in Mali are funded through a 5-year agreement between USAID-Mali and the Division of STD Prevention at NCHSTP. Under this agreement, CDC provides long- and short-term technical assistance in STD/HIV prevention to the Ministry of Health (MOH) in Mali. During 1999-2000, CDC began development of an integrated STD/HIV surveillance system designed to provide sexual behavior data and STD/HIV prevalence information among selected risk groups in Mali. This surveillance model, called the Integrated STD Prevalence and Behavior Surveillance (ISBS), is based partly on Behavior Surveillance Surveys (BSS) developed by Family Health International (FHI). In early 2000, ISBS was implemented in four sites; two more were added in October and November 2000. In preparation for this surveillance activity, formative research was carried out by a consultant to CDC to identify the potential sentinel risk groups and assess operational issues related to surveillance implementation. In addition, staff of both Mali's national AIDS program and INRSP (National Public Health Research Institute) received training in the design and implementation of behavioral surveys, which was provided by FHI. CDC also began a major initiative to improve STD/HIV national laboratory capacity by conducting a needs assessment for increased STD laboratory capacity at and evaluating the feasibility of renovating existing laboratory space to house a national STD reference laboratory.

Start Date: 10/1/95
Status: Ongoing

Malaria

NCID's Division of Parasitic Diseases, together with the Malaria Research and Training Center in Bamako, is conducting a 2-year collaborative study on prevention of malaria during pregnancy in northern Mali, comparing the efficacy of traditional weekly chloroquine prophylaxis with intermittent chloroquine or intermittent sulfadoxine pyremethamine.

Start Date: 9/1/98
Status: Ongoing

Malaria

NCID's Division of Parasitic Diseases provided a consultation to NIH's Malaria Research Laboratory and the Malaria Research and Training Center in Bamako on improvement of Mali's National Malaria Control Program.

Start Date: 9/1/99
End Date: 9/30/99
Status: Complete

Management Training

In FY 99 and 00, participants from Mali attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

MAURITANIA - TECHNICAL SUPPORT

Dracunculiasis (Guinea Worm)

NCID's Division of Parasitic Diseases provided consultations to Global 2000 and the Ministry of Health of Mauritania on planning and implementing dracunculiasis eradication activities. NCID staff informally assessed the effectiveness of case detection and control interventions in selected areas of the country and recommended activities to correct the observed deficiencies.

Start Date: 7/1/99
End Date: 8/1/99
Status: Complete

MOZAMBIQUE

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

In Mozambique, CDC works closely with the Mozambican Ministry of Health, USAID, UNAIDS, UNICEF, and local agencies to expand voluntary counseling and testing by increasing the number of sites that offer this service and by developing guidelines and training for staff. Both surveillance and prevention programs target the country's youth. Surveillance and laboratory activities include implementing sentinel HIV seroprevalence studies in 22 antenatal clinics, improving quality assurance for HIV testing, and promoting wider use of rapid tests. CDC and its partners are also collaborating to develop a care strategy appropriate for Mozambique that will integrate various care strategies and provide community-based treatment.

Start Date: 5/1/00
Status: Ongoing

Natural Disasters

In late February 2000, southern Africa was struck by massive flooding. NCEH staff were asked by the Office of Foreign Disaster Assistance (OFDA) to obtain an overview of the Mozambican districts affected by the flood emergency, focusing on five provinces: Gaza, Sofola, Inhambane, Manica, and Maputo. USAID partners were contacted for information about public health activities and the activities of other groups in these areas. The NCEH team created an inventory of available resources so that the overall capacity to develop and implement emergency programs could be assessed. Site visits were made to several accommodation centers for misplaced people in Maputo City and Gaza Province to obtain population and demographic estimates; medical supply, equipment, pharmaceutical, and staffing needs were assessed through visits to health posts. The predominant illnesses and injuries evaluated at these posts were reviewed and discussed with local health officials and with OFDA. The NCEH researchers developed a long-term operational plan for the health and water/sanitation teams and reviewed grant proposals on various public health projects. An NCEH epidemiologist also assisted local health officials and relief agency representatives with an investigation of a reported cholera epidemic in Maputo.

Start Date: 3/1/00
End Date: 3/31/00
Status: Complete

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

NAMIBIA

School Health

NCCDPHP's Division of Adolescent and School Health provided technical support and recommendations for improving coordinated school health and HIV prevention programs to national school groups in Australia, Bangladesh, Indonesia, Nigeria, Namibia, Oman, and Vietnam.

Start Date: 11/1/98
Status: Ongoing

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

NIGER

Management Training

In FY 99 and 00, participants from Niger attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Meningococcal Disease/Meningitis

NCID's Division of Bacterial and Mycotic Diseases has provided technical assistance to the Centre pour l'Epidemiologic et Recherche de Meningitis et Schistosomiasis (CERMES) in Niger for the development of a research proposal to evaluate the impact of a Meningococcal A cont conjugate vaccine in school children in Niger.

Start Date: 8/1/00
Status: Ongoing

NIGERIA

Two NIP staff members were assigned to Nigeria, where they assisted WHO and UNICEF in polio eradication efforts.

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Nigeria) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Child Survival

CDC was one of five Implementing Partners responsible for the USAID-funded Nigeria Combating Childhood Communicable Diseases Project. NCID Division of Parasitic Diseases staff worked primarily with nine NGOs that together are responsible for approximately 90 health facilities. CDC provided technical assistance for community health worker training, health facility management training, adaptation of the WHO/UNICEF Integrated Management of Childhood Illness (IMCI) guidelines, IMCI training, and National Immunization Days.

Start Date: 10/1/93
End Date: 7/1/99
Status: Complete

Epidemiology Training

Public health professionals from Nigeria were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

Family Planning Management Training

Since 1974, NCCDPHP's Division of Reproductive Health has provided various types of technical assistance to Nigeria through a Participating Agencies Services Agreement (PASA) with USAID's Office of Population. Under the current PASA (covering FY 98-02), the logistics component of this multi-faceted agreement supported and promoted effective Family Planning (FP)/Reproductive Health (RH) program interventions by providing assistance in assessing national FP logistics systems, forecasting contraceptive requirements, and recommending specific improvements in logistics management systems. In addition, a *Pocket Guide to Managing Contraceptive Supplies* was published. A French translation was also prepared, and a Spanish version is nearing completion.

Start Date: 10/1/97
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Nigeria, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries

worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

Hemorrhagic Fever Viruses

Staff from NCID's Division of Viral and Rickettsial Diseases examined a skin biopsy specimen from Nigeria suspected of viral hemorrhagic fever by immunohistochemical diagnostic testing and provided pathology consultation.

Start Date: 2/1/99
End Date: 3/1/99
Status: Complete

HIV

NCID's Division of AIDS, STD, and TB Laboratory Research, in collaboration with the Institute of Human Virology (IHV) at the University of Maryland and the National Institute for Pharmaceutical Research and Development (NIPRD) in Nigeria, performed a survey of HIV strains in Nigeria. Sequences from more than 200 strains, representing variants country-wide, indicated the predominance and widespread distribution of subtypes G (55%) and A (45%). The majority of subtype A viruses represent the A/G recombinant IbNg-like strain, and the subtype G sequences consist of at least two subgroups of viruses within the G clade. Based on this information, HIV-1 strains were selected to include in vaccine constructs under development at the IHV. From these same samples, NCID is currently screening for the presence of HIV-2 and HIV-2-like viruses.

Start Date: 7/1/99
Status: Ongoing

HIV

Nigerian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs. In Nigeria, CDC works with the Nigerian Federal and State Ministries of Health, global health and development organizations, foundations, and private companies on several HIV/AIDS initiatives. These include building Nigeria's counseling and testing capacity, assisting in the development of a national blood transfusion service, promoting HIV prevention messages through the media, providing training for Nigerian HIV/AIDS staff, and conducting

research on HIV prevention among high-risk populations, such as injection drug users.

Start Date: 5/1/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from Nigeria attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Polio Eradication

Nigeria is currently strengthening active surveillance for acute flaccid paralysis (AFP) and conducted a house-to-house polio immunization program in 15 states in April and May 1999. While Nigeria reached the targeted non-polio AFP rate of at least 1/100,000 children under 15 years of age, several states were well below the target rate. In February 1999, six WHO consultants, including NCEH staff, arrived in Lagos, Nigeria to help strengthen AFP surveillance in Nigerian states with low performance. One of these, Bauchi State, met the targeted non-polio AFP rate but performed poorly on several indicators of AFP surveillance, including timeliness and completeness of reporting and 60-day follow-up examinations. NCEH staff met with local health officials to assess their knowledge of the polio eradication initiative and to improve their ability to conduct active AFP surveillance. The team was able to visit 16 of the 20 local government agencies in the state. In each one the team gave a short presentation on the polio eradication initiative, AFP surveillance, and the house-to-house vaccination strategy and asked for the local officials' support. These types of efforts eventually will lead to the eradication of polio from the world, eliminating the need to vaccinate for polio. Once this occurs, estimated savings from vaccination, treatment costs, and rehabilitation may amount to $1.5 billion per year.

Start Date: 1/30/99
End Date: 4/10/99
Status: Complete

School Health

NCCDPHP's Division of Adolescent and School Health provided technical support and recommendations for improving coordinated school health and HIV prevention programs to national school groups in Australia, Bangladesh, Indonesia, Nigeria, Namibia, Oman, and Vietnam.

Start Date: 11/1/98
Status: Ongoing

RWANDA

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

In Rwanda, CDC works with the Ministry of Health, local hospitals, UNICEF, USAID, and the Pediatric AIDS Foundation on HIV/AIDS initiatives. These include strengthening Rwanda's HIV/AIDS surveillance system, expanding access to services that prevent maternal-to-child transmission (including counseling and testing, antenatal and peripartum services, and preventive care for HIV-infected mothers), improving laboratory capacity for both HIV and TB drug-resistance testing, and helping Rwanda's Ministry of Health develop national guidelines for preventing opportunistic infections in adults and children (including training medical personnel).

Start Date: 5/1/00
Status: Ongoing

SENEGAL

Dracunculiasis (Guinea Worm)

An NCID Division of Parasitic Diseases consultant advised staff of Senegal's National Dracunculiasis Eradication Program in techniques to speed elimination of the Guinea worm disease from the country.

Start Date: 8/1/99
End Date: 8/31/99
Status: Complete

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

In Senegal, CDC works with the Ministry of Health's National AIDS Control Program, USAID, Catholic Relief Services, Harvard University, UNAIDS, WHO, the World Bank and others to maintain Senegal's relatively low HIV prevalence rate. Initiatives include enhanced voluntary counseling and testing (and the surveillance and laboratory services to support it), implementing HIV serologic sentinel surveillance to monitor HIV trends in targeted subpopulations, and monitoring antimicrobial resistance to cotrimoxazole to prevent opportunistic infections.

Start Date: 6/1/00
Status: Ongoing

SIERRA LEONE

Management Training

In FY 99 and 00, participants from Sierra Leone attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

SOUTH AFRICA

Four CDC staff were assigned to South Africa – three from NCHSTP as technical advisors on HIV/AIDS issues and the third from NIOSH, supporting occupational health and hygiene training and other activities.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in South Africa and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including South Africa, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to South African as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Birth Defects: Neonatal Screening

NCEH staff collaborated with the South African Ministry of Health on a project entitled "Capacity Building for a Fetal Alcohol Syndrome (FAS) Prevalence and Prevention Study in Guateng Province, Republic of South Africa." The project will help build capacity within South Africa for FAS surveillance and prevention, develop new surveillance and case finding techniques (including specialized software to be developed through the project), and contribute to global knowledge about preventing FAS. The first round of screening of 819 children occurred in the spring of 2000, followed by clinical examinations of the 33.7% of children who met weight and height or head circumference criteria. Of these, 5 had definite FAS and another 18 received a deferred diagnosis.

Start Date: 1/1/97
Status: Ongoing

Capacity Development

NIOSH has continued its ongoing collaboration with its South African counterpart agency, the National Centre for Occupational Health (NCOH), in joint research and capacity development. A major accomplishment in 1999 was the detail of a senior NIOSH industrial hygienist to NCOH for approximately 11 months. The goal of this assignment was to work toward building industrial hygiene programs and capacity at the national and provincial levels. The NIOSH staff member has worked with NCOH colleagues on a variety of worksite investigations, including in particular a comprehensive survey conducted at a large manganese refinery, and has provided technical assistance on other activities such as a survey of environmental asbestos exposures in Soweto households. In addition, he has provided training and mentoring for NCOH and other occupational hygienists and worked on other projects to further the expansion of South African capacity in the field of occupational/industrial hygiene.

Start Date: 11/1/99
End Date: 9/1/00
Status: Complete

Diarrheal Diseases

NCID's Division of Bacterial and Mycotic Diseases provided financial support to establish and support a quality assurance program and reference laboratory for *Shigella dysenteriae* and *Vibrio cholerae* for southern Africa at the South African Institute for Medical Research.

Start Date: 5/1/98
Status: Ongoing

Environmental Health

ATSDR plans several activities to make existing and new scientific products more useful to South African colleagues. These include: (1) identifying multimedia avenues (e.g., direct mailings, Internet access, CD-ROM) to provide existing scientific products to South Africa; (2) translating scientific products into foreign languages; (3) preparing new or revised products to meet the highest priority needs in South Africa; and (4) developing a marketing and distribution strategy for new products (along with training in their use). ATSDR staff also will consult with South African colleagues regarding the an applied research program, site-specific assessments, and health education interventions.

Start Date: 9/1/00
Status: Ongoing

HIV

South African laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

In South Africa, CDC works with the South African Ministry of Health, USAID, the Congress of South African Trade Unions, UNAIDS, WHO, and others to address the HIV/AIDS epidemic. CDC and its partners hope to stem the epidemic's spread through expanded access to voluntary HIV counseling and testing, improved surveillance, prevention programs aimed at youth, mother-to-child transmission prevention programs, improved laboratory testing, and managerial training.

Start Date: 1/1/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from South Africa attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine labora-

tories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including South Africa, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Mine Studies

NIOSH conducted collaborative research to assess the stability of blocky ground at the Stillwater Mine in Nye, Montana with a consultant from South Africa. The results of this work have been published in two papers co-authored by NIOSH staff members and the South African consultant. The papers are entitled, "Use of Strain-gauged Rock Bolts to Measure Rock Mass Strain During Drift Development" and "Stress Measurement of a Jointed Rock Mass During Drift Development."

Start Date: 3/1/98
Status: Ongoing

Mine Studies

In September 2000, three NIOSH staff members (one of whom was a U.S. delegate to the International Committee for Coal Research, or ICCR) visited the Republic of South Africa to attend the 12th ICCR Conference. They represented NIOSH at the Workshop on Mining Systems and Technology, Strata Control, and Mine Closure Management. The goal of the workshop was to identify opportunities for international cooperation for coal research. They also studied ground conditions and strata control practices at underground gold, platinum, and coal mines in South Africa. Information on mining safety and health research and practices was exchanged that ultimately will benefit the mine workers of both countries.

Start Date: 9/11/00
End Date: 9/14/00
Status: Complete

Occupational Exposure

NIOSH staff worked with South African colleagues to develop a functional model for the prevention of occupational infectious disease among health care workers, appropriate for implementation at the provincial level in developing countries. The model was designed to be effective in preventing infection, cost-appropriate, and culturally applicable for other provinces and states in developing countries. The project's primary goal is the protection of health care providers in developing countries, many of whom face the hazard of occupational exposure to HIV/AIDS, TB, and other infectious diseases. In 1999, a team of CDC scientists traveled to South Africa to meet with colleagues at the National Center for Occupational Health and begin preliminary investigations into the problems associated with the occupational transmission of HIV/AIDS and TB in South Africa. In 2000, several members of the CDC team met in the United States with a scientist from South Africa to further develop this collaborative project, which was funded and initiated in 2001.

Start Date: 8/1/99
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation to South Africa on a case involving a rash of unknown origin.

Start Date: 12/1/98
End Date: 1/31/99
Status: Complete

Rock Mechanics

A NIOSH staff member visited South Africa to obtain information on ground conditions and practices in South African underground coal mines. While in South Africa, he visited seven underground mines in Mpumalanga, KwaZulu-Natal, and the Free State. The focus was on the selection of roof supports and ground control during pillar recovery, both of which are topics of cur-

rent NIOSH mine safety research projects. A secondary goal was to explore the possibilities for cooperative safety research efforts with the South African mining community.

Start Date: 1/1/99
Status: Ongoing

School Health

At the invitation of the South Africa Ministry of Health's Health Promotion Directorate, staff from NCCDPHP's Division of Adolescent and School Health (DASH) visited Pretoria to identify youth HIV prevention program needs, including school health activities. DASH staff have provided leadership in building national capacity for school health promotion, including HIV/AIDS prevention programs, as part of the Gore-Mbeki Binational Commission. DASH will provide technical assistance in implementing the Youth Risk Behavior Survey System; implementing and evaluating school-based HIV prevention education programs (including teacher training and peer education programs); building capacity among tertiary institutions to support school health programs; and collaborating with WHO to establish and strengthen health-promoting school programs in Africa.

Start Date: 1/1/95
Status: Ongoing

Syphilis

Syphilis is common in South Africa; although statistics are not available, congenital syphilis is also believed to be common. Even though South African government guidelines call for the serologic screening of women during pregnancy, it is unlikely to occur in most clinics due to logistical difficulties (such as an inability to transport sera, or shortages of testing materials). Even when testing is performed, many women do not return for their results. Recent development of technologically simple, point-of-care tests allow on-site testing and treatment, but it is uncertain how well they can be implemented in many clinics. NCHSTP proposed testing two strategies for on-site testing of pregnant women by determining: (1) performance characteristics; (2) acceptability to patients and staff; (3) effectiveness in increasing the number of women tested and treated for syphilis; and (4) whether they decrease cases of congenital syphilis. Following two site visits, the last in May 2000, a protocol was finalized for IRB (Institutional Review Board) and other clearances in the United States and South Africa.

Start Date: 12/1/00
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including South Africa. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

Tuberculosis

In FY 2000, CDC, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program recently expanded to 10 additional countries. Improving TB prevention and control efforts is an important component of the LIFE/GAP initiative. Staff from NCHSTP's Division of TB Elimination have been actively involved in developing project "best practice" blueprints, participating in site visits to LIFE/GAP countries, and convening an expert group to provide input into the selection of countries for initial TB efforts and the content of country-specific TB projects. Initial TB efforts focused on six countries, including South Africa.

Start Date: 1/1/98
Status: Ongoing

Violence

A proposed surveillance system in South Africa consists of a limited number of strategically selected sites for the pilot testing of a system to monitor fatal and non-fatal injuries. These pilot facilities will be used to refine the information system before perhaps expanding it nationwide. Fatalities will be monitored from state mortuaries; non-fatalities will be monitored from hospital and community health center casualty departments (emergency rooms). The mortality component of the pilot project has been completed and the morbidity component is still in the initial pilot phase. In addition, NCIPC is providing consultation on the development of a school violence prevention program being developed in collaboration with the South African Ministry of Health and the Ministry of Education.

Start Date: 2/1/97
Status: Ongoing

Water Vessel Project

NCID's Division of Bacterial and Mycotic Diseases provided technical assistance for the production of the CDC water storage vessel in Johannesburg, South Africa.

Start Date: 3/1/99
End Date: 3/1/00
Status: Complete

SOUTH AFRICA - U.S.-BASED COLLABORATION(S)

Mine Studies

NIOSH is using an existing collection of lung autopsy samples to investigate genetic factors implicated in occupational silicosis and lung cancer. The products of this study will be: (1) technology transfer of new and innovative molecular methodologies to NIOSH's collaborators in South Africa; (2) resolution of the question of which principal genetic changes occur during silica- and asbestos-related lung cancer; and (3) resolution of questions surrounding the involvement of the immune system in silicosis. These three goals and objectives will provide a foundation for the development of a nested case control study that will examine gene-environment interaction questions

related to mining diseases. NIOSH has already established the feasibility of sample transportation from South Africa to the NIOSH laboratory in Morgantown, West Virginia, as well as the capability to conduct the genetic analyses. The study is unique in having high-quality silica exposure data, tobacco smoking data, and lung tissue samples. The study will contribute to NIOSH's knowledge of the pathogenesis of silicosis and silica-induced lung cancer.

Start Date: 10/1/98
Status: Ongoing

SUDAN

African Trypanosomiasis

With partial support from the CARE/CDC Health Initiative, NCID's Division of Parasitic Diseases continued to provide technical assistance to the International Medical Corps and CARE International in the control of African trypanosomiasis in southwestern Sudan, where NCID had documented a serious epidemic. The activities included epidemiologic support for ongoing prevalence surveys to define the magnitude and geographic distribution of the epidemic and technical assistance in the design and evaluation of sleeping sickness control programs in two counties. The vector control program was an integrated component of a multifaceted disease control project that resulted in the reduction of sleeping sickness seroprevalence from epidemic proportions of just under 9% to under 2%.

Start Date: 5/1/97
Status: Ongoing

African Trypanosomiasis

NCID's Division of Parasitic Diseases, in collaboration with Emory University and CARE, has conducted a study of the cost effectiveness of trypanosomiasis control in Sudan. In collaboration with International Medical Corps, NCID has designed a study to investigate the interaction of HIV and African trypanosomiasis in persons with dual infection.

Start Date: 7/1/99
Status: Ongoing

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Sudan and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

SWAZILAND

Management Training

In FY 99 and 00, participants from Swaziland attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management train-

ing needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

TANZANIA

Capacity Development

CDC began providing technical and evaluation assistance with CARE as part of the CARE/CDC Collaborative Health Initiative (CCHI) in 1996. Activities in 1999-2001 focused on evaluation of the CARE/CCHI empowerment activities in targeted communities. CARE Tanzania's Community-Based Reproductive Health Project is designed to improve the health status of mothers and children in the two intervention districts of Kwimba and Miswungi by decreasing maternal mortality and improving the health status of infants. The project intervention focused on reproductive health issues of family planning; care of women before, during, and after pregnancy; and treatment of STDs, including HIV/AIDS.

Start Date: 9/1/96
Status: Ongoing

Health Information Systems

NCEH staff conducted a field trial of a method to rapidly estimate the population of displaced populations in refugee and other emergency settings, using Global Positioning Systems, Geographic Information Systems, and a modified cluster survey. A follow-up study is being planned.

Start Date: 11/1/98
Status: Ongoing

HIV

Tanzanian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

As part of an international quality assurance program, NCEH Division of Laboratory Sciences staff conducted evaluations for HIV antibody testing on dried blood spots from laboratories in 9 countries, including Tanzania.

Start Date: Ongoing in various countries since January 1988.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs. In Tanzania, CDC works with the Tanzanian Ministry of Health, USAID, UNAIDS, UNICEF, and other global health partners to address the HIV/AIDS epidemic. Initiatives include strengthening the country's surveillance system, improving laboratory capacity to perform HIV testing on all blood donations, and expanding HIV counseling and testing services and referral to care.

Start Date: 5/1/00
Status: Ongoing

HIV

As a partner in the Leadership and Investment for Fighting an Epidemic (LIFE) Initiatives and the Global AIDS Activity (GAA), EPO is developing a comprehensive training strategy that addresses the need for national capacity building and infrastructure development to fight the epidemic of HIV/AIDS in 15 partner countries. EPO's Division of International Health will assist partners in the development of training materials on core LIFE/GAA topics, including: HIV/AIDS, TB, STIs, program management and evaluation, laboratory performance, disease surveillance, and community care. These materials will be designed for national and sub-national health workers and will cover program management, sentinel surveillance, and basic epidemiology.

Start Date: 8/1/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from Tanzania attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Reproductive Health

An NCCDPHP study of reproductive health (RH) outcomes among displaced persons in 52 post-emergency phase camps was conducted in 7 countries (Azerbaijan, Ethiopia, Myanmar, Nepal, Tanzania, Thailand and Uganda). The objective of the study was to provide data on these outcomes

and compare them to the host country and country-of -origin populations as well as to determine programmatic factors that affect RH outcomes. The main outcome measures were crude birth rate, neonatal mortality rate, maternal mortality ratio, incidence of complications of unsafe and spontaneous abortion, and percent low birth weight.

Start Date: 10/1/98
Status: Ongoing

Surveillance

The main goal of EPO's Global Surveillance and Response Project is to improve infectious disease surveillance, epidemic preparedness, and response systems. In an effort to develop model surveillance systems, the project is focusing primarily on four African countries: Uganda, Ghana, Zimbabwe, and Tanzania. Surveillance system assessments were carried out in Tanzania, Uganda, and Ghana. Workshops to develop action plans to strengthen each country's surveillance system took place in Tanzania in March 1999, in Uganda in May 2000, and in Ghana in October 2000. Project staff have worked closely with both the Ministry of Health (MOH) and the School of Public Health Without Walls (PHSWOW) in Uganda, where the project hired a local epidemiologist and a trainer from the PHSWOW to help in the implementation of the action plan as well as with the ministries of health and public health schools in the other targeted countries.

Start Date: 11/1/98
Status: Ongoing

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

Water Vessel Project

NCID's Division of Bacterial and Mycotic Diseases provided technical assistance for the design of a Safe Water System project in Dar es Salaam.

Start Date: 9/1/00
End Date: 9/30/00
Status: Complete

TOGO

Child Survival

A Division of Parasitic Diseases epidemiologist has collaborated with Johns Hopkins University and the Basic Support for Institutionalizing Child Survival project in providing technical assistance to UNICEF and Togo's Ministry of Health to address tetanus serology with the Multiple-Indicator Cluster Survey (MICS) in Togo. The purpose of the MICS is to determine whether the World for Summit Year 2000 goals have been met. The main purpose of the tetanus serologic component (added to the MICS in Togo and a few other countries) is to understand better the relationship between tetanus antitoxin seroprevalence and tetanus toxoid coverage so that tetanus toxoid coverage will be better understood as an indicator of protection against neonatal tetanus.

Start Date: 7/1/00
Status: Ongoing

UGANDA

An NCHSTP staff member was assigned to Uganda to oversee HIV/AIDS activities related to the Global AIDS Program (formerly known as the LIFE Initiative).

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Uganda and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Dracunculiasis (Guinea Worm)

Staff from NCID's Division of Parasitic Diseases provided two consultations to assist the National Secretariat for Eradication of Dracunculiasis with continuing full operation during the absences of the Resident National Technical Advisor and National Program Manager. The consultant also monitored the status of case containment strategies in disease-endemic districts and made recommendations for improvements.

Start Date: 1/1/99
End Date: 3/1/99
Status: Complete

Ebola Virus

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support during an outbreak of Ebola hemorrhagic fever.

Start Date: 9/1/00
Status: Ongoing

HIV

Ugandan laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

Two NCEH staff went on a coalition-building and site-selection mission to Guinea, Kenya, and Uganda to lay the groundwork for investigations into HIV and HIV-related issues in complex emergency settings.

Start Date: 9/1/99
Status: Ongoing

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

In Uganda, CDC works with the Ugandan Ministry of Health, USAID, local hospitals and clinics, and the country's Institute of Public Health. Primary prevention activities include strengthening HIV and STD surveillance by expanding HIV sentinel sites, improving syphilis testing and testing for other STDs, introducing an HIV incidence assay, enhancing behavioral surveillance, evaluating rapid HIV and syphilis tests, conducting population-based AIDS case surveillance, and coordinating national laboratory and epidemiologic activities. Specific research initiatives include evaluating a cotrimoxazole prophylaxis program, evaluating the effectiveness of a water vessel intervention to reduce diarrheal morbidity, and developing pediatric HIV/AIDS counseling and care manuals and training materials to improve services at a pediatric HIV clinic.

Start Date: 3/1/00
Status: Ongoing

HIV

Since 1997, CDC has collaborated with Uganda's Ministry of Health on a series of collaborative research projects. These have addressed the following topics: evaluating access and impact of antiretroviral drug therapy for AIDS patients in Uganda (acceptance, adherence and drug resistance); the epidemiology of HHV-8 and Kaposi's sarcoma; HIV infection in discordant couples; and surveillance for HIV variant strains in Uganda. In addition, CDC collaborates with the National Institute for Allergies and Infectious Diseases (NIAID) to assess laboratory factors related to HIV transmission during breastfeeding, including investigations of virologic, immunologic, and other factors for HIV transmission.

Start Date: 1/1/97
Status: Ongoing

HIV

As a partner in the Leadership and Investment for Fighting an Epidemic (LIFE) Initiative and the Global AIDS Activity (GAA), EPO is developing a comprehensive training strategy that addresses the need for national capacity building and infrastructure development to fight the epidemic of HIV/AIDS in 15 partner countries. EPO's Division of International Health will assist partners in the development of training materials on core LIFE/GAA topics, including: HIV/AIDS, TB, STIs, program management and evaluation, laboratory performance, disease surveillance, and community care. These materials will be designed for national and sub-national health workers and will cover program management, sentinel surveillance, and basic epidemiology.

Start Date: 8/1/00
Status: Ongoing

HIV

NCID's Division of Bacterial and Mycotic Diseases installed LITS Plus in the Uganda Viral Research Institute (UVRI), a CDC partner in the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative. (LITS Plus is a combination of CDC's Laboratory Information Management System, or LITS, plus the Public Health Laboratory Information System, or PHLIS.) UVRI is the pilot site for using LITS Plus as its main laboratory information management system in the LIFE Initiative laboratories. NCID assessed the laboratory's data collection needs and helped to design a system to meet those needs; conducted training for the database administrator, system administrator, laboratory supervisor, and data entry personnel; and conducted preliminary planning for the transition from a paper-based system to LITS Plus.

Start Date: 8/1/00
Status: Ongoing

Laboratory Diagnostics

As part of CDC's LIFE (Leadership and Investment in Fighting an Epidemic) Initiative, CDC's Office of Health and Safety staff have provided technical assistance to laboratories in Uganda, Kenya, and Ivory Coast, as these countries seek to upgrade existing Level 2 and 3 facilities or build new ones. Current technical assistance bolsters the capacity of these laboratories to meet standards for testing for HIV/AIDS and to apply laboratory safety principles in resource-poor conditions. Laboratories in these and other countries are also expanding their TB testing capabilities, with assistance from CDC staff.

Start Date: 1/1/92
Status: Ongoing

Management Training

In FY 99 and 00, participants from Uganda attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Marburg Virus

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and assistance during an outbreak of Marburg virus disease in Durba.

Start Date: 1/1/00
End Date: 3/1/00
Status: Complete

Measles

NIP has collaborated with the Department of Pediatrics and Child Health of Makerere University Medical School and Mulago Hospital in Kampala, Uganda and the Uganda Virus Research Institute of the Ministry of Health on a research project. The project's aims are to discover whether prolonged excretion of measles virus exists in HIV-infected Ugandan infants and to find any other characteristics in the children that are associated with this prolonged excretion. The protocol was approved by IRBs in Uganda and at CDC; patient recruitment began in September 2000.

Start Date: 4/1/99
Status: Ongoing

Reproductive Health

An NCCDPHP study of reproductive health (RH) outcomes among displaced persons in 52 post-emergency phase camps was conducted in 7 countries (Azerbaijan, Ethiopia, Myanmar, Nepal, Tanzania, Thailand and Uganda). The objective of the study was to provide data on these outcomes and compare them to the host country and country-of -origin populations as well as to determine programmatic factors that affect RH outcomes. The main outcome measures were crude birth rate, neonatal mortality rate, maternal mortality ratio, incidence of complications of unsafe and spontaneous abortion, and percent low birth weight.

Start Date: 10/1/98
Status: Ongoing

Surveillance

The main goal of EPO's Global Surveillance and Response Project is to improve infectious disease surveillance, epidemic preparedness, and response systems. In an effort to develop model surveillance \carried out in Tanzania, Uganda, and Ghana. Workshops to develop action plans to strengthen each country's surveillance system took place in Tanzania in March 1999, in Uganda in May 2000, and in Ghana in October 2000. Project staff have worked closely with both the Ministry of Health and the School of Public Health Without Walls (PHSWOW) in Uganda, where the project hired a local epidemiologist and a trainer from the PHSWOW to help in the implementation of the action plan as well as with the ministries of health and public health schools in the other targeted countries.

Start Date: 11/1/98
Status: Ongoing

Tuberculosis

In FY 2000, CDC, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program recently expanded to 10 additional countries. Improving TB prevention and control efforts is an important component of the LIFE/GAP initiative. Staff from NCHSTP's Division of TB Elimination have been actively involved in developing project "best practice" blueprints, participating in site visits to LIFE/GAP countries, and convening an expert group to provide input into the selection of countries for initial TB efforts and the content of country-specific TB projects. Initial TB efforts focused on six countries, including Uganda.

Start Date: 1/1/98
Status: Ongoing

Water Vessel Project

NCID's Division of Bacterial and Mycotic Diseases initiated a study of the health impact of the Safe Water System on persons with AIDS.

Start Date: 9/1/00
Status: Ongoing

ZAMBIA

Diarrheal Diseases

NCID's Division of Bacterial and Mycotic Diseases provided consultation on water vessel, filtration, and education interventions to decrease the incidence of waterborne infectious disease.

Start Date: 10/1/98
Status: Ongoing

HIV

Zambian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project

objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

Zambia is one of the countries hardest hit by the HIV epidemic, with one in five adults infected with HIV. As a result, life expectancy has dropped from 56 to 37 years. CDC works with the Zambian Ministry of Health, USAID, UN agencies, and international development agencies to help combat the epidemic. Activities include providing training to health care workers regarding the clinical management of STDs, expanding access to voluntary counseling and testing, expanding and improving mother-to-child transmission prevention programs, strengthening the country's TB control program, making TB and STD treatment more widely available, expanding laboratory support for HIV, STD, and TB testing, and linking clinical service to home-based care programs. A special initiative addresses HIV/AIDS among Zambian military personnel.

Start Date: 4/1/00
Status: Ongoing

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

ZIMBABWE

Seven CDC staff were assigned to Zimbabwe. Four were affiliated with the GAP/LIFE program, participating in surveillance, laboratory support, and interventions to detect and prevent HIV/AIDS, STDs, and TB. A staff member from NCCDPHP's Office on Smoking and Health was also assigned to Zimbabwe, as were two NIP medical epidemiologists assisting with WHO's polio eradication efforts.

Family Planning Management Training

Since 1974, NCCDPHP's Division of Reproductive Health has provided various types of technical assistance to Zimbabwe through a Participating Agencies Services Agreement (PASA) with USAID's Office of Population. Under the current PASA (covering FY 98-02), the logistics component of this multi-faceted agreement supported and promoted effective Family Planning (FP)/Reproductive Health (RH) program interventions by providing assistance in assessing national FP logistics systems, forecasting contraceptive requirements, and recommending specific improvements in logistics management systems. In addition, a *Pocket Guide to Managing Contraceptive Supplies* was published. A French translation was also prepared, and a Spanish version is nearing completion.

Start Date: 10/1/97
Status: Ongoing

HIV

In FY 2000, CDC's NCHSTP, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program has expanded to an additional 10 countries. GAP works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary

prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs.

Zimbabwe, where one in four adults is infected with HIV, has the highest HIV prevalence rate in Africa. A decade ago, life expectancy was over 60; by 1998, it had dropped to 39 years. CDC works with the Zimbabwe Ministry of Health and Child Welfare, USAID, UNAIDS, and WHO to promote primary prevention, surveillance and infrastructure development, and care support and treatment. Behavior change communication programs focus on mother-to-child transmission and on prevention strategies for youth. At the provincial and district levels, CDC and its partners are trying to expand the use of rapid HIV testing and to ensure its quality. Both HIV and STD surveillance have been strengthened. Laboratory information systems have been upgraded, and broader information system technology – such as Internet access for disease reporting and distance learning – has been put in place. TB directly observed therapy-short course (TB DOTS) has been integrated with HIV/AIDS home-based care strategies.

Start Date: 4/1/00
Status: Ongoing

HIV

As a partner in the Leadership and Investment for Fighting an Epidemic (LIFE) Initiatives and the Global AIDS Activity (GAA), EPO is developing a comprehensive training strategy that addresses the need for national capacity building and infrastructure development to fight the epidemic of HIV/AIDS in 15 partner countries. EPO's Division of International Health will assist partners in the development of training materials on core LIFE/GAA topics, including: HIV/AIDS, TB, STIs, program management and evaluation, laboratory performance, disease surveillance, and community care. These materials will be designed for national and sub-national health workers and will cover program management, sentinel surveillance, and basic epidemiology.

Start Date: 8/1/00
Status: Ongoing

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health has developed partnerships with organizations in several African countries, including Zimbabwe, to design, implement, and evaluate innovative behavioral interventions using entertainment/education strategies. In collaboration with these partners, the Division is developing both international and domestic interventions that use radio and television serialized dramas to promote reproductive health and HIV/STD prevention.

Start Date: 5/1/99
Status: Ongoing

HIV/STD Prevention

Staff from NCCDPHP's Division of Reproductive Health have developed the Global AIDS Activity Technical Strategy for Behavior Change Communications (BCC). Through this initiative, NCCDPHP staff will be providing technical assistance on the development and evaluation of BCC projects in Botswana, Ethiopia, and Zimbabwe. Other countries also have requested this type of assistance; the program will be expanded to include them in subsequent years.

Start Date: 5/1/99
Status: Ongoing

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health is providing technical assistance on a study to evaluate the acceptability of the diaphragm among women in Zimbabwe who are at risk for unintended pregnancy, HIV, or other STDs and who cannot

negotiate 100% condom use with their partners. The design of this study first identifies women who are unable, after a skills-based counseling intervention regarding condom use, to negotiate safer sex using male or female condoms. These women will then participate in a 6-month prospective study of use and acceptability of the diaphragm. The diaphragm is presented as a method of unknown efficacy for protection from HIV infection. The women are encouraged to use male condoms in conjunction with the diaphragm to assure protection or to use the female condom alone when diaphragm use is not possible. Analysis of these data will evaluate the acceptability and rates of diaphragm use among this population. and identify predictors of both diaphragm and condom use. If the diaphragm is found to be acceptable, the information could be used to develop an educational diaphragm intervention. Findings from this study also will contribute to the conceptualization and design of larger clinical studies.

Start Date: 9/1/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from Zimbabwe attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Surveillance

The main goal of EPO's Global Surveillance and Response Project is to improve infectious disease surveillance, epidemic preparedness, and response systems. In an effort to develop model surveillance systems, the project is focusing primarily on four African countries: Uganda, Ghana, Zimbabwe, and Tanzania. Surveillance system assessments were carried out in Tanzania, Uganda, and Ghana. Workshops to develop action plans to strengthen each country's surveillance system took place in Tanzania in March 1999, in Uganda in May 2000, and in Ghana in October 2000. Project staff have worked closely with both the Ministry of Health (MOH) and the School of Public Health Without Walls (PHSWOW) in Uganda, where the project hired a local epidemiologist and a trainer from the PHSWOW to help in the implementation of the action plan as well as with the ministries of health and public health schools in the other targeted countries.

Start Date: 11/1/98
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, atti-

tudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Zimbabwe. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

Tuberculosis

Several African countries - including South Africa, Swaziland, Namibia, Lesotho, Mozambique, Zambia, Zimbabwe, Malawi, and the United Republic of Tanzania -- are applying innovations in TB treatment that are the result of collaborative research efforts among CDC, WHO, and Botswana's Ministry of Health. The TB/HIV research effort, known as BOTUSA, has served as the base for regional USAID-funded TB activities throughout southern Africa, including a project for low-cost assessment of drug quality and implementation of computer-based TB surveillance.

Start Date: 1/1/95
Status: Ongoing

Tuberculosis

PHPPO's Division of Laboratory Systems (DLS) is engaged in an international cross-training in TB laboratory science in Botswana, Jamaica, Mexico, and Zimbabwe. A CDC/Association of Public Health Laboratories (APHL) cooperative agreement involves training selected international participants in U.S. state public health laboratories (SPHL) and sending U.S. experts to provide specialized training in selected international laboratories in these countries.

Start Date: 1/1/97
Status: Ongoing

THE AMERICAS

THE WORK OF CDC IN THE AMERICAS

CDC's global health projects in the Americas include collaboration with PAHO, CAREC, foundations, and other regional health organizations, as well as joint efforts with specific countries. CDC works particularly closely with Mexico and Canada, with whom the United States shares both borders and many common health issues.

Examples of CDC's global health activities in the Americas in each of five strategic areas are provided below.

Public Health Surveillance and Response

Like other areas experiencing the aftermath of war-time violence, Nicaraguans have found that violent injuries do not necessarily end with the war itself. Both intentional and unintentional firearm injuries as well as injuries from unexploded mines can prolong the devastation of war. Staff representing CDC's National Center for Injury Prevention and Control (NCIPC) provided technical assistance to Nicaraguan health officials to develop, test, and evaluate a rapid response surveillance system for violent injury. The team hopes this system will be useful in other settings experiencing war or its consequences.

In a more peaceful setting, NCIPC staff also served on an evaluation team that helped assess Jamaica's injury surveillance system. Like surveillance systems for disease, injury surveillance systems require that trained staff are able to identify and categorize injuries consistently and both elicit and record information about the circumstances in which the injury occurred – all goals shared by the Jamaican injury surveillance system.

Public Health Infrastructure and Capacity-Building

CDC's immediate neighbors to the north and south – Canada and Mexico – are frequent partners in binational efforts to share knowledge and strengthen public health capacity throughout the region. For example, CDC's National Institute for Occupational Safety and Health (NIOSH) works with PAHO staff in Mexico to help Mexican scientists and health officials address occupational safety and health issues, and has provided similar assistance to South American countries concerned about topics such as miners' exposure to mercury, or of smelter workers to lead.

Staff from the Agency for Toxic Substances and Disease Registry (ATSDR) have worked with Mexican and Canadian counterparts for over a decade to share information on environmental health issues and build regional capacity to detect and respond to hazards in the environment all three nations share.

An example of the "ripple effect" of capacity building throughout the region is Nicaragua's public health management training curriculum, funded by a grant from the Woodruff Foundation's CARE/CDC Health Initiative. Through the training program, graduates of Nicaragua's Sustained Management Development Program (SMDP) received technical assistance from Mexican graduates of the Management for International Public Health (MIPH) course, who had themselves received their training from CDC and Emory University's School of Public Health faculty in Atlanta – a true illustration of "cross-training."

Disease and Injury Prevention and Control

The global public health triumph of smallpox eradication in 1979 was followed in the Western Hemisphere with the elimination of poliomyelitis in 1991. The next target for this hemisphere – tantalizingly within reach – is the elimination of endemic measles transmission. Between 1997 and 1999, confirmed measles cases in the Americas declined 95 percent, from nearly 54,000 cases in 1997 to 3,102 in 1999. CDC's National Immunization Program (NIP) has worked with PAHO and countries throughout Latin America, Central America, and the Caribbean to assess measles programs and provide measles vaccine to supplemental immunization programs in an effort to make this goal a reality.

Applied Research for Effective Health Policies

In the public health arena, devising a way to prevent disease or disability on a large scale, with minimal effort required from those who benefit, is a constant but often elusive goal. For many years, scientists have known of just such an intervention: folic acid fortification of common foods (such as bread and cereal) to prevent neural tube defects. Consuming 400 micrograms of folic acid each day early in pregnancy prevents these birth defects, but during the first month of pregnancy, many women are unaware of their pregnancies – and thus of the need to make this critical addition to their diets. In Chile, scientists from the National Center for Environmental Health, NCEH, along with the Chilean government, PAHO, and March of Dimes, are conducting research to measure the effects of the Chilean government's recent supplementation of wheat flour with folic acid. The project will compare baseline and post-supplementation levels of RBC folate and vitamin B12 among 750 women to see whether the strategy is having the intended effect.

Several National Center for Infectious Diseases (NCID) research studies in the region explored whether fractional vaccine doses or alternative treatment methods might provide protective and curative effects for different diseases, while lowering costs. These studies include an assessment of fractional doses of *Haemophilus influenzae* type b (Hib) vaccine in the Dominican Republic, a study of a broad spectrum anti-helminthic treatment program among Haitian schoolchildren, and clinical trials showing the effectiveness of reduced treatment doses of antimony-containing medication for leishmaniasis in Guatemala.

Exchange of Information and Lessons Learned

In the United States, national health objectives have been measured and tracked each decade, beginning in 1990. The current iteration, known as Healthy People 2010, offers national goals in a variety of health areas, registering progress in each of those areas from 1990 baseline figures (and, sometimes, lack thereof). The National Center for Health Statistics, NCHS, is the keeper of Healthy People data, derived from numerous sources and methods. In this capacity, NCHS has worked with both Canadian and Mexican health statistics counterparts to discuss health topics of mutual interest and to share information on collecting, analyzing, and diffusing health information. With the help of the InterAmerican Development Bank, NCHS staff hope to extend the Healthy People model to Chile, Argentina, and Uruguay, as they have already done in several other countries around the world.

ARGENTINA

A NIP staff member was assigned to the PAHO office in Buenos Aires, Argentina to assist PAHO and Argentinian colleagues conducting immunization projects, with a particular emphasis on measles.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Argentina and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Argentinian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Cholesterol Reference Methods

NCEH's Division of Laboratory Sciences provided support to six international members of the Cholesterol Reference Method Laboratory Network (CRMLN): The Netherlands, Japan, United Kingdom, Canada, Italy, and Argentina. Services included reference materials used to assess performance of reference methods and designated comparison methods, quality control materials for assessing performance, and regular reports of performance status. The Division also convened a meeting of all CRMLN laboratories in the United States and abroad, attended by representatives of all international CRMLN laboratories.

Argentina received additional support from CDC to become a full active CRMLN member in 2000 by successfully standardizing its reference method for cholesterol. In October 1999, an NCEH staff member participated in two conferences in Argentina, presenting on "The Cholesterol Reference Method Laboratory Network: Formation, Performance, and Activities" at both meetings.

Start Date: 3/1/89
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Argentinian and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diarrheal Diseases

Staff from NCID's Division of Bacterial and Mycotic Diseases reviewed a questionnaire, target sample size, and other design aspects of a proposed two-site matched case control study examining risk factors for *E. coli* in children.

Start Date: 9/1/00
End Date: 9/30/00
Status: Complete

Epidemiology Training

Public health professionals from Argentina were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

Hemolytic Uremic Syndrome

Staff from NCID's Division of Bacterial and Mycotic Diseases participated in and financially supported a laboratory training course on laboratory-based surveillance for hemolytic uremic syndrome.

Start Date: 4/1/00
Status: Ongoing

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Argentina and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Influenza

NCID's Division of Viral and Rickettsial Diseases collaborated with scientists at the Instituto Dr. Carlos G. Malbran in Buenos Aires to study the effect of multiple influenza vaccinations on antibody response in elderly persons. During recent working meetings, presentations were made on the importance of influenza, the effectiveness of influenza vaccines, and influenza pandemic planning.

Start Date: 1/1/96
Status: Ongoing

Influenza

Staff from NCID's Division of Viral and Rickettsial Diseases participated in regional influenza laboratory and epidemiology training for Southern Cone Countries at the Instituto Dr. Carlos G. Malbran in Buenos Aires.

Start Date: 6/1/00
End Date: 6/30/00
Status: Complete

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Diseases Control and Community Intervention) provided support to the PAHO CARMEN (Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No transmisibles) project. In an effort to raise awareness of the epidemic of non-

communicable diseases (NCDs), CARMEN, which follows the European CINDI (Countrywide Integrated Noncommunicable Disease Intervention) model, makes local adaptations to meet the needs of countries in the Americas region, including Argentina. Specific activities have included creating a working group for the development of a policy framework for NCD prevention, creating a working group on physical activity, and identifying technical resources available for country programs. NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination.

Start Date: 1/1/99
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation on two cases of respiratory failure in Argentina.

Start Date: 12/1/98
End Date: 9/1/99
Status: Complete

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Argentina. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

ARGENTINA - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Argentina for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

BAHAMAS

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in the Bahamas and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging

the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Bahamas. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

Violence

NCIPC provided technical assistance in reviving the Emergency Room-Based Injury Surveillance System and in planning a national strategy for the prevention of intentional injury in the Bahamas.

Start Date: 8/1/00
Status: Complete

BARBADOS

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Barbados and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Leptospirosis

NCID's Division of Bacterial and Mycotic Diseases collaborated with the University of the West Indies to produce the leptospirosis chapter for the 8th edition of the American Society for Microbiology's *Manual of Clinical Microbiology*.

Start Date: 4/1/00
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Barbados. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

BOLIVIA

H. pylori

NCID's Division of Bacterial and Mycotic Diseases continued a study for the prevention of Helicobacter pylori reinfection in rural populations in Bolivia using a safe drinking water intervention.

Start Date: 6/1/99
Status: Ongoing

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Bolivia and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

HIV/STD Prevention

CDC activities in Bolivia have been funded since 1992 under a Participating Agencies Service Agreement (PASA) with USAID-LaPaz and the NCHSTP Division of STD Prevention. Under this agreement, CDC has conducted collaborative operational research for the development of a national STD/HIV prevention program. Technical assistance has been provided in the areas of STD clinical service development, laboratory capacity building and quality control, behavioral science, and epidemiologic analysis. Training in STD clinical care and HIV/STD prevention counseling has been provided to health professionals on a regular basis. A model system has been developed and evaluated for monitoring the prevalence of STD and self-reported condom use of FSWs through periodic interviews, examinations and screening tests that are now integrated into the routine visits by the FSWs to the health department.

Start Date: 12/1/91
Status: Ongoing

Influenza

NCID's Division of Viral and Rickettsial Diseases is assisting in the establishment of an influenza laboratory surveillance system through the provision of reagents, data, and technical assistance to the Laboratory for Virology in LaPaz, Bolivia.

Start Date: 1/1/97
Status: Ongoing

Management Training

In FY 99 and 00, participants from Bolivia attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Natural Disasters

In May 1998, the central portion of Bolivia was hit by an earthquake. Eighty-five people were confirmed dead and 7,000 people lost their homes. PAHO provided running water and latrines to several of the temporary camps housing displaced persons. In October 1998, NCEH conducted a cross-sectional study of 15 camps to determine how the provision of water and sanitation services affected the health of those living in the camps. Lower incidence of illnesses, such as bloody diarrhea and respiratory illness without fever, were associated with access to running water, latrines, and household water treatment (by boiling or chlorine). The results of this study were used to improve the health conditions for these internally displaced persons and could be used to develop guidelines for displaced populations.

Start Date: 10/1/98
End Date: 10/31/98
Status: Complete

Natural Disasters

At PAHO's request, a workshop on reporting the health effects from El Niño was conducted for personnel from the Bolivian Ministry of Health, selected UN organizations, and NGOs. Similar workshops were conducted in September and October 1998 in Peru, Ecuador, and Venezuela. The objective of the workshops was to produce a standardized reporting format for El Niño-affected countries in South America so that a regional document could be easily generated by PAHO. As a result of these workshops, El Niño reporting has been standardized.

Start Date: 10/1/98
End Date: 3/1/99
Status: Complete

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Bolivia. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

Water Vessel Project

NCID's Division of Bacterial and Mycotic Diseases conducted initial data analyses for a comparative study of the effects of a clean water intervention implemented over a 1-year observational period. Modeling for these data involved repeated measures analyses and estimation of complex underlying covariance structures within the framework of generalized estimating equations (GEEs).

Start Date: 7/1/00
Status: Ongoing

Yellow Fever

Staff from NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support for a case of yellow fever in Bolivia.

Start Date: 3/1/00
End Date: 4/30/00
Status: Complete

BOLIVIA - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Bolivia for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

BRAZIL

Three CDC staff were assigned to long-term collaborative projects in Brazil, representing NIP (supporting PAHO measles projects), EPO (providing epidemiology training), and NCHSTP (assisting with epidemiologic studies of HIV and other STDs).

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Brazil participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs

were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Biosafety

CDC's Office of Health and Safety worked with Brazilian Ministry of Health officials and the World Bank to develop a train-the-trainer course on laboratory safety. WHO's current biosafety manual was translated into Portuguese, and CDC staff co-taught a 1-week course with their Brazilian counterparts. The course was attended by at least one representative from every state and federal laboratory in Brazil; these trainers are now sharing their new knowledge with others in their own laboratories.

Start Date: 6/1/99
End Date: 6/1/00
Status: Complete

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Brazilian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Candida

NCID's Division of Bacterial and Mycotic Diseases assisted the Evandro Chagas Hospital, located at Oswaldo Cruz Institute in Rio de Janeiro, with the investigation of an outbreak of Candida parapsilosis bloodstream infections.

Start Date: 1/1/99
End Date: 5/1/00
Status: Complete

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Brazil) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Cyclospora

NCID's Division of Parasitic Diseases staff initiated a broad study of Cyclospora infection in selected communities to address key issues related to prevalence, seasonality, transmission, symptomatology, and the role of animal reservoirs and to serve as a source of organisms for laboratory-based studies.

Start Date: 9/1/99
End Date: 8/1/00
Status: Complete

Environmental Contamination

ATSDR assisted PAHO, the EPA, and the Brazilian Ministry of Health in evaluating the pub-

lic health impact of releases from an industrial facility that produced pesticides in Cidade dos Meninos, Duque de Caxias, Brazil.

Start Date: 9/9/00
End Date: 9/16/00
Status: Complete

Field Epidemiology Training Program

CDC worked with Brazil's Ministry of Health in its major effort to reorganize and reinforce the detection and control of infectious diseases. In partnership with the CDC Foundation and with assistance from the World Bank'-supported VIGISUS project, EPO's Division of International Health has launched a project to strengthen the National Epidemiologic Surveillance System by establishing institutionalized and sustainable training programs. The project will develop the professional capacity for rapid response to outbreaks and epidemics and enhance the capacity of health staff to use data and scientific information to plan and implement effective public health programs. This training program will be called EPISUS (the equivalent of a Field Epidemiology Training Program and Data for Decision Making course).

Start Date: 4/1/00
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Brazil, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

Histoplasmosis

NCID's Division of Bacterial and Mycotic Diseases collaborated with the Evandro Chagas Hospital, located at the Oswaldo Cruz Institute in Rio de Janeiro, in the development of improved reagents and methods to diagnose histoplasmosis. The research was carried out both in the United States by a long-term visiting scientist and later at the Oswaldo Cruz Institute and the University of Rio de Janeiro.

Start Date: 10/1/98
End Date: 9/1/99
Status: Complete

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Brazil and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

HIV

As part of an international quality assurance program, NCEH Division of Laboratory Sciences staff conducted evaluations for HIV antibody testing on dried blood spots from laboratories in 9 countries, including Brazil.

Start Date: Ongoing in various countries since January 1988.

Influenza

NCID's Division of Viral and Rickettsial Diseases has ongoing collaboration and dialogue regarding influenza surveillance with colleagues at the University of Sao Paolo, Brazil. During recent working visits, presentations on influenza surveillance and vaccine strain selection were made by NCID staff. The Division's Influenza Branch hosted a visiting scientist for training and collaboration.

Start Date: 1/1/96
Status: Ongoing

Leptospirosis

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and immunohistochemical testing on cases of suspected hemorrhagic fever, pulmonary hemorrhage, and a rash of unknown origin in Brazil. Results included a diagnosis of leptospirosis in one patient.

Start Date: 10/1/98
End Date: 9/1/99
Status: Complete

Measles

Despite a routine two-dose measles vaccination program, mass campaigns in 1987 and 1992, and low subsequent incidence, São Paulo experienced an outbreak of measles between May and October of 1997, with over 42,000 confirmed cases (mostly among young adults) and 42 measles-associated deaths (mostly infants). To eliminate measles, PAHO recommends supplementing routine childhood vaccination (keep-up) via mass campaigns, initially to reduce (catch-up) and periodically to maintain (follow-up) susceptible numbers below the epidemic threshold. NIP modeled measles in metropolitan São Paulo to determine whether a 1996 follow-up campaign might have prevented or ameliorated this outbreak and found that emergency outbreak-control efforts may have reduced cases as much as 77%, depending on coverage; a follow-up campaign among children one to four years during 1996 would have been even more effective. Susceptible adolescents would have escaped, however, possibly setting the stage for future outbreaks.

Targeted supplemental immunization of adolescents and young adults would eliminate this potential. Metropolitan São Paulo's population immunity must be maintained above the epidemic threshold, despite birth and immigration. The effectiveness of routine childhood vaccination determines the required frequency of follow-up campaigns. Adolescent and young adult immigrants can be vaccinated in bus stations, peripheral shantytowns, or in the workplaces of unskilled laborers. Because epidemic thresholds vary with density, this may be a better national strategy than vaccinating more rural children, but NIP will evaluate these alternatives via a meta-population model. NIP also advocates investigation of these matters elsewhere to ensure that the increasing urbanization of the developing world does not impede measles eradication.

Start Date: 3/1/99
Status: Ongoing

Measles

NIP created a mathematical model to determine whether the 1996 follow-up vaccination campaign might have prevented or ameliorated the 1997 measles outbreak in São Paulo, Brazil, evaluate control efforts, and explore the potential of supplementary adolescent and adult vaccinations. Simulations suggested that emergency outbreak control efforts may have reduced cases by as much as 77%, depending on coverage; a follow-up campaign among children aged 1 to 4 during 1996 would have been even more effective. Susceptible adolescents would have escaped, however, possibly setting the stage for future outbreaks. Targeted supplemental immunization of adolescents and young adults – whether long-time residents (who were neither vaccinated as children nor infected subsequently) or recent immigrants (from areas with lower population immunity) – would eliminate this potential. NIP is developing a meta-popula-

tion model with which to confirm tentative conclusions about migration and, if indicated, to evaluate alternative strategies. Since rural-urban migration is a general phenomenon, insights derived from this second-generation modeling might facilitate measles eradication around the world.

Start Date: 3/1/99
Status: Ongoing

Meningococcal Disease/Meningitis

Staff from NCID's Division of Bacterial and Mycotic Diseases used PorA VR typing to demonstrate that the population structure of serogroup B meningococci in Brazil is very different from that in the United States and the United Kingdom. The large proportion of a single PorA type (66% were P1.19,15) creates a situation where an outer membrane based P1.19,15 PorA vaccine could be effective in preventing disease. An estimated 6,300 cases caused by this strain occurred during the 2-year period of 1997-98, prompting Brazilian public health authorities to begin development and production of such a vaccine at Instituto Adolfo Lutz in Sao Paulo and FIOCRUZ in Rio de Janeiro.

Start Date: 1/1/97
End Date: 12/1/98
Status: Complete

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Diseases Control and Community Intervention) provided support to the PAHO CARMEN (Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No transmisibles) project. In an effort to raise awareness of the epidemic of noncommunicable diseases (NCDs), CARMEN, which follows the European CINDI (Countrywide Integrated Noncommunicable Disease Intervention) model, makes local adaptations to meet the needs of countries in the Americas region, including Brazil. Specific activities have included creating a working group for the development of a policy framework for NCD prevention, creating a working group on physical activity, and identifying technical resources available for country programs. NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination.

Start Date: 1/1/99
Status: Ongoing

Nosocomial Infections

NCID staff conducted the following assessments: risks of TB among healthcare workers; usefulness of CDC guidelines in reducing nosocomial TB transmission; effectiveness and feasibility of ultraviolet germicidal irradiation (UVGI) in reducing nosocomial TB transmission; usefulness of serial TB skin testing among healthcare workers with prio (infancy or more recently) BCG vaccination.

Start Date: 10/1/99
End Date: 9/1/00
Status: Complete

Schistosomiasis

NCID's Division of Parasitic Diseases staff were co-investigators in a study that examined the immunologic status of patients in Brazil, Ecuador, Egypt, and Kenya with *Schistosomia mansoni*. The study evaluated whether patients who were resistant to reinfection after a chemotherapeutic cure had different cellular and humoral immune profiles than those who were still susceptible. The effects of the number of treatments on resistance were determined. This study also investigated the cytokine profiles of patients with asymptomatic versus hepatosplenic disease, as well as how HIV-1 co-infection affects these various aspects of schistosomiasis.

Start Date: 9/1/95
Status: Ongoing

Streptococcus

NCID's Division of Bacterial and Mycotic Diseases assisted in an outbreak investigation of nephritis in Nova Serrano, Brazil, including a matched case-control study and a family-based matched case-control study. NCID conducted all analyses associated with the matched cluster design (family-based matched case control study) and assisted in the case-control study analysis. The source of the outbreak was Group C *Streptococcus*.

Start Date: 7/1/98
End Date: 5/1/00
Status: Complete

Tobacco Control

As the result of a U.S.-signed Memorandum of Cooperation with Brazil, NCCDPHP's Office on Smoking and Health collaborated with the National Cancer Institute of Brazil (INCA), under the Ministry of Health, on projects related to research, surveillance, and information exchange.

Start Date: 3/1/98
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health and NCEH staff are providing technical assistance to the National Cancer Institute of Brazil (INCA) in establishing a laboratory to analyze tobacco products.

Start Date: 8/1/00
Status: Ongoing

Tuberculosis

In FY 2000, CDC, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program recently expanded to 10 additional countries. Improving TB prevention and control efforts is an important component of the LIFE/GAP initiative. Staff from NCHSTP's Division of TB Elimination have been actively involved in developing project "best practice" blueprints, participating in site visits to LIFE/GAP countries, and convening an expert group to provide input into the selection of countries for initial TB efforts and the content of country-specific TB projects. Initial TB efforts focused on six countries, including Brazil.

Start Date: 1/1/98
Status: Ongoing

Tuberculosis

In conjunction with the University of Rio de Janeiro - Julia Kubitshek Hospital and WHO, NIOSH served as consulting engineer for an NCID Hospital Infections Program TB intervention project at three hospitals in Brazil. NIOSH staff also supervised installation of HEPA filter air cleaners and UVGI light fixtures and trained personnel on engineering controls (application, installation, and maintenance) and respiratory protection.

Start Date: 10/1/99
End Date: 10/31/99
Status: Complete

BRAZIL - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Brazil for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

Chagas Disease

NCID's Division of Parasitic Diseases initiated a three-way collaboration among scientists at Fundacao Oswaldo Cruz (FIOCRUZ), University of Rio de Janeiro, and CDC regarding research

programs with triatomine vectors of Chagas disease (i.e., population genetics and symbiont-mediated modification of vector competence). This collaboration has allowed Brazilian doctoral students to train at CDC.

Start Date: 5/1/98
Status: Ongoing

Streptococcus

NCID's Division of Bacterial and Mycotic Diseases assisted collaborators with serotyping and antimicrobial susceptibility testing of isolates of *Streptococcus pneumoniae* and analyzed DNA hybridization of *Streptococcus* pyogenes-like clinical isolates and new emm types.

Start Date: 9/1/85
Status: Ongoing

CANADA

An NCID scientist was on assignment to Health Canada, assisting colleagues in Canada's Laboratory Centre for Disease Control.

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including Canada, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Canadian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Cholesterol Reference Methods

NCEH's Division of Laboratory Sciences provided support to six international members of the Cholesterol Reference Method Laboratory Network (CRMLN): The Netherlands, Japan, United Kingdom, Canada, Italy, and Argentina. Services included reference materials used to assess performance of reference methods and designated comparison methods, quality control materials for assessing performance, and regular reports of performance status. The Division also convened a meeting of all CRMLN laboratories in the United States and abroad, attended by representatives of all international CRMLN laboratories.

Start Date: 3/1/89
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Canadian and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treat-

ment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Cryptosporidiosis

NCID's Division of Parasitic Diseases staff exchanged samples from U.S. and Canadian *Cryptosporidium* outbreaks for the purpose of establishing collaborative efforts focused on molecular typing and phylogenetics.

Start Date: 7/1/98
End Date: 7/1/99
Status: Complete

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Canadian and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Emerging Infectious Diseases

NCID's Division of Bacterial and Mycotic Diseases worked in collaboration with Health Canada to examine strains that are undergoing molecular and chemotaxonomic studies to determine their taxonomic classification. Information obtained from this project will help clinical and public health laboratories to more rapidly detect and identify these organisms and will contribute to the identification of their natural reservoir. Preliminary results were presented at the 2nd International Emerging Infectious Diseases Conference.

Start Date: 4/1/00
Status: Ongoing

Environmental Health

The U.S. EPA and Environment Canada have the responsibility under the two countries' Great Lakes Water Quality Agreement to report on the status of the Great Lakes and St. Lawrence River basins every 2 years. The major activity by the two governments to fulfill this agreement was to organize a State of the Lakes Ecosystem Conference. ATSDR has been an integral partner in the development and organization of these biennial conferences, beginning with the first one in October 1994. In addition to providing human health data, ATSDR conducts research, writes reports, and provides technical assistance throughout the year in preparation for each conference.

Start Date: 10/1/94
Status: Ongoing

Environmental Health

ATSDR's Office of Children's Health has formed a partnership with the Canadian Institute of Child Health in Ottawa. This collaboration has included exchanging visits, sharing educational materials, and assisting with the establishment of the first Canadian Pediatric Environmental Health Specialty Unit.

Start Date: 10/1/94
Status: Ongoing

Environmental Health

NCEH coordinated CDC's participation in an interlaboratory comparison of analytical methods to determine PCBs and pesticides as part of the Arctic Monitoring and Assessment Program (AMAP) Quality Assurance Program. The CDC's data compared favorably with that of other participating labs.

Start Date: 11/1/99
Status: Ongoing

Environmental Health

An ATSDR staff member developed the format and contributed to the writing of the human health sections of the Lakewide Management Plans (LaMPs) for Lakes Erie and Superior. These sec-

tions and the LaMPs themselves are written documents directed toward the restoration of the Great Lakes ecosystem, including a human health component, in accordance with the Great Lakes Water Quality Agreement between the United States and Canada. ATSDR's representative serves as the American Co-Chair of the Human Health Subcommittee of the Lake Erie LaMP and also is a Subcommittee member of the Lake Superior LaMP Human Health Subcommittee. Through this collaboration, both governmental and non-governmental agencies are informed about the status of the Great Lakes and the efforts needed to restore the Great Lakes ecosystem.

Start Date: 5/1/99
Status: Ongoing

Environmental Health

ATSDR is represented on the U.S. Department of State's Arctic Council Health and Environmental Working Group, which includes representatives from Canada, Denmark, Finland, Iceland, Norway, Russia, and Sweden. The Working Group was formed to assist the Department of State in its role as the Council's chair. The Working Group's assistance has included: (1) identifying ongoing research at federal agencies that are investigating exposure to persistent organic pollutants (POPs) and their impact(s) on human and ecological health; (2) identifying new areas of human and ecological health that would be applicable to the countries represented on the council; and (3) assisting the Department of State in establishing an agenda for 2000-2001 based on the above information.

Start Date: 4/1/00
Status: Ongoing

Ergonomics

At the behest of the Mines and Aggregates Safety and Health Administration (MASHA), a NIOSH staff member delivered two presentations on the Pittsburgh Research Laboratory's close proximity warning device and remote-control mining research. The presentations were entitled "Human Factors Implications for a Close Proximity Warning Device" and "Scenario-Based Training for Remote-Control Mining." Each talk was based on previous remote-control mining research data. Consideration of human factors when changing technology also was discussed. The NIOSH staff member met representatives from MASHA, Laurentian University (Sudbury, Ontario), Inco Mining, and the Ontario Ministry of Labour and discussed collaborating with a MASHA ergonomist on a visibility survey of load-haul-dump (LHD) operators in Canada. The workshop was attended by MASHA representatives and several safety managers from various mines. NIOSH staff also worked with a MASHA ergonomist to help develop a survey for LHD operators' visibility problems.

Start Date: 5/1/99
End Date: 5/11/99
Status: Complete

HIV

Canadian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

As part of an international quality assurance program, NCEH Division of Laboratory Sciences staff conducted evaluations for HIV antibody testing on dried blood spots from laboratories in 9 countries, including Canada.

Start Date: Ongoing in various countries since January 1988.

Invasive Bacterial Infections

An International Circumpolar Surveillance (ICS) for invasive bacterial diseases caused by *Streptococcus pneumonia*, *Haemophilus influenza*, *Neisseria meningitides*, and Group A and B *Streptococcus* has been initiated for Arctic regions of the United States and Canada by NCID's Arctic Investigations Program and Health Canada's Laboratory Centre for Disease Control. The objectives of this population-based surveillance are to describe the epidemiologic factors for disease in aboriginal and non-aboriginal peoples of the Arctic and characterize the serotypes and spread of antimicrobial resistance. In 2000, Greenland joined the ICS, providing information on invasive diseases caused by *Streptococcus pneumonia*. This surveillance system, which now spans the entire Arctic region of North America and Greenland, will allow the standardization of laboratory and data collection methods, assessment of disease rates in Arctic communities, evaluation of the effectiveness of vaccination programs on disease rates, monitoring of emergence of antimicrobial resistance treatment failures associated with these infections, and focused design of collaborative applied research on risk factors for infection and prevention strategies.

Start Date: 1/1/99
Status: Ongoing

Laboratory Methods Development

Staff from NCEH's Division of Laboratory Sciences (DLS) chaired a Working Group on the measurement of the biochemical bone markers pyridinoline and deoxypyridinoline, which are important in the diagnosis and treatment of osteoporosis and other bone-related diseases. The Working Group, which included representatives from Canada, Germany, Switzerland, and the United Kingdom, developed guidelines on patient status and sample collection and submitted them for publication in Clinical Chemistry. In March 2000, a DLS staff member attended an international workshop on biochemical bone markers, during which the Working Group also met to exchange new findings and ideas. A DLS representative attended the annual meeting of the American Association for Bone and Mineral Research (AABMR), where the standardization project was discussed with experts from other countries and a new collaboration with Hoffman-LaRoche/Switzerland was explored.

Start Date: 1/1/97
Status: Ongoing

Micronutrient Malnutrition

In April 2000, NCCDPHP Division of Nutrition and Physical Activity staff (together with OGH and EPO staff) participated in the annual TEPHINET conference in Ottawa, Canada. CDC staff shared information about CDC's International Micronutrient Malnutrition Prevention and Control (IMMPaCt) Program and recruited Field Epidemiology Training Programs (FETPs) to incorporate epidemiology training related to micronutrient malnutrition into their programs. This led to three country programs receiving funding for the EPO to implement projects to assess micronutrient status of selected populations.

Start Date: 4/1/00
End Date: 4/30/00
Status: Complete

Mine Studies

A NIOSH staff member traveled to Cape Breton, Nova Scotia in October 1998 in response to a request for assistance from District 26 of the United Mine Workers of America (UMWA), following a major roof fall at Cape Breton's Phalen Colliery. The NIOSH staff member was accompanied by a UMWA International Safety Representative and other UMWA safety personnel on two mine visits. Geologic and monitoring data were provided and the team observed roof cores taken from Phalen and from Prince Colliery. During the visit, the NIOSH staff member pre-

sented a short course on ground control. Another NIOSH staff member returned to the Phalen Colliery in March 1999 in response to another request for assistance from District 26 of the UMWA following a longwall face collapse. The roof fall created very hazardous conditions for the miners. Following procedures specified in maintenance and operational plans – along with union and management cooperation on roof control – should help eliminate roof falls and ensuring a safe future for the Cape Breton coal mines.

Start Date: 8/1/98
End Date: 3/1/99

Mine Studies

A Memorandum of Understanding (MOU) was signed between NIOSH and the Canada Centre for Mineral and Energy Technology (CANMET) to promote, facilitate, and implement close cooperation between NIOSH's Pittsburgh Research Laboratory (PRL) and the Canadian Underground Coal Mine Safety Research Collaboration (UCMSRC) in improving safety and health in underground coal mining. The UCMSRC is a collaborative consortium that brings together industry, labor unions, regulators, inspectors, and universities in the three Canadian provinces where coal mining is active: Nova Scotia, Alberta, and British Columbia. Its main goal is to identify technology and knowledge gaps in key areas common to the operating mines. PRL is currently participating in a project titled "Standardization of Geological and Geomechanical Assessment at Underground Coal Mines in Canada." In April and May 1999, a NIOSH staff member visited Canada to (1) attend a meeting of UCMSRC's Executive Committee, (2) conduct a geotechnical safety evaluation of the Smoky River underground coal mine, and (3) present an invited paper at the Annual Meeting of the Canadian Institute of Mining (CIM). In November 1999, NIOSH staff visited Canada to conduct a geotechnical safety evaluation of the Quinsam underground coal mine and conduct ground control training sessions for Quinsam staff, United Steelworkers of America miners, and regulatory personnel.

Start Date: 4/1/99
Status: Ongoing

Mine Studies

Two NIOSH staff members visited Goderich Mine – the world's largest salt mine – in Ontario, Canada. Gas outbursts at the mine have resulted in major roof falls, three of which also resulted in ignitions of the suddenly released methane. Meetings were held with local management and local union representatives to more fully discuss the problem and review the mine's degasification and roof control procedures. An underground investigation also was conducted. The unique aspects of this mine's problems provided a research opportunity for NIOSH Pittsburgh Research Laboratory researchers to more fully understand these phenomena affecting miner safety and health, such as the relationship between roof control and the presence of methane, stress relief pillar design, the migration paths of the methane, and the need to refine the degasification technique. As a result, a modest research plan was developed for the operation's managers, workers, and researchers alike to improve their understanding of ground and methane control for application in Canadian and U.S. mining operations.

Start Date: 5/1/00
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Diseases Control and Community Intervention) provided support to the PAHO CARMEN (Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No transmisibles) project. In an effort to raise awareness of the epidemic of noncommunicable diseases (NCDs), CARMEN, which follows the European CINDI (Countrywide

Integrated Noncommunicable Disease Intervention) model, makes local adaptations to meet the needs of countries in the Americas region, including Argentina. Specific activities have included creating a working group for the development of a policy framework for NCD prevention, creating a working group on physical activity, and identifying technical resources available for country programs. NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination.

Start Date: 1/1/99
Status: Ongoing

Occupational Hazards

In a collaborative research project with the University of Calgary, Canada; Bombay Hospital and Institute of Medical Sciences, Bombay, India; and the National University of Singapore, NIOSH researchers worked to elucidate molecular events and corresponding pathological changes that occur in the lungs of workers exposed to silica or other particles. Silica-induced events measured included oxidant production, phosphorylation of protein tyrosine, and activation of the transcription factor NFkB. (NFkB activation is dependent upon tyrosine protein kinase, which in turn is dependent on the production of reactive oxygen species by silica-exposed macrophage.) Other studies include autopsy studies of occupational and environmental changes in lungs, molecular events leading to carcinogenesis, and biomarkers of occupational disease inhibitors and development.

Start Date: 1/1/98
Status: Ongoing

Occupational Hazards

NIOSH convened a series of international conferences on developing policies for preventing worker injuries and illness from dermal contact with chemical hazards. These were part of a major multi-year program to develop practices that prevent exposures to dermal hazards and to conduct research leading to appropriate practices for controlling them. A number of multinational efforts are in place in Canada, Denmark, Finland, and Italy to develop appropriate principles for dermal absorptions hazards and approaches for controlling dermatitis in workers.

Start Date: 10/1/99
Status: Ongoing

Occupational Health

NIOSH is working with Canada to develop a partnership on diesel exposures. In November 1999, a NIOSH staff member participated in the discussions of the Technical Committee of the Diesel Emissions Evaluation Program (DEEP), a mostly Canadian consortium of the major underground mining companies, government, labor, and health organizations in Canada chartered to bring practical diesel exhaust measurement and control solutions to the Canadian underground hard-rock mining industry. In June 2000, NIOSH staff presented a paper and attended the Mining Diesel Emissions Conference. With funding from Noranda and DEEP, diesel particle filters that potentially reduce emitted diesel particulate matter by factors of 5 to 20 are being evaluated for a period of 18 months at Noranda's Brunswick Mining and Smelting Mine, Bathurst, New Brunswick, Canada. A NIOSH staff member has been appointed as the NIOSH Technical Transfer Representative for DEEP and has traveled to Canada to oversee several evaluation projects. These have included: (1) observing the installation of diesel exhaust temperature and pressure data loggers on underground mine vehicles, in preparation for the selection and evaluation of diesel exhaust particulate filter technology (which has the potential to reduce the diesel particulate matter emitted by a factor of 10 or more); (2) observing and discussing the operation of the NanoMet particle counting instrument from Matter Engineering in order to understand its operation, witness its performance, and determine ease of use;

and (3) discussing the state of development of European diesel exhaust filtration technology and its application, certification, and selection.

Start Date: 11/1/99
Status: Ongoing

Occupational Injuries

NIOSH staff met with Canadian colleagues at the Construction Safety Association of Ontario to compare highway construction work zone safety issues in the United States and Canada. Discussions have covered risk factors and control strategies for the prevention of motor vehicle- and equipment-related deaths among highway construction workers.

Start Date: 12/1/99
Status: Ongoing

Reproductive Toxicology

NIOSH scientists collaborated with Canadian researchers in a human health study entitled "Exposure and Endocrine Impact of Organochlorines in a Native Community." This pilot study determined the feasibility of conducting a larger study to evaluate the effects of PCBs, DDT, and lead contamination found in diet on the reproductive health of women within a subsistence Native American community living on the shores of James Bay in eastern Ontario. The NIOSH researchers helped design the study protocol and will help collect questionnaire information and biological samples, analyze the biological samples, statistically analyze and interpret the data, and write the report(s). Success of this pilot study will lead to a larger study of the reproductive health of men and women in this and similar communities and also will provide information on the reproductive toxicity of PCBs, DDT, and lead as they relate to occupational hazards in the United States.

Start Date: 11/1/99
Status: Ongoing

Strongyloidiasis

NCID's Division of Parasitic Diseases conducted a longitudinal study of post-therapy antibody persistence with Toronto General Hospital.

Start Date: 8/1/90
End Date: 1/1/00
Status: Complete

West Nile Virus

NCID's Division of Vector-Borne Infectious Diseases provided West Nile virus laboratory-based surveillance in Canada.

Start Date: 1/1/00
Status: Ongoing

CANADA - U.S.-BASED COLLABORATION(S)

Injuries

The National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS), which was funded by NIOSH under the Childhood Agricultural Injury Prevention Initiative, implemented development of the North American Guidelines for Children's Agricultural Tasks (NAGCAT). This was an outgrowth of a recommendation of the National Committee for Childhood Agricultural Injury Prevention, which called for the establishment of work guidelines for children in agriculture as a foundation on which to build other safety strategies. The NAGCATs were developed to assist parents in assigning safe and appropriate farm jobs for children 7 to 16 years of age. A project team from the United States, Canada, and Mexico used a consensus development process to generate guidelines. Extensive reviews of existing literature were conducted and discussions with groups of farm parents and teen workers were convened. Multi-disciplinary specialists provided feedback on the content's accuracy and a job hazard analysis framework was used to document variables associated with a range of agricultural jobs. The result was the release of 62 spe-

cific NAGCATs in June 1999, along with a 400-page professional resource manual for use by injury prevention specialists. Some of the NAGCATs also were translated into Spanish.

Start Date: 10/1/98
Status: Ongoing

CHILE

Asthma

NIOSH has identified several well-characterized populations afflicted with occupational asthma and has established collaborations with the Asociacion Chilena de Seguridad in Santiago, Chile. NIOSH is investigating the role of genetic factors (HLA- DR and DQ alleles, FcåRIâ, TcR, MCC, á1-ACT, á1-AAT, â-AR, TNF-á, IL-1á & â, IL-RA, IL-4, IL-10, IFN-ã and C2CS) using allele specific PCR and PCR/RFLP. Power calculations showed that for the candidate genes, a sample size of 350 individuals per group (i.e. 350 cases, 350 controls) provided 90% power to detect a difference of at least 10% between the two groups, if a difference existed. (All comparisons were at the 0.05 level.) Exploratory/feasibility studies are in progress. Although associations between asthma and a variety of genes have been investigated previously, this will be the first investigation designed to look at multiple genes in a single, well-defined study that is focused specifically on occupational asthma.

Start Date: 10/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Chilean as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Birth Defects

Neural tube defects (NTDs) are a range of congenital malformations produced by the neural groove's failure to close around the 28th day of fetal development. Since the early 1990s, the U.S. Public Health Service and CDC have issued the recommendation that all women capable of becoming pregnant should consume 0.4 mg (400 micrograms) of folic acid per day in order to prevent NTDs. Folic acid fortification of common foods such as bread and cereals is one strategy that can be used to help women meet the daily folic acid requirement. On January 1, 2000, the Chilean government started supplementation of wheat flour with folic acid. A proposal underway for a collaborative research project was discussed with PAHO, the March of Dimes, and Chilean government and CDC representatives. This project would evaluate baselines of folate in bread and in serum in a population sample. After 1 year, these measurements will be repeated and compared to the baseline levels to evaluate the impact of the supplementation. Serum and RBC folate and vitamin B12 levels were measured on 750 baseline (pre-fortification) specimens from Chile. Collection supplies were sent to the Chilean Principal Investigator in September 2000 to facilitate the collection of 750 post-fortification samples for analysis.

Start Date: 1/1/00
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Chilean and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve

the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Chile and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Influenza

NCID's Division of Viral and Rickettsial Diseases provided ongoing technical assistance through the provision of reagents, data, and technical support to the Institute for Public Health of Chile.

Start Date: 1/1/96
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Diseases Control and Community Intervention) provided support to the PAHO CARMEN (Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No transmisibles) project. In an effort to raise awareness of the epidemic of noncommunicable diseases (NCDs), CARMEN, which follows the European CINDI (Countrywide Integrated Noncommunicable Disease Intervention) model, makes local adaptations to meet the needs of countries in the Americas region, including Chile. Specific activities have included creating a working group for the development of a policy framework for NCD prevention, creating a working group on physical activity, and identifying technical resources available for country programs. NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination.

Start Date: 1/1/99
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Chile. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; pro-

duced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

CHILE - U.S.-BASED COLLABORATION(S)

Influenza

NCID's Division of Viral and Rickettsial Diseases hosted a guest researcher from the Institute for Public Health of Chile for training in virus isolation, antigenic and molecular characterization, and anti-viral resistance assays.

Start Date: 1/1/96
End Date: 1/1/99
Status: Complete

COLOMBIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Colombia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Colombian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Bloodstream Infections

NCID staff implemented a post-outbreak intervention to reduce the risk of bloodstream infection (BSI) and assess the intervention's impact. A study to determine pathogens associated with BSIs in a high-risk nursery in Cali, Colombia was conducted with colleagues from the University Del Vale.

Start Date: 10/1/99
Status: Ongoing

Cysticercosis

NCID's Division of Parasitic Diseases collaborated with the Instituto de Neurologico de Antioquia in Medellin in a scientific exchange of knowledge and reagents for the serodiagnosis of cysticercosis. In addition, a survey and pilot control program for cysticercosis has been implemented in two villages near the Northern coast of the country. NCID's Division of Parasitic Diseases participated in a regional consortium to train young scientists in how to plan, conduct, evaluate, and report the results of clinical trials.

Start Date: 4/1/97
Status: Ongoing

Dengue

NCID's Division of Vector-Borne and Infectious Diseases developed a community-based prevention campaign, including health education for dengue/dengue hemorrhagic fever.

Start Date: 9/1/97
Status: Ongoing

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Colombia and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Influenza

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and immunohistochemical testing on two cases of hepatic failure, resulting in the diagnosis of influenza A in one case.

Start Date: 8/1/99
End Date: 9/1/99
Status: Complete

Malaria

NCID's Division of Parasitic Diseases analyzed bed net samples for deltamethrin contrent for the Fundacion Centro Internacional de Entreamiento e Investigacions Medicas (CIDIEM) in Colombia.

Start Date: 4/1/98
End Date: 11/1/98
Status: Complete

Management Training

In FY 99 and 00, participants from Colombia attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Diseases Control and Community Intervention) provided support to the PAHO CARMEN (Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No transmisibles) project. In an effort to raise awareness of the epidemic of noncommunicable diseases (NCDs), CARMEN, which follows the European CINDI (Countrywide Integrated Noncommunicable Disease Intervention) model, makes local adaptations to meet the needs of countries in the Americas region, including Colombia. Specific activities have included creating a working group for the development of a policy framework for NCD prevention, creating a working group on physical activity, and

identifying technical resources available for country programs. NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination.

Start Date: 1/1/99
Status: Ongoing

Onchocerciasis

The Guatemala-based Onchocerciasis Elimination Program for the Americas (OEPA), administered by The Carter Center and PAHO, has helped develop and maintain national onchocerciasis programs in all six known disease-endemic countries in the Americas. The Program's staff embarked on "pre-certification" of elimination exercises for Colombia, Ecuador, Mexico, and Guatemala in 2000.

Start Date: 3/1/93
Status: Ongoing

Vector Research

NCID's Division of Parasitic Diseases staff collaborated with colleagues at the Universidad de Antioquia in Medellin in vector research and are supervising the research of doctoral candidates in their Ciencias Basicas Biomedicas program.

Start Date: 1/1/95
Status: Ongoing

COLOMBIA - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Colombia for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

COSTA RICA

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Costa Rican as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Costa Rican and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Epidemiology Training

The Post-Hurricane Reconstruction Project is a collaborative effort among CDC's EPO, PAHO, USAID, and the Association of Public Health Laboratories (APHL). Its purpose is to re-establish and sustain the capacity for assessing health status and for detecting and responding to outbreaks and changes in disease patterns in the Central American and Caribbean region affected by Hurricanes Georges and Mitch, including Costa Rica. To accomplish this objective, CDC promoted four strategies: improved disease surveillance; increased availability of trained epidemiologists

and training of other health workers by these epidemiologists through the Field Epidemiology Training Program (FETP); increased laboratory capacity; and community-based prevention and control of disease. EPO's Division of International Health established a regional FETP that serves seven Central American/Caribbean countries: Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, the Dominican Republic, and Haiti. The first class of over 20 trainees is expected to graduate in 2001.

Start Date: 9/1/99
Status: Ongoing

Histoplasmosis

NCID's Division of Bacterial and Mycotic Diseases assisted the Ministry of Health in investigating an outbreak of histoplasmosis among schoolchildren who visited a popular tourist cave.

Start Date: 2/1/99
End Date: 2/28/99
Status: Complete

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Costa Rica and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Leptospirosis

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and examined several suspected cases of hemorrhagic fever, a few of which were diagnosed as leptospirosis by immuno-histochemical testing.

Start Date: 1/1/99
End Date: 2/28/99
Status: Complete

Leptospirosis

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support for several cases of hemorrhagic fever. Two of these cases were diagnosed as leptospirosis.

Start Date: 10/1/99
End Date: 3/31/00
Status: Complete

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Diseases Control and Community Intervention) provided support to the PAHO CARMEN (Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No transmisibles) project. In an effort to raise awareness of the epidemic of noncommunicable diseases (NCDs), CARMEN, which follows the European CINDI (Countrywide Integrated Noncommunicable Disease Intervention) model, makes local adaptations to meet the needs of countries in the Americas region, including Costa Rica. Specific activities have included creating a working group for the development of a policy framework for NCD prevention, creating a working group on physical activity, and identifying technical resources available for country programs. NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination.

Start Date: 1/1/99
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Costa Rica. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

CUBA

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Cuban as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Diseases Control and Community Intervention) provided support to the PAHO CARMEN (Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No transmisibles) project. In an effort to raise awareness of the epidemic of noncommunicable diseases (NCDs), CARMEN, which follows the European CINDI (Countrywide Integrated Noncommunicable Disease Intervention) model, makes local adaptations to meet the needs of countries in the Americas region, including Cuba. Specific activities have included creating a working group for the development of a policy framework for NCD prevention, creating a working group on physical activity, and identifying technical resources available for country programs. NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination.

Start Date: 1/1/99
Status: Ongoing

DOMINICA

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS

was conducted in 34 countries in 1999 and 2000, including Dominica. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

DOMINICAN REPUBLIC

Two CDC/EPO staff were assigned to the Dominican Republic, where they supported the Dominican Republic's trainees in the Field Epidemiology Training Program (FETP) for Central America and provided technical assistance to PAHO and Dominican Republic colleagues.

Diphtheria

NCID's Division of Bacterial and Mycotic Diseases provided laboratory support to the Dominican Republic in response to a *C. Diptheria* outbreak. Two different PCR methods were used to detect the tox gene in 22 clinical specimens: traditional PCR and a new TaqMan PCR approach that employs a target-specific probe in addition to the two PCR primers (resulting in a more sensitive assay).

Start Date: 1/1/00
Status: Ongoing

Epidemiology Training

The Post-Hurricane Reconstruction Project is a collaborative effort among CDC's EPO, PAHO, USAID, and the Association of Public Health Laboratories (APHL). Its purpose is to re-establish and sustain the capacity for assessing health status and for detecting and responding to outbreaks and changes in disease patterns in the Central American and Caribbean region affected by Hurricanes Georges and Mitch, including the Dominican Republic. To accomplish this objective, CDC promoted four strategies: improved disease surveillance; increased availability of trained epidemiologists and training of other health workers by these epidemiologists through the Field Epidemiology Training Program (FETP); increased laboratory capacity; and community-based prevention and control of disease. EPO's Division of International Health established a regional FETP that serves seven Central American/Caribbean countries: Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, the Dominican Republic, and Haiti. The first class of over 20 trainees is expected to graduate in 2001.

Start Date: 9/1/99
Status: Ongoing

Haemophilus Influenzae Vaccine

NCID's Division of Bacterial and Mycotic Diseases collaborated with Dominican Republic Ministry of Health and clinical researchers on surveillance for meningitis and a clinical trial evaluating the immunogenicity of fractional doses of *Haemophilus influenzae* type b (Hib) vaccine. The trial compared full dose, one-half dose, and one-third dose Hib vaccine given separately from and in combination with DTP vaccination. Regimens were evaluated to see whether they provided a predetermined level of antibodies in the participants. All regimens met this level. NCID staff conducted a vaccine trial in the Dominican Republic to assess the antibody response to fractional dose Hib vaccination, and assisted in the data analysis and manuscript preparation.

Start Date: 6/1/98
End Date: 5/1/99
Status: Complete

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in the Dominican Republic and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Lymphatic Filariasis

NCID's Division of Parasitic Diseases supported filariasis surveys to assess the magnitude of the problem in the Dominican Republic.

Start Date: 6/1/97
End Date: 12/1/99
Status: Complete

Management Training

In FY 99 and 00, participants from Dominican Republic attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Natural Disasters

Hurricane Georges hit the Caribbean Islands in September 1998, causing extensive damage and loss of life throughout the region. The Dominican Republic was the hardest hit, with over 300 people killed, tremendous infrastructure damage, and agricultural losses including staple crops of rice, plantain, and cassava. Two months after the hurricane, the American Red Cross (ARC) International Services was asked to provide a feeding program to the estimated 170,000 vulnerable families throughout the country. NCEH was asked to perform a needs assessment to estimate the health and nutritional needs of the hurricane-affected population to assist in directing ARC relief efforts. The most striking finding was the great need for food and health care 2 months after the hurricane, with up to 40% of selected populations having insufficient food five or more days of the week and 28% of households in need of medical attention. NCEH continued its needs surveillance of ARC beneficiary populations every 3 months for the duration of the 1-year feeding program. A conference on lessons learned from Hurricanes Georges and Mitch was held in February 2000. NCEH participation led to the direct improvement of health conditions for the internally displaced peoples in the Dominican Republic. CDC guidelines for dis-

placed populations were used, and the lessons learned from this collaboration were shared with others at two international meetings. In addition, lessons learned from this collaboration may be applied in the United States to improve evaluation techniques in post-disaster situations, aid in the mitigation of disasters, and improve disaster preparedness.

Start Date: 12/1/98
End Date: 7/1/00
Status: Complete

ECUADOR

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Ecuador and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Management Training

In FY 99 and 00, participants from Ecuador attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Onchocerciasis

The Guatemala-based Onchocerciasis Elimination Program for the Americas (OEPA), administered by The Carter Center and PAHO, has helped develop and maintain national onchocerciasis programs in all six known disease-endemic countries in the Americas. The Program's staff embarked on "pre-certification" of elimination exercises for Colombia, Ecuador, Mexico, and Guatemala in 2000.

Start Date: 3/1/93
Status: Ongoing

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) has been providing technical assistance for international reproductive health surveys for more than 20 years under its Participating Agencies Service Agreement (PASA) with USAID. DRH staff work with USAID, in-country implementing agencies, Ministries of Health, international organizations, and NGOs to provide programmatically important information on a wide array of topics in reproductive health. DRH staff assisted in virtually all aspects of these surveys, including conceptu-

alization, design, planning, training, implementation, data processing, analysis, report writing, and dissemination activities. In 1999 and 2000, assistance was provided for surveys carried out in Ecuador, Romania, Ukraine, Russia, and the Republic of Georgia. Reports on the survey results in Cape Verde and El Salvador were completed and published in 1999. Planning is underway for surveys that will take place in 2001 in Mozambique, Azerbaijan, Honduras, and Paraguay.

Start Date: 1/1/98
Status: Ongoing

Schistosomiasis

NCID's Division of Parasitic Diseases staff were co-investigators in a study that examined the immunologic status of patients in Brazil, Ecuador, Egypt, and Kenya with *Schistosomia mansoni*. The study evaluated whether patients who were resistant to reinfection after a chemotherapeutic cure had different cellular and humoral immune profiles than those who were still susceptible. The effects of the number of treatments on resistance were determined. This study also investigated the cytokine profiles of patients with asymptomatic versus hepatosplenic disease, as well as how HIV-1 co-infection affects these various aspects of schistosomiasis.

Start Date: 9/1/95
Status: Ongoing

ECUADOR - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Ecudor for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

EL SALVADOR

An EPO medical epidemiologist was assigned to El Salvador to support El Salvador's trainees in the Field Epidemiology Training Program (FETP) for Central America.

Epidemiology Training

The Post-Hurricane Reconstruction Project is a collaborative effort among CDC's EPO, PAHO, USAID, and the Association of Public Health Laboratories (APHL). Its purpose is to re-establish and sustain the capacity for assessing health status and for detecting and responding to outbreaks and changes in disease patterns in the Central American and Caribbean region affected by Hurricanes Georges and Mitch, including El Salvador. To accomplish this objective, CDC promoted four strategies: improved disease surveillance; increased availability of trained epidemiologists and training of other health workers by these epidemiologists through the Field Epidemiology Training Program (FETP); increased laboratory capacity; and community-based prevention and control of disease. EPO's Division of International Health established a regional FETP that serves seven Central American/Caribbean countries: Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, the Dominican Republic, and Haiti. The first class of over 20 trainees is expected to graduate in 2001.

Start Date: 9/1/99
Status: Ongoing

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in El Salvador and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in

their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Micronutrient Malnutrition

Approximately 100 serum specimens (residual serum from hospitalized children, primarily for non-infectious diagnoses) were sent to NCEH to be analyzed for vitamin A levels by the Futterman fluorescence method and by HPLC to compare the results of the two analyses. The purpose was to determine whether analyses done by the Futterman procedure in El Salvador, which indicated a low prevalence of vitamin A deficiency, were correct. The HPLC analyses have been completed, but the Futterman analyses have been delayed.

Start Date: 1/1/99
Status: Ongoing

Natural Disasters

In late October and early November 1998, Hurricane Mitch caused widespread destruction throughout Central America. Hurricane Mitch was one of the strongest, most devastating hurricanes of the past 200 years. The region was battered for several days by high winds and torrential rains that caused enormous loss of life and catastrophic damage to the infrastructure of the countries affected. The American Red Cross (ARC) International Services oversaw health efforts in the hurricane-affected areas of Central America and asked NCEH to perform a needs assessment to assist in directing its efforts. NCEH conducted the needs assessment in 4 countries: El Salvador, Guatemala, Honduras and Nicaragua. Immediately following the hurricane, 3% of households in El Salvador reported that their homes were completely destroyed. Thirty-six percent of households reported not having enough food to feed their families since the hurricane. In the month after the hurricane, 76% of El Salvadoran households reported an illness. Following the hurricane, health care was needed in 34% of households. The NCEH team identified substantial housing, health and food needs, which led to the ARC providing emergency health care to these areas until long-term reconstruction programs could be initiated throughout Central America. This collaboration helped improve the health conditions of Salvadorans in the wake of the natural disaster they had experienced. In addition, the lessons NCEH learned about assessing the needs of internally displaced peoples can be used in the future by other international agencies.

ARC also implemented many water and sanitation interventions for affected communities. In December 1999, ARC requested that NCEH evaluate the health impact of these interventions in the four countries. In February 2000, a baseline evaluation of diarrheal disease, water and sanitation availability, knowledge and practices of appropriate hand washing behavior, and water quality was conducted in eight affected communities, prior to implementation of the interventions.

Start Date: 1/1/99 (needs assessment) and 12/1/99 (baseline evaluations)
End Date: 2/1/99 (needs assessment) and baseline evaluations are ongoing

Natural Disasters

NCEH staff participated in a workshop called "Post-Hurricane Program for Reconstruction of Public Health Systems in Central America and the Caribbean" that was sponsored by EPO and USAID. NCEH participation included a presentation about how CDC can collaborate with FETPs in other countries.

Start Date: 1/1/00
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support during an outbreak of dengue hemorrhagic fever.

Start Date: 6/1/00
End Date: 6/30/00
Status: Complete

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) has been providing technical assistance for international reproductive health surveys for more than 20 years under its Participating Agencies Service Agreement (PASA) with USAID. DRH staff work with USAID, in-country implementing agencies, ministries of health, international organizations, and NGOs to provide programmatically important information on a wide array of topics in reproductive health. DRH staff assisted in virtually all aspects of these surveys, including conceptualization, design, planning, training, implementation, data processing, analysis, report writing, and dissemination activities. Reports on the survey results in El Salvador was published in 1999. In 1999 and 2000, assistance was provided for surveys carried out in Romania, Ukraine, Russia, the Republic of Georgia, and Ecuador. Planning is underway for surveys that will take place in 2001 in Mozambique, Azerbaijan, Honduras and Paraguay.

Start Date: 1/1/97
Status: Ongoing

GRENADA

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Grenada. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

GUATEMALA

The Medical Entomology Research and Training Unit (MERTU) is a collaborative research center for research activities supported by CDC, the University del Valle and the Ministry of Health. MERTU conducted research on Chagas diseases, cyclosporiasis, malaria, onchocerciasis, geohelminth infections, leishmaniasis and other areas. In addition, the center sponsored training and supports regional surveillance networks to track emerging infectious diseases.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Guatemala and other countries, which then test the strains and fax results

directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Guatemalan as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Chagas Disease

NCID's Division of Parasitic Diseases and Guatemala Medical Entomology Research and Training Unit (MERTU/G) staff completed a comprehensive evaluation of practices with respect to blood collection, blood screening for anti-*Trypanosoma cruzi* antibody, and blood usage in the capitol city and in four Chagas-endemic regions of Guatemala. Data were used to make recommendations to the Ministry of Health to improve transfusion safety.

Start Date: 8/1/97
End Date: 8/1/99
Status: Complete

Chagas Disease

NCID's Division of Parasitic Diseases continues to work with the Guatemalan Ministry of Health to develop and implement a program to control the transmission of Chagas disease. The program will be based on interventions designed to eliminate the vector of Chagas disease. A study is in progress near Olopa that encompasses surveys and education as well as entomologic and serologic evaluation of a Ministry of Health initiative to control transmission by reducing vector density in domiciliary and peridomiciliary areas using the insecticide deltamethrin.

Start Date: 10/1/97
Status: Ongoing

Chagas Disease

NCID's Division of Parasitic Diseases staff continued laboratory studies aimed at predicting the field efficacy of the VSI (vector-symbiont intervention) approach to controlling Chagas disease and met with representatives from the Guatemala Ministry of Health and officials from the Universidad del Valle de Guatemala to discuss the potential benefits of this approach. Work is also in progress, funded by WHO, to study population biology and genetics of triatomine vectors of Chagas disease. A Guatemalan ASM postdoctoral Fellow was selected and has begun work on these projects.

Start Date: 1/1/93
Status: Ongoing

Diarrheal Diseases

NCID's Division of Bacterial and Mycotic Diseases reviewed a questionnaire, target sample size, and other design aspects of a proposed two-site matched case control study examining risk factors for *E. coli* in children.

Start Date: 9/1/00
End Date: 9/30/00
Status: Complete

Epidemiology Training

Public health professionals from Guatemala were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatis-

tics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

Epidemiology Training

The Post-Hurricane Reconstruction Project is a collaborative effort among CDC's EPO, PAHO, USAID, and the Association of Public Health Laboratories (APHL). Its purpose is to re-establish and sustain the capacity for assessing health status and for detecting and responding to outbreaks and changes in disease patterns in the Central American and Caribbean region affected by Hurricanes Georges and Mitch, including Guatemala. To accomplish this objective, CDC promoted four strategies: improved disease surveillance; increased availability of trained epidemiologists and training of other health workers by these epidemiologists through the Field Epidemiology Training Program (FETP); increased laboratory capacity; and community-based prevention and control of disease. EPO's Division of International Health established a regional FETP that serves seven Central American/Caribbean countries: Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, the Dominican Republic, and Haiti. The first class of over 20 trainees is expected to graduate in 2001.

Start Date: 9/1/99
Status: Ongoing

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Guatemala and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Leishmaniasis

NCID's Division of Parasitic Diseases staff at the Guatemala Medical Entomology Research and Training Unit (MERTU/G), the Division's collaborative research center in Guatemala, have developed an integrated leishmaniasis program consisting of research on the epidemiology, parasitology, and treatment of cutaneous leishmaniasis.

Start Date: 4/1/97
End Date: 2/1/99
Status: Complete

Leishmaniasis

Staff from NCID's Division of Parasitic Diseases have shown through several clinical trials that the traditionally recommended total treatment dose of antimony-containing medication can be decreased by half or more, thereby reducing adverse effects and cost without diminishing efficacy. Although typical approaches to control (such as vector elimination) are not feasible in Guatemala, NCID staff have shown that morbidity can be reduced by improving the capacity at the local level to detect, diagnose, and treat infections.

Start Date: 4/1/97
End Date: 2/1/99
Status: Complete

Malaria

NCID's Division of Parasitic Diseases, through its collaoborative research center in Guatemala, Medical Entomology Research and Training Unit (MERTU/G), has conducted a wide range of malaria research, including studies of insecticide resistance, identification of new anopheline vector species, effect of impregnated bed nets on the dynamics of malaria transmission, and innovative approaches to community participation in malaria control. A high priority is to evaluate whether chloroquine resistance is occurring.

Start Date: 9/1/99
Status: Ongoing

Management Training

In FY 99 and 00, participants from Guatemala attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Guatemala, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Natural Disasters

In late October and early November 1998, Hurricane Mitch caused widespread destruction throughout Central America. Hurricane Mitch was one of the strongest, most devastating hurricanes of the past 200 years. The region was battered for several days by high winds and torrential rains that caused enormous loss of life and catastrophic damage to the infrastructure of the countries affected. The American Red Cross (ARC) International Services oversaw health efforts in the hurricane-affected areas of Central America and asked NCEH to perform a needs assessment to assist in directing its efforts. NCEH conducted the needs assessment in 4 countries: El Salvador, Guatemala, Honduras and Nicaragua. Immediately following the hurricane, 2% of households in Guatemala reported that their homes were completely destroyed. Twenty-five percent of households reported not having enough food to feed their families since the hurricane. In the month after the hurricane, 57% of Guatemalan households reported an illness. Following the hurricane, health care was needed in 26% of households. The NCEH team identified substantial housing, health and

food needs, which led to the ARC providing emergency health care to these areas until long-term reconstruction programs could be initiated throughout Central America. This collaboration helped improve the health conditions of Guatemalans in the wake of the natural disaster they had experienced. In addition, the lessons NCEH learned about assessing the needs of internally displaced peoples can be used in the future by other international agencies.

ARC also implemented many water and sanitation interventions for affected communities. In December 1999, ARC requested that NCEH evaluate the health impact of these interventions in the four countries. In February 2000, a baseline evaluation of diarrheal disease, water and sanitation availability, knowledge and practices of appropriate hand washing behavior, and water quality was conducted in eight affected communities, prior to implementation of the interventions.

Start Date: 1/1/99 (needs assessment) and 12/1/99 (baseline evaluations)
End Date: 2/1/99 (needs assessment) and baseline evaluations are ongoing

Onchocerciasis

The Guatemala-based Onchocerciasis Elimination Program for the Americas (OEPA), administered by The Carter Center and PAHO, has helped develop and maintain national onchocerciasis programs in all six known disease-endemic countries in the Americas. The Program's staff embarked on "pre-certification" of elimination exercises for Colombia, Ecuador, Mexico, and Guatemala in 2000.

Start Date: 3/1/93
Status: Ongoing

Onchocerciasis

NCID's Division of Parasitic Diseases, through its research station, Guatemala Medical Entomology Research and Training Unit (MERTU/G), continued to assist the Guatemalan Ministry of Health in a major onchocerciasis control project based on distribution of ivermectin to disease-endemic communities. A broad operational research program was designed to develop and evaluate methods for monitoring program impact, improve record keeping, decrease costs, and improve community participation. NCID staff continued to explore the use of geographic information systems and other global positioning tools within the framework of an active onchocerciasis control program.

Start Date: 7/1/97
Status: Ongoing

Water/Sanitation/Hygiene-General

NCID's Division of Bacterial and Mycotic Diseases reviewed and suggested design and analysis strategies for a proposed comparative longitudinal study examining the effects of a clean water intervention at selected sites within the Guatemala. Modeling for these data will involve repeated measures analysis and estimation of complex underlying covariance structures within the framework of generalized estimating equations (GEEs).

Start Date: 3/1/00
End Date: 3/31/00
Status: Complete

Water Vessel Project

NCID's Division of Bacterial and Mycotic Diseases continued laboratory trials of candidate filters and flocculants designed for water vessels.

Start Date: 12/1/98
Status: Ongoing

Waterborne Disease

NCID's Division of Bacterial and Mycotic Diseases continued a study to measure the age specific seroprevalence of antibodies to a variety of waterborne pathogens.

Start Date: 2/1/98
End Date: 2/1/99
Status: Complete

GUATEMALA - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Guatemala for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

GUYANA

Epidemiology Training

Public health professionals from Guyana were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Guyana. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

HAITI

Cyclospora

NCID's Division of Parasitic Diseases staff initiated a broad study of Cyclospora infection in selected communities to address key issues related to prevalence, seasonality, transmission, symptomatology, role of animal reservoirs, and to serve as a source of organisms for laboratory-based studies.

Start Date: 1/1/97
Status: Ongoing

Epidemiology Training

The Post-Hurricane Reconstruction Project is a collaborative effort among CDC's EPO, PAHO, USAID, and the Association of Public Health Laboratories (APHL). Its purpose is to re-establish and sustain the capacity for assessing health status and for detecting and responding to outbreaks and changes in disease patterns in the Central American and Caribbean region affected by Hurricanes Georges and Mitch, including Haiti. To accomplish this objective, CDC promoted four strategies: improved disease surveillance; increased availability of trained epidemiologists and training

of other health workers by these epidemiologists through the Field Epidemiology Training Program (FETP); increased laboratory capacity; and community-based prevention and control of disease. EPO's Division of International Health established a regional FETP that serves seven Central American/Caribbean countries: Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, the Dominican Republic, and Haiti. The first class of over 20 trainees is expected to graduate in 2001.

Start Date: 9/1/99
Status: Ongoing

Intestinal Helminths

NCID's Division of Parasitic Diseases (DPD) staff continued studies of the health impact of a broad spectrum anti-helminthic treatment program for school-age children in Haiti. A study of the efficacy of combined albendazole and diethylcarbamazine was completed and demonstrated that the drug combination offers no additional benefit against the intestinal helminths compared to albendazole alone. This is in contrast to previous DPD findings, suggesting that combined albendazole/ivermectin had enhanced efficacy against the intestinal helminths and offered a height/weight nutritional benefit compared to albendazole alone.

Start Date: 6/1/97
End Date: 9/1/99
Status: Complete

Lymphatic Filariasis

NCID completed a study to evaluate the effect of combined single-dose diethylcarbamazine and albendazole on filarial and intestinal helminth infections and growth in children. Albendazole significantly enhanced the suppressive effect of diethylcarbamazine on the microfilaria of *Wuchereria bancrofti*.

Start Date: 6/1/97
End Date: 9/1/99
Status: Complete

Lymphatic Filariasis

NCID's Division of Parasitic Diseases completed a community-based program to evaluate the impact of salt fortified with iodine and with diethylcarbamazine for control of iodine deficiency and lymphatic filariasis. An interdisciplinary team is evaluating the feasibility of expanding this program.

Start Date: 6/1/96
End Date: 6/1/99
Status: Complete

Lymphatic Filariasis

NCID's Division of Parasitic Diseases completed a study using ultrasound, physical exams, and patient interviews to demonstrate that filariasis is an infection of children, and succeeded in locating adult worms in pre-adolescent children.

Start Date: 1/1/99
End Date: 6/1/00
Status: Complete

Lymphatic Filariasis

NCID's Division of Parasitic Diseases continued a study to evaluate the feasibility and effectiveness of treatment for filaria-associated elephantiasis.

Start Date: 6/1/95
Status: Ongoing

Lymphatic Filariasis

Through a cooperative agreement to evaluate the impact of a district-wide lymphatic filariasis elimination program, NCID's Division of Parasitic Diseases conducted a well-monitored and rigorously evaluated demonstration project to address important questions related to assessing the geographic distribution of lymphatic filariasis, monitoring the intervention, improving community compliance with annual drug treatment, and determining how long to continue annual drug treatment. The target population was the Commune of Leogane in Haiti. Activities to date have included developing an accurate map of the Leogane

Commune to evaluate spatial relationships of filarial infection and associations with ecologic, environmental, economic, and operational factors; assessing the distribution of lymphatic filariasis throughout the targeted area; creating a community intervention strategy designed to provide a model that can be used in a national filariasis elimination program; and developing health education materials and using these to increase community awareness of lymphatic filariasis and acceptance of the strategies available to interrupt transmission. In October 1999, more than 100,000 doses of antifilarial medication were administered by community health workers and volunteers.

Start Date: 10/1/99
Status: Ongoing

HONDURAS

Two CDC staff were assigned to Honduras, where one supported child survival efforts sponsored by USAID and another supported Honduran trainees in the Field Epidemiology Training Program (FETP) for Central America.

Epidemiology Training

The Post-Hurricane Reconstruction Project is a collaborative effort among CDC's EPO, PAHO, USAID, and the Association of Public Health Laboratories (APHL). Its purpose is to re-establish and sustain the capacity for assessing health status and for detecting and responding to outbreaks and changes in disease patterns in the Central American and Caribbean region affected by Hurricanes Georges and Mitch, including Honduras. To accomplish this objective, CDC promoted four strategies: improved disease surveillance; increased availability of trained epidemiologists and training of other health workers by these epidemiologists through the Field Epidemiology Training Program (FETP); increased laboratory capacity; and community-based prevention and control of disease. EPO's Division of International Health established a regional FETP that serves seven Central American/Caribbean countries: Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, the Dominican Republic, and Haiti. The first class of over 20 trainees is expected to graduate in 2001.

Start Date: 9/1/99
Status: Ongoing

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Honduras and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Management Training

In FY 99 and 00, participants from Honduras attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares partici-

pants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Natural Disasters

In late October and early November 1998, Hurricane Mitch caused widespread destruction throughout Central America. Hurricane Mitch was one of the strongest, most devastating hurricanes of the past 200 years. The region was battered for several days by high winds and torrential rains that caused enormous loss of life and catastrophic damage to the infrastructure of the countries affected. The American Red Cross (ARC) International Services oversaw health efforts in the hurricane-affected areas of Central America and asked NCEH to perform a needs assessment to assist in directing its efforts. NCEH conducted the needs assessment in 4 countries: El Salvador, Guatemala, Honduras and Nicaragua. Immediately following the hurricane, 52% of households in Honduras reported that their homes were completely destroyed. Fifty-five percent of households reported not having enough food to feed their families since the hurricane. In the month after the hurricane, 91% of Honduran households reported an illness. Following the hurricane, health care was needed in 61% of the households. The NCEH team identified substantial housing, health and food needs, which led to the ARC providing emergency health care to these areas until long-term reconstruction programs could be initiated throughout Central America. This collaboration helped improve the health conditions of Hondurans in the wake of the natural disaster they had experienced. In addition, the lessons NCEH learned about assessing the needs of internally displaced peoples can be used in the future by other international agencies.

ARC also implemented many water and sanitation interventions for affected communities. In December 1999, ARC requested that NCEH evaluate the health impact of these interventions in the four countries. In February 2000, a baseline evaluation of diarrheal disease, water and sanitation availability, knowledge and practices of appropriate hand washing behavior, and water quality was conducted in eight affected communities, prior to implementation of the interventions.

Also in Honduras, pesticide factories and storage places were destroyed and it was reported that 300-400 barrels of pesticides were released. An environmental exposure assessment and a population-based cross-sectional study were conducted in Istoca, a community of 440 households consisting of an estimated 3,100 residents to evaluate chemical contamination of potable water and soil and the extent of human exposure to chemicals as a result of extensive flooding associated with Hurricane Mitch. The chemicals of concern to the Honduran Ministry of Health were organophosphates, chlorinated pesticides, volatile organic compounds, and heavy metals.

Start Date: 1/1/99 (needs assessment); 12/1/99 (baseline evaluations); and 11/1/98 (pesticides investigation)
End Date: 2/1/99 (needs assessment); baseline evaluations are ongoing; and 6/30/99 (pesticides investigation)

HONDURAS - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Honduras for use in collaborative studies aimed at examining population genetics and molecular tax-

onomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

JAMAICA

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Jamaica and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

HIV/STD Prevention

NCID's Division of AIDS, STD, and TB Laboratory Research, in collaboration with the Jamaican Ministry of Health and the University of North Carolina, determined the etiology of genital ulcer disease (GUD) among patients attending public STD clinics. The relatively poor accuracy of clinical and locally available laboratory diagnoses warranted the need for syndromic management of genital ulcers, as well as intensified prevention efforts in Jamaica.

Start Date: 1/1/98
End Date: 12/1/99
Status: Complete

Injuries

NCIPC staff were part of an evaluation team that assessed systems in Jamaican health facilities for collecting data on injuries. Specific evaluation elements included: (1) the ability of staff to identify, capture, and correctly categorize persons presenting at A&Es (Accident and Emergency Departments) as a result of an injury-causing event; (2) the completeness of reporting, both in terms of the number reported and the quality of the relevant data (i.e. the elements that are relevant to the particular type of injury are correctly completed); (3) the ease of use of the system by its operators (including understanding the data elements, how to elicit required information, and logistics); and (4) analysis of the system's overall utility. The current injury surveillance system seems to be working fairly well in the five hospitals with computerized systems. Although there are some economic constraints, the Epidemiology Unit at the Jamaican Ministry of Health hopes to have a cross-island computerized system. It is anticipated that modifications will be made to the training of intake clerks and physicians, based on the evaluation team's recommendations.

Start Date: 12/1/99
End Date: 12/31/99
Status: Complete

Tuberculosis

PHPPO's Division of Laboratory Systems (DLS) is engaged in an international cross-training in TB laboratory science with an emphasis on the U.S. Mexico border. A CDC/Association of Public Health Laboratories (APHL) cooperative agreement involves training selected international participants in U.S. state public health laboratories (SPHL) and sending U.S. experts to provide specialized training in selected international laboratories. Both APHL and CDC select international laboratories that may benefit from training in a U.S. lab. Cross-training has been provided to staff from national laboratories in Botswana, Jamaica, and Zimbabwe.

Start Date: 1/1/97
Status: Ongoing

Violence

NCIPC's Division of Violence Prevention provided technical assistance to the Ministry of Health, Jamaica in first establishing an electronic system for surveillance of violent injury, expanding it to include all injuries, and finally evaluating its operation in seven hospitals in comparison with a previously existing system in fifteen institutions. NCIPC's Division of Unintentional Injury Prevention participated in the evaluation component. Collaboration continues with the analysis of the data being generated by the system for policy development and use in the formulation of proposals for submission to funding agencies. DVP also continues to provide support and advice for development and implementation of interventions.

Start Date: 6/1/98
Status: Ongoing

MEXICO

Two CDC staff were assigned to Mexico – one from NIOSH (focusing on occupational safety and health issues) and the other from NIP (supporting PAHO's measles elimination efforts).

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Mexican as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Birth Defects

The Neural Tube Defect Initiative includes joint binational work to enhance birth defect surveillance systems along the U.S.-Mexico border, collection of neural tube defect monitoring data in all the border states, and finalization of a research proposal on genetic and environmental risk factors for anencephaly and initiation of data collection in two Mexican border states (Tamaulipas and Baja California). Through a project of the Southwest Consortium for Environmental Research and Policy (SCERP), investigators at San Diego State University in California collaborated with the departments of health of Tijuana and Mexicali on studies of anencephaly and spina bifida. The initiative is also collecting data on folic acid supplementation programs and their relationship to neural tube defect rates as Mexico initiates folic acid fortification programs in selected regions of the country. During 1999 and 2000, NCEH measured serum folate and vitamin B12, urine creatinine, and blood and urine heavy metals in 215 samples from this ongoing study. In addition, the Environmental Health Working Group (EHWG) Advanced Training Program initiative has assigned an epidemiology resident to work on neural tube defect epidemiology in Baja California. PAHO, in partnership with CDC, has recruited an epidemiologist for the El Paso Field Office to work on environmental health issues, including neural tube defect surveillance and prevention.

Start Date: 9/1/97
Status: Ongoing

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Mexico) to address the global burden of disease

and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Capacity Development

A NIOSH occupational health physician completed a 3-year assignment to the PAHO representation office in Mexico City. The purpose of the assignment was to work with various Mexican governmental agencies and other partners (e.g., university programs) to help develop and expand capacity to address occupational safety and health problems in Mexico, with a particular focus on developing self-sustaining training programs. All activities promoted the public health framework of occupational health, cooperation and collaboration for creating sustainable training programs, practical application of knowledge for feasible solutions, preventive interventions as well as evaluations of problems, and active dissemination of knowledge and experiences by participants of the training programs. Activities included: (1) a collaborative project of developing formal training programs in occupational hygiene, (2) development of multistate regional plans and projects for promoting occupational health, (3) workshops and tutorials on workplace evaluations and interventions, and (4) externships of selected Mexican occupational health professionals at NIOSH and other occupational health centers. The ultimate objective of these efforts is capacity development to improve capabilities to address these issues in Mexico and to develop approaches that can be applied elsewhere in Latin America.

Start Date: 10/1/95
End Date: 9/1/00
Status: Complete

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Mexico for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 3/1/99
End Date: 5/1/00
Status: Complete

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Mexican and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

NCCDPHP's Division of Diabetes Translation provides partial funding for the United States/Mexico Binational Diabetes Collaborative Project Initiative, which involves four U.S. and six Mexican states along the border. The project will conduct a household diabetes surveillance study along the U.S.-Mexico border. Primary partners for the activity include CDC's state diabetes control programs, Mexico's Health Ministries, the U.S. Office of Minority Health, the Office of International and Refugee Health, and the PAHO Field Office in El Paso, Texas (through the U.S.-Mexico Border Health Association).

Start Date: 9/1/99
Status: Ongoing

Environmental Health

ATSDR provided technical support to the Director of Mexico's Institute of Health, Environment and Work. The Institute was commissioned by Mexico's Secretary of Health to evaluate and assess the possible risks to human and environmental health associated with the addition of an organic manganese compound – methyl cyclopentadienyl manganese tricarbonyl (MMT) – to gasoline. Data were provided to support the development of ATSDR's risk characterization.

Start Date: 8/1/99
End Date: 3/1/00
Status: Complete

Environmental Health

The Director General of the Mexican environmental health department invited ATSDR staff to Mexico to develop and present an environmental health education and training workshop to discuss environmental contamination, decontamination issues, and establishment of poison control centers. Five staff members from ATSDR conducted a workshop in Mexico City on hazardous substances for a group of 25 Mexican physicians. The workshop was part of a 2-week training session connected with an effort to start a regional poison information and treatment system in Mexico. It covered such topics as medical management of acute chemical exposures, responding to acute exposures, treating children who have been exposed, and educating physicians and the community about hazardous substances. Lecturers focused on clinical intervention strategies associated with contaminants of concern in Mexico, such as lead, cadmium, volatile organic compounds, arsenic, mercury, and methyl parathion and other pesticides.

Start Date: 9/28/99
End Date: 10/1/99
Status: Complete

Environmental Health

ATSDR has responsibility for emergency preparedness and response in the U.S.-Mexico border area and works with other federal, state, and local officials and industry representatives to achieve this mission. ATSDR participates in the U.S.-Mexico Joint Response Team and regularly attends team meetings.

Start Date: 9/1/00
Status: Ongoing

Epidemiology Training

CDC's Division of Reproductive Health conducted 1- to 2-week Reproductive Health Epidemiology (RHE) Training Workshops in China, Mexico, and Moldova, as well as short-term, targeted RHE training. When feasible, Epi Info training with RHE examples is included in the workshops and overviews. Follow-up activities include ongoing technical assistance in RHE proposal development and projects. In addition to the core RHE training manual, *An Epidemiologic Approach to Reproductive Health*, DRH is developing a series of topic-based training modules. These modules will cover such topics as the epidemiology of maternal health, infant health, reproductive tract infections, and reproductive health surveillance. The new modules will supplement the core training manual and provide applied information and practice to training participants.

Start Date: 1/1/85
Status: Ongoing

H. pylori

NCID's Division of Viral and Rickettsial Diseases continued collaboration with Stanford University, the National Cancer Institute in Mexico, and ECOSUR in Chiapas by providing pathology consultation for a study of Helicobacter pylori and preneoplastic gastric lesions.

Start Date: 10/1/97
Status: Ongoing

Health Statistics

NCHS is currently providing statistical support to the U.S.-Mexico Border Health Commission, a binational group appointed by the U.S. and Mexican governments to identify health issues within the border region and seek solutions to those problems. As part of this program, NCHS is assisting in the selection of key health objectives for the U.S. border region to serve as part of a Healthy People 2010 program for the border that will be known as the "Healthy Gente" program. NCHS has offered to work with the Secretariat of Health of Mexico and state health officials of the Mexican border states to develop appropriate health objectives for the Mexican side of the border as well. NCHS is also collaborating with the Mexican Secretariat of Health on a report on population, mortality, natality, morbidity, and health resources for the U.S.-Mexico border region for the years 1990-98. The report will summarize findings for the entire border region and provide detailed comparisons for pairs of sister cities and will include information on trends from 1990 to 1998 for selected variables. A bilingual version of the analysis will be published as an NCHS Series Report. The report will be designed to provide useful health and demographic information to the Border Health Commission.

Start Date: 6/1/98
Status: Ongoing

Health Surveillance

The Border Infectious Disease Surveillance (BIDS) Project is an active, binational surveillance system for infectious diseases along the U.S.-Mexico border. The project was developed in direct response to resolutions passed in 1997 by the U.S.-Mexico Border Health Association and the U.S. Council of State and Territorial Epidemiologists in support of improved surveillance efforts in this region. Participants include epidemiologists from the four U.S. and six Mexican border states, as well as representatives from CDC, the Mexican Secretariat of Health, and PAHO. The surveillance network currently includes 13 clinics and hospitals located in four regions along the border: Group 1, San Diego/Tijuana; Group 2, Nogales/Nogales; Group 3, Las Cruces/El Paso/Ciudad Juarez; and Group 4, McAllen/Reynosa. Surveillance is initially focused on syndromes consistent with hepatitis (A,B,C,D,E) and febrile exanthems (measles, rubella, dengue fever, typhus, Rocky Mountain spotted fever, and ehrlichiosis). However, the program is sufficiently flexible to accommodate other diseases in the future.

Start Date: 10/1/97
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Mexico, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

Hib

Staff from NCID's Division of Bacterial and Mycotic Diseases collaborated with representatives from the National Vaccination Council (Consejo Nacional de Vacunacion, or CONAVA) in Mexico's Ministry of Health to develop a survey. The survey was designed to determine (retrospectively) the incidence of pneumonia among those classified as broncho-pneumonic in Monterrey and Nuevo Leon states to assess the impact on pneumonia of the recently implemented universal

Haemophilus influenzae type b (Hib) conjugate vaccination program.

Start Date: 8/1/98
End Date: 6/1/99
Status: Complete

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Mexico and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Immunization

In 2000, NIP and the Mexican Ministry of Health began designing and implementing a project to evaluate the cost-effectiveness of delivering rubella vaccine in the context of measles elimination efforts. This information was intended to help other countries at similar stages of measles elimination make policy decisions about rubella control. Due to resource limitations, the pilot project was limited to a study of an intervention to vaccinate health care workers with the Measles-Rubella vaccine. NIP staff conducted prospective costing fieldwork in May 2000 in the state of Morelos, involving a team of observers.

Start Date: 9/1/00
Status: Ongoing

Immunization

An epidemiologist from the Adult Vaccine-Preventable Disease Branch (AVPDB) of NIP's Division of Epidemiology and Surveillance serves as a technical advisor on immunization issues for the U.S.-Mexico Binational Commission Working Group on Aging. The NIP staff member has consulted with and provided assistance to Ministry officials in writing and revising adult immunization recommendations.

Start Date: 8/1/99
Status: Ongoing

Immunization

In 1996, the Immunization Working Group of the Mexico-U.S. Binational Commission was established as one of four working groups for health. The purpose of the Immunization Working Group is to enhance coordination of disease surveillance activities, assure high immunization coverage in both countries, and hasten the elimination of vaccine-preventable diseases. NIP's Deputy Director co-chairs this Working Group with a high-level official from Mexico's Ministry of Health. The Mexico co-chair also serves as a liaison to the Advisory Committee for Immunization Practices (ACIP) in the United States. Two priority areas for the Immunization Working Group are measles and rubella. In addition to collaborating on projects to help control these diseases, the Working Group also has developed a bilingual course on vaccine-preventable diseases (held twice a year) and coordinates communication between state epidemiologists in the United States and Mexico to report rubella other vaccine-preventable diseases.

Start Date: 6/1/96
Status: Ongoing

Immunization

NIP is collaborating with Spain and the Immunization Working Group of the U.S.-Mexico Binational Commission in order to translate the

CDC manual entitled "*Epidemiology and Prevention of Vaccine-Preventable Diseases*" into Spanish for use by professionals in Mexico. This will initially be used by Mexico, but the plan is to expand the use to Spain and the rest of the Spanish-speaking countries in the Americas.

Start Date: 7/1/99
Status: Ongoing

Laboratory Diagnostics

In May and September 2000, staff from the NCEH Newborn Screening Quality Assurance Program provided consultation to the Mexico Social Security Administration and the Mexico Newborn Screening Program on laboratory issues, improving newborn screening using CDC quality control materials, and application of mass spectrometry in the analysis of new markers for inborn errors of metabolism.

Start Date: 5/1/00
End Date: 9/1/00
Status: Complete

Lead Poisoning

A pediatric blood lead assessment was conducted in the New Mexico-Chihuahua border region as part of a binational effort among CDC, EPA, the New Mexico Department of Health, the New Mexico Border Health office, and the Secretary of Health in Chihuahua, Mexico. NCEH staff used a portable blood lead analyzer to screen children aged 1-6 years for elevated blood lead levels and trained local health care workers and volunteers to use the portable blood lead technology. The overall mean blood lead level of the participants was 2.7ug/dL with a range from 0.7 to 19.8 ug/dL out of 937 blood lead levels collected. Participants in Grant and Luna Counties in New Mexico had significantly lower mean blood lead levels than participants in Palomas and Ascencion in Chihuahua.

Start Date:: 1/21/99
End Date: 1/28/99
Status: Complete

Lead Poisoning

Staff from NCEH's Division of Laboratory Sciences (DLS) assisted the Secretary of Health in Mexico City by verifying lead levels in children's blood samples. The samples were collected during an investigation of a point source of lead contamination in Torreon, Coahuila in which elevated blood lead levels were found. DLS provided laboratory results of 20 split samples and prepared a report for the central office of the Secretary of Health in Mexico City and the state-based office in Torreon.

Start Date: 6/1/99
End Date: 10/28/99
Status: Complete

Management Training

In FY 99 and 00, participants from Mexico attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Onchocerciasis

The Guatemala-based Onchocerciasis Elimination Program for the Americas (OEPA), administered by The Carter Center and PAHO, has helped develop and maintain national onchocerciasis programs in all six known disease-endemic countries in the Americas. The Program's staff embarked on "pre-certification" of elimination exercises for Colombia, Ecuador, Mexico, and Guatemala in 2000.

Start Date: 3/1/93
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation on a case of fever of unknown origin in Mexico.

Start Date: 11/1/98
End Date: 12/31/98
Status: Complete

Rubella and Congenital Rubella

In 1999, a cost-effectiveness study on rubella vaccination of health care workers in Morelos, Mexico was initiated and analysis is underway. This study is the first in a number of studies to collaborate with Mexico in order to control the incidence of congenital rubella syndrome. This study was initiated as a project under the Immunization Working Group of the Mexico-U.S. Binational Commission, which was established to enhance coordination of disease surveillance activities, assure high immunization coverage in both countries and hasten the elimination of vaccine-preventable diseases. Two priority areas for the Immunization Working Group are measles and rubella, including congenital rubella syndrome (CRS).

Start Date: 9/1/99
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health (OSH) continued a partnership with Mexico as part of the U.S.-Mexico Binational Commission. The Commission's Smoking Prevention Core Group, co-chaired by the OSH Director, continued to explore collaborative activities to address public and professional education, research and evaluation, policy analysis and coordination, and increased bilateral coordination. Members of both delegations and international experts participated in the first Seminar on Tobacco Abuse in Mexico in August 1999, which addressed research, prevention, legislation, treatment and training.

Start Date: 3/1/96
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Mexico. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; pro-

duced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

Tobacco Control

NCCDPHP's Office on Smoking and Health – in collaboration with the General Directorate of Epidemiology in the Mexican Secretariat of Health, the Chihuahua State Department of Health Services, the Ciudad Juárez Department of Health Services, the Texas Department of Health, and the New Mexico Department of Health – conducted a survey in early 1999 to measure the percentage of retailers willing to sell tobacco to minors in three border cities (Ciudad Juárez, Chihuahua (Mexico); El Paso, Texas; and Las Cruces, New Mexico). The survey was the first simultaneous binational survey of minors' access to tobacco. The findings were reported in the CDC *Morbidity and Mortality Weekly Report* (*MMWR*), May 21, 1999, vol. 48.

Start Date: 1/1/99
End Date: 2/1/99
Status: Complete

Tuberculosis

PHPPO's Division of Laboratory Systems (DLS) is engaged in an international cross-training in TB laboratory science with an emphasis on the U.S. Mexico border. A CDC/Association of Public Health Laboratories (APHL) cooperative agreement involves training selected international participants in U.S. state public health laboratories (SPHL) and sending U.S. experts to provide specialized training in selected international laboratories. Both APHL and CDC select international laboratories that may benefit from training in a U.S. lab. Cross-training has been provided to staff from national laboratories in Botswana, Jamaica, and Zimbabwe. This cross-training process has also been combined with the CDC/APHL U.S./Mexico Border TB Laboratorian Binational Training Project to allow flexibility to address training needs either in Mexico or other countries. In previous years, the project with Mexico involved training partnerships between laboratorians in the United States and Mexico border state TB laboratories. Each laboratory partnership developed objectives for improving quality and services in each Mexican state laboratory. Next steps may involve collaboration with SSA, Mexico's national laboratory institute (Instituto Nacional Diagnostico y Referencia Epidemiologicos, or INDRE), NCHSTP's Division of TB Elimination, and APHL to focus on combined epidemiological studies, operational research, and laboratory infrastructure in one or more Mexican states.

Start Date: 1/1/97
Status: Ongoing

Tuberculosis

NCHSTP's Division of TB Elimination (DTBE) has redoubled its efforts to control and prevent TB along the U.S.-Mexico border, working closely with the four border states and Mexican counterparts. In addition to playing an active role in the development of an *MMWR* statement on TB control along the U.S.-Mexico border, Division staff are actively participating in the Ten Against TB project, which involves collaboration between the four U.S. and six Mexican border states and the Mexican and U.S. governments. During 1999, discussions took place between DTBE staff and Mexican TB program officials and a review of border projects was planned for October 2000. In addition, in collaboration with the directors of the Mexico TB program, projects to further evaluate the surveillance system, conduct drug resistance surveillance in Mexico's border states, and establish an operations research collaborative site in a northern Mexican state have been developed and funded by USAID.

Start Date: 1/1/98
Status: Ongoing

Tuberculosis

Direct acid fast bacilli (AFB) microscopy is the primary diagnostic tool for identifying cases of TB and monitoring treatment in most countries. CDC is assisting Mexico's national laboratory institute, Instituto Nacional Diagnostico y Referencia Epidemiologicos (INDRE), to improve its national external quality assessment (EQA) program for AFB microscopy performed in 600 state and local laboratories in the SSA system. This collaboration involves consultation on EQA methods and a series of studies comparing proficiency testing (PT) and rechecking as methods to assess the quality of AFB microscopy in Mexico. Although the rechecking programs have significant problems, those who participate in a rechecking program had higher scores on PT. The next phase of the studies is to improve the rechecking program using a statistically representative sample of slides selected from each laboratory. This sampling method, called Lot Quality Assurance Sampling (LQAS), is proposed in preliminary recommendations by an international workgroup co-sponsored by WHO, IAUTLD, CDC, and APHL. The LQAS method of rechecking will be implemented in two Mexican states and the results will be compared with other standard rechecking programs. At the end of this study, the cumulative results and lessons learned will be used to propose an adequate quality control program for AFB microscopy in Mexico and used as a model for other countries.

Start Date: 11/1/98
Status: Ongoing

Urban Health

Mexico City is one of the most air-polluted cities in the world. Much of this pollution is due to elevated levels of volatile organic compounds – a class of chemicals with known carcinogenic and central nervous system effects. It is widely suspected that much of this pollution is due to the transportation of workers from outlying areas into Mexico City and that much of the suspected exposure occurs during the commute. NCEH scientists collaborated with investigators from PAHO and the Mexican Ministry of Health to evaluate exposure of commuters in Mexico City to volatile organic compounds (VOCs), including benzene, toluene, and methyl tert-butyl ether. Significant increases in the levels of a number of gasoline-related volatile compounds were found in the blood of commuters who participated in the study. These findings point to the need for further efforts to reduce pollution in Mexico City and similar cities with heavy vehicular traffic in order to protect citizens from elevated exposure to potentially toxic chemicals. Study findings could lead to regulations concerning automobile use and other forms of transportation in Mexico City. The identification of commuting as a source of exposure may give the Mexican government additional information to help it promote cleaner alternatives to gasoline combustion engines. In addition, by helping to understand the role of automobile use in air pollution in urban areas, this work also can contribute to clean air regulations in the United States.

Start Date: 6/7/96
Status: Ongoing

MEXICO - U.S.-BASED COLLABORATION(S)

Injuries

The National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS), which was funded by NIOSH under the Childhood Agricultural Injury Prevention Initiative, implemented development of the North American Guidelines for Children's Agricultural Tasks (NAGCAT). This was an outgrowth of a recommendation of the National Committee for Childhood Agricultural Injury Prevention, which called for the establishment of work guidelines for children in agriculture as a foundation on which to build other safety strategies. The NAGCATs were developed to assist parents in assigning safe and appropriate farm jobs for children 7 to 16 years of age. A project team

from the United States, Canada, and Mexico used a consensus development process to generate guidelines. Extensive reviews of existing literature were conducted and discussions with groups of farm parents and teen workers were convened. Multi-disciplinary specialists provided feedback on the content's accuracy and a job hazard analysis framework was used to document variables associated with a range of agricultural jobs. The result was the release of 62 specific NAGCATs in June1999, along with a 400-page professional resource manual for use by injury prevention specialists. Some of the NAGCATs also were translated into Spanish. The current emphasis is on disseminating the information, but the NAGCATs will continue to be assessed and revised based on customer feedback.

Start Date: 1/10/98
Status: Ongoing

NICARAGUA

Two EPO public health advisors were assigned to Nicaragua, where they supported the Nicaraguan trainees of the Field Epidemiology Training Program (FETP) for Central America.

Epidemiology Training

The Post-Hurricane Reconstruction Project is a collaborative effort among CDC's EPO, PAHO, USAID, and the Association of Public Health Laboratories (APHL). Its purpose is to re-establish and sustain the capacity for assessing health status and for detecting and responding to outbreaks and changes in disease patterns in the Central American and Caribbean region affected by Hurricanes Georges and Mitch, including Nicaragua. To accomplish this objective, CDC promoted four strategies: improved disease surveillance; increased availability of trained epidemiologists and training of other health workers by these epidemiologists through the Field Epidemiology Training Program (FETP); increased laboratory capacity; and community-based prevention and control of disease. EPO's Division of International Health established a regional FETP that serves seven Central American/Caribbean countries: Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, the Dominican Republic, and Haiti. The first class of over 20 trainees is expected to graduate in 2001.

Start Date: 9/1/99
Status: Ongoing

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Nicaragua and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Management Training

The CARE/CDC Health Initiative (CCHI) began in 1997 with a grant from the Woodruff Foundation to develop models for collaboration between CDC and CARE country offices. In late 1999, CCHI approved a proposal from CARE's Nicaragua office and the CDC's Sustainable Management Development Program to develop a cadre of public health management trainers in Nicaragua. These trainers meet the ongoing training needs of CARE staff and their counterparts in the Ministry of Health (MOH) and other NGOs.

Start Date: 3/1/97
Status: Ongoing

Management Training

In FY 99 and 00, participants from Nicaragua attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

With NCEH support, MOST (a contractor for USAID) is conducting a multisite comparison study in vitamin A methods. Approximately 500 specimens were collected in Managua as part of a national nutrition survey and distributed to the participating labs for assessment of optimal methods for vitamin A analysis.

Start Date: 5/1/00
Status: Ongoing

Natural Disasters

In late October and early November 1998, Hurricane Mitch caused widespread destruction throughout Central America. Hurricane Mitch was one of the strongest, most devastating hurricanes of the past 200 years. The region was battered for several days by high winds and torrential rains that caused enormous loss of life and catastrophic damage to the infrastructure of the countries affected. The American Red Cross (ARC) International Services oversaw health efforts in the hurricane-affected areas of Central America and asked NCEH to perform a needs assessment to assist in directing its efforts. NCEH conducted the needs assessment in 4 countries: El Salvador, Guatemala, Honduras and Nicaragua. Immediately following the hurricane, 78% of households in Nicaragua reported that their homes were completely destroyed. Seventy-three percent of households reported not having enough food to feed their families since the hurricane. In the month after the hurricane, health care was needed in 70% of the households. The NCEH team identified substantial housing, health and food needs, which led to the ARC providing emergency health care to these areas until long-term reconstruction programs could be initiated throughout Central America. This collaboration helped improve the health conditions of Nicaraguans in the wake of the natural disaster they had experienced. In addition, the lessons NCEH learned about assessing the needs of internally displaced peoples can be used in the future by other international agencies.

ARC also implemented many water and sanitation interventions for affected communities. In December 1999, ARC requested that NCEH evaluate the health impact of these interventions in the four countries. In February 2000, a baseline evaluation of diarrheal disease, water and sanitation availability, knowledge and practices of appropriate hand washing behavior, and water quality was conducted in eight affected communities, prior to implementation of the interventions.

Start Date: 1/1/99 (needs assessment) and 12/1/99 (baseline evaluations)
End Date: 2/1/99 (needs assessment) and baseline evaluations are ongoing

Violence

NCIPC staff helped Nicaraguan colleagues develop, field-test, and evaluate a rapid response violent injury surveillance system to track homicides, suicides, mine/UXO injuries, and unintentional firearm injuries in locations that have experienced armed conflict recently or continue to experience conflict today.

Start Date: 4/1/00
Status: Ongoing

PANAMA

Ergonomics

The U.S. Coast Guard Advisor for the Panama Canal Commission contacted NIOSH regarding musculoskeletal injuries experienced by line handlers and deck hands during cable- and line-handling operations. Two NIOSH staff members traveled to Panama to analyze some physically strenuous activities performed by these workers and ultimately design ergonomic interventions that will help reduce the injuries attributed to these tasks. NIOSH staff also conducted two half-day training sessions with the workers to familiarize them with the ergonomic risk factors associated with their jobs. Such sessions have proven useful in the past in sensitizing both workers and managers about common practices that may affect their safety and health. A web site was developed to summarize the team's observations and recommendations about cable- and rope-pulling, boarding ships, walkway design, and wire rope usage.

Start Date: 11/1/98
End Date: 12/1/98
Status: Complete

Hantavirus

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support on a case of hantavirus pulmonary syndrome in Panama.

Start Date: 6/1/00
End Date: 8/31/00
Status: Complete

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Panama and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

PANAMA - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Panama for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

PARAGUAY

Dengue

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support for cases for dengue hemorrhagic fever in Paraguay.

Start Date: 4/1/00
End Date: 4/30/00
Status: Complete

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Paraguay and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Influenza

NCID's Division of Viral and Rickettsial Diseases supported the improvement of the influenza laboratory surveillance system through the provision of reagents, data, and technical assistance to the Central Laboratory for Public Health in Paraguay.

Start Date: 1/1/96
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation for two cases of granulomatous lymphadenitis in Paraguay.

Start Date: 5/1/99
End Date: 7/31/99
Status: Complete

PERU

An NCID medical officer was assigned to the U.S. Navy Medical Research Center in Lima, Peru.

Cryptosporidiosis

NCID's Division of Parasitic Diseases, in collaboration with Johns Hopkins University School of Hygiene and Public Health and the Asocacion Benefica PRISMA, examined existing serum and stool specimens from a pediatric cohort study of diarrheal illness in Peru. Division staff performed serologic testing for antibodies to *Cryptosporidium* and genotyped *Cryptosporidium* oocysts isolated from stool. NCID staff are currently analyzing the resulting data and plan to perform subgenotyping on stool isolates.

Start Date: 7/1/99
Status: Ongoing

Cryptosporidiosis

NCID's Division of Parasitic Diseases, in collaboration with Johns Hopkins University School of Hygiene and Public Health and the Asocacion Benefica PRISMA, has begun interviewing and collecting specimens from patients with HIV/AIDS in three Lima hospitals. The major objectives of this study are to identify risk factors associated with specific genotypes and species of *Cryptosporidium* and microsporidia and to obtain appropriate specimens to use in the development of a continuous culture system for the most important species of microsporidia, *E. bieneusi*.

Start Date: 9/1/00
Status: Ongoing

Cysticercosis

NCID's Division of Parasitic Diseases, in collaboration with the Departamento de Microbiologica, Universidad Peruana Cayetano Heredia, Instituto de Medicina Trapical de San Martin, John Hopkins University, and the Instituto de Ciencias Neurologicas in Lima, is developing control strategies for human and pig cysticercosis. Scientific exchange of knowledge and reagents for serodiagnosis of cysticercosis is continuing.

Start Date: 5/1/90
Status: Ongoing

Environmental Health

With funds from the CARE/CDC Health Initiative (CCHI), NCEH has partnered with CARE Peru to implement an environmental health project designed to improve local environmental health conditions in urban and peri-urban communities in the District of San Juan de Lurigancho in Lima and the human settlement, Manuel Cardozo, in Iquitos. One of the objectives of this project is to strengthen the capacity of the municipalities and the local public and private organizations to resolve urban environmental health problems. This activity has resulted in the establishement of an Inter-institutional Committee for the Enhancement of Environmental Health (CIMSA) in San Juan de Lurigancho and Cardozo. Recent efforts have included increasing the membership of the San Juan de Lurigancho CIMSA with 3 new members: Radio Canto Grande, the Huascar Work-group, and the "Vara de Oro" Market. Training efforts have included adult education workshops for technical training groups utilizing Hazard Analysis Critical Control Points (HACCP) methodologies in community markets.

Start Date: 10/1/99
Status: Ongoing

Environmental Health

In July 2000, the International Finance Corporation (IFC) asked CDC to provide technical assistance on public health issues related to a spill of 151 kg of elemental mercury that occurred on June 2, 2000, as the mercury was being transported through three Peruvian towns. CDC was asked to prepare a chronology of health-related activities that followed the spill and make recommendations for public health actions. Two CDC staff members traveled to Cajamarca, Peru to conduct the assessment. They interviewed eyewitnesses to the spill itself and to the subsequent collection of the mercury and obtained reports and documents related to the event. They recommended steps to identify and prevent complications from mercury poisoning, especially among vulnerable populations such as women of reproductive age, children of women exposed while pregnant, and patients who underwent chelation. The team also recommended surveys, other follow-up activities, clinical and laboratory practices to continue monitoring the spill's effects, and practices to prevent future adverse health effects.

Start Date: 7/1/00
End Date: 7/31/00
Status: Complete

Epidemiology Training

The purpose of the 40-hour Environmental Epidemiology Training Course was to build local capacity within Latin American countries to investigate public health problems involving environmental factors by applying standardized epidemiologic methods. The goal was to create a set of core teaching modules on epidemiologic concepts and a compendium of international environmental public health case studies for future adaptation into a distance learning tool. The course was first piloted in Lima, Peru for 55 professionals in the Directorate General for Environmental Health (part of the Ministry of Health in Peru) in March 2000. A background syllabus was prepared for all

of the didactic sessions and to present the case studies; this material was translated into Spanish and presented as a bound manual for each participant. Didactic sessions were written and presented in English and interpreted simultaneously by a professional interpreter.

Start Date: 7/1/99
Status: Ongoing

Hepatitis

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation on a case of hepatic failure and subsequent death of a U.S. citizen in Peru.

Start Date: 7/1/99
End Date: 9/30/99
Status: Complete

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Peru and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Lead Poisoning

NCEH continued an assessment of lead pollution and pediatric lead poisoning in Lima Province and Callao Constitutional Province, Peru. The objective was to apportion primary source(s) of lead pollution and pediatric lead poisonings among children aged 2-7 in the two provinces. The design was source characterization of pediatric blood lead samples and comparison to local lead sources (e.g., mining operations, petro, pottery) using isotope ratio methodology. The main outcome measures were isotopic ratios of non-radiogenic lead isotopes for children's blood and non-biological samples (e.g., mining products, petro). Lead isotope ratios helped determine the sources of lead exposure. This project has been completed and a publication is in preparation.

Start Date: 3/7/99
End Date: 9/30/99
Status: Complete

Malaria

NCID's Division of Parasitic Diseases analyzed bed net samples for deltamethrin content and evaluated the quality of commercially treated deltamethrin bed nets for the Peruvian Ministry of Health.

Start Date: 4/1/98
End Date: 11/1/98
Status: Complete

Mercury Poisoning

An uncontrolled spill of mercury used in processing gold was reported in early May 2000. CDC was asked to evaluate the potential exposures and adverse health outcomes from the covert sampling and "home processing" activities of local residents. It was believed that many individuals were heating the scavenged mercury to recover gold or other precious metals, resulting in high concentrations of elemental mercury vapor in homes. A systematic evaluation of mercury exposure was conducted in partnership with the Division of Environmental Hazards and Health Effects (HHE) via collection

and measurement of urine for mercury analysis. Specimens have been analyzed for mercury and reported to the HHE Project Officer.

Start Date:: 6/1/00
End Date: 6/30/00
Status: Complete

Natural Disasters

At PAHO's request, a workshop on reporting the health effects from El Niño was conducted for personnel from the Ministry of Health, selected UN organizations, and NGOs. Similar workshops were conducted in Bolivia (October 1998), Ecuador (September 1998), and Venezuela (September 1998). The objective of the workshops was to produce a standardized reporting format for El Niño-affected countries in South America so that a regional document could be easily generated by PAHO. As a result of the workshops, the terms of El Niño reports were standardized.

Start Date: 10/1/98
End Date: 10/31/98
Status: Complete

Occupational Health

NIOSH conducted a study to demonstrate that real-time, on-site blood lead testing in occupational settings in a developing country can be implemented and need not depend on a blood lead laboratory or transportation infrastructure. The data collected in this study will not only provide valuable monitoring data to the participating company, but also will test the LeadCare™ instrument over its full clinical operating range. This will be the first known study of occupational lead workers using the new portable blood lead instrument in a foreign country. This project also provided an opportunity to teach proper blood collection techniques and to train public health officials (Ministry of Health delegates and private industry practitioners) to conduct blood lead analysis using the LeadCare™ instrument.

Start Date: 5/1/00
Status: Ongoing

Sporotrichosis

NCID's Division of Bacterial and Mycotic Diseases conducted a study of risk factors for sporotrichosis in a hyperendemic area for the disease in Abancay, Peru, in collaboration with the Peruvian National Institute of Health.

Start Date: 9/1/99
End Date: 10/31/99
Status: Complete

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Peru. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

ST. KITTS AND NEVIS

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in St. Kitts and Nevis and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

ST. LUCIA

Management Training

In FY 99 and 00, participants from St. Lucia attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

SURINAME

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Suriname and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000,

including Suriname. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

TRINIDAD AND TOBAGO

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Trinidad and Tobago and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Lead Poisoning

Approximately 5 years ago, a joint PAHO/CDC project investigated blood lead levels among people who lived in an area in Port-of-Spain, Trinidad where there were high levels of lead due to a local battery recycling plant. Since then, some of the people in the community have moved away from the area and U.S. EPA has worked with the remaining community to implement lead abatement interventions. In May 1999, the Ministry of Health of Trinidad and Tobago requested assistance from CDC to conduct lead screening follow-up for the 200 children who are still living in the area. CDC staff provided training for local health professionals in using portable blood lead analyzers and helped oversee data collection.

Start Date: 6/6/99
End Date: 6/12/99
Status: Complete

Management Training

In FY 99 and 00, participants from Trinidad and Tobago attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and aca-

demic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Trinidad and Tobago. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

URUGUAY

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Uruguay and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Uruguayan as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Uruguay and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to

ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

VENEZUELA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Venezuela and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

HIV

PHPPO's Model Performance Evaluation Program (MPEP) for retroviral and AIDS-related testing has collaborated with PAHO to enroll national reference laboratories in Venezuela and other Latin American and Caribbean countries in the MPEP for HIV-1 antibody testing quality assurance. By monitoring the performance of laboratories throughout the region, PAHO officials can implement the appropriate intervention strategies to ensure high quality laboratory testing for HIV-1 in their member countries. In addition, by participating in the MPEP, PAHO officials are encouraging the national reference laboratories in each country to establish their own quality assurance programs for HIV-1 testing, thus building local capacity by enabling each national reference laboratory to serve other laboratories in the same country.

Start Date: Ongoing in various countries since June 1989.

Management Training

In FY 99 and 00, participants from Venezuela attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their ana-

lytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Venezuela, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Mine Studies

A series of case studies is being conducted by NIOSH investigators at the Spokane Research Laboratory to characterize workers' exposures to mercury during refining at gold and silver mines. The ultimate goal of the studies is to either develop new or identify existing controls for mercury exposure. Minimizing exposure to mercury is crucial due to the serious health effects associated with overexposure. Quite often, in underdeveloped countries the required resources for reducing occupational exposure to various chemical agents are not readily available or are not economically feasible. NIOSH researchers conducted a comprehensive survey to determine whether overexposure to mercury exists in El Callao, Venezuela.

Start Date: 7/1/98
End Date: 7/1/00
Status: Complete

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including China. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)
Status: Ongoing

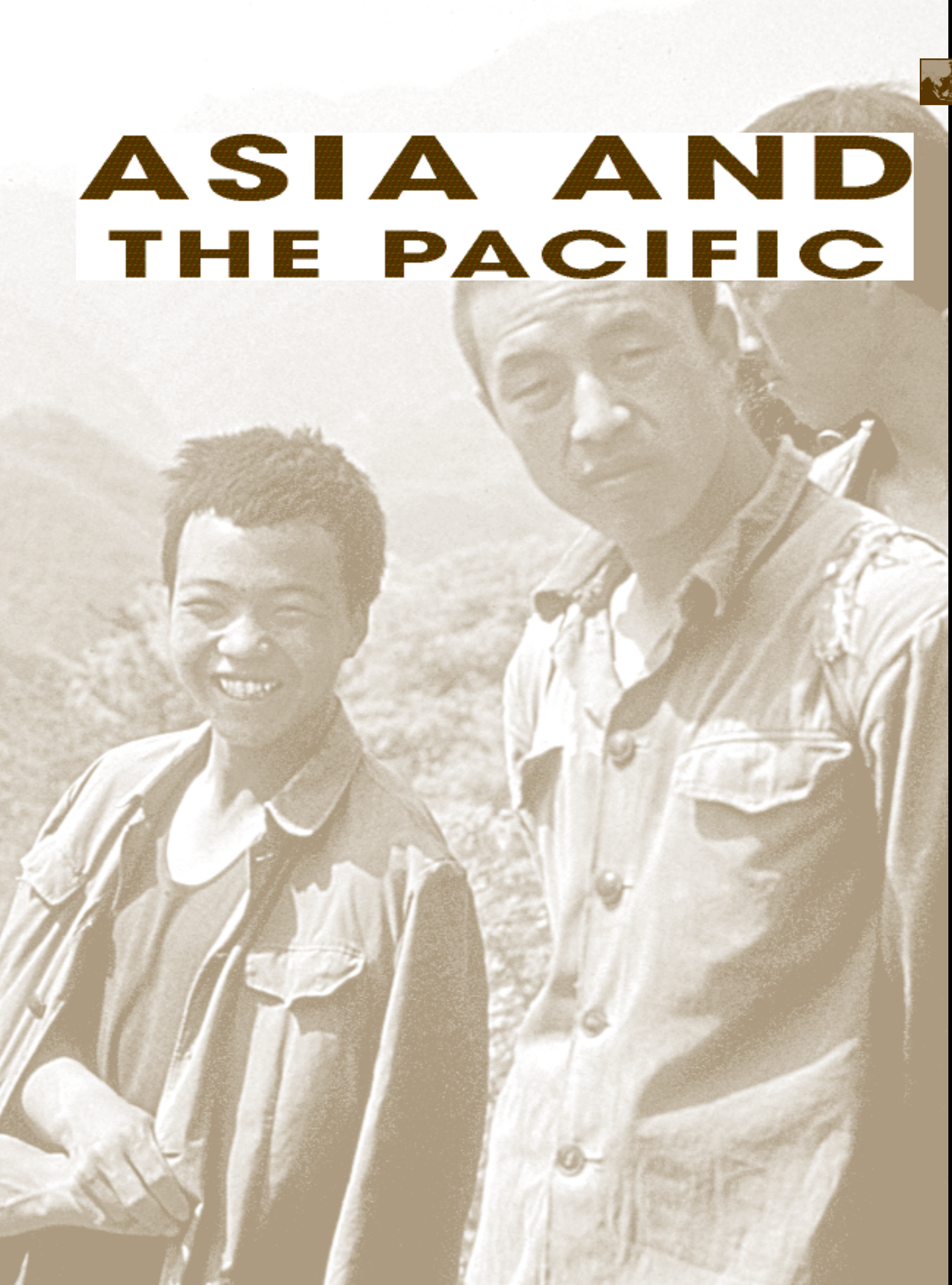
VENEZUELA - U.S.-BASED COLLABORATION(S)

Chagas Disease

NCID's Division of Parasitic Diseases received field-collected triatomine specimens from Venezuela for use in collaborative studies aimed at examining population genetics and molecular taxonomy of these insects, relating to reinfestation of homes previously treated with insecticides.

Start Date: 1/1/95
Status: Ongoing

ASIA AND THE PACIFIC



THE WORK OF CDC IN ASIA AND THE PACIFIC

Only one region of the world includes more than one country with a population over 100 million. That region is the Asia/Pacific region, and it is home to six nations with populations that exceed that size: China (the world's largest), India, Indonesia, Pakistan, Japan, and Bangladesh. India and China alone contribute more than a third of the world's total population growth.

Although the region includes countries with high standards of living and high life expectancy (like Japan), it is largely a region of developing countries. Seventy percent of the developing world's population lives in Asia.

Within the region, noncommunicable diseases account for the majority of deaths and of disability-adjusted life years (DALYs), according to the World Health Organization's World Health Report 2000. However, the toll of communicable diseases – in terms of both mortality and DALYs – is much higher in Southeast Asia than in the countries of the Western Pacific, in part because of the region's struggle against HIV/AIDS.

CDC's five global health strategies are well-represented throughout the region, reflecting an effort – in concert with Asian countries and other global health partners – to address the emerging importance of chronic disease (particularly the toll of tobacco) and injury, while maintaining an emphasis on communicable diseases and reproductive health.

Examples of CDC's global health activities in the Asia/Pacific region in each of five strategic areas are provided below.

Public Health Surveillance and Response

CDC staff have helped a number of Asian countries to develop or enhance surveillance systems. For example, the National Immunization Program (NIP) has worked with nine Asian countries to track cases of polio as part of a global effort to eradicate the disease. In the South Asian nations of Bangladesh, India, Pakistan, and Nepal, NIP staff are providing technical assistance as these countries upgrade measles surveillance systems, which in turn will contribute to targeted measles control programs. Similar efforts were underway in China and in the Philippines.

Public Health Infrastructure and Capacity-Building

Many Asian economies have grown at a rapid pace in the last several decades, but occupational health and safety have not always kept pace with industrial growth. In response, staff from CDC's National Institute for Occupational Safety and Health (NIOSH) have provided intensive training for their South Korean counterparts at NIOSH laboratories in the United States to help build South Korea's capacity to respond to occupational safety and health issues. NIOSH also has offered workshops on ergonomic issues in Vietnam. In China, NIOSH staff are working with Chinese occupational safety and health researchers to assess the timing of specific health effects linked to the coal mining industry. In the Philippines, staff from CDC's Public Health Practice Program Office (PHPPO) have worked closely with the country's Field Management Training Program (FMTP) and Sustainable Management Development Program (SMDP) to strengthen public health management capacity at the local level. For example, FMTP participants from the municipality of Minalabac in the Philippines recently put their training to work by researching and designing a much-needed national rabies prevention program.

Disease and Injury Prevention and Control

Tobacco threatens the health of people around the world, but China's large population and relatively high proportion of smokers (over 60% of adult men) means that China will absorb a disproportionate share of tobacco's toll in the decades to come. Staff from CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) have worked with colleagues in China as part of a joint WHO/UNICEF project on youth and tobacco. In China, two sets of surveys – the Global Youth Tobacco Survey (GYTS) and the Global School Personnel Survey (GSPS) – will help China and other participating countries understand and respond to tobacco use among youth, helping to avert a future epidemic in China and throughout the region. In India and Thailand, CDC's National Center for HIV, STD, and TB Prevention (NCHSTP) has supported disease prevention initiatives aimed at these commonly overlapping diseases. In India, where between 3 and 5 million people are infected with HIV, the Center's Global AIDS Program (GAP) supports voluntary HIV/AIDS counseling and testing programs, surveillance, and case management of those who succumb to opportunistic infections. In Thailand, Center staff have worked with the Thai Ministry of Health on HIV/AIDS, STD, and TB prevention activities for over a decade, emphasizing disease prevention through programs that emphasize populations at particular risk, such as adolescents, drug users, and commercial sex workers.

Applied Research for Effective Health Policies

Too often, the mere presence of an effective treatment or innovative strategy is not enough to ensure widespread implementation. This is the case with TB, which boasts a strategy for diagnosing and managing the disease with a 90 percent cure rate among those treated. Despite this potential success rate, few developing countries – where the TB burden is largest – have effective programs in place. To help narrow the gap between knowledge and practice, CDC's National Center for HIV, STD, and TB Prevention (NCHSTP) offered training workshops in Vietnam that also featured mentoring and funding for Vietnamese staff to encourage national TB-related research projects. Research sparked by the project included identification of risk factors for treatment failure and for default, reasons for patient delay in seeking initial TB treatment, and knowledge and beliefs about HIV and HIV testing and counseling among TB patients. These types of research initiatives will help both Vietnam and other countries address the continuing challenge posed by TB – and in so doing, also will create a new cadre of trained researchers ready to apply their skills and curiosity to both old and new diseases.

Exchange of Information and Lessons Learned

Injuries – and the morbidity and mortality they cause – are a relatively new surveillance arena. CDC's National Center for Health Statistics (NCHS) has worked with Australia, New Zealand, and Japan on international collaborative efforts designed to improve the collection and analysis of injury data. One of these collaborative efforts addresses a problem common to all surveillance systems – standardizing definitions so that comparisons among countries can be meaningful. These information exchanges allow epidemiologists and other researchers to share insights and help build consensus about the causes of – and responses to – disease and injury.

AUSTRALIA

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including Australia, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Australian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Australian and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

The International Federation of Clinical Chemistry (IFCC) Working Group for the Standardization of Hemoglobin A1c (HbA1c) includes members from the United States, Belgium, Sweden, Australia, Germany, and Japan. The IFCC Working Group has built a network of laboratories to improve measurement of HbA1c, which is a marker of glucose control among people with diabetes. In 1999 and 2000, the Working Group addressed two reference methods for measurement of HbA1c.

Since CDC houses the only network laboratory in the United States that has been approved by the IFCC to run both reference methods, NCEH has contributed to studies designed to assess and compare the reference methods. The first of these studies, known as Florence II, determined the feasibility of standardizing routine clinical assays for HbA1c. Another study, called the Malmoe reference range study, was designed to study the level of HbA1c and the biological variability of percent HbA1c in normal healthy adults using samples provided from the Denmark Health Study. The results indicated that the reference range is lower if measured by the highly specific IFCC reference methods and that the biological variability in non-diabetic adults is just slightly less if measured by the IFCC reference methods rather than by ion exchange chromatography. Additional reference range studies are planned to build on this initial work.

Start Date: 12/1/99
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Australian and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Encephalitis

Staff from NCID's Division of Viral and Rickettsial Diseeases provided pathology consultation on a case of encephalitis.

Start Date: 5/1/99
End Date: 9/1/99
Status: Complete

Epidemiology Training

Public health professionals from Australia were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Australian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

As part of an international quality assurance program, NCEH Division of Laboratory Sciences staff conducted evaluations for HIV antibody testing on dried blood spots from laboratories in 9 countries, including Australia.

Start Date: Ongoing in various countries since January 1988.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Australia, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Mine Studies

Information about a NIOSH research study conducted in cooperation with the Twentymile Coal Company at the Foidel Creek Mine near Steamboat Springs, Colorado was provided to a senior mining engineer with Australian Mining Consultants in Melbourne, Australia. The organization had requested information about backfill

mix design, placement methods, sampling and testing procedures, and ground stability concerns for a similar backfill application at the Homestead Colliery in Australia. NIOSH also provided a copy of a paper summarizing the Foidel Creek study, entitled "Stability of Backfilled Cross-Panel Entries During Longwall Mining," which was presented at the 17th International Conference on Ground Control in Mining.

Start Date: 1/1/99
End Date: 1/31/99
Status: Complete

Occupational Hazards

A NIOSH staff member traveled to Germany to participate in a meeting of the International Electrotechnical Commission (IEC) TC31 Working Group 8 Risk of Ignition by Optical Equipment and attend plant safety sessions of the INTERKAMA International Society for Measurement and Control (ISA) Tech Conference. The purpose of the visit was to collaborate on new safety standards for using lasers in hazardous locations. The new European safety standard spotlights NIOSH research of laser safety in hazardous locations. A new CEN standard for coal mines limits optical powers in areas where firedamp may be present. The limits were arrived at after considering experimental evidence of laser ignition thresholds produced by NIOSH (U.S.), PTB (Germany) and BHP (Australia) laboratories. Results among the three laboratories were in close agreement. The new standard excludes situations where layers of coal dust may be ignited because of a lack of published research, but the ignition of coal dust layers is being addressed under phase II of the current NIOSH research project.

Start Date: 10/1/99
Status: Ongoing

Occupational Injuries

NIOSH staff participated in an international collaborative study of fatal occupational injuries in three countries: the United States, Australia, and New Zealand. The project includes a comparison of fatal work injury data in the three countries for a common time period. To overcome the impediment of differences in the three data systems, the same inclusion and exclusion criteria were applied to the data from each country to provide comparable data sets for analysis. Similarities and differences in fatal injury rates and causes were examined and compared by employment and demographic characteristics. Detailed analyses also described mechanisms of injury, examined coding differences in the three countries, and examined high-risk worker groups. Results allow NIOSH to generate hypotheses regarding occupational safety issues, such as factors contributing to lower injury risk in the same occupations in one country but not others, and to identify possible directions for prevention.

Start Date: 1/1/98
Status: Ongoing

Quality Assurance Audit at Manufacturing Sites

NIOSH performed quality assurance site audits of respirator manufacturing facilities as required by Title 42, CFR, Part 84.43(b). Audits were conducted at Rayphil Blastmaster, Christchurch, New Zealand in April 2000 and at Safety Equipment of Australia (SEA), Warriewood, Australia in May 2000. Both of these respirator manufacturers produce NIOSH certified respirators.

Start Date: 4/1/00
End Date: 5/1/00
Status: Complete

Respirator Protection

In August 2000, a representative of the Australian Coal Board in New South Wales met with NIOSH Division of Respiratory Disease Studies staff to discuss self-contained self-rescuer (SCSR) issues as related to proposed regulatory approval and use changes in Australian mines.

Start Date: 8/1/00
End Date: 8/31/00
Status: Ongoing

Rock Mechanics

A NIOSH staff member visited Australia to assist an Australian Coal Association Research Project (ACARP), the goal of which was to calibrate the Analysis of Longwall Stability (ALPS) method for Australian conditions. ALPS was developed by NIOSH to help maintain safe escape routes from longwall mines. While in Australia, NIOSH staff visited 12 underground coal mines and gave 3 lectures at universities in Queensland and New South Wales. The final ACARP report on the project has since been published, and the ALPS method has been widely implemented in Australia.

Start Date: 1/1/99
End Date: 1/10/99
Status: Complete

School Health

NCCDPHP's Division of Adolescent and School Health provided technical support and recommendations for improving coordinated school health and HIV prevention programs to national school groups in Austrailia, Bangladesh, Indonesia, Nigeria, Namibia, Oman, and Vietnam.

Start Date: 11/1/98
Status: Ongoing

West Nile Virus

Staff from NCID's Division of Vector-Borne Infectious Diseases provided molecular epidemiology of the West Nile virus and development of West Nile virus and antigen detection assays.

Start Date: 9/1/99
Status: Ongoing

AUSTRALIA - U.S.-BASED COLLABORATION(S)

Influenza

NCID's Division of Viral and Rickettsial Diseases hosted a visiting scientist from one of the WHO collaborating laboratories in Australia on influenza surveillance to promote better exchange of sequence information.

Start Date: 11/1/98
End Date: 5/1/99
Status: Complete

BANGLADESH

Three CDC staff were assigned to Dhaka, Bangladesh. Two NIP staff served with WHO colleagues as consultants on immunization issues (including polio and AFP surveillance), and an NCID epidemiologist was affiliated with the International Center for Diarrheal Disease Research, Bangladesh (ICCDR,B).

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Bangladesh) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Dengue

NCID staff developed and coordinated a multi-faceted research program on dengue and dengue hemorrhagic fever, which emerged in Bangladesh during the summer of 2000. The research included hospital and community surveillance, a population-based study of incidence and risk factors, and studies of vector distribution and density.

Start Date: 8/1/00
Status: Ongoing

Emerging Infectious Diseases

NCID staff assisted a USAID-funded emerging infection program that addressed surveillance, epidemiology, and entomology of dengue; surveillance for TB and drug-resistant TB; STIs (including epidemiology and molecular epidemiology of drug resistant N. gonorrhea); drug resistant respiratory infections; and surveillance for emerging diarrheal pathogens (with which *v. cholerae* O131 was identified). Assistance included mentoring young researchers; providing focus and direction in protocol development and implementation; and collection, analysis, interpretation, and dissemination of data.

Start Date: 6/1/98
Status: Ongoing

Family Planning Management Training

Since 1974, NCCDPHP's Division of Reproductive Health has provided various types of technical assistance to Bangladesh through a Participating Agencies Services Agreement (PASA) with USAID's Office of Population. Under the current PASA (covering FY 98-02), the logistics component of this multi-faceted agreement supported and promoted effective Family Planning (FP)/Reproductive Health (RH) program interventions by providing assistance in assessing national FP logistics systems, forecasting contraceptive requirements, and recommending specific improvements in logistics management systems. In addition, a *Pocket Guide to Managing Contraceptive Supplies* was published. A French translation was also prepared, and a Spanish version is nearing completion.

Start Date: 10/1/97
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Bangladesh, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

Hib

CDC's National Vaccine Program Office (NVPO) provided funds for a USAID-supported study to assess the effect of TetractHib on the oropharyngeal (OP) colonization with Hib in Bangladeshi children. Data on Hib diseases in Bangladesh is limited. However, in Bangladesh, Acute Lower Respiratory Infections (ALRI), particularly pneumonia, are the most important cause of morbidity and mortality of children. An ongoing study in Bangladesh will provide data on the effectiveness and cost of introducing Hib conjugate vaccine in Bangladesh. If it can be shown that the introduction of Hib conjugate vaccine substantially reduced the burden of pneumonia and meningitis in <2-year-old-children in Bangladesh, its inclusion in routine EPI will considerably improve child health and survival. If it can also be demonstrated that the Hib conjugate vaccine can impart "herd" immunity, this will strengthen the case for its introduction.

Start Date: 10/1/99
Status: Ongoing

Lead Poisoning

Little is known about the prevalence of lead poisoning among children in Bangladesh, although studies of air quality show extremely high levels in the capital, Dhaka. In addition, two small health studies – one among 93 adult rickshaw drivers and the other among 5 children seen in a neurologic clinic – found a high prevalence of elevated blood lead levels. In July 1999, Bangladesh switched from leaded to unleaded gasoline, which resulted in a significant decrease in mobile-source lead exposure in the general population. The objective of this project was to measure blood lead and hemoglobin levels in Bangladeshi children and assess risk factors for lead exposure. NCEH's Division of Laboratory Sciences provided training and supplies for the study, which enabled public health officials to monitor the effectiveness of the removal of lead from gasoline and to modify the intervention if necessary. In November 1999 and 2000, a cross-sectional exposure assessment before and after the introduction of unleaded gasoline was conducted in four metropolitan cities (Sylhet, Khulna, Chittagong, and the capital, Dhaka) of approximately 2,000 school children aged 6 to 10 years. The main outcome measures were lead poisoning and anemia. This assessment helped Bangladesh health officials describe the prevalence and severity of pediatric lead poisoning.

Start Date: 2/18/00
End Date: 2/28/00
Status: Complete

Lead Poisoning

The Bangladesh Ministry of Health invited the NCEH Health Studies Branch to provide technical assistance in measuring blood lead levels in Bangladeshi school children in the capital city of Dhaka. The objective of the assessment was to describe the prevalence and severity of pediatric lead poisoning and to provide a baseline against which to evaluate government-sponsored interventions to remove lead from gasoline. NCEH conducted a survey of blood lead levels of children who attended grades 1 to 5 at five primary schools, which were chosen to represent different areas of potential exposure and socio-economic levels in Dhaka. Blood lead levels were measured with a LeadCare analyzer and hemoglobin levels with a Hemocue analyzer. When possible, environmental samples including dust, soil and water were also obtained from each school and from the homes of children with elevated blood lead levels. These environmental samples were analyzed for lead at the CDC laboratory. On-site qualitative lead tests have not indicated any other major exposure source than leaded gasoline.

Start Date: 1/1/00
Status: Ongoing

Management Training

PHPPO's 6-week Managment for International Public Health (MIPH) Course is offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting managment training courses for public health professionals in developing countries. The course provides participants from Bangladesh and other countries with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country managment training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country managment training courses. Most participants attend through an institutional collaboration with CDC's . (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since September 1992.

Polio Eradication

A NIP staff member served as a short-term consultant on polio eradication for WHO in Bangladesh from May - July 2000. During that time, NIP staff helped plan, implement, and evaluate the country's 7th National Immunization Day; conducted acute flaccid paralysis (AFP) active surveillance in hospitals in five districts in Dhaka Division; and provided surveillance orientation/training to more than 500 field workers, field supervisors, physicians, and nurses.

Start Date: 1/1/99
Status: Ongoing

Polio Eradication

As part of a STOP (Stop Transmission of Polio) Team (which is part of a worldwide effort to eradicate polio by 2000), NIP assisted the Bangladeshi Surveillance Medical Officer in developing and maintaining a surveillance system to identify cases of acute flaccid paralysis, neonatal tetanus, and measles in Rajshahi Division, Bangladesh. NIP also assisted the Bangladeshi Ministry of Health and non-government organizations in identifying future surveillance needs.

Start Date: 5/1/99
End Date: 7/1/99
Status: Complete

Rotavirus

NCID staff have collaborated with counterparts in Bangladesh for over a decade on a rotavirus vaccine program. This collaboration has yielded a tremendous body of knowledge about the incidence, epidemiology, and molecular and microbiologic characteristics of this important pathogen. Ongoing collaboration focuses primarily on ways to prevent rotavirus through immunization. For example, NCID staff have recently worked with International Center for Diarrheal Disease Research, Bangladesh (ICDDR,B) colleagues to evaluate immunogenicity and safety of a rotavirus vaccine and to plan for an investigation of the vaccine's efficacy.

Start Date: 1/1/99
Status: Ongoing

School Health

NCCDPHP's Division of Adolescent and School Health (DASH) provides technical support and recommendations for improving coordinated school health and HIV prevention programs to national school groups in Australia, Bangladesh, Indonesia, Nigeria, Namibia, Oman, and Vietnam.

Start Date: 11/1/98
Status: Ongoing

CAMBODIA

An NCID biologist was on assignment in Cambodia.

HIV/STD Prevention

NCID's Division of AIDS, STD, and TB Laboratory Research – in collaboration with NCHSTP's Division of STD Prevention, USAID/Cambodia, and the Cambodian Ministry of Health – provided laboratory technical assistance to estimate the prevalence and incidence of four STIs (gonorrhea, syphilis, chlamydia, and trichomoniasis) and pregnancy in a community-based sample of rural men and women.

Start Date: 8/1/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from Cambodia attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares partici-

pants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

CHINA

Four CDC staff were assigned to China, assisting with environmental health projects (NCEH), supporting polio and other immunization activities (NIP), conducting research studies with UNICEF colleagues on numerous chronic disease and health infrastructure topics (NCCDPHP), and serving as a technical advisor to the Chinese Academy of Preventive Medicine (NCID).

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Hong Kong, China, and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from China participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Chinese as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Birth Defects

In collaboration with Beijing Medical University (BMU) colleagues, NCEH continued to examine the relation between the periconceptual consumption of folic acid and birth outcomes such as birth defects, spontaneous abortions, and twinning. In addition, NCEH and BMU evaluated the feasibility of conducting a study to determine the value of folic acid in preventing cardiac defects. This collaboration helped Chinese health authorities recommend folic acid consumption levels based on U.S. Public Health Service (USPHS) recommendations for consumption of this B vitamin. The project may also have an impact in the United States by validating USPHS recommendations for women in this country. NCEH also coordinated the testing of the measurement of hemoglobin folate. Resulting data will be used to validate the field worthiness of the hemoglobin-folate assay for screening in countries where optimal specimen preparation and shipping methods are not practical or available. This assay has been described at several international conventions and may be used by others around the world. In addition, this collaboration supplied BMU laboratories with the necessary materials to perform their own testing. Finally, this assay could be used in the United States by the March of Dimes for testing and will help U.S. researchers develop appropriate laboratory testing for folate.

Start Date: 12/1/91
Status: Ongoing

Cancer

NIOSH collaborated with Henan Medical University in Henan to investigate the serum ras P21 level and sister chromatid exchange (SCE) frequency with peripheral blood lymphocyte in workers exposed to coke oven emissions. The results showed that serum P21 levels and SCE/cell frequencies in the exposed group were significantly higher than those of the normal group. P21 level and SCE in those working near the top of the coke oven were much higher than those working in other sites. No significant differences were found between smokers and non-smokers. Both humans and animals were used to investigate the effect of Cr(VI) exposure on sperm quality. The results demonstrated that workers occupationally exposed to Cr(VI) exhibited reduced sperm counts and motility and lower levels of zinc, LDH, and LDH-x in seminal plasma. The FSH concentration in serum for exposed workers was significantly higher than that in the control group. Rats fed a diet high in Cr(VI) exhibited significant reduction in epididymal sperm number. The level of sperm abnormalities also significantly increased in Cr(VI) exposed rats. In exposed rats, there was visible disruption in germ cell arrangement near the wall of seminiferous tubules. The diameter of the seminiferous tubules in Cr(VI) exposed rats was also reduced. The results suggest that occupational exposure to Cr(VI) leads to alteration of semen status and sperm quality that may lower the reproductive potential of exposed workers.

Start Date: 10/1/99
Status: Ongoing

Cancer

NIOSH staff collaborated with Chinese researchers in analyzing K-ras and p53 mutations in cancer tissues and in developing potential biomarkers for molecular epidemiology studies. The West China University of Medical Sciences has provided both human mesothelioma tissue samples from workers exposed to asbestos and rat mesothelioma samples induced by asbestos to study mutations in the K-ras proto-oncogene and the p53 tumor suppressor gene. Mutations are being analyzed in the critical regions of K-ras codons 12, 13, and 61, and p53 exons 5 - 9 by either PCR-Restriction Fragment Length Polymorphism and/or DNA sequencing. Guangzhou Medical College has also provided serum and urine samples from lung cancer patients, smokers, and control subjects. These samples are being analyzed by Western blotting for the presence of various onco-

proteins/tumor suppressor proteins. NIOSH's studies have shown differential expression of several marker proteins (p62 FOS, p21 RAS, p42 RAS-related, p39 JUN), which are being evaluated for possible correlation with disease and/or smoking status. Results of these studies may lead to a better understanding of occupational carcinogenesis and the establishment of cancer-related biomarkers for molecular epidemiology and medical surveillance studies to detect cancer risk and may eventually play a role in the prevention of occupational cancers.

Start Date: 10/1/97
Status: Ongoing

Candida

Staff from NCID's Division of Bacterial and Mycotic Diseases provided laboratory support for research on the development of molecular and immunological methods for the rapid and specific diagnosis of vulvovaginal candidiasis.

Start Date: 9/1/99
End Date: 9/1/00
Status: Complete

Candida

An International Emerging Infectious Diseases Fellow conducted research on the effects of drug efflux pump substrates on drug susceptibility and the production of pathogenic factors of *Candida albicans*. Research also was conducted on the expression of efflux pump genes for susceptible and resistant isolates of *Candida albicans* grown in the presence of efflux substrates.

Start Date: 8/1/99
End Date: 8/1/00
Status: Complete

Capacity Development

The Shanghai Municipal Center for Disease Control and Prevention is helping China build its public health infrastructure. An NCEH staff member served as the senior consultant to the Center and as the liaison between the U.S. CDC and the Chinese CDC. The committee plans to publish *Introduction to the CDC*, a book written in Chinese, which will be distributed throughout China.

Start Date: 1/1/00
Status: Ongoing

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including China) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Cardiovascular Disease

The People's Republic of China (PRC)-USA Collaborative Study of Cardiovascular and Cardiopulmonary Epidemiology studies was initiated in 1981 under the PRC-USA Governmental Cooperation in Science and Technology agreement. It was implemented in the United States through program coordination by the National Heart, Lung and Blood Institute (NHLBI), the University of North Carolina, and CDC, which assumed responsibility for the standardization of two laboratories in China. Epidemiologic studies in China were conducted through the Cardiovascular Institute of the Chinese Academy of Medical Sciences and Fu Wai Hospital, Beijing (for a Northern China population survey) and by Guangdong Provincial Cardiovascular Institute, Guangzhou (for a Southern China population study). The two China

groups have successfully conducted the third survey, which has occurred at 5-year intervals. An NCEH staff member serves on the Executive Committee of the PRC-USA Collaborative Study, attends annual meetings of the Committee, and has co-authored papers on fasting plasma glucose and tea drinking in the two populations. Assistance was provided to Chinese laboratories (the Biochemistry Laboratory in the Beijing Institute of Geriatrics and the Genetic Epidemiology Laboratory, Fu Wai Hospital, Beijing) to help them evaluate whether they could successfully use lipid reagents manufactured in China.

Start Date: 1/1/81
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Chinese and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Congenital Rubella Syndrome

NIP staff assessed the feasibility of screening and diagnosing congenital rubella syndrome (CRS) cases where rubella vaccination is not routine and where the burden of disease is thought to be greater than in the United States. This study took place in Jiaxing City among a birth cohort enrolled in the Child Health Care (CHC) System through August 31, 2000. The study is a supplement to an existing NCEH birth defects study. Surveillance tools developed from the NCEH collaboration will be modified and used to enhance CRS case finding.

Start Date: 3/1/00
Status: Ongoing

Environmental Health

ATSDR provided a grant to the University of Texas School of Medicine, Department of Dermatology to conduct an investigation of the human health effects of environmental exposures to arsenic. The team collaborated with the Inner Mongolia Arsenic Program (IMCAP), a medical researchers' consortium, to analyze previously collected data from local drinking water wells in three villages with known levels of arsenic in the water. The epidemiological data on those exposed to drinking water levels of greater than 50 ug/L were previously analyzed for relationship between arsenic exposure and observed health effects. For this study, the researchers analyzed data on individuals consuming less than 50 ug/L of arsenic. The skin lesions of persons exposed at lower levels of arsenic were then evaluated, focusing on the role that arsenic exposure had played in the development of the lesions. The data collection is complete, but the analysis is ongoing. Reports on the study's findings will combine the human and well water data.

Start Date: 5/1/97
Status: Ongoing

Epidemiology Training

CDC's Division of Reproductive Health conducted 1- to 2-week Reproductive Health Epidemiology (RHE) Training Workshops in China, Mexico, and Moldova, as well as short-term, targeted RHE training. When feasible, Epi Info training with RHE examples is included in the workshops and overviews. Follow-up activities include ongoing technical assistance in RHE proposal development and projects. In addition to the core RHE training manual, *An Epidemiologic Approach to Reproductive Health*, DRH is developing a series of topic-based training modules. These modules will cover such topics as the epidemiology of maternal health, infant health, reproductive tract infections, and reproductive health surveillance. The new modules will supplement the core training manual and provide applied information and practice to training participants.

Start Date: 1/1/85
Status: Ongoing

Field Epidemiology Training Program

CDC collaborated with China on development of its first Field Epidemiology Training Program (FETP). A major goal of the FETP will be to increase China's public health surveillance and epidemic response capacity by creating a cadre of applied epidemiologists and related practitioners who will strengthen the Ministry of Health (MOH) and local public health infrastructure with ongoing training-through-service. The Chinese Ministry of Health, Chinese Academy of Preventive Medicine, Peking Union Medical College, Beijing Medical University, UNICEF, WHO, EPO's Division of International Health, and various Chinese academic and public health institutions collaborated in the development, funding, and staffing, of the FETP. The program will be administered by highly experienced field epidemiologists from the above institutions, along with technical assistance and training support from EPO, other CDC CIOs, and Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) staff. Annual selection of a class of 10 to 15 FETP trainees (based on their potential to become dedicated future leaders in applied field epidemiology, public health policy, and training) will be crucial to developing MOH capacity and infrastructure. The 2 years of supervised training-through-service will consist of formal coursework and field assignments focused on applied epidemiology, communications, and program management.

Start Date: 9/1/00
Status: Ongoing

Food Safety

NCID's Division of Bacterial and Mycotic Diseases provided PulseNet training to guest researchers from Hong Kong.

Start Date: 3/1/00
End Date: 6/1/00
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including China, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

Hepatitis

NIP participated in the immunization and hepatitis B components for a World Bank mid-term program review for a health project operating within ten provinces in China. An NIP staff member reviewed general immunization and hepatitis B interventions, activities, surveillance, and vaccination services.

Start Date: 6/1/00
End Date: 6/7/00
Status: Complete

HIV

Chinese and Hong Kong laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Influenza

NCID's Division of Viral and Rickettsial Diseases (DVRD) continued its support of a national influenza surveillance program in China. NCID/DVRD staff obtained isolates from China through continued financial and technical support of scientists at the Institute of Virology in Beijing, China. Receipt of these viruses allowed the WHO Collaborating Center for Influenza to identify new antigenic variants of influenza virus in time to consider them as potential vaccine candidates. NCID/DVRD hosted multiple guest researchers for periods of 3 to 6 months for training in influenza virus isolation and characterization. NCID/DVRD conducted two 4-day courses on the isolation and identification of influenza viruses in Beijing, China in 1999 for 54 Chinese scientists from over 40 provinces in China. NCID/DVRD provided funding to expand influenza surveillance network sites and continued financial and scientific support of the molecular biology capability established in China in previous years.

Start Date: 1/1/89
Status: Ongoing

Influenza

An NCID Division of Viral and Rickettsial Diseases (DVRD) staff member served as a WHO consultant in collaboration with staff from Japan and WHO's Western Pacific Regions Office (WPRO). The team to conducted on-site technical assistance visits to health departments and influenza surveillance laboratories in Shenzhen, Guanzhou, Hefei, and the National Influenza Center (NIC) and Ministry of Health (MOH) in Beijing. NCID/DVRD staff worked together with NIC and MOH staff to evaluate the current influenza surveillance system and draft a coordinated influenza surveillance plan for China, which was submitted to WHO.

Start Date: 5/1/00
Status: Ongoing

Influenza

NCID's Division of Viral and Rickettsial Diseases hosted visiting staff from Harbin, China for training in the molecular characterization of avian influenza viruses.

Start Date: 10/1/99
Status: Ongoing

Influenza

NCID's Division of Viral and Rickettsial Diseases assisted the Department of Health in Hong Kong in conducting a field investigation related to cases of influenza A(H9N2), a novel avian influenza virus that infected two young children.

Start Date: 4/1/99
End Date: 4/30/99
Status: Complete

Influenza

NCID's Division of Viral and Rickettsial Diseases provided expert testimony on the 1997-1998 influenza A (H5N1) investigations at a death inquest convened by the Hong Kong coroner.

Start Date: 1/1/99
End Date: 12/31/99
Status: Complete

Laboratory Methods Development

NCEH Division of Laboratory Sciences staff visited a laboratory in China to help its staff set up a quality control scheme for vitamin A analysis and to advise them on streamlining their procedures in preparation for a national vitamin A and iron survey funded by UNICEF.

Start Date: 1/1/00
End Date: 3/31/00
Status: Complete

Lead Poisoning

Available evidence suggests that lead poisoning rates in China may be high, but the problem has not been well studied. To begin to understand the pervasiveness of lead poisoning, NCEH staff conducted blood lead measurements of a population-based sample in Wuxi. A paper was prepared and submitted for publication in a scientific journal.

Start Date: 1/1/98
End Date: 8/1/00
Status: Complete

Lead Poisoning

Following news reports that the risk for lead poisoning in China is high, the U.S. Embassy in China offered free blood lead screening to expatriate children residing in Beijing, Chengdu, Guangzhou, Shanghai, Shenyang, and in Ulan Batur (Mongolia). NCEH provided technical assistance on development of the project and analyzed the data.

Start Date: 1/1/98
End Date: 8/1/00
Status: Complete

Management Training

In FY 99 and 00, participants from China attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including China, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Mine Studies

A NIOSH staff member traveled to China, to chair a technical session and present an invited paper (entitled "Discriminating Mine Fire Sensors") at the 1998 International Symposium on Safety Science Technology. He also met with officials of the Beijing Institute of Technology and the China Coal Research Institute (CCRI), who reported that more than 10,000 fatalities occurred in Chinese coal mines in 1997. These were due, in part, to inadequate training of workers in the safe use of equipment and technologies and in part to the serious problems of methane and coal outbursts that are prevalent in over 47% of the mines. In addi-

tion, almost one-half of these mines have problems with spontaneous combustion. It was also estimated that more than 10,000 Chinese miners die annually from lung diseases. Discussion focused on ongoing and past research conducted at NIOSH's Pittsburgh Research Laboratory relevant to fire detection, mine fire sensors, deployment/spacing of sensors, setting of alarm sensor alarms, spontaneous combustion, and the impact of ventilation on the detection of mine fires.

Start Date: 10/2/98
End Date: 10/13/98
Status: Complete

Mycosis

An International Emerging Infectious Diseases Fellow conducted research on pathogenicity, molecular subtypes, and anti-fungal drug resistance in the newly emerging fungal opportunist, *Penicillium marneffei*.

Start Date: 9/1/00
Status: Ongoing

Occupational Health

In China, Ministry of Health authorities estimate that more than 526,000 coal workers have contracted pneumoconiosis and 119,000 have died of the disease, based upon cumulative statistics dating from the Communist Party takeover of the country in 1949 to the end of 1996. In the United States, NIOSH has recommended that coal miners undergo serial lung function monitoring to allow early detection of lung injury. However, a recent study of recruits to coal mining has suggested that the temporal changes in lung function may not be linear. Rather, new miners appear to suffer initial severe declines, followed by some reduction in the rate of decline. Understanding this pattern is important in the interpretation of screening spirometry. Owing to the relatively long interval between medical examinations in previous studies, it is not possible to obtain more reliable information on this phenomenon from existing data sets. A recent collaboration with researchers at the Tongji Medical University involved examining lung function changes prospectively in underground Chinese coal miners. The study assessed how the lung function of new coal miners changed in the short term (within 3 years) after they entered coal mining, and the relationship of these changes to dust exposure. The study aimed to assist Chinese investigators with better understanding of current underground environmental conditions and lung function changes being experienced by coal miners in that country and to generate information that will be useful to U.S. occupational health personnel in the performance and interpretation of recommended lung function screening for workers in dusty trades. The investigators are currently analyzing the results.

Start Date: 10/1/95
Status: Ongoing

Occupational Health

NIOSH collaborated with the Institute of Occupational Medicine in Beijing, China to investigate the mechanism of silica-induced carcinogenesis. The major focus was the effect of silica on cell growth regulation, by examining silica-induced cell growth arrest. Several cell cycle checkpoint proteins, such as cyclins/Cdks and growth arrest- and DNA-damage-inducible protein 45 (GADD45), are being studied. The results will help researchers understand how silica affects cell growth regulation and the mechanism of silica-induced carcinogenesis.

Start Date: 5/1/00
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation on a cluster of appendicitis cases in China.

Start Date: 1/1/99
End Date: 7/1/99
Status: Complete

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and immunohistochemical testing on two cases of hepatic failure in Hong Kong, resulting in the diagnosis of influenza A in one case.

Start Date: 5/1/99
End Date: 7/31/99
Status: Complete

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided diagnostic immunohistochemical testing and pathology consultation on a case of adult respiratory distress syndrome that occurred during Hong Kong's influenza outbreak.

Start Date: 5/1/99
End Date: 7/1/99
Status: Complete

Plague

In a collaborative effort with Chinese scientists, NCID staff published the sequence of the newly emerged 6-kb plasmid and began a study to understand its role in *Yersinia pestis* isolates. A senior scientist from the Chinese Academy of Preventive Medicine (Beijing) examined the six unique genes encoded by the 6-kb plasmid. In conjunction with scientists from the Yunnan Institute of Epidemic Disease Control and Research (YIEDCR), NCID is trying to identify a source of the 6-kb plasmid and to track its spread. On-site training at YIEDCR was provided by NCID Division of Vector-Borne Infectious Diseases staff on setting up their molecular laboratory, providing biosafety training, and training on the competitive ELISA test. NCID's current efforts include continuing to analyze the genetic variance in Chinese *Y. pestis* isolates, detecting its pathogenic mechanisms, and completing the transfer of technology for multiplex and RAPD PCR.

Start Date: 9/1/97
Status: Ongoing

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) participated in an evaluation of a World Bank project on maternal and child health poverty alleviation in Yunnan Province, China that was completed in December 1999. During 2000, DRH staff collaborated on researching and publishing a paper on a 10-year study of Norplant effectiveness and continuation in Shanghai, China, which stemmed from a long-term collaborative study with the ObGyn Hospital of Shanghai Medical University. DRH staff conducted data analysis and prepared an evaluative report with Chinese colleagues on the effects of modern quality family planning services on contraceptive choice and use-effectiveness.

Start Date: 4/1/00
Status: Ongoing

Schistosomiasis

A training course on Geographic Information Systems (GIS) was held at the Jiangsu Institute of Parasitic Diseases (JIPD) in Wuxi, Jiangsu Province. It was attended by 22 participants from schistosomiasis control programs and research institutes in schistosomiasis-endemic areas of China. The workshop was a collaborative effort of NCID's Division of Parasitic Diseases, NASA's Center for Health Applications of Aerospace-Related Technology (CHAART), Louisiana State Univsersity (LSU), the Environmental Systems Research Institute (ESRI), and WHO.

Start Date: 11/1/98
End Date: 11/30/98
Status: Complete

School Health

NCCDPHP's Division of Adolescent and School health has provided technical assistance to China to improve HIV/AIDS/STD prevention, tobacco prevention, and helminth reduction.

Start Date: 12/1/96
Status: Ongoing

Silicosis

NIOSH staff collaborated with colleagues at the Institute of Occupational Medicine, Department of Biochemistry in Beijing, China on research involving the elucidation of molecular events that occur in cells exposed to silica or other particles. Silica-induced events measured included oxidant production, phosphorylation of protein tyrosine, and activation of the transcription factor NFkB. (NFkB activation is dependent upon tyrosine protein kinase, which in turn is dependent on the production of nitric oxide and reactive oxygen species by silica-exposed macrophage.) Other studies included autopsy studies of occupational and environmental changes in lungs and molecular events leading to carcinogenesis. Another area of research activity involved biomarkers of occupational disease and inhibitors of disease development.

Start Date: 1/1/98
Status: Ongoing

Silicosis

Tongji Medical University (TMU) scientists, with support from NIOSH's Health Effects Laboratory Division, researched silica dust exposure factors in disease rash for tungsten and tin mine and pottery factory workers in China. The researchers have been able to use the extensive Chinese medical and work-history records for silicotic workers and advanced NIOSH methods for respirable particle analyses. Work-history data on 12,000 dust-exposed but non-silicotic workers were compiled and converted into exposure history estimates for analysis with medical registry data on 16,000 silicotic workers. TMU researchers and a NIOSH researcher visited pottery worksites in preparation for collection of additional dust samples for advanced respirable particle surface analysis by NIOSH. This will help determine whether the biologically available surface of quartz particles can provide a predictive index for mixed dust exposure disease risk. Jointly authored reports were drafted on the following topics: estimating historical respirale-free silica exposures for Chinese pottery workers and iron/copper, tin, and tungsten miners; silica exposure and silicosis among tin miners in China; exposure-response analyses and risk assessment; and mortality among dust-exposed Chinese mine and pottery workers.

Start Date: 7/1/98
Status: Ongoing

Tobacco Control

CDC/OSH worked with WHO and the Chinese government to develop and implement a needs assessment to review and analyze opportunities to reduce tobacco use in China. The assessment was used to develop further budgetary and strategic plans for work with WHO and other international agencies in support of tobacco control in China. Examples of work to be done include: a compilation and review of the extensive surveys and other needs assessments already conducted in China; initial estimates of the burden of disease and other public health consequences of tobacco use in China; an analysis of the marketing, distribution and manufacturing practices of tobacco companies in the region; and analyses of the impact of those practices on smoking rates, particularly among women and children.

Start Date: 8/1/00
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including China. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)
Status: Ongoing

Vaccine Safety

NIP provided a briefing on the U.S. vaccine safety monitoring system and how the system interacts with the vaccine regulatory body. NIP worked mainly with staff from the Chinese Ministry of Health and the Chinese Academy of Preventive Medicine (CAPM), as well as with staff from the State Drug Administration (SDA), to review the vaccine safety monitoring system and prepare a workplan for setting up a national system for monitoring vaccine safety in China. NIP prepared a detailed plan for conducting a national workshop in early 2000 on vaccine safety/surveillance for health workers responsible for safety surveillance, supervision, and reporting. The plan specified optimal content, participants, duration, and training materials required for the workshop. NIP staff also carried out other work on vaccine safety monitoring and prepared a report on vaccine safety activities in China.

Start Date: 10/1/99
End Date: 11/1/99
Status: Complete

EAST TIMOR

Complex/Humanitarian Emergencies

During FY 2000, NCEH was heavily engaged in the humanitarian emergency in East Timor. IEHRB fielded multiple missions: staff served as health coordinators for UNHCR and conducted health and nutritional surveys in coordination with the Office of Foreign Disaster Assistance (OFDA).

Start Date: 10/1/00
Status: Ongoing

FEDERATED STATES OF MICRONESIA

An NCHSTP staff member was assigned to Micronesia as a regional public health advisor, assisting in PAHO's efforts to build public health capacity through training.

Lead Poisoning

A survey of children aged 2 to 4 years in the Federal States of Micronesia (FSM) showed that 15% had elevated blood lead levels. The objective of this project was to determine the prevalence of elevated blood lead levels among children aged 1 to 9 years and determine the source(s) of lead poisoning. NCEH staff conducted a nested case-control study in Yap, FSM. The main outcome measures were blood lead levels and lead levels in environmental samples. The study revealed that the primary source of lead exposure was from reclaiming old car batteries. Some elevated blood lead levels were noted among FSM children who recently participated in a vitamin A survey conducted by CDC.

Start Date: 4/21/00
End Date: 9/30/00
Status: Complete

Management Training

In FY 99 and 00, participants from Federated States of Micronesia attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

In January and February 2000, NCEH staff from the Division of Laboratory Sciences and the Division of Birth Defects, Child Development, and Disability and Health went to the Federated States of Micronesia (FSM) at the invitation of the FSM Department of Health and UNICEF to conduct a vitamin A survey of children ages 24-59 months and female caregivers of those children in Kosrae and Yap states. As a result, a vitamin A supplementation program was implemented for both states. Findings of elevated blood lead levels resulted in a follow-up study conducted by the Division of Environmental Hazards and Health Effects at the invitation of FSM to determine the extent of the lead problem in Yap and to investigate the sources of the lead exposure.

Start Date: 10/1/98
Status: Ongoing

FIJI

A medical epidemiologist from CDC's Office of Global Health was assigned to Fiji, where he assisted WHO colleagues.

Hib

Two NIP staff members traveled to Fiji for a 3-week consultation for WHO. They evaluated a vaccination program for Hib in Fiji using laboratory logs from the three referral hospital laboratories in Fiji and vaccination coverage data provided by the Fiji Ministry of Health. Hib vaccine was introduced in 1995 as a mass vaccination campaign, including catch-up vaccination for all children under 5 years of age. There was then a 1-1 _ year period during which no vaccine was available, followed by the re-introduction of the Hib vaccination program for infants. Hib meningitis and laboratory specimens suggestive of bacterial meningitis (with negative cultures) decreased substantially with the introduction of the Hib vaccine. The number of Hib meningitis cases increased during the period in which no vaccine was available, and then decreased again when vaccine was re-introduced in infants.

Start Date: 10/1/98
End Date: 3/1/99
Status: Complete

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focus-

es on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Fiji. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)
Status: Ongoing

INDIA

Six CDC staff were assigned to India. Two served as advisors on infectious diseases and HIV/AIDS, and the others worked with WHO and Indian colleagues on polio and other immunization activities.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in India and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Indian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including India) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Capacity Development

PHPPO has provided consultations to and participated in program review activities in India. A PHPPO staff member participated, as part of a PHPPO team, in a visit and discussion with Indian officials as part of the ERIDDS project.

Start Date: 11/1/99
End Date: 1/31/00
Status: Complete

Cysticercosis

NCID's Division of Parasitic Diseases collaborated with the Bombay Institute of Medical Sciences to define the impact of cysticercosis on neurologic diseases and to determine the sensitivity of the immunoblot assay for patients infected with a single cyst of Taenia solium. Expanded surveillance and research activities have been proposed for funding by the new U.S.-India Cooperative Research Agreement.

Start Date: 7/1/98
Status: Ongoing

Diabetes

NCCDPHP's Division of Diabetes Translation continues to work with the World Bank and with experts in India to develop basic diabetes guidelines for primary care physicians.

Start Date: 10/1/98
Status: Ongoing

Environmental Health

ATSDR and CDC joined with the National Institute of Environmental Health Sciences, the Department of Health and Human Services, and the EPA to develop a Joint Statement. The principal objective of the Joint Statement was to facilitate collaboration in environmental and occupational health programs (including the identification, monitoring, and prevention of disease caused by environmental and occupational factors) and to research and develop improved methods and approaches for achieving this objective, thereby promoting both scientific and technologic programs in both countries and achieving demonstrable improvements in public health. The involved agencies then developed an Indo-U.S. Joint Working Group to establish procedures for the operation of the Joint Statement. The Joint Working Group sets policy, secures funding, reviews program plans, recommends new areas of cooperation, addresses issues requiring joint resolution, monitors and evaluates the program, and creates subcommittees or evaluation committees.

Start Date: 12/1/99
Status: Ongoing

Fungal Pathogens

NCID's Division of Viral and Rickettsial Diseases examined several diagnostic cases suspected to be caused by fungal pathogens and provided pathology consultation and diagnostic testing as appropriate.

Start Date: 5/1/99
End Date: 7/1/99
Status: Complete

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including India, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

HIV

Indian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

In FY 2000, CDC, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) initiative to support efforts to combat HIV/AIDS in fourteen African countries and in India. CDC's Global AIDS Program (GAP) works closely with USAID and other partners to customize HIV/AIDS initiatives in each country and to implement project objectives. These include: the reduction of HIV transmission through primary prevention of sexual, mother-to-child, and blood-borne transmission, development of programs to improve of community and home-based care and treatment of HIV/AIDS/STI and opportunistic infections, and strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs. India has the largest number of HIV-infected people of any country. As the epidemic spreads beyond high-risk groups and from urban to rural districts, CDC is working with the Indian Ministry of Health, USAID, UN agencies, WHO, and Indian HIV/AIDS and infectious disease agencies to combat HIV/AIDS. Major program areas include support of voluntary HIV/AIDS counseling and testing programs, building the capacity of Indian AIDS Control Organizations at the state level, strengthening laboratory capacity, supporting surveillance and case management for opportunistic infections, and developing programs to prevent mother-to-child transmission.

Start Date: 5/1/00
Status: Ongoing

Lead Poisoning

The problem of lead poisoning in India is not well understood by either the general population or government officials. NCEH co-sponsored an international conference with India's George Foundation in order to bring lead poisoning to the attention of the media, government, and general population. The conference resulted in a national plan for preventing lead poisoning in India that was formally presented to the Indian government. As a component of the National Family of Health Surveys, NCEH staff obtained population-based blood samples from children in Mumbai and Delhi to analyze lead and hemoglobin measurements. Staff also performed anthropometric measurements and conducted interviews with mothers of the children who were tested. This collaboration could have a direct impact on the Indian children by referring all of those found to have high blood lead levels for treatment and guidance. In addition, this project helped to increase the technical capacity of Indian colleagues, who learned to use portable blood lead analyzers during the study. NCEH continues to provide methodological consultation on an as-needed basis.

Start Date: 5/1/98
Status: Ongoing

Malaria

NCID's Division of Parasitic Diseases, in collaboration with the National Institute of Immunology in New Delhi, continued ongoing research on the expression of malarial antigens in a baculovirus expression system. Studies are planned to develop a combination Plasmodium falciparum and Plasmodium vivax multi-component vaccine.

Start Date: 3/1/00
Status: Ongoing

Malaria

NCID's Division of Parasitic Diseases initiated a project with the Malaria Research Center, New Delhi, aimed at: 1) collecting baseline data related to entomologic designing, and epidemiologic and sociologic measurements, of malaria transmission required to quantitate morbidity and mortality attributable to malaria; 2) undertaking immunoepidemiologic and molecular-epidemiologic investigation of Plasmodium falciparum and Plasmodium vivax malaria required to determine the characteristics of naturally acquired immunity and the nature and extent of genetic diversity in natural parasite populations; and 3) carrying out a field intervention related to novel molecular approaches and new tools to study the feasibility and control of malaria.

Start Date: 6/1/99
Status: Ongoing

Management Training

In FY 99 and 00, participants from India attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including India, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Occupational Hazards

In a collaborative research project with the University of Calgary, Canada; Bombay Hospital and Institute of Medical Sciences, Bombay, India; and the National University of Singapore, NIOSH researchers worked to elucidate molecular events and corresponding pathological changes that occur in the lungs of workers exposed to silica or other particles. Silica-induced events measured included oxidant production, phosphorylation of protein tyrosine, and activation of the transcription factor NFkB. (NFkB activation is dependent upon tyrosine protein kinase, which in turn is dependent on the production of reactive oxygen species by silica-exposed macrophage.) Other studies include autopsy studies of occupational and environmental changes in lungs, molecular events leading to carcinogenesis, and biomarkers of occupational dis-

ease inhibitors and development.

Start Date: 1/1/98
Status: Ongoing

Rotavirus

The NCID Viral Gastroenteritis Unit has been working since 1988 with the All India Institute of Medical Sciences in New Delhi on a project to understand the epidemiology of rotavirus diarrhea in India and to develop a rotavirus vaccine. This project has been funded continuously through the Indo-U.S. Vaccine Program and has led to more than 20 joint publications describing the unique features of rotavirus in India that will have an impact on rotavirus vaccine development. Through this project, a candidate rotavirus vaccine has been developed from an Indian virus, prepared for volunteer studies by NIH and administered to human volunteers in the United States. Further development of this vaccine is being supported by the Indian Government's Department of Biotechnology, The Bill and Melinda Gates Foundation, WHO, and NVPO. An Indian company is presently preparing this vaccine candidate for large-scale efficacy trials.

Start Date: 1/1/88
Status: Ongoing

Tobacco Control

CDC's Office on Smoking and Health collaborated with WHO, the World Bank, and the Birhanmumbai Municipal Corporation to convene the International Workshop on Certification of Causes of Death in February 1999 in Mumbai, India. The workshop strongly endorsed the leadership of India's Registrar General in upgrading India's vital statistics registration and cause-of-death systems for the next century. These changes will assist in monitoring changes in causes of premature mortality and the current and future importance of external factors such as HIV, tobacco, and alcohol as causes of death.

Start Date: 2/1/99
End Date: 2/28/99
Status: Complete

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including India. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)
Status: Ongoing

INDIA - U.S.-BASED COLLABORATION(S)

Fungal Pathogens

Staff from NCID's Division of Bacterial and Mycotic Diseases trained a physician-scientist from the Lokmanya Tilak Municipal Medical College

and Hospital, Mumbai (Bombay) in laboratory methods to identify systemic fungal pathogens.

Start Date: 8/1/99
End Date: 9/30/99
Status: Complete

INDONESIA

An NIP medical epidemiologist was assigned to Indonesia to assist WHO with polio and other immunization activities.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Indonesia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Bloodstream Infections

NCID staff implemented a post-outbreak intervention to reduce the risk of bloodstream infection (BSI) and assess the intervention's impact. Staff conducted a prospective evaluation of common BSI pathogens in neonates in a nursery in one hospital in Indonesia.

Start Date: 10/1/99
Status: Ongoing

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Indonesia) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Family Planning Management Training

Since 1974, NCCDPHP's Division of Reproductive Health has provided various types of technical assistance to Indonesia through a Participating Agencies Services Agreement (PASA) with USAID's Office of Population. Under the current PASA (covering FY 98-02), the logistics component of this multi-faceted agreement supported and promoted effective Family Planning (FP)/Reproductive Health (RH) program interventions by providing assistance in assessing national FP logistics systems, forecasting contraceptive requirements, and recommending specific improvements in logistics management systems. In addition, a *Pocket Guide to Managing Contraceptive Supplies* was published. A French translation was also prepared, and a Spanish version is nearing completion.

Start Date: 10/1/97
Status: Ongoing

Health Information Systems

NCID's Division of Bacterial and Mycotic Diseases hosted the Department of Defense to provide training for LITS PLUS for Windows, which is the new version of the Laboratory Information Management System (LITS) plus the Public Health Laboratory Information System (PHLIS).

The software is being implemented in OCONUS Laboratories.

Start Date: 1/1/95
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Indonesia, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

HIV/STD Prevention

CDC activities in Indonesia have been funded since 1996 under a Participating Agencies Services Agreement (PASA) with USAID/Jakarta and the Division of STD Prevention (DSTDP) at CDC's NCHSTP. DSTDP has provided a long-term resident medical epidemiologist and short-term technical assistance to implement the HIV/AIDS Prevention Project (HAPP). This included operational research (STD prevalence surveys, gonorrhea susceptibility study, and behavioral sentinel surveillance); training in syndromic case management and laboratory procedures; and development of a model clinic for monitoring and care of sex workers in Surabaya.

Start Date: 9/1/96
Status: Ongoing

Management Training

In FY 99 and 00, participants from Indonesia attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to

26 laboratories in 19 countries, including Indonesia, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

School Health

NCCDPHP's Division of Adolescent and School Health provides technical support and recommendations for improving coordinated school health and HIV prevention programs to national school groups in Australia, Bangladesh, Indonesia, Nigeria, Namibia, Oman, and Vietnam.

Start Date: 11/1/98
Status: Ongoing

Vector Research

Staff from NCID's Division of Parasitic Diseases, in collaboration with DOD entomologists, have scheduled the field evaluation of a rapid (5-minute) wick assay for identification of malaria vectors.

Start Date: 1/1/99
Status: Ongoing

JAPAN

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Japan and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including Japan, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Japan) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Capacity Development

As part of the Division of Surveillance and Epidemiology's international support role in Field Epidemiology Training Programs (FETP), an NCHSTP staff member spent 2-1/2 months in Tokyo at the National Institute of Infectious

Diseases. His role was to begin the development of the training program for six epidemiologists by assisting two co-directors of the program in curriculum design and delivery and by providing general epidemiologic expertise.

Start Date: 9/1/99
End Date: 11/1/99
Status: Complete

Cholesterol and Related Lipids: Cholesterol Reference Methods

NCEH's Division of Laboratory Sciences provided support to six international members of the Cholesterol Reference Method Laboratory Network (CRMLN): The Netherlands, Japan, United Kingdom, Canada, Italy, and Argentina. Services included reference materials used to assess performance of reference methods and designated comparison methods, quality control materials for assessing performance, and regular reports of performance status. The Division also convened a meeting of all CRMLN laboratories in the United States and abroad, attended by representatives of all international CRMLN laboratories.

Start Date: 3/1/89
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Japanese and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

The International Federation of Clinical Chemistry (IFCC) Working Group for the Standardization of Hemoglobin A1c (HbA1c) includes members from the United States, Belgium, Sweden, Australia, Germany, and Japan. The IFCC Working Group has built a network of laboratories to improve measurement of HbA1c, which is a marker of glucose control among people with diabetes. In 1999 and 2000, the Working Group addressed two reference methods for measurement of HbA1c.

Since CDC houses the only network laboratory in the United States that has been approved by the IFCC to run both reference methods, NCEH has contributed to studies designed to assess and compare the reference methods. The first of these studies, known as Florence II, determined the feasibility of standardizing routine clinical assays for HbA1c. Another study, called the Malmoe reference range study, was designed to study the level of HbA1c and the biological variability of percent HbA1c in normal healthy adults using samples provided from the Denmark Health Study. The results indicated that the reference range is lower if measured by the highly specific IFCC reference methods and that the biological variability in non-diabetic adults is just slightly less if measured by the IFCC reference methods rather than by ion exchange chromatography. Additional reference range studies are planned to build on this initial work.

Start Date: 12/1/99
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Japanese and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Complete

Environmental Health

An NCEH staff member participated in a workshop sponsored by the Japanese National Institute of Environmental Studies. Experts from Germany and the United States discussed approaches to assessing human exposure to dioxins and related compounds, particularly in human populations living near municipal waste incinerators. The workshop also covered quality assurance of the results of the assessments.

Start Date: 3/13/00
End Date: 3/13/00
Status: Complete

Field Epidemiology Training Program

With the help of CDC, Japan began its first Field Epidemiology Training Program (FETP) in September 1999, housed in the National Institute of Infectious Diseases in Tokyo. The program began with five trainees recruited from city governments and universities and focuses on infectious disease epidemiology. The instructors include two Japanese physicians: one a graduate of the Epidemic Intelligence Service (EIS) and one a graduate of the European Programme for Intervention Epidemiology Training (EPIET), along with a long-term consultant from CDC and short-term consultants from CDC and other FETPs. Trainees have participated in outbreak investigations, communications, polio immunization assistance in China, and assessment of various infectious disease surveillance systems in Japan. First-year trainees have been assigned to prefectural health departments throughout Japan. A second-year class was selected and is beginning service-through-training in surveillance evaluation, outbreak investigation and other topics in applied epidemiology.

Start Date: 9/1/99
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Japan, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

HIV

Japanese laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Influenza

NCID's Division of Viral and Rickettsial Diseases participated in a working visit to Japan's National Institute of Infectious Diseases and the Ministry of Health; made numerous presentations on influenza, including H5N1 epidemiologic investigations; and provided technical assistance and consultation on influenza studies and encephalopathy.

Start Date: 1/1/94
Status: Ongoing

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Japan, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Natural Disasters

The Panel on Wind and Seismic Effects was established in 1969 as part of a broader U.S.-Japan Cooperative Science Program. Since 1995, NCEH's Division of Environmental Hazards and Health Effects has been an active panel member, participating in joint programs to exchange wind and seismic technologies, conduct joint research, and develop stronger technical links between the United States and Japan. In 2000, Japanese colleagues identified a counterpart from the Ministry of Health's Field Epidemiology Training Program to represent health-related research interests. A mechanism for continuing dialogue between the United States and Japan for health interests in wind and seismic disasters has been created through this panel.

Start Date: 5/1/95
Status: Ongoing

Occupational Hazards

NIOSH staff participated in a collaborative research project with colleagues from the Department of Pathology, Dokkyo University School of Medicine, Mibu, Tochiqi, Japan. The research involved elucidation of molecular events that occur in cells exposed to silica or other particles. Silica-induced events measured included specific early pathologic changes and immunological changes. Other studies included autopsy studies of occupational and environmental changes in lungs and molecular events leading to carcinogenesis. The collaboration focused on biomarkers of occupational disease inhibitors associated with diesel exposure.

Start Date: 1/1/98
Status: Ongoing

JAPAN - U.S.-BASED COLLABORATION(S)

Mycosis

Staff from NCID's Division of Bacterial and Mycotic Diseases collaborated with a visiting scientist from the Faculty of Pharmaceutical Sciences, Science University of Tokyo to study the physiological characteristics and mycotoxins of human clinical isolates of Fusarium species.

Start Date: 10/1/98
End Date: 9/1/99
Status: Complete

KOREA (REPUBLIC OF - SOUTH)

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in South Korea and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to South Korean as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

HIV

South Korean laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Silicosis

NIOSH staff participated in a collaborative research project with colleagues from Ewha Women's Medical College in Seoul, Korea. The research involved elucidation of molecular events that occur in macrophages exposed to silica or endotoxin. Silica-induced events measured included oxidant production, phosphorylation of protein tyrosine, and activation of the transcription factor NFkB. (NFkB activation is dependent upon tyrosine protein kinase, which in turn is dependent on the production of nitric oxide and reactive oxygen species by silica-exposed macrophage.) Current studies involve co-culture of alveolar macrophages and alveolar type II cells to determine if stimulant-induced oxidants released from macrophages damage alveolar epithelial cells.

Start Date: 1/1/00
Status: Ongoing

KOREA (REPUBLIC OF - SOUTH) - U.S.-BASED COLLABORATION(S)

Capacity Development

NIOSH has renewed its collaborative agreement with the Korea Occupational Safety and Health Agency (KOSHA), formerly the Korea Industrial Safety Corporation (KISCO). KOSHA is a quasi-governmental organization charged with addressing occupational safety and health (OSH) issues in Korea and conducting OSH research. The purpose of the agreement is to facilitate staff exchanges for the purpose of training KOSHA staff in OSH research techniques and related skills. Through this agreement, various Korean researchers have been detailed to NIOSH labs for periods of 6 to 12 months to work in a variety of subject areas,

including pneumoconioses, industrial hygiene methods, hazard surveillance, environmental sampling, and others. Preparations are in progress to host additional KOSHA researchers over the next several years.

Start Date: 11/1/96
Status: Ongoing

MALAYSIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Malaysia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

HIV

Malaysian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Management Training

In FY 99 and 00, participants from Malaysia attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Natural Disasters

Forest fires spawned by land clearing and burning caused widespread air pollution in Southeast Asia in 1997, affecting nearly 300 million people throughout the region. Studies were needed to measure the risk for adverse health outcomes among vulnerable adults with different levels of exposure to haze caused by the fires. NCEH visited Malaysia to assess the feasibility of conducting health assessments. During the site visit, the team developed further details of the study protocols in collaboration with counterparts in Malaysia's Ministry of Health, assessed the availability of data, and developed plans for capacity-building activities. NCEH staff also presented "Analyses Related

to Environmental Exposures and Health Outcomes: the Disaster Approach" at a workshop on analysis of data related to haze and public health.

Start Date: 5/1/99
Status: Ongoing

Pathology Consultation

Staff from NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support on cases of Enterovirus 71 encephalitis.

Start Date: 5/1/00
End Date: 7/1/00
Status: Complete

MONGOLIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Mongolia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Influenza

A staff member from NCID's Division of Viral and Rickettsial Diseases served as a consultant for WHO's Western Pacific Regional Office (WPRO) in its efforts to strengthen influenza laboratory-based virologic and influenza disease surveillance. Staff performed on-site technical assistance visits to laboratories, hospitals, and outpatient clinics in the Philippines, Mongolia, and Vietnam and met with Ministry of Health staff, communicable disease epidemiologists, physicians, and surviellance specialists in each country. Through these visits and meetings, information was gathered on current and past activities related to influenza and the current level of virologic surveillance for influenza was assessed. Recommendations on how to strengthen virologic and disease-based surveillance for influenza were made to WHO/WPRO.

Start Date: 8/1/00
End Date: 9/30/00
Status: Complete

MYANMAR

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Myanmar and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

HIV

Laboratories in Myanmar, along with laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate test-

ing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.
Status: Ongoing

Reproductive Health

An NCCDPHP study of reproductive health (RH) outcomes among displaced persons in 52 post-emergency phase camps was conducted in 7 countries (Azerbaijan, Ethiopia, Myanmar, Nepal, Tanzania, Thailand and Uganda). The objective of the study was to provide data on these outcomes and compare them to the host country and country-of -origin populations as well as to determine programmatic factors that affect RH outcomes. The main outcome measures were crude birth rate, neonatal mortality rate, maternal mortality ratio, incidence of complications of unsafe and spontaneous abortion, and percent low birth weight.

Start Date: 10/1/98
Status: Ongoing

NEPAL

An NIP medical epidemiologist was assigned to Nepal to assist in WHO's polio eradication efforts in the region.

Encephalitis

Staff from NCID's Division of Vector-Borne Infectious Diseases conducted epidemiology and surveillance of Japanese encephalitis in Nepal.

Start Date: 1/1/99
Status: Ongoing

Epidemiology Training

EPO staff collaborated with Nepal on a training project for the prevention and control of vector-borne diseases in collaboration with the Nepali Ministry of Health (MOH), WHO, and other partners, with principal funding from USAID. The main objectives of the project are to enhance surveillance, outbreak detection, and response capacity for three major vector-borne diseases: malaria, kala-azar, and Japanese encephalitis. These activities are intended to strengthen the recently created national surveillance Early Warning Reporting System (EWARS) and to diminish the occurrence and burden of vector-borne diseases in Nepal. Field epidemiologic activities included an assessment of the sensitivity of the malaria surveillance system; a case control study of the risk factors and potential interventions for kala-azar; assessment of the prevalence of Japanese encephalitis; and assessment of malarial treatment efficacy. Training and human capacity building activities included a "train-the-trainers" course in vector-borne disease surveillance, outbreak detection, and response in collaboration with WHO, the MOH, and USAID.

Start Date: 8/1/98
Status: Ongoing

Leishmaniasis

NCID's Division of Parasitic Diseaes collaborated with the Ministry of Health to conduct a USAID-funded study of risk factors for visceral leishmansiasis in lowland Nepal. The study identified use of bed nets as a strong protective factor; this finding was used to design a pilot intervention.

Start Date: 9/1/99
End Date: 3/1/00
Status: Complete

Nutrition Assessment

NCEH's Division of Laboratory Sciences staff measured serum folate and vitamin B12, transferrin receptor, and vitamin A on serum from approximately 225 Bhutanese refugees interned in Nepal for an NCEH study on refugee health. The results indicated that the refugees were severely malnourished.

Start Date: 1/1/99
End Date: 3/8/00
Status: Complete

Reproductive Health

An NCCDPHP study of reproductive health (RH) outcomes among displaced persons in 52 post-emergency phase camps was conducted in 7 countries (Azerbaijan, Ethiopia, Myanmar, Nepal, Tanzania, Thailand and Uganda). The objective of the study was to provide data on these outcomes and compare them to the host country and country-of -origin populations as well as to determine programmatic factors that affect RH outcomes. The main outcome measures were crude birth rate, neonatal mortality rate, maternal mortality ratio, incidence of complications of unsafe and spontaneous abortion, and percent low birth weight.

Start Date: 10/1/98
Status: Ongoing

NEW ZEALAND

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to New Zealand's as well as other countries' neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to New Zealand laboratories and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate New Zealand laboratories and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Epidemiology Training

Public health professionals from New Zealand were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Laboratories in New Zealand, along with laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give labora-

tories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Meningococcal Disease/Meningitis

NCID's Division of Bacterial and Mycotic Diseases provided technical assistance to WHO on the control of epidemic serogroup Meningococcal disease in New Zealand.

Start Date: 9/1/96
Status: Ongoing

Occupational Injuries

NIOSH staff participated in an international collaborative study of fatal occupational injuries in three countries: the United States, Australia, and New Zealand. The project includes a comparison of fatal work injury data in the three countries for a common time period. To overcome the impediment of differences in the three data systems, the same inclusion and exclusion criteria were applied to the data from each country to provide comparable data sets for analysis. Similarities and differences in fatal injury rates and causes were examined and compared by employment and demographic characteristics. Detailed analyses also described mechanisms of injury, examined coding differences in the three countries, and examined high-risk worker groups. Results allow NIOSH to generate hypotheses regarding occupational safety issues, such as factors contributing to lower injury risk in the same occupations in one country but not others, and to identify possible directions for prevention.

Start Date: 1/1/98
Status: Ongoing

Quality Assurance Audit at Manufacturing Sites

NIOSH performed quality assurance site audits of respirator manufacturing facilities as required by Title 42, CFR, Part 84.43(b). Audits were conducted at Rayphil Blastmaster, Christchurch, New Zealand in April 2000 and at Safety Equipment of Australia (SEA), Warriewood, Australia in May 2000. Both respirator manufacturers produce NIOSH-certified respirators.

Start Date: 4/1/00
End Date: 5/1/00
Status: Complete

PAKISTAN

An NIP staff member was assigned to Pakistan to assist in polio eradication activities.

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Pakistan) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in the EMRO region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and they have developed a rapid response network to investigate outbreaks of public health importance. This agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa. Other activities

include collaboration with USAID to strengthen communicable disease surveillance in Egypt and technical assistance to countries in the region for a variety of public health issues.

Start Date: 8/1/97
Status: Ongoing

Health Information Systems

In collaboration with UNHCR, NCEH staff are involved in the ongoing design and implementation of a prototype computer based health information system for Afghan refugees in Pakistan, which will serve as a model to be implemented in other refugee situations.

Start Date: 1/1/00
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Pakistan, with scientific approaches to building a strong non-communicable disease (NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

Lead Poisoning

NCEH's Division of Laboratory Sciences provided quality assurance/quality control support in the analysis of 20 split samples from Pakistan. This allowed the Aga Khan University to resolve its blood lead analysis issues so that its staff could then analyze samples for a blood lead study.

Start Date: 11/1/99
End Date: 8/31/00
Status: Complete

Management Training

In FY 99 and 00, participants from Pakistan attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Reproductive Health Surveys

A study in the Afghan refugee camps in Pakistan is identifying the proportion of deaths in the camp attributable to reproductive health-related causes and measuring the need for family planning and other reproductive health services.

Start Date: 5/1/99
Status: Ongoing

Water Vessel Project

NCID's Division of Bacterial and Mycotic Diseases collaborated in a study with Pakistan's Aga Khan University and Health Oriented Preventive Education to evaluate the health impact of soap, health education, improved drinking water storage, and decontamination.

Start Date: 9/1/00
Status: Ongoing

PALAU

Management Training

In FY 99 and 00, participants from Palau attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since September 1992.

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Palau. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)
Status: Ongoing

PHILIPPINES

An NIP medical epidemiologist was assigned to the Philippines to assist in WHO's measles activities.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to

participating labs in the Phillipines and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Filipino as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Epidemiology Training

Public health professionals from the Philippines were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Laboratories in the Philippines, along with laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Influenza

A staff member from NCID's Division of Viral and Rickettsial Diseases served as a consultant for WHO's Western Pacific Regional Office (WPRO) in its efforts to strengthen influenza laboratory-based virologic and influenza disease surveillance. Staff performed on-site technical assistance visits to laboratories, hospitals, and outpatient clinics in the Philippines, Mongolia, and Vietnam and met with Ministry of Health staff, communicable disease epidemiologists, physicians, and surviellance specialists in each country. Through these visits and meetings, information was gathered on current and past activities related to influenza and the current level of virologic surveillance for influenza was assessed. Recommendations on how to strengthen virologic and disease-based surveillance for influenza were made to WHO/WPRO.

Start Date: 8/1/00
End Date: 9/30/00
Status: Complete

Management Training

In FY 99 and 00, participants from Philippines attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory

University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Management Training

PHPPO's Field Management Training Program (FMTP) in Tagaytay, Philippines is an in-service applied management training program designed to equip local government unit staff with practical managment skills. Field-based and action-oriented, the program consists of three workshops spaced out during a 1-year time period. Each participant must complete two applied managment classes in his or her local government unit. The management curriculum content is appropriately designed for Philippines local government officials. FMTP uses the same curriculum for in-country Management for International Health Program (MIPH). Examples of project themes include: improving the adequacy of TB sputum samples, eliminating supply stock-outs, improving the timely submission of disease reporting, and increasing patient counseling for family planning services.

Start Date: 9/1/98
Status: Ongoing

Micronutrient Malnutrition

In February 2000, NCCDPHP's Division of Physical Activity and Nutrition staff (together with CDC Office of Global Health staff) participated in a regional forum on flour fortification in Southeast Asia, held in Manila, Philippines and hosted by the Asian Development Bank. The forum led to the development of consensus statements on strategies to implement large-scale nutrient fortification of flour in Southeast Asian countries.

Start Date: 2/1/00
End Date: 2/28/00
Status: Complete

Surveillance

EPO's Division of International Health (DIH), in collaboration with USAID, has been working with the Philippines Department of Health (DOH) to establish an Infectious Disease Surveillance and Control Program (IDSCP). The six project sites focus on three priority diseases – TB, dengue, and malaria – and training has begun with the sites' coordinators.

Start Date: 5/1/99
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including the Philippines. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the

existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)
Status: Ongoing

Tuberculosis

In collaboration with the Department of Health (DOH) of the Republic of the Philippines and EPO, NCHSTP's Division of TB Elimination is providing technical assistance to a USAID-funded project whose objective is to reduce the threat of HIV/AIDS and other selected infectious diseases in the Philippines. Of the infectious diseases in the Philippines, TB has the most significant public health impact and therefore figures significantly in the project. DTBE continues to work with the DOH to initiate operations research training; expand directly observed treatment, short-course (DOTS) pilot projects; and initiate public-private collaborative projects in a number of provinces.

Start Date: 1/1/99
Status: Ongoing

REPUBLIC OF THE MARSHALL ISLANDS (RMI)

Radiation

Since 1994, the NCEH Radiation Studies Branch has had three consecutive cooperative agreements with the Republic of the Marshall Islands (RMI). The basic purpose of this work has been to examine the feasibility of performing an epidemiologic study of thyroid disease among Marshallese citizens who were exposed to radioactive fallout from U.S. nuclear weapons testing in the Marshall Islands following World War II. Even though CDC has demonstrated that it is feasible to perform an epidemiologic study, this current cooperative agreement is concentrating on developing quantitative methods for estimating radiation exposure from nuclear weapons fallout, based on peer review of a proposed study protocol by the National Academy of Sciences and other external reviewers as well as the expressed interest of the Marshallese government. Work continues on developing quantitative methods for estimating radiation exposure to the Marshallese from nuclear weapons fallout.

Start Date: 1/1/94
Status: Ongoing

SAMOA

HIV

Samoan laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

SINGAPORE

Occupational Hazards

In a collaborative research project with the University of Calgary, Canada; Bombay Hospital and Institute of Medical Sciences, Bombay, India; and the National University of Singapore, NIOSH

researchers worked to elucidate molecular events and corresponding pathological changes that occur in the lungs of workers exposed to silica or other particles. Silica-induced events measured included oxidant production, phosphorylation of protein tyrosine, and activation of the transcription factor NFkB. (NFkB activation is dependent upon tyrosine protein kinase, which in turn is dependent on the production of reactive oxygen species by silica-exposed macrophage.) Other studies include autopsy studies of occupational and environmental changes in lungs, molecular events leading to carcinogenesis, and biomarkers of occupational disease inhibitors and development.

Start Date: 1/1/98
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Singapore. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)
Status: Ongoing

SRI LANKA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Sri Lanka and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

HIV

Sri Lankan laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Sri Lanka. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

TAIWAN

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Taiwanese as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Diabetes

As part of the NCCDPHP Division of Diabetes Translation's ongoing collaboration with Taiwan's Center for Disease Control, a number of manuscripts relevant to diabetes issues have been or are in the process of being published. Manuscript topics include diabetes prevalence, diabetes mortality, and ethnic variation in diabetes prevalence in Taiwan.

Start Date: 5/1/97
Status: Ongoing

Environmental Health

At the invitation of the Taiwan Department of Health's National Resuscitation Council, an ATSDR staff member conducted a training session on health sector disaster preparedness. The class focused on coordination and management in disasters, as well as primary and secondary chemical threats.

Start Date: 8/6/00
End Date: 8/13/00
Status: Complete

Environmental Health

The Taiwan Environmental Protection Administration (EPA) funded ATSDR to conduct its Basic Course for Health Assessment and Consultation in June 2000 in Taipei, Taiwan. The course included a field training practicum or mock site visit, held at the Shan Ju Ku Landfill, Nan Gang District, Taiwan. A number of meetings and conference calls were conducted with Taiwan health officials before the actual training date, including the planning and preparation of the field practicum. The ATSDR team trained approximately 70 Taiwan health officials and EPA officials

in ATSDR's methodology of investigating hazardous waste sites and conducting public health assessments to identify persons at health risk from adverse exposures.

Start Date: 11/1/99
End Date: 6/1/00
Status: Complete

HIV

Taiwanese laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Management Training

In FY 99 and 00, participants from Taiwan attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Natural Disasters

On September 21, 1999 a powerful earthquake (measuring 7.6 on the Richter scale) struck central Taiwan. Considered unusual in the region due to its origin beneath the Changyung Mountains, the quake killed an estimated 2,256, injured 8,731, and displaced roughly 100,000 people. After the earthquake, Taiwan requested epidemiologic consultation from CDC to assist in managing public health response activities for the disaster and in training personnel from the Field Epidemiology Training Program (FETP) in responding to earthquake events. During the first week, activities consisted of site visits to selected disaster-affected zones in Taichung and Nantou Counties to review 1) CDC-Taiwan's earthquake-related disease surveillance systems; 2) environmental management in shelters for displaced persons; and 3) emergency response in the public health sector. Later, activities focused on 1) various presentations on post-disaster epidemiologic methods to the CDC-Taiwan staff and faculty from National Taiwan University's College of Public Health; 2) attendance at daily meetings of the staff for the earthquake emergency; 3) consultation about post-earthquake disease outbreaks from surveillance data, information regarding latrines for camps with prefabricated structures, and strategies for responding to the media. Feedback was given on the results of a community needs assessment conducted by the FETP. Further activities with the FETP consisted of discussion of appropriate study designs for addressing earthquake-related mortality and possible earthquake-

related projects to be conducted by the 12 FETP members.

Start Date: 10/1/99
End Date: 10/31/99
Status: Complete

Nosocomial Infections

NCID staff conducted the following assessments: risks of TB among healthcare workers; usefulness of CDC guidelines in reducing nosocomial TB transmission; effectiveness and feasibility of ultraviolet germicidal irradiation (UVGI) in reducing nosocomial TB transmission; usefulness of serial TB skin testing among healthcare workers with prio (infancy or more recently) BCG vaccination.

Start Date: 10/1/99
End Date: 9/1/00
Status: Complete

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support on cases of Enterovirus 71 encephalitis in Taiwan.

Start Date: 5/1/00
End Date: 7/1/00
Status: Complete

Reproductive Toxicology

NIOSH researchers are collaborating with researchers from the National Cheng Kung University in Tainan, Taiwan and University of Medicine and Dentistry of New Jersey/Rutgers University to conduct a study to determine the reproductive health of Taiwanese women and their daughters. The women had consumed rice oil contaminated with polychlorinated biphenyls (PCBs) during their pregnancies. The NIOSH researchers will analyze the biological samples, help statistically analyze and interpret the data, and write the report(s). Results from this study may prompt additional evaluation of this population. They will also provide information on the reproductive toxicity of PCBs as it relates to occupational hazards in the United States.

Start Date: 3/1/00
Status: Ongoing

Rickettsial Disease

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation on sporadic cases of encephalitis, hepatic failure, and rash in Taiwan. Several cases of rash were determined to be associated with Orientia group rickettsia.

Start Date: 1/1/99
End Date: 9/1/99
Status: Complete

THAILAND

Six NCHSTP staff members served at CDC's collaborative research center in Thailand, designing and implementing numerous HIV/AIDS and TB research projects with Thai colleagues.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Thailand and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Thai as well as other neonatal screening laborato-

ries around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactesemi, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Thai and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Environmental Health

NIOSH participated with the WHO/International Programme for Chemical Safety (IPCS) and the Thai Society of Toxicology in Bangkok, Thailand to evaluate the potential environmental and health hazards to community residents associated with a localized 2,3,7,8-tetrachlorodibenzodioxin-contaminated site. The site appeared to have been contaminated in the 1960s. The multidisciplinary international team conducted a site visit and presented results of their findings at a public meeting. Team members also gave day-long presentations on the issues related to health effects, environmental distribution, and physical chemistry of dioxin.

Start Date: 10/1/99
End Date: 11/1/99
Status: Complete

Hemorrhagic Fever Viruses

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and immunohistochemical diagnostic testing in Thailand for sporadic cases of hemorrhagic fever of unknown origin.

Start Date: 11/1/98
End Date: 1/31/99
Status: Complete

HIV

NCID's Division of AIDS, STD, and TB Laboratory Research provided technical support for laboratory operations in CDC's research station in Bangkok, Thailand, and conducted mission-related research in collaboration with the field site.

Start Date: 10/1/95
Status: Ongoing

HIV

Thai laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

The HIV/AIDS Collaboration (HAC) is a CDC collaboration with the Thai Ministry of Health to improve understanding of HIV/AIDS and the dynamics of its spread in Thailand and to provide a scientific basis for the development, implementation, and monitoring of intervention programs to prevent and control HIV infection and AIDS. Research is being conducted to: develop, implement, and evaluate interventions to prevent maternal-infant HIV transmission; study heterosexual HIV and STD transmission to determine rates of HIV and other STDs and the role that

vaginal microbicides can play in high- and low-risk populations; evaluate HIV transmission among injecting drug users; characterize the HIV epidemic in Thailand through molecular epidemiology; and participate in an HIV vaccine efficacy trial.

Start Date: 1/1/90
Status: Ongoing

HIV

NCCDPHP's Division of Reproductive Health collaborated with Chiang Mai University and Johns Hopkins University on a study of heterosexual HIV transmission in Chiang Mai, Thailand. The study's original purpose was to identify epidemiologic, behavioral, and laboratory factors associated with HIV transmission from 590 HIV-infected men to their female partners. Three additional substudies were developed: 1) to evaluate host and viral factors that distinguished women who became infected with the HIV virus after a short exposure period from women who remained HIV-negative after prolonged exposure to the virus; 2) to document the types of illnesses and average time to death among Thai persons infected with HIV-clade E; and 3) to evaluate host and viral factors that distinguished people who died from HIV illnesses after a short infection period from people who lived with the virus for a long period of time without becoming ill. Through these studies, important new information about HIV-clade E is being discovered from these studies in a nation with an epidemic of this unique HIV subtype.

Start Date: 3/1/92
Status: Ongoing

HIV/STD Prevention

CDC is participating in an HIV/AIDS collaboration with the Thailand Ministry of Public Health. Under this collaboration, the NCHSTP Division of STD Prevention has provided a long-term resident medical epidemiologist and short-term technical assistance to conduct STD research and data analysis for a cohort study of female sex workers in Chiang Rai province; analyze HIV-1 seroprevalence among childbearing women; and assess the feasibility of evaluating vaginal microbicide use to prevent HIV infection among women in the general population of Chiang Rai.

Start Date: 9/1/95
Status: Ongoing

HIV/STD Prevention

NCID's Division of AIDS, STD, and TB Laboratory Research, in a collaborative study with NCHSTP's Division of STD Prevention and the Thailand Ministry of Public Health in Bangkok, began to analyze strains of *N. gonorrhoeae* isolated in Bangkok for clinically significant antimicrobial resistances. NCID is currently determining the genetic basis of ciprofloxacin resistance to monitor the evolution of ciprofloxacin resistance in *N. gonorrhoeae* in Thailand.

Start Date: 7/1/94
Status: Ongoing

Leptospirosis

NCID's Division of Bacterial and Mycotic Diseases provided assistance to the Thai Ministry of Public Health in epidemiologic investigations of leptospirosis in northeastern Thailand by testing serum samples by the standard serologic assay for detection of leptospiral antibodies-Leptospira micro agglutination assay.

Start Date: 1/1/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from Thailand attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and

conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Reproductive Health

An NCCDPHP study of reproductive health (RH) outcomes among displaced persons in 52 post-emergency phase camps was conducted in 7 countries (Azerbaijan, Ethiopia, Myanmar, Nepal, Tanzania, Thailand and Uganda). The objective of the study was to provide data on these outcomes and compare them to the host country and country-of -origin populations as well as to determine programmatic factors that affect RH outcomes. The main outcome measures were crude birth rate, neonatal mortality rate, maternal mortality ratio, incidence of complications of unsafe and spontaneous abortion, and percent low birth weight.

Start Date: 10/1/98
Status: Ongoing

Tuberculosis

In FY 2000, CDC, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program recently expanded to 10 additional countries. Improving TB prevention and control efforts is an important component of the LIFE/GAP initiative. Staff from NCHSTP's Division of TB Elimination have been actively involved in developing project "best practice" blueprints, participating in site visits to LIFE/GAP countries, and convening an expert group to provide input into the selection of countries for initial TB efforts and the content of country-specific TB projects. Initial TB efforts focused on six countries, including Thailand.

Start Date: 1/1/98
Status: Ongoing

VIETNAM

Two CDC staff were assigned to Vietnam – one from NCIPC, who helped develop injury prevention and control programs, and the other from NCHSTP, assisting the Vietnamese with HIV/AIDS, STD, and TB prevention efforts

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Vietnam and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Bloodstream Infections

NCID staff conducted a prospective cohort study from September 1998 to April 1999 to determine the identity and antimicrobial susceptibility patterns of the most common pathogens causing bloodstream infections (BSIs) in febrile, hospitalized adults and to determine the prevalence of HIV in this patient population. The Myco-F-Lytic (MFL) system was used for blood cultures. The BSI rate was 4.3%, which is low compared to reports from studies in other Southeast Asian countries. The MFL system provides a sensitive and uncomplicated method for comprehensive detection of BSIs in developing countries. Seroprevalence rates of HIV in this patient population remain low.

Start Date: 9/1/98
End Date: 4/1/99
Status: Complete

Bloodstream Infections

NCID staff conducted an evaluation of the epidemiology and microbiology of bloodstream infections (BSIs) among adult patients on admission to Bach Mai Hospital in Hanoi. The purpose of the study was to determine which pathogens were causing BSIs in patients admitted to the medical service and intensive care units.

Start Date: 9/1/98
End Date: 4/1/99
Status: Complete

Emerging Infectious Diseases

NCID's Division of Vector-Borne Infectious Diseases staff have worked for several years in collaboration with the Ministry of Health in Vietnam to assist in the development of laboratory expertise, surveillance, prevention, and control of emerging infectious diseases.

Start Date: 10/1/96
Status: Ongoing

Epidemiology Training

Public health professionals from Vietnam were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

Ergonomics

At the request of the National Institute for Occupational and Environmental Health (NIOEH) of the Republic of Vietnam, NIOSH conducted a workshop in December 1998 in Hanoi on the principles of ergonomics. This course was requested as part of the ongoing collaboration between NIOEH and NIOSH. The workshop was designed for NIOEH professional staff to provide an intensive introduction to the theory and practice of ergonomics. A secondary goal was to promote relationships between researchers from the two institutes to explore potential collaborative research activities.

Start Date: 12/1/98
End Date: 12/31/98
Status: Complete

Hemodialysis

NCID staff established a hospital infection surveillance system for hemodialysis patients with febrile illness and fever or infected access sites at Bach Mai Hospital, Hanoi, which is the largest hemodialysis center in Vietnam.

Start Date: 11/1/99
Status: Ongoing

HIV

Vietnamese laboratories, as well as laboratories in 81other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Hospital Infections

NCID staff developed a curriculum to teach principles of hospital epidemiology and infection control. They trained regional control personnel, provided consultancies on establishing an infection control department/infrastructure, and assessed infection control practices and recommendations for improvement in one urban hospital.

Start Date: 9/1/99
Status: Ongoing

Influenza

A staff member from NCID's Division of Viral and Rickettsial Diseases served as a consultant for WHO's Western Pacific Regional Office (WPRO) in its efforts to strengthen influenza laboratory-based virologic and influenza disease surveillance. Staff performed on-site technical assistance visits to laboratories, hospitals, and outpatient clinics in the Philippines, Mongolia, and Vietnam and met with Ministry of Health staff, communicable disease epidemiologists, physicians, and surviellance specialists in each country. Through these visits and meetings, information was gathered on current and past activities related to influenza and the current level of virologic surveillance for influenza was assessed. Recommendations on how to strengthen virologic and disease-based surveillance for influenza were made to WHO/WPRO.

Start Date: 8/1/00
End Date: 9/30/00
Status: Complete

Injuries

An NCIPC staff member participated in a Traffic and Workplace Safety Roundtable and gave a presentation on motor vehicle injury prevention in the United States. He also took part in discussions of the problem of motor vehicle safety in Vietnam.

Start Date: 12/1/99
End Date: 12/31/99
Status: Complete

Injuries

NCIPC collaborated with UNICEF to jointly fund an injury prevention specialist from NCIPC to work first on transport and occupational injury and then on injury in the home, school and community. NCIPC staff also participated in a series of workshops on these activity areas, providing technical consultation regarding the development of a national plan for preventing injuries in these areas.

Start Date: 1/16/00
Status: Ongoing

Management Training

In FY 99 and 00, participants from Vietnam attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public

health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Nosocomial Infections

NCID staff conducted prevalence surveys of surgical site infections (SSIs) at Cho-Ray Hospital in Ho Chi Minh City, Vietnam. Staff assessed rates, antibiotic usage patterns, associated risk factors, and microbiologic data correlation. Results indicated that the point prevalence of SSI rate was 15.4% – predominantly gram-negative bacterial infections with high resistance to gentamicin and third-generation caphalosporins. The study found 99.7% post-operative antimicrobial usage, regardless of surgical ward or type of surgery. There was limited utilization of microbiologic data. In a related study, staff assessed the impact of waterless handwashing solution on SSI rates at Cho-Ray Hospital and introduced this intervention onto wards to reduce nosocomial infection and assess efficacy.

Start Date: 10/1/99
Status: Ongoing

Nosocomial Infections

Point prevalence surveys of nosocomial infections conducted in the ICU and two medical wards of Cho-Ray Hospital, Vietnam were conducted in September 1998. Data showed that point prevalence surveys efficiently identified nosocomial infections in hospitals with limited resources. Nosocomial pneumonia and surgical site infections are the major problems in the Cho-Ray Hospital intensive care unit population.

Start Date: 1/1/99
Status: Ongoing

School Health

NCCDPHP's Division of Adolescent and School Health provided technical support and recommendations for improving coordinated school health and HIV prevention programs to national school groups in Australia, Bangladesh, Indonesia, Nigeria, Namibia, Oman, and Vietnam.

Start Date: 11/1/98
Status: Ongoing

Tuberculosis

Although an effective strategy has been developed for the diagnosis and management of TB in developing countries that results in over 90% cure among those treated, few countries have effective programs in place. In late 1997, CDC established a model training program in operations research. Studies now have been completed or are nearing completion on risk factors for treatment failure and for default; reasons for patient delay in seeking initial TB treatment; and knowledge, attitudes, and beliefs about HIV and HIV testing and counseling among TB patients. A second course, built on a similar model of training combined with mentored projects and using funding provided by USAID, seeks to build TB managerial capacity.

Start Date: 1/1/97
Status: Ongoing

Tuberculosis

TB control in the United States is dependent on successfully addressing TB in immigrant populations, including efforts directed both at strengthening the medical examination procedures and treatment of immigrants and refugees prior to their entry into the United States and assuring

complete and appropriate follow-up, evaluation, and treatment of migrants once they arrive in the United States. NCID's Division of Quarantine, in collaboration with the NCHSTP Division of Tuberculosis Elimination and partners in Vietnam (Cho-Ray Hospital, Institute Pasteur, and Pham Ngoc Thach National TB Hospital), is working on a project to reduce the burden of TB disease in immigrants who resettle in the United States. By using chest radiographs and sputum specimens obtained as part of the medical examination process for immigrants at Cho-Ray Hospital, the project will compare the ability of the current mandated TB screening procedures to detect cases of active TB with that of mycobacterial culture and other newly developed diagnostic tests. To improve follow-up of immigrants with suspected tuberculosis after arrival in the United States, reliable routes are being developed for electronically transmitting data to NCID and to selected health departments prior to the immigrant's arrival in the United States. Electronic linking may be accomplished through the Internet, e-mail, or by a stacked bar-code method of data transmission attached to the immigrant's visa application.

Start Date: 10/1/98
Status: Ongoing

Tuberculosis

In FY 2000, CDC, USAID, and other partners launched the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative to support efforts to combat HIV/AIDS in 14 African countries and in India. Now known as the Global AIDS Program (GAP), the program recently expanded to 10 additional countries. Improving TB prevention and control efforts is an important component of the LIFE/GAP initiative. Staff from NCHSTP's Division of TB Elimination have been actively involved in developing project "best practice" blueprints, participating in site visits to LIFE/GAP countries, and convening an expert group to provide input into the selection of countries for initial TB efforts and the content of country-specific TB projects. Initial TB efforts focused on six countries, including Vietnam.

Start Date: 1/1/98
Status: Ongoing

Typhoid Fever

NCID's Division of Bacterial and Mycotic Diseases provided financial and technical assistance to estimate the seroprevalence of chronic carriers of *Salmonella Typhi*.

Start Date: 6/1/99
Status: Ongoing

Typhoid Fever

Staff from NCID's Division of Bacterial and Mycotic Diseases reviewed and suggested design elements for a planned study of typhoid fever at selected locations within the Vietnam. The study will use spatial/geographic statistical methodologies in the data description and modeling.

Start Date: 10/1/99
End Date: 12/1/99
Status: Complete

VIETNAM - U.S.-BASED COLLABORATION(S)

Influenza

Staff from NCID's Division of Viral and Rickettsial Diseases hosted a visiting scientist from Vietnam for training in the isolation, identification, and characterization of influenza viruses so that an influenza surveillance system can be implemented in Vietnam.

Start Date: 1/1/97
Status: Ongoing

Occupational Exposure

In 1999, a CDC scientist stationed in Vietnam requested assistance in determining whether HIV-positive workers should be restricted in work activities. This was in response to a Vietnamese government proposal to severely restrict work activities

for anyone who was HIV-positive. The NIOSH HIV Activity conducted a basic literature search and identified only one official policy statement on this subject: Recommendations for Preventing Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Patients During Exposure-Prone Invasive Procedures, July 12, 1991/ 40(RR08);1-9. NIOSH provided assistance based on the recommendations made in this report.

Start Date: 10/1/99
Status: Ongoing

EUROPE

THE WORK OF CDC IN EUROPE

Despite some cultural and economic differences, in terms of health, the United States shares more characteristics with European countries than with any other region. In most of the United States and throughout Europe, noncommunicable conditions are by far the leading cause of death (compared to communicable diseases and injuries) and of disability-adjusted life years, or DALYs.

As in other high-income countries, Europeans face continuing threats from past hazards, along with the challenges posed by more recent changes in tobacco use, diet, physical activity, and the environment. CDC staff have shared their expertise with European counterparts and learned from their experiences in each of these areas, contributing to new knowledge around the world.

Examples of CDC's global health activities in Europe in each of five strategic areas are provided below.

Public Health Surveillance and Response

The National Center for Health Statistics (NCHS) has helped numerous countries design and implement health interview surveys to gain a more detailed understanding about health behaviors and outcomes. Two recent collaborations have involved the Ministries of Health in Hungary and Portugal. In a more specific effort aimed at youth, staff from CDC's Office of Smoking and Health (OSH), within the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), helped Hungarian colleagues implement a Student Health Behavior Survey among secondary school students in Budapest. The survey measured five categories of priority health risk behaviors among the students, for comparison against an earlier baseline survey: unintentional and intentional injuries, tobacco and alcohol use, physical activity, depression and attempted suicide, and sexual activities. The results were used to improve school health policies and design intervention programs geared to the specific concerns and behaviors of young people.

Public Health Infrastructure and Capacity-Building

European colleagues have helped scientists at the Agency for Toxic Substances and Disease Registry (ATSDR) learn more about chemical mixtures and environmental contamination that affects people in both continents. For example, ATSDR scientists have collaborated with scientists from the Czech Republic, the Netherlands, Spain, Belgium, Germany, and Poland on research about waste sites and specific toxicological risks. This new knowledge is used to update toxicological profiles maintained by ATSDR and used by health and environmental agencies around the world.

Disease and Injury Prevention and Control

CDC is an active participant in WHO's Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme – a major European collaborative effort to promote health and prevent noncommunicable diseases throughout the region. CINDI initiatives include the tobacco "Quit and Win" campaign, a Millennium Initiative on smoking reduction among health professional, development of dietary guidelines, and training seminars to advance knowledge about cardiovascular disease.

Applied Research for Effective Health Policies

CDC's National Immunization Program (NIP) provides technical expertise in the planning, implementation, and evaluation of polio eradication and measles vaccination activities to individual countries (such as Romania and Turkey) and to the WHO European Regional Office. Related to this effort were several recently completed research studies – such as a study in Romania to identify risk factors for late measles vaccinations and a study in Sweden on pertussis vaccination – particularly the need for a fourth dose of pertussis vaccine in children and whether booster doses are needed for adolescents and adults.

Exchange of Information and Lessons Learned

For a variety of reasons, national health and safety organizations sometimes devote a great deal of effort to developing national standards, only to find that parallel efforts have been underway elsewhere and have reached different conclusions. To share scientific information early in the process and to avoid any one nation's scientists having to "reinvent the wheel," CDC's National Institute for Occupational Safety and Health (NIOSH) initiated discussions with international and national health and safety organizations regarding sharing mutually useful assessments of occupational hazards. Letters of agreement among the American Conference of Governmental Industrial Hygienists and their counterpart organizations in the Netherlands, Sweden, and a group of Nordic countries have led to an efficient sharing of information about establishing occupational exposure limits in accordance with each organization's policies.

AUSTRIA

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Austria participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Austrian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Epidemiology Training

Public health professionals from Austria were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Austrian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collabo-

rative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Austria and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

BELGIUM

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Belgian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Belgian and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

The International Federation of Clinical Chemistry (IFCC) Working Group for the Standardization of Hemoglobin A1c (HbA1c) includes members from the United States, Belgium, Sweden, Australia, Germany, and Japan. The IFCC Working Group has built a network of laboratories to improve measurement of HbA1c, which is a marker of glucose control among people with diabetes. In 1999 and 2000, the Working Group addressed two reference methods for measurement of HbA1c. Since CDC houses the only network laboratory in the United States that has been approved by the IFCC to run both reference methods, NCEH has contributed to studies designed to assess and compare the reference methods. The first of these studies, known as Florence II, determined the feasibility of standardizing routine clinical assays for HbA1c. Another study, called the Malmoe reference range study, was designed to study the level of HbA1c and the biological variability of percent HbA1c in normal healthy adults using samples provided from the Denmark Health Study. The results indicated that the reference range is lower if measured by the highly specific IFCC reference methods and that the biological variability in non-diabetic adults is just slightly less if measured by the IFCC reference methods rather than by ion exchange chromatography. Additional reference range studies are planned to build on this initial work.

Start Date: 12/1/99
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Belgian and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Emerging Infectious Diseases

Staff from NCID's Division of Bacterial and Mycotic Diseases provided analysis of a set of unclassified fresh-water isolates to determine their genetic relatedness to *Afipia* species, a recently described opportunistic human pathogen. The international project with the University of Brussels was designed to identify the natural reservoir of one of the unusual pathogens, Afipia. The great majority of known Afipia strains have been isolated from patients, so the natural reservoir of this genus is not known. The University of Brussels has isolated a set of possible Afipia strains from fresh-water sources in Europe. NCID is using DNA-DNA hybridization technology to conclusively determine whether these strains are actually Afipia. Information obtained from this project will clarify the role of fresh water as a natural reservoir of Afipia.

Start Date: 2/1/00
Status: Ongoing

Epidemiology Training

Public health professionals from Belgium were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Belgian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Laboratory Diagnostics

NCEH's Division of Laboratory Sciences exchanged data with a laboratory in Belgium regarding the measurement of polychlorinated biphenyls (PCBs) in human samples. The collaboration will continue with the Belgian scientist coming to CDC for an extended stay as a research fellow.

Start Date: 3/1/00
Status: Ongoing

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Belgium, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

BELGIUM - U.S.-BASED COLLABORATION(S)

Environmental Contamination

ATSDR staff convened an international expert panel, including Belgian scientists, to assess the latest scientific and public health knowledge related to the usefulness of renal biomarkers. The work related to a medical monitoring program for those exposed to environmental lead and cadmium contamination from the Bunker Hill Mining Complex in Idaho's Silver Valley. Two primary adverse health outcomes related to lead and cadmium exposures are hypertension and chronic renal failure. Expert presentations and panel discussions included the following topics: program overview; public health practice considerations; lead-induced nephropathy; concomitant and comorbid conditions; cadmium nephropathy; tubular protinuria; and concluding recommendations regarding biomarker testing and clinical protocols.

Start Date: 5/25/99
End Date: 5/26/99
Status: Complete

BULGARIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Bulgaria and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Bulgaria, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Bulgaria and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

CROATIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Croatia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

HIV

Croatian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Croatia and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

CYPRUS

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to laboratories in Cyprus as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for

the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Cyprus and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

CZECH REPUBLIC

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in the Czech Republic and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from the Czech Republic participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Czech as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Czech and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Environmental Health

As part of its cooperative agreement with the Institute of Hygiene and Epidemiology (IHE) at the Charles University in Prague, ATSDR assisted in translating Division of Toxicology (DT) publications for Czech scientific journals. ATSDR also worked on classifying data from an IHE breast milk project that will be included in the ATSDR toxicological profile addressing interaction of breast milk contaminants.

Start Date: 8/1/00
Status: Ongoing

Giardiasis

Staff from NCID's Division of Parasitic Diseases developed and presented two courses with Czech colleagues on Polymerase Chain Reaction (PCR) and genomic sequencing techniques. Specimens and technology also were exchanged.

Start Date: 10/1/93
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In the Czech Republic and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

DENMARK

An NIP medical epidemiologist was assigned to WHO/EURO offices in Denmark to collaborate on polio and other immunization issues.

Developmental Disorders

Infection in pregnancy may be an important risk factor for poor neuro-developmental outcomes, including cerebral palsy. However, data about infection in pregnancy are often not available because of the lack of routinely collected information. To overcome this problem, data must be collected prospectively on mothers during pregnancy and on children after birth to identify developmental outcomes. NCEH is working on two proj-

ects in collaboration with scientists at the Danish Epidemiology Sciences Centre to address these problems. The first project is a pilot study to investigate markers of infection measured in Danish archived newborn blood spots and the risk for cerebral palsy among children identified through the Danish Cerebral Palsy Register. In addition, NCEH and Danish colleagues prepared a proposal to investigate markers of infection measured in serial maternal blood samples obtained during pregnancy, newborn cord blood, and newborn blood spots and the risk for cerebral palsy based on data gathered on 100,000 pregnant women and their offspring as part of the Danish National Birth Cohort. This collaboration will have a possible impact on the health of U.S. populations. If a cause of abnormal neuro-development is found, the results could be applied in the United States for prevention purposes. In addition, this type of research may improve our understanding of how sub-clinical infection may be detected during pregnancy and may guide U.S. activities investigating the role of infections during pregnancy and developmental outcomes.

Start Date: 10/1/99
Status: Ongoing

Environmental Health

NCEH continued its collaboration with Danish investigators on studies designed to determine the neurodevelopmental and behavioral effects of perinatal environmental exposures to polychlorinated biphenyls (PCBs), pesticides, mercury, and dioxins.

Start Date: 1/1/94
Status: Ongoing

Environmental Health

ATSDR is represented on the U.S. Department of State's Arctic Council Health and Environmental Working Group, which includes representatives from Canada, Denmark, Finland, Iceland, Norway, Russia, and Sweden. The Working Group was formed to assist the Department of State in its role as the Council's chair. The Working Group's assistance has included: (1) identifying ongoing research at federal agencies that are investigating exposure to persistent organic pollutants (POPs) and their impact(s) on human and ecological health; (2) identifying new areas of human and ecological health that would be applicable to the countries represented on the council; and (3) assisting the Department of State in establishing an agenda for 2000-2001 based on the above information.

Start Date: 4/1/00
Status: Ongoing

HIV

Danish laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV/STD Prevention

NCID's Division of AIDS, STD, and TB Laboratory Research collaborated with Statens Serum Institut in Denmark to investigate the molecular epidemiology and the emergence of antimicrobial resistance of *Chlamydia trachomatis* over the past 30 years. This study used previously collected isolates from the 1960s and compare them with geographically similar isolates from the 1990s in an attempt to provide insight into time-related changes in chlamydial transmission patterns.

Start Date: 12/1/99
Status: Ongoing

Occupational Hazards

In 2000, NIOSH staff worked with international and national health and safety organizations to share scientific data on occupational exposure to chemicals and develop documents that can be used by multiple organizations to establish occupational exposure limits in accordance with each organization's policies. Partner organizations include the American Conference of Governmental Industrial Hygienists (ACGIH) in the United States, the Dutch Expert Committee on Occupational Standards (DECOS) in the Netherlands, the National Institute for Working Life (NIWL) in Sweden, and the Nordic Expert Group for Criteria Documentation of Health Risks for Chemicals (NEG), which includes Denmark.

Start Date: 10/1/96
Status: Ongoing

Occupational Hazards

NIOSH convened a series of international conferences on developing policies for preventing worker injuries and illness from dermal contact with chemical hazards. These were part of a major multi-year program to develop practices that prevent exposures to dermal hazards and to conduct research leading to appropriate practices for controlling them. A number of multinational efforts are in place in Canada, Denmark, Finland, and Italy to develop appropriate principles for dermal absorptions hazards and approaches for controlling dermatitis in workers.

Start Date: 10/1/99
Status: Ongoing

Occupational Health

A NIOSH staff member delivered a lecture at a workshop on future needs in risk assessment. He then assisted in the teaching of a course on the scientific basis of cancer risk assessment, delivering lectures on the use of epidemiologic data for cancer risk assessment. The course was organized by the Nordic Institute for Advanced Training in Occupational Health and Safety, an organization jointly sponsored by the Nordic countries (Denmark, Sweden, Norway and Finland).

Start Date: 9/1/00
End Date: 9/5/00
Status: Complete

Quality Assurance Audit at Manufacturing Sites

NIOSH staff members traveled to Copenhagen, Denmark in June 1999 where they conducted an on-site compliance audit at the manufacturing site for an air-purifying respirator. NIOSH audits all manufacturers that hold NIOSH approvals and NIOSH approvals are relied upon by many countries around the world.

Start Date: 6/21/99
End Date: 6/28/99
Status: Complete

DENMARK - U.S.-BASED COLLABORATION(S)

Food Safety

NCID's Division of Bacterial and Mycotic Diseases provided PulseNet training to guest researchers from Denmark.

Start Date: 3/1/00
End Date: 6/1/00
Status: Complete

FINLAND

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Finland and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab

as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Finnish as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Finnish and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Diabetes

An NCEH staff member made the first of two trips to Finland in May 2000 to evaluate ongoing research programs and research grants at the request of the Juvenile Diabetes Foundation (JDF), International. An NCEH staff member, who is a member of the Advisory Board for the JDF Center for Prevention of Type 1 Diabetes in Finland, participated in the first meeting to review the Finnish Diabetes Prediction and Prevention Trial (DIPP).

Start Date: 5/1/00
Status: Ongoing

Environmental Health

ATSDR is represented on the U.S. Department of State's Arctic Council Health and Environmental Working Group, which includes representatives from Canada, Denmark, Finland, Iceland, Norway, Russia, and Sweden. The Working Group was formed to assist the Department of State in its role as the Council's chair. The Working Group's assistance has included: (1) identifying ongoing research at federal agencies that are investigating exposure to persistent organic pollutants (POPs) and their impact(s) on human and ecological health; (2) identifying new areas of human and ecological health that would be applicable to the countries represented on the council; and (3) assisting the Department of State in establishing an agenda for 2000-2001 based on the above information.

Start Date: 4/1/00
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Finland and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowl

edge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Occupational Hazards

In 2000, NIOSH staff worked with international and national health and safety organizations to share scientific data on occupational exposure to chemicals and develop documents that can be used by multiple organizations to establish occupational exposure limits in accordance with each organization's policies. Partner organizations include the American Conference of Governmental Industrial Hygienists (ACGIH) in the United States, the Dutch Expert Committee on Occupational Standards (DECOS) in the Netherlands, the National Institute for Working Life (NIWL) in Sweden, and the Nordic Expert Group for Criteria Documentation of Health Risks for Chemicals (NEG), which includes Finland.

Start Date: 10/1/96
Status: Ongoing

Occupational Hazards

NIOSH convened a series of international conferences on developing policies for preventing worker injuries and illness from dermal contact with chemical hazards. These were part of a major multi-year program to develop practices that prevent exposures to dermal hazards and to conduct research leading to appropriate practices for controlling them. A number of multinational efforts are in place in Canada, Denmark, Finland, and Italy to develop appropriate principles for dermal absorptions hazards and approaches for controlling dermatitis in workers.

Start Date: 10/1/99
Status: Ongoing

Occupational Health

A NIOSH staff member delivered a lecture at a workshop on future needs in risk assessment. He then assisted in the teaching of a course on the scientific basis of cancer risk assessment, delivering lectures on the use of epidemiologic data for cancer risk assessment. The course was organized by the Nordic Institute for Advanced Training in Occupational Health and Safety, an organization jointly sponsored by the Nordic countries (Denmark, Sweden, Norway, and Finland).

Start Date: 9/1/00
End Date: 9/5/00
Status: Complete

FRANCE

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from France participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which

should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including France, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to French as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate French and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Epidemiology Training

Public health professionals from France were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

French laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Nosocomial Infections

NCID staff conducted an epidemiologic study of nosocomial infections in bone marrow transplant recipients and evaluated the sensitivity and specificity of a new laboratory test, the polymerase chain reaction (PCR), for rapid detection of can-

didemia among bone marrow transplant recipients in Nantes, France. Candida species, which are common fungal organisms, are now the fourth most frequent cause of hospital-acquired bloodstream infection in the United States and are associated with significant patient morbidity and mortality.

Start Date: 1/1/99
Status: Ongoing

West Nile Virus

Staff from NCID's Division of Vector-Borne Infectious Diseases provided molecular epidemiology of the West Nile virus.

Start Date: 9/1/99
Status: Ongoing

GERMANY

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Germany participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to German as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to German and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of car.diovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

The International Federation of Clinical Chemistry (IFCC) Working Group for the Standardization of Hemoglobin A1c (HbA1c) includes members from the United States, Belgium, Sweden, Australia, Germany, and Japan. The IFCC Working Group has built a network of laboratories to improve measurement of HbA1c,

which is a marker of glucose control among people with diabetes. In 1999 and 2000, the Working Group addressed two reference methods for measurement of HbA1c. Since CDC houses the only network laboratory in the United States that has been approved by the IFCC to run both reference methods, NCEH has contributed to studies designed to assess and compare the reference methods. The first of these studies, known as Florence II, determined the feasibility of standardizing routine clinical assays for HbA1c. Another study, called the Malmoe reference range study, was designed to study the level of HbA1c and the biological variability of percent HbA1c in normal healthy adults using samples provided from the Denmark Health Study. The results indicated that the reference range is lower if measured by the highly specific IFCC reference methods and that the biological variability in non-diabetic adults is just slightly less if measured by the IFCC reference methods rather than by ion exchange chromatography. Additional reference range studies are planned to build on this initial work.

Start Date: 12/1/99
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate German and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Epidemiology Training

Public health professionals from Germany were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

German laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Immunotoxicology

In collaboration with the Free University of Berlin and the Federal Institute for Health Protection of Consumers and Veterinary Medicine (BgVV), the International Programme on Chemical Safety (IPCS) sponsored and organized a symposium entitled "Approaches to Risk Assessment of Immunotoxic Effects of Chemicals." The symposium, which consisted of a series of meetings on assessment of immunotoxicity within the context of chemical safety, was held in December 1999 in Berlin, Germany. The aims of the symposium were to review human health effects of exposure to immunemodulating chemical agents; to evaluate the validity of available experimental systems to assess immunotoxicity and to predict human health risk; to evaluate means of extrapolation from in vitro and in vivo animal studies to human health effects; and to evaluate the potential for harmonisation of the test procedures and risk assessment methodologies. NIOSH authors presented a

paper entitled "Approaches to Risk Assessment of Immunotoxic Effect of Chemicals."

Start Date: 12/1/99
End Date: 1/1/00
Status: Complete

Laboratory Methods Development

Staff from NCEH's Division of Laboratory Sciences (DLS) chaired a Working Group on the measurement of the biochemical bone markers pyridinoline and deoxypyridinoline, which are important in the diagnosis and treatment of osteoporosis and other bone-related diseases. The Working Group, which included representatives from Canada, Germany, Switzerland, and the United Kingdom, developed guidelines on patient status and sample collection and submitted them for publication in *Clinical Chemistry*. In March 2000, a DLS staff member attended an international workshop on biochemical bone markers, during which the Working Group also met to exchange new findings and ideas. A DLS representative attended the annual meeting of the American Association for Bone and Mineral Research (AABMR), where the standardization project was discussed with experts from other countries and a new collaboration with Hoffman-LaRoche/Switzerland was explored.

Start Date: 1/1/97
Status: Ongoing

Legionella

Staff from NCID's Division of Bacterial and Mycotic Diseases identified legionella-like organisms isolated from human and environmental sources for identification using serological reagents prepared at the CDC and molecular techniques not available at any other research laboratories anywhere in the world. These activities are designed to assist foreign laboratories in conducting surveillance and epidemiological investigations.

Start Date: 9/1/97
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Germany and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Occupational Hazards

A NIOSH staff member participated in the International Electrotechnical Commission (IEC) TC31 Working Group 8 on Risk of Ignition by Optical Equipment. He also attended plant safety sessions of the INTERKAMA International Society for Measurement and Control Tech Conference. The purpose of his visit was to collaborate on new safety standards for using lasers in hazardous locations. The new European safety standard spotlights NIOSH research on this issue. A new European Committee for Standardisation standard for coal mines limits optical powers in areas where firedamp may be present. The limits were arrived at after considering experimental evidence of laser ignitions thresholds produced by

NIOSH (U.S.), PTB (Germany) and BHP (Australia) laboratories. Results among the three laboratories were in close agreement. Because of a lack of published research, the new standard excludes situations where layers of coal dust may be ignited, but the ignition of coal dust layers is now being addressed under phase II of the current NIOSH research project.

Start Date: 10/1/99
Status: Ongoing

Quality Assurance Audit at Manufacturing Sites

NIOSH performed quality assurance site audits of respirator manufacturing facilities. The audits were conducted jointly with the Mine Safety and Health Adminsitration (MSHA) representatives at MSA Auer in Berlin, Germany and at the Dragerwerk in Lubeck, Germany in September 2000. Both companies produce self-rescue devices that are jointly approved by NIOSH and MSHA for emergency escape from underground mine emergencies. Both also produce NIOSH-certified respirators.

Start Date: 9/1/00
End Date: 9/10/00
Status: Complete

Quality Assurance Audit at Manufacturing Sites

NIOSH conducted three on-site audits of respirator manufacturers in Germany in June 1999. NIOSH audits all manufacturers that hold NIOSH approvals and NIOSH approvals are relied upon by many countries around the world. Two of the audits were jointly conducted with representatives of the Mine Safety and Health Administration Approval and Certification Center, for those respirators that have mining applications.

Start Date: 6/21/99
End Date: 6/28/99
Status: Complete

Silicosis

In April 1999, NIOSH staff met with technical experts and researchers from the German Employers Liability Insurance Association (whose German acronym is BG) for the Ceramic and Glass Industries. The purpose of the visit was to exchange information and conduct walk-though surveys of silica-using manufacturing sites. The NIOSH team also visited German factories with state-of-the-art engineering controls for silica.

Start Date: 4/23/99
End Date: 4/30/99
Status: Complete

Vector Research

NCID's Division of Parasitic Diseases staff advises a doctoral candidate in the Institut fur Medizinische Parasitologie at the University of Bonn. The student is using molecular techniques to differentiate the European members of the *Anopheles maculipennis* species complex.

Start Date: 6/1/98
Status: Ongoing

Vector Research

Staff from NCID's Division of Parasitic Diseases collaborated with investigators at the European Molecular Biology Laboratory in Heidelberg, Germany on the development of a high-density microsatellite locus genetic map for the mosquito *Anopheles gambiae* and the use of this map to determine the genetic basis for malaria parasite encapsulation by a Plasmodium-refractory strain of this mosquito.

Start Date: 1/1/93
Status: Ongoing

GERMANY - U.S.-BASED COLLABORATION(S)

Environmental Contamination

ATSDR staff convened an international expert panel, including German scientists, to assess the latest scientific and public health knowledge related to the usefulness of renal biomarkers. The work related to a medical monitoring program for those exposed to environmental lead and cadmium contamination from the Bunker Hill Mining Complex in Idaho's Silver Valley. Two primary adverse health outcomes related to lead and cadmium exposures are hypertension and chronic renal failure. Expert presentations and panel discussions included the following topics: program overview; public health practice considerations; lead-induced nephropathy; concomitant and comorbid conditions; cadmium nephropathy; tubular protinuria; and concluding recommendations regarding biomarker testing and clinical protocols.

Start Date: 5/25/99
End Date: 5/26/99
Status: Complete

GREECE

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Greece and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Greece participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Greek as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

GREENLAND

Invasive Bacterial Infections

An International Circumpolar Surveillance (ICS) for invasive bacterial diseases caused by *Streptococcus pneumonia*, *Haemophilus influenzae*, *Neisseria meningitides*, and Group A and B *Streptococcus* has been initiated for Arctic regions of the United States and Canada by NCID's Arctic Investigations Program and Health Canada's Laboratory Centre for Disease Control. The objectives of this population-based surveillance are to describe the epidemiologic factors for disease in aboriginal and non-aboriginal peoples of the Arctic and characterize the serotypes and spread of antimicrobial resistance. In 2000, Greenland joined the ICS, providing information on invasive diseases caused by *Streptococcus pneumoniae*. This surveillance system, which now spans the entire Arctic region of North America and Greenland, will allow the standardization of laboratory and data collection methods, assessment of disease rates in Arctic communities, evaluation of the effectiveness of vaccination programs on disease rates, monitoring of emergence of antimicrobial resistance treatment failures associated with these infections, and focused design of collaborative applied research on risk factors for infection and prevention strategies.

Start Date: 1/1/99
Status: Ongoing

HUNGARY

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Hungary and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Cryptosporidiosis

NCID's Division of Parasitic Diseases initiated studies to share primers for screening for drug evaluation and identification of *Cryptosporidium*.

Start Date: 6/1/94
Status: Ongoing

Health Statistics

In collaboration with the World Bank, NCHS provided technical assistance to the Hungarian Ministry of Health on the development and execution of a national health interview survey. The assistance included survey and questionnaire design, sampling design, interviewer training, design of data files, and data processing. The field pre-test took place in July 2000 and the main survey was conducted in the fall of 2000. The Hungarian project directors have visited the U.S. to observe a field pretest and interviewer training for the 2000 U.S. National Health Interview Survey (NHIS), and to discuss data processing and collaborative analysis. The U.S.-based consultants have visited Hungary to help develop the Hungarian version of the survey and to observe its pretest, field test, and field operations.

Start Date: 3/1/99
Status: Ongoing

HIV

Hungarian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing

results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Hungary and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, Dietary Guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health provided technical support to the Budapest Municipal government to assist with the administration of the1999 Budapest Student Health Behavior Survey. The survey measured five categories of priority health risk behaviors (i.e., behaviors that result in unintentional and intentional injuries, tobacco and alcohol use, physical activity, depression and attempted suicide, and sexual activity) among secondary school students in Budapest. The tobacco use section of the questionnaire consisted of follow-up questions to a survey conducted in Budapest in 1995. Data were analyzed and will be used to improve school health policies and to plan intervention programs for youth in Budapest.

Start Date: 5/1/98
End Date: 11/1/99
Status: Complete

ICELAND

Environmental Health

ATSDR is represented on the U.S. Department of State's Arctic Council Health and Environmental Working Group, which includes representatives from Canada, Denmark, Finland, Iceland, Norway, Russia, and Sweden. The Working Group was formed to assist the Department of State in its role as the Council's chair. The Working Group's assistance has included: (1) identifying ongoing research at federal agencies that are investigating exposure to persistent organic pollutants (POPs) and their impact(s) on human and ecological health; (2) identifying new areas of human and ecological health that would be applicable to the countries represented on the council; and (3) assisting the Department of State in establishing an agenda for 2000-2001 based on the above information.

Start Date: 4/1/00
Status: Ongoing

Occupational Hazards

In 2000, NIOSH staff worked with international and national health and safety organizations to share scientific data on occupational exposure to chemicals and develop documents that can be used by multiple organizations to establish occupational exposure limits in accordance with each organization's policies. Partner organizations include the American Conference of Governmental Industrial Hygienists (ACGIH) in the United States, the Dutch Expert Committee on Occupational

Standards (DECOS) in the Netherlands, the National Institute for Working Life (NIWL) in Sweden, and the Nordic Expert Group for Criteria Documentation of Health Risks for Chemicals (NEG), which includes Iceland.

Start Date: 10/1/96
Status: Ongoing

IRELAND

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Irish as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Emerging Infectious Diseases

NCID's Division of Bacterial and Mycotic Diseases assisted local and national public health authorities in Scotland, Ireland, and England in an investigation of unexplained severe illness among injecting drug users. The investigation included extensive epidemiologic and laboratory collaborations and involvement of multiple groups within CDC and other U.S. government agencies. Bacterial isolates from lots of heroin associated with deaths among drug users in Scotland were analyzed to rule out *Bacillus anthracis*, *Brucella species*, *Burkholderia pseudomallei*, and *Burkholderia mallei*. None of the above was detected in any of the approximately 15 specimens studied. Bacterial cultures to date have been negative for a causative agent.

Start Date: 5/1/00
Status: Ongoing

Foodborne Diseases

NCID's Division of Bacterial and Mycotic Diseases staff presented a paper, "Surveillance for Foodborne Disease and Outbreak Detection in Foodborne Disease," to the Ireland Food Safety Authority, providing information and technical assistance in the development and implementation of laboratory information management and surveillance systems.

Start Date: 2/1/00
End Date: 2/28/00
Status: Complete

HIV

Irish laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

ITALY

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Italy and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges.

Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Italy participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Italian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Cholesterol Reference Methods

NCEH's Division of Laboratory Sciences provided support to six international members of the Cholesterol Reference Method Laboratory Network (CRMLN): the Netherlands, Japan, United Kingdom, Canada, Italy, and Argentina. Services included reference materials used to assess performance of reference methods and designated comparison methods, quality control materials for assessing performance, and regular reports of performance status. The Division also convened a meeting of all CRMLN laboratories in the United States and abroad, attended by representatives of all international CRMLN laboratories. One of the participating countries, Argentina, received additional support from CDC to become a full active CRMLN member in 2000 by successfully standardizing its reference method for cholesterol.

Start Date: 3/1/89
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Italian and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Environmental Health

NCEH staff worked on an endometreosis study in Seveso, Italy, where there is a two-fold nonstatistical increase of endometreosis in a population exposed to TCDD (dioxin). NCEH is continuing

to work with the National Cancer Institute, the National Institute of Environmental Health Sciences, and Italian counterparts on the relationship among exposure, susceptibility, and the effects of TCDD in Seveso.

Start Date: 6/1/98
Status: Ongoing

Fungal Pathogens

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnosis of a case of respiratory failure caused by a fungal pathogen.

Start Date: 4/1/99
End Date: 5/31/99
Status: Complete

HIV

Italian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Italy, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Italy and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Occupational Hazards

NIOSH convened a series of international conferences on developing policies for preventing worker injuries and illness from dermal contact with chemical hazards. These were part of a major multi-year program to develop practices that prevent exposures to dermal hazards and to conduct

research leading to appropriate practices for controlling them. A number of multinational efforts are in place in Canada, Denmark, Finland, and Italy to develop appropriate principles for dermal absorptions hazards and approaches for controlling dermatitis in workers.

Start Date: 10/1/99
Status: Ongoing

Occupational Injuries

The NIOSH Division of Safety Research is a partner in the Civilian American European Surface Anthropometry Resource (CAESAR) project, coordinated by the Society of Automotive Engineers. The CAESAR project is conducting an anthropometric survey of U.S., Dutch, and Italian civilians to provide an updated anthropometric database for use in the design of equipment, machines, and safety devices. This stratified sampling of males and females 18 to 65 years old will provide 40 traditional and 59 three-dimensional (3-D) surface scan-based measures for each subject, 3-D electronic images of each subject in three postures (one standing and two seated), and demographic information including age, weight, sex, occupation, ethnic group, education, and income. Anthropometric measurements are essential to the Division's Protective Technology Branch for research on ways to prevent traumatic occupational injuries, such as the biomechanical calculation of loadings on the human body during lifting tasks, evaluation of centers of gravity needed to prevent falls, design of well-fitting personal protective gear, and design of protective devices and guarding to prevent human contact with hazardous energy sources.

Start Date: 12/1/97
Status: Ongoing

ITALY - U.S.-BASED COLLABORATION(S)

Food Safety

NCID's Division of Bacterial and Mycotic Diseases provided PulseNet training to guest researchers from Italy.

Start Date: 3/1/00
End Date: 6/1/00
Status: Ongoing

KOSOVO

Mental Health

NCEH has been leading a series of studies looking at the mental health effects of the conflict and genocide in Kosovo. NCEH staff members have conducted multiple studies examining topics such as rape, feelings of revenge, and the mental health status of aid workers. Future studies in other emergency settings are planned.

Start Date: 8/1/99
Status: Ongoing

Violence

NCIPC provided technical assistance in evaluating a landmine injury surveillance system in Kosovo.

Start Date: 8/1/99
End Date: 2/1/00
Status: Complete

MALTA

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Malta participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that

Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

HIV

Laboratories in Malta, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Malta and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

NETHERLANDS

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Netherlands participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support;

worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Autoimmunity

NIOSH staff participated in an exploratory WHO-sponsored meeting on the epidemiology of occupational and environmental factors associated with autoimmunity, organized by the National Institute of Public Health (RIVM) and held in Bilthoven, the Netherlands in May 2000. There are many indications that certain chemicals in the environment and at the workplace cause or exacerbate autoimmune responses and illnesses. The aim of this meeting was to suggest the most adequate methodology for assessing autoimmunity associated with occupational or environmental exposures in the human population and to design collaborative epidemiologic studies on the association of exposure to hexachlorobenzene, ultraviolet radiation, silica, and other agents with autoimmunity in the human population. The meeting participants concluded that there is a need for experimental studies in laboratory animals, clinical studies to enhance scientific knowledge, and an interdisciplinary approach to epidemiological studies of the environmental and other causes of these disorders in human populations. Specific designs for epidemiological studies in this context were reviewed, as well as laboratory assays for health outcomes. A document summarizing the meeting was submitted to *Environmental Health Perspectives*.

Start Date: 5/1/00
End Date: 5/31/00
Status: Complete

Bioterrorism

PHPPO Division of Laboratory Systems staff visited laboratories in the Netherlands as part of an informal collaboration for developing analytical methods for select chemical terrorism agents.

Start Date: 5/1/00
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Dutch as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Cholesterol Reference Methods

NCEH's Division of Laboratory Sciences provided support to six international members of the Cholesterol Reference Method Laboratory Network (CRMLN): the Netherlands, Japan, United Kingdom, Canada, Italy, and Argentina. Services included reference materials used to assess performance of reference methods and designated comparison methods, quality control materials for assessing performance, and regular reports of performance status. The Division also convened a meeting of all CRMLN laboratories in the United States and abroad, attended by representatives of all international CRMLN laboratories.

Start Date: 3/1/89
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Dutch and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Dutch and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Environmental Health

ATSDR collaborated with the Center for Substances and Risk Assessment at the National Institute of Public Health and the Environment (RIVM) in Bilthoven, Netherlands to outline areas of mutual interest that will be pursued in a cooperative agreement between RIVM and ATSDR. Scientists in RIVM work on risk assessment issues on both single chemicals and mixtures, several of which are of interest to ATSDR and could be targeted for joint research (e.g., development of dermal health guidance values and development of methods for health assessment of chemical mixtures). Development of new methods and their application by ATSDR's Division of Toxicology in chemical-specific or mixture-specific consultations will directly benefit communities living near hazardous waste sites in the United States. Research on toxic chemical mixtures is an item on ATSDR's Priority Research Agenda.

Start Date: 8/1/00
Status: Ongoing

Injuries

Staff from NCIPC began work in 1999 with Dutch health and injury control groups to convene the World Congress on Drowning, including preparing a document on drowning prevention, chairing a task force on the epidemiology of drowning, and helping to plan the June 2002 meeting to be held in Amsterdam.

Start Date: 9/1/99
Status: Ongoing

Occupational Hazards

NIOSH staff assisted the Health Council of the Netherlands in the evaluation of health data on potentially hazardous chemicals found in the workplace. The purpose of this collaboration was to provide scientific expertise in the evaluation of animal and human toxicity data to determine whether sufficient evidence existed for deriving occupational exposure limits (OELs) for use by the Netherlands. During 1999 and 2000, NIOSH assisted the Health Council of the Netherlands in the evaluation of approximately 120 chemicals. Through this collaboration, documents have been developed that describe the available scientific information for each chemical. Participation in this activity has produced information mutually beneficial to NIOSH and the Netherlands that can be used to identify chemicals in the workplace that pose possible health risks to workers.

Start Date: 10/1/96
Status: Ongoing

Occupational Hazards

In 2000, NIOSH staff worked with international and national health and safety organizations to share scientific data on occupational exposure to chemicals and develop documents that can be used

by multiple organizations to establish occupational exposure limits in accordance with each organization's policies. Partner organizations include the American Conference of Governmental Industrial Hygienists (ACGIH) in the United States, the Dutch Expert Committee on Occupational Standards (DECOS) in the Netherlands, the National Institute for Working Life (NIWL) in Sweden, and the Nordic Expert Group for Criteria Documentation of Health Risks for Chemicals (NEG).

Start Date: 10/1/96
Status: Ongoing

Occupational Injuries

The NIOSH Division of Safety Research is a partner in the Civilian American European Surface Anthropometry Resource (CAESAR) project, coordinated by the Society of Automotive Engineers. The CAESAR project is conducting an anthropometric survey of U.S., Dutch, and Italian civilians to provide an updated anthropometric database for use in the design of equipment, machines, and safety devices. This stratified sampling of males and females 18 to 65 years old will provide 40 traditional and 59 three-dimensional (3-D) surface scan-based measures for each subject, 3-D electronic images of each subject in three postures (one standing and two seated), and demographic information including age, weight, sex, occupation, ethnic group, education, and income. Anthropometric measurements are essential to the Division's Protective Technology Branch for research on ways to prevent traumatic occupational injuries, such as the biomechanical calculation of loadings on the human body during lifting tasks, evaluation of centers of gravity needed to prevent falls, design of well-fitting personal protective gear, and design of protective devices and guarding to prevent human contact with hazardous energy sources.

Start Date: 12/1/97
Status: Ongoing

Silicosis

NIOSH participated in a medical survey of a cohort of 1,339 Dutch construction workers that involved a questionnaire on respiratory symptoms, smoking and work histories, and chest x-rays. NIOSH arranged x-ray film readings by three NIOSH-certified B-readers and returned the findings to Holland for analysis. The results of this study are being compiled and prepared for publication in a peer-reviewed occupational health journal.

Start Date: 6/1/99
Status: Ongoing

NORWAY

Environmental Health

ATSDR is represented on the U.S. Department of State's Arctic Council Health and Environmental Working Group, which includes representatives from Canada, Denmark, Finland, Iceland, Norway, Russia, and Sweden. The Working Group was formed to assist the Department of State in its role as the Council's chair. The Working Group's assistance has included: (1) identifying ongoing research at federal agencies that are investigating exposure to persistent organic pollutants (POPs) and their impact(s) on human and ecological health; (2) identifying new areas of human and ecological health that would be applicable to the countries represented on the council; and (3) assisting the Department of State in establishing an agenda for 2000-2001 based on the above information.

Start Date: 4/1/00
Status: Ongoing

Environmental Health

As part of the Arctic Monitoring and Assessment Program (AMAP) Quality Assurance Program, NCEH coordinated CDC's participation in an inter-laboratory comparison of analytical methods to detect polychlorinated biphenyls (PCBs) and

pesticides. CDC's data compared favorably with that of the other participating labs.

Start Date: 11/1/99
Status: Ongoing

HIV

Norwegian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Meningococcal Disease/Meningitis

NCID's Division of Bacterial and Mycotic Diseases provided consultation regarding adverse events associated with serogroup B Meningococcal vaccination.

Start Date: 4/1/99
Status: Ongoing

Occupational Hazards

In 2000, NIOSH staff worked with international and national health and safety organizations to share scientific data on occupational exposure to chemicals and develop documents that can be used by multiple organizations to establish occupational exposure limits in accordance with each organization's policies. Partner organizations include the American Conference of Governmental Industrial Hygienists (ACGIH) in the United States, the Dutch Expert Committee on Occupational Standards (DECOS) in the Netherlands, the National Institute for Working Life (NIWL) in Sweden, and the Nordic Expert Group for Criteria Documentation of Health Risks for Chemicals (NEG), which includes Norway.

Start Date: 10/1/96
Status: Ongoing

Occupational Health

A NIOSH staff member delivered a lecture at a workshop on future needs in risk assessment. He then assisted in the teaching of a course on the scientific basis of cancer risk assessment, delivering lectures on the use of epidemiologic data for cancer risk assessment. The course was organized by the Nordic Institute for Advanced Training in Occupational Health and Safety, an organization jointly sponsored by the Nordic countries (Denmark, Sweden, Norway and Finland).

Start Date: 9/1/00
End Date: 9/5/00
Status: Complete

POLAND

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Poland and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Poland participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another..

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Polish as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Polish and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Cryptosporidiosis

NCID's Division of Parasitic Diseases continued collaborative studies to isolate and identify strain differentiation, including Polymerase Chain Reaction (PCR) and genomic analysis.

Start Date: 3/1/91
Status: Ongoing

Environmental Health

An ATSDR staff member served as a technical advisor to WHO and chaired a Working Group meeting on "Methods of Assessing Exposure to Hazards Released from Waste Landfills," held in Lodz, Poland. The Working Group was convened to recommend methods of assessing exposure to hazards released from waste landfills and to prepare a guidance document for local health districts.

Start Date: 4/10/00
End Date: 4/12/00
Status: Complete

Giardiasis

NCID's Division of Parasitic Diseases developed and presented two courses with Polish colleagues on Polymerase Chain Reaction (PCR) and genomic sequencing techniques, which included an exchange of information, training, and specimen sharing.

Start Date: 2/1/90
Status: Ongoing

Mine Studies

When safety and health research was transferred from the former U.S. Bureau of Mines (USBM) to NIOSH, the NIOSH Pittsburgh Research Laboratory (PRL) continued the relationship that the USBM had established with mining research organizations in Poland. This has included an exchange of information on mine safety and health research and practices that has benefited mine worker safety and health in both countries. In May 1999, a NIOSH staff member visited Poland to attend and participate in a Polish-American Seminar, "Seals and Barriers as a Means of Protection against Fires and Explosions in Mines," which NIOSH co-sponsored. Another NIOSH staff member traveled to Poland to attend and participate in the International Conference on Control of Dust Hazards in the Mining Industry in October 1999. This international conference was a forum for an exchange of ideas and technologies pertaining to respirable dust in underground and surface mines, safety management, methods of dust control, influence of coal/rock parameters on dust generation, research and development work, and testing of dust collection equipment and fans. The conference was sponsored by the KOMAG (Polish Construction of Mining Machines) Mining Mechanization Center. NIOSH personnel were invited to submit a paper for the conference proceedings and to present the paper to share ideas and expertise on longwall dust control techniques. NIOSH presented a paper entitled "Reducing Worker Exposure to Respirable Dust at Longwall Mining Operations." In December 1999, the Deputy Director of the Central Mining Institute officially invited a NIOSH staff member to participate in technical discussions and presentations. These meetings provided an exchange of information concerning current work being conducted by PRL at Poland's Experimental Mine "Barbara" and elsewhere in Poland relating to mine safety and health issues.

Start Date: 10/1/95
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Poland and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Nosocomial Infections

NCID staff provided technical support for the analysis of several years of nosocomial infection surveillance data from a network of 91 hospitals in Poland. Staff conducted site visits to two major cities and trained infection control (IC) personnel in IC techniques and procedures.

Start Date: 10/1/99
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a

school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Poland. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

PORTUGAL

Foodborne Diseases

Staff from NCID's Division of Bacterial and Mycotic Diseases presented a paper on "Sources of Data on Acute Foodborne Illness," providing information regarding data sources from electronic reporting systems that capture foodborne illness data.

Start Date: 5/1/99
End Date: 5/31/99
Status: Complete

HIV

Portuguese laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Portugal and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

ROMANIA

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Romania participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Epidemiology Training

Public health professionals from Romania were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

HIV

Romanian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Management Training

The 6-week Management for International Public Health (MIPH) Course is offered each fall in Atlanta by the CDC, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country managment training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country managment training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP). The SMDP works with ministries of

health, non-govermental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: 9/1/92
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Romania and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Nosocomial Infections

NCID assessed infection control practices in dental offices in Romania and conducted infection control training for nursing staff.

Start Date: 5/1/99
End Date: 6/1/99
Status: Complete

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) has been providing technical assistance for international reproductive health surveys for more than 20 years under its Participating Agencies Service Agreement (PASA) with USAID. DRH staff work with USAID, in-country implementing agencies, Ministries of Health, international organizations, and NGOs to provide programmatically important information on a wide array of topics in reproductive health. DRH staff assisted in virtually all aspects of these surveys, including conceptualization, design, planning, training, implementation, data processing, analysis, report writing, and dissemination activities. In 1999 and 2000, assistance was provided for surveys carried out in Romania, Ukraine, Russia, the Republic of Georgia, and Ecuador. Reports onn the survey results in Cape Verde and El Salvador were completed in 1999. Planning is underway for surveys that will take place in 2001 in Mozambique, Azerbaijan, Honduras, and Paraguay.

Start Date: 1/1/98
Status: Ongoing

SLOVAKIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Slovakia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Slovakia participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Giardiasis

NCID's Division of Parasitic Diseases developed and presented two courses with in-country collaborators on Polymerase Chain Reaction (PCR) and genomic sequencing techniques, which included an exchange of information, training, and specimen sharing.

Start Date: 2/1/90
Status: Ongoing

HIV

Slovakian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Slovakia and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

SLOVAKIA - U.S.-BASED COLLABORATION(S)

Influenza

NCID's Division of Viral and Rickettsial Diseases hosted a visiting scientist from the Institute for Virology, Slovak Academy of Science, who worked on the development of monoclonal antibodies for influenza virus typing and sub-typing.

Start Date: 9/1/99
End Date: 11/30/99
Status: Complete

SLOVENIA

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Slovenia participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

HIV

Slovenian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Slovenia and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

SPAIN

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Spanish as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Spanish and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Spanish and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Environmental Health

In October 2000, ATSDR conducted its 4-day Basic Course for Health Assessment and Consultation and 1-day Emergency Medical Preparedness course in Seville, Spain. The Andalucian Department of Health and WHO jointly funded, sponsored, and endorsed the training. The course included a field training practicum or mock site visit in a community near Seville. The ATSDR team trained approximately 40 Andalucian health officials in ATSDR's methodology of investigating hazardous waste sites and conducting public health assessments to identify persons at health risk from adverse exposures. All ATSDR training materials were translated in advance into Spanish.

Start Date: 4/1/00
Status: Ongoing

HIV

Spanish laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

As part of an international quality assurance program, NCEH Division of Laboratory Sciences staff conducted evaluations for HIV antibody testing on dried blood spots from laboratories in 9 countries, including Spain.

Start Date: Ongoing in various countries since January 1988.

Immunization

NIP collaborated with Spain and the Immunization Working Group of the U.S.-Mexico Binational Commission to translate a CDC manual, *Epidemiology and Prevention of Vaccine-Preventable Diseases*, into Spanish for use by professionals in Mexico. The manual will be used initially in Mexico, but the plan is to expand its use to Spain and to other Spanish-speaking countries in the Americas.

Start Date: 7/1/99
Status: Ongoing

Natural Disasters

In June 2000, NCEH presented a 5-hour course (in Spanish) on the public health response to natural disasters, with an emphasis on floods. The course was offered during a workshop on public health crises and was sponsored by the Center for Research on Toxic Oil Syndrome in Madrid, Spain.

Start Date: 6/5/00
End Date: 6/9/00
Status: Complete

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Spain and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic testing on a case of fever of unknown origin.

Start Date: 3/1/99
End Date: 3/31/99
Status: Complete

SPAIN - U.S.-BASED COLLABORATION(S)

Environmental Contamination

ATSDR provided consultation and training for a medical epidemiologist from the Andalucian Health Board in Spain. The Spanish epidemiologist was evaluating the public health effects of releases of hazardous substances from an impoundment near Seville that held copper mining wastes. The epidemiologist visited ATSDR for 2 weeks to discuss his investigation and to attend a health assessment training course.

Start Date: 8/30/99
End Date: 9/10/00
Status: Complete

SWEDEN

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including Sweden, to discuss biosafety issues

specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Swedish and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

The International Federation of Clinical Chemistry (IFCC) Working Group for the Standardization of Hemoglobin A1c (HbA1c) includes members from the United States, Belgium, Sweden, Australia, Germany, and Japan. The IFCC Working Group has built a network of laboratories to improve measurement of HbA1c, which is a marker of glucose control among people with diabetes. In 1999 and 2000, the Working Group addressed two reference methods for measurement of HbA1c. Since CDC houses the only network laboratory in the United States that has been approved by the IFCC to run both reference methods, NCEH has contributed to studies designed to assess and compare the reference methods. The first of these studies, known as Florence II, determined the feasibility of standardizing routine clinical assays for HbA1c. Another study, called the Malmoe reference range study, was designed to study the level of HbA1c and the biological variability of percent HbA1c in normal healthy adults using samples provided from the Denmark Health Study. The results indicated that the reference range is lower if measured by the highly specific IFCC reference methods and that the biological variability in non-diabetic adults is just slightly less if measured by the IFCC reference methods rather than by ion exchange chromatography. Additional reference range studies are planned to build on this initial work.

Start Date: 12/1/99
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate Swedish and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Environmental Health

ATSDR is represented on the U.S. Department of State's Arctic Council Health and Environmental Working Group, which includes representatives from Canada, Denmark, Finland, Iceland, Norway, Russia, and Sweden. The Working Group was formed to assist the Department of State in its role as the Council's chair. The Working Group's assistance has included: (1) identifying ongoing research at federal agencies that are investigating exposure to persistent organic pollutants (POPs) and their impact(s) on human and ecological health; (2) identifying new areas of human and ecological health that would be applicable to the countries represented on the council; and (3) assisting the Department of State in establishing an agenda for 2000-2001 based on the above information.

Start Date: 4/1/00
Status: Ongoing

Occupational Exposure

NIOSH staff collaborated with a Swedish scientist on a study involving paper-dust data to finalize analyses and begin manuscript preparation. Additional collaborations were explored based on the scientist's new studies of paper-dust exposed workers.

Start Date: 5/1/00
Status: Ongoing

Occupational Hazards

In 2000, NIOSH staff worked with international and national health and safety organizations to share scientific data on occupational exposure to chemicals and develop documents that can be used by multiple organizations to establish occupational exposure limits in accordance with each organization's policies. Partner organizations include the American Conference of Governmental Industrial Hygienists (ACGIH) in the United States, the Dutch Expert Committee on Occupational Standards (DECOS) in the Netherlands, the National Institute for Working Life (NIWL) in Sweden, and the Nordic Expert Group for Criteria Documentation of Health Risks for Chemicals (NEG).

Start Date: 10/1/96
Status: Ongoing

Occupational Health

NIOSH staff provided technical assistance to Nottingham University (U.K.) and Lund University (Sweden) in the development of a European Academy of Occupational Health Psychology. Occupational health psychology is a new academic field that involves the application of behavioral science to the prevention of occupational injury and illness. The European Academy of Occupational Health Psychology is a recently funded professional organization whose goal is to foster the growth of occupational health psychology throughout Europe. Lund University and Nottingham University have taken primary responsibility for organizing this Academy. NIOSH has nearly a decade of experience in promoting and developing graduate and post-graduate training in occupational health psychology at U.S. universities. For this reason, NIOSH was asked to provide technical assistance to Lund University and Nottingham University in organizing the Academy.

Start Date: 11/1/99
End Date: 11/30/99
Status: Complete

Occupational Health

A NIOSH staff member delivered a lecture at a workshop on future needs in risk assessment. He then assisted in the teaching of a course on the scientific basis of cancer risk assessment, delivering lectures on the use of epidemiologic data for cancer risk assessment. The course was organized by the Nordic Institute for Advanced Training in Occupational Health and Safety, an organization jointly sponsored by the Nordic countries (Denmark, Sweden, Norway and Finland).

Start Date: 9/1/00
End Date: 9/5/00
Status: Complete

Pertussis

NIP designed an evaluation of several pertussis models in the United States and Sweden. The goal is to improve the models as much as possible before performing experiments required to address policy questions. U.S. policymakers currently are interested in the import of the fourth pediatric, adolescent, and targeted adult doses. NIP will compare simulations with and without the doses in question and count cases or deaths, while NIP health economists will calculate costs per case or death averted. An NIP staff member coded the CDC pertussis model from November of 1999 through January of 2000. Soon afterwards, scientists at the Swedish Institute for Infectious Disease Control and National Board of Health and Welfare pro-

posed to collaborate on parameter estimation. The NIP staff member visited Sweden to discuss the collaboration in August 2000.

Start Date: 11/1/99
Status: Ongoing

SWITZERLAND

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Switzerland participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Swiss as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to Swiss and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

HIV

Swiss laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Laboratory Methods Development

Staff from NCEH's Division of Laboratory Sciences (DLS) chaired a Working Group on the measurement of the biochemical bone markers pyridinoline and deoxypyridinoline, which are important in the diagnosis and treatment of osteoporosis and other bone-related diseases. The Working Group, which included representatives from Canada, Germany, Switzerland, and the United Kingdom, developed guidelines on patient status and sample collection and submitted them for publication in Clinical Chemistry. In March 2000, a DLS staff member attended an international workshop on biochemical bone markers, during which the Working Group also met to exchange new findings and ideas. A DLS representative attended the annual meeting of the American Association for Bone and Mineral Research (AABMR), where the standardization project was discussed with experts from other countries and a new collaboration with Hoffman-LaRoche/Switzerland was explored.

Start Date: 1/1/97
Status: Ongoing

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Switzerland, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Mycosis

NCID's Division of Bacterial and Mycotic Diseases hosted a recipient of a Swiss National Science Foundation Fellowship, who conducted research on the development of molecular diagnostic tests to detect *Aspergillus* species and other filamentous fungi in clinical specimens.

Start Date: 6/1/00
Status: Ongoing

Vector Research

Staff from NCID's Division of Parasitic Diseases, in collaboration with Department of Defense entomologists, have scheduled the field evaluation of a rapid (5-minute) wick assay for identification of malaria vectors.

Start Date: 1/1/99
Status: Ongoing

TURKEY

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Turkey and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

HIV

Turkish laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Natural Disasters

On August 17, 1999, an earthquake measuring 7.4 on the Richter Scale struck western Turkey, resulting in official estimates of 17,000 deaths, 10,000 missing, 24,000 injured, and more than 600,000 homeless. NCEH staff were asked to conduct a rapid epidemiologic assessment of the needs of the displaced population and to evaluate the morbidity that resulted from this disaster so that Conscience International, Inc., a U.S. non-governmental, private voluntary organization, could focus its responses. Of 86 households residing in Bahcecik tent city located in the area of Golcuk (which was one of the most severely affected cities), shelter, winter clothes and employment were the most important needs identified. Polyclinic logbook entries 2 and 6 weeks after the earthquake revealed that the primary illness for both periods in two tent cities was upper respiratory tract infection, followed by musculoskeletal pain. All other causes, including diarrhea, represented no more than 10% of the total visits. The overwhelming number of visits was for illnesses, not injuries. Recommendations to alleviate the situation included providing shelter, heat, and clothing suitable for winter conditions; providing mental health services, social activities, and community jobs to address the increased level of stress that the communities were experiencing; continuing the current level of medical care; and encouraging reporting of morbidity data from local camp polyclinics to regional health offices.

Start Date: 9/1/99
Status: Ongoing

Natural Disasters

On August 17, 1999, powerful earthquakes (measuring between 7.4 and 7.8 on the Richter Scale) devastated western Turkey. By August 19, an estimated 5,000 deaths occurred, with approximately 20,000 injured and another 10,000 missing. Within several hours, USAID's Office of Foreign Disaster Assistance (OFDA) asked CDC to participate in its Disaster Assistance Response Team (DART) to conduct rapid epidemiologic assessments of the earthquake-affected population and to evaluate the results of epidemiologic information and recommendations regarding health-related surveillance and emergency response interventions. As part of the DART, NCEH activities focused on the following during the immediate emergency: (1) rapid assessment of community needs; (2) investigation of a rumor of infectious disease; (3) assessment of hospital-based needs in the disaster zones of Yalova, Golcuk, Adapazari, Izmit, Derince, Karamursel, and Gebze; and (4) assessment of hospital-based needs in Istanbul.

NCEH staff also were asked to provide information on the immediate public health needs of the displaced population so that the Turkish Red Crescent Society and American Red Cross could focus their responses.

Start Date: 8/1/99
End Date: 9/1/99
Status: Complete

UNITED KINGDOM

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from United Kingdom participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including the United Kingdom, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to British as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Cancer

NCCDPHP condcuted a study to investigate compliance barriers to obtaining free-of-charge colorectal flexible sigmoidoscopy screening, follow-up diagnostics, and treatment in British populations 50-64 years of age. A report will describe the quantitative and qualitative analyses, behaviors, attitudes, and beliefs of potential participants. Information from this study will assist the CDC in setting up, directing, monitoring, and evaluating a nationwide colorectal screening program.

Start Date: 4/1/96
Status: Ongoing

Cholesterol and Related Lipids: Cholesterol Reference Methods

NCEH's Division of Laboratory Sciences provided support to six international members of the

Cholesterol Reference Method Laboratory Network (CRMLN): the Netherlands, Japan, United Kingdom, Canada, Italy, and Argentina. Services included reference materials used to assess performance of reference methods and designated comparison methods, quality control materials for assessing performance, and regular reports of performance status. The Division also convened a meeting of all CRMLN laboratories in the United States and abroad, attended by representatives of all international CRMLN laboratories.

Start Date: 3/1/89
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH provided standardization assistance to British and other international laboratories through the CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: Ongoing in various countries since January 1984.

Diabetes

Coordinating the WHO Collaborating Center for Development of Integrated Primary Care Programs for Community Practice, NCCDPHP's Division of Diabetes Translation continues to provide technical and financial assistance for the Global Diabetes Education Initiative and for the International Diabetes Federation/WHO Diabetes Epidemiology Training Program in Cambridge, England.

Start Date: 7/1/99
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate British and other laboratories around the world that perform autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories from around the world have registered in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

Emerging Infectious Diseases

NCID's Division of Bacterial and Mycotic Diseases and Division of Viral and Rickettsial Diseases assisted local and national public health authorities in Scotland, Ireland, and England in an investigation of unexplained severe illness among injecting drug users. The investigation included extensive epidemiologic and laboratory collaborations and involved multiple groups within CDC and other U.S. government agencies. Bacterial isolates from heroin lots associated with deaths among drug users in Scotland were analyzed to rule out *Bacillus anthracis*, *Brucella* species, *Burkholderia pseudomallei*, and *Burkholderia mallei*. None of the above was detected in any of the approximately 15 specimens studied. Bacterial cultures to date have been negative for a causative agent.

Start Date: 5/1/00
Status: Ongoing

HIV

British laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

As part of an international quality assurance program, NCEH Division of Laboratory Sciences staff conducted evaluations for HIV antibody testing on dried blood spots from laboratories in 9 countries, including the United Kingdom.

Start Date: Ongoing in various countries since January 1988.

Influenza

NCID's Division of Viral and Rickettsial Diseases exchanged reagents, current viruses, and surveillance data with the United Kingdom's National Institute of Medical Research and Central Public Health Laboratory to keep abreast of the currently circulating influenza strains that may affect vaccine strain selection.

Start Date: 1/1/88
Status: Ongoing

Laboratory Methods Development

Staff from NCEH's Division of Laboratory Sciences (DLS) chaired a Working Group on the measurement of the biochemical bone markers pyridinoline and deoxypyridinoline, which are important in the diagnosis and treatment of osteoporosis and other bone-related diseases. The Working Group, which included representatives from Canada, Germany, Switzerland, and the United Kingdom, developed guidelines on patient status and sample collection and submitted them for publication in Clinical Chemistry. In March 2000, a DLS staff member attended an international workshop on biochemical bone markers, during which the Working Group also met to exchange new findings and ideas. A DLS representative attended the annual meeting of the American Association for Bone and Mineral Research (AABMR), where the standardization project was discussed with experts from other countries and a new collaboration with Hoffman-LaRoche/Switzerland was explored.

Start Date: 1/1/97
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In the United Kingdom and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Nutrition Assessment

In November 1999, an NCEH staff member traveled to Dunn Nutrition Laboratory at Cambridge University in the United Kingdom to serve as the external laboratory reviewer for the United Kingdom National Diet and Nutrition Survey. During the trip, she also presented lectures at Cambridge and at the Ministry of Agriculture, Food, and Fisheries in London on the ongoing National Health and Nutrition Examination Survey (NHANES 1999+).

Start Date: 11/1/99
Status: Ongoing

Occupational Exposure

A NIOSH Health Effects Laboratory Division (HELD) staff member collaborated with a King's College of London scientist on a dermal toxicology project for 2 years. This project investigated the role of oxidant injury in dermal exposures induced by occupational chemicals and the protective effects of elevated dietary vitamin E. Animals for this study were exposed and treated at NIOSH and skin samples were shared between the two collaborators for various assays conducted in their individual laboratories. Although NIOSH has sufficient expertise in the measurement of radical generation and in the pathological evaluation of dermal injury, the King's College scientist has provided invaluable expertise in the analysis of coenzyme Q-10 and biochemical analysis of keratinocytes. This collaboration worked well despite the distance between the labs. In August 2000, the NIOSH staff member traveled to London to meet and discuss the results of these collaborative experiments. At that time, the researchers were able to evaluate the data obtained thus far, plan and design future experiments, and draft a manuscript presenting the results.

Start Date: 12/1/99
Status: Ongoing

Occupational Hazards

A NIOSH staff member participated in the International Electrotechnical Commission (IEC) TC31 Working Group 8 on Risk of Ignition by Optical Equipment. He also attended plant safety sessions of the INTERKAMA International Society for Measurement and Control Tech Conference. The purpose of his visit was to collaborate on new safety standards for using lasers in hazardous locations. The new European safety standard spotlights NIOSH research on this issue. A new European Committee for Standardisation standard for coal mines limits optical powers in areas where firedamp may be present. The limits were arrived at after considering experimental evidence of laser ignitions thresholds produced by NIOSH (U.S.), PTB (Germany) and BHP (Australia) laboratories. Results among the three laboratories were in close agreement. Because of a lack of published research, the new standard excludes situations where layers of coal dust may be ignited, but the ignition of coal dust layers is now being addressed under phase II of the current NIOSH research project.

Start Date: 10/1/99
Status: Ongoing

Occupational Health

NIOSH staff provided technical assistance to Nottingham University (U.K.) and Lund University (Sweden) in the development of a European Academy of Occupational Health Psychology. Occupational health psychology is a new academic field that involves the application of behavioral science to the prevention of occupational injury and illness. The European Academy of Occupational Health Psychology is a recently funded professional organization whose goal is to foster the growth of occupational health psychology throughout Europe. Lund University and Nottingham University have taken primary responsibility for organizing this Academy. NIOSH has nearly a decade of experience in promoting and developing graduate and post-graduate training in occupational health psychology at U.S. universities. For this reason, NIOSH was asked to provide technical assistance to Lund University and Nottingham University in organizing the Academy.

Start Date: 11/1/99
End Date: 11/30/99
Status: Complete

Pesticides

NIOSH staff examined the interrelations among markers of pesticide exposure, quantifiable brain tissue injury, and clinical and pathological evidence of Parkinsonism and dementias in an established

epidemiologic study. Using these endpoints will allow an integration and understanding of these issues among the disciplines of epidemiology, clinical neurology, neuropathology, and neurotoxicology. The outcome of this collaboration will establish the existence of more sensitive and precise indicators of neurotoxic damage in humans, using methods validated in over 10 years of animal research that are directly transferable from experimental research to clinical and epidemiologic research. Findings will have a significant impact on regulating chronic occupational and environmental exposure to organchlorine pesticides.

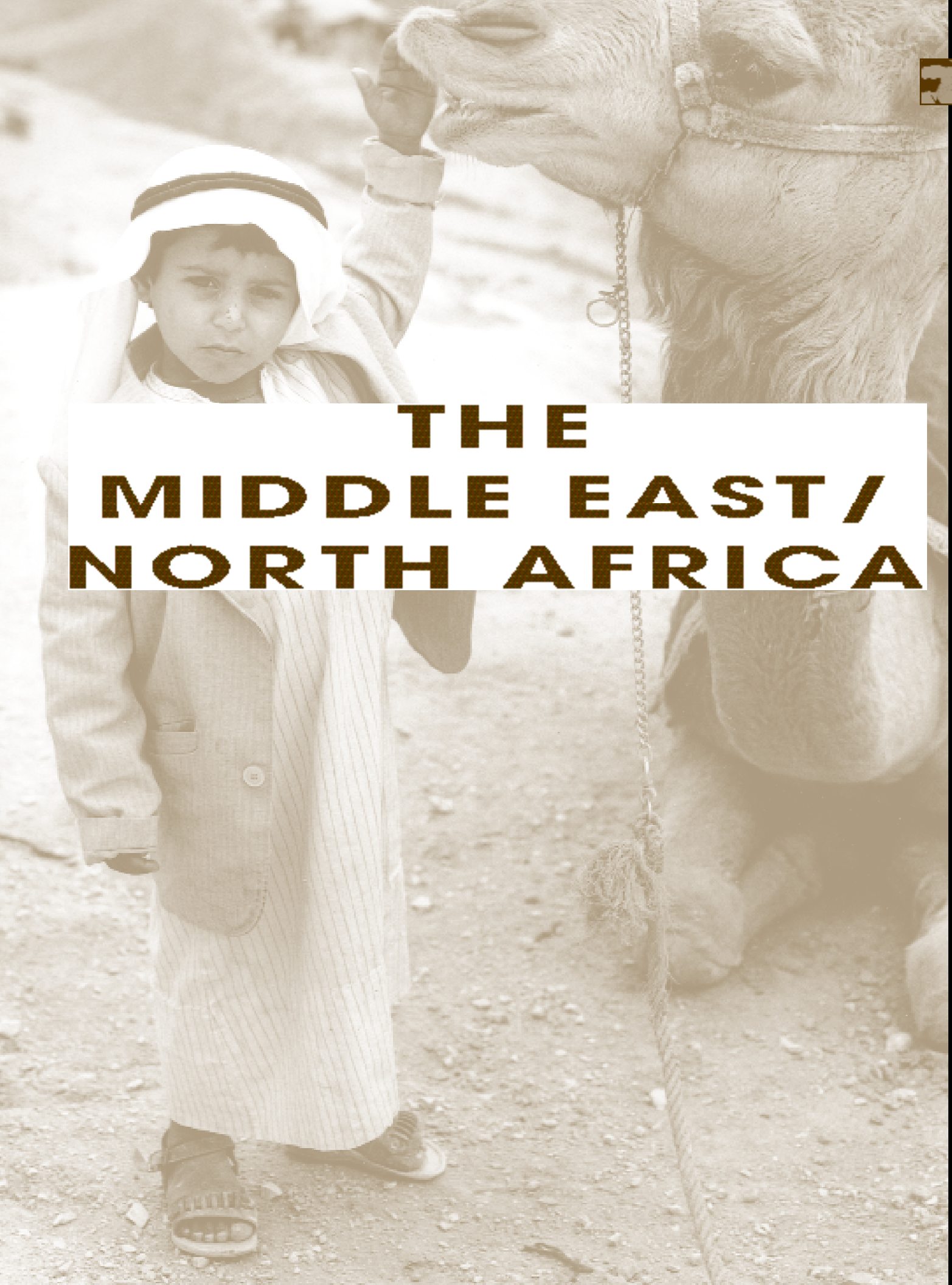
Start Date: 10/1/99
Status: Ongoing

YUGOSLAVIA

Epidemiology Training

Public health professionals from Yugoslavia were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.



THE MIDDLE EAST/ NORTH AFRICA

THE WORK OF CDC IN THE MIDDLE EAST AND NORTH AFRICA

Within the Middle East/North Africa region, the developed world is juxtaposed with the developing world. Oil booms in the region during the 1970s boosted the region's per capita GNP and allowed investments in education, transportation, urban sanitation, and other infrastructure features that affect poverty and health. At 68, average life expectancy in the region is relatively high. Infant mortality has been steadily reduced, and primary school enrollment has increased (although female youth illiteracy remains at 25 percent).

As in other parts of the world, however, these general improvements mask substantial disparities. The region continues to face significant public health and environmental challenges; these are the focus of CDC's activities throughout the region.

Examples of CDC's global health activities in each of five strategic areas are provided below.

Public Health Surveillance and Response

One characteristic of economic development is a shift in the relative contributions of communicable and chronic diseases to mortality. As populations become more affluent – as in the Middle East, North Africa, and other developing regions – the so-called "diseases of affluence" become more prominent. In Jordan, staff from CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) are helping Ministry of Health officials expand their surveillance systems to capture a variety of indicators for these diseases and conditions. With support from the Field Epidemiology Training Program and USAID, CDC staff are helping Jordanian counterparts collect data on cardiovascular disease, cancer, and diabetes through hospital discharge data, mortality data, and risk behavior surveys. A joint CDC, WHO, and UNICEF project also supports the Global Youth Tobacco Survey – a school-based survey of knowledge, attitudes, and behaviors related to tobacco use among 13- to 15-year-olds.

Public Health Infrastructure and Capacity-Building

Training is one of the strongest contributors to overall public health capacity, with long-lasting benefits not only for those who participate but for their colleagues and institutions as well. CDC and ATSDR have established a partnership among three schools of public health to bring current environmental health, disease prevention, and health promotion knowledge to the region. The three schools – Hadassah Medical School at Hebrew University in Jerusalem, Al-Quds University in East Jerusalem and the Gaza Strip, the Emory School of Public Health in Atlanta – share some students and faculty, and representatives from all three programs plan to participate in joint research projects throughout the Middle East. A regional Sustained Management Develop Program (SMDP) course will extend similar training to all the countries in the region.

Disease and Injury Prevention and Control

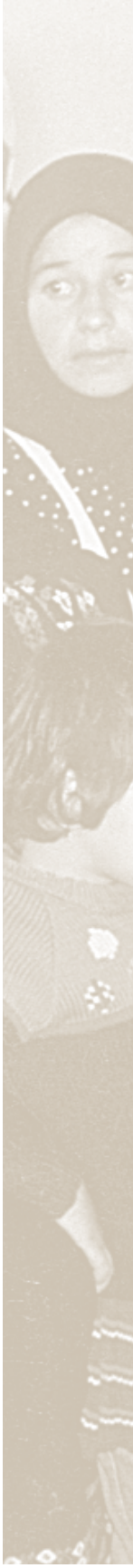
CDC's National Immunization Program has worked with several countries in the Middle East/North Africa region as they participate in global polio eradication and measles programs. Polio eradication efforts have been underway in Afghanistan and Yemen (supported by STOP teams in these two countries) and in Lebanon. Activities include organizing National Immunization das and supporting surveillance for acute flaccid paralysis – an indicator for polio eradication.

Applied Research for Effective Health Policies

Around the world, public health and medical treatment systems have detected rapid increases in the prevalence of diabetes among both adults and children. In Egypt, CDC's NCCDPHP has analyzed data from a population-based survey about diabetes and its complications to evaluate the performance of retinal photography as a diagnostic tool. Data from the project, called Diabetes in Egypt, are being used to compare the performance of three glycemic measures: fasting, 2-hour glucose, and hemoglobin A1c. The study results have helped researchers determine the optimal tests to use in diagnosing diabetes – in Egypt and around the world.

Exchange of Information and Lessons Learned

Staff from CDC's National Center for Health Statistics (NCHS) have collaborated with colleagues in Egypt's Ministry of Health on a number of statistical projects. Working in tandem with the Department of Health and Human Service's Office of Disease Prevention and Health Promotion, NCHS staff are helping their Egyptian colleagues develop a health promotion project similar to Healthy People 2010. Known as "Healthy Egyptians," the project – like Healthy People – will establish health objectives for the nation and both baseline and ongoing data collection to track progress towards reaching those objectives.



ALGERIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Algeria and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

BAHRAIN

Management Training

In FY 99 and 00, participants from Bahrain attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

EGYPT

An NCID physician was assigned to the U.S. Naval Medical Research Unit #3 in Cairo and served as medical officer and senior surgeon. An NIP medical epidemiologist was stationed in Alexandria to assist the Egyptian Ministry of Health with polio and other immunization efforts.

Diabetes

NCCDPHP's Division of Diabetes Translation analyzed data from a population-based survey of diabetes and its complications in Egypt to evaluate the performance of retinal photography in Egyptian adults. Data from the Diabetes in Egypt Project are being used to compare the performance of three glycemic measures to diagnose diabetes: fasting, 2-hour glucose, and hemoglobin A1c. Study results have proven to be valuable in determining the optimal tests and cut point values in diagnosing diabetes.

Start Date: 10/1/95
Status: Ongoing

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in Egypt and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance projects, this agreement has been used to respond to several outbreaks in the

region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

Field Epidemiology Training Program

The Egyptian Ministry of Health and Population (MOHP) began its Field Epidemiology Training Program (FETP) in April 1993 in collaboration with EPO's Division of International Health. Initial activities focused on active surveillance for acute poliomyelitis and outbreak investigations of Rift Valley Fever virus, typhoid, tetanus, and human rabies. Environmental health activities include investigation of an outbreak of lead (Pb) toxicity due to contamination of flour in a grinding mill in a village in southern Egypt and establishing quality control programs in Egypt's Central Public Health Laboratory (CPHL). In 1999, the FETP, WHO, and U.S. Naval Medical Research Unit No. 3 (NAMRU-3) joined the CDC's collaboration with Egypt. The collaboration has focused on prioritizing notifiable disease reporting, including planning for laboratory confirmation of high-priority infectious diseases at the district, governorate, and national levels; training in epidemiology, surveillance, and public health computer use to facilitate implementation; strengthening laboratory-confirmed surveillance for viral and bacterial meningitis/encephalitis (including TB), typhoid fever and brucellosis, antimicrobial resistance testing, laboratory quality control, and field investigations. Important issues identified include documenting the burden of *Haemophilus influenzae* b (Hib) meningitis among children, identifying TB among suspected viral meningitis case patients, and using surveillance data for a cost-benefit analysis of implementing Hib vaccination. An additional priority has been the establishment of a comprehensive Nile cruise boat inspection program, which the FETP has initiated with assistance from the National Center for Environmental Health's Vessel Sanitation Program.

Start Date: 4/1/93
Status: Ongoing

Family Planning Management Training

Since 1974, NCCDPHP's Division of Reproductive Health has provided various types of technical assistance through a Participating Agencies Services Agreement (PASA) with USAID's Office of Population. Under the current PASA (covering FY 98-02), the "logistics" component of this multifaceted agreement supported and promoted effective Family Planning (FP)/Reproductive Health (RH) program interventions by providing assistance in assessing national FP logistics systems, forecasting contraceptive requirements, and recommending specific improvements in logistics management systems. In addition, a *Pocket Guide to Managing Contraceptive Supplies* was published. A French translation was also prepared, and a Spanish version is nearing completion.

Start Date: 10/1/97
Status: Ongoing

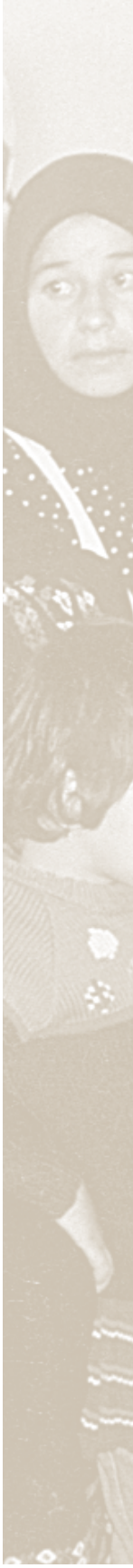
Health Information Systems

NCID's Division of Bacterial and Mycotic Diseases hosted the Department of Defense to provide training on LITS Plus for Windows, the new version of the Laboratory Information Management System (LITS) plus the Public Health Laboratory Information System (PHLIS), which is being implemented in OCONUS Laboratories.

Start Date: 1/1/95
Status: Ongoing

Health Statistics

NCHS continued to provide technical support to the Egyptian Ministry of Health (MOH) for the development of the Healthy Egyptians project, modeled after Healthy People 2000/2010 in the United States. Health objectives are being devel-



oped for four principal areas: maternal and child health, environmental health, injuries, and smoking control. In addition, the project is assisting the Egyptian MOH with strengthening its mortality data system. Staff at NCHS have discussed various approaches for future training in Egypt. A dialogue has been initiated with the Director of the National Information Center for Health and Population (NICHP) to specify NICHP's training needs.

Start Date: 5/1/97
Status: Ongoing

HIV

Egyptian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Lead Poisoning

NCEH staff collaborated with the Egyptian Ministry of Health on lead poisoning issues. NCEH staff prepared written reports for the Ministry about an outbreak of lead poisoning traced to a flour mill's production process. Other Egyptian industries, such as battery recycling plants or smelters (which may also be a source of lead exposure for some children), were identified. NCEH staff also analyzed data from the Cairo Lead Survey, which suggested a need for further investigation into sources of lead exposure. Data from the Cairo Lead Survey suggested that anemia may affect a large number of children. A final report presenting the results of the Manshiet Nasser area of Cairo has been completed and provided to the Field Epidemiology Training Program (FETP) for transmittal to the Ministry of Health. Data Analysis and report preparation are underway for the "Old Cairo" portion of the Cairo lead study. Data from this survey may be useful to policy makers to help direct resources and educational efforts to prevent lead poisoning and anemia.

Start Date: 11/1/97
Status: Ongoing

Management Training

In FY 99 and 00, participants from Egypt attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Meningococcal Disease/Meningitis

NCID's Division of Bacterial and Mycotic Diseases collaborated in the establishment of surveillance for bacterial meningitis and viral encephalitis and participated in meetings regarding the status of surveillance. NCID also provided technical consultation regarding a cluster of meningo-encephalitis and collaborated in an evaluation of the cost effectiveness of childhood immunization against *Haemophilus influenzae* type b.

Start Date: 9/1/97
Status: Ongoing

Meningococcal Disease/Meningitis

NCID's Division of Bacterial and Mycotic Diseases continued development and validation of the Polymerase Chain Reaction (PCR) approach using TaqMan and Light Cycler systems for detection of major agents of bacterial meningitis in cerebrospinal fluid (CSF) in collaboration with the Ministry of Health and U.S. Naval Medical Research Unit 3 (NAMRU-3) in Cairo, Egypt. Sensitivity and specificity of the *N. meningitidis* assay targeting the ctrA gene was completed and serogroup specific assays are in development. Approximately 400 Egyptian CSF samples from culture-confirmed and culture-negative cases of meningitis were tested.

Start Date: 1/1/00
Status: Ongoing

Schistosomiasis

NCID's Division of Parasitic Diseases staff were co-investigators in a study that examined the immunologic status of patients in Brazil, Ecuador, Egypt, and Kenya with *Schistosomia mansoni*. The study evaluated whether patients who were resistant to reinfection after a chemotherapeutic cure had different cellular and humoral immune profiles than those who were still susceptible. The effects of the number of treatments on resistance were determined. This study also investigated the cytokine profiles of patients with asymptomatic versus hepatosplenic disease, as well as how HIV-1 co-infection affects these various aspects of schistosomiasis.

Start Date: 9/1/95
Status: Ongoing

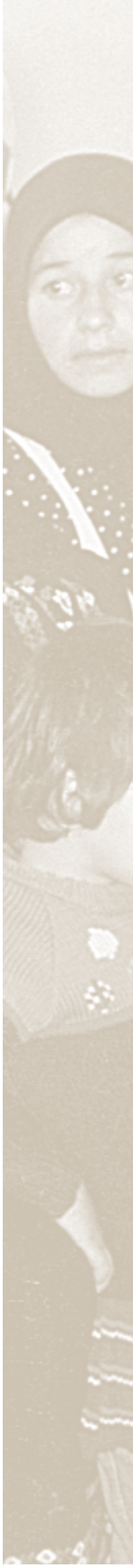
Schistosomiasis

NCID's Division of Parasitic Diseases provides managerial and scientific support and training to the Schistosomiasis Vaccine Development Program (SVDP). SVDP is a collaborative program to develop candidate vaccine against schistosomiasis involving USAID-Cairo; the Egyptian Reference Diagnostic Center (E-RDC), the High Institute of Public Health (HIPH) in Alexandria, Egypt; the U.S. Naval Medical Research Unit-3, Cairo (NAMRU-3); the Program for Appropriate Technology and Health (PATH); Harvard University; NIH's National Institute for Allergies and Infectious Diseases (NIAID); and CDC. NCID received funding from USAID and in turn funded program activities at NIAID and NAMRU-3. Candidate schistosomal vaccine antigens have been identified and manufactured at lab scale and are now undergoing pre-clinical testing for efficacy at NAMRU-3/E-RDC, Harvard, NIAID, and CDC. The aim of the program is to advance at least one candidate schistosomal vaccine antigen through a Phase I safety trial in the United States and then advance to more extensive trials in Egypt. As a result, the capability of Egyptian scientists and institutions to perform clinical trials will be greatly increased.

Start Date: 8/1/99
Status: Ongoing

Tobacco Control

Following Secretary of Health and Human Services (HHS) Donna Shalala's visit to Egypt and Lebanon in 1998, NCCDPHP's Office on Smoking and Health has been assisting the Egyptian government in developing the tobacco portion of the Healthy Egyptians 2010 Project. NCCDPHP staff offered



similar assistance to Lebanese national tobacco control efforts. Meetings with USAID, the Charges d'Affairs of the two U.S. embassies, and university and other personnel identified other potential partners and resources for the eventual implementation of strategies, policies, and programs that should emerge from the continuing collaboration. Priorities for continuing HHS technical assistance to Healthy Egyptians include training on data quality and surveillance activities, program evaluation, policy approaches to health promotion, health education, and mass media.

Start Date: 3/1/98
Status: Ongoing

Typhoid Fever

NCID's Division of Bacterial and Mycotic Diseases assessed the Egyptian Ministry of Health's surveillance system for typhoid fever and recommended activities to improve its use and accuracy.

Start Date: 6/1/00
Status: Complete

EGYPT - U.S.-BASED COLLABORATION(S)

Candida

NCID's Division of Bacterial and Mycotic Diseases trained a scientist from the University of Cairo in molecular sub-typing of *Candida albicans*.

Start Date: 8/1/98
End Date: 1/1/99
Status: Complete

IRAN

Epidemiology Training

Public health professionals from Iran were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing annually.

ISRAEL

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Israel participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Capacity Development

EPO provided technical assistance to the Israeli Ministry of Health, Israeli CDC, Palestinian Health Authority, and students in the Hebrew University International MPH program on how to conceptualize, plan, implement, and evaluate communication activities within a larger public health framework. The Office of Communication's computer-based planning tool, known as CDCynergy, was used to conduct this training, which was held at the Hebrew University in Jerusalem, Israel.

Start Date: 7/1/99
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

In 1984, the current CDC-National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Program (LSP) was implemented to offer combined total cholesterol (TC), triglyceride (TG), and high density lipoprotein cholesterol (HDLC) standardization services. Standardization assistance is offered by NCEH and its partners to any international laboratory involved in clinical trials and investigations supported by NHLBI, other institutes of the National Institutes of Health (NIH), and the World Health Organization (WHO). The goal of the LSP is to improve the laboratory measurement of cholesterol and related lipids so that they are measured with the accuracy and precision needed for detection, treatment, and prevention of cardiovascular disease.

Start Date: 1/1/84
Status: Ongoing

Diabetes

NCEH collaborated with the multinational Immunology and Diabetes Society to evaluate laboratories performing autoantibody assays predictive of type 1 diabetes. Forty-nine laboratories have registered from throughout the world in this ongoing study.

Start Date: 10/1/99
Status: Ongoing

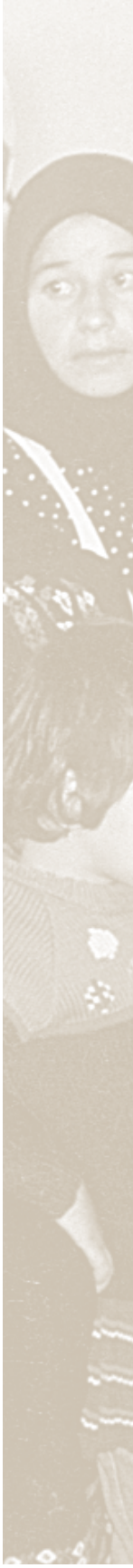
Environmental Health

CDC, ATSDR, and the Emory School of Public Health have established a partnership with the schools of public health at Hadassah Medical School at Hebrew University in Jerusalem and Al-Quds University in East Jerusalem and the Gaza Strip. CDC, ATSDR, and the Emory School of Public Health will assist the Israelis and Palestinians with infrastructure strengthening and capacity building in the areas of environmental health, disease prevention, and health promotion. Palestinian students are enrolled in Hebrew University's International MPH program and some PhD candidates are jointly supervised by the two schools. Israeli and Palestinian faculty members are jointly attending CDC's Sustained Management Development Program (SMDP) course and will be undertaking some joint projects when they return to the Middle East, such as creating a regional SMDP course in 2001 that can be attended by representatives from all countries in the region. Faculty at all three universities will be developing applied research proposals; CDC/ ATSDR will assist in obtaining the necessary funding and identifying interested federal scientists. A memorandum of agreement was negotiated and signed. The Deans of the two regional schools of public health recently visited Atlanta to meet with CDC/ATSDR managers and staff and Emory faculty.

Start Date: 12/1/99
Status: Ongoing

HIV

Israeli laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each



laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Management Training

In FY 99 and 00, participants from Israel attended PHPPO's 6-week Management for International Public Health (MIPH) course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

ISRAEL - U.S.-BASED COLLABORATION(S)

Food Safety

NCID's Division of Bacterial and Mycotic Diseases provided PulseNet training to guest researchers from Israel.

Start Date: 3/1/00
End Date: 6/1/00
Status: Complete

Respirator Protection

In February 2000, a representative of the Department of Personal Protective Equipment (Israel) visited with NIOSH staff to discuss approval requirements of a new respirator design. That same month, representatives from DEA, a manufacturer of powered-air purifying respirator (PAPR) equipment in Israel, visited with NIOSH staff to discuss NIOSH's approval requirements for a new PAPR with a tight-fitting facepiece that seals at the neck.

Start Date: 2/1/00
End Date: 2/28/00
Status: Complete

JORDAN

An EPO medical epidemiologist was assigned to Jordan to offer the Field Epidemiology Training Program (FETP) to Jordanian public health officials.

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Jordan and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Diabetes

As part of the Data for Decision Making project in Jordan, NCCDPHP's Division of Diabetes Translation will assess diabetes surveillance. The project's priority is to establish chronic disease surveillance for several conditions including cardiovascular disease (CVD) mortality and diabetes.

Start Date: 9/1/00
Status: Ongoing

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in Jordan and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance projects, this agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

Field Epidemiology Training Program

NCCDPHP's Division of Nutrition and Physical Activity conducted training for Field Epidemiology Training Program (FETP) and Data for Decision Making (DDM) projects in Jordan. Division staff reviewed projects submitted by trainees and provided technical support to carry out these projects.

Start Date: 2/1/00
End Date: 2/28/00
Status: Complete

Management Training

In FY 99 and 00, participants from Jordan attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

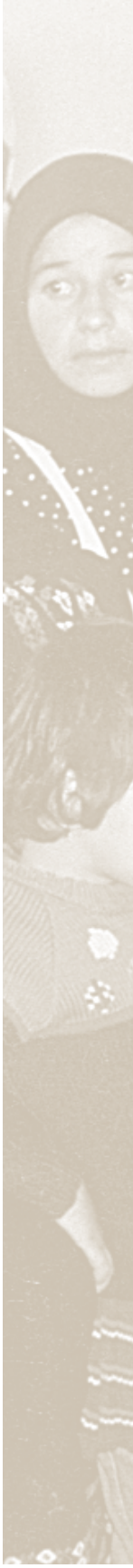
Surveillance

NCCDPHP's Division of Adult and Community Health assisted Jordan's Field Epidemiology Training Program (FETP), USAID, and the Jordanian Ministry of Health to start a national chronic disease surveillance system. The plan involved collecting data using hospital discharges, mortality data, and risk behavior factors. The proposal was to start initially with surveillance for cardiovascular disease, cancer, and diabetes and to expand to other diseases and conditions later. For hospital discharge data, a pilot study will be done in the country's largest hospital.

Start Date: 7/1/00
Status: Ongoing

Surveillance

CDC collaborated with Jordan on the Jordan Surveillance Project (JSP), which began in 1998 with the goal of providing the Ministry of Health with surveillance data on an ongoing basis. It has three components: the Field Epidemiology Training Program (FETP), the Data for Decision Making (DDM) training at the district and program management levels, and direct support for improved surveillance. The FETP has a total of 11 first- and second-year residents who have investi-



gated numerous outbreaks of disease and participated in the STOP teams organized as part of the global effort to eradicate polio. DDM started its first cohort of 22 district public health physicians in November 1999, representing all health districts in Jordan. JSP is currently evaluating a number of chronic disease surveillance systems in Jordan and preparing plans to improve those systems, such as cardiovascular diseases, mortality, and diabetes.

Start Date: 11/1/98
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Jordan. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

JORDAN - U.S.-BASED COLLABORATION(S)

Diarrheal Diseases

NCID's Division of Bacterial and Mycotic Diseases supported a Jordanian guest researcher to study the role of diarrheogenic *E. coli* causing diarrhea in Jordanian children less than five years of age.

Start Date: 9/1/98
Status: Ongoing

KUWAIT

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Kuwait and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

LEBANON

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Lebanon and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory

Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Lebanese as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Epidemiology Training

In 1998 and 2000, NCCDPHP's Division of Nutrition and Physical Activity conducted training in biostatistics and epidemiology with approximately 80 medical students and health professionals at the American University of Beirut. Training was also conducted in 1999 for approximately 25 Ministry of Health professionals in Bahrain on nutritional epidemiology, and included instruction on EpiInfo and surveillance.

Start Date: 12/1/98
End Date: 1/1/00
Status: Complete

Management Training

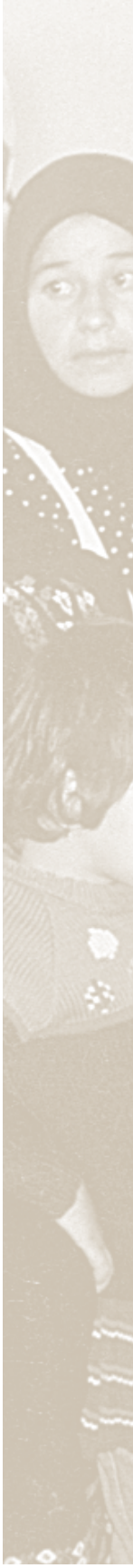
In FY 99 and 00, participants from Lebanon attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Tobacco Control

Following Secretary of Health and Human Services (HHS) Donna Shalala's visit to Egypt and Lebanon in 1998, NCCDPHP's Office on Smoking and Health has been assisting the Egyptian government in developing the tobacco portion of the Healthy Egyptians 2010 Project. NCCDPHP staff offered similar assistance to Lebanese national tobacco control efforts. Meetings with USAID, the Charges d'Affairs of the two U.S. embassies, and university and other personnel identified other potential partners and resources for the eventual implementation of strategies, policies, and programs that should emerge from the continuing collaboration. Priorities for continuing HHS technical assistance to Healthy Egyptians include training on data quality and surveillance activities, program evaluation, policy approaches to health promotion, health education, and mass media.

Start Date: 3/1/98
Status: Ongoing



MOROCCO

Epidemiology Training

EPO's Division of International Health is collaborating with Morocco's Ministry of Health (MOH) to design and implement a training program to meet the country's highest priority health needs. The training consists of a 3-week workshop followed by supervised, in-service application of the learned skills. The purpose of the program is to enable the participants to analyze routine surveillance data; detect changes in levels of disease (monitor trends); identify suspected epidemics; describe suspected epidemics in terms of person, place, and time; develop preliminary hypotheses; perform simple analytic studies to test the hypothesis (identify risk factors); and communicate their findings to appropriate decision-makers. The training is targeted to the epidemiologists of the newly created Regional Observatories of Epidemiology (ROE), all of whom are medical doctors with variable levels of instruction and experience. Faculty will include staff from the Epidemiology Service/DELM, faculty from teaching institutions, other staff from the MOH, regional staff who have had further training, and CDC staff.

Start Date: 4/1/00
Status: Ongoing

HIV

Moroccan laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

MOROCCO - U.S.-BASED COLLABORATION(S)

Child Survival

An NCID Division of Parasitic Diseases epidemiologist has worked in collaboration with USAID to provide assistance to the Moroccan Ministry of Health (MOH) to plan, conduct, and analyze a health facility survey to evaluate implementation of the WHO/UNICEF Integrated Management of Childhood Illness (IMCI) strategy in Morocco. Staff from the Moroccan MOH have visited CDC in Atlanta to work on this project.

Start Date: 1/1/00
Status: Ongoing

OMAN – PROJECT(S)

School Health

NCCDPHP's Division of Adolescent and School Health provides technical support and recommendations for improving coordinated school health and HIV prevention programs to national school groups in Australia, Bangladesh, Indonesia, Nigeria, Namibia, Oman, and Vietnam.

Start Date: 11/1/98
Status: Ongoing

PALESTINE

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in Palestine and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance

projects, this agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

Environmental Health

CDC, ATSDR, and the Emory School of Public Health have established a partnership with the schools of public health at Hadassah Medical School at Hebrew University in Jerusalem and Al-Quds University in East Jerusalem and the Gaza Strip. CDC, ATSDR, and the Emory School of Public Health will assist the Israelis and Palestinians with infrastructure strengthening and capacity building in the areas of environmental health, disease prevention, and health promotion. Palestinian students are enrolled in Hebrew University's International MPH program and some PhD candidates are jointly supervised by the two schools. Israeli and Palestinian faculty members are jointly attending CDC's Sustained Management Development Program (SMDP) course and will be undertaking some joint projects when they return to the Middle East, such as creating a regional SMDP course in 2001 that can be attended by representatives from all countries in the region. Faculty at all three universities will be developing applied research proposals; CDC/ATSDR will assist in obtaining the necessary funding and identifying interested federal scientists. A memorandum of agreement was negotiated and signed. The Deans of the two regional schools of public health recently visited Atlanta to meet with CDC/ATSDR managers and staff and Emory faculty.

Start Date: 12/1/99
Status: Ongoing

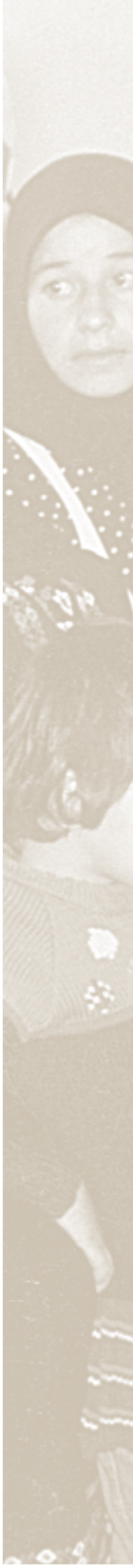
Management Training

In FY 99 and 00, participants from Palestine attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Under the auspices of the United Nations Relief and Works Agency (UNRWA), staff from NCCDPHP's Division of Nutrition and Physical Activity oversaw the planning, implementation, and reporting of a nutrition survey of Palestinian refugees in Gaza. The primary purpose of the survey was to verify high rates of iron deficiency among women and children in Gaza, and to develop recommendations for public health intervention. The survey included collection of hematological, biochemical, and anthropometric data, as well as quantitative and qualitative information on



knowledge, attitudes, and practices of mothers and primary health care professionals related to prevention and treatment of iron deficiency anemia.

Start Date: 10/1/98
End Date: 10/31/99
Status: Complete

Natural Disasters

The Gaza Strip's water supply consists solely of groundwater from the Coastal Aquifer, a shallow groundwater formation that is heavily impacted by seawater intrusion and agricultural and sewage infiltration. Because of this, the water supply generally contains chloride and nitrate at concentrations exceeding the WHO standards for drinking water (200 mg/L and 50mg/L, respectively). Under the USAID-sponsored Coastal Aquifer Management Program (CAMP), USAID and the Palestinian Water Authority (PWA) have undertaken a long-term program to improve the drinking water quality in Gaza and meet the WHO drinking water standards. All wells in the northern region of Gaza exceed the WHO standard of 50mg/L for nitrate, in some cases by 3 to 4 times. However, the water has relatively low salinity, such that removal of nitrate alone would improve the drinking water quality for 300,000 people in the northern region of Gaza and meet the WHO standards. The CAMP project has proposed building a denitrification plant to provide water meeting the WHO standards. USAID asked NCEH to investigate the prevalence of methemoglobinemia (MetHb) in young infants in order to estimate the health impact of the high-nitrate drinking water on the most susceptible segment of the population. The information gained from this investigation will be used by USAID in making its decision about the type of drinking water treatment system needed in northern Gaza. In September 2000, a team was sent to Gaza to determine the feasibility of conducting a study that could help USAID in its decision-making process. The team met with the Palestinian Minister of Health, representatives from the PWA, heads of Ministry of Health and United Nations Relief and Works Agency clinics, and the Dean of the Faculty of Public Health of Al-Quds University. In addition, the use of a portable MetHb measurement instrument and a draft of the study questionnaire were piloted. Based on these meetings and the pilot testing, a draft protocol was developed to test the MetHb levels of a representative sample of 1,000 babies in northern Gaza, which took place in October and November 2000.

Start Date: 9/1/00
Status: Ongoing

QATAR

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in Qatar and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance projects, this agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

SAUDI ARABIA

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Saudi Arabia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to

each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Saudi Arabian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in Saudi Arabia and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance projects, this agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

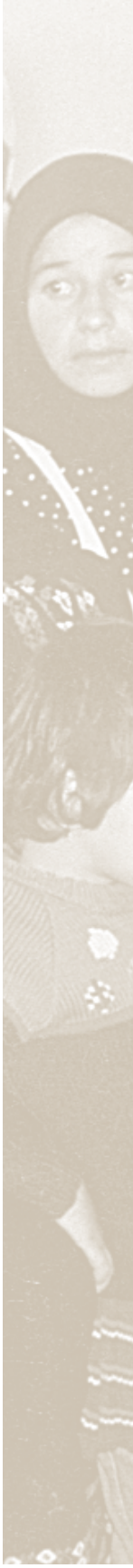
Field Epidemiology Training Program

CDC assisted with Saudi Arabia's Field Epidemiology Training Program (FETP), started in 1988 as the first such program in the Middle East. For the first 10 years, EPO's Division of International Health provided the program with technical support from Atlanta, a full time in-country Resident Advisor, and short-term consultancies. In recent years, DIH technical assistance has taken the form of short-term consultancies and technical support from Atlanta. The Saudi FETP is currently managed and staffed by Saudi nationals. Over the years, FETP has worked closely with the School of Community Medicine at King Saud University. The university provides the program residents with classroom instruction in epidemiology and surveillance and awards them a Diploma in Field Epidemiology upon graduation. The 49 FETP graduates thus far currently hold positions at the Ministry of Health's central offices and in the districts; three of the program graduates are from the Gulf country of Oman. In addition to training its residents, the program provides training in epidemiology and surveillance to Ministry of Health staff at the district and central level, and continues to contribute to a number of activities at the regional level.

Start Date: 1/1/88
End Date: 6/1/00
Status: Complete

Gulf War Syndrome

A decade after Operation Desert Storm, uncertainty still exists regarding the cause of illnesses and symptoms affecting some Gulf War veterans. To date, systematic studies of illnesses among Gulf War veterans have been conducted by U.S., British, and Canadian investigators, with these studies all finding an increased prevalence of symptoms among Gulf War veterans in comparison to non-deployed troops. Symptoms reported more frequently by Gulf War veterans include fatigue, muscle and joint pain, headache, memory distur-



bance, and skin rash. There is considerable interest in whether other coalition troops, particularly those from the Persian Gulf region, are reporting similar symptoms. Initial anecdotal reports do not suggest that military personnel from Saudi Arabia who participated in the Gulf War are reporting symptoms at a greater frequency than those who did not participate in the war; however, no systematic study has been attempted. This NCEH study will assess the health status of Saudi Arabia National Guard (SANG) troops who were stationed at two different locations within the Kingdom of Saudi Arabia during January 1991 (the time of the Gulf War): at Al Khafji (site of a major battle) and around Riyadh (the rear echelon). The health information from these individuals will be categorized using automated medical records maintained by King Fahad National Guard Hospital. These data will be used to characterize hospitalization rates and categories of discharge diagnoses since January 1988.

Start Date: 3/1/99
Status: Ongoing

HIV

Saudi Arabian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Meningococcal Disease/Meningitis

NCID's Division of Bacterial and Mycotic Diseases collaborated with the Saudi Ministry of Health and Field Epidemiology Training Program (FETP) in the investigation of an outbreak of Meningococcal disease associated with the Haj. CDC also collaborated with WHO in the investigation of international cases of Meningococcal disease associated with travel to Saudi Arabia.

Start Date: 6/1/00
End Date: 8/1/00
Status: Complete

Rift Valley Fever

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support for outbreaks of Rift Valley Fever.

Start Date: 9/1/00
Status: Ongoing

SYRIA

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in Syria and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance projects, this agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

Epidemiology Training

Public health professionals from Syria were among the international members of the Epidemic Intelligence Service (EIS) program directed by EPO's Division of Applied Public Health Training in FY 99 and 00. The training and service program focuses on applied epidemiology, biostatistics, public health ethics and law, evaluation of surveillance systems, scientific writing, and prevention effectiveness. The EIS training provides a cadre of epidemiologists capable of responding to situations of international public health importance.

Start Date: Ongoing anually.

UNITED ARAB EMIRATES

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to laboratories in the United Arab Emirates as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in the United Arab Emirates and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance projects, this agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

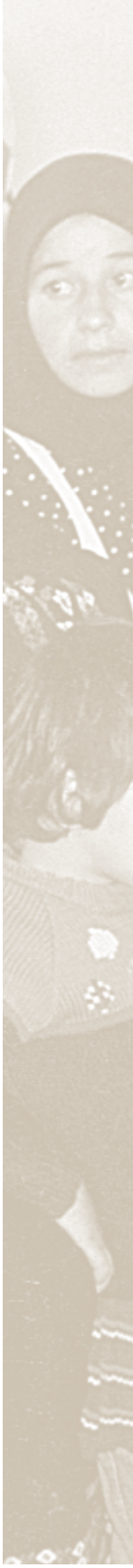
HIV

Laboratories in the United Arab Emirates, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Management Training

In FY 99 and 00, participants from the United Arab Emirates attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-coun-



try management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

YEMEN

Emerging Infectious Diseases

NCID staff collaborated with the U.S. Naval Medical Research Unit No. 3 and the WHO Eastern Mediterranean Regional Office (EMRO) to strengthen surveillance for emerging infectious diseases in Yemen and other countries throughout the region. In 1998, these agencies signed a formal agreement to strengthen surveillance for emerging diseases in the EMRO region and developed a rapid response network to investigate outbreaks of public health importance. Along with other capacity building and technical assistance projects, this agreement has been used to respond to several outbreaks in the region, including a large outbreak of Rift Valley Fever (RVF) in the Arabian Peninsula that occurred in October-December 2000 and was the first outbreak of RVF outside the continent of Africa.

Start Date: 8/1/97
Status: Ongoing

Rift Valley Fever

NCID's Division of Viral and Rickettsial Diseases provided pathology consultation and diagnostic support for outbreaks of Rift Valley Fever.

Start Date: 9/1/00
Status: Ongoing

NEW INDEPENDENT STATES

THE WORK OF CDC IN THE NEW INDEPENDENT STATES (NIS)

Along with the Soviet Union's collapse in 1991 came the disintegration of many aspects of the country's centralized and effective public health system, with dire consequences. Infectious disease rates soared as vaccination levels decreased and practices became far less uniform; sporadic health care, coupled with extreme socioeconomic changes, created fertile ground for multidrug-resistant strains of TB. Chronic diseases – already fueled by high rates of smoking, alcohol consumption, and poor diets – escalated.

By 1994, these trends had quickly converged to decrease life expectancy of Russian men to a nadir of 57.6 years– a reversal unheard of in industrialized nations until then. Since that low point, however, there have been some signs of progress, although profound challenges remain. The life expectancy at birth of Russian men is now 66.9 years – an improvement, but still relatively low compared to industrialized countries.

In Russia and the 14 other nations that make up the New Independent States (NIS), CDC is actively involved in projects that seek to rebuild a comprehensive public health infrastructure, exchange useful new knowledge, and target specific disease burdens posed by vaccine-preventable diseases, multidrug-resistant TB, a burgeoning HIV/AIDS epidemic, heart disease, and environmental health hazards. Although CDC has worked on health projects throughout the region for over 30 years, the anchor for CDC's activities since 1994 has been the U.S.-Russia Health Committee , part of the U.S.-Russia Joint Commission on Economic and Technological Cooperation.

Examples of these activities are provided below, grouped in CDC's five global health strategy areas.

Public Health Surveillance and Response

Staff from CDC's National Center for Health Statistics (NCHS) have collaborated with Russia's Ministry of Health on data analysis, comparisons of U.S. and Russian health data, and reports on health status in Russia. To create these analyses, NCHS staff have provided technical assistance on revising Russian birth and death certificate forms and have developed a computer-based training course on coding morbidity and mortality data according to international clarification standards.

In 1996, Russian Ministry of Health staff sought help from CDC in developing a behavioral risk factor surveillance system, since there was no existing system for collecting behavioral risk factor data at the regional or national levels. In 2000, years of collaborative efforts led to the first tests of a full-fledged Behavioral Risk Factor Surveillance System (BRFSS) in Russia. A parallel effort to implement Youth Risk Behavior Surveys (YRBS) in Russia began even earlier and is still ongoing, along with surveillance efforts targeting particular risk factors for chronic disease and their consequences.

Public Health Infrastructure and Capacity-Building

Strong surveillance and laboratory systems are key to tracking both old and new health threats in the NIS. Several CDC projects support rebuilding or expanding these important aspects of the public health infrastructure. For example, staff from the National Center for Infectious Diseases (NCID) provided diagnostic test training to staff from Russia's Central Institute for Skin and Venereal Diseases in Moscow. The Center's laboratory will serve as a model for other laboratories throughout the Russian Federation so that they can assist health officials in determining the prevalence of STDs – such as gonorrhea, chlamydia, and syphilis – among various populations.

In Kyrgyzstan, Azerbaijan, Moldova, and Georgia, staff from CDC's National Immunization Program (NIP) provided technical assistance on polio eradication activities, particularly the strengthening of disease surveillance systems throughout the region. In addition, NIP staff helped colleagues in Kyrgystan strengthen the infrastructure and capacity required to provide measles vaccine and, ultimately, to contribute to the elimination of that disease from the NIS.

Disease and Injury Prevention and Control

In the early 1990s, after the dissolution of the Soviet Union, a combination of drug shortages and poor access to treatment created ideal conditions for multi-drug resistant (MDR) TB. Latvia, one of the new independent states, experienced one of the highest rates of drug resistance in the world – a situation that persists today. In 1999, 10 percent of the country's new TB patients were diagnosed with MDR strains (compared to 1.6 percent of new patients in the United States and fewer than 1 percent of patients in African countries). To help address this problem in Latvia and other new republics, CDC's National Center for HIV, STD and TB Prevention (NCHSTP) and USAID joined forced with Latvian health agencies, the World Bank, and several Nordic countries to establish a center of excellence for the diagnosis and management of MDR TB in Latvia. The Center emphasized building the expertise of Latvian physicians by strengthening their clinical practice and management, developing and implementing infection control guidelines, and organizing MDR TB training for physicians from Estonia, Lithuania, and other NIS.

Applied Research for Effective Health Policies

In many of the countries that comprise the NIS, residents find themselves living in close proximity to potentially dangerous contaminants – such as the Kazakhstan populations living near a former Soviet nuclear test site. Scientists from the Agency for Toxic Substances and Disease Registry (ATSDR) collaborated with a group of researchers from Kazakhstan who designed a research study on the health effects of environmental contaminants on children living near nuclear test sites.

Exchange of Information and Lessons Learned

Physicians from CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) and the Office of the CDC Director participate in the Eurasian Medical Education Program – a partnership among the American College of Physicians, the American Society of Internal Medicine, and the Institute for Health Policy Analysis. Through voluntary contributions from practicing U.S. physicians, the partnership aims to supplement the continuing medical education of health professionals in the Russian Federation. This effort involves demonstrating American diagnosis, treatment, and prevention methods for hypertension, diabetes, and TB. The American physicians offer train-the-trainer workshops for Russian counterparts, as well as specific seminars, workshops, and clinical rounds.

ARMENIA

Management Training

In FY 99 and 00, participants from Armenia attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

AZERBAIJAN

Immunization

NIP assisted the Azerbaijani government and non-government officials, donor support groups, and other interested parties in the preparation of an application and 5-year plan for submission to GAVI to obtain funding from the Global Fund for Children's Vaccines (GFCV) to support use of new and underused vaccines and the improvement of immunization service planning and delivery infrastructure. NIP also conducted a coverage assessment for coverage of EPI diseases, with a special focus on measles. This application for funding to introduce hepatitis B vaccine and improve immunization services was approved by GAVI in late 2000.

Start Date: 9/1/00
End Date: 9/30/00
Status: Complete

Reproductive Health

A study of reproductive health (RH) outcomes among displaced persons in 52 post-emergency phase camps was conducted in 7 countries (Azerbaijan, Ethiopia, Myanmar, Nepal, Tanzania, Thailand and Uganda). The objective of the study was to provide data on these outcomes and compare them to the host country and country-of -origin populations as well as to determine programmatic factors that affect RH outcomes. The main outcome measures were crude birth rate, neonatal mortality rate, maternal mortality ratio, incidence of complications of unsafe and spontaneous abortion, and percent low birth weight.

Start Date: 10/1/98
Status: Ongoing

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health, in collaboration with local NGOs, is studying the reduction of morbidity and mortality associated with reproductive health in various refugee situations. A study in Azerbaijan of over 700 women examined methods of identifying women at risk for unintended pregnancy, HIV, and STDs and evaluated the effectiveness of syndromic diagnosis of STDs. Preliminary findings indicate that STD rates are high, knowledge of HIV is low, and abortion is common.

Start Date: 5/1/99
Status: Ongoing

BELARUS

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Belarus and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

BELARUS - U.S.-BASED COLLABORATION(S)

Environmental Health

ATSDR staff met with visiting health and environmental officials from Belarus to give them an overview of the agency's activities and provide them with pertinent materials.

Start Date: 5/20/99
End Date: 5/20/99
Status: Complete

ESTONIA

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Estonian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Estonia and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Tuberculosis

In 1999, with the fiscal support of the Department of State, a Memorandum of Agreement was signed between USAID and CDC to provide resources for the development of a center of excellence for the diagnosis and management of multidrug-resistant (MDR) TB in Latvia and for the dissemination of lessons learned from the project to Estonia, Lithuania, and other republics of the former Soviet Union, where TB control efforts also have been seriously compromised by drug resistance. The Center is designed to develop local expertise and facilities in Latvia capable of providing world-class diagnosis and treatment of MDR TB; the locally trained Latvian experts would then train counterparts from other countries in the region. The project builds on the already existing strong foundation of basic TB treatment and MDR TB treatment programs currently supported by the Latvian government, with additional financial and technical support by the World Bank and the Nordic countries. In the year since the agreement was signed, substantial progress has been made. The Center's development activities, supported by NCHSTP's Division of TB Elimination, have focused on three main areas: building the expertise of Latvian physicians by strengthening clinical practice and management; infection control; and organizing MDR TB training for physicians from other areas of the region. An MDR TB training course for Latvian physicians who manage MDR TB patients was offered in March 2000.

Start Date: 1/1/99
Status: Ongoing

GEORGIA (REPUBLIC OF)

Amebiasis

In response to a request from the Republic of Georgia's Ministry of Health, NCID's Division of Parasitic Diseases provided epidemiologic and laboratory assistance in investigating an outbreak of amebiasis in Tbilisi that was recognized because of a sudden increase in the number of amebic liver abscess diagnoses. More than 100 persons with amebic liver abscess were diagnosed; data from a serologic survey indicated that more than 100,000 may be infected. Epidemiologic studies implicated drinking water as the most likely source of infection. Source water from a reservoir was at risk for contamination by human sewage, filters at the water treatment plant were not working well enough to remove *E. histolytica* cysts, and the amount of chlorine disinfection provided was not adequate to kill the parasite.

Start Date: 5/1/99
End Date: 10/1/99
Status: Complete

Management Training

In FY 99 and 00, participants from Georgia attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) has been providing technical assistance for international reproductive health surveys for more than 20 years under its Participating Agencies Service Agreement (PASA) with USAID. DRH staff work with USAID, in-country implementing agencies, ministries of health, international organizations, and NGOs to provide programmatically important information on a wide array of topics in reproductive health. DRH staff assisted in virtually all aspects of these surveys, including conceptualization, design, planning, training, implementation, data processing, analysis, report writing, and dissemination activities. In 1999 and 2000, assistance was provided for surveys carried out in Romania, Ukraine, Russia, the Republic of Georgia, and Ecuador. Reports onn the survey results in Cape Verde and El Salvador were completed in 1999.

Start Date: 1/1/98
Status: Ongoing

GEORGIA (REPUBLIC OF) - U.S.-BASED COLLABORATION(S)

Botulism

NCID's Division of Bacterial and Mycotic Diseases provided laboratory training to a research microbiologist on laboratory diagnosis of infant botulism and molecular subtyping of *Clostridium botulinum* isolates obtained from infants with botulism.

Start Date: 5/1/98
Status: Ongoing

KAZAKHSTAN

Two EPO staff were assigned to Kazakhstan, where they served as advisors to all the Central Asian Republics and helped develop a public health surveillance infrastructure.

Environmental Health

Three scientists from Kazakhstan visited ATSDR in April 2000 to obtain assistance in revising the protocol for an epidemiological study, which has been tentatively approved by the International Science and Technology Center in Moscow. The study will examine the effect of radiation and chemical contamination on mortality and disease incidence rates among children ages 1 through 5 in Ustkamenotorst, Kazakhstan, which is located near a former Soviet nuclear test site. In addition to discussing the project with the scientists, ATSDR staff provided them with materials such as the toxicological profiles for substances of interest to the researchers, including those for lead, uranium, and beryllium.

Start Date: 4/17/00
End Date: 4/19/00
Status: Completed

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Kazakhstan and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches,

and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Surveillance

EPO's Division of International Health (DIH), in collaboration with USAID, has been working with the Ministers of Health in the Central Asian Republics (Kazakhstan, Kyrgystan, Turkmenistan, Tajikistan, Uzbekistan) to provide technical assistance to establish an infectious disease surveillance and control program focusing on priority diseases: TB, viral hepatitis, and HIV/AIDS/STI. These activities are designed to support the overall objective of USAID's program, which is to consolidate existing vertical programs into a comprehensive primary care network. Collaborators have included NCHSTP, NCID, Project HOPE, and WHO-Europe. A CDC medical epidemiologist is resident in Almaty, Kazakhstan oversees the implementation of CDC's activities in the Central Asian Republics; providing technical assistance for hepatitis by training health care providers in blood safety and universal precautions procedures; strengthening the national reference laboratories and advising on regulations and policies; "training the epidemiology trainers" with the Kazakhstan School of Public Health; and supporting the development of a sentinel surveillance system, assessing risk factors, and identifying priority interventions for HIV/AIDS in Kazakhstan.

Start Date: 9/1/97
Status: Ongoing

KYRGYZSTAN

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Kyrgyzstan and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Surveillance

EPO's Division of International Health (DIH), in collaboration with USAID, has been working with the Ministers of Health in the Central Asian Republics (Kazakhstan, Kyrgystan, Turkmenistan, Tajikistan, Uzbekistan) to provide technical assistance to establish an infectious disease surveillance and control program focusing on priority diseases: TB, viral hepatitis, and HIV/AIDS/STI. These activities are designed to support the overall objective of USAID's program, which is to consolidate existing vertical programs into a comprehensive primary care network. Collaborators have included NCHSTP, NCID, Project HOPE, and WHO-

Europe. Specific activities include placing a resident medical epidemiologist in Almaty, Kazakhstan to oversee the implementation of CDC's activities in the Central Asian Republics; providing technical assistance for hepatitis by training health care providers in blood safety and universal precautions procedures; strengthening the national reference laboratories and advising on regulations and policies; "training the epidemiology trainers" with the Kazakhstan School of Public Health; and supporting the development of a sentinel surveillance system, assessing risk factors and identifying priority interventions for HIV/AIDS.

Start Date: 9/1/97
Status: Ongoing

LATVIA

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Latvian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Latvia and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Tuberculosis

Latvia has one of the highest rates of drug resistance in the world; in 1999, 10% of new patients had multidrug-resistant (MDR) TB. This compares with 1.6% in the United States and less than 1% in most African countries. The high levels of MDR TB have resulted from poor treatment programs and drug shortages in the early 1990s, following the dissolution of the Soviet Union. In 1999, with the fiscal support of the Department of State, a Memorandum of Agreement was signed between USAID and CDC to provide resources for the development of a center of excellence for the diagnosis and management of MDR TB in Latvia and for the dissemination of lessons learned from the project to Estonia, Lithuania, and other republics of the former Soviet Union, where TB control efforts also have been seriously compromised by drug resistance. The Center is designed to develop local expertise and facilities in Latvia capable of providing world-class diagnosis and treatment of MDR TB; the locally trained Latvian experts would then train counterparts from other countries in the region. The project builds on the already existing strong foundation of basic TB treatment and MDR TB treatment programs currently supported by the Latvian government, with additional financial and technical support by the World Bank and the Nordic countries. In the year since the agreement was signed, substantial progress has been made. The

Center's development activities, supported by NCHSTP's Division of TB Elimination, have focused on three main areas: building the expertise of Latvian physicians by strengthening clinical practice and management; infection control; and organizing MDR TB training for physicians from other areas of the region. An MDR TB training course for Latvian physicians who manage MDR TB patients was offered in March 2000.

Start Date: 1/1/99
Status: Ongoing

Tuberculosis

A NIOSH staff member served as consulting engineer for NCHSTP's Division of TB Elimination intervention project at the TB and lung hospital in Riga, Latvia and assisted in the selection of appropriate engineering controls (both location and equipment). Latvia has received funding to purchase and install engineering controls from CDC, which offered trained personnel on engineering controls (application, installation, and maintenance) and respiratory protection. NIOSH worked in conjunction with the hospital (Valsts Tuberkulozes un Plausu Slimibu Centrs) and WHO.

Start Date: 8/1/00
End Date: 8/31/00
Status: Complete

LITHUANIA

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Lithuanian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Lithuania and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Tuberculosis

In 1999, with the fiscal support of the Department of State, a Memorandum of Agreement was signed between USAID and CDC to provide resources for the development of a center of excellence for the diagnosis and management of multidrug-resistant (MDR) TB in Latvia and for the dissemination of lessons learned from the project to Estonia, Lithuania, and other republics of the former Soviet Union, where TB control efforts also have been seriously compromised by drug resistance. The Center is designed to develop local expertise and facilities in Latvia capable of providing world-class diagnosis and treatment of MDR TB; the locally trained Latvian experts would then train counterparts from other countries in the region. The proj-

ect builds on the already existing strong foundation of basic TB treatment and MDR TB treatment programs currently supported by the Latvian government, with additional financial and technical support by the World Bank and the Nordic countries. In the year since the agreement was signed, substantial progress has been made. The Center's development activities, supported by NCHSTP's Division of TB Elimination, have focused on three main areas: building the expertise of Latvian physicians by strengthening clinical practice and management; infection control; and organizing MDR TB training for physicians from other areas of the region. An MDR TB training course for Latvian physicians who manage MDR TB patients was offered in March 2000.

Start Date: 1/1/99
Status: Ongoing

MOLDOVA

Epidemiology Training

NCCDPHP's Division of Reproductive Health conducted 1- to 2-week Reproductive Health Epidemiology (RHE) Training Workshops in China, Mexico, and Moldova, as well as short-term, targeted RHE training. When feasible, Epi Info training with RHE examples is included in the workshops and overviews. Follow-up activities include ongoing technical assistance in RHE proposal development and projects. In addition to the core RHE training manual, An *Epidemiologic Approach to Reproductive Health*, DRH is developing a series of topic-based training modules. These modules will cover such topics as the epidemiology of maternal health, infant health, reproductive tract infections, and reproductive health surveillance. The new modules will supplement the core training manual and provide applied information and practice to training participants.

Start Date: 1/1/85
Status: Ongoing

RUSSIAN FEDERATION

Antimicrobial Resistance

The WHO External Quality Assessment Schemes (EQAS) proficiency and quality control program is conducted by NCID. NCID staff select and package resistant strains for testing and ship them to participating labs in Russia and other countries, which then test the strains and fax results directly to NCID for analysis. NCID assesses lab performance and sends a cumulative summary to each lab as well as to WHO. Data are also submitted to the National Committee for Clinical Laboratory Standards for review of quality control ranges. Accuracy of testing has improved in areas where local or regional assistance is available.

Start Date: Ongoing in various countries since October 1996.

Antimicrobial Resistance

NCID coordinated an international surveillance system for antimicrobial resistance, the International Network for the Study and Prevention of Emerging Antimicrobial Resistance (INSPEAR), in which facilities from Russian Federation participate. An INSPEAR proficiency study showed that microbiologic methods are needed at participating hospitals if emerging pathogens are to be correctly identified. For example, the study showed that Methicillin Resistant *Staphylococcus Aureus* (MRSA) detection methods vary from country to country and that the methods used to assess the frequency and secular trends in MRSA vary from facility to facility. Further, NCID data showed that MRSA infection control programs were not instituted in many of these facilities until it was endemic. The study concluded that MRSA control programs should receive greater support; worldwide standardization in how MRSA is detected through surveillance is needed; and cultures and isolation of patients must receive higher priority. Through INSPEAR, an early warning system for antimicrobial-resistant pathogens has been

established. A consensus was reached on which pathogens should be of highest international priority and which should be regional priorities. An INSPEAR listserve has been established so that participants can communicate with one another.

Start Date: 7/1/98
Status: Ongoing

Biosafety

Biosafety Level 4 (BSL 4) laboratories are maximum containment labs, used to conduct research on dangerous specimens – such as smallpox or Ebola. For the past 6 years, CDC's Office of Health and Safety has convened a group of BSL 4 laboratory staff from countries with BSL 4 laboratories, including the Russian Federation, to discuss biosafety issues specific to these specialized conditions. These include technical issues ranging from how to work safely with specimens to engineering issues related to building or upgrading laboratory structures. Recently, the group reviewed joint CDC/NIH guidelines on biosafety and provided valuable feedback on guidelines that affect laboratories of different biosafety levels around the world.

Start Date: 1/1/95
Status: Ongoing

Biosafety

Two Russian Biosafety Level 4 (BSL4) laboratories – one in Siberia and one south of Moscow – are recipients of ongoing quality improvement investments and renovations designed to make these laboratories safe environments for Russian scientists and their intentional partners who collaborate with them on cooperative research projects.

Start Date: 1/1/98
Status: Ongoing

Birth Defects

As part of an international quality assurance program, NCEH provided dried-blood-spot quality control and performance evaluation measures to Russian as well as other neonatal screening laboratories around the world. The laboratories were screening for several diseases which varied by country, including congenital hypothyroidism, phenylketonuria, galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, and homocystinuria.

Start Date: Ongoing in various countries since January 1978.

Capacity Development

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) established the Mega Country Health Promotion Network through the WHO Global Collaborating Center for Health Promotion. The network aims to mobilize the world's most populous countries (including Russia) to address the global burden of disease and promote health. Priority areas identified by the Mega countries as focal points for joint efforts include school health (as a key setting for primary disease prevention) and behavioral risk factor surveillance (as a capacity-enhancing tool for strengthening non-communicable disease databases).

Start Date: 3/1/98
Status: Ongoing

Diabetes

As the lead agency for the diabetes component of the Health Initiative for the US-Russia Health Committee, NCCDPHP's Division of Diabetes Translation has provided guidance to develop diabetes surveillance systems and public health infrastructure in Russia. The Division has also coordinated negotiations between the American Diabetes Association and its counterparts in Russia to facilitate the creation of a voluntary health agency.

Start Date: 9/1/94
Status: Ongoing

Diabetes

The Director of NCCDPHP's Division of Diabetes Translation serves as a member of the Advisory Board of the Eurasian Medical Education Program, a partnership between the American College of Physicians-American Society of Internal Medicine and the Institute for Health Policy Analysis that addresses important causes of morbidity and mortality among Russian people. This partnership utilizes voluntary contributions of academically based and practicing U.S. physicians to supplement continuing medical education for health professionals in the Russian Federation. Three primary objectives of this partnership include demonstrating American methods of diagnosis, treatment, and prevention of hypertension, diabetes, and TB through train-the-trainer sessions for Russian faculty; conducting seminars, workshops, and clinical rounds with a focus on case-based presentations in a personal area of expertise; and illustrating effective teaching methods by incorporating reference and teaching materials.

Start Date: 1/1/00
Status: Ongoing

Environmental Health

ATSDR is represented on the U.S. Department of State's Arctic Council Health and Environmental Working Group, which includes representatives from Canada, Denmark, Finland, Iceland, Norway, Russia, and Sweden. The Working Group was formed to assist the Department of State in its role as the Council's chair. The Working Group's assistance has included: (1) identifying ongoing research at federal agencies that are investigating exposure to persistent organic pollutants (POPs) and their impact(s) on human and ecological health; (2) identifying new areas of human and ecological health that would be applicable to the countries represented on the council; and (3) assisting the Department of State in establishing an agenda for 2000-2001 based on the above information.

Start Date: 4/1/00
Status: Ongoing

Health Statistics

NCHS continues to collaborate with the Central Public Health Research Institute (CPHRI), the statistical agency of the Russian Ministry of Health, on a variety of statistical activities, including a joint statistical report, revision of birth and death certificates, ICD-10 coding of mortality data, preparation of mortality tabulations, and an investigation of injury mortality. NCHS's collaboration with the Russian Ministry of Health covers three majors areas. First, NCHS and CPHRI staff collaborate on the analysis and publication of joint reports on U.S. and Russian health data. Second, NCHS staff are currently working with CPHRI staff on an evaluation of the quality of vital statistics data (which include data from the new certificate items, cause of death coding, and a comparison of mortality data coded according to ICD-10, along with the Russian list of 200 causes of death). Finally, both NCHS and CPHRI staff are collaborating with an injury expert from Johns Hopkins University on a study of injury mortality in Sverdlosk Oblast and its capital, Yekaterinburg. The study combines data from death certificates with information from coroners' certificates on the circumstances of death and on the findings of autopsy reports. The focus of the first phase of this study is on drowning deaths. In the near future, analysts from NCHS and CPHRI will continue to update the vital and health statistics publication every 3 to 4 years and will collaborate on comparative reports on other health topics. The next collaborative publication will update the first joint report, but will also include a separate section on mortality trends in Russia.

Start Date: 6/1/95
Status: Ongoing

Health Surveillance

NCCDPHP staff participated in a project designed to empower countries participating in the Mega Country Health Promotion Network, including Russia, with scientific approaches to building a strong non-communicable disease

(NCD) prevention and health promotion evidence base. Surveillance experts from the Mega countries worked together to develop a protocol for conducting sound behavioral risk factor surveillance, modules of questionnaire items for all critical NCD topic areas, and technical materials to support sustainable behavioral risk factor surveillance efforts.

Start Date: 10/1/99
Status: Ongoing

HIV

Russian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

HIV

An NCHSTP staff member participated in a week-long review of the USAID HIV prevention program for the Russian Federation as part of the review team. Her role was to provide epidemiologic expertise, particularly in the area of sexual transmission of HIV and STDs.

Start Date: 3/1/00
Status: Complete

HIV/STD Prevention

CDC plays an active role in supporting and participating in WHO's STD Task Force for Eastern Europe and Central Asia.

Start Date: 9/1/98
End Date: 3/31/00
Status: Ongoing

HIV/STD Prevention

In 1999, CDC began designing a study of laboratory and integrated behavioral risk assessment on the prevalence of STDs, HIV, and illicit drug use among different population groups in Moscow. A Technical Advisory Group representing federal, local, and non-governmental sectors was formed to facilitate and assist with the implementation of the project. A series of formative research projects were implemented, leading to identification of the project populations and sites and finalization of the study questionnaire. Similar activities have been initiated in Saratov.

Start Date: 2/1/99
Status: Ongoing

HIV/STD Prevention

NCID's Division of AIDS, STD, and TB Laboratory Research, in collaboration with NCHSTP's Division of STD Prevention, the Ministry of Health of the Russian Federation, and several nongovernmental agencies (such as the Russian Association Against STDs, or SANAM), evaluated factors influencing health risks, the prevalence of STDs and HIV, and health-seeking behavior among female commercial sex workers and their clients. As part of this study, NCID provided diagnostic test training to staff at the Central Institute for Skin and Venereal Diseases in Moscow. The laboratory will serve as a model for other laboratories in the Russian Federation, assist in determining the prevalence of STDs in various populations in order to develop specific prevention programs, and introduce sensitive screening methods in antenatal clinics.

Start Date: 5/1/99
Status: Ongoing

HIV/STD Prevention

Through the Civilian Research and Development Foundation (CRDF), a mechanism for direct funding of in-country work was established for the successful implementation of projects in the Russian Federation.

Start Date: 1/1/00
End Date: 3/1/00
Status: Complete

HIV/STD Prevention

In April 2000, CDC collaborated with the Russian Ministry of Health to initiate a study of distribution, determinants, treatment practices, and consequences of congenital syphilis in five regions of the Russian Federation: Moscow, Moscow Oblast, St. Petersburg, Novgorod, and Ryazan. A Soros Foundation/CDC Fellowship was established and contributed to both the success of the project and to the local public health capacity building. The study was completed in November 2000.

Start Date: 4/2/00
Status: Ongoing

HIV/STD Prevention

CDC staff took part in the Joint U.S.-Russia Health Committee meeting between the U.S. Secretary of Health and Human Services, Russian Minister of Health, U.S. Department of Health and Human Services, Russian Ministry of Health and other agencies in Moscow in July 2000.

Start Date: 7/1/00
Status: Ongoing

HIV/STD Prevention

A Russian colleague representing the Russian Ministry of Health took part in the CDC's STD Treatment Guidelines Panel meeting in Atlanta to become acquainted with CDC's STD treatment guidelines development process. This experience will be applied to a similar process of STD treatment guidelines development through the Russian MOH.

Start Date: 9/1/00
Status: Ongoing

HIV/STD Prevention

NCID's Division of AIDS, STD, and TB Laboratory Research, in collaboration with USAID and NCHSTP's Division of STD Prevention, provided technical assistance to develop strategies for better STD diagnosis, treatment, and prevention among different populations in Moscow at increased risk for STDs and HIV, including disadvantaged adolescents, homeless persons, and detained commercial sex workers.

Start Date: 1/1/99
Status: Ongoing

Influenza

NCID's Division of Viral and Rickettsial Diseases is collaborating with the Institute of Experimental Medicine, St. Petersburg, Russia, in conducting multi-year, double-blinded vaccine trials to compare the immunogenicity of Russian live attenuated and U.S. inactivated influenza vaccines among elderly nursing home residents and healthy adults.

Start Date: 1/1/94
Status: Ongoing

Influenza

NCID's Division of Viral and Rickettsial Diseases is involved in the analysis of the genetic composition of candidate live attenuated, cold-adapted (ca) influenza A and B vaccines developed in Russia, and in the identification of nucleotide mutations in attenuated vaccine viruses relative to their wild type parents.

Start Date: 1/1/98
Status: Ongoing

Micronutrient Malnutrition

Under the auspices of the U.S.-Russia Joint Commission on Economy and Technological Cooperation, staff from NCCDPHP's Division of Nutrition and Physical Activity collaborated with SUSTAIN (the Institute of Nutrition in Moscow), public health authorities in Ivanovo Oblast, and the three primary bakeries in Ivanovo City to implement iron fortification of breads in that city.

CDC staff collaborated with Russian public health authorities to implement a rapid nutrition survey in Ivanovo Oblast in November 1998. Following the survey, a surveillance system was developed to monitor anemia among non-pregnant women in Ivanovo. Two rounds of anemia surveillance data were collected in November 1999 and July 2000, with the technical assistance of CDC staff, continuing activities initiated to address iron deficiency in Russia.

Start Date: 7/1/98
Status: Ongoing

Micronutrient Malnutrition

Following the signing of a Joint Statement on the Problem of Micronutrient Malnutrition (MNM) by the U.S. Secretary of Health and Human Services (HHS) and the Russian Minister of Health on February 5, 1997, HHS staff (with CDC personnel coordinating) and staff of the Russian Ministry of Health and the Institute of Nutrition at the Russion Acaademy of Medical Sciences have cooperated on several issues related to MNM, including iodine deficiency disorders (IDD), iron deficiency, fluoride deficiency, and selenium deficiency. An oral health epidemiologist and water fluoridation engineer from NCCDPHP's Division of Oral Health visited Moscow in March 1999 to tour the city's water facilities and discuss with leaders the benefits of fluoride in caries reduction. Work has continued to try to identify the appropriate site for initiation of water fluoridation in Russia. At the present time, a pilot city has been selected and efforts are underway to determine the equipment needed and the chemical to be used for fluoridation.

Start Date: 2/1/97
Status: Ongoing

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including the Russian Federation, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Russia and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Pathology Consultation

NCID's Division of Viral and Rickettsial Diseases provided immunohistochemical testing and pathology consultation for several cases of respiratory failure suspected to have influenza virus infections.

Start Date: 1/1/99
End Date: 4/1/99
Status: Complete

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) has been providing technical assistance for international reproductive health surveys for more than 20 years under its Participating Agencies Service Agreement (PASA) with USAID. DRH staff work with USAID, in-country implementing agencies, ministries of health, international organizations, and NGOs to provide programmatically important information on a wide array of topics in reproductive health. DRH staff assisted in virtually all aspects of these surveys, including conceptualization, design, planning, training, implementation, data processing, analysis, report writing, and dissemination activities. In 1999 and 2000, assistance was provided for surveys carried out in Romania, Ukraine, Russia, the Republic of Georgia, and Ecuador. Reports onn the survey results in Cape Verde and El Salvador were completed in 1999.

Start Date: 1/1/98
Status: Ongoing

Respirator Protection

In June 2000, the vice-chairman of the Central Body for Personal Protective Equipment (PPE) in Russia and representatives of 3M Russia and 3M's Regulatory Affairs & Training Division from St. Paul, Minnesota visited with NIOSH staff to discuss and compare the NIOSH respirator approval process with the Russian PPE approval process.

Start Date: 6/1/00
End Date: 6/30/00
Status: Complete

School Health

Since 1998, NCCDPHP's Division of Adolescent and School Health has provided leadership to the U.S.-Russian Health Committee of the Gore-Chernomyrdin Joint Commission on Economic and Technological Cooperation. Priority areas for both countries include: (1) preventing alcohol and drug abuse; (2) preventing tobacco use; (3) promoting cardiovascular risk reduction; (4) improving school health programs; (5) assessing and monitoring priority health risk behaviors among youth; (6) preventing micronutrient malnutrition; (7) improving STD control, particularly among youth and 8) TB prevention and control. The Youth Risk Behavior Survey System (YRBSS) was translated into Russian and conducted in the fall and winter of 1998 in Moscow as a pilot study. In Spring 2000, YRBSS was implemented in three regions of the Russian Federation: Moscow, Ivanovo Oblast, and the Republic of Tatarstan. Data analysis is presently underway. In addition, CDC has collaborated with WHO and the Soros Foundation/ Open Society Institute-Moscow Public Health Office, the Ministry of Health, and the Ministry of Education to implement a school health education program.

Start Date: 10/1/98
Status: Ongoing

Surveillance

The Russian Ministry of Health and RCPM requested help from CDC in developing a behavioral risk factor surveillance system in Russia, since no system previously existed for collecting behavioral risk factor data at the regional or national levels. In 1996, NCCDPHP's Division of Nutrition and Physical Activity began working with RCPM on policy and planning approaches to the prevention of chronic diseases at the local and national levels. In 2000, CDC began testing the Behavioral Risk Factor Surveillance System (BRFSS) in Russia, working closely with the WHO Mega Country project and WHO/EURO CINDI Program. Future

efforts will focus on expanding data collection and developing a sustainable surveillance system supported by local and central medical authorities and governments. Ultimately, the resulting data will be used for decision making and policy development.

Start Date: 9/1/96
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Russia. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

Tuberculosis

TB in Russia is increasing at an alarming rate, as are rates of drug resistance. Factors contributing to the increase include the inability to financially support the previous infrastructure for TB diagnosis and treatment, the unavailability of quality drugs, high levels of TB transmission in prison settings, and a reluctance to adopt the directly observed therapy, short-course (DOTS) strategy as employed in the United States and recommended by the World Health Organization (WHO). At USAID Moscow's request, WHO, CDC, and USAID are collaborating on the implementation of basic DOTS programs in the Orel oblast (territorial administrative division) and strengthening of the DOTS program started by the WHO in Ivanovo oblast in 1995. A third oblast, Vladimir, was added to the project in late 2000. CDC is also implementing DOTS-plus, the WHO strategy for the management of multidrug-resistant TB (MDR TB) treatment in low-resource settings, in the Orel oblast. Activities have included the development of an extensive diagnostic and treatment protocol, which has now become the base for the Russian DOTS program and may be used as the blueprint for projects being implemented in other oblast; assignment of CDC public health advisors on 3-month temporary duty assignments to assist in the implementation of the DOTS and DOTS-plus strategies; assistance with establishment of a national TB surveillance system; and epidemiologic studies of risk factors for the development of MDR TB in the Russian setting so that appropriate measures can be taken to reduce new cases. In addition, laboratory training, quality assurance for drug sensitivity testing, and consultation have been provided. At WHO's request, international training materials are being revised for use in Russia.

Start Date: 12/1/98
Status: Ongoing

Tuberculosis

NCID's Division of AIDS, STD, and TB Laboratory Research participated in the Department of Health and Human Services Program for Collaborative Research in Biotechnology and Applied Projects with Institutes of the former Soviet Union. Division staff, in collaboration with the State Research Center for Applied Microbiology in Oblensk, conducted restriction fragment length polymorphism (RFLP) typing activities to assess TB transmission patterns in the Moscow area and drug-susceptibility surveillance. These activities will be expanded to provide laboratory support for the projects in Vladimir and Ivanovo Oblasts.

Start Date: 1/1/98
Status: Ongoing

RUSSIAN FEDERATION - U.S.-BASED COLLABORATION(S)

Candida

NCID's Division of Bacterial and Mycotic Diseases hosted an International Emerging Infectious Diseases Fellow, who conducted research on azole drug-resistant strains of *Candida albicans* isolated from HIV-infected persons with oropharyngeal candidiasis.

Start Date: 10/1/98
End Date: 9/1/99
Status: Complete

HIV/STD Prevention

Two Russian colleagues, representing the NGO SANAM (the Russian Association Against STDs) and the Saratov Oblast Governor's Office's Security Council, participated in a training course in STD/HIV research methods at the University of Washington in Seattle, Washington and visited CDC in Atlanta.

Start Date: 7/1/00
Status: Ongoing

Influenza

NCID's Division of Viral and Rickettsial Diseases has regularly hosted a visiting scientist from the Institute for Experimental Medicine, Russian Academy of Medical Sciences in St. Petersburg, who is working on the analysis of reassortment in cold-adapted live influenza viruses.

Start Date: 10/1/98
Status: Ongoing

TAJIKISTAN

Surveillance

EPO's Division of International Health (DIH), in collaboration with USAID, has been working with the Ministers of Health in the Central Asian Republics (Kazakhstan, Kyrgystan, Turkmenistan, Tajikistan, Uzbekistan) to provide technical assistance to establish an infectious disease surveillance and control program focusing on priority diseases: TB, viral hepatitis, and HIV/AIDS/STI. These activities are designed to support the overall objective of USAID's program, which is to consolidate existing vertical programs into a comprehensive primary care network. Collaborators have included NCHSTP, NCID, Project HOPE, and WHO/EURO. A CDC medical epidemiologist resident in Almaty, Kazakhstan oversees the implementation of CDC's activities in the Central Asian Republics; providing technical assistance for hepatitis by training health care providers in blood safety and universal precautions procedures; strengthening the national reference laboratories and advising on regulations and policies; "training the epidemiology trainers" with the Kazakhstan School of Public Health; and supporting the development of a sentinel surveillance system, assessing risk factors, and identifying priority interventions for HIV/AIDS.

Start Date: 9/1/97
Status: Ongoing

TURKMENISTAN

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Turkmenistan and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Surveillance

EPO's Division of International Health (DIH), in collaboration with USAID, has been working with the Ministers of Health in the Central Asian Republics (Kazakhstan, Kyrgystan, Turkmenistan, Tajikistan, Uzbekistan) to provide technical assistance to establish an infectious disease surveillance and control program focusing on priority diseases: TB, viral hepatitis, and HIV/AIDS/STI. These activities are designed to support the overall objective of USAID's program, which is to consolidate existing vertical programs into a comprehensive primary care network. Collaborators have included NCHSTP, NCID, Project HOPE, and WHO-Europe. A CDC medical epidemiologist resident in Almaty, Kazakhstan oversees the implementation of CDC's activities in the Central Asian Republics; providing technical assistance for hepatitis by training health care providers in blood safety and universal precautions procedures; strengthening the national reference laboratories and advising on regulations and policies; "training the epidemiology trainers" with the Kazakhstan School of Public Health; and supporting the development of a sentinel surveillance system, assessing risk factors, and identifying priority interventions for HIV/AIDS.

Start Date: 9/1/97
Status: Ongoing

UKRAINE

Environmental Health

At the request of the Ukrainian government, an NCEH staff member went to the Ukraine as a member if a team assisting the government of Ukraine in determining the cause(s) of and health consequences of the toxicodermia outbreak in the Pervomaysk Region by providing expertise in hydrology, soil science, public health, epidemiology, and/or environmental health. In addition, NCEH's Division of Laboratory Sciences will analyze specimens from Ukraine residents from this region to test for possible heavy metal poisoning.

Start Date: 9/1/00
Status: Ongoing

HIV

Ukrainian laboratories, as well as laboratories in 81 other countries, are enrolled in CDC's Model Performance Evaluation Program for retroviral and AIDS-related testing. In this program, PHPPO's Division of Laboratory Systems provides samples to participating laboratories twice each year. PHPPO then provides a series of reports on the reactivity of tested samples and aggregate testing results. These confidential reports give laboratories

an opportunity for self assessment, allowing each laboratory to implement changes in its testing practices as needed.

Start Date: Ongoing in various countries since May 1988.

Management Training

In FY 99 and 00, participants from Ukraine attended PHPPO's 6-week Management for International Public Health (MIPH) Course offered each fall in Atlanta, in collaboration with the Rollins School of Public Health of Emory University. Enrollment is limited, with priority given to participants responsible for organizing and conducting management training courses for public health professionals in developing countries. The course provides participants with practical skills needed to develop and lead effective work teams in areas such as community needs assessment, health problem analysis, priority setting, planning, implementing, and evaluating public health programs. The course also prepares participants for assessing in-country management training needs; developing appropriate curricula; and planning, conducting, and evaluating in-country management training courses. Most participants attend through an institutional collaboration with CDC's Sustainable Management Development Program (SMDP), which works with ministries of health, non-governmental organizations, and academic institutions to permanently strengthen in-country management training capacity in developing countries.

Start Date: Ongoing in various countries since January 1992.

Micronutrient Malnutrition

Iodine deficiency disorders (IDD) are a well-documented global health problem, affecting more than a billion people worldwide. Progress towards the elimination of IDD has been substantial, with an estimated 70% of the world's edible salt currently being iodized. EQUIP is a CDC standardization program designed to provide urinary iodine laboratories with an independent assessment of their analytical performance. The NCEH program assists laboratories with monitoring the degree of variability and bias in their urinary iodine assay. Urinary iodine round robin pools were shipped to 26 laboratories in 19 countries, including Ukraine, and the data were evaluated in a statistical report.

Start Date: 7/1/00
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) is collaborating with WHO in the CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) program, a major European collaborative effort for the prevention of noncommunicable diseases (NCDs) and the promotion of health in the WHO European Region. In Ukraine and other participating countries, NCCDPHP provides support to strengthen behavioral risk factor surveillance, CVD training, and technical materials development and dissemination. CINDI program components are designed to promote intersectoral collaboration, comprehensive approaches, and community involvement. Examples include the tobacco Quit and Win campaign, Millennium Initiative on smoking reduction in health professionals, dietary guidelines development, training seminars to advance cardiovascular disease knowledge and evaluation, and a survey on hypertension management policies.

Start Date: 1/1/99
Status: Ongoing

Reproductive Health Surveys

NCCDPHP's Division of Reproductive Health (DRH) has been providing technical assistance for international reproductive health surveys for more than 20 years under its Participating Agencies Service Agreement (PASA) with USAID. DRH staff work with USAID, in-country implementing

agencies, ministries of health, international organizations, and NGOs to provide programmatically important information on a wide array of topics in reproductive health. DRH staff assisted in virtually all aspects of these surveys, including conceptualization, design, planning, training, implementation, data processing, analysis, report writing, and dissemination activities. In 1999 and 2000, assistance was provided for surveys carried out in Romania, Ukraine, Russia, the Republic of Georgia, and Ecuador. Reports onn the survey results in Cape Verde and El Salvador were completed in 1999.

Start Date: 1/1/98
Status: Ongoing

Tobacco Control

In late 1998, NCCDPHP's Office on Smoking and Health (OSH) and WHO's Tobacco Free Initiative (TFI) launched a Global Youth Tobacco Survey (GYTS) as part of a WHO/UNICEF-supported project on youth and tobacco. The GYTS is a school-based, tobacco-specific survey that focuses on adolescents aged 13-15 years, providing an in-depth assessment of students' knowledge, attitudes, and behaviors related to tobacco. The GYTS was conducted in 34 countries in 1999 and 2000, including Ukraine. An additional 53 countries have completed training and are in the process of initiating their GYTS in 2001.

In early 2000, OSH and WHO/TFI added a Global School Personnel Survey (GSPS) to the existing youth tobacco survey initiative. The GSPS, which was piloted in several countries during 2000/2001, is a tobacco-specific survey of school personnel providing in-depth assessment of behavior, knowledge, attitude, and school curriculum and policy regarding tobacco. For each country conducting the GYTS and GSPS, CDC/OSH assisted in the development and review of the final questionnaires; provided data collection answer sheets; processed, edited and weighted all data; produced detailed tables; and provided a data diskette for further analysis. OSH staff also provide ongoing technical assistance regarding further analysis, interpretation of results, and report writing.

Start Date: 12/1/98 (GYTS) and 1/1/00 (GSPS)

Tuberculosis

PHPPO has provided consultations to and participated in program review activities in Ukraine. A PHPPO staff member joined other CDC staff in a WHO review of TB in Ukraine. The WHO review involved assessments of multiple sites and interviews with officials for the compilation of a report on TB in Ukraine.

Start Date: 11/11/99
End Date: 1/1/00
Status: Complete

UZBEKISTAN

Surveillance

EPO's Division of International Health (DIH), in collaboration with USAID, has been working with the Ministers of Health in the Central Asian Republics (Kazakhstan, Kyrgystan, Turkmenistan, Tajikistan, Uzbekistan) to provide technical assistance to establish an infectious disease surveillance and control program focusing on priority diseases: TB, viral hepatitis, and HIV/AIDS/STI. These activities are designed to support the overall objective of USAID's program, which is to consolidate existing vertical programs into a comprehensive primary care network. Collaborators have included NCHSTP, NCID, Project HOPE, and WHO-Europe. A CDC medical epidemiologist resident in Almaty, Kazakhstan oversees the implementation of CDC's activities in the Central Asian Republics; providing technical assistance for hepatitis by training health care providers in blood safety and universal precautions procedures; strengthening the national reference laboratories and advising on regulations and policies; "training the epidemiology trainers" with the Kazakhstan School of

Public Health; and supporting the development of a sentinel surveillance system, assessing risk factors, and identifying priority interventions for HIV/AIDS.

Start Date: 9/1/97
Status: Ongoing

MULTINATIONAL ACTIVITIES

CDC'S COLLABORATIVE WORK WITH INTERNATIONAL AND MULTILATERAL ORGANIZATIONS

The scope and intensity of global health challenges ensures that no single country or agency can work alone to meet them. To contribute to shared global health objectives, CDC works in close partnership with a wide array of international agencies and institutions to shape global health policies and to fund, implement, and evaluate programs. CDC's partnerships with international and multinational organizations include the World Health Organization and its regional offices, other United Nations agencies (such as UNICEF) and affiliated agencies (such as the United Nations Foundation), the World Bank, other federal agencies within the U.S. Government, private foundations, universities, and global health organizations. Each is described briefly below.

Like others involved in these efforts, CDC staff hope to improve public health outcomes by providing technical expertise and learning new methods to improve the constantly evolving practice of public health. Another important aspect of sharing global health knowledge is the standardization of data collected– critical to the ongoing challenge of detecting and comparing trends around the world. CDC representatives also participate in policy discussions that explore the many options for devoting scarce resources to long-standing as well as emerging public health crises. These discussions offer opportunities for bringing U.S. perspectives to multilateral settings, along with the equally important goal of bringing the perspectives and insights of other countries and partners to the United States.

CDC's global health partners include the following:

- The World Health Organization (WHO) is the leading United Nations (UN) institution charged with determining global health policy. CDC contributes to WHO's efforts through the secondment of CDC staff to strategic posts within the WHO structure, with special attention to the WHO Regional Offices (e.g. PAHO, AFRO), and through grants to support specific programs of global importance, such as polio eradication and surveillance for emerging diseases. In addition, a number of WHO Collaborative Centers are based within CDC, sharing staff, research initiatives, and publications for use by the global health community. (See Appendix C for a list of WHO Collaborating Centers at CDC.)
- The World Bank is the leading institution for investments in health and development and thus plays a critical role in shaping global health policy. Other regional development banks may provide new opportunities to address specific global health issues in the future. CDC has had assignees at the Bank since 1997.
- The United Nations Foundation (UNF), with an annual endowment of $100 million, provides financial support to United Nations agencies for projects in the areas of child health, population, women's health, and the environment. CDC collaborates on policy and technical issues, helping to shape the UNF's health agenda in the developing world. (A CDC staff member is assigned to UNF.)
- UNICEF, a key partner in child health initiatives, has been a particularly critical ally in CDC's global immunization activities. As the final phase of the global campaign against polio approaches, UNICEF collaboration will continue to be a critical element as CDC and its partners achieve the goal of eradication.
- Within the U.S. government, the United States Agency for International Development (USAID) has had a longstanding relationship with CDC to support common global health objectives. The Department of Health and Human Services' Office of International and Refugee Health (OIRH) coordinates global

health policy for the Department, providing opportunities to CDC, as well as relying on its technical resources. Several CDC staff members are assigned to USAID to work on these collaborative initiatives. The Fogarty International Center at the National Institutes of Health (NIH) serves as the locus for interagency collaborations in global health. The U.S. Department of State (DOS) is a crucial partner in carrying out CDC's overseas programs and activities. DOS is responsible for assuring that all U.S. Government overseas programs and activities are consistent with the overall goals and objectives of U.S. foreign policy. Through its embassies and diplomatic corps around the world, the Department offers protection and support for agency personnel on long- and short-term assignments.

- In the private sector, several U.S. foundations demonstrate an interest in global health issues and projects by supporting programming in areas important to CDC. For example, the Rockefeller Foundation has actively supported the development of "Public Health Schools Without Walls," which in turn work closely with CDC's Field Epidemiology Training Programs (FETPs). The Bill and Melinda Gates Foundation recently has given high priority to its global health programs. Its areas of emphasis, including vaccine delivery, maternal mortality reduction, malaria, and TB are aligned with CDC's interests, leading to many collaborative efforts. Rotary International supports the efforts of CDC and other global partners to add polio to the list of diseases eradicated from the world - a goal that is within reach.

- Many U.S.-based international non-governmental organizations (NGOs) are actively engaged in international health projects. The relief agency CARE, for example, participates in a joint CARE-CDC Health Initiative (CCHI), which makes best use of CDC's technical and scientific expertise and CARE's on-the-ground capabilities to address critical health issues in countries around the world. The eradication of Guinea worm and the prevention of river blindness throughout the world tops the Atlanta-based Carter Center's list of global health concerns. Through The Carter Center's efforts, community-based intervention programs primarily in Africa have greatly reduced the burden of these diseases among some of the world's poorest people. Combining forces with the CDC, WHO, UNICEF, and others, The Carter Center helps make the idea of public-private partnership in global health a reality.

Like the country-specific activities described throughout this report, CDC's collaborative work with international and multilateral agencies supports the agency's five strategic global health goals:

Public Health Surveillance and Response

One of the important functions of surveillance systems is the ability to detect emerging health threats, ideally before they have spread. In a world compressed by the rapid movement of goods and people, a strong network of global surveillance systems offers the best chance of early warning and thus early response.

CDC and its global health partners have consistently invested in the development and upgrading of surveillance systems around the world. Strong individual systems are important, but so is comparability and consistency across systems. The International Collaborative Effort (ICE) on Automating Mortality Statistics, initiated by CDC's National Center for Health Statistics (NCHS), is one example of a global standardization effort. Working with USAID, WHO, and representatives from 26 countries, NCHS staff have helped improve the international comparability of mortality statistics by developing standards for automation. Because of this effort, data can be collected, analyzed, and compared in consistent – and thus more useful – ways.

The Integrated Disease Surveillance (IDS) project is another example of a collaborative project seeking greater standardization across surveillance systems. Supported by CDC's Epidemiology Program Office (EPO) and National Center for Infectious Diseases (NCID), along with WHO-AFRO, USAID, and the UN Foundation, the IDS project is designed to improve infectious disease surveillance, epidemic preparedeness, and response in 46 African countries. A similar project, coordinated by CDC's National Center for HIV, STD, and TB Prevention (NCHSTP) with support from USAID, UNAIDS, and WHO, led to the development of a series of monographs on specific aspects of HIV biological surveillance in developing countries.

CDC's National Center for Injury Prevention and Control (NCIPC) has participated in the International Classification of External Causes of Injury, a classification scheme that will help standardize international injury surveillance. At the request of WHO, the Center's staff have developed a manual on injury surveillance in less-resourced environments that will allow countries with minimal staff and material resources to collect comparable injury data, especially data on violent injury.

Public Health Infrastructure and Capacity-Building

CDC is an active participant in public health training programs around the world, contributing faculty, curricula, and specific techniques and tools – such as EpiInfo software – that strengthen public health capacity at all levels. One of many examples is TEPHINET – Training Programs in Epidemiology and Public Health Interventions NETworks. TEPHINET was created with support from WHO, CDC, and the Fondation Merieux. The program is designed to initiate and link a network of field-based training programs that emphasize epidemiology and public health interventions. CDC's National Institute for Occupational Safety and Health (NIOSH) supports training of researchers around the world in disciplines key to occupational safety and health, such as epidemiology, occupational medicine, industrial hygiene, safety engineering, and toxicology.

Training is a critical tool for enhancing public health capacity, but in order to be deployed effectively, training must respond to specific and measurable needs or performance gaps. Developing a tool to assess public health performance in international settings has been an ongoing effort of CDC's Public Health Practice Program Office (PHPPO). Working with PAHO through its "Public Health in the Americas" initiative, PHPPO staff have helped design an instrument that measures the degree to which essential public health services are provided throughout the Americas. This tool will provide each country with a guide for developing and investing in optimal public health practice standards.

Disease and Injury Prevention and Control

Eliminating or eradicating a disease from the face of the earth is one of the most compelling of public health achievements, averting not only needless suffering and death but also the enormous expense of continuing prevention and treatment programs. Today, polio and measles seem destined to follow smallpox into this roster of public health achievements. The CDC's National Immunization Program (NIP) has been a partner alongside WHO, PAHO, UNICEF, and Rotary International in the global efforts to eradicate polio and accelerate measles elimination and control. NIP staff provide epidemiologic, programmatic, and operational technical assistance to measles- and polio-endemic countries. CDC also contributes research on injection safety technology, laboratory assistance, training of thousands of health care workers, and short-term technical consultations from its epidemiologists, virologists, and managers. CDC's National Center for Infectious Diseases (NCID) contributes to The Carter Center's lead effort to eradicate Guinea worm disease by serving as a source of technical and scientific assistance.

Applied Research for Effective Health Policies

Partnerships among multilateral and global health agencies often help launch and sustain research projects by pooling funding and drawing needed technical and other resources to a particular initiative. Examples include a collaboration between CDC and UNICEF to develop a case control study that will help identify risk factors for arsenicosis. Arsenic contamination of ground water is a serious problem in many countries, and the study results will help scientists around the world use laboratory and epidemiologic methods to identify high-risk groups and intervene.

Multinational organizations also serve as a forum for disseminating research findings quickly to public health organizations around the world. For example, CDC's National Center for Infectious Diseases collected and analyzed pneumococcal vaccine evaluation data from a multi-laboratory study. The study results led to guidelines designed to assist regulatory agencies in evaluating a laboratory's ability to measure antibody concentrations, which were later disseminated by WHO.

Exchange of Information and Lessons Learned

Through conferences, meetings, and published reports and guidelines, global health agencies play a critical role in the exchange of public health information and of lessons learned. These communications not only ensure the efficient spread of useful strategies and data, but also foster the personal and institutional links that lead to collaboration and cooperation on global initiatives.

Beyond disseminating information, an important role for multinational coalitions is the setting and endorsement of accurate information and standards. NIOSH staff have contributed to many such efforts, including participation in WHO's International Programme for Chemical Safety (IPCS) – a project involving 14 other institutions from 10 countries. A specific initiative involved developing chemical assessment documents known as International Chemical Safety Cards (ICSC). The cards communicate highly technical hazard data by translating material safety data sheets into concise, accurate, and accessible information for workers and managers in both small and large businesses. Over 1,250 cards have been developed on chemicals found in different workplaces; these have been translated into more than 20 languages and are available on NIOSH's web site.

A prime example of concerted action against a global health threat is the ongoing joint effort for tobacco control, which brings together CDC, WHO, the American Cancer Society, other U.S. federal agencies, and the World Bank – among others. Through meetings, conferences, and published reports, CDC and its partners have been able to present a united front and support science-based policy positions on economic issues, treaties (such as the WHO-sponsored Framework Convention for Tobacco Control), environmental tobacco smoke (ETS), mass media campaigns, and regulatory initiatives.

Bacterial Diseases

A study involving the International Clinical Epidemiology Network has been developed to define the relationship between preterm birth and maternal carriage of group B *streptococcus* and bacterial vaginosis. NCID assisted with the development of a menu-driven data collection system that allowed participating sites to enter, edit, back up, and transmit clinical data and laboratory results collected during patient (case) enrollment in a multicenter pilot follow-up study.

Organization(s): International Clinical Epidemiology Network

Start Date: 7/1/99
Status: Ongoing

Capacity Development

Since 1998, PHPPO's Division of Laboratory Systems (DLS) has been assisting the Pan American Health Organization Caribbean Epidemiology Centre (CAREC) in developing a distance learning system so that the training needs of its member countries can be met on a timely basis. Preliminary evaluations have proved this training methodology to be effective, in that some laboratories are already instituting quality practices as a result of a pilot distance learning course. Continued training, including distance-based training to CAREC's member countries, provides for more effective epidemiology and laboratory services. DLS is currently working with CAREC to build distance learning capacity in the Caribbean region by developing laboratory and epidemiology training products. DLS staff are working with CAREC to provide technical support in the development of a CD-ROM (entitled *Quality Laboratory Management Guidelines*) and facilitate the development of a video, entitled *Investigating an Outbreak: A Team Approach*.

Organization(s): Caribbean Epidemiology Centre

Start Date: 2/1/00
Status: Ongoing

Capacity Development

As part of PAHO's "Public Health in the Americas" initiative, PHPPO's National Public Health Performance Standards Program (NPHPSP) has partnered with PAHO to share expertise in the area of performance measurement of public health infrastructure and capacity. One of the main objectives of this joint project has been to design a measurement tool suitable for use throughout the Americas. Pilot testing for this aspect of the project was completed in Bolivia, Jamaica, and Colombia. A field test took place in Chile in November 2000 with wider implementation planned for 2001. The measurement tool will be the basis for an integrated system of infrastructure surveillance and performance measurement of public health systems to be used in various countries of the Latin American and Caribbean region. To support collaborative efforts designed to measure and strengthen public health infrastructure, a WHO Collaborating Center in Health Systems Research and Development was initiated at PHPPO. The NPHPSP is already exercising a leadership role in measuring public health capacity and infrastructure in the United States. It is anticipated that the program's international initiative and its collaboration with PAHO and WHO will extend the reach of the concept of performance measurement and improve the practice of public health on a global scale.

Organization(s): Pan American Health Organization, WHO

Start Date: 9/1/98
Status: Ongoing

Capacity Development

NIOSH participates in and supports NIH Fogarty International Center programs to support training of foreign researchers in disciplines related to occupational safety and health (e.g., epidemiology, occupational medicine, industrial hygiene, safety engineering, and toxicology) and to assist foreign researchers in conducting local investigations. The Fogarty Center has made awards to a number of

U.S. universities, which have projects underway in some 20 countries throughout Africa, Asia, Central Europe, and Latin America. Among these countries are Mexico, South Africa, and Vietnam, with whom NIOSH has entered into long-term bilateral collaborative arrangements. NIOSH is pursuing coordination of activities with the Fogarty awardees in these countries.

Organization(s): Fogarty International Center

Start Date: 10/1/96
Status: Ongoing

Child Survival

NCID Division of Parasitic Diseases staff have worked collaboratively with the WHO Child and Adolescent Health and Development Department through participation in the Interagency Working Group on Integrated Management of Childhood Illness (IMCI) Monitoring and Evaluation. (This Working Group has responsibility for developing standards for evaluating IMCI implementation globally.) NCID conducted a policy analysis that examined strategies for addressing incompatibilities between IMCI and health information systems in developing countries. Staff also participated in two WHO-sponsored conferences on improving health worker performance.

Organization(s): WHO

Start Date: 9/1/97
Status: Ongoing

Child Survival

An NCID Division of Parasitic Diseases epidemiologist served as a member of UNICEF's Multiple-Indicator Cluster Survey (MICS) Technical Advisory Group. The MICS is being conducted in developing countries to determine whether the World Summit for Children 2000 goals have been met.

Organization(s): United Nations

Start Date: 1/1/95
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

The Director of Pan American Health Organization (PAHO) recommended redesignation of the PAHO/WHO Collaborating Center for Reference and Research in Blood Lipids at CDC for a period of 4 years, beginning in June 2000. The Center offers standardization assistance to lipid laboratories supporting PAHO-WHO cardiovascular projects; assists in the development of a central lipid standardization program to international laboratories participating in clinical trials and investigations or conducting methodology research; and participates in the development of methodology and standardization resources for public health laboratories. This PAHO/WHO Collaborating Center was first established at CDC in 1963.

Organization(s): Pan American Health Organization; WHO

Start Date: 6/1/00
Status: Ongoing

Cholesterol and Related Lipids: Laboratory Standardization

NCEH's Division of Laboratory Sciences participates in the Lipid Standardization Program (LSP), which provides standardization services to 84 U.S. and 34 international laboratories. The program is designed to improve the accuracy and precision of lipid measurements by providing reference materials, technical consultation, and reference laboratory analyses for total cholesterol, HDL cholesterol, and triglycerides.

Organization(s): Pan American Health Organization; WHO

Start Date: 6/1/00
Status: Ongoing

Diabetes

The Director of NCCDPHP's Division of Diabetes Translation serves on the Editorial Board of the *International Diabetes Federation Bulletin* as the international editor. He attended the Editorial Board meeting in Brussels, Belgium to review articles submitted for publication.

Organization(s): International Diabetes Foundation

Start Date: 11/1/98
Status: Ongoing

Diabetes

NCCDPHP's Division of Diabetes Translation formed a partnership with the Pacific Islands Health Officers Association (PIHOA), an organization dedicated to improving health that addresses issues of regional significance and conducts special demonstration projects. Members include principal health officers from each island jurisdiction, who together provide a unified voice for regional health policies. Two of PIHOA's executive board members are part of the expert council, which is an important steering committee of *Diabetes Today* in the Pacific. The strengthened relationship with PIHOA has created opportunities to collaborate with two other prominent organizations in the region: the South Pacific Commission and WHO.

Organization(s): Pacific Islands Health Officers Association, South Pacific Commission, WHO

Start Date: 10/1/98
Status: Ongoing

Environmental Health

An NCEH epidemiologist attended a 5-day task force meeting in London, Great Britain sponsored by WHO Healthy Communities. The purpose of the meeting was to produce the core of a community noise guidelines document.

Organization(s): WHO

Start Date: 4/1/98
End Date: 12/1/99
Status: Complete

Environmental Health

An NCEH staff member participated in a workshop organized by the European Science Foundation to establish guidelines for acceptance of analytical methods for measuring dioxins and related compounds in foods in response to concerns raised in Europe.

Organization(s): European Science Foundation

Start Date: 9/1/00
Status: Ongoing

Environmental Health

ATSDR authored the Concise International Chemical Assessment Document (CICAD) No. 12, Manganese and its Compounds, for the International Programme on Chemical Safety (IPCS), which is a joint venture of the United Nations Environment Programme, the International Labour Organization, and WHO. This and other CICADs are considered authoritative documents on the risk assessment of chemicals. CICADs are concise documents that provide summaries of the relevant scientific information concerning the potential effects of chemicals upon human health and/or the environment. They are based on selected national or regional evaluation documents or on the existing Environmental Health Criteria document. Before acceptance for publication as CICADs by IPCS, these documents undergo extensive peer review by internationally selected experts to ensure their completeness, accuracy in the way in which original data are presented, and the validity of the conclusions drawn. The CICAD for manganese was a part of the pilot phase to establish the process for developing these documents. As a result of this initial effort and its success, the agency is involved in the development of two additional CICADs on mercury and polychlorinated biphenyls (PCBs).

Organization(s): International Labour Organization; International Programme on Chemical Safety; United Nations Environment Programme

Start Date: 6/1/96
End Date: 6/1/99
Status: Complete

Environmental Health

An ATSDR staff member serves as the U. S. representative to WHO's International Programme on Chemical Safety (IPCS) Risk Assessment Steering Group. He provides the U.S. perspectives on priorities established by the Steering Group. These include chemical-specific assessments conducted by WHO and methodologic evaluations that govern the development of health guidance values established by IPCS, including the development of Concise International Chemical Assessment Documents (CICADS).

Organization(s): International Programme on Chemical Safety

Start Date: 8/1/00
Status: Ongoing

Environmental Health

An ATSDR staff member participated in an International Programme on Chemical Safety project on the harmonization of approaches to assessment of risk from exposure to chemicals. The programme focused on establishing an increased understanding of methods and practices used and building confidence in acceptance of assessments using different approaches (without standardized methods). Workshop experts discussed specific issues related to approaches used in expressing uncertainty and variability.

Organization(s): International Programme on Chemical Safety

Start Date: 5/1/00
Status: Ongoing

Environmental Health

Since 1988, the Persistent Organic Pollutants (POPs) Treaty has being negotiated under the auspices of the United Nations Environment Programme, with more than 100 countries participating in the negotiations. The treaty seeks to eliminate the use and production of certain highly toxic chemicals and restrict the use of others. One chemical targeted by the treaty is DDT, which is still used in some countries to control mosquitoes that transmit malaria. Through ATSDR's membership on the State Department's Interagency Working Group, U.S. Department of Health and Human Services malaria experts have provided scientific advice that has influenced the U.S. delegation's position. As a result of this advice, the U.S. delegation's draft negotiating text describes the restriction of international use of DDT to control malaria vectors and the ultimate phase-out of its use and production. The U.S. delegation is championing a robust program of technical assistance and capacity building to assist those countries that choose to make the transition away from reliance on DDT to control malaria. Finally, ATSDR's research on toxic substances in general and on the human health impact of exposure to POPs chemicals (documented through the agency's Great Lakes Human Health Effects Research Program) has contributed to provisions on measuring the treaty's effectiveness through international biomarker and air monitoring programs.

Organization(s): United Nations Environment Programme; U.S. Department of State

Start Date: 5/1/98
Status: Ongoing

Environmental Health

An ATSDR staff member was an official U.S. delegate to the 2nd Session of the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants (POPs) held in Nairobi, Kenya. The staff member also shared research findings from ATSDR's Great Lakes Human Health Effects Program regarding potential adverse human health effects from exposure to POPs chemicals. The 12 POPs chemicals of concern at the United Nations meeting in Nairobi are the same POPs chemicals under study in the Great Lakes program. This activity was in collaboration with the U.S. Department of State and Physicians for Social Responsibility.

Organization(s): Physicians for Social Responsibility; U.S. Department of State

Start Date: 1/1/99
End Date: 1/31/99
Status: Complete

Environmental Health

NIOSH researchers contributed to the development of a WHO International Programme on Chemical Safety Environmental Health Criteria document, *Biomarkers in Risk Assessment: Validity and Validation*, issued in 2001.

Organization(s): International Programme on Chemical Safety

Start Date: 1/1/98
Status: Ongoing

Environmental Health

The Director of NCEH met with WHO officials in Geneva to discuss cooperation on issues of mutual interest, identify new potential areas of future collaboration between the two organizations, and share information about NCEH's current research on children and the environment.

Organization(s): WHO

Start Date: 3/1/00
End Date: 3/31/00
Status: Ongoing

Environmental Health

ATSDR's Office of Children's Health is a coordinating member of International Children's Health, Environment, and Safety (INCHES), an international forum focused on children's environmental health issues. The goals of the organization are to promote international research, share environmental health data, and strengthen the interdisciplinary and international nature of children's environmental health work. ATSDR seeks to enhance the impact of its most effective domestic child health programs by extending program training and assistance to INCHES and related international organizations. For example, ATSDR will assist Mexico and the Philippines in establishing pediatric environmental health specialty units modeled after those established in the United States.

Organization(s): International Children's Health, Environment, and Safety

Start Date: 1/1/98
Status: Ongoing

Epidemiology Training

Training Programs in Epidemiology and Public Health Interventions Networks (TEPHINET) was created in June 1997 under the auspices of WHO, CDC, and the Fondation Merieux. Its mission is to strengthen international public health capacity by initiating, supporting, and networking field-based training programs that enhance competencies in applied epidemiology and public health interventions. As a partner in TEPHINET, EPO's Division of International Health continues to provide financial and technical support to the program. Recent contributions include bringing Field Epidemiology Training Program (FETP) trainees to international and regional conferences and participating in the Post-Hurricane Reconstruction Project, Micronutrient Malnutrition project, and polio Stop Transmission of Polio (STOP) teams.

Organization(s): WHO

Start Date: 6/1/97
Status: Ongoing

Food Safety

One approach to decreasing the occurrence of imported foodborne illness into the United States is to increase the ability of local and national health officials in exporting countries to detect and investigate outbreaks and to build their capacity for preventing future occurrences. EPO staff developed and evaluated foodborne safety and outbreak investigation materials in traditional media (such as paper and text-book based learning materials) and newer computer-based media (such as interactive computer programs). EPO staff worked with partners both at CDC (in NCID's Division of Bacterial and Mycotic Diseases and PHPPO's Division of Media and Training Services) and other

agencies and groups (including Epidemiólogos de Enfermedades Transmitidas por Alimentos, Training Programs in Epidemiology and Public Health Interventions Network, U.S. Department of Agriculture, Food and Drug Administration) to assess training needs and possible collaborations in food safety and outbreak investigations.

Organization(s): Caribbean Epidemiology Centre, Pan American Health Organization, U.S. Department of Agriculture, Food and Drug Administration

Start Date: 7/1/99
Status: Ongoing

Food Safety

Staff from NCID's Division of Bacterial and Mycotic Diseases presented the PulseNet Campylobacter PFGE protocol at the Campynet meeting attended by members of the European Union. NCID staff discussed collaborations with European public health laboratories to implement unified protocols in both Europe and the United States.

Organization(s): European Union

Start Date: 9/1/00
End Date: 9/30/00
Status: Complete

Health Education

A NIOSH staff member served as an invited participant on an International Commission of Occupational Health (ICOH) Working Group for an occupational safety and health web portal. ICOH, of which NIOSH is an affiliate organization, is composed of academics, government officials, consultants, and private industry individuals concerned with occupational health issues through the world. At the ICOH-sponsored 26th International Congress on Occupational Health, NIOSH presented a paper on web-based occupational safety and health training and education, recommendations for theory-driven designs to expand quality professional education globally, and recommendations for a consortium approach. These efforts will contribute to a centralized, Internet-based information source for occupational safety and health data and recommendations that will make current information more accessible around the world.

Organization(s): International Commission of Occupational Health

Start Date: 8/1/00
Status: Ongoing

Health Information Systems

NCID's Division of Bacterial and Mycotic Diseases implemented the Public Health Laboratory Information System for laboratory data reporting at the Caribbean Epidemiology Center in Trinidad.

Organization(s): Caribbean Epidemiology Centre

Start Date: 1/1/93
Status: Ongoing

Health Information Systems

NCHS continues to participate as the North American Collaborating Center (NACC) for the coordination and implementation of the International Classification of Diseases (ICD) and International Classification of Impairments, Disabilities, and Handicaps (ICIDH). NCHS's goal is to provide an international forum to exchange ideas and experiences on the classification of diseases, and to coordinate implementation of the ICD-10 and subsequent updates. In addition, NCHS hopes to coordinate the input and revision of the ICIDH-2. The NCHS Collaborating Center for the Classification of Diseases for North America includes coordination with the Canadian Institute for Health Information and Statistics Canada. Annual meetings of Centre Heads are held in the fall to review the status of implementation of the latest ICD revision, consider updates, and exchange information on related issues. The United States participates in the annual ICD Centre Heads meetings by presenting papers related to mortality and morbidity classification and discussion. NACC also chairs

the Subgroup on Training and Credentialing and the Mortality Reference Group of the international network of collaborating centres, and participates actively in the Update Reference Committee and Links to Other Classifications Committee. Regarding ICIDH-2, NCHS has provided extensive comments to WHO on the revision of ICIDH-2 and has worked closely with U.S. and Canadian researchers, as well as with the international community. In May 2000, NCHS held three 2-day meetings in Minneapolis, Minnesota; Pomona, California; and Hyattsville, Maryland to introduce stakeholders to CODE ICIDH-2, a learning tool that NCHS supported for the Beta-2 draft of ICIDH-2, and to conduct field trials on the classification. NCHS is leading the international Disability Tabulations project, which is backcoding five national surveys to ICIDH-2. The third and last DISTAB meeting is scheduled to take place in September in Washington, D.C., immediately preceding the annual NACC ICIDH-2 Revision meeting. NCHS also participated in the Interim Meeting on ICIDH-2 in Geneva and participated in the Year 2000 annual WHO meeting on ICIDH-2 revision in November 2000 in Madrid.

Organization(s): WHO

Start Date: 4/1/76
Status: Ongoing

Health Statistics

The International Collaborative Effort (ICE) on Automating Mortality Statistics was organized by NCHS in 1995 to promote international collaboration in applying technology to the collection, processing, and dissemination of mortality statistics. Initial emphasis was on automated processing, which a number of countries are undertaking – many based on suites of computer programs developed by the United States (ACME, TRANSAX, MICAR, SuperMICAR). The ICE's ultimate objective is to improve the international comparability of mortality statistics by developing standards in the use of automation, particularly the implementation of the International Classification of Diseases (ICD). The first plenary meeting of the ICE was held in Washington, D.C. in November 1996 and was attended by representatives from 19 countries and by NCHS, WHO, Pan American Health Organization, the International Institute for Vital Registration, and the National Cancer Institute. Several important global consequences occurred as a result of the first meeting: (1) WHO created the WHO Mortality Reference Group, an active committee that reviews proposals for updating and correcting ICD for mortality applications, and a group on training and credentialing medical coders; and (2) ICE established a group to discuss electronical developments in automation. Results of the meeting are described in *Proceedings of the International Collaborative Effort on Automating Mortality Statistics, Volume I* (July 1999). The report is available through NCHS's web site. The second ICE meeting, held in Bethesda, Maryland in September 1999, was attended by representatives from over 26 countries, extending to include participants from China, South Korea, South Africa, Hong Kong, Russia, Eastern European countries, and Latin America, as well as Europe and North America. In addition to focusing on automated processing, the meeting also addressed electronic death registration and automation applied to publishing the ICD. As a result of the meeting, two training sessions on mortality medical coding oriented to automation were conducted by NCHS in May 2000 for participants from South Africa, Taiwan, and Mexico.

Organization(s): WHO

Start Date: 6/1/96
Status: Ongoing

HIV

CDC collaborates with country-specific HIV/AIDS surveillance programs to conduct operational research to develop and enhance methodologies for field implementation of HIV biological surveillance. A series of monographs will be produced, including guidelines on HIV testing technologies for surveillance of HIV in developing countries; a critical discussion of the strengths and weaknesses of HIV and AIDS surveillance monitoring and evaluating HIV/AIDS prevention programs; and methods for conducting HIV sentinel surveillance, including rapid epidemiological assessments of the HIV situation in a specific geographic area. CDC will continue to maintain collaborative working relationships with U.S. Agency for International Development, Joint United Nations Programme on HIV/AIDS, and WHO in order to complete the scope of work.

Organization(s): United Nations; Joint United Nations Programme on HIV/AIDS; WHO

Start Date: 3/1/99
Status: Ongoing

HIV

PHPPO's Division of Laboratory Systems (DLS) supports CDC programs designed to strengthen public health laboratory systems globally through laboratory training and quality assurance. A current project involves developing training and quality assurance systems for the Leadership and Investment for Fighting an Epidemic (LIFE) initiative, now known as the Global AIDS Program (GAP). DLS is working with its partners at CDC (such as NCHSTP, NCID, and the Association of Public Health Laboratories (APHL)) to support and upgrade the laboratory testing services in 14 sub-Saharan African countries and India that have been affected by the HIV/AIDS epidemic. The DLS role in the LIFE/GAP initiative is leadership for laboratory training and developing and implementing quality systems for HIV, TB, STD, and opportunistic infections testing services. While the LIFE/GAP initiative has targeted many countries in Africa, initial activities included providing comprehensive laboratory support for the country of Zimbabwe and developing a training course on laboratory quality assurance for use by CDC, APHL, and the other LIFE country participants.

Organization(s): Association of Public Health Laboratories

Start Date: 1/1/00
Status: Ongoing

HIV/STD Prevention

NCCDPHP's Division of Reproductive Health is developing a partnership with the WHO Regional Office for Africa and Population Media Center, an international non-profit organization, to promote reproductive health, family planning, and HIV/STD prevention using entertainment/education strategies in Africa. In addition to assisting in the development of a WHO-sponsored, 2-year serialized radio drama in one country, NCCDPHP conducted a capacity-building workshop in Johannesburg in September 2000 and provided follow-up technical assistance on using radio serial drama for five countries in Africa.

Organization(s): WHO Regional Office for Africa

Start Date: 5/1/99
Status: Ongoing

Immunization

NIP assisted the rapporteur with the WHO Informal Technical Consultation on Vitamin A Supplements meeting and co-authored a manuscript summarizing the meeting's content: *Childhood Mortality Impact and Costs of Integrating Vitamin A Supplementation Into Immunization Campaigns*.

Organization(s): WHO

Start Date: 2/1/00
End Date: 3/1/00
Status: Complete

IMMUNIZATION

The safety of immunizations is affected by unsafe injection practices. However, since immunizations constitute less than 5% of all injections in health care, a larger project aimed at reducing unsafe injections overall was needed. A staff member from NIP's Division of Epidemiology and Surveillance, which includes the Vaccine Safety and Development Activity, was assigned to WHO in March 1999 to help develop the Safe Injection Global Network (SIGN), a new global initiative to limit the spread of blood-borne pathogens (e.g., hepatitis B and C, and HIV) via unsafe injection practices. Unsafe injections are a longstanding problem of immense public health consequences. Of the 12 billion injections annually, approximately 50% are administered unsafely in less-developed settings, resulting in tens of millions of new infections. Addressing the problem required assembling interventions ranging from anthropology (most cultures see injections as a "positive" medical intervention) to medical economics (most health care systems reimburse injections more than prescriptions) to technology (syringes can easily be reused without sterilization). The NIP staff member helped prepare for the launch of SIGN in October 1999 and recruited a large number of partners to join the organization. SIGN is now thriving with an international consortium of UN organizations, NGOs, governments, donors, and universities who share a common interest in the safe and appropriate use of injections. SIGN plans to coordinate the launch of pilot projects in five countries. Results of the evaluation of these pilot projects should be available by 2002.

Organization(s): UNICEF; WHO

Start Date: 4/1/99
Status: Ongoing

IMMUNIZATION

The Global Alliance for Vaccines and Immunizations (GAVI) was formed in 1999 with the primary goals of introducing new vaccines (hepatitis B, Hib, yellow fever) and improving immunization coverage in the poorest countries (i.e., those with GNP per capita < $1,000). Funds exceeding $1 billion have been made available to countries beginning in 2000 (and continuing for 5 years) for this purpose. CDC is one of many partners contributing to this effort, led by WHO, UNICEF, the Bill and Melinda Gates Foundation, the World Bank and others. Since January 2000, CDC has participated in GAVI Task Forces that have been planning the organization, funding, and monitoring of the GAVI grant program. CDC is a core member of the Task Force for Country Coordination. NIP staff provide technical expertise to partners and directly to countries on the Expanded Program on Immunization, introducing vaccines into eligible countries. During 2000, in-country consultancies were completed in Tanzania (EPI x2), Kenya (hepatitis B), Ghana (hepatitis B), Cameroon (hepatitis B, EPI), Pakistan (hepatitis B and EPI), Uzbekistan (hepatitis B and EPI), Azerbaijan (hepatitis B and EPI), Turkmenistan (hepatitis B), Tajikistan (hepatitis B), Bangladesh (EPI, hepatitis B), and Nepal (EPI). During the next several years, consultancies will continue to be required to assist countries as they prepare and implement plans, monitor outcomes, and continue to put in place other aspects of GAVI.

Organization(s): Gates Foundation (US); UNICEF; World Bank; WHO

Start Date: 1/1/00
Status: Ongoing

Immunization

NIP staff attended two briefings on Global Alliance for Vaccines and Immunizations (GAVI) operations and country support for immunization. The purpose of the meeting was to: (1) brief prospective consultants on GAVI operations and the Global Fund for Children's Vaccines application process; (2) provide an update on the common immunization assessment tool (including financing and health systems); and (3) introduce newly developed materials for planning new vaccine introduction.

Organization(s): WHO

Start Date: 8/1/00
End Date: 9/30/00
Status: Complete

Influenza

NCID's Division of Viral and Rickettsial Diseases collaborated with scientists from Bulgaria, France, Germany, Spain, the United Kingdom, and Russia on the analysis of currently circulating strains of influenza during influenza season.

Organization(s): WHO

Start Date: 11/1/97
End Date: 11/1/99
Status: Complete

Injuries

The purpose of the International Collaborative Effort on Injury is to improve international comparability and quality of injury data so that the causes of injury can be better understood and the most effective means of prevention can be implemented. The ICE on Injury has several ongoing projects. For example, NCHS is collaborating in the International Classification of External Causes of Injury (ICECI). NCHS is also in the process of studying cause-specific analysis of injury morbidity and mortality designed for the purpose of understanding international differences in injury, such as drowning analysis. In addition, NCHS plans to work on a framework for presenting injury diagnosis codes, and is currently working on the development of two sets of questionnaires. The first set addresses questionnaire design regarding mortality issues for understanding the process used to register and certify deaths by countries, while the second set deals with morbidity issues to understand surveillance of morbidity data by country.

In a related ICE effort, NIOSH participates in a collaboration of several countries (including the United States, Australia, and New Zealand) to harmonize national data on fatal occupational injuries in order to make accurate international comparisons of work-related injury deaths and their circumstances.

Organization(s): ICE on Injury

Start Date: 5/1/94
Status: Ongoing

Injuries

The NIOSH Division of Safety Research Alaska Field Station (AFS) has a long-term, collaborative relationship with the WHO Collaborating Center on Community Safety, located at the Karolinska Institute in Stockholm, Sweden. NIOSH serves as one of the lead local partners in operating the Anchorage Safe Communities Coalition (recently reorganized as the Alaska Injury Prevention Center). The collaborating center formally recognized Anchorage as an International Safe Community in November 1998. In addition to general collaboration with other local agencies and NGOs, the AFS coordinates the Workers and Workplace Injury Prevention Team for the coalition, with multiple ongoing ancillary projects in the community. Anchorage will host the 2001 International Safe Communities Conference. AFS participated in the planning for this meeting, including a major role in planning the scientific program. There is an active, ongoing exchange between these entities. Prior to the International Injury Prevention and Control Conference, AFS assisted the WHO Collaborating Center by providing technical assistance and content for the 9th

International Conference on Safe Communities, in Dhaka, Bangladesh in February 2000, and injury epidemiology training to 60 students from many nations in New Delhi in March 2000.

Organization(s): WHO

Start Date: 1/1/95
Status: Ongoing

Injuries

Beginning in February 1999, NCIPC began working with WHO to contribute to a WHO publication, *Guidelines for Safe Recreational-water Environments: Swimming Pools, Spas and Similar Recreational-water Environments*.

Organization(s): WHO

Start Date: 2/1/99
Status: Ongoing

Laboratory Diagnostics

Through the Newborn Screening Quality Assurance Programme, NCEH staff provided consultation during a meeting of the International Atomic Energy Agency in Thailand. The consultation addressed issues pertaining to laboratory screening for both excessive iodine exposure.

Organization(s): International Atomic Energy Agency

Start Date: 1/1/00
End Date: 1/10/00
Status: Complete

Laboratory Methods Development

Five years ago, NIOSH began a major standards development initiative within the International Organization for Standardization (ISO) and assumed the leadership of the ISO Workplace Atmospheres Subcommittee. The result has been the preparation, at an unprecedented rate, of a dozen standards now close to publication. The standard development process helps ensure a quality product through the involvement of a large number of interested and qualified participants. An example of the potential impact is the first such standard to be published by ISO: a protocol for evaluating diffusive samples of hazardous gases and vapors. The protocol was developed concurrently with the NIOSH design and construction of a sampler exposure chamber. A major industry-supported sampler evaluation has now begun that will offer an alternative to the personal sampling pump while maintaining accuracy defensible through consensus-based criteria.

Organization(s): International Organization for Standardization

Start Date: 1/1/96
Status: Ongoing

Malaria

Staff from NCID's Division of Parasitic Diseases continued collaboration with the Office of the United Nations High Commissioner for Refugees on development of guidelines for malaria control in refugee and displaced populations.

Organization(s): WHO

Start Date: 1/1/96
Status: Ongoing

Management Training

Healthy Plan-it™ is a video training tool kit that was developed through PHPPO's Sustainable Management Devolvement Program (SMDP). Established in 1992 in collaboration with Emory University, the SMDP at CDC is a global program designed to assist developing countries with improving the health and productivity of their people by strengthening in-country public health management training. The objective is accomplished through the Management for International Public Health (MIPH) course offered every year to management trainers from developing countries. Healthy Plan-it™ is provided as a course resource to all past and future participants of the annual MIPH train-the-trainer course, who may use it as facilitators in their own management efforts in-country. The materials have been developed specifically for international audiences who speak English as a second language and who may face cultural bar-

riers to participatory training. The use of Healthy Plan-it™ for in-country training helps overcome the monetary and logistical barriers of sending people to Atlanta for training in the module.

Organization(s): Emory University (US)

Start Date: 3/1/97
End Date: 3/1/00
Status: Complete

Measles

CDC provided key support to WHO, Pan American Health Organization, and individual countries to accelerate global measles elimination and control during 1999 and 2000. Measles cases abroad pose a continuing risk of importation to the United States. NIP provides support through epidemiologic, programmatic, and operational technical assistance (through secondment of staff and short-term consultants) to measles-endemic countries; research and development for injection safety technology; laboratory assistance; research to improve future measles elimination initiatives; and, through UNICEF, provision of vaccines for supplementary vaccination activities. CDC detailed staff to WHO in Argentina, Brazil, China, Mexico, Philippines, and Uganda as well as PAHO headquarters. Recently, cooperation on measles control has been increased with support and staffing to the International Federation of the Red Cross and Red Crescent Societies.

Organization(s): WHO
Status: Ongoing

Meningococcal Disease/Meningitis

At the request of WHO's Division of Vaccines and other Biologicals, staff from NCID's Division of Bacterial and Mycotic Diseases participated in a study with Manchester Public Health Laboratories in the United Kingdom and Children's Hospital Oakland Research Center. The purpose of the study was to compare serum bactericidal titers with meningococcal serogroup C using human and rabbit complement sources. NCID developed a sensitivity/specificity model with a resultant receiver-operator characteristic (ROC) curve to arrive at a rabbit complement titer level that best correlated with a human complement cutoff of 1:4 and 1:8. NCID submitted two reports to WHO and reviewed reports submitted by the two other centers. A meeting was convened before a panel of experts at WHO in Geneva, where NCID delivered a presentation discussing these issues; the panel adopted NCID's approach.

Organization(s): WHO

Start Date: 5/1/99
End Date: 10/1/00
Status: Complete

Meningococcal Disease/Meningitis

NCID's Division of Bacterial and Mycotic Diseases provided technical support to WHO Regional Office for Africa (AFRO) to develop technical guidelines for Integrated Disease Surveillance and Response in Africa and define methods for infectious disease control and prevention in Africa.

Organization(s): WHO Regional Office for Africa

Start Date: 5/1/98
Status: Ongoing

Micronutrient Malnutrition

The problem of micronutrient malnutrition (MNM) – such as iron, vitamin A, and iodine deficiency – affects many people around the world. EPO's Divisions of International Health and Public Health Surveillance and Informatics are collaborating with the NCCDPHP Division of Nutrition and Physical Activity to develop materials to train public health workers to assess the extent of MNM problems, develop appropriate intervention strategies, and evaluate the impact of such interventions. EPO will work with TEPHINET (Training Programs in Epidemiology and Public Health Interventions Network) to develop training strategies for the 21 member organizations. Appropriate tools, such as EpiInfo 2000, will be used to develop these training modules.

Organization(s): Training Programs in Epidemiology and Public Health Interventions Network

Start Date: 4/1/00
Status: Ongoing

Micronutrient Malnutrition

In February 1999, NCCDPHP Division of Nutrition and Physical Activity staff participated in a UNICEF/WHO Regional Consultation that resulted in recommendations for prevention and control of iron deficiency anemia in Eastern Europe and in New Independent States.

Organization(s): WHO

Start Date: 2/1/99
End Date: 2/28/99
Status: Complete

Micronutrient Malnutrition

NCEH collaborated on a Micronutrient Malnutrition (MNM) workshop on flour fortification for the WHO Eastern Mediterranean Region (EMRO), held in Ottawa, Canada in June 2000. Participants included representatives from MNM; MNM consultants;WHO Regional Office for the Eastern Mediterranean; UNICEF; CDC; and Canadian International Development Agency. CDC's possible involvement in the monitoring aspect of nutrition surveys and surveillance systems in countries of the Eastern Mediterranean Region was discussed with regard to: (1) helping to select proper indicators of nutritional status for impact assessment; (2) providing laboratory and technical assistance (e.g., provide QC samples, assist with selection of methods of analysis, set up, troubleshooting, and measurement of a subset of samples at CDC's lab); (3) assist with capacity building in the labs and on the ground (e.g., provide training in design of performance surveys, sampling methodologies, lab methods, and data analysis); and (4) assist with case studies for impact assessment in countries.

Organization(s): WHO Regional Office for the Eastern Mediterranean; UNICEF; WHO

Start Date: 6/8/00
End Date: 6/9/00
Status: Complete

Mine Studies

A NIOSH staff member is serving as a U.S. Representative on the International Arctic Mining Advisory Council, the organizing committee for a series of international Symposia on mining in the Arctic that are held every 3 years. NIOSH is planning a conference session on Arctic mining in the United States with the Department of Mining and Geological Engineering at the University of Alaska Fairbanks, for the 6th International Symposium on Mining in the Arctic, held in Nuuk, Greenland in May 2001.

Organization(s): International Arctic Mining Advisory Council

Start Date: 10/1/98
Status: Ongoing

Mine Studies

NIOSH is a member of the International Safety in Mines Research Institutes. This international group sponsors the International Conference of Safety in Mines Research Institutes every 2 years, rotating the conference location among participating countries. The objective of the conference is to foster the international exchange of information on safety of underground mining operations and to bring together active researchers so they can learn directly from each other's experiences.

Organization(s): International Arctic Mining Advisory Council

Start Date: 10/1/95
Status: Ongoing

Noncommunicable Disease Prevention and Control

NCCDPHP's Division of Adult and Community Health (now the Division of Chronic Disease Control and Community Intervention) provides support to strengthen both the non-communicable disease (NCD) prevention programmatic components of the Global Forum for NCD Prevention and Control regional networks, as well as behavioral risk factor surveillance data collection activities. The Global Forum's objectives include: (1)

encourage the development of regional networks of community-based initiatives in support of national NCD control strategies and program development in all six WHO regions; (2) support regional networks through inter-regional collaboration and international partnership; (3) disseminate scientific evidence and experience and provide updated guidance on primary and secondary prevention of NCDs; (4) increase awareness of NCD prevention and control initiatives through advocacy; (5) promote the harmonization of monitoring and surveillance methodologies; and (6) promote collaborative research and capacity building in relation to primary and secondary prevention.

Organization(s): WHO Regional Offices

Start Date: 5/1/00
Status: Ongoing

Nutrition Assessment

NCEH collaborated in a workshop in Kuala Lumpur, Malaysia organized by International Life Sciences Institute on the harmonization of methods for National nutrition status assessment and dietary studies in Southeast Asia. Countries participating included the Philippines, Indonesia, Brunei, Singapore, Malaysia, Thailand, Vietnam, Laos, Cambodia, and Myanmar (Burma). Areas of focus were dietary assessment, biochemical determinations, and anthropometric measurements. CDC assistance included help with issues related to data management and statistical analysis. In addition, CDC contributed to a training workshop on biochemical assessment, including assessment of iodine deficiency disorders, iron deficiency and iron deficiency anemia, and vitamin A deficiency. WHO/WPRO and UNICEF/EAPRO expressed a strong interest in CDC's efforts to establish a global network of regional laboratories. NCEH staff visited the laboratory at the Institute of Nutrition at Mahidol University in Bangkok, Thailand), the governmental nutrition laboratory at the Department of Health (Bangkok, Thailand), and the laboratory at the International Center for Diarrhoeal Disease Research in Dhaka, Bangladesh to discuss their participation in a global network of regional laboratories.

Organization(s): International Life Sciences Institute; UNICEF; WHO

Start Date: 8/28/00
End Date: 8/29/00
Status: Complete

Occupational Hazards

Since 1986, NIOSH staff have participated in a multinational effort with the WHO International Programme for Chemical Safety (IPCS) to develop concise international chemical assessment documents known as International Chemical Safety Cards (ICSC). This project includes 14 other institutions from 10 countries. Highly technical hazard communication data (material safety data sheets) are translated into concise, accurate, and easily understandable information for workers and managers in both small and large businesses. Over 1,250 ICSC on chemicals found in different workplaces have been developed and translated into more than 20 languages. Currently, the English, French, German, Malaysian, and Swahili-language versions of the cards are available on the NIOSH web site, where there also are links to Chinese, Finnish, Japanese, Korean, Russian, and Spanish versions. Details of the ICSC project activities were presented by NIOSH and WHO staff at the International Emergency Management Society meeting in Orlando, Florida in May 2000. The cards are being used as a model for disseminating information on nuclear, chemical, and biological terrorism agents for use by emergency response and health personnel through the CDC Health Alert Network. Finally, in support of the development of the ICSC, NIOSH staff attended meetings in Italy, Belgium, and the United Kingdom to advise the Secretariat, WHO, and IPCS about the future direction of this project and to review the draft cards developed by participating agencies.

Organization(s): WHO International Programme for Chemical Safety

Start Date: 11/1/86
Status: Ongoing

Occupational Hazards

The International Labour Organization (ILO) sponsored the development of International Occupational Hazard Data Sheets (IOHDSs). IOHDSs are intended to inform occupational safety and health professionals, employers, and workers of the hazards associated with specific occupations. Currently, over 100 IOHDS have been developed. NIOSH has assisted in developing these data sheets and in obtaining English language translations. Currently, the ILO has mounted several of the NIOSH- sponsored translations on the ILO website.

Organization(s): International Labour Organization

Start Date: 10/1/95
Status: Ongoing

Occupational Health

WHO is sponsoring the development of Concise International Chemical Assessment Documents (CICADs), which are developed from source documents produced by participating countries. The information in the source document is condensed into a standardized format covering environmental and occupational hazards associated with exposure to the subject hazard. NIOSH participates both in developing CICADs, i.e., 2-Butoxyethanol CICAD #10, and serves on the CICAD final review board for peer review of these documents.

Organization(s): WHO

Start Date: 10/1/96
Status: Ongoing

Occupational Health

The longstanding NIOSH cooperative agreement with WHO remains in force. Current activities directly under the scope of this agreement include projects to assess the global burden and economic impacts of occupational injury and disease and the impacts of globalization of trade and industry; continued development and implementation of the small-scale enterprises component of the Prevention and Control Exchange project, which attempts to disseminate affordable and effective hazard control techniques to small businesses worldwide; and continued development of training materials to be used in capacity development programs in developing countries. Outside the specific scope of the cooperative agreement, NIOSH continues a variety of cooperative activities with WHO and its various components. Along with the International Programme for Chemical Safety (IPCS), NIOSH continued to develop additional IPCS cards, which are concise summaries of chemical hazard data intended for direct use by workers and supervisors. NIOSH also collaborated with WHO (and the International Labour Organization) in the development of International Hazard Data Sheets, which describe health and safety risks associated with specific occupations. NIOSH also continues to work with the International Agency for Research on Cancer in several areas, including an international study of cancer mortality among more than 600,000 nuclear plant workers.

Organization(s): WHO International Programme for Chemical Safety; International Agency for Research on Cancer; International Labour Organization

Start Date: 10/1/92
Status: Ongoing

Oral Health/Fluoridation

NCCDPHP's Division of Oral Health provided technical assistance to PAHO's Oral Health Program in the design and implementation of major international research and training activities. Since 1996, these activities have contributed to cost-effective public health interventions that have resulted in the introduction and consolidation of national fluoridation programs in more than 15 countries in Central and South America. During 1999 and 2000, assistance focused on three countries: the Commonwealth of the Bahamas, Costa Rica, and Trinidad and Tobago. In addition, the Division served as technical advisor and reviewer for documents prepared by the PAHO's Regional

Program for Oral Health.

Organization(s): Pan American Health Organization

Start Date: 1/1/96
Status: Ongoing

Pneumococcal Vaccine

NCID's Division of Bacterial and Mycotic Diseases collected, managed, and analyzed Pneumococcal vaccine evaluation data from a multi-laboratory study designed to measure the level of agreement among 12 laboratories quantifying antibody levels in a shared pool of 24 paired (pre- and post-vaccination) sera. Four methods of comparison were evaluated and a percent error statistic was deemed the most informative to use in this situation. Guidelines were developed to assist regulatory agencies in evaluating a laboratory's ability to measure antibody concentrations in these sera within an acceptable degree of tolerance. Results were discussed at a WHO meeting and in a paper describing these investigations.

Organization(s): WHO

Start Date: 5/1/96
Status: Ongoing

Polio Eradication

CDC worked in partnership with WHO, UNICEF, Rotary International, donors, and polio-endemic countries to accelerate worldwide polio eradication efforts during 1999 and 2000. To assist in implementing polio eradication strategies and activities, NIP provided: (1) ongoing surveillance and programmatic technical assistance through short-term and long-term assignments of CDC staff to WHO and UNICEF; (2) polio laboratory training, services, funding and support; (3) grants to WHO and UNICEF for staffing, technical, programmatic and operational support to polio-endemic countries; (4) research; (5) vaccine funding; and (6) staff training. During the past 2 years, NIP expanded the network of CDC and CDC-funded staff, virologists, epidemiologists, and technical and scientific officers to 120 persons in polio eradication programs worldwide, at WHO headquarters, and in Atlanta. CDC, through UNICEF, supplied over 1.2 billion doses of polio vaccine for conducting mass immunization campaigns. In October 1998, the Stop Transmission of Polio (STOP) Initiative was launched to mobilize a workforce of health professionals to assist countries with intensified surveillance and supplemental immunization campaigns. In 1999-2000, NIP trained six groups of STOP teams – a total of 220 people – who have worked as short-term consultants in 20 countries.

Organization(s): WHO, UNICEF, Rotary International

Start Date: 10/1/85
Status: Ongoing

Radiation

NIOSH investigators have provided work history and exposure information on two U.S. cohorts for a multinational study that is a scientific collaboration among 14 countries to determine the carcinogenic risks from occupational exposures to external ionizing radiation. In addition, NIOSH makes technical contributions to scientific panels that are responsible for the conduct and reporting of the study.

Organization(s): International Agency for Research on Cancer; WHO

Start Date: 4/1/95
Status: Ongoing

Respirator Protection

International visitors from Japan and England toured the NIOSH Morgantown facility following the conclusion of the International Society for Respiratory Protection (ISRP) Conference in Pittsburgh, Pennsylvania in October 1999. The Japanese visitors represented the Asian Branch of the ISRP and included representatives of respirator manufacturers, safety and health organizations, and government agencies. The English visitors, who represented the European Branch of the ISRP, included respirator manufacturers and consultants.

Organization(s): International Society for Respiratory Protection

Start Date: 10/1/99
End Date: 8/1/00
Status: Complete

Salmonella

NCID's Division of Bacterial and Mycotic Diseases developed and consulted on Global Salm-Surv, an international collaboration among CDC, WHO, and the Danish Veterinary Laboratory aimed at improving the quality of Salmonella surveillance, serotyping, and antimicrobial resistance testing throughout the world.

Organization(s): Danish Veterinary Laboratory; WHO

Start Date: 1/1/00
Status: Ongoing

Salmonella

Staff from NCID's Division of Bacterial and Mycotic Diseases participated in a training course held in Argentina for Global Salm-Surv for countries in South America.

Organization(s): WHO

Start Date: 6/1/00
End Date: 7/31/00
Status: Complete

Salmonella

At the XIII International AIDS Conference, staff from NCID's Division of Bacterial and Mycotic Diseases presented a poster on NCID's education program, "Healthy Pets, Healthy People." The program focuses on the prevention of pet-related zoonoses, including reptile-associated salmonellosis. As a result of discussions at the conference and the high interest in pet-related zoonoses among immunocompromised patients and physicians, NCID plans to create a "Healthy Pets, Healthy People" web site. A similar program is being established for HIV/AIDS patients in Mantova, Italy.

Organization(s): International AIDS Society

Start Date: 7/1/00
End Date: 7/31/00
Status: Complete

Surveillance

The Integrated Disease Surveillance (IDS) project is a collaborative effort between CDC (EPO and NCID) and WHO Regional Office for Africa (AFRO), supported by USAID and the UN Foundation. The project's goal is to improve infectious disease surveillance, epidemic preparedness, and response in the 46-country African Region of WHO. The project uses an integrated approach by sharing resources and building on existing strong programs (such as acute flaccid paralysis/polio). CDC provides technical support to WHO-AFRO in the development of situational assessment, action-planning guides, and technical guidelines for improvement of surveillance systems. EPO staff have participated in situational assessments and action-planning workshops in four countries and are in the process of field testing technical guidelines for the IDS project for later distribution to the WHO-AFRO countries.

Organization(s): WHO Regional Office for Africa

Start Date: 11/1/98
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health participated in a WHO-convened expert consultation on environmental tobacco smoke and child health in January 1999. Experts from developing and developed countries gathered to examine the effects of exposure to tobacco smoke on child health and to develop recommendations for action to eliminate this exposure. The resulting report summarizes the health effects of children's exposure to tobacco smoke, measurement issues central to action (e.g., measuring health impacts, children's exposure, and the economic burden of children's involuntary exposure to tobacco smoke), and interventions. It included evidence of effective policies and programs to reduce children's exposure to tobacco smoke and a framework for designing cost-effective responses to this threat.

Organization(s): WHO

Start Date: 1/1/99
End Date: 1/31/99
Status: Complete

Tobacco Control

NCCDPHP's Office on Smoking and Health provided technical assistance to the WHO/Tobacco Free Initiative Entertainment 2000 project during the May 2000 World No-Tobacco Day (WNTD). The project aims to heighten critical awareness of tobacco advertising and product placement in entertainment and sports and to publicize tobacco industry political tactics around the world. Entertainment 2000 will serve as a catalyst to reframe the tobacco control debate through a year-long series of events and will strengthen WNTD activities for the year 2000 and beyond.

Organization(s): WHO

Start Date: 3/1/99
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health (OSH) is collaborating with WHO and the Society for Research on Nicotine and Tobacco to develop a database of evidence-based information on the treatment of tobacco dependence and practical educational resources for use by health care professionals and policymakers in developed and developing countries. The database will contain information on the efficacy, safety, health economics, policy, and demographics/health effects of these interventions. OSH chaired the Demographics/Health Effects section of the database, providing key findings and recommendations along with key references that support the need for treatment of tobacco dependence.

Organization(s): Society for Research on Nicotine and Tobacco; WHO

Start Date: 4/1/00
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health collaborated with the American Cancer Society and WHO to develop summary tobacco status reports on 192 countries. The Tobacco Control Country Profiles include information on prevalence, legislation, economics, agriculture, and other tobacco-related information derived from central data sources. Released at the 11th World Conference on Tobacco or Health in August 2000, this information will serve as baseline data for the National Tobacco Information Online Systems project, an electronically integrated information system containing country-specific information on a wide variety of tobacco control issues.

Organization(s): WHO

Start Date: 11/1/98
End Date: 8/1/00
Status: Complete

Tobacco Control

NCCDPHP's Office on Smoking and Health (OSH) partnered with the World Bank to hold Tobacco Economics Workshops in 1999 to address economic issues of tobacco control. These workshops examined issues related to country-level economic data analysis and the World Bank's guidebook for country-level economic analyses of tobacco, *Curbing the Epidemic: Governments and the Economics of Tobacco Control*. OSH financed the translation and dissemination of *Curbing the Epidemic* into official WHO languages and some additional languages.

Organization(s): World Bank

Start Date: 5/1/99
End Date: 6/1/99
Status: Complete

Tobacco Control

NCCDPHP's Office on Smoking and Health participated as members of the U.S. negotiating team in meetings for the WHO-sponsored Framework Convention for Tobacco Control (FCTC). Since June 1999, the U.S. Domestic Policy Council (DPC) has worked collaboratively with the U.S. Departments of Health, State, Commerce, Treasury, Justice, and Agriculture, as well as the U.S. Trade Representative and the National Security Council, to determine specific goals for the United States with regard to the FCTC and to provide guidance to the U.S. delegation to the

FCTC. This process has included meetings among Federal representatives and other stakeholders, including public health/medical professionals, tobacco farmers, and businesses involved in tobacco trade and processing. CDC held a public hearing in March 2000 in Washington, DC to brief interested parties about the Framework Convention and to gain input about tobacco control issues that may be included in the treaty.

Organization(s): WHO

Start Date: 3/1/96
Status: Ongoing

Tobacco Control

In March 2000, NCCDPHP's Office on Smoking and Health (OSH) hosted a meeting with WHO to discuss and begin planning an upcoming global mass media campaign on smoking cessation. The meeting included representatives from WHO, Pan American Health Organization, OSH, several European countries, several U.S. State tobacco control programs, and several pharmaceutical companies that market nicotine replacement products. The meeting participants approved a draft plan that includes the development of: (1) advertising messages to motivate more smokers to try to quit to increase the number of assisted quit attempts; (2) a clearinghouse of mass media materials and campaign evaluation reports; and (3) a media toolkit to help countries secure adequate media exposure and implement effective campaigns. Through a project steering committee, NCCDPHP presented a preliminary analysis of cessation campaigns conducted in 13 countries and 6 U.S. states. The team also presented a variety of television spots to an international focus group composed of selected media "change agents" from WHO's Tobacco Free Media Initiative.

Organization(s): WHO

Start Date: 3/1/00
Status: Ongoing

Tobacco Control

Working with WHO, NCCDPHP's Office on Smoking and Health (OSH) staff reviewed proposed legislation and regulations at the request of WHO and member states. To date, OSH's review and suggestions for strengthening proposed legislation and regulations have been incorporated into draft bills and/or regulations from South Africa, Kenya, the Philippines, Fiji, Tonga, Botswana, and Uganda.

Organization(s): WHO

Start Date: 6/1/99
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health collaborated with the WHO Tobacco Free Initiative, the American Cancer Society, the World Bank, the United Nations Children's Fund (UNICEF), and the International Union Against Cancer to develop an electronically integrated information system, NATIONS, containing country-specific information on a wide variety of tobacco control issues. The database, which will be made available to the public via the Internet, integrates several sources of data to provide comprehensive summary national-level information on tobacco use prevalence and smoking-related disease impact, tobacco control laws and regulations, tobacco economics, industrial organization, and programmatic interventions.

Organization(s): American Cancer Society; International Union Against Cancer; UNICEF; World Bank; WHO

Start Date: 11/1/98
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health worked with the WHO Tobacco Free Initiative to collect information on the knowledge, attitudes, and behavior of nationally representative samples of health professionals in WHO member nations. This global health professionals survey, begun in

1999, focuses on health professionals' personal smoking histories as well as on the treatment approaches used with patients. A pilot study is currently underway to test the instrument and the sampling procedures in Bahrain, Oman, Kuwait, Korea, Lebanon, and Cambodia. The next steps involve analyzing the pilot data and proceeding to the finalization of materials to be used for global implementation of the survey.

Organization(s): WHO

Start Date: 4/1/00
Status: Ongoing

Tobacco Control

SmokeFree Soccer, a tobacco prevention program launched by the U.S. Department of Health and Human Services in 1996 in collaboration with NCCDPHP's Office on Smoking and Health and the National Cancer Institute, is designed to promote participation in youth soccer and help children learn about the adverse health effects of tobacco on athletic performance. A new partnership with WHO and the Federation Internationale de Football Association, the international governing body of soccer, will help expand the program internationally and will be of particular value in those countries that still accept tobacco industry sponsorship of soccer.

Organization(s): Federation Internationale de Football; National Cancer Institute, WHO

Start Date: 5/1/00
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health (OSH) staff assisted WHO's Regional Office for Africa (AFRO) in conducting a tobacco control programming needs assessment, investigating tobacco control laws and regulations, and assessing the tobacco control situation in AFRO countries. This activity was in preparation for OSH's 2-year secondment of a staff person to support WHO's Tobacco Free Initiative activities in Africa.

Organization(s): WHO Regional Office for Africa

Start Date: 2/1/00
End Date: 3/1/00
Status: Complete

Tobacco Control

NCCDPHP's Office on Smoking and Health provided funding for several PAHO projects in FY 2000 to support tobacco control activities throughout Latin American and the Caribbean. CDC-supported projects included compiling and analyzing epidemiological data concerning morbidity caused by tobacco use; a search and analysis of tobacco industry documents that have been released through litigation; and inter-country consultation for training, information exchange, and country-specific needs assessments.

Organization(s): Pan American Health Organization

Start Date: 12/1/98
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health collaborated with WHO, the Advocacy Institute, the University of North Carolina/Chapel Hill, and the Health Promotion Foundation (Poland) to convene 28 participants from 17 countries in the Central and Eastern European Tobacco Control Institute in May 2000. The training focused on tobacco control policy development and used the CDC's Best Practices for comprehensive tobacco control programs to transfer knowledge to public health personnel in developing countries. The Institute enhanced participants' knowledge of the science base that has guided the development of key tobacco control policies and is being considered as a model training for other WHO regions.

Organization(s): Advocacy Institute; Health Promotion Foundation (Poland); University of North Carolina - Chapel Hill; WHO

Start Date: 5/1/99
End Date: 5/1/00
Status: Complete

Tobacco Control

NCEH staff participated in a WHO meeting in Oslo, Norway to discuss global strategies to reduce tobacco use and regulate tobacco products. NCEH staff took part in group discussions concerning the relative effectiveness of regulations to reduce the harm from tobacco products and efforts to promote cessation of tobacco use.

Organization(s): WHO

Start Date: 2/1/00
End Date: 2/6/00
Status: Complete

Tobacco Control

The Regional Survey of Country-specific Data is a 42-question, comprehensive survey of tobacco use and control activities, developed through a collaboration between WHO/Tobacco Free Initiative (TFI) Regional Offices, WHO TFI Geneva, CDC, and the World Bank. The Regional Survey has been designed to collect national-level information from every WHO member country in the world, including information on tobacco use prevalence, tobacco-attributed mortality, tobacco economics, tobacco industry, tobacco laws and regulations, and on tobacco policy and programs. The Regional Survey instrument will enhance reliability and comparability of data and will help CDC, WHO and its member states better plan and evaluate tobacco control programs and support activities. The Regional Survey has been piloted in every WHO region; final implementation of the survey in every WHO member state is planned for 2002.

Organization(s): World Bank; WHO

Start Date: 6/1/99
Status: Ongoing

Tobacco Control

In 2000, NCCDPHP Office on Smoking and Health staff worked collaboratively with WHO Tobacco Free Initiative (WHO/TFI) staff and WHO-United Nations staff in New York on special projects. These included researching foundations for additional program funding possibilities, meeting with UN agency staff to discuss tobacco control, and participating in tobacco control events at the Beijing+5 Women's Conference.

Organization(s): WHO

Start Date: 5/1/00
End Date: 6/1/00
Status: Complete

Tobacco Control

In an effort to strengthen global information management relevant to tobacco control, NCCDPHP's Office on Smoking and Health, WHO's Tobacco Free Initiative, the International Union Against Cancer, and the World Bank organized a meeting on Global Information Management in March 1999 in Atlanta, Georgia, to discuss the development of information systems for tobacco control. Key outcomes of the meeting included an agreement to form the Tobacco Information Alliance to respond to global tobacco-related information needs and improve accessibility to global resources, and consensus to pursue the development of a common web site.

Organization(s): International Union Against Cancer; World Bank; WHO

Start Date: 3/1/99
Status: Ongoing

Tobacco Control

NCCDPHP's Office on Smoking and Health, the American Medical Association, the American Cancer Society, WHO, and the Robert Wood Johnson Foundation sponsored a pre-conference training for 170 leadership scholars attending the World Conference on Tobacco or Health (WCOTH). Representatives from 95 countries from Africa, the Americas, Europe, Eastern Mediterranean, Southeast Asia, and the Western Pacific participated. The training was conducted to increase the leadership scholars' ability to participate in the WCOTH by strengthening their understanding of key elements of tobacco control to enhance the likelihood of successful application

of knowledge and skills upon returning to their respective countries.

Organization(s): American Cancer Society; American Medical Association; Robert Wood Johnson Foundation (US); WHO

Start Date: 8/1/99
End Date: 8/1/00
Status: Complete

TUBERCULOSIS

CDC, through a cooperative agreement with the Association of Public Health Laboratories (APHL), has developed several products that are focused on providing training to the laboratory technician performing direct acid fast bacilli (AFB) microscopy at the local level in middle- and low-income countries. (AFB microscopy is used to diagnose TB.) These training products – which include a video, audiocassettes, slides, and a booklet – represent a unique collaboration among APHL, CDC, WHO, the International Union Against Tuberculosis and Lung Diseases (IUATLD), PAHO, and Instituto Nacional Diagnostico y Referencia Epidemiologicos or INDRE (Mexico's national laboratory institute). The materials have been produced in English, French, and Spanish. WHO and IUATLD will help to distribute at least one copy to every country, with some countries, such as Mexico, receiving sufficient copies for every local laboratory. The various products will be reproduced, packaged together in the appropriate combination of language and video format, and then distributed through several National TB Programmes (NTPs) to the peripheral laboratories that perform AFB microscopy. Further efforts are underway to market the product and solicit funding to distribute copies to high-burden countries.

Organization(s): Pan American Health Organization; WHO; International Union Against Tuberculosis and Lung Diseases; Instituto Nacional Diagnostico y Referencia Epidemiologicos (Mexico); Association of Public Health Laboratories

Start Date: 1/1/99
Status: Ongoing

TUBERCULOSIS

PHPPO's Division of Laboratory Systems (DLS) is part of an international workgroup that is developing guidelines for national external quality assessment programs for acid fast bacilli (AFB) microscopy networks in resource-poor countries. AFB microscopy is the basis for diagnosis and control of TB throughout the world, but there is currently no practical guidance for national programs to monitor and promote quality testing at the clinic level. The workgroup has met twice and developed consensus on guidance that includes analyses of existing and necessary resources, onsite evaluations of laboratories, developing panels of AFB slides to send to laboratories, and rechecking a representative statistical sample of AFB smears performed in the peripheral laboratory. These guidelines will be published collaboratively with all the co-sponsoring organizations, which include WHO, the International Union Against Tuberculosis and Lung Disease, and Royal Netherlands Chemical Society (KNCV). At least one copy of the guidelines will be provided to every country in the world.

Organization(s): WHO; International Union Against Tuberculosis and Lung Disease; Royal Dutch Chemical Society (KNCV)

Start Date: 11/1/99
Status: Ongoing

TUBERCULOSIS

CDC is playing an active role in WHO-sponsored international efforts to evaluate the effectiveness of various treatment strategies for multidrug-resistant (MDR) TB in low-resource settings and to conduct large-scale purchase of MDR TB drugs, which will bring prices down to a small fraction of their current levels. CDC is a charter member of the WHO Working Group on this issue and serves as one of five international agencies that review MDR TB treatment protocols submitted by national TB programs for potential participation in the WHO MDR TB treatment network.

Organization(s): WHO

Start Date: 6/1/00
Status: Ongoing

Vaccine Preventable Diseases

NCID's Division of Bacterial and Mycotic Diseases staff participated in CDC Global Alliance for Vaccine and Immunizations (GAVI) activities. CDC has co-lead responsibility for the Subgroup on Monitoring and Evaluation, which focuses on vaccination coverage and disease surveillance. The primary areas of interest are vaccination coverage and the use of administrative data to monitor vaccination coverage. Developing countries are eligible for funding; an increase in the third dose of DTP is the basis for both funding and evaluation. An audit tool (Immunization Data Quality Audit) is being developed to evaluate the quality of administrative data and its usefulness in monitoring vaccination coverage, especially an increase in the number of children receiving the third dose of DTP.

Organization(s): Global Alliance for Vaccine and Immunization

Start Date: 6/1/00
Status: Ongoing

Violence

NCIPC is collaborating with WHO on the development of a World Report on Violence and Health, which will focus on those aspects of violence thay are most likely to be effectively addressed by the public health sector and on violence as a public health problem. The goals of the report are to document and raise awareness about the problem of violence globally, highlight the contributions of public health to understanding and responding to violence, and increase the level of response taken by the public health community to preventing the problem. The report is divided into three main sections. The first section includes general background information on violence as a public health problem. The second section is divided into eight chapters, seven of which focus on specific intervention topics. These are child abuse, youth violence, elderly abuse, violence against women by intimate partners, self-directed violence, collective violence, and sexual violence. The eighth chapter serves as a summary of current knowledge and practices, and a conclusion presents ideas, suggestions, and approaches for moving the field of violence prevention forward in different contexts. The final section, the Statistical Annex, includes a series of tables with data on mortality and Disability-Adjusted Life years and the numbers and rates of homicide, suicide, and war-related deaths by country and by region.

Organization(s): WHO

Start Date: 1/1/99
Status: Ongoing

Violence

The Inter-American Coalition for the Prevention of Violence is a partnership of six organizations (Inter-American Development Bank, World Bank, Organization of American States, United Nations Educational, Scientific and Cultural Unit Organizaton, Pan American Health Organization, and CDC) to promote the implementation of comprehensive strategies for crime and violence reduction based on prevention, education, and social capital building in the region of the Americas. CDC's contribution to the Coalition will be in the areas of information generation, mainly through surveillance and through information dissemination via an extension to the Youth Violence Resource Center web site.

Organization(s): Inter-American Coalition for the Prevention of Violence

Start Date: 12/1/98
Status: Ongoing

Violence

NCIPC's Division of Violence Prevention actively participates in the development of an injury classification scheme, the International Classification of External Causes of Injury, which will contribute greatly to the international standardization of injury data, especially data on violent injury.

Organization(s): WHO; Consumer Safety Institute (Netherlands); Flinders University of South

Australia; Health Canada; National Institute of Public Health (Denmark); Office of National Statistics (United Kingdom).

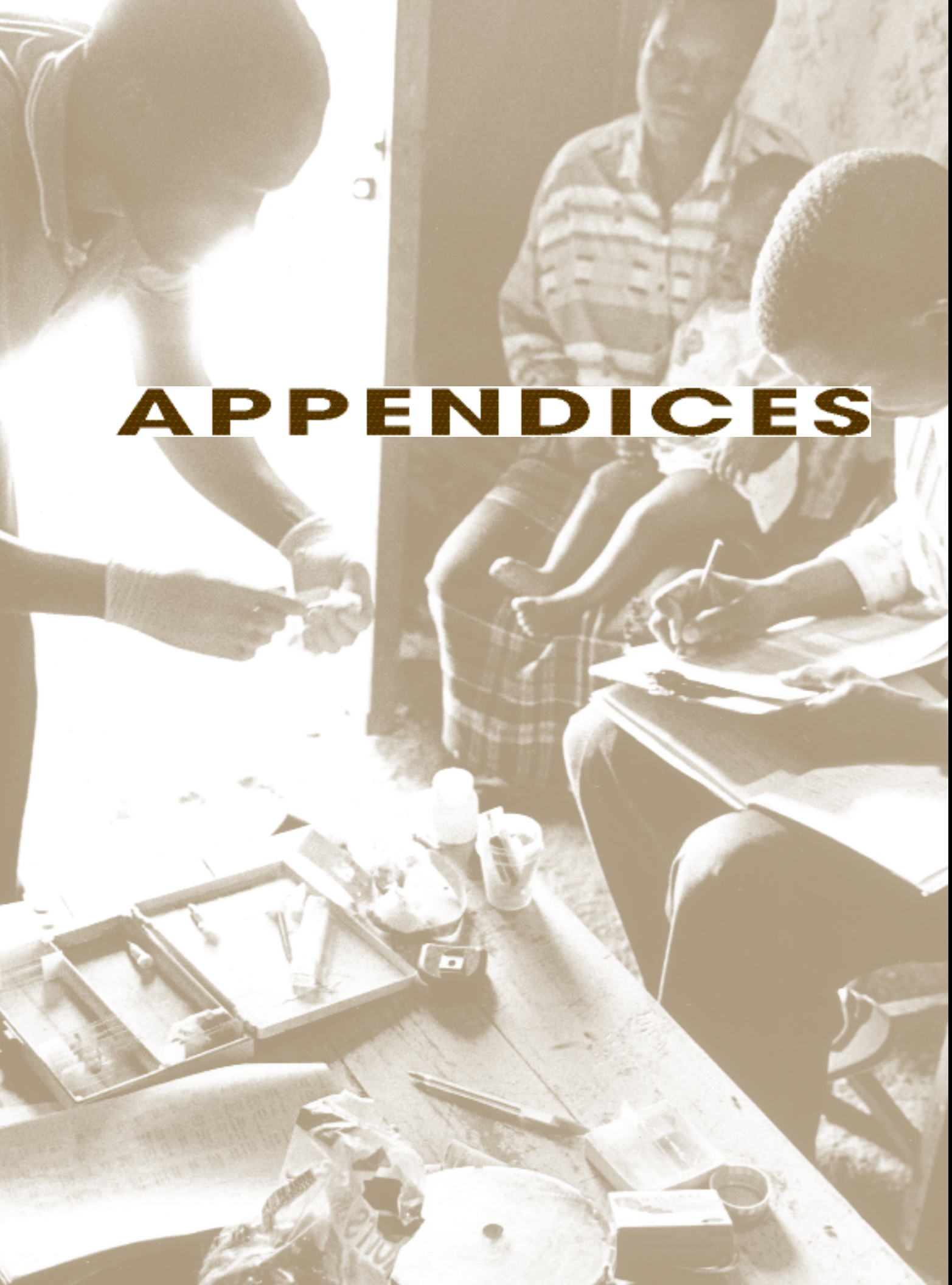
Start Date: 4/1/99
Status: Ongoing

VIOLENCE

Under a project funded by the MacArthur Foundation and administered by the CDC Foundation, an International Fellow is attached to CDC for 2 years to gain experience in the surveillance of violent injury and to be trained as a resource for the region of the Americas. The Fellow is involved in the Division's international work, such as the Coalition in the Bahamas and in Nicaragua.

Organization(s): International Violence Fellowship

Start Date: 1/1/00
Status: Ongoing



APPENDICES

APPENDIX A
ACRONYMS

A&CC . . . . . Approval and Certification Center
A&E's . . . . . Accident and Emergency Departments
AABMR . . . . . American Association for Bone and Mineral Research
ACARP . . . . . Australian Coat Association Research Project
ACGIH . . . . . American Conference of Governmental Industrial Hygienists
ACIP . . . . . Advisory Committee for Immunization Practices
ACS . . . . . American Cancer Society
AD . . . . . Autodisable
AFB . . . . . Acid Fast Bacilli
AFP . . . . . Acute Flaccid Paralysis
AFRO . . . . . Regional Office for Africa, WHO
AFS . . . . . Alaska Field Station
AIDS . . . . . Acquired Immunodeficiency Syndrome
ALPS . . . . . Analysis of Longwall Stability
ALRI . . . . . Acute Lower Respiratory Infections
AMAP . . . . . Arctic Monitoring and Assessment Program
APHL . . . . . Association of Public Health Laboratories
ARC . . . . . American Red Cross
ASM . . . . . American Society for Microbiology
ATSDR . . . . . Agency for Toxic Substances and Disease Registry
AVPDB . . . . . Adult Vaccine Preventable Disease Branch, NIP
AZT . . . . . Oral Zidovudine
BASICS . . . . . Basic Support for Institutionalization Child Survival
BCC . . . . . Behavior Change Communication
BCG . . . . . Bacillus of Calmette and Guérin
BDI . . . . . Bungoma District Initiative
BG . . . . . German Employers Liability Insurance Association
BGPDS . . . . . Body Guard Proximity Detection System
BgVV . . . . . Federal Institute for Health Protection of Consumers and Veterinary Medicine, Germany
BIDS . . . . . U.S.-Mexico Borders Infectious Disease Surveillance
BMU . . . . . Bejing Medical University
BOTUSA . . . . . Collaborative HIV/AIDS Project between CDC and the Government of Botswana
BRFSS . . . . . Behavioral Risk Factors Surveillance System
BSI . . . . . Bloodstream Infection
BSL 4 . . . . . Biosafety Level 4
BSS . . . . . Behavior Surveillance Surveys
CAESER . . . . . Civilian American European Surface Anthropometry Resource
CAH . . . . . Child and Adolescent Health and Development Department
CAMP . . . . . Coastal Aquifer Management Program
CANMET . . . . . Canada Centre for Mineral and Energy Technology
CAPM . . . . . Chinese Academy of Preventative Medicine
CARE . . . . . Cooperative for American Relief Everywhere, Inc.
CAREC . . . . . Caribbean Epidemiology Centre
CARMEN . . . . . Conjunto de Acciones para la Reduccion Multifactorial de las Enfermedades No transmisibles
CBRHP . . . . . Community Based Reproductive Health Project
CCHI . . . . . CARE/CDC Collaborative Health Initiative
CCRI . . . . . China Coal Research Institute
CDC . . . . . Centers for Disease Control and Prevention
CEN . . . . . European Committee for Standardization
CERMES . . . . . Centre pour l'Epidemiologic At Recherche de Meningitis et Schistosomiasis
CFR . . . . . Code of Federal Regulations
CHAART . . . . . Center for Health Applications Aerospace-Related Technology
CHC . . . . . Child Health Care
CICADs . . . . . Concise International Chemical Assessment Documents
CIDA . . . . . Canadian International Development Agency

APPENDIX A
ACRONYMS

CIDIEM . . . . . .Fundacion Central Intemacional de Entreamiento e Investigacions Medicas
CIM . . . . . .Canadian Institute of Mining
CIMSA . . . . . .Committee for the Enhancement of Environmental Health
CINDI . . . . . .Countrywide Integrated Non-communicable Disease Intervention
CIOs . . . . . .Centers, Institutes, and Offices
CISS . . . . . .Community Initiatives for Child Survival in Sonya
CONAVA . . . . . .Consejo Nacional de Vacunacion (National Vaccination Council)
CPHL . . . . . .Central Public Health Laboratory, Egypt
CPHRI . . . . . .Central Public Health Research Institute, Russia
CPWR . . . . . .Center to Protect Workers' Rights
CrVI . . . . . .Chromosome VI
CRADA . . . . . .Cooperative Research and Development Agreement
CRDF . . . . . .Civilian Research and Development Foundation
CRMLN . . . . . .Cholesterol Reference Method Laboratory Network
CRS . . . . . .Congenital Rubella Syndrome
CSF . . . . . .cerebrospinal fluid
CSIRO . . . . . .Commonwealth Scientific and Industrial Research Organisation
CVD . . . . . .Cardiovascular Disease
DALYs . . . . . .Disability-Adjusted Life years
DART . . . . . .Disaster Assistance Response Team
DASH . . . . . .Division of Adolescent and School Health, NCCDPHP
DBMD . . . . . .Division of Bacterial and Mycotic Diseases, NCID
DTBE . . . . . .Division of TB Elimination, NCHSTP
DDM . . . . . .Data for Decision Making
DDT . . . . . .Dichloro-diphenyl-trichloroethane
DECOS . . . . . .Dutch Expert Committee on Occupational Standards
DEEP . . . . . .Diesel Emissions Evaluation Program
DIH . . . . . .Division of International Health, EPO
DIPP . . . . . .Diabetes Prediction and Prevention Trial
DISTAB . . . . . .Disability Tabulations
DLS . . . . . .Division of Laboratory Systems, PHPPO
DNA . . . . . .Deoxyribonucleic Acid
DOD . . . . . .U.S. Department of Defense
DOH . . . . . .Department of Health
DOS . . . . . .U.S. Department of State
DOTS . . . . . .Directly Observed Therapy, Short-Course
DPC . . . . . .US Domestic Policy Council
DPP . . . . . .Division of Parasitic Diseases, NCID
DRH . . . . . .Division of Reproductive Health, NCCDPHP
DSR . . . . . .Division of Safety Research, NIOSH
DSTDP . . . . . .Division of STD Prevention, NCHSTP
DT . . . . . .Division of Toxicology, ATSDR
DTBE . . . . . .Division of TB Elimination, NCHSTP
DTP . . . . . .Diphtheria, Tetanus, Pertusis
DVP . . . . . .Division of Violence Prevention, NCIPC
DVRD . . . . . .Division of Viral & Rickettsial Diseases, NCID
E-RDC . . . . . .Egyptian Reference Diagnostic Center
EAPRO . . . . . .East Asia and Pacific Regional Office, United Nations
EHWG . . . . . .Environmental Health Working Group
EIS . . . . . .Epidemic Intelligence Service
ELISA . . . . . .Enzyme-linked Immunosorbent Assay
EMF . . . . . .Electromagnetic Field
EMRO . . . . . .Regional Office for the Eastern Mediterranean, WHO
EPA . . . . . .Environmental Protection Agency
EPI . . . . . .Expanded Program on Immunization

EPI-ETA . . . . . .Epidemiólogos de Enfermedades Transmitidas por Alimentos
EPIET . . . . . .European Program for Intervention Epidemiology Training
EPO . . . . . .Epidemiology Program Office, CDC
EQA . . . . . .External Quality Assessment
EQAS . . . . . .External Quality Assessment Schemes
EQUIP . . . . . .Ensuring the Quality of Iodine Procedures
ERIDDS . . . . . .Emerging and Re-emerging Infectious Disease and Disease Surveillance
ESRI . . . . . .Environmental Systems Research Institute
EWARS . . . . . .Early Warning Reporting System
ETS . . . . . .Environmental Tobacco Smoke
EURO . . . . . .Regional Office for Europe, WHO
FAS . . . . . .Fetal Alcohol Syndrome
FCTC . . . . . .Framework Convention for Tobacco Control
FDA . . . . . .Food and Drug Administration
FETP . . . . . .Field Epidemiology Training Program
FHI . . . . . .Family Health International
FIFA . . . . . .Federation Internationale de Football Association
FIOCRUZ . . . . . .Fundacno Oswaldo Cruz
FMTP . . . . . .Field Management Training Program
FP . . . . . .Family Planning
FSM . . . . . .Federal States of Micronesia
GAA . . . . . .Global Aids Activity
GAAD45 . . . . . .Growth arrest and DNA damage inducible protein 45
GAP . . . . . .Global AIDS Program
GAVI . . . . . .Global Alliance for Vaccines and Immunizations
GBS . . . . . .Group B Streptococcus
GEE . . . . . .Generalized Estimating Equations
GFCV . . . . . .Global Fund for Children's Vaccines
GIS . . . . . .Geographic Information System
GSPS . . . . . .Global School Personnel Survey
GUD . . . . . .Genital Ulcer Disease
GYTS . . . . . .Global Youth Tobacco Survey
HAC . . . . . .HIV/AIDS Collaboration
HACCP . . . . . .Hazard Analysis Critical Control Points
HAPP . . . . . .HIV/AIDS Prevention Program
HbA1c . . . . . .Hemoglobin A1c
HDLC . . . . . .High Density Lipoprotein Cholesterol
HELD . . . . . .Health Effects Laboratory Division
HHE . . . . . .Division of Environmental Hazards and Health Effects, NCEH
HHS . . . . . .Health and Human Services
HHV-8 . . . . . .Human Herpesvirus-8
Hib . . . . . .Haemophilus influenzae type b
HIPH . . . . . .High Institute of Public Health, Egypt
HIV . . . . . .Human Immunodeficiency Virus
HOPE . . . . . .Project HOPE – Health Opportunities for People Everywhere
HPLC . . . . . .High-Performance Liquid Chromatography
IAHEA . . . . . .International Atomic Energy Agency
IARC . . . . . .International Agency for Research on Cancer
IAUTLD . . . . . .International Union Against Tuberculosis and Lung Disease
IC . . . . . .Infection Control
ICCR . . . . . .International Committee for Coal Research
ICD . . . . . .International Classification of Diseases
ICDDR,B . . . . . .International Center for Diarrheal Disease Research, Bangladesh
ICE . . . . . .International Collaborative Effort
ICECI . . . . . .International Classification of External Causes of Injury

APPENDIX A
ACRONYMS

ICIDH . . . . . International Classification of Impairments, Disabilities, and Handicaps
ICOH . . . . . International Commission on Occupational Health
ICS . . . . . International Circumpolar Surveillance
ICSC . . . . . International Chemical Safety Cards
ICU . . . . . Intensive Care Unit
IDD . . . . . Iodine Deficiency Disorders
IDS . . . . . International Disease Surveillance
IDQA . . . . . Immunization Data Quality Audit
IDSCP . . . . . Infectious Disease Surveillance and Control Program
IEC . . . . . International Electrotechnical Commission
IEHRB . . . . . International Emergency and Refugee Health Bureau
IFC . . . . . International Finance Corporation
IFCC . . . . . International Federation of Clinical Chemistry
IFRC . . . . . International Federation of Red Cross/Red Crescent
IHE . . . . . Institute of Hygiene and Epidemiology
IHV . . . . . Institute of Human Virology
ILO . . . . . International Labour Organization
ILSI . . . . . International Life Sciences Institute
IMCAP . . . . . Inner Mongolia Arsenic Program
IMCI . . . . . Integrated Management of Childhood Illness
IMMPaCT . . . . . International Micronutrient Malnutrition Prevention and Control
INC . . . . . Intergovernmental Negotiating Committee
INCA . . . . . National Cancer Institute of Brazil
INCHES . . . . . International Children's Health, Environment, and Safety
INCLEN . . . . . International Clinical Epidemiology Network
INDRE . . . . . Instituto Nacional Diagnostico y Referencia Epidemiologicos
INMU . . . . . Institute of Nutrition at Mahidol University
INRSP . . . . . National Public Health Research Institute
INSPEAR . . . . . International Network for the Study and Prevention of Emerging Antimicrobial Resistance
INTERKAMA . . . . . International Trade Fair
IOHDS . . . . . International Occupational Hazard Data Sheets
IPCS . . . . . International Programme on Chemical Safety
IRB . . . . . Institutional Review Board
IRC . . . . . International Rescue Committee
ISA . . . . . International Society for Measurement and Control
ISBS . . . . . Integrated STD Prevalence & Behavioral Surveillance
ISLI . . . . . International Life Sciences Institute
ISO . . . . . International Organization for Standardization
ISRP . . . . . International Society for Respiratory Protection
ISTM . . . . . International Society of Travel Medicine
IUATLD . . . . . International Union Against Tuberculosis and Lung Diseases
JDF . . . . . Juvenile Diabetes Foundation
JIPD . . . . . Jiangsu Institute of Parasitic Diseases
JSP . . . . . Jordan Surveillance Project
KEMRI . . . . . Kenya Medical Research Institute
KISCO . . . . . Korea Industrial Safety Corporation
KNCV . . . . . Royal Dutch Chemical Society
KOMAG . . . . . Construction of Mining Machines
KOSHA . . . . . Korea Occupational Safety and Health Agency
LaMPS . . . . . Lakewide Management Plans
LHD . . . . . Local Haul Dump
LIFE . . . . . Leadership and Investment in Fighting an Epidemic
LITS . . . . . Laboratory Information Management System
LQAS . . . . . Lot Quality Assurance Sampling
LSP . . . . . Lipid Standardization Program

LSU . . . . . Louisiana State University
MAKs . . . . . Maximum Workplace Concentrations
MASHA . . . . . Mines and Aggregates Safety and Health Administration
MDR TB . . . . . Multidrug-Resistant Tuberculosis
MERTU . . . . . Medical Entomology Research and Training Unit
MetHB . . . . . Methemoglobinemia
MFL . . . . . Myco-F-Lytic
MICS . . . . . Multiple-Indicator Cluster Survey
MIPH . . . . . Management for International Public Health
MMT . . . . . Methyl Cyclopentadenyl Maganese Tricarbonyl
MMWR . . . . . Morbidity and Mortality Weekly Report
MNM . . . . . Micronutrient Malnutrition
MOH . . . . . Ministry of Health
MOHP . . . . . Ministry of Health and Population, Egypt
MOST . . . . . USAID Micronutrient Program
MOU . . . . . Memorandum of Understanding
MPEP . . . . . Model Performance Evaluation Program
MPH . . . . . Master of Public Health
MRSA . . . . . Methicillin Resistant Staphylococcus Aureus
MSHA . . . . . Mine Safety and Health Administration
NACC . . . . . North American Collaborating Center
NAGCAT . . . . . North American Guidelines for Children's Agricultural Tasks
NAMRU-3 . . . . . U.S. Naval Medical Research Unit No. 3
NATIONS . . . . . National Tobacco Information Online Systems
NASA . . . . . National Aeronautic and Space Administration
NCCCD . . . . . Nigeria Combating Childhood Communicable Diseases Project
NCCDPHP . . . . . National Center for Chronic Disease Prevention and Health Promotion
NCCRAHS . . . . . National Children's Center for Rural and Agricultural Health and Safety
NCD . . . . . Non-communicable Disease
NCEH . . . . . National Center for Environmental Health, CDC
NCHS . . . . . National Center for Health Statistics, CDC
NCHSTP . . . . . National Center for HIV, STD and TB Prevention, CDC
NCI . . . . . National Cancer Institute, NIH
NCID . . . . . National Center for Infectious Diseases, CDC
NCIPC . . . . . National Center for Injury Control and Prevention , CDC
NCOH . . . . . National Centre of Occupational Health, South Africa
NEG . . . . . Nordic Expert Group
NFkB . . . . . Nuclear Factor kB
NGO . . . . . Non-governmental Organization
NHANES . . . . . National Health and Nutrition Examination Survey
NHIS . . . . . National Health Interview Survey
NHLBI . . . . . National Heart, Lung and Blood Institute, NIH
NIAID . . . . . National Institute for Allergies and Infectious Diseases, NIH
NIC . . . . . National Influenza Center
NICHP . . . . . National Information Center for Health and Population, Egypt
NIEHS . . . . . National Institute of Environmental Health Sciences, NIH
NIH . . . . . National Institutes of Health
NIOEH . . . . . National Institute for Occupational and Environmental Health, Vietnam
NIOSH . . . . . National Institute for Occupational Safety and Health, CDC
NIP . . . . . National Immunization Program, CDC
NIPRD . . . . . National Institute of Pharmaceutical Research & Development
NIS . . . . . Newly Independent States
NIWL . . . . . National Institute for Working Life, Sweden
NPHPSP . . . . . National Public Health Performance Standards Program
NTD . . . . . Neural Tube Defect

APPENDIX A
ACRONYMS

NTP . . . . . National TB Programmes
NVPO . . . . . National Vaccine Program Office, CDC
OCONUS . . . . . Outside Continental United States
OEL . . . . . Occupational Exposure Limits
OEPA . . . . . Onchocerciasis Elimination Program for the Americas
OFDA . . . . . Office of Foreign Disaster Assistance
OGH . . . . . Office of Global Health, CDC
OI . . . . . Opportunistic Infections
OIRH . . . . . Office of International and Refugee Health, HHS
OP . . . . . Oropharyngeal
OSH . . . . . Office on Smoking and Health, NCCDPHP
OSH . . . . . Occupational Safety and Health
P21 . . . . . Protein 21
PACE . . . . . Prevention and Control Exchange
PAHO . . . . . Pan-American Health Organization
PAPR . . . . . Powered-Air Purifying Respirator
PASA . . . . . Participating Agencies Service Agreement
PATH . . . . . Program for Appropriate Technology and Health, Harvard University
PCBs . . . . . Polychlorinated Biphenyls
PCR . . . . . Polymerase Chain Reaction
PE . . . . . Performance Evaluation
PFGE . . . . . pulsed-field gel electrophoresis
PhD . . . . . Doctor of Philosophy
PHLIS . . . . . Public Health Laboratory Information System
PHPPO . . . . . Public Health Practice Program Office, CDC
PHSWOW . . . . . School of Public Health Without Walls
PIHOA . . . . . Pacific Islands Health Officers Association
PMC . . . . . Population Media Center
PNLS . . . . . Programme National de Lutte Contre le SIDA
POP . . . . . Persistent Organic Pollutants
PPE . . . . . Personal Protective Equipment
PRC . . . . . People's Republic of China
PRISMA . . . . . Projects in Agriculture, Rural Industry, Science and Medicine, Inc., Peru
PRL . . . . . Pittsburgh Research Laboratory
PSI . . . . . Population Services International
PT . . . . . Proficiency Testing
PWA . . . . . Palestinian Water Authority
RAPD PCR . . . . . Random Amplified Polymoric DNA Polymerase Chain Reaction
RETRO-CI . . . . . Collaborative HIV/AIDS Project between CDC and the Government of Côte d'Ivorie
RFLP . . . . . Restriction fragment length polymorphism
RH . . . . . Reproductive Health
RHE . . . . . Reproductive Health Epidemiology
RIVM . . . . . National Institute of Public Health and the Environment, Netherlands
RMI . . . . . Republic of the Marshall Islands
ROC . . . . . receiver-operator characteristics
ROE . . . . . Regional Observatories of Epidemiology
RSA . . . . . Republic of South Africa
RVF . . . . . Rift Valley Fever
SAIMR . . . . . South African Institute for Medical Research
SANAM . . . . . Russian Association Against STDs
SANG . . . . . Saudi Arabia National Guard
SCE . . . . . Sister Chromatic Exchange
SCERP . . . . . Southwest Consortium for Environmental Research and Policy
SCSR . . . . . Self-Contained Self-Rescuer
SDA . . . . . State Drug Administration

APPENDIX A
ACRONYMS

SEA . . . . . Safety Equipment of Australia
SEARO . . . . . Regional Office for the South-East Pacific, WHO
SIGN . . . . . Safe Injection Global Network
SMDP . . . . . Sustainable Management Development Program, CDC
SPC . . . . . South Pacific Commission
SPHL . . . . . State Public Health Laboratories
SRNT . . . . . Society for Research on Nicotine and Tobacco
SSIs . . . . . Surgical Site Infections
STI . . . . . Sexually Transmitted Infection
STD . . . . . Sexually Transmitted Disease
STOP . . . . . Stop Transmission of Polio
SUSTAIN . . . . . Sharing US Technology to Aid in the Improvement of Nutrition
SVDP . . . . . Schistosomiasis Vaccine Development Program
TB . . . . . Tuberculosis
TC . . . . . Total Cholesterol
TCDD 2,3,7,8-Tetrachlorodiebenzo-p-Dioxin
TEPHINET . . . . . Training Programs in Epidemiology and Public Health Interventions Network, CDC
TFI . . . . . Tobacco Free Initiative, WHO
TG . . . . . Triglyceride
TMU . . . . . Tongji Medical University
UCMSRC . . . . . Canadian Underground Local Mine Safety Research Collaboration
UICC . . . . . International Union Against Cancer
UJNR . . . . . United States-Japan Cooperative Program in Natural Resources
UK . . . . . United Kingdom
UMWA . . . . . United Mine Workers of America
UN . . . . . United Nations
UNAIDS . . . . . Joint United Nations Programme on HIV/AIDS
UNESCO . . . . . United Nations Educational, Scientific and Cultural Unit Organization
UNEP . . . . . United Nations Environment Programme
UNF . . . . . United Nations Foundation
UNHCR . . . . . United Nations High Commissioner for Refugees
UNICEF . . . . . United Nations Children's Fund
UNRWA . . . . . United Nations Relief and Works Agency
USAID . . . . . United States Agency for International Development
USBM . . . . . United States Bureau of Mines
USDA . . . . . United States Drug Administration
USPHS . . . . . United States Public Health Service
UVGI . . . . . Ultraviolet Germicida Irradiation
UVRI . . . . . Uganda Viral Research Institute
UXO . . . . . Unexploded Ordinance
VIGISUS . . . . . Brazil Disease Surveillance and Control Project
VOC . . . . . Volatile Organic Compounds
VSI . . . . . Vector-Symbiont Intervention
WB . . . . . World Bank
WCOTH . . . . . World Conference on Tobacco or Health
WHO . . . . . World Health Organization
WNTD . . . . . World No-Tobacco Day
WPRO . . . . . Regional Office for the Western Pacific, WHO
YIEDCR . . . . . Yunnan Institute of Epidemic Disease Control and Research
YRBSS . . . . . Youth Risk Behavior Survey System

APPENDIX B
COUNTRIES BY REGION

COUNTRIES IN WHICH CDC CONDUCTED PROJECTS OR SPONSORED U.S.-BASED COLLABORATIONS

AFRICA
Benin
Botswana
Burkina Faso
Cameroon
Cape Verde Islands
Central African Republic
Congo
Ethiopia
Gabon
Ghana
Guinea
Ivory Coast
Kenya
Lesotho
Madagascar
Malawi
Mali
Mauritania
Mozambique
Namibia
Niger
Nigeria
Rwanda
Senegal
Sierra Leone
South Africa
Sudan
Swaziland
Tanzania
Togo
Uganda
Zambia
Zimbabwe

THE AMERICAS
Argentina
Bahamas
Barbados
Belize
Bolivia
Brazil
Canada
Chile
Colombia
Costa Rica
Cuba
Dominica
Dominican Republic
Ecuador
El Salvador
Grenada
Guatemala
Guyana
Haiti
Honduras
Jamaica
Mexico
Nicaragua
Panama
Paraguay
Peru
St. Kitts and Nevis
St. Lucia
Suriname
Trinidad and Tobago
Uruguay
Venezuela

ASIA/PACIFIC
Australia
Bangladesh
Cambodia
China
East Timor
Federated States of Micronesia
Fiji
India
Indonesia
Japan
Korea (Republic of - South)
Malaysia
Mongolia
Myanmar
Nepal
New Zealand
Pakistan
Palau
Philippines
Republic of the Marshall Islands (RMI)
Samoa
Singapore
Sri Lanka
Taiwan
Thailand
Vietnam

EUROPE
Austria
Belgium
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Finland
France
Germany
Greece
Greenland
Hungary
Iceland
Ireland
Italy
Kosovo
Malta
Netherlands
Norway
Poland
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
United Kingdom
Yugoslavia

MIDDLE EAST/ NORTH AFRICA
Algeria
Bahrain
Egypt
Iran
Israel
Jordan
Kuwait
Lebanon
Morocco
Oman
Palestine
Qatar
Saudi Arabia
Syria
United Arab Emirates
Yemen

NEW INDEPENDENT STATES
Armenia
Azerbaijan
Belarus
Estonia
Georgia (Republic of)
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Moldova
Russian Federation
Tajikistan
Turkmenistan
Ukraine
Uzbekistan

NCCDPHP

WHO Collaborating Center for Development of Integrated Primary Care Programs for Community Practice

WHO Global Collaborating Center for Health Promotion

WHO Collaborating Center on Health Education and Promotion of School-Aged Children and Adolescents

WHO Collaborating Center on Monitoring Trends and Determinants of Cardiovascular Disease (MONICA) Project's Optional Study of Physical Activity (MOSPA)

WHO Collaborating Center on Physical Activity

WHO Collaborating Center for Tobacco or Health

WHO Collaborating Center in Perinatal Care and Health Services Research in Maternal and Child Health*

WHO Collaborating Center for Development of Integrated Primary Care Programs for Community Practice*

**Note: These two Collaborating Centers were combined in April 2001 to form the WHO Collaborating Center for Reproductive Health.*

NCEH

WHO Collaborating Center for Emergency Preparedness and Response

WHO Collaborating Center for Reference and Research in Blood Lipids

NCHS

WHO Collaborating Center for Classification of Diseases for North America

NCHSTP

WHO Collaborating Center on HIV/AIDS

NCID

WHO Collaborating Center for Antimicrobial Resistance

WHO Collaborating Center for Arthropod-Borne Viruses in the Western Hemisphere

WHO Collaborating Center for Clostridium botulinum

WHO Collaborating Center for Dengue and Dengue Hemorrhagic Fever

WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis

WHO Collaborating Center for HIV/AIDs

WHO Collaborating Center for Reference and Reagents for Human Immunoglobulin Subclasses

WHO Collaborating Center for Foodborne Disease Surveillance

WHO Collaborating Center for Surveillance, Epidemiology, and Control of Influenza

WHO Collaborating Center for Evaluating and Testing New Insecticides

WHO Collaborating Center for Leptospirosis

WHO Collaborating Center for Control and Elimination of Lymphatic Filariasis

WHO Collaborating Center for Malaria Control in Africa

WHO Collaborating Center for Production and Distribution of Malaria Sporozoite ELISAs

WHO Collaborating Center for Mycoses in North America

WHO Collaborating Center for Reference and Research on Plague Control

WHO Collaborating Center for Poliovirus and Enterovirus Surveillance

WHO Collaborating Center for Reference and Research on Rabies

WHO Collaborating Center for Respiratory Viruses Other than Influenza

WHO Collaborating Center for Rickettsial Diseases

WHO Collaborating Center for Shigella

WHO Collaborating Center for Smallpox and Other Poxviruses Infections

WHO Collaborating Center for Reference and Research in Syphilis Serology

WHO Collaborating Center for Viral Hemorrhagic Fevers

WHO Collaborating Center for Reference and Research on Viral Hepatitis

WHO Collaborating Center for Lyme Borreliosis**

WHO/PAHO Collaborating Center for Rotavirus and the Agents of Viral Gastroenteritus **

*** Tentative WHO Approval*

NCIPC

WHO Collaborating Center for Injury Prevention and Control

WHO Collaborating Center for Neurotrauma

NIOSH

WHO Collaborating Center for Occupational Safety and Health

PHPPO

PHPPO has applied for formal designation as a WHO Collaborating Center for Public Health Systems and Practice.

• CHRONIC DISEASE PREVENTION • INFECTIOUS DISEASE PROTECTION • IMMUNIZATION • INJURY PREVENTION • PR
ILD HEALTH • GLOBAL PARTNERSHIPS • MINORITY OUTREACH • MONITORING HEALTH • COMMUNITY PARTNERSHIP
FER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER • HEA
ALTH EDUCATION • EPIDEMIOLOGY • WORKPLACE HEALTH • IMMUNIZATION • WORKPLACE SAFETY • TRAINING •

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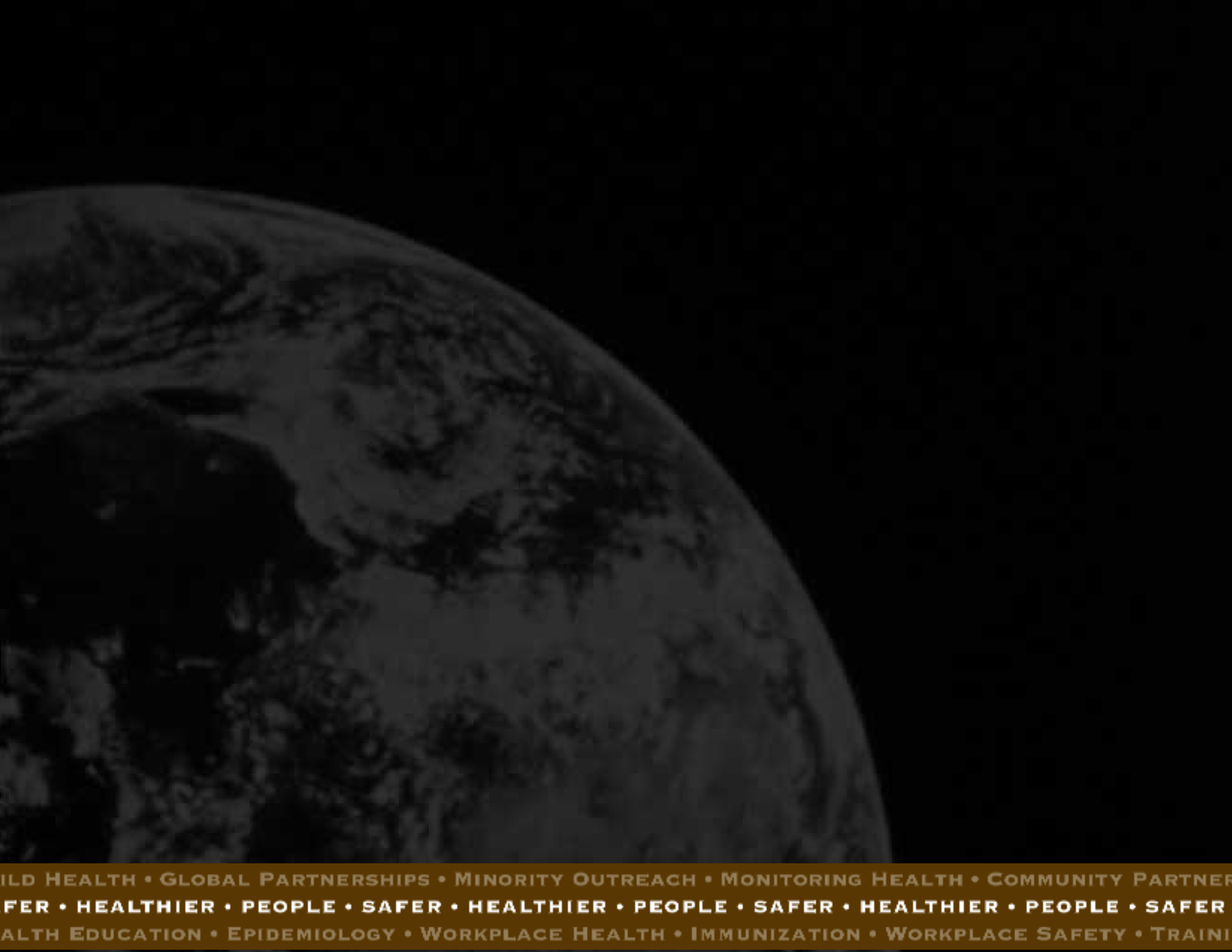
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