Centers for Disease Control and Prevention (CDC)

Final FY 2003 GPRA Annual Performance Plan
Revised Final FY 2002 GPRA Annual Performance Plan
FY 2001 GPRA Annual Performance Report

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Centers for Disease Control and Prevention

FY 2003 Final Performance Plan
FY 2002 Revised Final Performance Plan
FY 2001 Performance Report

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Introduction

Safer • Healthier • People is a national and global ideal made real by the informed actions of the dedicated professionals of the Centers for Disease Control and Prevention (CDC). *Safer • Healthier • People* is the organizing principle of the lead federal agency that is responsible for promoting health and quality of life by preventing and controlling disease, injury, and disability. CDC, which was founded in 1946, has remained at the forefront of domestic and global public health efforts for more than 5 decades.

CDC is often recognized for its world-class research and high-profile, life-saving investigations. However, it is CDC's action-oriented approach of applying the results of scientific inquiry to making the citizens of the United States – and the world – safer and healthier that sets it apart from other agencies. Since its inception, the scope of CDC's mandate has expanded from infectious disease prevention and control to include to prevention and control of chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. The impact of CDC's programs and activities can be measured by its performance in three principal focus areas:

Protecting the health and safety of Americans
Infectious diseases, such as human immunodeficiency virus (HIV) infection, tuberculosis (TB), and foodborne infections, can destroy lives, strain community resources, and destabilize nations. In our fast-paced society, new diseases have the potential to spread across the world in a few hours or days, making early detection and action more important than ever. CDC plays a critical role in controlling these diseases, with disease detectives ready and able to travel at a moment's notice to investigate acute threats to health at home or abroad.

But disease outbreaks are only one aspect of CDC's protective role. By providing state and local health departments with funds, training, and other types of technical assistance, CDC works to protect the public from infectious and chronic diseases, injuries, disabilities, and workplace and environmental hazards. Protecting health and safety also requires the judicious use of the most ethical and high-quality scientific research techniques that allow CDC scientists to understand the causes of disease, injury, and disability and to implement actions that prevent them. CDC specializes in detecting and defining health problems through public health surveillance, determining their causes, developing and testing strategies for addressing the problem, and implementing programs that prevent or reduce threats to health and safety.

Providing credible information to enhance health decisions
CDC recognizes that the best, most up-to-date health information is meaningless unless it is meaningful and accessible to the persons it is meant to serve. By working with public health and grassroots partners, and by leveraging the technology of the Internet and the tools of the communications media, CDC ensures that the best health and safety information is accessible to the citizens, communities, healthcare providers, and policy makers who need it.

Promoting health through strong partnerships
The everyday world provides a series of obstacles to continued good health: emerging infectious diseases and the threat of bioterrorism; pollution in the air we breathe and water we drink; unsafe conditions in our workplaces; personal habits that damage our health; intentional and unintentional injuries; and limited access to health services, especially for disadvantaged populations. CDC works collaboratively with global, national, state, and local organizations to promote health and protect people from disease, injury, and disability. CDC

alone cannot protect the health of the American people. However, by collaborating with others – from state and local health departments to private corporations, from county-sponsored clinics to managed-care organizations, from media outlets to the general public – CDC can leverage its vision of a better world of Safer • Healthier • People.

CDC has a broad mandate to promote health and quality of life by preventing and controlling disease, injury, and disability. The people of CDC contribute significantly to Americans' ability lead longer, more productive, healthier lives. As illustrated in this report, CDC's unique approach to health improvement achieves results and cost savings. *Safer • Healthier • People* is a desirable and achievable goal made possible by CDC.

Part I. CDC Context for Performance Measurement

I-A Vision, Mission and Long-term Goals

The Centers for Disease Control and Prevention (CDC) is recognized as the lead federal agency for protecting the health and safety of the American people at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. Working with partners across the country and the world, CDC has been a leader in monitoring health, detecting and investigating heath problems, conducting research to enhance prevention, developing and advocating sound public health policies, promoting healthy behaviors, fostering safe and healthy environments, and providing leadership and training. The nation has how entered the 21st century, but the fundamental challenge facing CDC is the same as it was in its early days more than five decades ago – to improve the quality of people's lives by protecting them from disease, injury, and disability.

CDC's vision: *Healthy people in a healthy world – through prevention.*
CDC's vision conveys an idea of what the world would be if CDC's partnerships, information, and protection activities were fully realized. The agency is committed to helping create a safe physical and social environment where health is both protected and promoted nationally and internationally. CDC believes that prevention based on sound scientific knowledge is the foundation for achieving this vision.
During the past half century, CDC has constantly evolved and innovated to face new health challenges. It is this constant renewal that enables the agency to continue providing quality service and reliable information to the American public.

CDC's mission: *Promote health and quality of life by preventing and controlling disease, injury, and disability.*

CDC's mission statement conveys how the agency approaches its responsibilities as the nation's prevention agency. Accomplishing this mission is predicated on CDC's ability to build on the following agency strengths:

- Prevention strategies based on sound scientific knowledge
- Leadership and technologic capabilities of state and local health organizations and the integration of those capabilities with private health organizations
- Trained public health workers and leaders
- Ability to serve a diverse population with a diverse work force

CDC's long-term goals:
CDC has adopted key parts of the DHHS strategic plan, which was completed in October 2000, to move the agency forward into the 21st century. The DHHS strategic plan has six broad goals that are supported by multiple objectives. CDC's programs primarily address DHHS Goals 1, 4, 5, and 6, and their corresponding objectives. DHHS' strategic goals set the stage for actions that, on a daily basis, improve the quality of people's lives throughout the world. When it comes to action, CDC focuses its expertise and other resources in three principal areas:

Protecting the health and safety of Americans – CDC addresses DHHS Goals 1 and 6 through actions generated from science-based programs. Serious threats to the nation's health come from many sources: diseases, organisms, injuries, behaviors, emerging risks. Meeting these complex health problems head-on requires CDC to be both nimble and flexible – that is, to adapt resources and balance priorities as needed, to use diverse tactics, and to forge effective partnerships.

Dramatic gains in life expectancy have resulted largely from improvements in sanitation and the prevention of diseases through vaccines. A century ago, pneumonia and TB were the two leading causes of death in the United States. Then, in the 1940s, a critical focus of the nation's health priorities was the control of malaria among military personnel during World War II. From these programs came the genesis of the Centers for Disease Control and Prevention, and since that time CDC has been at the forefront of the nation's efforts to improve the health and well-being of Americans.

As we move into a new century, many of CDC's resources are dedicated to solving complex, cross-cutting health problems that require a broad array of skills, abilities, and experience. For example, since the 1960s and 1970s, community-based programs have helped to produce more recent reductions in tobacco use, increases in blood pressure control, healthier diets, increased use of seat belts, and effective injury control. These improvements and others have contributed in turn to declines in deaths from stroke and heart disease and declines in overall death rates for children. Yet, despite these successes, heart disease and cancer have remained the leading causes of death through the latter part of the 20th century.

2000 DHHS Strategic Goals and Objectives Related to CDC Programs

Goal 1: Reduce the major threats to the health and productivity of all Americans.

Objective 1.1 Reduce tobacco use, especially among youth.
Objective 1.2 Reduce the incidence and impact of injuries and violence in American society.
Objective 1.3 Improve the diet and level of physical activity of Americans.
Objective 1.4 Reduce alcohol abuse and prevent under age drinking.
Objective 1.5 Reduce the abuse and illicit use of drugs.
Objective 1.6 Reduce unsafe sexual behaviors.
Objective 1.7 Reduce the incidence and impact of infectious diseases.
Objective 1.8 Reduce the impact of environmental factors on human health.

Goal 4: Improve the quality of health care and human services.

Objective 4.1 Enhance the appropriate use of effective health services.
Objective 4.2 Increase consumer and patient use of health care quality information.
Objective 4.3 Improve consumer and patient protection.
Objective 4.4 Develop knowledge that improves the quality and effectiveness of human services practice.

Goal 5: Improve the nation's public health systems.

Objective 5.1 Improve the capacity of the public health system to identify and respond to threats to the health of the nation's population.
Objective 5.2 Improve the safety of food, drugs, medical devices, and biological products.

Goal 6: Strengthen the nation's health science research enterprise and enhance its productivity.

Objective 6.1 Advance the scientific understanding of normal and abnormal biological functions and behaviors.
Objective 6.2 Improve our understanding of how to prevent, diagnose, and treat disease and disability.
Objective 6.3 Enhance our understanding of how to improve the quality, effectiveness, utilization, financing, and cost-effectiveness of health services.
Objective 6.4 Accelerate private-sector development of new drugs, biologic therapies, and medical technology.
Objective 6.5 Strengthen and diversify the base of well-qualified health researchers.
Objective 6.6 Improve the communication and application of health research results.
Objective 6.7 Strengthen mechanisms for ensuring the protection of human subjects in research and the integrity of the research process.

Today, CDC and partners confront challenging, complex issues that reinforce, reshape, and expand the traditional roles of public health. Responding to those challenges involves such activities as:

- Investigating disease outbreaks in the United States and around the world;
- Probing the realms of viruses, bacteria, and parasites to uncover ways to control both emerging and re-emerging pathogens;
- Protecting the food and water supplies from both inadvertent and deliberate contamination;
- Curbing the toll of death and disability from preventable injuries;
- Stemming the epidemic of obesity in the United States;
- Convincing the public that altering certain behaviors will yield long-term health dividends;
- Educating youth about the risks of HIV, unintended pregnancy, tobacco use, physical inactivity, and poor nutrition;
- Translating biomedical research findings into practice in communities; and

- Eliminating disparities in the health of all Americans.

Protecting health and safety has its basis in science. CDC staff use the applied techniques of epidemiology, laboratory, behavioral, and social sciences as the primary tools to understand the causes of poor health, identify populations at risk, and develop interventions for disease control and prevention. As research provides more information about the relationships among the physical, mental, and social dimensions of well-being, a broader approach to public health has become important in the quest for answers to prevent and solve health problems. CDC is committed to expanding its research agenda to help bridge the gap between research and protecting health and safety.

Providing credible information to enhance health decisions – CDC addresses DHHS Goal 4 by providing credible, timely health information to help policy makers, providers, and consumers make informed decisions about personal and public health. The general public and health practitioners at all levels require up-to-date, credible information about health and safety to make rational decisions. To help support this crucial decision making, CDC continues to increase and apply its preeminent expertise in the disciplines of public health surveillance, epidemiology, statistical analysis, laboratory investigation and analysis, health communications and social marketing, behavioral risk reduction, technology transfer, and prevention research. CDC applies the science that underpins those disciplines to develop and disseminate credible and practical health information to meet the diverse needs of its primary clients, the people of the United States. Such information affects health and well-being across all stages of life when the best possible health decisions must be made by consumers, providers, and policy makers.

CDC makes this crucial health information available through many channels, including books, periodicals, and monographs; Internet websites; health and safety guidelines; reports from investigations and emergency responses; public health monitoring and statistics; travel advisories; and answers to public inquiries.

In addition to serving the public, CDC delivers health information that enables providers to make critical decisions. For example, the practicing medical and dental communities and the nation's healthcare providers are target audiences for numerous official CDC recommendations on the diagnosis and treatment of disease, immunization schedules, infection control, and clinical prevention practices. CDC also offers technical assistance and training to health professionals.

CDC is positioned in vanguard efforts to inform people about the benefits of having children wear bicycle helmets, teaching young women about preventing birth defects by taking folic acid, quitting smoking, eating sensibly and exercising regularly, reducing health hazards during food preparation in the home, making sure children and adults are vaccinated, and alerting the public to environmental hazards. CDC recognizes that many other public health messages either need to be heard for the first time or should be reinforced.

Promoting health through strong partnerships – CDC addresses DHHS Goal 5 through strong working relationships with key public health partners. CDC has a long history of developing and sustaining vital partnerships with various public and private entities that improve service to the American people. CDC's partners in conducting effective prevention and control activities include:

- Public health associations
- State and local public health agencies
- Other DHHS agencies and agencies in other federal departments
- Practicing health professionals, including physicians, dentists, nurses, and veterinarians
- Public safety and security officials
- Schools and universities
- Communities of faith
- Community, professional, and philanthropic organizations

- Nonprofit and voluntary organizations

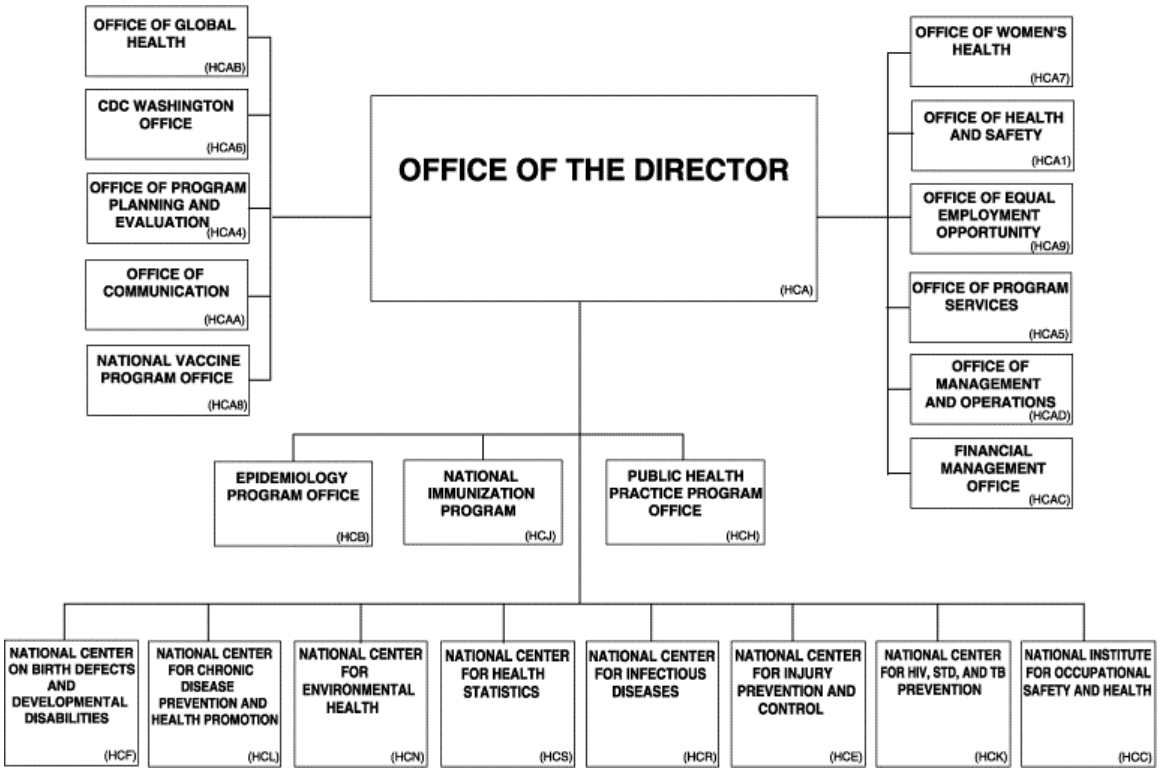
- Business, labor, and industry
- CDC Foundation and other foundations
- International health organizations
- State and local departments of education

CDC's partners implement most of the agency's extramural programs. These programs are tailored to reflect local and community needs. In addition, partners strengthen CDC by serving as consultants to CDC program staff, by participating in CDC advisory committees, and by attending CDC-sponsored seminars and conferences. The wide-ranging perspectives that CDC's partners bring to common interests and goals generate new opportunities for collaborations, help shape key strategies, and provide another means for staying focused on the needs of the American public. Sustaining these partnerships involves coordination and communication.

I-B Organization, Programs, Operations, Strategies, and Resources

Organization and Programs

CDC's major program components respond individually in their areas of expertise and also pool their resources and expertise on crosscutting issues and specific health threats. The agency is comprised of 11 major program components and 11 staff offices.



- *National Center for Birth Defects and Developmental Disabilities (NCBDDD)* prevents serious and costly causes of morbidity and mortality in infants and children such as autism, fetal alcohol syndrome, and spina bifida.

- *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, disability, and death resulting from the interactions between people and their environment.
- *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 HIV, STD, and TB Prevention (NCHSTP*) provides national leadership in preventing and controlling human immunodeficiency virus infection, sexually transmitted diseases, and tuberculosis.
- *National Immunization Program (NIP*) prevents disease, disability, and death from vaccine-preventable diseases in children and adults.
- *National Center for Injury Prevention and Control (NCIPC*) prevents death and disability from non-occupational 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 Center for Health Statistics (NCHS)* provides statistical information that guide actions and policies to improve the health of the American people.
- *Epidemiology Program Office (EPO*)strengthens the public health system by coordinating public health surveillance, providing support in scientific communications, statistics, and epidemiology, and providing training in surveillance, epidemiology, and prevention effectiveness.
- *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.

CDC's presence is global, with employees assigned to posts in 20 countries and 46 of the 50 states. CDC headquarters is located in Atlanta, Georgia, with 15 field stations located throughout the nation and in Puerto Rico.

Personnel Resources and Strategies

One of CDC's greatest resources is its more than 8,500 employees, who provide quality service to the American people and expertise in public health surveillance, epidemiology, statistical analysis, laboratory investigation and analysis, health communications and social marketing, behavioral risk reduction, technology transfer, and prevention research.

On a daily basis, CDC staff are involved in information-dependent activities that work synergistically to help CDC accomplish its mission. Several key activities illustrate how CDC accomplishes its mission. To *monitor health problems*, CDC staff examine health patterns quantitatively in terms of where disease, injury, and disability occur, among what population groups, and whether trends are changing over time. This activity requires CDC to draw upon a host of health databases from a variety of sources and to use the principles of public health surveillance and health statistics. Completeness and timeliness of monitoring activities help CDC staff *detect and investigate outbreaks* or unexpected health patterns. Detecting and investigating outbreaks allow the causes of these occurrences to be uncovered and control measures to be implemented. These activities often require the use of highly analytical epidemiology, biostatistics, and laboratory techniques that help transform simple data into useful information.

To *develop and advocate sound public health policies*, CDC staff frequently *conduct research* that spans biomedical, behavioral, and health services disciplines and makes use of epidemiology, biostatistics, and laboratory techniques. The goal of public health research is to *unveil sound prevention strategies*. In simple terms, these strategies for improving health in a population rely on health communications and social marketing to *stimulate healthy personal behaviors* and the judicious use of preventive healthcare services, carefully crafted and broadly distributed technical guides to help healthcare providers *use effective preventive*

health services for their patients, and health regulations and laws that guarantee community-wide approaches that *foster safe and healthful environments*. Once effective prevention strategies are created, CDC often works with state and local partners, *providing leadership and training* to assist them in administering a variety of Congressionally mandated prevention programs.

These activities are the backbone of CDC's mission. Each of CDC's component organizations undertakes these activities in conducting its specific programs.

Critical Physical Resources

Increasingly, CDC is an information-intensive organization. CDC's dependence on information technology, information systems, electronic communications, and digital media continues to grow. Increasing CDC's expertise in public health informatics is an agency priority. CDC has developed strategies to use information technology to effectively and efficiently facilitate its mission while protecting the integrity and confidentiality of its information and data resources.

CDC is increasingly recognized for the excellence of its laboratory sciences that support prevention research and field investigations, especially in infectious diseases and environmental health.

Values and Priorities

Levels of preventable illness, disability, and death in the United States are still unacceptably high, creating gaps in areas where people have not benefitted from progress made during the last century. For example, gains in life expectancy have not benefitted all Americans equally; the gap in life expectancy between African Americans and whites has been increasing since the 1970s. To prepare CDC to meet these and other challenges of the new millennium, CDC has committed to the following priorities that reflect our commitment to excellence and social justice, creativity, and compassion:

Strengthen science for public health action – CDC is only as strong as its science. But science is only the first step and not an end in itself. We must use our science to make real, measurable differences in people's lives. To do that, we must have a strong, flexible, and supportive public health infrastructure. This infrastructure should promote strong science, including laboratory, epidemiologic, social, and behavioral sciences, and biomedical prevention and health systems research to direct public health action. It should develop and maintain a skilled and highly effective workforce, able to put that science to best use. And it should build integrated information and surveillance systems that improve the ability to monitor the effectiveness of our use of science to improve the public's health.

Enhance environmental and occupational health – Significant premature death and avoidable illness and disability result from interactions between people's unique biologic, social, and lifestyle characteristics and their environment. The environmental role in the development of diseases, injuries, and disabilities is well recognized but in many instances not well understood. The task of learning more about environmental exposures and health risks is complex, involving the use of surveillance systems, data, and biomonitoring methods to detect and assess environmental and occupational health threats. Increased efforts are needed to reduce the impact of environmental factors on human health through research, surveillance, and public health prevention programs.

Promote healthy living at every stage of life – Americans are living longer, bringing about a demographic transition as we become a nation with more older adults. Because of this transition, we face new challenges in promoting health at every stage of life. In recent years, we have accomplished much in improving the health of children. The same intensity of effort now must be extended to all age groups. We must guarantee that people at every stage of life are empowered with the knowledge needed to help them improve their own health.

Promote global health – Disparities in health status have widened between developed and developing nations.

In addition, transportation and population shifts make it possible for new and emerging diseases to travel swiftly across continents and around the world. Facing these challenges requires even closer cooperation with our global partners in using science and sound policy to promote public health globally.

Reduce health disparities – Strong evidence suggests that there is persistent disparity in the health status of persons of color compared with the overall health status of the American people, and that race and ethnicity correlate with continued and increasing health disparities in members of these communities. The underlying causes of increased levels of disease and disability in these groups often include poverty, lack of adequate access to quality health services, failure to receive preventive or "state-of-the-art" health care, and the need for effective prevention programs tailored to specific community needs. Reducing racial and ethnic disparities in health will require research to identify new knowledge about causes of health disparities and effective ways to deliver preventive and clinical services. It will also require new and innovative ways of working in partnership with state, local, and tribal governments and communities.

I-C Partnerships and Coordination

Setting the nation's health promotion and disease prevention agenda
CDC has been an active participant in setting and working toward national health promotion and disease prevention goals and objectives since the Healthy People (HP) initiative began in 1979. Beginning in 1996, more than 600 national and state organizations and more than 11,000 persons and organizations participated in the development of HP 2010 objectives. Key participants included representatives of state and local health departments. The extensive participation by representatives of state and local governments, academic institutions, business and labor, and community and professional organizations at each step in the process helped to establish the broad network needed for successful implementation of programs. CDC actively participated in this process, accepting the lead in overseeing the coordination, collaboration, and implementation of many health promotion and disease, injury, and disability prevention objectives.

The HP 2010 initiative was launched in early 2000. CDC shares lead coordination of HP 2010 objectives with other federal organizations. Many of the performance objectives in CDC's Annual Performance Plan are directly linked to HP objectives, and HP 2010 goals and objectives serve as a foundation for a number of CDC's performance measures. Although CDC has lead responsibility for many of the objectives in HP 2010, achievement of these objectives represents a national effort in which CDC works closely with other federal, state, local, and community entities. Performance measures in CDC's plan have been crafted to reflect the collaborative nature of CDC's program activities.

Supporting state and local health departments
In FY 2000 about 71% of CDC's budget ($3.07 billion) – provided through extramural grants, cooperative agreements, and program contracts – was spent on public health work performed by CDC's partners. Most of those funds were provided to state and local health departments as grants and cooperative agreements to support public health programs aimed at disease prevention and control.

Supporting extramural research
CDC funds extramural research through such programs as the Prevention Research Centers, which support a prevention research agenda at 23 schools of public health throughout the country.

Expanding partnerships and coordination
Just as the development of national health objectives is dependent on the work of many, CDC works with its many partners throughout the United States and the world to accomplish the long-term and annual goals in the CDC Performance Plan and the DHHS Strategic Plan. State and local health departments provide the infrastructure on which the public's health is built. Other traditional partners include persons and institutions that educate and promote the health of Americans of all ages, such as school systems, local community groups, businesses, voluntary and professional associations, and other federal organizations. In view of the increasingly diverse and complex role of public health, CDC has reached out to newer and less traditional public health partners, including churches, local organizations, health insurance organizations, health alliances, health boards, consumer groups, and private medical providers.

I-D High Priority Initiatives in the FY 2003 Plan

Several high-priority, critical initiatives are included in CDC's 2003 Annual Performance Plan. These initiatives include support for the President's Management Plan, the Secretary's Budget Priorities, and CDC's Workforce Restructuring and Delayering Plan. Information about CDC's efforts to support the President's Management Plan and its Restructuring and Delayering Plan is provided in the section entitled "Program Support." The Program Support section of CDC's Performance Plan represents management activities that cross-cut the entire organization. Activities and priorities of the Human Resources, Information Technology, and Financial Management Offices are all captured in the Program Support section of CDC's Performance Plan.

CDC's work in support of the Secretary's Budget Priorities includes:

Promotion of Early Childhood Development
CDC is participating in creation of a comprehensive paper describing HHS' efforts to promote early childhood health. This paper will be developed by the Assistant Secretary for Planning and Evaluation. CDC's efforts in this area are represented in the following sections of the Immunization and the Birth Defects and Early Childhood Development sections of the CDC Performance Plan.

Patient Safety and Prevention of Medical Errors
This important initiative is reflected in work being carried out by CDC's National Center for Infectious Diseases. Goals and performance measures reflecting this work are contained within the Infectious Diseases section of this plan.

II-A.1 Infectious Diseases Control

Total Program Funding (Dollars in thousands)

FY 2003:	$ 344,570	(Estimate)
FY 2002:	$ 354,077	(Current Estimate)
FY 2001:	$ 326,372	(Actual)

Mandate

CDC is charged with planning, directing, and coordinating a national program to improve the identification, investigation, diagnosis, prevention, and control of infectious diseases in the United States and throughout the world.

Health and Economic Burden

Once expected to be eliminated as a public health problem, infectious diseases remain a leading cause of death worldwide. Earlier predictions of the elimination of infectious diseases did not take into account changes in demographics, human behavior, and the ability of microbes to adapt, evolve, and develop resistance to drugs. More than 35 newly emerging diseases were identified between 1973 and 2000, and new infectious threats will continue to be identified. Outbreaks of infectious diseases endanger U.S. citizens at home and abroad, threaten U.S. forces overseas, and contribute to social and political instability throughout the world. Outbreaks can interfere with the global marketplace and affect tourism, trade, and foreign investment. The national costs of controlling outbreaks can also be considerable – for example, when large numbers of disease-carrying food animals must be slaughtered, as occurred recently in the United Kingdom.

Infectious diseases can lurk anywhere – in undercooked hamburgers, on unwashed hands, or carried by blood, water, ticks, or mosquitoes. Some, like the pathogens that cause influenza or syphilis, are familiar foes that have preyed on humans for centuries. Others, like West Nile virus, are relatively new or emerging threats. Some old threats, like tuberculosis, have adapted to the drugs deployed against them, making them dangerous in new ways. These attributes make infectious diseases a constant threat. The emergence of a new strain of influenza somewhere in the world could have a severe effect on the United States, causing an estimated 89,000 to 207,000 deaths, 314,000 to 734,000 hospitalizations, and direct and indirect costs of $71 billion to as much as $167 billion. Antimicrobial resistance in six bacteria commonly found in hospitals adds approximately $661 million per year in hospital charges. Hospital-acquired infections kill an estimated 88,000 Americans annually and cost more than $4.5 billion. The estimated burden of illness from foodborne infections is up to 5,000 deaths and 76 million illnesses annually, with associated costs reaching several billion dollars annually.

Even chronic diseases are being linked to infectious agents. To date, more than 30 microbes are recognized

to initiate or define the progression of long-term illness and disability. Approximately 40% of chronic liver disease – the tenth leading cause of death among U.S. adults – is caused by hepatitis C virus (HCV). The medical and work-loss costs of HCV-related liver disease are estimated to exceed $600 million annually. Evidence supports or suggests many other infectious-chronic disease associations, and scientists know that new associations are likely to emerge at a rapid pace.

Strategies, Activities, and Resources

In 1994, recognizing the serious and growing threat of infectious diseases, CDC and partners launched the first phase of a nationwide program to revitalize U.S. capacity to protect the public from infectious disease threats. The second phase of this effort began in 1998 and continues to build domestic and global capacity for recognizing and responding to infectious diseases through partnerships with federal, state, and local agencies, universities, private industry, foreign governments, WHO, and non-governmental agencies. CDC's efforts focus on four strategies:

- Surveillance and response – to detect, investigate, and monitor emerging pathogens, the diseases they cause, and the factors influencing their emergence;
- Applied research – to integrate laboratory science and epidemiology to optimize public health practice;
- Infrastructure and training – to strengthen public health infrastructure to support surveillance and research and to implement prevention and control programs; and
- Prevention and control – to ensure prompt implementation of prevention strategies and enhance communication of public health information about emerging infectious diseases.

Within this framework key priorities have emerged: strengthening state and local infectious disease control capacity; developing strategies to address infectious diseases that contribute to high mortality, morbidity, and healthcare costs, such as hepatitis C, influenza, and foodborne illnesses; finding solutions to the problems posed by antimicrobial resistance; reducing the burden of illness from infectious diseases among hospitalized patients and healthcare workers; and providing information learned through research on infectious diseases to consumers, providers, and policy makers.

Links to DHHS Strategic Plan

Infectious disease performance measures relate to DHHS Goal 1, Objective 1.7: *Reduce the incidence and impact of infectious diseases*; Goal 5, Objective 5.1: *Improve the capacity of the public health system to identify and respond to threats to the health of the nation's population*; and Goal 6: *Strengthen the nation's health science research enterprise and enhance its productivity*.

Partnerships

To accomplish its mission of protecting the public from infectious disease threats, CDC collaborates with a number of agencies and organizations. Examples of partners and some selected activities include: CSTE (assist states with pandemic influenza planning activities); APHL (enhance state laboratory capacity by providing long-term laboratory training); National Institutes of Health (NIH); Food and Drug Administration (FDA) (food safety programs), USDA (food safety programs), Department of Interior (U.S. Fish and Wildlife), Department of Justice (U.S. Immigrations and Naturalization Service), Department of State, and Department of Treasury (U.S. Customs). To accomplish HCV prevention objectives, CDC collaborates with the National Association of State AIDS Directors (NASAD), National Minority AIDS Council (NMAC), American Social Health Association (ASHA), Pacific Islands Health Officers Association (PIHOA), American Liver Foundation (ALF), Hepatitis Foundation International (HFI), and Indian Health Service (IHS).

Presentation of Performance

Disease-based outcome measures are not applicable to emerging infectious diseases, many of which are new or previously unrecognized. Uncertainty about what diseases will emerge or re-emerge precludes the development of baselines or performance measures of disease incidence. Even when baselines do exist, it is

often difficult to link declines in incidence directly to prevention and control efforts. For example, 1998 data from FoodNet (an active surveillance network for foodborne diseases) show a decline in several of the major bacterial and parasitic causes of foodborne illness. Although these declines may reflect the implementation of disease prevention efforts (e.g., changes in meat processing; restrictions on food imports), they may also reflect annual fluctuations in the incidence of foodborne illnesses and temporal variations in diagnostic practices.

Another difficulty in using disease-based outcome measures is that improved disease tracking and better reporting systems may result in the recognition of more outbreaks and cases. This does not mean that more cases of the disease are occurring. Rather, it means that our eyes, ears, and other tools are better able to find them. Thus, rather than focusing on disease-based outcomes, many of the infectious disease performance measures assess CDC's ongoing efforts to strengthen national public health capacity for disease surveillance and response through training programs (the EID Laboratory Fellowship), new laboratory diagnostics (PulseNet), and funding of state and local health departments for infrastructure improvements (hepatitis C coordinators).

CDC's Infectious Diseases Control Performance Plan includes three new goals which highlight priority infectious disease threats, patient and healthcare worker safety, and our ongoing efforts to provide sound scientific health information upon which the public and healthcare providers can make informed decisions.

Protecting Health and Promoting Partnerships

II-A.1a State and Local Capacity

Protecting Americans from infectious diseases begins with well-staffed and well-equipped state and local health departments. CDC is helping to rebuild the infectious disease control component of the state and local public health infrastructure by building and maintaining national epidemiologic and laboratory capacity. Building national capacity will improve the ability to recognize, respond to, and monitor new and resurgent infectious diseases – the key to prevention and control. Success depends on ensuring that national public health capacity exists to quickly recognize and respond to the appearance of new and re-emerging threats and to prevent and control existing infectious disease problems.

Another program that is contributing to identified gaps in our nation's infectious disease infrastructure is the Emerging Infectious Disease (EID) laboratory fellowship. This training program in infectious disease laboratory methods and practice is designed to attract and prepare laboratory scientists for careers in public health. Recruiting and retaining trained health professionals is key to rebuilding the nation's public health infrastructure.

Performance Summary
In FY 2001, 57 sites–50 state, 6 local, and 1 territorial health department–were funded for the Epidemiology and Laboratory Capacity (ELC) program. Because of outbreaks, such as West Nile virus, and the threat of other emerging infectious diseases, expanding this capacity-building program to all eligible state and local health departments became a key priority in FY 2001; thus, we exceeded the proposed target by four sites. With the exception of some territorial health departments which will be targeted for funding in FY 2002, this goal has been met and this measure will be discontinued after FY 2002. The ELC program assists State and eligible local public health agencies to strengthen the public health infrastructure to address infectious disease threats. Resources are used to improve surveillance, develop new and improved diagnostic and subtyping methods, implement electronic disease reporting systems, transfer state-of-the-art technologies into public health laboratories, and train epidemiologists and laboratory workers. Through FY 2000, ELC funding has been used to hire 160 Full Time Equivalents (FTEs) in funded sites (total 43), including 60 epidemiologists and 46 microbiologists. Even though each grant award is modest in size (average $311,000), the ELC program has made a dramatic impact.

The infrastructure developed though the ELC program was crucial in the response to the outbreak of West Nile virus in the New York metropolitan area. In addition, through technology transfer, many states now have state-of-the-art molecular laboratory diagnostic tools, including pulsed field gel electrophoresis (PFGE) and polymerase chain reaction (PCR) technology. These tools have been used to identify, investigate, and rapidly implement control measures in hundreds of outbreaks. Examples in 1999 include, *E. coli* O157:H7 at an upstate New York county fair linked to contaminated water; multi-state outbreaks of *Salmonella* associated with alfalfa sprouts; and multi-state outbreaks of *Listeria* associated with hot dogs.

Through FY 2000, 73 scientists completed the Emerging Infectious Disease (EID) laboratory fellowship. Successful recruiting of highly qualified applicants resulted in a larger than expected class. Of the fellows who have completed training, 48% are working in laboratories in state health departments or at CDC and 34% returned to school (primarily in M.D. or Ph.D. programs). The others accepted employment with non-profit, health-related organizations and private industry or accepted other fellowships.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Strengthen epidemiologic and laboratory capacity to recognize, respond to, and monitor infectious diseases.**		
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Establish up to 65 state-based prevention programs through Epidemiology and Laboratory Capacity (ELC) for Infectious Diseases cooperative agreements.	**FY 02:** 57 sites **FY 01**: 53 sites **FY 00:** 43 sites **FY 99:** 33 sites	**FY 02:** 57 **FY 01:** Exceeded/57 **FY 00:** Achieved **FY 99:** Achieved **FY 98:** 30 (baseline)	Page 164
Increase the number of EID microbiology fellows trained for employment in public health laboratories.	**FY 03:** 160 fellows **FY 02:** 125 fellows **FY 01:** 100 fellows **FY 00:** 70 fellows **FY 99:** 40 fellows	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Achieved **FY 00**: Exceeded/73 **FY 99:** Achieved **FY 97:** 13 (baseline)	Page 164

II-A.1b Priority Disease Problems

Periodically, the results of public health surveillance and applied research call for new actions to protect Americans from infectious diseases. This is why CDC has undertaken efforts to develop national strategies to address priority disease areas.

Hepatitis C, chronic liver disease, and viral hepatitis: A CDC goal is to lower the incidence of acute hepatitis C in the United States and to reduce the burden of liver disease from chronic HCV infection. To this end, CDC is: 1) educating healthcare and pubic health professionals to improve identification of persons at risk for HCV infection and ensure appropriate counseling, diagnosis, management, and treatment; 2) educating the public and persons at risk about risk factors and the need for testing and evaluation; 3) promoting clinical and public health activities aimed at identifying, counseling, and testing persons at risk and evaluating or referring

persons found to be infected; 4) developing outreach and community-based programs to address practices that put people at risk and identify persons who need testing; 5) strengthening surveillance to monitor disease trends and evaluate the effectiveness of prevention activities; and 6) conducting epidemiologic research to guide prevention efforts.

Influenza: CDC plays a key role in the prevention and control of influenza. Improved preparedness is essential to minimize the impact on Americans of a long-overdue influenza pandemic. To fulfill this role, CDC: 1) conducts worldwide monitoring of influenza viruses to collect data to contribute to annual Northern and Southern hemisphere vaccine decisions; 2) is building capacity domestically and internationally to improve the early detection systems for new influenza viruses; 3) is working closely with States to improve the infrastructure for delivery of influenza vaccines; 4) conducts research studies on influenza viruses to form the building blocks for better vaccines and vaccines to viruses with pandemic potential; 5) participates on an interagency workgroup to develop an influenza pandemic preparedness plan for the United States.

Foodborne illnesses: CDC has a prominent role in maintaining the safety of the nation's food supply. CDC is challenged to: 1) build a strong nationwide public health network for foodborne disease surveillance and response; 2) design and implement prevention strategies; 3) support, educate, and train the public health workforce; and 4) provide scientifically sound health information to the public. These efforts are essential for food safety regulatory agencies that need and rely on CDC's epidemiologic data, laboratory science, environmental health capability, public health expertise, and links to state and local health and education departments.

Performance Summary

Hepatitis C, chronic liver disease, and viral hepatitis:

Hepatitis C Coordinators **-** CDC was able to exceed the expected number of HCV coordinators funded as State and local health departments quickly recognized the importance of coordinators who serve as the "linking pin," coordinating hepatitis C activities among health department programs (e.g., STD, Immunization, and Epidemiology/Surveillance), and state agencies (e.g., Mental Health, Substance Abuse, and Corrections). They are also closely involved with media campaigns, provider education, and the development of educational materials.

Viral Hepatitis Integration Projects (VHIP) - As targeted, 15 VHIPs were funded this year. The integration of these services into existing prevention systems (STD clinics, HIV counseling and testing sites, corrections facilities, and drug treatment programs) is fundamental to providing optimal prevention/intervention services to clients with multiple risk factors. This approach is also fiscally more realistic and cost-effective as opposed to developing new venues in which to provide services. It maximizes use of federal tax dollars and accessibility to services by at-risk groups.

Sentinel Surveillance for Acute Disease - Funding was continued in FY 2001 for a program of intensive surveillance for acute viral hepatitis in six sentinel counties to monitor the incidence and epidemiology of all types of viral hepatitis. This system provides the only data on incidence and risk factors for newly acquired hepatitis C. These data have been crucial in demonstrating the significant decline in transfusion-associated hepatitis C and the important role of injecting drug use and possibly sexual exposures in transmission. The participating sites have also developed improved methods for surveillance which have served as models for other county and State health departments. The data collected through the sentinel counties are essential for

monitoring the impact of prevention and control activities for hepatitis C as well as for developing new strategies for persons who remain at increased risk and continue to serve as foci for disease transmission.

Influenza - CDC has improved preparedness for both epidemics and a possible pandemic of influenza by increasing the number of domestic and global sites that monitor influenza. In 2000, we exceeded our target for domestic and international sites through diligent recruitment for U.S. Sentinel Physicians and consistent follow-up by CDC staff. These domestic and international sites provide surveillance data that are critical to influenza vaccine decisions. In 9 of the last 10 years, influenza vaccines were well matched to the circulating influenza viruses.

Maintaining and improving the U.S. Sentinel Physician surveillance system is a priority because it is the primary U.S. system for measuring influenza morbidity and is a source of specimens necessary for monitoring circulating viruses in the U.S.. Data collected about circulating influenza viruses are used to form the basis of annual vaccine decisions. The U.S. Sentinel Physician surveillance system will be the primary system for measuring the impact of an influenza pandemic on morbidity in the U.S.

Foodborne illnesses **-** CDC has improved food safety through collaborations with federal, state, and local governments and other public- and private-sector partners. CDC led the development and implementation of FoodNet, a network of 9 sentinel sites used to determine foodborne disease trend data for targeting of resources and improving prevention methods. CDC and its state partners also designed and implemented the PulseNet DNA fingerprinting network in public health laboratories. This network provides early detection of foodborne disease outbreaks within and between states. These programs and other CDC efforts have: 1) strengthened and expanded the early warning system for foodborne illness; 2) improved and expanded pathogen-detection methods; 3) improved techniques to avoid, reduce, and eliminate pathogens; and 4) improved outbreak containment. In collaboration with FDA and USDA, CDC: 1) designed training and educational materials for public health and healthcare professionals; 2) collaborated with government, industry, and consumer partners to conduct a broad-based food safety education campaign (Fight BAC!™); and 3) launched a national partnership for school-focused foodborne illness prevention. In FY 2001, we met our target with seven common pathogens, two parasites, and one syndrome (Hemolytic Uremic Syndrome) under active surveillance.

The number of outbreaks detected and investigated has been achieved as expected, as has determining the causative food in outbreaks. After FY 2001, we will no longer continue to track progress on either of these two performance measures because of the extreme variability in number and the dependence on local health department preference for CDC participation.

CDC and its state partners also designed and implemented the PulseNet DNA fingerprinting network in public health laboratories. This network provides early detection of foodborne disease outbreaks within and between states. CDC has prioritized the expansion of PulseNet because of the increased demand from participating sites. As of FY 2001, the targets for each of the pathogens have been achieved as expected.

In FY 2000, using FoodNet and other sources, CDC updated estimates of the burden of foodborne disease in the United States. New estimates indicate that 76 million cases of foodborne illnesses result in 325,000 hospitalizations and 5,000 deaths each year. FoodNet data from FY1999 showing declining rates of *Campylobacter* (26%), *Shigella* (44%), *E. coli* (22%), and *Salmonella enteriditis* (48%) led to new interagency efforts in research and surveillance to document the effectiveness of food safety measures. FY 2000 data has shown a continued declining trend albeit not as remarkable.

Goal-by-Goal Presentation of Performance

Performance Goal: Protect Americans from priority infectious diseases.

Hepatitis C, Chronic Liver Disease, and Viral Hepatitis

Performance Measures	Targets	Actual Performance	Ref.
Provide support to up to 65 health departments for coordinators to initiate hepatitis prevention and control activities.	**FY 03:** 50 health departments **FY 02:** 50 health departments **FY 01:** 25 health departments **FY 00:** 9 health departments	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Exceeded/34 **FY 00:** Exceeded/15 **FY 99:** 0	Page 164
Provide support to 20 health departments to assess the effectiveness of integration of HCV counseling, testing, and referral programs.	**FY 01:** 15 health departments **FY 00:** 15 health departments	**FY 01:** 15 **FY 00:** 12 **FY 99:** 0 (baseline)	Page 164
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Establish sentinel surveillance systems for chronic HCV in 10 states to monitor trends in incidence, risk factors for infection, and outcomes of disease.	**FY 03:** 6 states **FY 02:** 6 states **FY 01**: 5 states **FY 00**: 3 states **FY 99:** 1 pilot test	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Exceeded/6 **FY 00:** Exceeded/5 **FY 99:** Exceeded/2 **FY 98:** 0 (baseline)	Page 164

Influenza

Performance Measures	Targets	Actual Performance	Ref.
Monitor influenza viruses in domestic and global sites (1 site/250,000 population domestically and increasing numbers internationally) to enhance early detection of viruses with pandemic potential and improve vaccine decision-making.	**FY 03:** 900 sites **FY 02:** 600 sites **FY 01:** 514 sites **FY 00:** 510 sites	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** 550 **FY 00:** Exceeded/514 **FY 99:** 410 **FY 96:** 0	Page 164

Foodborne Illnesses

Performance Measures	Targets	Actual Performance	Ref.

Detect and investigate large or unusual outbreaks of diarrheal and/or foodborne illness.	**FY 01:** 26 outbreaks **FY 00:** 26 outbreaks **FY 99:** 23 outbreaks	**FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved **FY 98:** 15	Page 164
Increase the proportion of outbreak investigations in which the causative organism/toxin is identified.	**FY 03:** 58% **FY 02:** 57% **FY 01**: 55% **FY 00:** 50% **FY 99:** 45%	**FY 03:** 12/2004 **FY 02:** 12/2003 **FY 01:** 12/2002 **FY 00:** 12/2001 **FY 99:** Exceeded/48% **FY 98:** 40%	Page 164
Increase the proportion of foodborne outbreaks in which the causative food is identified.	**FY 01**: 55% **FY 00:** >50% **FY 99:** 50%	**FY 01:** 02/2002 **FY 00:** Exceeded/55% **FY 99:** Exceeded/65% **FY 98:** 45%	Page 164

Performance Measures	Targets	Actual Performance	Ref.
Expand to up to 60 the number of public health laboratories using PulseNet to build subtyping capacity and exchange foodborne illness data for early identification of and response to outbreaks (number of agents may increase as new pathogens are identified).	*E. coli* 0157:H7: **FY 03:** 45 labs **FY 02:** 45 labs **FY 01:** 45 labs **FY 00:** 40 labs **FY 99:** 29 labs *Salmonella* Typhimurium: **FY 03:** 45 labs **FY 02:** 45 labs **FY 01:** 45 labs **FY 00:** 40 labs **FY 99:** 7 labs *Listeria monocytogenes*: **FY 03:** 30 labs **FY 02:** 30labs **FY 01:** 30 labs **FY 00:** 20 labs **FY 99:** 7 labs *Shigella sonnei:* **FY 03:** 15 labs **FY 02:** 15 labs	*E. coli* 0157:H7: **FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved **FY 97:** 0 (baseline) *Salmonella* Typhimurium*:* **FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved **FY 97:** 0 (baseline) *Listeria monocytogenes*: **FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved **FY 97:** 0 (baseline) *Shigella sonnei*: **FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Achieved **FY 00:** 7 **FY 97:** 0	Page 164
Enhance FoodNet by increasing the number of pathogens and syndromes under active surveillance.	**FY 03:** 11 **FY 02:** 11 **FY 01:** 11 **FY 00:** 10 **FY 99:** 8	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Achieved **FY 00:** Achieved **FY 99:** 8 **FY 97:** 7	Page 164

II-A.1c Antimicrobial Resistance

Americans are increasingly at the mercy of microbes that are resistant to antimicrobial agents. In the United States and around the world, many human infections are becoming resistant to the antimicrobial drugs used to treat them. In some areas of the United States, more than 30% of infections with pneumococci, the most common cause of bacterial pneumonia and meningitis, are no longer susceptible to penicillin. Nearly 30% of the bacteria that most frequently cause infections acquired in hospital intensive-care units are resistant to the preferred antibiotic. Drug-resistant *Staphylococcus aureus*, formerly seen almost exclusively in hospitals, is now being reported in the community.

An interagency task force, co-chaired by CDC, FDA, and NIH, recently released *A Public Health Action Plan to Combat Antimicrobial Resistance*, which calls for 1) a national antimicrobial resistance surveillance plan; 2) promotion of appropriate use of antimicrobial drugs and prevention of transmission of infections; (3) research into antimicrobial resistance and mechanisms of transmission; and (4) new product development to prevent, diagnose, and treat infections.

Performance Summary

This year, the antibiotic use numbers for otitis media have been revised to reflect corrected baseline prescribing levels. Measuring the number of courses of antibiotics for ear infections for children under the age of 5 years is used as an indicator of two things: 1) physician prescribing practices for otitis media; and 2) overall incidence of otitis media. Based on the revised numbers, CDC has exceeded the overall target of reducing the number of courses of antibiotics to 57 antibiotic courses per 100 children and will drop this measure after this year. Reductions in antibiotic prescriptions for otitis media may reflect an increased awareness of the public health problem of antimicrobial resistance, the effectiveness of a national efforts including the CDC's education campaigns targeted to physicians and the public on judicious use of antibiotics, or a decrease in the incidence of otitis media.

Another measure that CDC achieved sooner than expected is the establishment of an antimalarial drug resistance surveillance system in Africa. Using an existing regional surveillance system as a basis for the new system facilitated its implementation and all countries were agreeable to implementing the new system.

Goal-by-Goal Presentation of Performance

Performance Goal: Reduce the spread of antimicrobial resistance.

Performance Measure	Target	Actual Performance	Ref.
Provide support to health departments and hospitals for surveillance, prevention, and control of antimicrobial resistance.	**FY 01:** 14 sites **FY 00:** 14 sites	**FY 01:** Achieved **FY 00:** Achieved **FY 99:** 0	Page 164
Diminish the rapid rise in the proportion of enterococci resistant to vancomycin (VRE rate) among pathogens associated with nosocomial infections in ICU patients.	Increase in resistant strains: **FY 03:** 26.0% **FY 02:** 26.0% **FY 01:** 27.2% **FY 00:** 25.2% **FY 99:** 40.0%	**FY 03:** 3/2004 **FY 02:** 3/2003 **FY 01:** 3/2002 **FY 00:** 25.0% **FY 99**: 40.9%; 5-year historical mean, 47%.	Page 164
Establish a surveillance system to collect data on antimalarial drug resistance in African countries.	**FY 01:** 54 countries **FY 00:** 25 countries	**FY 01:** 54 **FY 00:** Exceeded/54 **FY 99:** No system	Page 164
Reduce the number of courses of antibiotics for ear infections for children < 5 years to 57 courses per 100 children.	**FY 01:** 54 courses **FY 00:** 106 courses	**FY 01:** 9/2002 **FY 00:** 54 **FY 97:** 108	Page 164

Reduce the number of courses of antibiotics prescribed for a sole diagnosis of the common cold to 1,268 courses per 100,000 population.	**FY 03:** 2,017 courses **FY 02:** 2,144 courses **FY 01:** 2,281 courses **FY 00:** 2,408 courses	**FY 03:** 4/2004 **FY 02:** 4/2003 **FY 01:** 4/2002 **FY 00:** 1,496 **FY 97:** 2,535 (baseline)	Page 164

II-A.1d Medical Errors and Healthcare-associated Infections

Assuring the safety of patients receiving health care is a public health priority. The Institute of Medicine (IOM) has estimated that medical errors and preventable adverse events contribute to the deaths of 44,000 to 98,000 patients and add $29 billion to the cost of direct healthcare expenditures in the U.S. annually. The IOM has called for a 50% reduction in medical errors and adverse events within 5 years and that a national system for monitoring and reporting these events will be critical to achieving this goal. In addition, the IOM proposes that the wider adoption of new information technology can more effectively help healthcare facilities improve systems of care and ensure adherence to best practices for promoting patient safety. CDC's strategy for responding to the IOM recommendations will build on its core capacities in measuring and monitoring infections and other adverse health events. Significant enhancements in the measurement and intervention capacity to prevent medical errors and other adverse health events are needed both at the individual facility level and within local, state and national public health agencies. Our strategy is to build this capacity by updating, enhancing, expanding and extending existing patient safety capacities that are embedded in infection control programs. The core of this strategy is to convert the current measurement system, the National Nosocomial Infections Surveillance (NNIS) system, into the Healthcare Safety Network, a national program which will not only measure, but can provide interactive capacity to intervene through health communications campaigns and targeted intervention programs.

Performance Summary
Through health communications campaigns and other active prevention efforts, the target of reduction of central line-associated bloodstream infections has been exceeded. Further progress is anticipated based on additional plans for programs for educational and behavioral interventions.

Performance Goal: Protect Americans from death and serious harm caused by medical errors and preventable complications of healthcare

Performance Measures	Targets	Actual Performance	Ref.
Fund demonstration programs to develop and evaluate new strategies to measure and prevent healthcare associated infections	**FY 03:** 2 programs	**FY 03:** 9/2003 **FY 02:** 10/2002 **FY 01:** 0 (baseline)	Page 164
Reduce the rate of central line-associated bloodstream infections in adult ICU patients to 3.80, as measured through the NNIS system.	**FY 03:** 3.80 **FY 02:** 3.80 **FY 01:** 3.86 **FY 00:** 4.4 **FY 99:** 5.2	**FY 03:** 4/2004 **FY 02:** 4/2003 **FY 01:** 4/2002 **FY 00:** Exceeded/3.92 **FY 99:** Exceeded/4.4 **FY 98:** 5.3	Page 164

II-A.1f Public and Provider Education

CDC continues to serve as a source of scientific information on emerging infectious diseases. Working with partners in state and local health departments, academic institutions, and other organizations, CDC conducts research and demonstration projects to identify and understand emerging diseases and to develop and

evaluate prevention and control strategies. Disease prevention information and prevention guidelines are disseminated to health professionals and the public in a variety of formats, using the internet, CD-ROM, and various journals and publications.

Performance Summary

A successful example of how prevention guidelines have been used is demonstrated through the reduction in the incidence of perinatal group B streptococcal disease, the most common cause of severe infections in newborns. Providers and obstetric departments have quickly adopted recommended prevention strategies, resulting in a decline in disease that is more rapid than expected. CDC worked with the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics (AAP) to develop guidelines and information for practitioners on the best methods for preventing group B streptococcal disease. Surveys have shown that the prevention recommendations have been widely adopted. CDC's Active Bacterial Core Surveillance (ABCs) is tracking group B streptococcal disease in nine states in areas with a total population of 28.3 million persons. According to ABCs data, neonatal group B streptococcal infections have declined 70% since 1995, the year before the prevention recommendations were published. To improve prevention efforts, CDC staff are working with ABCs personnel to assess missed opportunities for prevention and will be meeting with representatives from ACOG and AAP to review the 1996 prevention guidelines. Preliminary data for FY 2000 show a rise in disease incidence (0.6 per 1,000 births up from 0.4), which CDC will be looking into in the coming year.

Another source of important information on emerging diseases comes from provider-based surveillance networks called the Emerging Infections Network (EIN). These networks, established with emergency departments, travel medicine clinics, infectious disease physicians, along the U.S./Mexico border, and in two international sites (the Amazon Basin and southern cone region), are able to detect and monitor emerging diseases in specialized settings. The EIN is intended to function primarily as an "early warning system" for CDC and other public health agencies by providing information about unusual cases encountered in the clinical practices of its members. It may also assist in outbreak investigations, provide information on physician practices, conduct investigations on the cause of certain illnesses, and disseminate knowledge about new microbial threats. Published work from the Infectious Diseases Society of America EIN is available on the internet at: http://www.idsociety.org/EIN/pub_rpts/list.cfm.

Emerging infections applied research emphasizes the development of tools for detecting, treating, and preventing infectious diseases; the identification of behavioral factors, environmental, and genetic factors that influence disease emergence and prevention; and evaluation of disease prevention and control strategies. The ultimate goal of emerging infections research projects is to integrate advances in laboratory diagnosis and epidemiology into routine public health practice.

The Emerging Infections Program (EIP) is a network of health departments that was established to conduct population-based surveillance and research. The EIP network is uniquely designed to address new infectious disease problems whenever they arise. EIP activities of the past few years have included investigations of meningococcal and streptococcal diseases and the EIPs have established surveillance for unexplained deaths and severe illnesses in previously health people. Information on the EIP network can be found on the CDC website at: http://www.cdc.gov/ncidod/osr/EIP.htm

The Universal Data Collection Program (UDC) enrolls persons with bleeding disorders in each of the nations' 134 federally funded hemophilia treatment centers (HTC). The purpose of UDC is two-fold: 1) to establish a sensitive blood safety monitoring system among persons with bleeding disorders; and 2) to collect a uniform set of clinical outcomes information that could be used to monitor the occurrence of and potential risk factors for infectious diseases and joint complications. Data from the UDC about the demographic characteristics of the participants, their blood and factor product use, and the occurrence and treatment of joint and infectious diseases is disseminated routinely to public health workers, healthcare providers, health educators, and

patients in the bleeding disorder community. By using patient and provider focus groups and working closely with the with the HTCs, CDC has been able to increase participation of all HTCs sooner than expected and also increase participation of persons enrolling in the study. Data, information, and newsletters from the UDC are published routinely on CDC's website at: http://www.cdc.gov/ncidod/dastlr/Hematology

Performance Goal: Apply scientific findings to prevent and control infectious diseases

Performance Measure	Target	Actual Performance	Ref.
Reduce the incidence of perinatal group B streptococcal infections to 0.3 per 1,000 live births.	**FY 01:** 0.3 **FY 00:** 0.4 **FY 99:** 0.9	**FY 01:** 06/2002 **FY 00:** 0.6 (preliminary) **FY 99:** Exceeded/0.4 **FY 95:** 1.3	Page 164
Establish 10 surveillance networks to monitor antimicrobial resistance, threats from transfusion of blood/blood products, and infectious diseases in travelers and immuno-suppressed and under served populations.	**FY 03:** 7 networks **FY 02:** 7 networks **FY 01:** 6 networks **FY 00:** 5 networks **FY 99:** 4 networks	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Achieved/6 **FY 00:** Exceeded/6 **FY 99:** Achieved/4 **FY 98:** 3 **FY 97:** 3 (baseline)	Page 164
Increase the number of extramural research awards for development/improvement of diagnostic tests for the study of antimicrobial resistance, STDs, malaria, Lyme disease, healthcare-associated infections, and blood safety.	**FY 01:** 45 awards **FY 00:** 22 awards **FY 99:** 22 awards	**FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved **FY 97:** 17	Page 164
Increase participation by 134 hemophilia treatment centers in the Universal Data Collection system.	**FY 02:** 100% participation **FY 01:** 100% participation **FY 00:** 90% participation **FY 99:** 40% participation	**FY 02:** 9/2003 **FY 01:** 100% **FY 00**: Exceeded/100% **FY 99:** Exceeded/70% **FY 98:** 0%	Page 164
Establish EIP sites to conduct active surveillance and applied research and to pilot/evaluate prevention and intervention measures.	**FY 01:** 9 sites **FY 00:** 9 sites **FY 99:** 8 sites	**FY 01:** Achieved **FY 00:** Achieved **FY 99:** 7	Page 164

Verification/Validation of Performance Measures: Successful accomplishment of these objectives will be verified in part using data submitted from funded states. In these instances, performance will be verified through on-site technical assistance and periodic visits and progress reviews. Other data are monitored by use of published and unpublished studies and recommendations. Additional systems used for verification include: 1) Hepatitis C Virus County Surveillance Project, 2) PulseNet and FoodNet, 3) U.S. Influenza Physicians

Surveillance Network, 4) Foodborne Outbreak Reporting System, and 5) Active Bacterial Core Surveillance (ABCs). The following systems referenced in Appendix B are also used for data verification and validation: 1) National Nosocomial Surveillance System (NNIS), 2) National Electronic Telecommunication System for Surveillance (NETSS), and 3) Public Health Laboratory Information System (PHLIS).

II A.2 Bioterrorism

Total Program Funding (Dollars in thousands)

FY 2003:	$1,636,740	(Estimate)
FY 2002:	$2,305,419	(Current Estimate)
	$2,123,500	ERF
	$ 181,919	non-ERF
FY 2001:	$ 180,949	(Actual)

Mandate

CDC is responsible for leading national efforts to detect, respond to, and prevent illnesses/injuries that result from the deliberate release of biological or chemical agents.

Problem

Bioterrorism preparedness continues to be a priority for the U.S. public health community. As scientific and technological advances increase the ease with which persons are able to obtain and weaponize biological and chemical agents, the potential for bioterrorism to threaten the health of the U.S. public also continues to increase. Although the probability of an attack remains low, the potentially catastrophic impact demonstrates the critical need for local, state, and federal public health capacity to rapidly detect, identify, and respond to a widespread infectious disease outbreak or chemical assault.

Preparing the nation to address the dangers of biological and chemical terrorism is a major challenge to public health and healthcare systems. The tools and expertise - surveillance, epidemiology, laboratory capacity, and coordinated control measures - that will be most valuable in the event of a biological attack will also aid public health in the investigation and control of other infectious disease outbreaks. However, these tools must be enhanced to ensure implementation of the rapid response necessary to minimize the impact of a bioterrorism agent, such as smallpox or plague. Early detection requires increased awareness among members of the medical community, who are in the best position to report suspicious illnesses and injuries, and improved linkages between the healthcare and public health communities. State and local health agencies require enhanced capacity to detect and investigate unusual events and unexplained illnesses, and diagnostic laboratories need to be equipped to rapidly identify biological and chemical agents that are rarely seen in the United States. State and local entities must also be trained to receive and distribute the contents of an established pharmaceutical stockpile. Fundamental to these efforts is comprehensive, integrated planning and training to ensure core competency in the primary elements of public health preparedness and a high degree of scientific expertise among all partners.

Strategies, Activities, and Resources

Advances have been made at the State and local level to strengthen national capacity for bioterrorism response. The CDC cooperative agreement program, Public Health Preparedness and Response for Bioterrorism, currently provides funding to 50 states, 4 localities and 1 U.S. territory to enhance some or all of the primary components of bioterrorism preparedness. CDC's Bioterrorism Preparedness and Response activities are a cross-cutting effort which integrates the activities of various offices at CDC, the Agency for

Toxic Substances and Disease Registry, and other federal entities such as the FBI, the Federal Emergency Management Agency, and the Office of Justice Programs. CDC provides leadership and coordination for this national capacity-building effort, with emphasis on interdependent focus areas:

1) **Deterrence/Prevention**
2) **Preparedness and Response Capacity**
3) **Surveillance and Epidemiology Capacity**
4) **Biologic and Chemical Laboratory Capacity**
5) **National Pharmaceutical Stockpile**
6) **Information and Communications Systems**
7) **Worker Safety**

By implementing and coordinating bioterrorism preparedness activities at the federal level, CDC will be better able to support State and local partners in their efforts to establish comprehensive bioterrorism preparedness and response programs. Activities being implemented at the CDC/ATSDR complement efforts being made around the country.

Links to DHHS Strategic Plan

Bioterrorism performance measures relate to DHHS Goal 5, Objective 5.1: *Improve the capacity of the public health system to identify and respond to the threats to the health of the nation's population*.

Partnerships

CDC's primary partners in developing national capacity for bioterrorism preparedness and response are state and local health departments. In addition, CDC works with a variety of federal agencies, academic institutions, and non-governmental organizations, such as Association of Public Health Laboratories (APHL), Food and Drug Administration (FDA), U.S. Army Medical Research Institute for Infectious Diseases (USAMRIID), National Association of County and City Health Officials (NACCHO), National Governors Association (NGA), National Emergency Management Association (NEMA), Infectious Disease Society of America (IDSA) and the Department of Veteran's Affairs (VA). Examples of some of CDC's collaborative activities include: 1) interagency agreement with the Department of Veterans Affairs for procurement of pharmaceuticals and medical supplies that comprise the National Pharmaceutical Stockpile; 2) cooperative agreement with APHL for coordination of the Laboratory Response Network; 3) contract with Acambis, Inc. for development of a new smallpox vaccine; and 4) cooperative agreements with the National Institute for Standards and Technology, the U.S. Army Soldiers Biological and Chemical Command, and the Occupational Safety and Health Administration for the development of respiratory protection standards.

Presentation of Performance

As a result of the achievement of the performance measures listed below, local, state, and federal preparedness for biological and chemical terrorism has been strengthened.

Performance Summary

In light of the possibility of additional terrorist attacks against Americans domestically, it is critical that CDC be able to help public health agencies and professionals in all states and territories, as well as many other major cities, achieve the same level of planning, preparedness, and training that exist in New York and Washington. With supplemental funds provided in FY 2002, CDC will begin to address existing deficiencies by creating a nationwide comprehensive, coordinated emergency public health preparedness planning and training program. The supplemental funding will accelerate training opportunities, CDC field staff assignments, and CDC led emergency response exercises would be made available to every state and territory, as well as the major cities deemed to be most at risk from a terrorist attack. CDC will continue its efforts to strengthen national preparedness for bioterrorism by further developing and maintaining activities such as improving preparedess and response capabilities, improving capacity for laboratory diagnosis of biologic and chemical agents, strengthening surveillance systems and epidemiologic tools for detection of bioterrorism, strengthening the

public health workforce capacity, establishing communications and training networks to improve bioterrorism readiness and response, maintaining the National Pharmaceutical Stockpile, and building partnerships to ensure coordinated, comprehensive plans for response to bioterrorism. All of these activities will continue to be conducted at federal, state, and local levels.

Protecting Health and Promoting Partnerships

II-A.2a Deterrence/Prevention

DHHS, through its Centers for Disease Control and Prevention (CDC) regulation (i.e. Select Agent Rule), as mandated by the Antiterrorism and Effective Death Penalty Act of 1996, has oversight of the national Laboratory Registration/Select Agent Transfer (LR/SAT) program. This rule requires the monitoring of approximately 40 biological agents and toxins ("select agents") that pose a severe threat to public health and safety. To administer the Select Agent Rule, CDC requires the registration of specific facilities that transfer or receive these agents. This is to ensure that they are equipped and capable of safely working with them. CDC may also perform inspections on these facilities during the 3 year registration period. The Select Agent Rule also requires CDC to maintains data on shipments of select agents between registered facilities and works with law enforcement agencies when violations of the regulation occur or are suspected of having occurred.

Performance Summary

To assist with national deterrence efforts, CDC continues to register and inspect laboratories that transfer or receive select agents. In FY 2001, 55 new registrations were issued under the LR/SAT program, resulting in a total of 249 laboratories currently registered and certified with CDC to transfer select agents. During FY 2001, CDC also implemented an inter-agency agreement with Edgewood Chemical Biological Center to assist with facility inspections efforts. This allowed CDC to continue facility registrations, while both agencies conducted facility inspections. Through this agreement a total of 23 inspections were performed under the Select Agent Rule, for a cumulative total of 60 laboratories inspected under the program. These figures reflect the cancellation of 5 facility inspections due to the national terrorism events of September 11, 2001. In FY 01, CDC documented a total of 893 transfers of select agents between government agencies, universities, research institutions, and commercial entities. Following the events of September 11th, CDC provided immediate assistance to several federal and state law enforcement agencies about select agent data to assist with criminal investigative efforts. CDC also provided consultation to 5 state public health laboratories and 75 non-state pubic health facilities (federal government, industry, academia, and international) on facility design, construction and containment issues.

During FY 2002, CDC will initiate efforts to incorporate both security and technological upgrades to the select agent data base. This will expand our capabilities of providing assistance to law enforcement authorities. CDC will also initiate efforts expand programmatic infrastructure to increase timeliness of facility registrations and inspections. Additionally, CDC in conjunction with the Association of Public Health Laboratories will provide train-the-trainer workshops to State public health laboratory safety instructors on the subjects of safe laboratory practices and new select agent legislation.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Continue efforts to protect the safety and security of laboratorians regarding the**

	handling and processing of biological agents.		
Performance Measure	**Target**	Actual Performance	Ref.
Inspect public health laboratories in accordance with the Select Agent Rule.	**FY 03:** 120 laboratories **FY 02:** 90 laboratories **FY 01:** 65 laboratories **FY 00:** 50 laboratories	**FY 03:** **FY 02** **FY 01:** Achieved/65 **FY 00:** 36 **FY 99:** 14	Page 218

II-A.2b Preparedness and Response Capacity

The prospect of terrorists unleashing biological or chemical weapons is a terrifying one, in part because of a fear of the unknown. It is expected that an act of biological or chemical terrorism will occur with no warning. In order to protect the health of Americans, CDC assists state and local health departments as they prepare to respond to deliberate acts of terrorism. A well planned, rapid and effective response will be critical in minimizing morbidity and mortality associated with such a bioterrorism event. Across the country, state health department officials are reconsidering the capabilities of their departments to respond to a biological or chemical terrorism incident. Traditionally, the responsibilities of the state health departments have been disease surveillance and management. Health departments now are defining their roles to respond effectively to an intentional release of biological organisms or hazardous chemicals into an unsuspecting population.

Performance Summary
CDC initiated a cooperative agreement program for state and major local health departments to help improve their preparedness and response capabilities for bioterrorism. State and local grantees are completing comprehensive assessments of their capacity for bioterrorism preparedness and response. Analysis of these assessments will allow grantees to prioritize their resources and efforts. All the states and some territories will have initiated some preparedness and response activities in FY 2002. By the end of FY 2002 at least 48 of the 55 states and territories receiving funding will have completed their vulnerability assessments and 42 will have completed their draft public health emergency response plans. In addition, state, territorial, and local health departments will have begun to build critical communication links with other assets in the health-care and emergency response community, e.g., hospitals, emergency departments, acute-care centers, police, fire, EMS, local emergency management agencies and other first response organizations, to assess local capacities and coordinate responses. Finally, a community emergency response demonstration program will be established to develop methodology to assure integrated state and local public health emergency response capabilities.

Three exemplar centers for public health preparedness have been established and are implementing model information technology projects that will provide assistance for states and localities developing public health information systems. CDC has also collaborated with the Department of Justice in development of an assessment of public health capacity for bioterrorism.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Enhance the capacity of CDC and state and local health departments to prepare for and respond to a biological or chemical terrorism event.**

Performance Measure	Target	Actual Performance	Ref.
Establish state and local bioterrorism preparedness and response planning activities.	**FY 03**: 55 states or localities **FY 02:** 55 states or localities **FY 01:** 11 states or localities **FY 00:** 11 states or localities **FY 99**: 5 states or localities	**FY 03:** **FY 02:** **FY 01**: Achieved/11 **FY 00:** Achieved **FY 99:** Exceeded/11	Page 218

I-A.2c Surveillance and Epidemiology Capacity

Because a covert biological or chemical attack will most likely be detected locally, disease tracking systems at state and local health agencies must be ready to detect unusual patterns of disease and injury, and epidemiologists at these agencies must have expertise and resources for responding to reports of rare, unusual, or unexplained illnesses. CDC is working to integrate surveillance for illness resulting from biological and chemical terrorism into the U.S. disease surveillance systems. CDC is also developing new methods for rapidly detecting, evaluating, and reporting suspicious health events that might indicate covert terrorist acts. CDC has provided funding for bioterrorism surveillance and epidemiology coordination to all state health departments and selected major metropolitan cities and territories.

Performance Summary

Funding for this component includes awards for building core capacity, as well as special projects. In FY 2000 all 50 states, 4 localities, and 1 U.S. territory were funded for the core capacity component of the cooperative agreement. Additionally, eight projects were identified to develop special surveillance and epidemiology activities. States and localities have used their cooperative agreement funds to enhance their capacity to detect, investigate and mitigate health threats posed by bioterrorism agents. In addition, expansion of *Epi-X*, the *Epidemic Information Exchange*, an Internet-based, secure communication system promotes easier, more accurate, and real-time reporting of suspect outbreaks or other emerging health threats, including those related to bioterrorism. Increased funding for upgrading state and local capacity allowed for funding 14 additional sites and expansion of *Epi-X* to a larger number of public health professionals. *Epi-X* is also supporting the development of secure communications systems at three jurisdictions (Florida, Kansas, and Chicago).
A variety of technical assistance has been completed, including: provision of epidemiologic assistance in the investigation of an outbreak of West Nile virus in New York, enhanced surveillance support for the World Trade Organization Ministerial Conference in Seattle, Democratic and Republican National Conventions, and 2001 Super Bowl.

Goal-by-Goal Presentation of Performance

Performance Goal:	Enhance the capacity of CDC and state/local health departments to rapidly detect and investigate potential biological events.

Performance Measure	Target	Actual Performance	Ref.
Number of state and major city health departments and other sentinel sites with expanded epidemiology and surveillance capacity to detect, investigate and mitigate health threats by bioterrorism.	**FY 03:** 55 sites **FY 02:** 55 sites **FY 01:** 55 sites **FY 00:** 40 sites **FY 99:** 40 sites	**FY 03:** **FY 02:** **FY 01:** Achieved/55 **FY 00:** Exceeded/55 **FY 99:** 34 **FY 98:** 0	Page 218

II-A.2d Laboratory Capacity

Laboratory capacity for biologic agents: Because most bioterrorist agents have little public health importance on a day-to-day basis, the nation's ability to rapidly diagnose these infections is limited, both at the national level and in state and local public health laboratories. CDC is responsible for providing the nation with an accurate and timely determination of any etiologic agent causing a public health threat, including both naturally occurring diseases and bioengineered organisms used in a biological terrorism attack. CDC also ensures that frontline state and large city public health laboratories are prepared to rapidly and accurately diagnose agents causing public health problems. To meet these needs, CDC, in collaboration with APHL established the Laboratory Response Network. This multilevel network of public health laboratories provides essential diagnostic capabilities in state and large metropolitan areas and centralized, state-of-the-art national reference capacity at CDC. CDC's Rapid Response and Advanced Technology Laboratory can provide rapid identification of biological agents that are rarely seen in the United States. Other disease specific laboratories at CDC provide additional research and surge capacity for diagnostic testing in response to any incident. CDC and partners have identified the biological agents most likely to be involved in a terrorist attack and are developing rapid assays to assist in detecting these agents at the state and local levels.

Laboratory capacity for chemical agents: Chemical attacks by terrorists, such as the release of the deadly gas sarin in a Tokyo subway, underscore the need to quickly and reliably determine the identity of the chemical agent, find out who has been exposed, and determine the extent of exposure. Public health laboratories currently do not have the infrastructure to test human samples for chemical agents. In the event of a chemical terrorist incident, not only would there be a need to analyze samples from persons who were actually exposed to an agent, but there also could be extensive demand for services for persons who think they were exposed. To address these deficiencies, CDC has developed a rapid toxic screen that can identify up to 150 different agents in a blood sample.

Performance Summary

Laboratory capacity for biological agents: Laboratorians from all 50 states have been trained in the handling and testing of critical biologic agents. In addition many public health laboratories across the country have been renovated and upgraded to allow adequate safety for improved diagnosis of potential bioterrorism agents. Currently, 55 laboratories in 53 states and localities receive funds to enhance their capacity for identification of biologic agents. All of these laboratories are also members of the Laboratory Response Network (LRN). The LRN is a collaborative partnership to establish front line lab-based biodetection for rapid agent identification and communications needed to support sentinel surveillance, epidemic response, and population based public health decision making. New rapid assays are being developed for real-time PCR and antigen detection for potential bioterrorism agents.

Laboratory capacity for chemical agents*:* CDC has funded 5 laboratories to address chemical agents and has worked with grantees to accomplish the purchase, installation, and training associated with new state-of-the-art laboratory equipment required to carry out this highly measurement of nerve agents in human samples and successfully completed a round of proficiency testing to demonstrate their understanding of the method. Additionally, states are also receiving training on measurement of sulphur mustards in human samples.

CDC capacity: CDC has organized teams of laboratory professionals whose sole responsibility is to provide the laboratory services needed to rapidly and accurately triage and analyze specimens that are suspected to be potential bioterrorism threat agents. CDC's Rapid Response and Advanced Technology Laboratory (RRAT) for bioterrorism was established to receive suspect clinical and environmental samples for rapid identification. Since the World Trade Center attack on September 11, 2001 until the report of the first confirmed case of anthrax on October 4, 2001, an estimated 7,500 laboratory samples were processed at CDC's RRAT and specialty laboratories. In addition, agent-specific laboratories at CDC have been established or strengthened to perform confirmatory testing and strain characterization of critical biologic agents and provide surge capacity during an event.

CDC has developed testing methods for nerve agents, nitrogen mustards, sulfur mustards, lewisite, hydrogen cyanide, cyanogen chloride, BX, tricothecene mycotoxins, ricin, heavy metals, selected toxic industrial chemicals, and incapacitating agents.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Enhance the laboratory capacity of CDC and state and local health departments to rapidly and accurately identify biological and chemical agents that can pose a terrorist threat.**

Performance Measure	Target	Actual Performance	Ref.
Increase the number of laboratories in the Laboratory Response Network.	**FY 03**: 140 laboratories **FY 02:** 120 laboratories **FY 01:** 100 laboratories **FY 00:** 43 laboratories	**FY 03:** **FY 02:** **FY 01:** Achieved/100 **FY 00:** Achieved **FY 99:** 43	Page 218
Increase the capacity of state and major city laboratories to provide or gain access to rapid testing for potential bioterrorism agents.	**FY 03:** 60 laboratories **FY 02:** 54 laboratories **FY 01:** 54 laboratories **FY 00:** 40 laboratories **FY 99:** 2 laboratories	**FY 03:** **FY 02:** **FY 01:** Achieved/54 **FY 00:** Exceeded/43 **FY 99:** Exceeded/43 **FY 98:** 0	Page 218
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Increase the number of rapid diagnostic tests to be developed for potential bioterrorism agents.	**FY 03:** 15 tests **FY 02:** 10 tests **FY 01:** 6 tests	**FY 03:** **FY 02:** **FY 01**: Exceeded/7	Page 218
Number of laboratories qualified to provide surge capacity for analysis of chemical agents.	**FY 03:** 5 laboratories **FY 02:** 5 laboratories **FY 01:** 5 laboratories **FY 00:** 4 laboratories	**FY 03:** **FY 02:** **FY 01:** Achieved/5 **FY 00:** Exceeded/5 **FY 99:** 4	Page 218
Increase the number of toxic substances likely to be used in chemical terrorism that can be rapidly measured in blood and urine.	**FY 03:** 150 substances **FY 02:** 150 substances **FY 01:** 120 substances **FY 00:** 100 substances **FY 99:** 50 substances	**FY 03:** **FY 02:** **FY 01:** Achieved/120 **FY 00:** 90 **FY 99:** Achieved/50 **FY 98:** 0	Page 218

II-A-2.e National Pharmaceutical Stockpile

Congress gave CDC the mission to manage and oversee the National Pharmaceutical Stockpile (NPS) in January 1999. CDC was expected by January 1, 2000 to be capable of meeting an expected terrorist threat and met this mandate on time, declaring that it had drugs and medical materiel ready to deploy and an air cargo service ready to deliver it. One of two NPS Program components is the "12-hour Push Package." A 12-hour Push Package can reach a site within 12 hours of a federal order to deploy. There are twelve 12-hour Push Packages located throughout the country for security reasons and in case of multiple attacks. In a terrorist event, CDC staff will meet the arriving NPS, transfer custody to state officials, and offer technical assistance on NPS organization, repackaging, and distribution to medication dispensing sites. The second NPS Program component is "vendor-managed inventory" (VMI), or a stockpile of drugs and materiel made and stored for CDC by firms that produce or distribute them. VMI is meant to help treat many casualties over time. During FY 2000 the 12-hour Push Package became fully operational and ready for deployment. During FY

2001 VMI contracts were awarded and the material they represent came on-line ready for deployment. Maintaining and upgrading the materials and supplies (purchase of additional antidotes, antibiotics, medical supplies, equipment, etc) in both the12-hour Push Package and VMI will continue to be a priority activity of the NPS Program.

In FY 2002, the NPS program will achieve and maintain a capacity to provide post-exposure prophylaxis to 12 million persons for possible exposure to anthrax, and an equal or greater number of persons who may be exposed to plague or tularemia. Each of the 50 states, 6 U.S. Territories, and the District of Columbia will continue to have the opportunity to put a process in place to effectively manage and use the NPS should a deployment occur in a terrorist or other catastrophic event. In FY 2003 the NPS program will conduct preparedness planning, training, and exercises; sustain anthrax prophylaxis capability; sustain non-anthrax vendor managed inventory with 12 hour push-package capability; and cover routine operational expenses such as personnel, storage, and transport.

Performance Summary

The National Pharmaceutical Stockpile (NPS) was deployed for the first time in response to the September 11, 2001 terrorist attacks in New York City and Washington, DC. CDC mobilized a NPS "push package" to NYC within 7 hours of an approved deployment as well as a push package to Washington, DC in the days following the attack on the Pentagon. The initial push package consisted of over 50 pallets of medical materiel. In addition, the NPS program, already on 24-hour, fully-staffed alert from the September 11th event, arranged CDC's immediate response to the first case of anthrax in Florida. At the request of the state of Florida and local officials, CDC arranged through the NPS program for the transportation of CDC epidemiologists and its Technical Advisory Response Unit (TARU) to Florida and North Carolina to investigate the anthrax exposures. In October and November, CDC used the NPS program to deliver almost 3.75 million tablets of three different antibiotics (amoxicillin, ciprofloxacin, and doxycycline) for post-exposure prophylaxis of employees in affected buildings, postal workers, mail handlers, and postal patrons.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Procure, maintain and upgrade the materials and supplies in the National Pharmaceutical Stockpile as necessary to augment federal, state and local response to a bioterrorist event**

Performance Measure	Target	Actual Performance

Maintain a national pharmaceutical stockpile for deployment in response to terrorist use of biological or chemical agents against the U.S. civilian population.	**FY 03:** Maintain a stockpile as per the FY 03 DHHS Bioterrorism Strategic Plan **FY 02:** Maintain a stockpile, as per the FY02 DHHS Bioterrorism Strategic Plan. **FY 01:** Maintain a national pharmaceutical stockpile for deployment to respond to terrorist use of biological or chemical agents, including the ability to medically treat civilians for biological and chemical agents as delineated in the Draft HHS Bioterrorism Strategic Plan	**FY 03:** **FY 02:** **FY 01:** The stockpile continued to develop throughout the year. Several 12-hour Push Packages became the initial response; Vendor Managed Inventory became the follow-on response. Together, these two stockpile response components built the capacity to fully treat or give full prophylaxis for selected threat agents to citizens to an extent beyond the FY01 targets listed in the Draft HHS Bioterrorism Strategic Plan.	Page 218
	FY 00: Maintain a national pharmaceutical stockpile for deployment to respond to terrorist use of biological or chemical agents, including the ability to medically treat civilians for biological and chemical agents as delineated in the Draft HHS Bioterrorism Strategic Plan	**FY 00:** Exceeded/12-hour Push Package and VMI components provided capacity beyond targets.	
	FY 99: Create a stockpile, including the ability to protect 1million-4 million civilians from anthrax attacks.	**FY 99:** Achieved	

Providing Credible Information to Enhance Health Decisions

II-A.2.f Information and Communication Systems

Most health departments lack the modern, secure electronic systems needed to detect disease outbreaks rapidly, respond to outbreaks, and communicate with CDC, other government agencies, and the public during public health emergencies. Through the Health Alert Network, CDC is aiding state and local health departments to raise their capacity and preparedness to deal with public health threats – including not only bioterrorism but also emerging infectious diseases, chronic diseases, and environmental hazards. This means that the nation reaps the benefits of these investments every day, not just in the event of a chemical attack. Key elements are modern information and communication systems, a fully trained workforce, and robust organizational capacity to address the full spectrum of public health issues. The network allows high-speed Internet communications, including early-warning broadcast alerts, among CDC and state and local

health departments.

The need for rapid communication, research, and response has become an essential element of public health. Local outbreaks can develop rapidly into pandemics, previously unidentified diseases emerge, contaminated food or defective products are disseminated, and the threat of bioterrorism is increasing. The availability of a secure Web-based communications network for public health investigation and response would simplify and expedite the exchange of routine and emergency public health information between CDC and state and local health departments. In the absence of such a network, reports and discussions are extremely difficult and timely investigative and prevention efforts are delayed.

To help public health officials share information on outbreaks, CDC officially launched the Epidemic Information Exchange (*Epi-X*). *Epi-X* is the secure, web-based communications system that simplifies and enables "real time" sharing of routine and emergency public health information about disease outbreaks and other acute health events including those related to bioterrorism among pubic health officials at the local, state, and federal levels. *Epi-X* was designed with input from a range of public health officials and organizations. Examples of *Epi-X* reports include infectious disease outbreaks; newly recognized environmental, product, occupational and recreational hazards; recommendations regarding availability and use of vaccines; and bioterrorism threats and acts.

Performance Summary

Within four hours of the attack on the World Trade Center, the Health Alert Network was activated and began transmitting emergency messages to the top 250 public health officials in 50 States, 7 large cities and Guam. In the months that followed, over 67 health alerts, advisories and updates were transmitted reaching an estimated 1 million frontline public and private physicians, nurses, laboratorians, and State and local health officers. Using in-state systems built with CDC funds, States were able to augment and tailor the HAN alerts to their unique situations. CDC and its HAN grantees also established and maintained Internet websites to provide information to the public. Since September 11th there have been 73 million hits, 5 million visits, and 12 million requests for information on the CDC bioterrorism website.

A second national conference, focused on Health Alert efforts (such as internet connectivity, broadcast alert, and distance learning), was held in August 2001 in Columbus, Ohio. A variety of communication and program management tools have been developed including LIST SERVs, E-mail group codes, websites, and an ACCESS database. Site visits are continuing at all of the HAN project areas and technical assistance has been provided. In FY 2001 additional HAN funding became available which increased the number of funded states/areas to 55.

To address the public health problem of being able to share information delays in reporting outbreaks, CDC, with the input of over 300 health officials, developed the *Epidemic Information Exchange* (*Epi-X*). *EPI-X* was launched in December 2000. As of September 30, 2001, 650 public health officials, including all state epidemiologists or their designees, local health officials, and members of the military, participate on *Epi-X*. *Epi-X*, which has medical editorial staff available 24 hours/day, 7 days/week, is moderated for quality by CDC staff. Responding to ideas from public health officials, Epi-X provides secure communications for multi-state outbreak response teams, and plans to develop links between disease surveillance programs and local health alert systems and improved software to automate the recognition of similar disease outbreaks across jurisdictions.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Enhance the capacity of CDC and state and local health departments to rapidly and accurately communicate critical information about biological and chemical terrorism events.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**

Number of states and major metropolitan areas with health-sector-dedicated communications systems to facilitate/expedite detection and response to terrorist events.	**FY 03:** 55 states/areas **FY 02:** 55 states/areas **FY 01:** 54states/areas **FY 00:** 40 states/areas	**FY 03:** **FY 02:** **FY 01:** Achieved/55 **FY 00:** 40 **FY 99:** 36 **FY 98:** 0	Page 218
Number of communities with advanced information technology and training for preparedness and response to chemical and biological terrorism.	**FY 03:** 5 communities **FY 02:** 5 communities **FY 01:** 3 communities **FY 00:** 3 communities	**FY 03:** **FY 02:** **FY 01**: Achieved/3 **FY 00:** Achieved **FY 99**: 3	Page 218
Increase the number of state and local public health professionals who use *Epi-X* to share intelligence regarding outbreaks and other emerging health events including those suggestive of bioterrorism.	**FY 03:** 750 **FY 02:** 750 **FY 01:** 230	**FY 03:** **FY 02:** **FY 01:** Exceeded/650	Page 218
Number of reports of disease outbreaks and other emerging health events posted on Epi-X	**FY 03:** 400 **FY 02:** 300	**FY 03:** **FY 01:** Achieved/197 **FY 00:** 0 (baseline)	Page 218
Increase the number of states, major metropolitan areas with access to the national secure public health communications network, *Epi-X*.	**FY 03:** 55	**FY 03:** **FY 00:** 0 (baseline)	Page 218

II-A.2.g Worker Safety

Since local responders will be the first on scene of a biological or chemical terrorism event, the quality of protective equipment and clothing used against biological and chemical weapons is critical to the response effort. Mechanisms for ensuring that respirators and protective clothing adequately protect against chemical and biological terrorism must be evaluated.

Performance Summary
The National Institute for Occupational Safety and Health (NIOSH) is developing guidelines and certification standards for various classes of respiratory protective equipment. Laboratory and staff capabilities will be acquired to process certification applications. User guidelines specifying cautions and limitations of use will be developed and disseminated. A National Personal Protective Technologies Laboratory to study and develop improved personal protective equipment for first responders and other workers has been established.

In December 2001, CDC developed and implemented standards for self-contained breathing apparatus (SCBA). CDC's NIOSH will accept applications from respirator manufacturers beginning in January 2002. It is anticipated that in early 2002, SCBA will be approved by NIOSH that will provide first responders with appropriate personal protection for response during chemical, biological, radiological and nuclear (CBRN) acts of terrorism.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Continue efforts to protect the health and safety of first responders during biological and chemical terrorism events.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
Develop certification standards and user guidelines for respirators to protect workers and emergency responders.	**FY 03:** Establish certification standards for air-purifying respirators against weapons of terrorism. Process applications submitted for certification. **FY 02:** Establish certification standards for self-contained breathing apparatus for protection against weapons of terrorism. Process applications for certification. Produce user guides for proper use of self-contained breathing apparatus against weapons of terrorism. **FY 01:** Issue a report reviewing industrial chemicals that are potential weapons of terrorism. Issue a report reviewing national and international standards applicable to the performance of respiratory protection.	**FY 03:** **FY 02:** SCBA approved 12/2001. Processing of applications begin 01/2002. **FY 01:** Vulnerability Assessment Report and Terrorism Hazards Report - 03/2002.	Page 218

Verification/Validation of Performance Measures: Performance will be verified in part using data submitted from funded states and via on-site technical assistance and periodic visits and progress reviews. Performance related to measuring toxic substances will be validated through the Clinical Laboratory Improvement Act of 1988 (CLIA) (See Appendix B for details).

II-A.3 Immunization

Total Program Funding (Dollars in thousands)

FY 2003:	$631,089	(Estimated)
FY 2002:	$630,927	(Current Estimate)
FY 2001:	$555,689	(Actual)

Mandate

CDC protects the health of American children and adults from disability and death associated with vaccine-preventable diseases by developing and implementing immunization programs and monitoring vaccine use.

Health Burden

Immunizations are among the greatest public health achievements of the 20th century. Vaccines are responsible for the control of many infectious diseases, including diphtheria, measles, mumps, and pertussis, that were once common in this country. Vaccines are now available to protect children and adults against life-threatening or debilitating diseases. These interventions have reduced cases of all vaccine-preventable diseases by more than 97% from peak levels before vaccines were available, saving lives and treatment and hospitalization costs. Appropriate administration of safe and effective vaccines remains one of the most successful and cost-effective public health tools for preventing disease, disability, and death and reducing economic costs resulting from vaccine-preventable diseases.

Vaccines are Highly Cost-Effective
For every $1 spent:
DTaP saves $27.00
MMR saves $13.50
Varicella saves $5.40

Despite great success in lowering disease levels and raising immunization coverage rates, however, much remains to be done to protect children and adults worldwide. Approximately 1 million two-year-olds in the United States have not received one or more of the recommended vaccines. New vaccines, although greatly beneficial to public health, complicate an already complex immunization schedule and make it increasingly difficult to ensure complete vaccination. Immunizations are also subject to a higher standard of safety than other medical interventions because they are given to healthy people. Like all medical interventions, no vaccine is 100% safe or effective. Vaccine safety activities are needed to maintain public confidence in immunizations, preserve high coverage levels, prevent a resurgence of vaccine-preventable diseases, and detect adverse events quickly.

One of the greatest challenges is extending the success in childhood immunization to adults. The burden of vaccine-preventable diseases in adults in the United States is staggering. Over 30,000 U.S. adults die annually of influenza, pneumococcal infections, and hepatitis B; the cost to society exceeds $10 billion each year. Pneumonia and influenza were the 5th leading cause of death among African Americans aged 65 years or more, based on 1998 national mortality data, and the 7th leading cause of death in all persons aged 65 and older.

Barriers also remain in achieving polio eradication, and support is needed to expand measles control efforts. Polio virus causes acute paralysis that can lead to permanent physical disability and even death. Before polio vaccine was available, 13,000 to 20,000 cases of paralytic polio were reported each year in the United States. These annual epidemics of polio often left thousands of victims – mostly children – in braces, crutches, wheelchairs, and iron lungs. Development of polio vaccines and implementation of polio immunization programs have eliminated paralytic polio caused by wild polio viruses in the U.S. and the entire Western hemisphere. Before measles immunization were available, nearly everyone in the U.S. got measles, resulting in approximately 3 - 4 million measles cases each year. An average of 450 measles-associated deaths were reported each year between 1953 and 1963. In industrialized countries, up to 20% of persons with measles are hospitalized, and 7% to 9% suffer from complications such as pneumonia, diarrhea, or ear infections. Although less common, some persons with measles develop encephalitis, resulting in brain damage. It is estimated that as many as one of every 1,000 persons with

measles will die.

Measles is one of the most infectious diseases in the world and is frequently imported into the U.S. In 1998, most cases were associated with international visitors or U.S. residents who were exposed to the measles virus while traveling abroad. More than 90% of people who are not immune will get measles if they are exposed to the virus. According to the World Health Organization (WHO), nearly 900,000 deaths occurred among persons in developing countries in 1998. In populations that are not immune to measles, measles spreads rapidly. If vaccinations were stopped, 2.7 million measles deaths worldwide could be expected. Although the United States has greatly reduced its burden of disease through immunizations, our children are at risk due to the occurrence of these diseases in other countries.

Strategies, Activities, and Resources

CDC provides national leadership in the ongoing effort to protect America's children and adults from vaccine-preventable diseases and to ensure the safety of vaccines. Beginning in 1962, when the first national effort to improve the immunization status of children was proposed, CDC has counted immunization among its most vital programs, recognizing it as a core public health activity and perhaps the best example of effective primary prevention. CDC's National Immunization Program (NIP) focuses on several major programmatic areas, including childhood immunization, adult immunization, and global polio eradication.

Although CDC is assisted by many partners, state and local health agencies play a primary role in helping NIP carry out its mission in the United States. CDC ensures quality immunization services by: 1) awarding grants to states and large local health departments; 2) providing technical, epidemiologic, and scientific assistance to states and localities; 3) monitoring immunization coverage; 4) ensuring an adequate supply of vaccine by overseeing purchases made through CDC contracts and managing the Vaccines for Children (VFC) program; 5) helping states develop immunization registries; and 6) conducting research to develop new and improved delivery strategies. CDC increases community participation, education, and partnerships through public information campaigns, education and training for providers, assistance to communities on building coalitions, and partnerships with community-based organizations, minority organizations, volunteer groups, vaccine companies, professional organizations, and federal agencies.

Global disease eradication and elimination programs are also collaborative efforts. CDC works with WHO, Rotary International, USAID, the Task Force for Child Survival and Development, UNICEF, other CDC components, and international agencies to bolster polio eradication efforts by providing scientific assistance and financial support. This collaboration is unique among public health initiatives for the unprecedented level of partnerships.

The United States remains at risk of importation of measles from countries that have not yet eliminated the disease. Therefore, CDC contributed more than $4 million in FY 2000 to support the Pan American Health Organization (PAHO) initiative to eliminate measles from the Western Hemisphere. CDC provides epidemiologic and laboratory assistance for disease tracking, vaccine for outbreak control, and other supplementary immunization activities, and short- and long-term assignments of CDC scientific staff to priority countries.

CDC also plays a critical role in developing immunization policy by providing technical and scientific support to policy-making advisory groups. These groups include the Advisory Committee on Immunization Practices (ACIP), the Committee on Infectious Diseases of the American Academy of Pediatrics and the American Academy of Family Physicians, the National Vaccine Advisory Committee (NVAC) of the National Vaccine Program Office, and the Advisory Commission on Childhood Vaccine of the National Vaccine Injury Compensation Program, among others.

Although coverage for preschool immunization is high in almost all states, pockets of need – areas with substantial numbers of under-immunized children – continue to exist. These areas are of great concern because of the potential for outbreaks of vaccine-preventable diseases. CDC uses several strategies to improve immunization coverage in pockets of need. AFIX (Assessment, Feedback, Incentives, and Exchange) is a tool for assessing immunization coverage and providing feedback to providers – methods that have resulted in higher coverage rates. Linkages with the Women, Infants, and Children (WIC) program

have increased coverage among low-income preschool children. Reminder and recall systems (manually generated mail or telephone appointment reminders) consistently improve patient compliance for scheduled health visits.

As a result of all of these activities, cases of vaccine-preventable diseases are at or near all-time lows, and childhood immunization rates are at an all-time high. Infrastructure funds are essential to sustain the systems that have resulted in the highest immunization levels ever recorded. These funds are used to implement proven strategies to raise immunization coverage, conduct disease surveillance, implement outbreak control measures, ensure access to and appropriate administration of vaccines, perform outreach activities, develop immunization registry systems, educate providers and parents about the need for timely immunization, and assess immunization coverage levels and pockets of under-immunized children, among many other activities. Infrastructure investments must be maintained to ensure that proven systems and high immunization levels are not jeopardized.

Links to DHHS Strategic Plan

Performance measures relate to DHHS Goal 1: *Reduce the major threats to health and productivity of all Americans*, specifically Objective 1.7: *Reduce the incidence and impact of infectious diseases.*

Partnerships

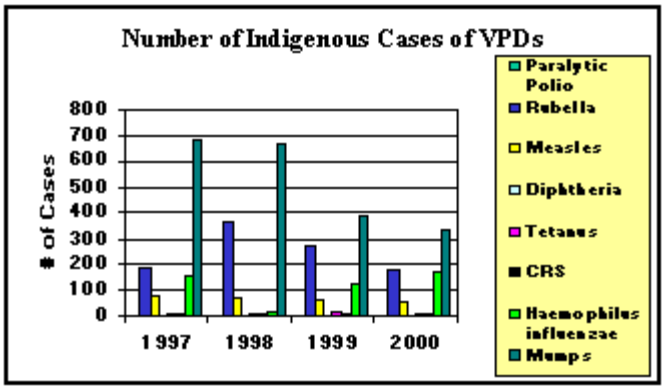
CDC collaborates with HRSA, CMS, FDA, NIH, and others in achieving immunization objectives.

Presentation of Performance

CDC uses two main sources to measure the attainment of U.S. performance goals: 1) the National Notifiable Diseases Surveillance System, and (2) the National Immunization Survey. The National Notifiable Diseases Surveillance System (NNDSS) is the data source for tracking cases of vaccine-preventable disease. Provisional data from this system are routinely published in the *MMWR;* final data are published in the Annual Summary of Notifiable Diseases. CDC collects vaccination coverage data at the national, state, and local levels through the National Immunization Survey (NIS). With these data, CDC can evaluate the impact of national, state, and local policies and programs and use the results to monitor progress toward the goals of the performance plan. The surveys measure vaccine-specific and series-complete coverage and include detailed analyses for race/ethnicity and poverty groups. Such surveys are necessary to monitor the maintenance or improvement of immunization coverage levels in the target populations of 78 state and major urban areas.

Protect Health and Promote Partnerships

II-A.3a Cases of Vaccine-Preventable Diseases



Performance Summary

By all counts, efforts to protect children in the U.S. from vaccine-preventable disease have been a success. Cases of most vaccine-preventable diseases of childhood are down more than 97% from peak levels before vaccines were available. No cases of paralytic polio due to indigenous transmission of wild polio virus have been reported in the U.S. since 1979. Coverage levels for preschool children are at an all-time high for all racial and ethnic groups.

Only 86 reported cases of indigenous measles occurred in 2000. In March 2000, a panel of experts reviewed extensive information on measles epidemiology, imported cases, population immunity, and

the quality of measles surveillance, and concluded that measles is no longer an epidemic in the United States. The elimination of endemic measles from the United States is an historic public health achievement and the fulfillment of a goal expressed by public health experts even before the first vaccine was licensed in 1963. Keeping endemic measles out of the United States will require sustained efforts to maintain high vaccine coverage levels.

Conjugate vaccines for the prevention of *Haemophilus influenzae* type b (Hib) are highly effective and have led to near elimination of invasive Hib disease, the main cause of bacterial meningitis. However, in 2000, the number of possible cases reported did increase from 120 cases in 1999 to 167 cases. In accordance with the Healthy People 2010 goal, this measure was clarified to include both cases with type b and unknown serotype. As a portion of these cases were not serotyped, the number of unknown serotypes that are actually type b cannot be confirmed. Therefore, it is possible that, although the total number of cases increased in 2000, the number of type b cases (both serotyped and not) – for which the vaccine is effective – may have remained the same or decreased. Beginning with the 2000 data, CDC will be reporting both the number of serotype b + unknown serotype cases as well as the number of serotype b cases only to alleviate some of this ambiguity.

The number of varicella cases is being submitted as a new measure for 2003. Performance targets for newly recommended vaccines begin five years after the ACIP recommendation. Therefore, reporting of the varicella measure begins in 2001, although coverage was being monitored earlier.

The reduction in the number of indigenous cases of mumps has exceeded our goal of 500 cases. In 1999, there were only 387 cases of mumps; in 2000, the incidence was further reduced to 338 cases. This reduction is linked to the effectiveness of the Measles-Mumps-Rubella vaccine and its coverage rate.

Although substantial progress has been made to reduce and/or eliminate the incidence of these vaccine-preventable diseases, total eradication, i.e., the number of cases be reduced to zero, of some of these diseases is unlikely to occur except under exceptional circumstances. For example, smallpox has been eradicated and polio is virtually eradicated because 1) humans are the only reservoir, 2) there is no carrier state or vaccination eliminates carriage, and 3) efforts to eradicate the disease are global. Where an organism is found in the environment, such as tetanus, the only way to reduce cases to 0 is to assure complete protection – which implies both vaccination and immunollgical response to vaccine. Where vaccination does not significantly impact the transmission of an organism or where transmission occurs in a population that cannot be vaccinated, such as pertussis, significant numbers of cases will continue to occur. Additionally, where protection from vaccination occurs in the U.S. but not globally, such as rubella, cases will continue to be introduced by travelers or immigrants.

Goal-by-Goal Presentation of Performance

Performance Goal: Reduce the number of indigenous cases of vaccine-preventable diseases.

Performance Measure	Target	Actual Performance	Ref.

The number of indigenous cases of paralytic polio, rubella, measles, *Haemophilus influenzae* invasive disease (type b and unknown) in children under 5 years, diphtheria, congenital rubella syndrome, and tetanus will remain at or be reduced to 0 by 2010. * To be in line with Healthy People 2010, beginning in 2001, the diphtheria and tetanus cases will be measured in persons < 35 years of age (previously < 25 years of age). Provisional data	**Paralytic Polio** **FY 03:** 0 **FY 02:** 0 **FY 01:** 0 **FY 00:** 0 **FY 99:** 0 **FY 98:** 0 **FY 97:** 0 **Rubella** **FY 03:** 0 **FY 02:** 0 **FY 01:** 0 **FY 00:** 0 **FY 99:** 0 **FY 98:** 0 **FY 97:** 0 **Measles** **FY 03:** 0 **FY 02:** 0 **FY 01:** 0 **FY 00:** 0 **FY 99:** 0 **FY 98:** 0 **FY 97:** 0 ***Haemophilus influenzae*** **FY 03:** 0 **FY 02:** 0 **FY 01:** 0 **FY 00:** 0 **FY 99:** 0 **FY 98:** 0 **FY 97:** 0 **Diphtheria*** **FY 03:** 0 **FY 02:** 0 **FY 01:** 0 **FY 00:** 0 **FY 99:** 0 **FY 98:** 0 **FY 97:** 0 **Congenital rubella syndrome** **FY 03-97:** 0	**Paralytic Polio** **FY 03:** 0 **FY 02:** 0 **FY 01:** 0 **FY 00 :** 0 **FY 00:** 0 **FY 99:** 0 **FY 98:** 0 **FY 97:** 0 **Rubella** **FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01 :** 19 **FY 00:** 176 **FY 99:** 271 **FY 98:** 364 **FY 97:** 181 **Measles** **FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01 :** 61 **FY 00 :** 63 **FY 99:** 66 **FY 98:** 74 **FY 97:** 81 ***Haemophilus influenzae*** **FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01 :** b + unknown 183 **FY 00 :** b + unknown 167 Serotype b 24 **FY 99:** 120 **FY 98:** 163 **FY 97:** 152 **Diphtheria** **FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01** : 2 **FY 00:** 1 **FY 99:** 0 **FY 98:** 1 **FY 97:** 3 **Congenital rubella syndrome** **FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01:** 823 (baseline)	**Page 153**

Performance Measure	Target	Actual Performance	Ref.
The number of indigenous cases of mumps in persons of all ages will be reduced from 666 (1998 baseline) to 0 by 2010.	**FY 03:** 220 **FY 02:** 500 **FY 01**: 500 **FY 00:** 500 **FY 99:** 500	**FY 03:** **FY 02:** **FY 01** : 231 **FY 00**: Exceeded – 338 **FY 99**: Exceeded – 387 **FY 98**: 666 **FY 97**: 683 Provisional data	Page 153
The number of indigenous cases of varicella in persons under 18 years will be reduced to 400,000 by 2010 (1996 Baseline: 4 million).	**FY03**: 2.8M	**FY 03:** **FY 02:** **FY 01 :** 13,413	Page 153
The number of cases of pertussis among children under 7 years of age will be reduced.	**FY 03**: 2,560 **FY 02**: 2,000 **FY 01:** 2,000 **FY 00:** 2,000 **FY 99:** 2,000	**FY 01** : 2,380 **FY 00** : 2,708 **FY 99**: 3,247 **FY 98**: 3,417 **FY 97**: 3,043 Provisional data	Page 153

Verification/Validation of Performance Measures: Data is obtained from a variety of sources, including the National Notifiable Disease Surveillance System (NNDSS), CDC, EPO; the National Congenital Rubella Syndrome Registry (NCRSR), CDC, NIP; the Active Bacterial Core Surveillance (ABCs), Emerging Infections Programs, CDC, NCID; and the National Health Interview Survey (NHIS), CDC, NCHS.

II-A.3b Vaccine Coverage

Performance Summary

Childhood Immunization Coverage

In 2000, the coverage rate for four doses of Diptheria-Tetanus-Pertussis (DTaP) containing vaccine did not yet achieve the 90% goal. However, the rate has steadily increased since the change to a four dose schedule, as recommended by ACIP in 1991. This goal has been the one of the most difficult for CDC to achieve because it requires that the fourth dose be given to the child after the second year of life. The administration of DTaP tends to coincide with regular well-baby visits through the third dose; however, the fourth dose does not, requiring a visit specifically for this purpose. CDC does have coverage rates of 95% for the first three doses. These are considered to be the most critical, however, CDC and the ACIP feel strongly that the fourth and fifth doses are important for full vaccination. Varying state requirements for the four-dose vaccine schedule may have also led to a slower increase in coverage.

The varicella vaccine was newly introduced to the Recommended Childhood Immunization Schedule in 1996. Any new universally recommended vaccine is expected to reach coverage goals within five years of the recommendation. Although CDC does not yet have the 2001 data, which is expected by June, 2002, CDC will be held accountable for meeting this goal beginning with the 2001 data. Coverage levels for varicella vaccine have reached almost 65% in 2000. Coverage for this vaccine has more than doubled from 27% in 1997 to 59% in 1999 with no racial or ethnic gaps in coverage. In 1999, attenuation of seasonality and declines in varicella cases and hospitalizations were documented in active surveillance systems. Between 1995 and 1999, varicella cases and hospitalizations declined 80% in the communities with active surveillance. The greatest decline in cases occurred among children 1 - 4 years, however, cases declined in all age groups, including infants and adults, indicating reduced disease transmission in these areas.

Following prevention of *Haemophilis influenzae* type B infections with an infant vaccine licensed in 1988, pneumococci took over as the leading cause of meningitis. Now pneumococcal meningitis is preventable. Pneumococci also are the leading cause of bacterial pneumonia, bloodstream infections, otitis media (ear infections), and sinusitis among children. Studies of PCV, pre-licensure, showed this vaccine to be more than 97% effective against invasive pneumococcal infections. Overall, this vaccine is projected to prevent over one million episodes of childhood illness and approximately 120 deaths among children annually. Preventing pneumococcal infections with PCV is becoming more important because of problems with treatment as a result of increasing antibiotic resistance. The Advisory Committee on Immunization Practices (ACIP) added pneumococcal conjugate vaccine (PCV) to the 2001 Recommended Childhood Immunization Schedule. As this is a newly recommended vaccine, accountability for performance targets will begin in 2006; however, NIP will begin tracking coverage rates this year to establish a baseline.

Adult Immunization Coverage

The growth rate of the elderly population has far exceeded the population of the country as a whole. In this century, the total population has tripled. The number of persons aged 65 and older has increased by a factor of eleven, from 3.1 million in 1900 to 34.991 million in 2000, and accounts for 12.4% of the population in the United States. According to the Census Bureau's middle series projection, the number of persons aged 65 years and older will more than double by the middle of the next century to 80 million. While the growth of the elderly will be steady from 1990 to 2010, there will be a substantial increase in the number of elderly persons during the 2010 to 2030 period when the "Baby Boom" generation reaches age 65.[2]

During the past decade, vaccination rates among older adults increased steadily as CDC implemented national strategies and promoted adult and adolescent immunization among health care providers and state and local governments. Influenza vaccine coverage rates have continually increased, from 30 percent in 1989 to 68 percent in 2000. An increasing proportion of older adults also reported receipt of pneumococcal vaccination, from 15 percent in 1989 to 54 percent in 1999. However, data suggests that influenza vaccination levels may have reached a plateau. Delays in distribution of influenza vaccine supplies during the 2000-01 season and projected for the 2001-02 season pose additional challenges to increasing coverage levels. Therefore, in August, 2001, members of CDC and CMS met to discuss the feasibility of reducing performance targets for 2002 and 2003. Because no credible information is currently available which confirm that coverage rates are dropping or stabilizing, CDC decided to maintain the a target of 74 percent for 2002 for influenza vaccination. In addition, since States use the performance targets to justify funding levels in support of immunization infrastructure, it was also felt that a reduction of the target levels at this point could harm their programs. CDC will revisit this issue in the Fall of 2001, once preliminary survey data is available from a CMS study, to decide if targets should remain unchanged or be reduced.

For the FY 2003 Performance Plan, CDC has changed the wording of this goal from "Increase pneumococcal pneumonia and influenza vaccination among persons $\geq$ 65 years" to the present stated goal to reflect and be consistent with the Healthy People 2010 objective. In addition, CDC added the performance measure addressing influenza and pneumococcal pneumonia vaccine coverage for non-institutionalized persons aged 18 to 64 years at high risk to better depict address the impact of CDC's adult immunization initiatives. In 1999, preliminary estimates, based on vaccination rates of persons with diabetes in this age group, suggest that the vaccination rate for influenza and pneumococcal are 43 percent and 25 percent, respectively.

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[2] Source: U.S. Bureau of the Census, *65+ in the United States*, Special Studies, Series P23-190, U.S. Government Printing Office, Washington, DC, 1996

Goal-by-Goal Presentation of Performance

Performance Goal: **Ensure that 2-year-olds are appropriately vaccinated.**

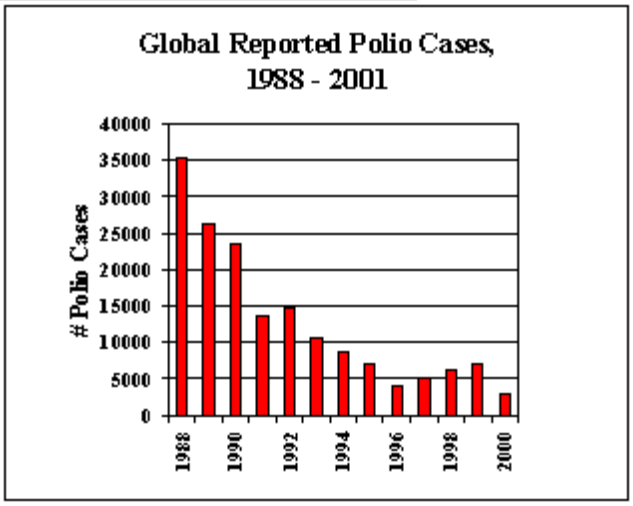
Performance Measure	Target	Actual Performance	Ref.
Achieve or sustain immunization coverage of at least 90% in children 19- to 35-months of age for: 4 doses DTaP vaccine 3 doses Hib vaccine 1 dose MMR vaccine* 3 doses hepatitis B vaccine 3 doses polio vaccine 1 dose varicella vaccine** 4 doses pneumococcal conjugate vaccine** * Includes any measles- containing vaccine. **Performance targets for newly recommended vaccines will begin 5 years after ACIP recommendation. Measures for varicella will begin in 2001and for pneumococcal conjugate measure in 2006, even though coverage will be reported earlier.	**FY 03:** 90% coverage **FY 02:** 90% coverage **FY 01:** 90% coverage **FY 00:** 90% coverage **FY 99:** 90% coverage **FY 98:** 90% coverage	**FY 03:** **FY 02:** **FY 01:** 8/2002 **FY 00:** DTaP 82% Hib 93% MMR 91% Hepatitis B 90% Polio 90% Varicella 68% **FY 99**: DTaP 83% Hib 94% MMR 92% Hepatitis B 88% Polio 90% Varicella 58% **FY 98**: DTaP 84% Hib 93% MMR 92% Hepatitis B 87% Polio 91% Varicella 43%	Page 153

Verification/Validation of Performance Measures: Data are collected through the National Immunization Survey (see Appendix B).

Performance Measure	Target	Actual Performance	Ref.

Increase the rate of influenza and pneumococcal pneumonia vaccination in persons 65 years.* *Influenza and pneumococcal vaccination coverage goals for adults aged 65 and older are based on the 90% coverage goals in Healthy People (HP) 2010. It is expected that influenza vaccination coverage will increase approximately 2% per year and pneumococcal vaccination will increase about 3% per year to realize the HP 2010 goals.	**FY03**: Influenza 76% Pneumococcal 69% **FY 02:** Influenza: 74% Pneumococcal: 66% **FY 01:** Influenza: ** 72% Pneumcoccal: 63% **FY 00:** Influenza: 70% Pneumococcal: 60% **FY 99:** Influenza: 60% Pneumococcal: 54% **Beginning in FY 01, performance will be reported as in HP2010 (age adjusted to the 2000 standard population).	**FY 03:** **FY 02:** **FY 01:** 6/2002 **FY 00 :** Influenza 64% Pneumococcal 53% **FY 99 :** Influenza 66% Pneumococcal 50% Preliminary data	Page 153

Performance Measure	Target	Actual Performance	Ref.
Achieve a vaccination rate of 60% among noninstitutionalized high-risk adults aged 18 to 64 years for influenza and pneumococcal pneumonia by 2010.	**FY03**: Influenza 32% Pneumococcal 22%	**FY 03:** **FY01**: Influenza 6/2003 Pneumococcal 6/2003 **FY00**: Influenza 6/2002 Pneumococcal 6/2002 **FY99**: Influenza 43% Pneumococcal 25% **FY98**: Influenza 31% Pneumococcal 15% Preliminary estimate based on vaccination rates among persons aged 18-64 with diabetes	Page 153



Verification/Validation of Performance Measures: Data is collected through the National Health Interview Survey (NHIS), CDC, NCHS for non-institutionalized populations and National Nursing Home Survey (NNHS), CDC, NCHS for institutionalized populations.

II-A.3c Global Disease Eradication

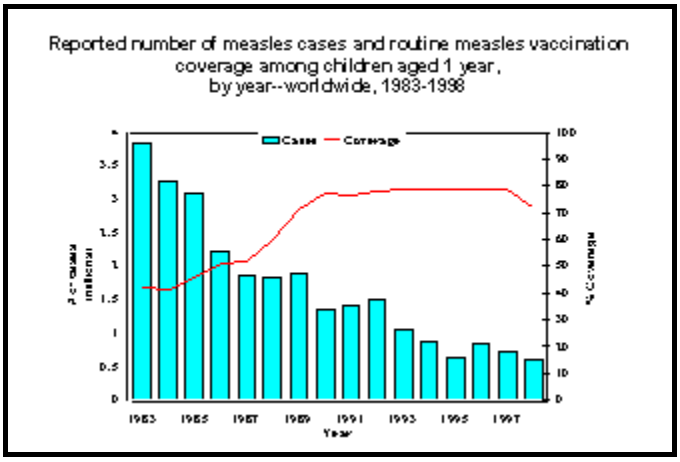
Performance Summary

For the FY 2003 Performance Plan, CDC is newly including the World Health Organization's (WHO) measure addressing polio eradication. The global initiative is on target for certification of polio eradication by 2005. Global polio incidence has declined by more than 99% from about 350,000 cases in 1988 to

2,880 cases in 2000, about 250,000 lives have been saved and 4 million cases of childhood paralysis have been avoided, and the number of polio-endemic countries dropped from 125 in 1988 to only 20 at the end of 2000. In 2000, the American Region of WHO completed its ninth year without a reported case of polio due to the wild virus. The Western Pacific Region (i.e., China Vietnam, and Cambodia) has achieved regional eradication of polio. More than 80 countries conducted mass immunization campaigns in 1999, vaccinating over 450 million children aged less than 5 years. In 2000, 550 million children were vaccinated in 82 countries. After eradication is certified, it is expected that polio vaccinations will cease, saving more than $350 million annually in the United States.

In 2001, CDC expects to purchase 540 million doses of polio vaccine for use in mass global immunization campaigns. In FY 2001, a 25% price hike by polio vaccine manufacturers of oral polio vaccine (OPV) from 7.2 cents per dose to 9.0 cents per dose decreased CDC's purchasing capacity (through UNICEF) from a projected 625 million doses in FY 2001 to an actual 590 million doses. For FY 2002, CDC has received increased funding for polio eradication which should allow us to meet the FY 2002 target. Additionally, CDC supported 150 experts in polio eradication programs throughout the world. One hundred ninety-nine public health professionals throughout CDC were trained in 2001 to complete additional short-term assignments. CDC has provided epidemiologic, laboratory, and programmatic expertise to assist polio-endemic countries and the WHO with polio eradication activities. UNICEF has received grants from CDC to procure more than 500 million doses of oral polio vaccine for mass immunization campaigns in 70 polio-endemic countries to help interrupt polio transmission. Additionally, a number of CDC staff are assigned to WHO and other international organizations to provide leadership and technical expertise.

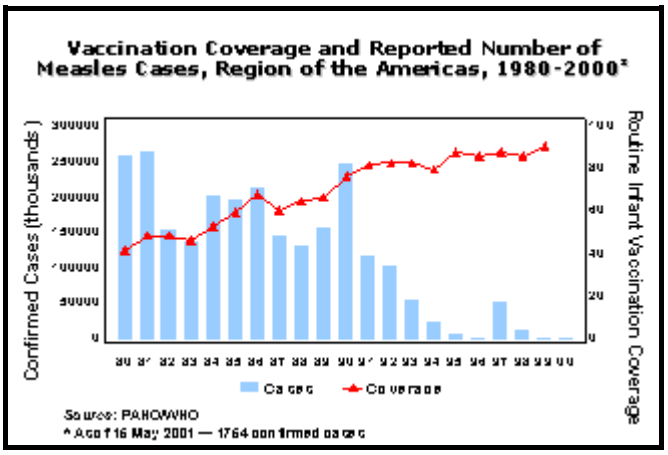
As long as polio transmission occurs anywhere in the world, it remains a threat to American children. CDC will continue to fight against polio by collaborating with partners to increase the number and quality of National Immunization Days, as well as intensify implementation of the other components the strategy to interrupt transmission in the remaining 20 endemic countries. It is necessary for CDC to provide scientific assistance to improved tracking to certify that polio eradication has occurred.



To better reflect CDC's participation in the global immunization arena, beyond that of polio immunization, CDC has newly added the global measles reduction goal in the FY 2003 Performance Plan. The subsequent performance measures reflect the goals and commitment of the WHO and Pan American Health Organization (PAHO) as well as CDC's participation in these efforts.

According to available surveillance information, measles transmission has been interrupted in all countries of the Western Hemisphere except on the island of Hispaniola (Dominican Republic, Haiti). An aggressive plan to eliminate measles has reduced cases in the Western Hemisphere by more than 99% from about 250,000 in 1990 to less than 1,800 cases in 2000 – the lowest annual total ever reported. Deaths from measles complications have virtually disappeared. Globally, measles caused an estimated 880,000 deaths in 1999 and was the leading cause of death among children under five years of age from a vaccine-preventable disease. Based on surveillance data for 2001, 45 of 47 countries and territories appear to have interrupted measles transmission. Nationwide measles immunization campaigns in seven southern African countries conducted in 1996-1998 have resulted in approximately a 95% reduction in reported cases and a virtual disappearance of measles deaths. During 2000, CDC reviewed immunization programs in Haiti and the Dominican Republic, conducted a measles outbreak investigation and assisted with the organization of the outbreak response in Haiti, and tracked the spread of the disease in the Dominican Republic along the border with Haiti. In addition, CDC bought measles vaccine for outbreak response in Haiti. These efforts resulted in a

curtailment of outbreaks in Haiti and the Dominican Republic; however, limited measles transmission continues.



The WHO, UNICEF, and CDC have prepared a 5-year strategic plan for global measles control, mortality reduction, and regional elimination. The plan calls for a one-half reduction in measles mortality by 2005 compared with 2000 levels through introduction of a second opportunity for measles vaccination for all children. In addition, the plan recommends that prevention of rubella and congenital rubella syndrome be integrated with measles vaccination and surveillance activities where appropriate. CDC is a major partner with the PAHO and WHO in eliminating measles and reducing measles mortality. CDC is developing new partnerships with the American Red Cross, IFRC, and the UN Foundation to advocate for measles control. A global public-private sector coalition has been formed to implement the 5-year Global Measles Strategic Plan to reduce measles mortality.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Assist domestic and international partners to help achieve WHO's goal of global polio eradication.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
Purchase doses of oral polio vaccine for mass immunization campaigns in Asia, Africa, and Europe.	**FY 03**: 540 million doses **FY 02**: 558 million doses **FY 01**: 625 million doses **FY 00**: 750 million doses **FY 99**: 445 million doses	**FY 03:** 6/2004 **FY 02:** 6/2003 **FY 01:** 590 million doses **FY 00:** 700 million doses **FY 99:** 427 million doses **FY 98:** 390 million doses Provisional data	Page 153
Achieve and sustain zero cases of polio by 2005.	**FY 03**: 0 **FY 02**: 500 **FY 01**: 1,500	**FY 03**: 6/2004 **FY 02**: 6/2003 **FY 01**: 6/2002 **FY 00**: 2,880	Page 153

Verification/Validation of Performance Measures: UNICEF provides the number of doses of polio purchased with CDC funding via an annual report that is part of the CDC/WHO cooperative agreement. WHO provides the polio case data based on reports submitted by countries.

Performance Goal:	**Work with global partners to reduce the cumulative global measles related mortality rate.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**

By 2005, reduce by 50% the cumulative global measles-related mortality compared with 2000 estimates (Baseline: 888,000)	**FY 03**: 621,600	**FY 03:** 6/2004 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00:** 888,000	Page 153
Eliminate indigenous measles transmission in the Americas.	**FY 03**: 0	**FY 03:** 6/2004 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00:** 1,754 (baseline)	Page 153

Verification/Validation of Performance Measures: The global measles data source is WHO/Geneva and PAHO for the Americas. Data is obtained from each country through an established, systematic surveillance data/reporting mechanism similar to how CDC gets data from the States.

II-A.3d Vaccine Safety

Performance Summary

Although infectious diseases continue to decline, concerns remain about the risks associated with vaccines. Immunizations are subject to a higher standard of safety than other medical interventions because they are given to healthy people. But, like all medical interventions, no vaccine is 100% safe or effective. Since vaccination is such a common and memorable event, any illness following immunization may be attributed to the vaccine. While some of these reactions may be caused by the vaccine, many of them are unrelated events that occur after vaccination by coincidence. Therefore, the scientific research that attempts to distinguish true vaccine side effects from unrelated, chance occurrences is crucial. Vaccine safety activities are needed to maintain public confidence in immunizations, preserve high coverage levels, and prevent a resurgence of vaccine-preventable diseases. As science continues to advance, we are constantly striving to develop safer vaccines and improve delivery in order to better protect ourselves against disease.

CDC has a unique and vital role in striving for vaccine safety by monitoring harmful effects, conducting scientific research to evaluate the safety of vaccines, communicating to the public the benefits and risks of vaccines, and supporting development of new vaccine administration devices, combination vaccines, and potential candidate vaccines to prevent additional infectious diseases. Assessments of the risks and benefits of vaccines can also influence vaccine policy and recommendations.

The vaccine safety performance goal has undergone the most extensive revision of all of the immunization goals. In an effort to move towards more outcome-oriented, rather than output-oriented, measures, CDC has eliminated two output measures relating to the number of VAERS pilot tests and data mining techniques. In addition, we have reworded and replaced our surveillance database measure to better reflect and be more consistent with the Healthy People 2010 goal. These three measures will be phased out in the FY 2002 Performance Report. Finally, we added two additional measures, also mirroring Healthy People 2010 goals, relating to febrile seizures following immunization and vaccine-associated paralytic polio.

As there was no incidence of paralytic polio in the United States in 2000, it follows that there were also no cases of vaccine-associated paralytic polio to report for the year.

In 2000, not only did the overall number of febrile seizures following pertussis immunization decreased from incidences reported the previous year, the incidence following immunization with DTP substantially decreased. January, 1999 was the first time since a pertussis vaccine was recommended that the Recommended Childhood Immunization Schedule did not recommend DTP; however, the associated

wording allowed for the use of DTP. The schedule that was published in January, 2000 recommended exclusive use of DTaP. The virtual disappearance of DTP-associated seizure reports in 2000 reflects its removal from the vaccine schedule. Although it appears that the number of reports following immunization with DTaP has increased from 1999 to 2000, this is attributed directly to the increase in the total number of DTaP immunizations when DTP was removed as an option from the schedule.

Goal-by-Goal Presentation of Performance

Performance Goal: Improve vaccine safety surveillance.

Performance Measure	Target	Actual Performance	Ref.
Eliminate vaccine-associated paralytic polio (VAPP) by 2010.	**FY 03**: 0	**FY03:** 6/2002 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00:** 0 (baseline)	Page **153**
Performance Measure	**Target**	**Actual Performance**	**Ref.**
By 2010, reduce febrile seizures following pertussis vaccines by 50% of 1998 baseline (152 seizures).	**FY 03**: 122	**FY 03**: 6/2002 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00**: DtaP 192 DTP 4 **FY 99**: DtaP 183 DTP 21	Page 153
Increase the number of persons under active surveillance for vaccine safety via large linked databases to 13 million people by 2010.	**FY 03**: 10 million	**FY 03**: 6/2003 Baseline: TBD	Page 153

Verification/Validation of Performance Measures: Data collected from the National Notifiable Disease Surveillance System (NNDSS), CDC, EPO, as well as the Vaccine Adverse Event Reporting System (VAERS) and the Vaccine Safety Datalink (VSD), CDC,
NIP.

Provide Credible Information to Enhance Health Decisions

II-A.2e Education and Information Sharing

CDC offers health care provider training through satellite, remote audio, Internet and land-based immunization courses, speaker presentations, and grand rounds. In addition, immunization modules are presented in medical residency programs as well as medical and nursing school curricula. In 2000, an estimated 60,000 professionals participated in live-satellite, land-based, or self-study courses, and approximately one fourth of the participants (physicians and nurses) were awarded Continuing Medical Education (CME) or Continuing Nursing Education(CNE) credits.

Both the general public and health care professionals frequently request immunization information and referral services from the National Immunization Information Hotline (NIIH). This information is provided through a toll-free service and website in both English and Spanish. In 2000, NIIH responded to an average of 594 calls each day. To accommodate the deaf and hard of hearing, NIIH implemented both Tele-Typewriter (TTY) and American Sign Language (ASL) services.

Performance measures have not yet been developed to assess the effectiveness of these programs, however, CDC plans to do so in the future.

II-A.3f Measures Being Eliminated From the Plan

The following performance measures were replaced or omitted in favor of more outcome oriented measures. CDC will continue to report on these measures until 2002, as they were previously included in the FY 2002 Performance Plan.

Performance Measure	Target	Actual Performance	Ref.
Expand the network of CDC and CDC-funded staff, virologists, epidemiologists, technical and scientific officers on long-term assignments in WHO country and regional offices.	**FY 02**: 100 **FY 01**: 90 **FY 00**: 82 **FY 99**: 67	**FY 02:** **FY 01**: 150 **FY 00**: 120 **FY 99**: 75 **FY 98**: 60	Page 153
Expand a special program to prepare a cadre of trained public health professionals throughout CDC to complete short-term assignments with WHO.	**FY 02**: 124 **FY 01**: 100 **FY 00**: 60 **FY 99**: 50	**FY 02:** **FY 01**: 199 **FY 00**: 128 **FY 99**: 100 **FY 98**: 23	Page 153
Use new data mining techniques to increase the number of detected true and false signals of adverse events associated with vaccination.	**FY 02**: 5	**FY 01**: 2 **FY 00**: 1	Page 153
Expand the Vaccine Safety Datalink (VSD) sites to increase the number of persons under active surveillance for vaccine safety.	**FY 02**: 12 million vaccine recipients.	**FY 02**: 2/2002 **FY 01**: 8 million members enrolled **FY 00**: 6.5 million members enrolled in participating HMOs	Page 153

Improve the ability of health care providers to report vaccine adverse events, including those associated with influenza vaccine, by pilot testing electronic reporting to VAERS in managed care organizations.	**FY 02**: 3	**FY 02**: 2/2002 **FY 01**: 1 **FY 00**: 0	Page 153

II-A.4 HIV/AIDS

Total Program Funding* (Dollars in thousands)

FY 2003:	$ 1,143,137	(Estimate)
FY 2002:	$ 1,142,759	(Current Estimate)
FY 2001:	$ 1,051,342	(Actual)

*Funding includes HIV, STD, and TB prevention programs

Mandate

CDC has been involved in the fight against human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) from the earliest days of the epidemic and remains a domestic and global leader in HIV/AIDS prevention and control. In collaboration with partners at community, state, national, and international levels, CDC applies well-integrated, multidisciplinary programs of research, surveillance, interventions, technical assistance, and evaluation to reduce the impact of HIV/AIDS in human populations.

Health Burden

HIV remains a deadly infection for which there is no vaccine or cure and for which treatments are limited. Through December 2000, nearly 775,000 Americans were reported with AIDS, and more than 448,060 (58%) had died. An estimated 800,000 to 900,000 persons are living with HIV infection in the U.S. Although incidence has decreased substantially from the high of 150,000 cases per year in the late 1980s, CDC estimates that some 40,000 Americans become infected with HIV every year.

A Public Health Success Story: Perinatal AIDS Reduction

The U.S. has seen dramatic reductions in perinatal HIV transmission rates in the past decade. In 2000, an estimated 280 to 370 babies were born with HIV infection, compared to 1,000 to 2,000 U.S. infants born with HIV infection during the early 1990s. These declines reflect the success of widespread implementation of PHS recommendations for routine counseling and voluntary HIV testing of pregnant women and use of zidovudine (AZT, also called ZDV) by infected women during pregnancy and delivery and for treatment of the infant after birth. Revised perinatal counseling and testing guidelines were released in November 2001.

CDC focuses its perinatal prevention efforts in the states and cities that account for the most cases of perinatal HIV transmission. Activities include: 1) educating providers about the importance of offering counseling and testing to all pregnant women; 2) providing outreach to increase prenatal care for high-risk women; 3) providing public information campaigns with information about perinatal HIV testing and transmission; and 4) examining the feasibility of testing at delivery for women who have had no prenatal care.

Over the past decade, the HIV/AIDS epidemic has expanded into new populations. More persons of color (especially women) and young persons are becoming infected with HIV. In 2000, HIV prevalence was higher among African Africans than among any other racial or ethnic group surveyed. Hispanics represented approximately 13% of the total U.S. population in 2000 but accounted for 19% of new AIDS cases. An estimated 50% of those now infected with HIV in the United States became infected during their youth. Among men, the majority of new AIDS cases, 53%, are among men who have sex with men (MSM). Recent evidence of resurgent unsafe behaviors and outbreaks of other STDs among MSM underscore the importance of sustaining and improving prevention efforts for this population.

In addition to the high costs in terms of morbidity and mortality, HIV has high economic costs. The estimated lifetime cost in the U.S. of treating just one person infected with HIV is $155,000. With 40,000 persons infected yearly, America faces additional annualized costs of more than $6 billion every year, dwarfing the amount CDC spends to prevent new infections.

The global toll of HIV is much higher. At the end of 2001, 40 million adults and children were living with HIV/AIDS and nearly 22 million had died. In 2001 alone, an estimated 5.3 million persons, including more than 800,000 children, were newly infected with HIV, and 3 million had died of AIDS. Further, by the end of 1999, over 13 million children had lost one or both parents to AIDS. The most severely affected

countries are in sub-Saharan Africa; 70% of those living with HIV/AIDS reside in this region. HIV/AIDS has had a devastating toll on families in these countries, resulting in loss of income, ongoing costs for care of family members with AIDS and AIDS-related illnesses, and dissolution of basic family and community structures. By 2010, demographers project that life expectancy will fall from 66 to 33 years in Zambia and from 70 to 40 years in Zimbabwe. HIV surveillance and other data reveal emerging epidemics in India, China, the Ukraine and other parts of the world.

Domestic Strategies, Activities, and Resources

Despite great success in HIV prevention in the U.S. over the last decade, the number of new infections each year remains unacceptably high. In recognition of the need for a new national strategy, CDC worked with experts in public health, prevention science, and medicine and representatives from affected communities to devise a strategic plan to halve the number of new infections. The overarching goal is reduce the number of new HIV infections per year in the U.S. from 40,000 to 20,000 by 2005. Through the plan, CDC aims to:

1. decrease by 50% the number of persons at high risk for HIV infection or transmission;
2. through voluntary counseling and testing, increase from 70% to 95% the proportion of HIV-infected persons who know they are infected;
3. increase from 50% to 80% the proportion of infected persons who are linked to appropriate care, prevention, and treatment services; and
4. strengthen capacity to monitor the epidemic, implement effective prevention interventions, and evaluate prevention programs.

CDC has also set a goal for international HIV/AIDS to assist in reducing HIV transmission and improving HIV/AIDS care and support in partnership with resource-constrained countries. The plan will be used to guide CDC's investment in HIV prevention. Performance measures will be adjusted as the plan is implemented. The HIV Strategic Plan can be found on the web at http://www.cdc.gov/nchstp/od/news/prevention.pdf

CDC's approach to implementing the plan involves collaborations with a broad spectrum of partners and focuses on four areas: recognition, intervention, capacity building, and evaluation. Priority-setting for health protection activities is based on information gathered through CDC's HIV/AIDS recognition activities – surveillance and research. Surveillance is the tool by which CDC and state/local health departments track the epidemic and understand its dynamics. Surveillance provides demographic, laboratory, clinical, and behavioral data that are used to identify populations at greatest risk for HIV infection. Surveillance data also help CDC estimate the size and scope of the epidemic at the national level.

Targeting Interventions to Marginalized Populations

U.S. prisons and jails hold 2 million persons and release approximately 12 million inmates into the community annually. These facilities house persons who are disproportionately affected by high rates of infectious diseases such as HIV/AIDS. The confirmed AIDS case rate among prisoners was five times the U.S. rate in 1997. Approximately 80% of prisoners have a history of substance abuse. Most facilities lack comprehensive discharge planning to link releasees with community-based providers for health care, substance abuse treatment, and other services.

CDC promotes a community approach to improve the health of inmates via collaborations with correctional institutions, public health agencies, and community-based healthcare and social service organizations. In FY 1999, CDC and HRSA funded 7 health departments to design and implement innovative demonstration projects for HIV prevention and care in jails, prisons, and/or juvenile detention centers. The Massachusetts Department of Public Health used this funding to implement an intensive case management program for inmates with HIV infection who are nearing release. Each of the state's five regions has a Transitional Intervention Project (TIP) team, consisting of a social worker and case manager, that meets with inmates before release to assess their needs, arrange for medical and social services, and monitor their transition.

CDC provides funding and technical assistance to state and local health departments to conduct HIV/AIDS surveillance. Every state requires reporting of the number of persons diagnosed with AIDS each year. This information is used to identify those in need of services and care, allocate prevention and treatment resources, and track the course of the epidemic. However, because of the long latency of the disease, AIDS cases alone are not indicative of recent trends in the epidemic. Consequently, CDC has encouraged states to report HIV infections. As of December

2001, 33 states have adopted confidential reporting by name of adults and adolescents with HIV infection. CDC also conducts specialized surveys of infected and high-risk persons to better understand the dynamics of the epidemic. For example, the Supplement to HIV/AIDS Surveillance (SHAS) is a survey of adults newly reported with HIV infection or AIDS. Results help improve the understanding of sociodemographic characteristics of HIV-infected persons, sexual and drug-using behaviors, access to health care, HIV testing patterns, minority health issues, and use of and adherence to prescribed therapies.

HIV/AIDS tracking systems give CDC a clear, timely view of populations at risk and provide a scientific basis for developing prevention strategies and setting priorities. While CDC has a strong tradition of supporting interventions that prevent HIV infection in persons at high risk, as the epidemic has evolved it also has become important to focus attention on programs for the growing number of persons who are living with HIV and their partners. Medical science has made great progress in treating HIV infection and associated opportunistic infections. Research consistently shows the prevention benefit of early diagnosis and ongoing care and services for people living with HIV. At the same time, prevention research has found that persons who know they are HIV infected are more likely to make informed decisions to protect partners. For these reasons, it is vital for HIV-infected persons to know they are infected and to seek appropriate medical care as early as possible. In accordance with its strategic plan, CDC will build on activities to strengthen the HIV prevention, care, and treatment interface.

Early in the epidemic, CDC recognized that the involvement of affected communities was a critical success factor in HIV/AIDS prevention programs. Although HIV/AIDS in the U.S. is often referred to as a single epidemic, it is, in truth, composed of many smaller epidemics that often differ substantially. Once a disease that mainly affected white MSM and injection drug users, HIV/AIDS is increasingly affecting heterosexual persons (particularly women, who account for 30% of the estimated 40,000 new infections annually), gay men of color, and young persons (ages 13-24). Communities of color are disproportionately affected. Overwhelming evidence, including historical experience and scores of careful scientific studies, demonstrates that well-designed prevention programs can help reduce the number of new infections. However, to produce lasting behavior change, prevention programs must consider the social and cultural realities of the persons at greatest risk.

CDC uses several tools to involve communities in HIV prevention. These include community planning, coordinated through health departments, and direct funding of community-based organizations. Through the HIV community planning process, communities tailor HIV prevention programs to local needs. Committees that include representatives from all affected communities, state and local health departments, and key non-governmental organizations providing HIV prevention and related services, and experts in epidemiology, behavioral science, and program evaluation collaborate to determine the most appropriate HIV prevention interventions based on local epidemic data, community resources, and science.

Local HIV Prevention in California

Twenty-one California local health departments provide outreach, counseling, and testing in high-risk communities with the Neighborhood Interventions Geared to High Risk Testing (NIGHT). NIGHT outreach workers – often former or current members of the communities in which they work – use mobile vans to provide education, referrals, and follow-up services directly to at-risk communities.

Since 1989, CDC has provided funding directly to community-based organizations to conduct HIV prevention activities. Many of these organizations have a history of serving populations most-affected by the epidemic. CDC also funds organizations to assist CBOs in designing, implementing and evaluating programs. Since 1999, CDC has received additional funding through the Minority AIDS Initiative to augment existing efforts to address racial and ethnic disparities in HIV/AIDS. These funds help communities build the basic services and infrastructure needed to implement HIV prevention programs and link HIV-infected and at-risk individuals to other health and social services.

International Strategies, Activities, and Resources

CDC is working with HRSA, NIH, USAID, the Department of State, and other agencies and organizations to help ministries of health in Africa, Asia, and Latin America address the devastating impact of HIV/AIDS. This initiative represents the first major commitment of U.S. resources to address the AIDS epidemic overseas. CDC (in collaboration with USAID) has established a field presence in 24 countries in Africa, Asia, and Latin America to help national HIV/AIDS control programs. CDC plans to establish a presence in at least one additional country in 2002.

Global AIDS Program Countries FY 2001	
Angola	Mozambique
Botswana	Namibia
Brazil	Nigeria
Cambodia	Rwanda
Cote d'Ivoire	Senegal
Democratic Rep. of Congo	South Africa
Ethiopia	Tanzania
Guyana	Thailand
Haiti	Uganda
India	Vietnam
Kenya	Zambia
Malawi	Zimbabwe

CDC works with host countries and other key partners to assess the needs of each country and design a customized program of assistance that fits within the host nation's strategic plan. CDC will focus on two or three major program areas in each country. Priorities include:

- Primary prevention of HIV infection through activities such as expanding voluntary counseling and testing programs, building programs to reduce maternal-to-child transmission, strengthening programs to reduce blood transmission.

- Improving the care and treatment of HIV/AIDS, STDs and related opportunistic infections by improving STD management, enhancing care and treatment of opportunistic infections including tuberculosis, and initiating targeted antiretroviral treatment demonstration projects.

- Strengthening the capacity of countries to collect and use surveillance data and to manage national HIV/AIDS programs by expanding HIV/STD/TB surveillance programs and strengthening laboratory support for surveillance, diagnosis, disease monitoring and HIV screening for blood safety.

For example, prevention of mother-to-child-transmission (MTCT) of HIV infection has been identified as a priority in both Uganda and Kenya. In Uganda, CDC funds 10 counselors for the MTCT program at the prenatal clinic in Mulago Hospital, which serves more than 34,000 women annually. In Kenya, CDC is working with multiple partners to introduce MTCT prevention activities to the Pumwani Maternity Hospital in Nairobi. More than 23,000 babies are born at this facility each year. The estimated HIV prevalence in mothers there is approximately 16 percent.

Links to DHHS Strategic Plan

HIV/AIDS prevention objectives relate to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans*, and specifically to Objectives 1.6: *Reduce unsafe sexual behaviors*, and 1.7: *Reduce the incidence and impact of infectious disease*.

Partnerships

CDC works closely with other HHS agencies, including HRSA, SAMHSA, and NIH, to coordinate efforts to address HIV. CDC works with HRSA to evaluate access to care and the extent to which states have been effective in reducing perinatal HIV transmission and provides data necessary for HRSA's care and treatment programs. CDC collaborates with SAMHSA and NIDA on issues related to transmission of HIV in the injecting drug use population. A working group has been established to address healthcare issues in correctional institutions. Development and implementation of the plan to eliminate racial and ethnic

health disparities is an interagency effort within DHHS. CDC will expand partnerships with USAID, UNAIDS cooperating agencies (WHO, UNICEF, UNDP, UNFPA), sister agencies in DHHS, other federal agencies, and an anticipated 15 U.S.-based non-governmental organizations working in HIV prevention in Global AIDS countries and regions.

Presentation of Performance

Providing Credible Information to Enhance Health Decisions

II-A.4a HIV/AIDS Case Surveillance

CDC is the source of national level data on HIV and AIDS. CDC has a mandate to work with state health departments and CSTE to monitor incidence, prevalence, morbidity, and mortality for all notifiable diseases. CDC works with states to produce HIV surveillance data, which in turn are used by states to guide their prevention programs, HRSA-funded care and treatment programs, and programs funded by SAMHSA and HUD. At the national level, CDC and HRSA use surveillance data to guide the allocation of funding among states. CDC is working with HRSA to develop an epidemiology profile that will provide, in a single document, all of the epidemiologic information both agencies need to guide their programs.

Historically, newly reported AIDS cases (AIDS incidence) have been the basis for assessing needs for prevention and treatment programs. However, potent new antiretroviral therapies can delay or may even prevent the development of AIDS in a growing number of HIV-infected persons. AIDS incidence is therefore no longer the most appropriate way to describe the needs of different populations. HIV reporting data are increasingly needed to monitor the effect of the epidemic, but HIV data are not available from every state. In 1999, CDC issued *Guidelines for National HIV Case Surveillance including Monitoring for HIV Infection in AIDS*. CDC is working with states to implement HIV reporting and is studying methods to estimate HIV incidence nationally. Until HIV data are available nationwide, CDC will continue to use AIDS data to report nationwide statistics.

Performance Summary

Data on the number of persons living with AIDS (AIDS prevalence), together with data on the prevalence of those with diagnosed HIV infection (where available), will be more useful than AIDS incidence data for public health planning. AIDS incidence data are useful in identifying populations that were diagnosed late with HIV infection or require improved access to timely testing and treatment. In 2001, CDC began funding projects to develop new methodologies to measure HIV incidence in at-risk populations. Because the proposed incidence studies will be more complex and expensive than the prevalence studies of the past, CDC had planned to reduce the number of sites to 30 in 2001. However, as planning from the studies has evolved, CDC realized that more intensive, comprehensive data collection is needed at each site. CDC funded 21 sites in 2001 and anticipates funding approximately 17 sites in 2002 and 2003.

As of December 2001, 45 states, Puerto Rico, Guam, and the Virgin Islands conducted some type of surveillance for HIV infection. Thirty-three of these states use the same confidential, name-based method for reporting infections in adults and adolescents that is used in AIDS surveillance. CDC anticipates that by 2003 all states will have implemented HIV surveillance as an extension of their AIDS surveillance activities.

Concerns about the confidentiality of HIV surveillance data could hamper state-based initiatives to include HIV surveillance as part of their HIV prevention plans. Therefore, CDC issued technical guidance for security procedures that include enhanced confidentiality and security activities. At the federal level, HIV/AIDS surveillance data are protected by federal statutes that preclude the release of HIV/AIDS surveillance data for non-public health purposes. In addition, encrypted data, rather than names, are

provided to CDC. In FY 2001, 100% of states continued to maintain recommended security and confidentiality standards.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Improve the ability of the nation's HIV/AIDS surveillance system to determine the incidence and prevalence of HIV infection.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
Measure HIV incidence and prevalence in high-risk populations.	**FY 03:** 17 sites **FY 02:** 17 sites **FY 01:** 30 sites **FY 00:** ~53 sites	**FY 03:** 9/2004 **FY 02:** 9/2003 **FY 01:** 21 **FY 00:** ~53 sites **FY 99:** ~53 sites	Page 139
Increase the number of states that conduct HIV case reporting.	**FY 03:** 50 states **FY 02:** 50 states **FY 01:** 45 states **FY 00:** 40 states	**FY 03:** 3/2004 **FY 02:** 3/2003 **FY 01:** Met/ 45 states and 3 territories. 33 of these states conducted confidential name-based HIV reporting for adults and adolescents. **FY 00:** Exceeded/ 43 states and 3 territories. 33 of these states conducted confidential name-based HIV reporting for adults and adolescents. **FY 99:** Released *Guidelines*; 34 states (reports); 4 states, 1 territory (coded identifiers)	Page 139
Percentage of states that adopt and maintain recommended security and confidentiality standards.	**FY 03:** 100% of states **FY 02:** 100% of states **FY 01:** 100% of states **FY 00:** 100% of states **FY 99:** Update *Guidelines* to include security and confidentiality standards.	**FY 03:** 12/2002 **FY 02:** Achieved **FY 01:** Achieved **FY 00:** Achieved **FY 99:** 100%	Page 139

II-A.4b Data on Access to Care, Adherence to Treatment, and Impact of Therapy

Performance Summary

CDC funds health departments to collect information on the care of all persons with HIV/AIDS. Health departments use these data to inform both care and prevention programs. This population-based surveillance captures data on persons who receive care through the private sector, Medicaid, or HRSA-funded programs, as well as persons who do not receive care at all. Data on adherence identify persons at increased risk for morbidity and mortality. Since non-adherence can lead to the development of drug-resistant viral strains, these data also identify areas where surveillance for drug-resistant strains may be needed. Data on long-term survival identify populations underserved by prevention and care programs. In FY 2002, the number of states monitoring adherence to treatment increased. The number of states monitoring the impact of antiretroviral therapy on long-term survival remained the same.

Midway through the 1990s, effective therapies became available for HIV-infected persons. The effect of these treatments on AIDS incidence and deaths were detected at the population level through surveillance as early as 1996. As the number of deaths have decreased and the rate of new infection remained stable, AIDS prevalence has steadily increased year to year. In FY 2000, CDC published results of survival analyses from the Adult Spectrum of Disease (ASD) project. Methodology and software from the project were disseminated in 2001. Data from this study and other sources using newly developed methods can help federal, state, and local programs to plan, direct, and improve the clinical management of persons with HIV and AIDS.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Improve the ability to measure access to care, adherence to treatment, and impact of therapy on long-term survival of persons with HIV/AIDS.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Expand the number of states that are able to measure:* 1. Adherence to treatment 2. Impact of antiretroviral therapy (ART) on long term survival. *This study was initiated with three components: access to care, adherence to treatment and impact of ART. The access to care component ended in FY 2001.	**FY 03:** Initiate analyses of data **FY 02:** Continue to support the same states funded in FY 01 **FY 01**: Continue to expand the numbers of states that collect data and can measure care and treatment outcomes.	**FY 03:** 12/2002 **FY 02:** Adherence/19; impact 11 **FY 01:** Access/6; adherence/16; impact/11 **FY 00:** Access/5; adherence/15; impact/11 **FY 99:** Access/4; adherence/12; impact/11	Page 139

Refine methods for measuring long-term survival.	**FY 03:** Expand new methods to include understanding of factors associated with long-term survival. Publish final methods and instruments for collection of data on factors associated with long-term survival. **FY 02:** Develop new methods based on findings. **FY 01:** Publish final results; disseminate methodology. **FY 00:** Publish preliminary results of ASD survival analyses. **FY 99:** Measure trends in long-term survival and rates of transmission of new infections.	**FY: 03** **FY 02:** **FY 01:** Achieved/published final results; disseminated methodology & software. **FY 00:** Exceeded/published final results. **FY 99:** Data analysis underway.	Page 139

Protecting Health and Promoting Partnerships

II-A.4c AIDS Incidence and Early Detection

Performance Summary

Marked declines in AIDS incidence began in 1996 and continued into 1998 in association with the widespread use of potent antiretroviral therapies. The rates of decline slowed during the latter part of 1998. AIDS cases and deaths in the U.S. have remained relatively stable since July 1998. At the end of 2000, 322,865 persons who had been reported with AIDS were alive. As deaths have decreased the rate of new infection remained stable, the number of persons living with HIV/AIDS has increased. If the number of new infections does not decrease, the number of persons living with HIV and AIDS is expected to continue to increase slightly each year. The increasing number of persons living with HIV and AIDS provides further evidence of the importance of continuing HIV prevention programs.

The slowing of the decline in AIDS incidence may be attributed to: 1) attainment of the limits of therapy in extending survival, 2) failing therapies due to treatment-resistant viral strains, 3) late HIV diagnosis, 4) inadequate access and adherence to treatment in some populations, or 5) recent increases in HIV incidence in some risk groups. To achieve further declines in AIDS incidence and deaths, HIV-infected persons must seek testing earlier in the course of their disease and receive and adhere to complex treatment regimens. In addition, new HIV infections must be prevented.

Surveillance data reported through December 2000 show sharply declining trends in perinatal AIDS cases; this decline was strongly associated with increasing ZDV use in pregnant women who were aware of their HIV status. More recently, improved treatment also likely delayed onset of AIDS for HIV-infected children. With efforts to maximally reduce perinatal HIV transmission and increase treatment of those infected, declines are likely to continue but may be affected by treatment failures and missed opportunities to prevent transmission. National HIV surveillance data are needed to more closely monitor recent perinatal HIV incidence.

CDC's HIV prevention programs are aimed at preventing new infections, increasing knowledge of HIV status through voluntary counseling and testing, and linking infected persons with prevention, care, and treatment services. Increasingly, preventing the progression to AIDS in infected persons seems to depend on the availability, receipt, and adherence to care and treatment services – activities beyond the

scope of CDC's programs. CDC has proposed new measures related to the strategic plan goal of increasing knowledge of serostatus. These new measures are to increase the early diagnosis of HIV infection (before progression to AIDS) among persons who acquire their infection through heterosexual transmission, injecting drug use, and male-to-male sexual contact. Data on progress will be available next year.

CDC will continue to estimate reductions in HIV incidence as better methodologies are developed for doing so. Funding increases received in FY 2001 and FY 2002 are anticipated to reduce new HIV infections in the U.S. in subsequent years. Declines in incidence from programs funded in FY 2001 will first be achieved in FY 2002 and reported on in FY 2003. Further declines, supported by increases requested in FY 2002, would be achieved in FY 2003 and reported on in FY 2004. CDC will also continue to measure performance in reducing perinatal AIDS transmission and in reducing new infections. CDC will continue to report AIDS incidence data in its surveillance reports but will use the measure described above to assess program performance.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Among persons who acquire HIV infection through heterosexual transmission, injecting drug use, or male-to-male sexual contact, increase the proportion who are diagnosed with HIV before a diagnosis of AIDS.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
Among persons with HIV infection attributed to heterosexual behavior, increase the proportion diagnosed before progression to AIDS.	**FY 03:** 82% **FY 02:** 82% **FY 01:** 82%	**FY 03:** 7/2004 **FY 02:** 7/2003 **FY 01:** 7/2002 **FY 00:** 80% in areas with HIV reporting **FY 99:** 81% in areas with HIV reporting	Page 139
Among persons with HIV infection attributed to injecting drug use, increase the proportion diagnosed before progression to AIDS.	**FY 03:** 76% **FY 02:** 76% **FY 01:** 76%	**FY 03:** 7/2004 **FY 02:** 7/2003 **FY 01:** 7/2002 **FY 00:** 74% in areas with HIV reporting **FY 99:** 75% in areas with HIV reporting **FY 98:** 73% in areas with HIV reporting	Page 139

Among persons with HIV infection attributed to male-to-male sexual contact, increase the proportion diagnosed before progression to AIDS.	**FY 03:** 74% **FY 02:** 74% **FY 01:** 74%	**FY 03:** 7/2004 **FY 02:** 7/2003 **FY 01:** 7/2002 **FY 00:** 74% in areas with HIV reporting **FY 99:** 73% in areas with HIV reporting **FY 98:** 74% in areas with HIV reporting	Page 139

Performance Goal:	**Through the implementation of HIV prevention programs, reduce the number of cases of HIV infection and AIDS: 1) acquired heterosexually, 2) related to injecting drug use, 3) associated with male-to-male homosexual contact, and 4) acquired perinatally.**

Performance Measure	Target	Actual Performance	Ref.
Decrease the number of perinatally acquired AIDS cases, from the 1998 base of 235 cases.	**FY 03:** 139 cases **FY 02:** 141 cases **FY 01:** 151 cases **FY 00:** 203 cases **FY 99:** 214 cases **Note:** Baseline changed from reported to diagnosed cases to increase accuracy.	**FY 03:** 7/2004 **FY 02:** 7/2003 **FY 01:** 7/2002 **FY 00:** Exceeded/102 **FY 99:** Exceeded/171 **FY 98:** 235 **FY 97:** 310 **FY 96:** 509	Page 139

Reduce the annual incidence of new HIV infections.	**FY 03:** 35,600 new infections/yr **FY 02**: 35,600 new infections/yr **FY 01:** 37,900 new infections/yr **FY 00:** 40,000 new infections/yr **FY 99:** Measure rates of transmission of new HIV infections.	**FY 03:** 9/2005 **FY 02:** 9/2004 **FY 01:** 9/2003 **FY 00:** Estimated baseline: 40,000 **FY 99**: Estimated baseline: 40,000 **Note:** Declines in incidence related to funding increases in FY 2001 will not be realized until at least FY 2002 and will be reported in FY 2003.	Page 139

Verification and Validation of Performance Measures: CDC conducts validation/evaluation studies of HIV/AIDS surveillance on an ongoing basis. Projects include: reviewing surveillance methodologies and redirecting resources to the most productive case-finding methods; analyzing surveillance data to discover possible underreporting and reporting delays; monitoring data quality; and assessing completeness of reporting by comparing HIV/AIDS surveillance registries with alternate databases. At least once a year, health departments re-abstract demographic, risk, laboratory, and clinical data from a representative sample of records to assess the quality and validity of data collected. Although completeness of reporting of diagnosed AIDS cases varies by region and patient population, studies indicate that reporting in most areas is more than 85% complete. Reporting of deaths is estimated to be more than 90% complete.

The period of time between a diagnosis of AIDS and the arrival of the report at CDC is termed the reporting delay (40% of AIDS cases are reported to CDC within 3 months of diagnosis, 80% within 1 year). Because AIDS surveillance data based on the date of diagnosis provide the most direct measure of AIDS incidence, the data are mathematically adjusted to examine trends in more recent periods. To make accurate adjustments, CDC requires a minimum of 6 months of additional data after the close of the examined period. Adjustments for 2001 data will be available after June 30, 2002.

II-A.4d Voluntary Counseling and Testing

Performance Summary

CDC considered several factors in estimating the improvement in the percentage of persons who return for their HIV tests. The objective is based on an annual evaluation of approximately 2 million HIV tests reported from over 11,000 sites, each with varying test return rates. Improvements in testing technologies may make “results while you wait” a possibility in some settings, and the value of retaining this as a performance objective for more than the next few years is questionable. Although an increase in posttest counseling rates was reported for 2000, CDC did not meet its goal and has reported an overall decline in the posttest counseling rate. The declining rate of posttest counseling is due, at least in part, to difficulties in tracking completed posttest counseling sessions. CDC is currently evaluating and working to improve these reporting systems. CDC has contacted grantees providing CTR services. Grantees were asked to review their posttest counseling data and explain why goals were not met or exceeded. This information will be used to develop a comprehensive plan to ensure that all people receiving an HIV-positive test result from a CDC-funded site know their status.

Goal-by-Goal Presentation of Performance

Performance Goal:	Among persons counseled and tested for HIV infection in CDC-supported sites, increase the percentage of HIV-infected persons who return for their results and post-test counseling.

Performance Measures	Target	Actual Performance	Ref.
Increase the percentage of HIV-positive tests for which persons return for results.	**FY 03:** 70% **FY 02:** 70% **FY 01**: 70% **FY 00:** 65% **FY 99:** 60%	**FY 03:** 10/2004 **FY 02:** 10/2003 **FY 01:** 10/2002 **FY 00:** 58.0% **FY 99:** 56.3% **FY 98:** 62.5% **FY 97:** 67.4% **FY 96:** 74.4%	Page 139

II-A.4e Technical Assistance for HIV Intervention and Prevention Programs

Performance Summary

CDC develops, tests, and implements evaluation systems and tools that states can use to assess their activities and improve their HIV prevention programs. In FY 2000, CDC published a guidance document for program evaluation and provided training and technical assistance to help states implement the guidance. Technical assistance focuses on incorporating CDC's evaluation framework, including process evaluation and, if possible, outcome monitoring and evaluation. In FY 2002 and 2003, CDC will work to refine this guidance so that it is easier for grantees to implement.

In FY 1999, CDC began providing technical assistance to health departments, correctional facilities, and community-based organizations on disease intervention and prevention activities for HIV-infected inmates. With CDC and HRSA funding, tools for curriculum building, needs assessment, and capacity building have been developed that will help interested agencies create interventions for high-risk inmates. CDC has also collaborated with SAMHSA and HRSA to offer a cross-training curriculum on substance abuse and infectious disease. These activities are targeted to 7 demonstration sites focused on continuity of care in correctional settings. CDC plans to increase technical assistance by 10% in FY 2001 and 25% in FY 2002.

Performance Goal:	Improve HIV intervention and prevention programs and continuity of care.

Performance Measure	Target	Actual Performance	Ref.

Provide technical assistance to states for evaluation of HIV prevention programs.	**FY 03:** Refine guidance and provide training, and technical assistance. **FY 02**: Refine guidance and provide training, and technical assistance to other partners. **FY 01**: Provide technical assistance based on use of guidance document. **FY 00**: Publish guidance document; train evaluators in use of the guidance. **FY 99**: Provide technical assistance to all community planning groups that request it.	**FY 03:** **FY 02**: **FY 01**: Achieved **FY 00:** Achieved/ Published guidance document; sponsored a training conference. **FY 99**: Provided evaluation technical assistance on request.	Page 139
Provide technical assistance to states to expand disease intervention and prevention activities in correctional settings (federal, state, and local).	**FY 03:** Provide technical assistance to all community planning groups that request it. **FY 02:** Provide technical assistance to all community planning groups that request it. **FY 01**: Provide technical assistance to all community planning groups that request it.	**FY 03:** **FY 02:** **FY 01**: Provided technical assistance to community planning groups on request.	Page 139

II-A.4f Community-based HIV Prevention

Performance Summary

CDC has long recognized the need for prevention programs that are tailored to the needs of communities, particularly minority communities. As early as July 1982, CDC experts reported that 37 cases of AIDS-related pneumonia had occurred among African-Americans. In 1988, CDC made funding available for the National and Regional Minority Organizations program designed to provide technical assistance to community-based prevention efforts. In 1989, minority community-based organizations began receiving direct funding from CDC. This program continues today. CDC currently funds 84 minority and other CBOs targeting groups at high risk through program announcement number 0023.

Since 1999, CDC has received funding through the Minority AIDS Initiative to augment these efforts. In addition, Minority AIDS Initiative funding has also supported other prevention efforts including funding additional organizations to provide technical assistance to CBOs, targeted efforts by health departments to address minority communities, demonstration projects to test new interventions, and communication efforts to increase knowledge of serostatus. CDC has expanded the number of awards to directly funded community-based organizations. In 2001, CDC funded 259 CBOs. Most of these programs address the needs of persons considered to be at high-risk for acquiring or transmitting HIV infection, including MSM, injecting drug users, youth, homeless persons, sex workers, and incarcerated persons.

In FY 1999, CDC awarded 20 planning grants for community coalition development intended to sustain, improve, and expand HIV prevention services for racial/ethnic minority populations. In FY 2001, CDC funded a subset of 11 of grantees to implement these community coalition development projects.

Goal-by-Goal Presentation of Performance

Performance Goal: Increase the capacity of community-based organizations providing HIV prevention services to persons of color.

Performance Measures	Targets	Actual Performance	Ref.
Fund community-based organizations to provide HIV prevention services to persons at high risk for HIV infection.	**FY 03:** 259 awards **FY 02:** 259 awards **FY 01**: 240 awards **FY 00:** 180 awards **FY 99:** 139 awards	**FY 03:** 10/2003 **FY 02:** 10/2002 **FY 01:** Exceeded/259 **FY 00:** Exceeded/253 **FY 99:** Achieved **FY 97:** 94	Page 139
Fund community coalition planning and implementation projects to expand community demonstration projects.	**FY 03:** Continue to fund 11 **FY 02:** Continue to fund 11 **FY 01:** Continue to fund 10 **FY 00:** Fund 3 grants of 20 planning grants initially funded. **FY 99:** Fund 20 projects.	**FY 03:** 8/2003 **FY 02:** 8/2002 **FY 01:** Exceeded/11 **FY 00:** Exceeded/10 **FY 99:** Achieved **FY 97:** 0	Page 139

Verification/Validation of Performance Measures: Data are derived from CDC administrative records. CDC staff will review grantees' progress reports.

II-A.4g Global AIDS Program

Performance Summary

CDC has established global AIDS programs in 24 countries in Africa, Asia, and Latin America. To support these efforts, CDC convened experts from U.S. and international agencies to develop a technical strategies document that: 1) summarizes best practices in the technical areas in which CDC will be working; 2) presents CDC's approach to its Global AIDS programs; and 3) provides a road map for implementation. Teams of CDC staff have visited GAP countries, presented the initiative to in-country partners, assessed priorities and needs, and drafted country-specific program plans. In addition, CDC created a series of agreements with HRSA, USAID, and other agencies to more rapidly implement its in-country Global AIDS programs. CDC has provided $3 million to support HRSA activities to improve professional education and training. CDC also identified and assigned individuals for in-country assignments to implement CDC's Global AIDS program plans. At present, CDC has assigned staff to 18 of the 24 countries. In March of 2001, CDC held its first meeting in Africa of these assignees to discuss challenges and strategies for in-country action. Finally, to support global and regional efforts, CDC has assigned staff to work with international and regional HIV/AIDS organizations, including CAREC, UNAIDS, WHO, and UNICEF.

CDC has also funded agreements with individual countries. In FY 2001, CDC strengthened voluntary counseling and testing (VCT) programs in 18 countries by providing technical assistance to ensure the quality and accuracy of HIV testing, strengthening laboratory diagnostic capabilities, identifying methods to target groups at high risk, and enhancing linkages between VCT and health and social services. CDC also expanded technical assistance and support to improve national surveillance programs for HIV, STDs, and TB to 22 countries.

CDC enhanced support for the implementation of programs that provide interventions to prevent perinatal transmission of HIV in 13 countries. CDC will continue to identify barriers to these services and evaluate the outcomes of interventions on both infants and mothers and to assess ways to expand prevention to infants' fathers as well. CDC expanded technical assistance and support to improve programs to treat STDs, TB, and other AIDS-related diseases in 18 countries.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Working with other countries, USAID, and international and U.S. government agencies, reduce the number of new HIV infections among 15- to 24-year-olds in sub-Saharan Africa from an estimated 2 million by 2005.**

Performance Measure	Target	Actual Performance	Ref.
Initiate, expand, or strengthen HIV/AIDS surveillance globally.	**FY 03:** 25 countries/regions **FY 02:** 25 countries/regions **FY 01:** 18 countries/regions **FY 00:** 15 countries/regions	**FY 03:** 9/2004 **FY 02**: 9/2003 **FY 01:** Exceeded/ 22 **FY 00:** 13	Page 139
Initiate, expand, or strengthen voluntary counseling and testing.	**FY 03:** 25 countries/regions **FY 02**: 25countries/regions **FY 01:** 19 countries/regions **FY 00:** 12 countries/regions	**FY 03:** 9/2004 **FY 02**: 9/2003 **FY 01:** 18 **FY 00:** Achieved	Page 139
Initiate, expand, or strengthen locally appropriate technical assistance for treatment of STDs, TB, and other opportunistic infections.	**FY 03:** 25 countries **FY 02:** 25 countries **FY 01:** 15 countries **FY 00:** 5 countries	**FY 03:** 9/2004 **FY 02:** 9/2003 **FY 01:** Exceeded/18 **FY 00:** Exceeded/11	Page 139
Initiate, expand, or strengthen perinatal HIV prevention programs in collaboration with national and international partners.	**FY 03:** 20 countries **FY 02:** 17 countries **FY 01:** 10 countries **FY 00:** 5 countries	**FY 03:** 9/2004 **FY 02:** 9/2003 **FY 01:** Exceeded/13 **FY 00:** Exceeded/8	Page 139

Verification/Validation of Performance Measures: Data are based on administrative records of financial assistance.

II-A.5 Sexually Transmitted Diseases (STDs)

Total Program Funding (Dollars in thousands)
Funding for FY 2003, FY 2002, and FY 2001 are included in the HIV/AIDS funding table

Mandate
CDC provides national and international leadership through research, surveillance, policy development, and assistance to states, territories, and local health departments in the delivery of services to prevent and control the transmission of sexually transmitted diseases (STDs) and their complications.

Health Burden
Programs to protect Americans from the immediate and long-term complications of STDs were first established in 1936 through collaborative efforts of federal, state, and local health authorities. Since then, rates of STDs have declined substantially. Nevertheless, STDs remain epidemic in the United States and disproportionately affect adolescents, women and infants, and communities of color.

The United States continues to record the highest STD rates in the industrialized world. STDs are the most commonly reported infections of all notifiable diseases reported to CDC. Because most STDs are asymptomatic and several of the most common STDs are not routinely reported, the true burden of STDs is many times greater than that reflected by national surveillance statistics. An estimated 15 million new cases of non-HIV STDs, such as syphilis, chlamydia, gonorrhea, genital herpes, and human papillomavirus (HPV), occur each year at an annual cost of at least $10 billion. STDs are even more costly when viewed in terms of human suffering. Severe, lifelong consequences that often follow these infections include involuntary infertility, potentially fatal tubal pregnancy, other adverse pregnancy outcomes such as stillbirths and newborn (congenital) infections, and increased risk of HIV transmission.

Investment in STD prevention now results in future savings in direct healthcare expenditures. For example, syphilis and its complications, such as congenital syphilis and increased HIV transmission, are estimated to cost the U.S. healthcare system more than $960 million annually. The health consequences from chlamydial infections in women are conservatively estimated to result in an additional $2.4 billion each year. In addition to causing irreversible and costly reproductive health consequences, chlamydia and syphilis infections increase the risk of HIV transmission among adults at least two- to fivefold. The cost benefit of the STD prevention program is conservatively estimated to be at least $10 saved in direct healthcare costs for every $1 spent on prevention.

Strategies, Activities, and Resources
With the exception of hepatitis B, which is caused by a virus, there are no vaccines for STDs. *Safe sexual behavior,* including abstinence and use of barrier protection, can dramatically limit the magnitude of the STD epidemic in the United States. Common bacterial STDs, such as chlamydia, gonorrhea, and syphilis, are curable and can be controlled and prevented with *clinical services* that include screening, diagnosis, and treatment. Common viral STDs, such as genital herpes and HPV, are treatable but not curable. *Counseling* has been proven effective in helping high-risk persons modify their sexual behaviors. *Partner notification* can interrupt chains of transmission in local sexual networks. CDC and its partners use all of these strategies in the battle against STDs.

CDC works with many partners to protect Americans from STDs. Principal activities include: 1) monitoring disease trends using national and local data to focus and assess prevention activities; 2) conducting behavioral, clinical, and health services research and program evaluation to provide a scientific base for improving program efforts; and 3) providing financial, direct personnel, and technical assistance to state and local health departments to deliver clinical and prevention services.

Both providers and the public need credible information to fight STDs. CDC and its partners provide education and training through guideline development, regional STD/HIV Prevention Training Centers, and programs to ensure that providers are adequately prepared to provide optimal STD treatment, care,

and prevention services. CDC also works with partners to educate health professionals, the public, and policymakers about the importance of STD prevention, the importance of protective healthcare-seeking and personal sexual behaviors, and the impact of STDs on the health of Americans, particularly women and infants, adolescents, and minority populations. Two major foci of national STD efforts are prevention of STD-related infertility and syphilis elimination.

Prevention of STD-related infertility: More than 50% of all preventable infertility in women is a result of STDs. Chlamydia and gonorrhea are the most common preventable causes of infertility and potentially fatal tubal pregnancy. Without adequate treatment, up to 40% of women infected with chlamydia or gonorrhea will develop infection in the uterus or fallopian tubes. Known as pelvic inflammatory disease (PID), this infection is the critical link to infertility and ectopic pregnancy. Among women with PID, scarring will cause involuntary infertility in 20%, ectopic pregnancy in 9%, and chronic pelvic pain in 18%. Approximately 70% of chlamydial infections and 50% of gonococcal infections in women are asymptomatic. These infections are detected primarily through screening programs. The vague symptoms associated with chlamydial and gonococcal PID cause 85% of women to delay seeking medical care, further increasing their risk of infertility and ectopic pregnancy.

Since the mid-1970s, a gonorrhea screening program has been implemented across the U.S. However, efforts to prevent chlamydia were not initiated until the late 1980's when technology and treatment applications became available and were expanded nationwide by the early 1990's. Because most chlamydia and gonorrhea infections are asymptomatic, the main approach is to provide screening and treatment services in settings where low-income women may not otherwise receive tests, such as family planning, prenatal, and STD clinics. CDC is also studying whether screening of asymptomatic young men has an effect on reducing rates of infection in women.

In 2000, 702,093 cases of infection with genital *Chlamydia trachomatis* were reported to CDC. This case count corresponds to a rate of 257.5 cases per 100,000 persons, an increase of 2.3% compared with the 1999 rate of 251.6. Rates of reported chlamydial infection in women have been increasing annually since the late 1980s when public programs for screening and treatment of women were first established. The increase in reported infections reflects the continued expansion of chlamydia screening programs and the increased use of more sensitive diagnostic tests for this condition. Chlamydia screening and reporting are likely to increase further in response to the recently implemented Health Plan Employer Data and Information Set (HEDIS) measure for chlamydia screening of sexually active women aged 15 to 25 who receive care through managed care organizations.

Syphilis elimination: There is a narrow window of opportunity to eliminate syphilis in the U.S., but doing so requires immediate and decisive action with well-organized, highly targeted, community-intensive intervention programs. Syphilis epidemics occur in 7- to 10-year cycles, and the peak of the last epidemic occurred in 1990. By acting quickly, the nation has an unparalleled opportunity for success because infectious syphilis is at the lowest rate ever reported in the United States (2.2 cases/100,000 persons) and is concentrated geographically. Half of all new cases in 2000 were reported from only 22 (<1%) of U.S. counties. Syphilis elimination is a path to:

- Improving infant health – Syphilis transmission from an untreated mother to her fetus during pregnancy occurs frequently and causes stillbirths or newborn (congenital) infection.
- Limiting the spread of AIDS – Syphilis increases HIV transmission at least two- to fivefold.
- Eliminating one of the nation's most glaring racial disparities in health – the reported rate of infectious syphilis in African Americans is 23 times higher than that for whites.
- Saving health resources – Syphilis and its complications cost the U.S. nearly $1 billion each year.

Presentation of Performance

Protecting Health and Promoting Partnerships

II-A.5a Prevention of STD-Related Infertility

CDC and the Office of Population Affairs (OPA) work collaboratively with family planning, STD, and primary-care programs to provide surveillance, screening, treatment, laboratory, and program-relevant research activities to inform and help in the implementation of infertility prevention activities for uninsured and under-insured women. CDC conducts research to identify the biologic and behavioral determinants of chlamydia transmission and the feasibility, acceptability, and cost-effectiveness of chlamydia screening for males. and help in the implementation of infertility prevention activities for uninsured and under-insured women. Infections due to *Neisseria gonorrhea*, like those resulting from *Chlamydia trachomatis*, are a major cause of PID in the United States. In addition, epidemiologic and biological studies provide strong evidence that chlamydial and gonococcal infections facilitate the transmission of HIV infection.

Chlamydia: Although all states and territories conduct some screening programs, it is not reaching large numbers of at-risk women. CDC supports chlamydia screening and prevention services for uninsured and under-insured women attending family planing, STD , and other women's health clinics. These screening programs are working to reduce the prevalence of chlamydia. Although all states and territories conduct some screening programs, it is not reaching large numbers of at-risk women.

Data on the prevalence of chlamydial infection in defined populations have been useful in monitoring disease burden and guiding screening programs. The Department of Labor Job Corps program and the family planning clinics provide crucial information on the prevalence of chlamydia in high-risk populations. These data indicate that: 1) chlamydia is geographically widespread and in nearly all states, chlamydia positivity exceeded the HP 2010 objective of 3%, 2) younger women consistently have higher chlamydia positivity than older women (over age 24) and 3) although chlamydia screening is not widely available for men, among men aged 17-37 years who were screened at entry in the army in 1999-2000, overall chlamydia prevalence was 4.7%. In 2000, the median state-specific positivity in women aged 15 to 24 was 5.2% for women aged 15 to 24 years screened at selected family planning clinics in all states and the Virgin Islands outlying areas. In selected prenatal clinics in 23 states, the chlamydia prevalence was 5.9%. For economically disadvantaged women aged 16 to 24 years who entered the U.S. Job Corps from 30 states, and Puerto Rico, in 2000, the prevalence was 11.9% – higher than the target of <8%. Although these prevalence data are not entirely comparable because of differences in the performance characteristics of screening tests and variations in screening criteria, they provide important information on the continuing high burden of disease. The data also allows monitoring of chlamydia in multiple venues and populations which is critical to understanding the true burden of disease.

Regional Chlamydia Screening Programs

Regional screening programs have been highly effective in reducing chlamydial infections in women. Between 1988 and 2000, chlamydia positivity declined by 59.2% (from 13.0% to 5.3%) among women attending family planning clinics in Region X. Similar reductions have been demonstrated in other parts of the country. In addition, data from a randomized controlled trial of chlamydia screening in a managed care setting suggest that screening programs can lead to a reduction of PID by as much as 60%.

After adjusting trends in chlamydia positivity to account for changes in laboratory methods and associated increases in test sensitivity, chlamydia test positivity among women decreased in four of 10 DHHS regions from 1999 to 2000, and increased in six regions. CDC achieved the goal for reducing prevalence among women attending publicly funded family planning clinics, but the prevalence of chlamydia in women participating in the Job Corps is still above 11% and therefore, did not meet the goal of 8%.

Although chlamydia positivity has declined in the past year in some regions, most likely due to the effectiveness of screening and treatment, continued expansion of screening programs to populations with higher prevalence of disease may have contributed to the increases in positivity seen in other regions. The increase in reported chlamydial infections in the 1990s reflects the expansions of chlamydia screening activities, use of increasingly sensitive tests, and increased emphasis on case reporting from providers and laboratories, and improvements in the information systems for case reporting. CDC may have increased the number of reported cases by improving and expanding screening, though this success is not reflected in the current performance measure.

CDC includes data provided from the Job Corps because the data is an important component of assessing burden of disease. Job Corps participants, who are required upon entry in the program to be screened for chlamydia, represent an important high-risk population who CDC is trying to reach. It can therefore be reasoned that a decline in prevalence among this population would reflect a success of CDC's screening program. In addition, continued expansion of screening through CDC programs and other services would lead to a continued reduction of the population based burden of disease and thus also impact the Job Corps participants. But, given that there has been little or no change in the prevalence of chlamydia among Job Corps participants and CDC does not have targeted activities toward the Job Corps, the target may be overly ambitious at this time. Therefore, it is recommended that the target for 2002 be adjusted to 10% and to 9% for 2003. However, CDC will review this measure and determine if its inclusion at this time is premature and consider other possible measures that could potentially better illustrate performance in this area. CDC has achieved its goal with regards to prevalence among women attending family planning clinics. Unlike the measure that utilizes data from Job Corps, this measure reflects the performance of long-standing screening programs. As CDC continues to expand its efforts, data from the family planning clinics is crucial not only in measuring performance but also in guiding future efforts.

Effective interventions have been demonstrated, but they are not reaching all those in need. Achieving future declines in chlamydia prevalence hinges upon efforts to 1) expand chlamydia screening and treatment services, so they are easily available to both men and women; 2) increase awareness about chlamydia testing and treatment services at private clinics and doctors' offices since the disease is common across all socioeconomic sectors and is asymptomatic; and 3) expand health promotion activities.

Gonorrhea: After a 73.9% decline in the reported rate of gonorrhea in the U.S. from 1975 to 1997, the rate increased in 1998 and 1999. In 2000, the rate (131.6/100,000) declined 1.2% from a rate of 132.0/100,000 in 1999. The 2000 rate exceeds the HP2010 objective of 19 cases per 100,000 persons.

Although reported rates of gonorrhea were once substantially higher among men than women, that gap has narrowed. This is most likely due to increased screening in women. Because women are more likely to be asymptomatic than men, cases in women are less likely to be reported. The overall gonorrhea rate in U.S. females in 2000 was similar to the rate in 1999 (128.3 and 128.7, respectively). Among women aged 15-44, the 2000 rate was 284 per 100,000, exceeding the target rate of 250. In 2000, 15- to 19-year-olds had the highest rate (715.6 cases per 100,000 females) of gonorrhea among women of all age categories. Among men, rates (589.7 cases/100,000 males) were highest among 20- to 24-year-olds.

Between 1999 and 2000, gonorrhea rates increased in all regions of the country except for the South which experienced a slight decline. Although increased screening, use of more sensitive diagnostic tests, and improved reporting may account for a portion of increases in the recent past, true increases in disease in some populations and geographic areas also appear to have occurred. The southern states continue to have the highest gonorrhea rates of any region. Reasons may include poverty levels and access to quality healthcare and preventive services. In 1999, 26 states and 3 outlying areas reported gonorrhea rates below the HP 2000 objective of 100 cases per 100,000 persons. In 2000, eight states and one outlying area had rates below the HP 2010 objective of 19 cases per 100,000 persons. Future declines in gonorrhea prevalence will require efforts to increase public and provider awareness of the problem, then increase screening and treatment in high-risk populations and expand health promotion and prevention messages.

Profound racial disparities persist for gonorrhea, with 2000 reported rates among non-Hispanic blacks more than 30 times higher than among whites and more than three times higher than rates among Hispanics. This disparity most likely reflects differences in access to prevention and treatment services.

Pelvic inflammatory disease: The incidence of PID hospitalization in women aged 15-44 decreased in 155 per 100,000 women in 1998 to 127 per 100,000 women in 1999, close to the 1999 target of 125 per 100,000. The reported number of initial visits to physicians' offices for PID through the National Disease and Therapeutic Index (NDTI) has generally declined from 1993 through 2000 but is similar to the rate in 1998 and is still higher than the 2000 target of <225,000 visits. The decrease in the incidence of PID is possible evidence of intensified nationwide screening and treatment efforts for chlamydia, a principal cause of PID. These decreases in hospitalizations may also be attributable to an increasing trend of outpatient management for PID and increased use of oral treatments.

Accurate estimates of PID and tubal factor infertility from gonococcal and chlamydia infections are difficult to obtain. Definitive diagnosis of these conditions often requires complex surgical or other diagnostic tests. Most cases of PID are treated on the basis of interpretations of clinical findings, which vary among practitioners. In addition, the settings in which care is provided can vary considerably over time. For example, women with PID who would have been hospitalized in the 1980s may be treated in outpatient facilities during the 1990s. Trends in hospitalized PID have declined steadily throughout the 1980s and early 1990s. In part, future declines in the incidence PID will hinge upon the Nations' ability to expand screening and treatment programs for chlamydia and gonorrhea as well as expand health promotion efforts that increase both public awareness and healthcare provider awareness.

Goal-by Goal Presentation of Performance

Performance Goal:	**Reduce STD rates by providing chlamydia and gonorrhea screening, treatment, and partner treatment to 50% of women in publicly funded family planning and STD clinics nationally.**

Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Reduce the prevalence of *Chlamydia trachomatis* among high-risk women under age 25, from 11.6%. Source: U.S. Department of Labor; U.S. Job Corps	**FY 03:** <8% **FY 02:** <8% **FY 01**: <8% **FY 00:** <8% **FY 99:** <8%	**FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01:** 8/2002 **FY 00:** 11.9% **FY 99:** 11.5% **FY 98:** 11.7% **FY 95:** 11.6%	Page 139
Reduce the prevalence of *Chlamydia trachomatis* among women under age 25 in publicly funded family planning clinics. Source: Regional Infertility Prevention Programs; CDC	**FY 03:** <5% median **FY 02:** <5% median **FY 01:** <6% median **FY 00:** <6% median **FY 99:** <6% median	**FY 03:** 6/2004 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00**: Achieved/5.2% **FY 99:** Achieved/5.5% **FY 98:** 5.4% **FY 96:** 9.0%	Page 139

Reduce the incidence of gonorrhea in women aged 15-44. Source: STD Morbidity Surveillance System; CDC	**FY 03:** <250/100,000 women **FY 02**: <250/100,000 women **FY 01:** <250/100,000 women **FY 00:** <250/100,000 women **FY 99:** <250/100,000 women	**FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01:** 8/2002 **FY 00**: 284 **FY 99:** 286 **FY 98:** 292 **FY 97:** 261 **FY 96:** 259 **FY 95:** 299	Page 139
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Reduce the incidence of PID, as measured by a reduction in hospitalizations for PID, in women aged 15-44. Source: National Hospital Discharge Survey, 1999 (latest data available)	**FY 03:** <125/100,000 women **FY 02**: <125/100,000 women **FY 01:** <125/100,000 women **FY 00:** <125/100,000 women **FY 99:** <125/100,000 women	**FY 03:** 2005 **FY 02:** 2004 **FY 01:** 2003 **FY 00:** 2002 **FY 99:** 127 **FY 98:** 155 **FY 97:** 157 **FY 96:** 164 **FY 95:** 162	Page 139
Reduce the number of initial visits to physicians for PID in women aged 15-44. Source: National Disease and Therapeutic Index (NDTI), IMS America, Ltd.	**FY 03:** <225,000 visits **FY 02:** <225,000 visits **FY 01:** <225,000 visits **FY 00:** <225,000 visits **FY 99:** <225,000 visits	**FY 03:** 2004 **FY 02:** 2003 **FY 01:** 2002 **FY 00**: 239,000 visits **FY 99:** 251,000 visits **FY 98:** 234,000 visits **FY 97:** 261,000 visits **FY 96:** 286,000 visits **FY 95:** 262,000 visits	Page 139

II-A.5b Syphilis Elimination

CDC has undertaken an initiative to eliminate syphilis in the United States by 2005. This effort builds on existing STD programs and takes advantage of the opportunity afforded by recent historic lows in syphilis rates. CDC has published a national plan for the elimination of syphilis in the United States, which centers on: community involvement in the development and implementation of syphilis elimination plans, enhanced surveillance, outbreak response preparedness, biomedical and behavioral interventions, enhanced health promotion, and assessment of quality and coverage of services. Resources are targeted to areas where syphilis persists at high levels and where there is a substantial potential for syphilis epidemics to reignite. At least 30% of federal grant funds are provided to non-governmental agencies and organizations that represent and serve affected populations.

Among the many national and local partners working to implement syphilis elimination efforts are NIH, SAMHSA, NIJ, APHL, and the American Social Health Association (ASHA). Collaborative efforts include: providing technical guidance on clinical services, implementing research and demonstration projects, and promoting collaboration among local affiliates/constituents on elimination efforts. One such example is the Community Health Outreach Education Services (CHORES) collaboration led by HRSA to develop a comprehensive health promotion, health education, and disease prevention program to be integrated into primary care. Five sites selected from CDC-designated high-morbidity areas will focus on implementing prevention into primary care programs and community involvement.

Congenital syphilis remains a high priority. Each positive test in a child is considered a medical emergency with immediate health services follow-up. The lack of syphilis serologic testing and treatment during pregnancy remains the major reason that congenital syphilis persists in the United States. The absence of testing is often related to complete lack of, or late initiation of, prenatal care.

Infectious syphilis in adults: CDC's syphilis elimination accomplishments to date include:

- Developing and publishing the *National Plan to Eliminate Syphilis from the United States* and the Syphilis Elimination Communication Plan;
- Launching the nationwide elimination effort;
- Improving the accuracy and timeliness of syphilis reporting and developing community-based support in the syphilis elimination high-morbidity areas;
- Implementing three syphilis elimination demonstration sites in Nashville (Davidson County), TN, Indianapolis (Marion County) IN, and Raleigh (Wake County) NC;
- Conducting comprehensive syphilis elimination program assessments;
- Providing supplemental grant awards to 32 STD prevention project areas with the highest syphilis morbidity
- Establishing mobile rapid outbreak response teams to help communities control outbreaks.

Substantial progress has already been made in syphilis elimination efforts:

2001*	2000	1999	1998	1997
Reported primary and secondary syphilis rate (per 100,000 pop.)	2.2	2.2	2.4	2.6	3.2
Syphilis-free counties	80.5%	80%	79%	78%	75%
Number of counties responsible for 50% of new cases	21	22	25	28	31
Black:white reported rate ratio	17.3:1	23:1	30:1	34:1	43:1
*Provisional data through week 52 (12/29/01)					

U.S. rates of primary and secondary (P&S) syphilis declined by 89.2% from 1990 to 2000. Although the 9.6% decline in the number of P&S syphilis cases reported in 2000 is less than the declines of approximately 20% per year since the last major syphilis epidemic in 1990, it is possible that this smaller decline at least partially reflects improved case finding and reporting resulting from the national syphilis elimination effort. The number of cases reported in 2000 is the lowest yearly number reported since 1957. Reported rates are at a historic low of 2.2 per 100,000.

Syphilis is extremely concentrated geographically. Approximately 80% of U.S. counties have already eliminated syphilis, and 93% have a syphilis rate of 4 per 100,000. Of counties that have not eliminated syphilis, the largest numbers of syphilis cases in 2000 were reported from 22. Syphilis remains an important problem in the South and in some urban areas in other regions of the country.

Syphilis remains one of the most glaring examples of racial disparities in health, with 2000 rates among African Americans 23 times those among white Americans, down from a 64-fold differential at the beginning of the last decade. This racial disparity (23:1) is extreme compared to most other health outcomes including AIDS (9:1), infant mortality (2.5:1), and deaths attributable to heart disease (1.5:1). Rates for Hispanic/Latinos increased by 12.5 percent from 1997 to 2000. Communities burdened by poverty, racism, unemployment, low rates of health insurance, and inadequate access to health care are

often disproportionately affected by syphilis. CDC aims to continue reducing this racial disparity in 2002 and 2003.

One of the key strategies in the *National Plan to Eliminate Syphilis* is the establishment of community partnerships. Many communities affected by syphilis have mobilized and formed effective coalitions to fight problems that allowed syphilis to persist.

Despite the successes so far with the Plan, a gradual increase in syphilis among men who have sex with men (MSM) has been reported from several U.S. cities, including Los Angeles, Seattle, Chicago, Miami, and New York City, among others, possibly reflecting an increase in risk behavior in this population associated with increased wellness and well-being afforded by the availability of new, highly-effective antiretroviral therapy for HIV infection. From 1998 to 2001, outbreaks of early syphilis (including P&S and early latent) have been reported from these cities involving 50 to 169 cases.
The outbreaks in these five cities have been characterized by high rates of HIV co-infection, ranging from 25 to 87 percent. Although the total number of cases identified so far among MSM is relatively small, these outbreaks present a new challenge to attaining the national syphilis elimination objective of reducing the number of reported P&S syphilis cases to fewer than one thousand by 2005.

Syphilis Elimination Demonstration Sites
Of the project sites receiving funding for syphilis elimination, three counties received additional funds prior to the official launch of the *National Plan to Eliminate Syphilis* from the United States. These demonstration sites (Davidson County, TN; Wake County, NC; and Marion County, IN) had established community partnerships prior to the national campaign, which greatly improved their ability to rapidly implement the National Plan. In each of the sites, a coalition with broad community representation led to collaboration among health departments, providers, corrections institutions, hospitals, faith communities and social service agencies ultimately translating into increased screening and case-finding. The efforts of the demonstration sites resulted in a 20-27% decline in the number of primary and secondary cases compared to a 9.6% decline nationally between 1999 and 2000.

Congenital syphilis: In 2000, 529 cases of congenital syphilis were reported to CDC, a rate of 13.4 cases per 100,000 live births. While slightly above the 2000 target of 12/100,000, this rate reflects a 51% decline in the number of cases since 1997 (1077 to 529 cases). The rate of congenital syphilis closely follows the trend of P&S syphilis in women. Peaks in congenital syphilis usually occur one year after peaks in P&S syphilis in women. The congenital syphilis rate peaked in 1991 at 107.3 cases per 100,000 live births and declined by 88% to 13.4 in 2000. The rate of P&S syphilis in women peaked at 17.3 cases per 100,000 females in 1990 and declined by 90% to 1.8 in 2000. In 20 states and outlying areas with 5+ reported cases of congenital syphilis in 2000, 10 had rates that decreased from the 1999 value. In fact, 2 of these states and Puerto Rico had decreases of 30% or more between 1999 and 2000. Effective prenatal screening programs for patients at high risk account for a substantial portion of the reduction.

Current objectives to eliminate congenital syphilis include: 1) screening >95% of women attending publicly funded prenatal clinics, 2) treating >80% of women attending publicly funded prenatal clinics who have untreated or inadequately treated syphilis within 2 weeks of their initial prenatal visit, and 3) screening >95% of pregnant women in counties with a syphilis rate >4/100,000 syphilis in hospitals at the time of delivery.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Reduce the incidence of primary and secondary syphilis. through the development of syphilis elimination action plans for each state that had a primary and secondary syphilis rate in 1995 of 4 per 100,000 population and an HIV prevalence in childbearing women of >1 per 1,000.**

Performance Measure	Targets	Actual Performance	Ref.
Increase the percentage of U.S. counties with an incidence of P&S syphilis in the general population of 4/100,000. Source: STD Morbidity Surveillance Systems, CDC	**FY 03:** >92% of counties **FY 02:** >92% of counties **FY 01:** >90% of counties **FY 00:** >90% of counties **FY 99:** 85% of counties	**FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01:** 8/2002 **FY 00**: Achieve/93% **FY 99:** Achieved/91% **FY 98:** 90% **FY 97:** 87% **FY 96:** 90% **FY 95:** 81%	Page 139

Performance Measure	Targets	Actual Performance	Ref.
Increase the percent reduction in the racial disparity.	**FY 03:** 15%, to 15:1 **FY 02:** 15%, to 18:1 **FY 01:** 15%, to 20:1* **FY 00:** 15%, to 25:1* **FY 99:** 15%, to 29:1* *These targets were recomputed using the actual performance rate ratio for FY1998, FY1999 rather than the target ratio for the previous FY.	**FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01:** 8/2002 **FY 00**: 23% reduction to 23:1 **FY 99:** 12% reduction to 30:1 **FY 98:** 21% reduction to 34:1	Page 139

Performance Goal: Reduce the incidence of congenital syphilis.

Performance Measure	Targets	Actual Performance	Ref.
Reduce the incidence of congenital syphilis per 100,000 births. Source: STD Morbidity Surveillance Systems, CDC	**FY 03:** <12 **FY 02:** <12 **FY 01:** <12 **FY 00:** <12 **FY 99:** <20	**FY 03:** 8/2004 **FY 02:** 8/2003 **FY 01:** 8/2002 **FY 00**: 13.4 **FY 99:** Achieved/14.3 **FY 98:** 20.6 **FY 97:** 27.5 **FY 96:** 33.3 **FY 95:** 47.4	Page 139

Verification and Validation of Performance Measures: STD incidence and prevalence data (hardcopy and electronic) undergo ongoing verification and validation procedures including quarterly reports back to project areas comparing reporting across all data sources, trend information, % unknowns for clinical fields, edit checks and updates, as well as constant communication via fax, phone, and email with project staff. PID hospitalization data is collected through the National Hospital Discharge Survey conducted by the National Center for Health Statistics, and PID initial visits to physicians is collected through the National Diagnostic and Therapeutic Index by IMS America, Ltd. Additional feedback is provided to project areas via annual publications and reports.

II-A.6 Tuberculosis

Total Program Funding (Dollars in thousands)
Funding for FY 2003, FY 2002, and FY 2001 are included in the HIV/AIDS funding table

Mandate
CDC is responsible for administering and promoting a national program for the prevention, control, and elimination of tuberculosis (TB) in the United States. CDC also works to eliminate the spread of TB globally.

Health Burden
Many people think that tuberculosis is a disease of the past. One reason for this belief is that the United States is currently seeing a decline in TB and is at an all-time low in the number of new cases. However, that very success makes the nation vulnerable to the complacency and neglect that come with declining visibility. This success also gives the nation an opportunity to eliminate TB.

There is reason for concern, as the nation has felt the ill effects of complacency and neglect of TB before. Once one of the leading causes of death in the U.S., TB had declined steadily after the introduction of effective chemotherapy in 1953.

In the 1970s and early 1980s, TB control efforts were scaled back and many states and cities redirected TB prevention and control funds to other programs. Consequently, the trend toward elimination was reversed, and the nation experienced a resurgence of TB, with a 20% increase in TB cases reported between 1985 and 1992. Many of these cases were difficult-to-treat, drug-resistant TB. The nation's mobilization of additional resources to combat the resurgence in the 1990s has, however, paid off; in 2000 the nation achieved the eighth consecutive year of decline and an all-time low in reported TB cases. Regaining control of TB has clearly been one of the major public health success stories of the last decade and has put the nation back on track toward TB elimination.

Still, TB continues to pose considerable challenges. All 50 states and District of Columbia continue to report TB cases each year and more than 16,000 cases of TB disease occurred in the U.S. during 2000. Every new TB case has the potential to spread if not promptly recognized and treated.

An estimated 10 to 15 million persons in the U.S. have been infected with the TB bacteria (latent TB infection). At some point in their lives, about 10% of infected persons will develop TB disease that can be transmitted to others. A much higher proportion will develop TB disease if they are co-infected with HIV. An increasing proportion of cases in the U.S. are among persons born outside the country. Foreign-born persons now account for nearly half of all U.S. TB cases. These trends reflect the potential impact of the global magnitude of TB on the health of people in the U.S. and elsewhere.

Drug-resistant TB also poses a continuing threat. If persons with TB disease do not complete their full course of treatment, they can develop and spread strains of TB that are resistant to available drugs. One case of multidrug-resistant (MDR) TB can cost up to $1 million to treat. Some U.S. areas are also having increasing difficulty in ensuring proficiency among healthcare providers in diagnosing and treating TB disease and latent TB infection. Diagnosis of infectious cases may be delayed because of their lack of experience, resulting in unnecessary disease transmission to others.

Strategies, Activities, and Resources

In 1989, CDC set a goal to eliminate TB in the United States, with elimination defined as less than 1 case per 1,000,000 persons. This goal was reaffirmed by the Advisory Council for the Elimination of Tuberculosis (ACET) in 1999 and by the Institute of Medicine (IOM) in 2000. In its report, *Ending Neglect: The Elimination of Tuberculosis in the United States*, the IOM called for a renewed commitment to TB elimination. CDC and the Federal TB Task Force are outlining a plan to accomplish this goal. Central to this plan are strategies to:

- Strengthen domestic TB control programs to ensure the prompt identification of persons with TB and offer appropriate treatment;
- Provide examination and treatment to persons who have latent TB infection and who are at high risk for developing infectious TB disease;
- Support the development of improved tools for TB prevention, such as a better vaccine, new diagnostic tests and improved drugs;
- Work in partnership with the countries that contribute most to TB morbidity in the U.S.

In addition, CDC is working to address the global TB epidemic (8 million new cases and 2 million deaths annually). CDC provides technical assistance and leadership to global efforts and participates in global and country-specific TB prevention initiatives.

Links to DHHS Strategic Plan

Tuberculosis performance measures relate to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans*, and Objective 1.7: *Reduce the incidence and impact of infectious diseases*.

Partnerships

CDC works with state, large city, and territorial health departments to deliver TB prevention and intervention activities designed to reduce the incidence of TB and eventually eliminate the disease. CDC works with the HHS Advisory Council for the Elimination of Tuberculosis (ACET), the National TB Controllers Association, American Lung Association, and American Thoracic Society (ATS) to set guidelines, recommendations, and policies related to TB prevention, control, and elimination. CDC is working with the Federal TB Task Force to develop a federal action plan in response to the IOM report, *Ending Neglect: The Elimination of Tuberculosis in the United States*. CDC works with NIH and FDA to develop new diagnostic and treatment tools and better vaccines. Through contracts with academic institutions and public health departments and interagency agreements (with the Veterans Health Administration), CDC formed a consortium for clinical trials research (currently evaluating the new TB drug, rifapentine). Internationally, CDC collaborates with USAID, WHO, and others through efforts such as the Stop TB Initiative and through assistance to specific countries.

Presentation of Performance

Protecting Health and Promoting Partnerships

Performance Summary

Success in achieving TB elimination ultimately depends on treating infectious patients quickly and completely, treating them with drugs that work, treating their close contacts, treating persons with latent infection who are at high risk of developing the disease, and maintaining timely, complete local, state, and national TB information systems to monitor elimination efforts. Key performance measures include the following:

Percentage of infectious TB patients who complete treatment within 12 months*:* Because completion of TB treatment is the most effective way to reduce the spread of TB and prevent its complications, this objective is the highest priority for CDC's TB program. Its achievement is vital to the reduction of TB cases and the eventual elimination of this disease. By FY 2003, CDC anticipates that 88% of TB patients will complete therapy within 12 months. In 1998, 79.1% of patients were reported to complete therapy within 12 months, an increase from the 67.6% reported in 1994. Patients who do not complete therapy within 12 months are often difficult to treat and require numerous interventions. Significant new efforts must be made to achieve this objective. CDC supports outreach workers, hired from language, cultural, and ethnic groups with high TB incidence to help meet this objective. Outreach workers help patients complete treatment through directly observed therapy (DOT), incentives, and other adherence strategies. CDC and the CDC-funded Model TB Centers also design and implement training and educational aids for health department and healthcare provider staff to improve the skills needed to help achieve this objective.

Percentage of TB patients with initial positive cultures who also have drug susceptibility tests done: Healthcare providers must know if a newly diagnosed infectious patient is infected with drug-sensitive or drug-resistant organisms so that appropriate drug therapy can be initiated. If this information is not known, patients may receive inadequate treatment leading to spread of drug-resistant organisms, additional morbidity, and even TB outbreaks and mortality. The performance for this measure in 2000 was 92.7%, up from 73.3% in 1993. With continued progress, CDC expects that programs will achieve the 95% target in FY 2003. Much of this progress is attributable to increased efforts of state and local health departments and hospital infection-control practitioners to address the resurgence of TB and to increased funding for health department laboratories to purchase state-of-the-art equipment needed to perform more accurate and rapid laboratory testing and confirmation for TB and MDR TB.

Percentage of contacts of infectious cases who are placed on treatment for latent TB infection and complete a treatment regimen: Contacts of infectious TB patients are at high risk of developing TB and therefore must be screened for infection and offered and complete treatment if infected. This is critical in community efforts to control and prevent TB. The 1998 rate for this measure was 74%, up from 68.4% in 1993. Through cooperative agreements to state and local health departments, CDC supports a commitment to the identification and examination of contacts and the completion of treatment for contacts who have latent TB infection. Health departments are required to address this objective in their TB cooperative agreement applications. CDC is also designing training for health department TB staff to improve their skills in this area.

Percentage of other high-risk persons who are placed on treatment for latent TB infection and complete a treatment regimen: Completion of treatment for latent TB infection is a cornerstone of U.S. efforts to reduce TB and eventually eliminate the disease. The 1998 rate for this objective was 62.9%; achieving future targets will require a great deal of effort by health departments and healthcare providers who serve persons at risk for TB. In recent years, many health departments have appropriately placed top priority on identifying and treating TB cases, reducing morbidity, and controlling outbreaks. With fewer TB cases, CDC is emphasizing activities related to completion of treatment for latent TB infection. In FY 2001, approximately 6% of TB cooperative agreement base award funds were devoted to targeted testing and completion of treatment for latent TB infection in groups at high risk for infectious TB. CDC is also working with HRSA and other federally funded programs serving groups at high risk for TB to facilitate testing and completion of treatment in high-risk persons. Recently, CDC and the American Thoracic Society issued new recommendations for the treatment of latent TB infection that permit 2-month therapy for certain groups. These recommendations are an outcome of CDC- and NIH-supported research. CDC is assessing the implementation of these guidelines to examine the incidence of adverse events and has recently issued additional guidance to help providers more safely test persons who are latently infected. CDC believes these regimens will significantly increase the percentage of persons who complete treatment for latent TB infection.

Percentage of TB case reports in which core data items are complete: To design and carry out community TB prevention and elimination efforts, public health officials and community leaders need to identify the unique and ever-changing characteristics of TB in their communities. Significant progress is being made on this front. States now report from 95% to 100% complete information on 19 of 22 targeted reporting variables. Progress can be attributed to CDC funding for TB surveillance activities and frequent telephone, electronic, and on-site communication between CDC and health department surveillance staff. Two of the under-reported variables for this measure relate to information about the HIV status of TB patients. CDC is working with health department TB staff, state epidemiologists, HIV program staff, and others to resolve issues surrounding these items, many of which are related to HIV confidentiality issues.

Goal-by-Goal Presentation of Performance

Performance Goal: Eliminate tuberculosis in the United States.

Performance Measure	Target	Actual Performance	Ref.
Increase the percentage of TB patients who complete a course of curative TB treatment within 12 months of initiation of treatment (some patients require more than 12 months).	**FY 03:** 88% **FY 02:** 88% **FY 01:** 88% **FY 00:** 85% **FY 99:** 85%	**FY 03:** Mid-2006 **FY 02:** Mid-2005 **FY 01:** Mid-2004 **FY 00:** Mid-2003 **FY 99:** Mid-2002 **FY 98:** 79.1% **FY 97:** 77.2% **FY 96:** 75.1% **FY 95**: 72.4% **FY 94:** 67.6%	Page 139
Increase the percentage of infectious TB patients with initial positive cultures who also have drug susceptibility results.	**FY 03: 95%** **FY 02:** 95% **FY 01:** 95% **FY 00:** 93% **FY 99:** 92%	**FY 03:** Mid-2004 **FY 02:** Mid-2003 **FY 01:** Mid-2002 **FY 00:** 92.7% **FY 99:** 91.9% **FY 98:** 90.9% **FY 97:** 88.5% **FY 94:** 87.4%	Page 139
Increase the percentage of contacts of infectious cases who are placed on treatment for latent TB infection and complete a treatment regimen.	**FY 03: 78%** **FY 02:** 78% **FY 01:** 78% **FY 00:** 75% **FY 99:** 75%	**FY 03:** Mid-2005 **FY 02:** Mid-2004 **FY 01:** Mid-2003 **FY 00:** Mid-2002 **FY 99:** Unable to analyze **FY 98:** 74.0% **FY 97:** 71.6% **FY 93:** 68.4%	Page 139

Increase the percentage of other high-risk infected persons who are placed on treatment for latent TB infection and complete a treatment regimen.	**FY 03:** 72% **FY 02:** 72% **FY 01:** 72% **FY 00:** 70% **FY 99:** 70%	**FY 03:** Late 2005 **FY 02:** Late 2004 **FY 01:** Late 2003 **FY 00:** Late 2002 **FY 99:** Unable to analyze **FY 98:** 62.9% **FY 97:** 60.6% **FY 93:** 64.8%	Page 139
Performance Measure	**Target**	**Actual Performance**	**Ref.**

For TB case reports sent to CDC from states, increase the percentage in which at least 90% of core data items are complete.	**FY 03:** 95% **FY 02:** 95% **FY 01:** 95% **FY 00:** States will report to CDC for identified variables: Date of birth Country of origin Sex Race Mo/yr arrived US Status at TB dx Disease site AFB smear AFB culture TB skin test Initial Rx regimen Initial drug suscept. results Previous TB Year of dx HIV status HIV status (25-44) Resident of correctional facility Resident long-term care facility Sputum convers. Reason stopped therapy DOT use Date Rx stopped (Note: the percentages reported are the percent with complete reporting results for each variable.)	**FY 03:** Mid-2004 **FY 02:** Mid-2003 **FY 01:** Mid-2002 **FY 00:** 11 out of 22 core variables greater than or equal to 99% complete. Remaining variables: Mo/yr arrived US 84.7% AFB culture 98.2% TB skin test 92.9% Initial drug suscept. results 92.7% Previous TB 98.9% Year of dx 92.4% HIV status 45.8% HIV status (25-44) 58.1% Sputum convers. 95.6% Reason stopped therapy 97.4% DOT use 96.7% **FY 99:** 10 out of 22 core variables greater than or equal to 99% complete. Remaining variables: Mo/yr arrived US 84.2% AFB smear 98.6% AFB culture 97.8% TB skin test 92.2% Initial drug suscept. results 91.9% Previous TB 98.7% Year of dx 92.6% HIV status 44.3% HIV status (25-44) 57.2% Sputum convers. 96.5% Reason stopped therapy 97.7% DOT use 97.0% **FY 93:** 12 out of 22 core variables greater than or equal to 99% complete. Remaining variables: Mo/yr arrived US 71.8% TB skin test 83.4% Initial drug suscept. results 96.1% Year of dx 93.3% HIV status 27.5% HIV status (25-44) 41.4% Resident of correctional facility 95.4% Resident long-term care facility 82.8% Sputum convers. 90.4% DOT use 97.9%	Page 139

Verification/Validation of Performance Measures: Information on the percentage of TB patients reported in 2003 who completed a course of curative TB treatment within 12 months will be available in June 2005. The last TB cases reported in 2003 (on December 31) will not have their 12-month treatment period completed until December 31, 2004. Then, 6-9 months are needed to tabulate, complete, verify, and report the data. This information is obtained from the National TB Surveillance System.

Information on the percentage of TB cases reported in 2003 with initial positive cultures and drug susceptibility results will be available by June 2004. Cases are reported through December 30, 2002, and then approximately 6 months are needed to process specimens and tabulate, complete, verify, and report the data. This information is obtained from the National TB Surveillance System.

CDC recently renovated the national reports for the data that would have addressed the following two measures: (1) Increase the percentage of contacts of infectious cases who are placed on treatment for latent TB infection and complete a treatment regimen; and (2) Increase the percentage of other high-risk infected persons who are placed on treatment for latent TB infection and complete a treatment regimen. The new system came on-line in CY 2000; the data for 1999 will not have a representative result because of the transition that occurred. The data for 2000 will not be submitted by the states until August 2002. Because the methods and definitions of reporting are substantially revised in the new system, data analysis will not yield results for these measures until after August 2003. Please note that the results will be discontinuous going from 1998 to 2000. Because of the change in definitions, program performance will appear to drop in that interval, but the data are not comparable because of the changes in definitions.

Information on the completion of treatment for latent TB infection for contacts of infectious cases and other persons at high risk for TB disease who are started on treatment in 2003 will be available in mid-2005. Depending on the regimen used, it takes 2-12 months to complete treatment. Therefore, some patients will not complete treatment until December 31, 2004. Approximately 6-9 months are allowed to tabulate, complete, verify, and report the data. This information is obtained from the National TB Program Evaluation Reports.

Information on the percentage of complete reporting of surveillance data items for TB cases reported in 2003 will be available by June 2004. Cases are reported through December 30, 2003, and approximately 6 months are allowed to tabulate, complete, verify, and report the data. This information is obtained from the National TB Surveillance System.

TB morbidity data and related information submitted via the National TB Surveillance System are entered locally or at the state level into CDC-developed software. The software contains numerous data validation checks. Data received at CDC are reviewed to confirm their integrity and evaluate completeness. Routine data quality reports are generated to assess data completeness and identify inconsistencies. These reports are shared with the reporting areas and discussed during site visits. CDC also funds selected areas for more detailed evaluation studies. At the end of each year, data are again reviewed and verified with each reporting area before data and counts are finalized and published. CDC encourages health departments to conduct active surveillance, which many do on a regular basis.

Data submitted via the National TB Program Evaluation Reports are reviewed on an ongoing basis as they are received at CDC. Data are checked for accuracy and inconsistencies. Problems are resolved by CDC staff working with state and local TB program staff. During regular visits to state, local, and territorial health departments, CDC staff review TB registers and other records and data systems and compare records for verification and accuracy. At the end of each year, data are again reviewed before data and counts are finalized and published.

II-B.1 Chronic Disease Prevention and Health Promotion

Total Program Funding (Dollars in thousands)

FY 2003:	$697,035	(Estimate)
FY 2002:	$753,712	(Current Estimate)
FY 2001:	$755,555	(Actual)

Mandate

CDC is charged with planning, directing, and coordinating a national program for the prevention of premature death, disease, and disability due to chronic illnesses and conditions.

Health Burden

Chronic diseases (including heart disease and stroke, cancer, and diabetes account for 70% of all U.S. deaths and one-third of years of potential life lost before age 65. More than 90 million Americans live with chronic illnesses, and 75% of the $1 trillion cost of health care is attributable to these conditions. The prolonged course of illness and disability from diseases such as diabetes and arthritis results in extended pain and suffering and decreased quality of life for millions of Americans. Chronic diseases rarely resolve on their own and are generally not cured by medication or prevented by vaccines. Effective measures do exist, however, to prevent much of the chronic disease burden and curtail its devastating consequences. Unfortunately, not everyone who can benefit from these measures has access to them.

Chronic conditions are not limited to older Americans, yet these conditions increase with age. The increase in the proportion of older Americans, largely due to the aging of the baby boom generation, means that the nation needs an effective public health response to chronic and disabling conditions now. Forty percent of all deaths in the United States each year are directly attributable to heart disease and stroke. Cancer will strike more than 1.3 million Americans in the next year. Diabetes continues to increase at an alarming rate, with concomitant increases in the number of persons facing preventable complications such as blindness, foot and leg amputations, and kidney disease. The impact of arthritis, osteoporosis, urinary incontinence, and Alzheimer's disease on society is considerable and will grow as the population ages.

Although 7 of every 10 deaths among Americans are due to chronic diseases, the underlying causes of these deaths are often risk factors that can be modified successfully years before they ultimately contribute to chronic illness and disability. A relatively few modifiable risk factors bring suffering and early death to millions of Americans. Three such factors – tobacco use, poor nutrition, and lack of physical activity – are major contributors to the nation's leading killers. Each year, 400,000 deaths (about 20% of all deaths) are linked to tobacco use, which causes not only lung cancer and emphysema but also one-fifth of all cardiovascular disease deaths.

Strategies, Activities, Resources, and Partnerships

CDC's strategy to protect the public from chronic diseases is to reduce or eliminate contributing behavioral risk factors, increase the prevalence of health promotion practices, and detect disease early to prevent complications or manage them more effectively. CDC implements this strategy through support for state programs, surveillance, prevention research, evaluation, and health promotion. Active partnerships are essential to each of these efforts. CDC coordinates and catalyzes the activities of many public and private partners – government agencies, professional organizations, voluntary organizations, academic institutions, healthcare organizations, community organizations, and private organizations and businesses. The expertise, experience, and outreach capabilities of these partners substantially increase CDC's effectiveness in reaching persons at highest risk for chronic diseases.

To prevent the onset of chronic diseases, CDC conducts research and promotes programs that encourage physical activity and healthier diets and that reduce tobacco use, especially among youth. CDC also works to prevent or delay the serious complications of diseases like diabetes, with notable success. For example, Michigan established a diabetes care and education collaboration with hospitals, health departments, and home-care agencies. Participants had a 45% lower rate of hospitalizations, 31% lower rate of lower-extremity amputations, and 27% lower death rate than non-participants.

Although research has unlocked many features of chronic diseases, much remains to be learned. CDC conducts surveys on people's behavior, supports surveillance systems and other data collection methods to track the prevalence of chronic disease risk factors (such as obesity), and brings a new public health perspective to well-known conditions such as epilepsy. CDC laboratory scientists help deepen the understanding of chronic diseases' causes and progression by designing and improving sophisticated measures of cholesterol, glucose, vitamin and mineral levels, and other critical markers. From specific laboratory measures to more complex studies of behaviors and risk factors, CDC's efforts are designed to understand the causes and consequences of chronic diseases and to place the powerful tools of prevention within the reach of more people every day.

Presentation of Performance

CDC considered several factors in developing performance measures for chronic disease prevention.

Long latency of chronic diseases: The three leading causes of death in the United States are heart disease, cancer, and stroke. Risk factors such as tobacco use, poor diet, and lack of exercise that often become habitual during youth or early adulthood contribute to the development of these diseases over long periods. The long latency of many chronic diseases complicates the development of outcome measures; for example, reductions in smoking rates will not cut back lung cancer deaths for decades. Moreover, many of the most effective interventions are aimed at preventing youth from adopting risky behaviors, but the positive outcomes associated with these actions are not reaped until adulthood. Over time, Americans can be influenced to adopt healthier behaviors, but efforts rarely result in significant or startling changes on a yearly basis.

Recent development of chronic disease programs: Chronic disease programs are relatively new in the public health world. For example, although the nation's leading cause of death for the past century, 1998 marked the first year of CDC's state-based heart disease and stroke prevention program. Only recently have all states received funding for diabetes control programs. Thus, many states are still putting into place the basic infrastructure of people, networks, and systems for effective programs. With the exception of the National Breast and Cervical Cancer Early Detection Program, none of CDC's chronic disease programs are focused on service delivery. Rather, they center on developing the policies, environments, and systems that support healthy behavior and appropriate health care.

Availability of annual data to measure performance: CDC's data collection systems for monitoring risk factors and behaviors for chronic diseases are collected annually for adults (Behavioral Risk Factor Surveillance System [BRFSS]) but only biennially for adolescents (Youth Risk Behavior Surveillance System [YRBSS]). Although these sources yield valuable information on chronic disease behavioral risk factors, they are not designed to collect outcome data on chronic diseases.

Opinions and recommendations of key stakeholders: CDC's efforts to protect Americans from chronic diseases depend on collaborative relationships. Future reductions in disease burden will require the persistent commitment and success of CDC programs plus widespread actions by healthcare providers, researchers, public health and education agencies, insurers and payers, federal agencies, and the private and nonprofit sectors. CDC's partners have voiced concern about their ability to demonstrate outcome measures related to chronic disease and advocate a balance between outcome and process objectives.

Need for partner involvement: Chronic diseases are a community-wide burden. CDC works with state and local health and education agencies, healthcare organizations, academic institutions, national organizations, nonprofit agencies, business, and philanthropies to reduce the burden of chronic diseases.

The presentation of performance for programs in chronic disease prevention and health promotion is necessarily broad because of the range and breadth of CDC's cross-cutting activities. During FY 2002, CDC's chronic disease programs will evaluate the effectiveness of performance measures. For FY 2003, significant changes are expected in order to present stronger outcome measures and goals for high priority chronic disease programs.

In fiscal year 2003, CDC will consolidate state funding into six categories of grant programs in fiscal year 2003. These six most closely align with the way programs are organized and implemented in state health departments, and the clustering of state partner organizations that co-fund and implement the programs: *(1) Heart Disease and Stroke*; *(2) Cancer Prevention and Control* (breast and cervical cancer registries, and other cancer grant awards); *(3) Diabetes*; *(4) Health Promotion* (Behavioral Risk Factor Surveillance System (BRFSS), tobacco, nutrition/physical activity/obesity, oral health, arthritis, Safe Motherhood and infancy including Pregnancy Risk Assessment Monitoring System (PRAMS), WISEWOMAN, and any other cooperative agreements not specified above that provide grants for state prevention programs). In addition to the state awards above, consolidated awards will be made to department of education and university partners in the following two areas: *(1) School Health* (Youth Risk Behavior Surveillance System (YRBSS), school-based HIV prevention, and school health programs); and *(2) Prevention Centers.* Over the past year, CDC has consulted with the State Chronic Disease Directors, the Association of State and Territorial Health Officials and the Association of State and Territorial Directors of Health Promotion and Health Education regarding consolidating and streamlining the cooperative agreement process.

Current chronic disease prevention and health promotion activities are summarized in the table below.

Protecting Health and Promoting Partnerships

Protecting the health of underserved Americans

I-A Early detection of breast and cervical cancer

Developing and evaluating community-based behavioral interventions

I-B Tobacco use prevention
I-C Community-based prevention research

Building chronic disease prevention capacity in state health departments and state departments of education

I-D Heart disease and stroke
I-E Diabetes
I-F Arthritis
I-G National program of cancer registries
I-H HIV prevention among school-aged youth

Providing Credible Information to Enhance Health Decisions

I-I Behavioral Risk Factor Surveillance System
I-J A media campaign to improve the health of

Protecting Health and Promoting Partnerships

Protecting the health of underserved Americans

II-B.1a Early Detection of Breast and Cervical Cancer

More than one-half million women will die of breast and cervical cancer in the decade ending in 2009. Breast cancer accounts for nearly one third of all cancers in women. An estimated 30% of deaths from breast cancer in women over age 50 are preventable through regular mammogram screenings. A combination of annual clinical breast examinations and mammography can reduce breast cancer mortality by more than 30% for women aged 50-74. Early detection also increases the 5-year survival rate. Treatment costs for breast cancer diagnosed at the

localized or in situ stage may be as much as 31% lower than costs for breast cancer diagnosed in later stages.

Approximately 13,000 new cases of cervical cancer are diagnosed each year. Almost all deaths from cervical cancer in women over age 50 are preventable through widespread use of Papanicolaou (Pap) testing.

Early diagnosis of breast and cervical cancer saves money as well as lives. CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) provides cancer screening for underserved women, particularly low-income women, older women, and members of racial/ethnic minorities. This program creates the foundation for an aggressive response to this health problem and ensures the delivery of successful screening services. CDC supports activities at the state and national levels in the areas of screening, referral and follow-up services, quality assurance, public and provider education, surveillance, partnership development, and evaluation.

Because CDC's NBCCEDP is a service delivery program, both performance measures for NBCCEDP are outcome measures. Mammograms and Pap tests are traditionally underused by women who are members of racial and ethnic minority groups. CDC strives to eliminate racial and ethnic disparities in screening for breast and cervical cancers. By its nature, such a screening program requires time to demonstrate positive effects in the target population. Data collection for these measures has been systematized by CDC, and state health agencies were involved in the development of the measures.

Links to DHHS Strategic Plan

These performance measures relate to DHHS Goal 4: *Improve the quality of health care and human services*, and Objective 4.2: *Reduce disparities in the receipt of quality health care services*.

Partnerships

The ability to implement a nationwide program depends on the involvement of national, state and local governments, healthcare professions and organizations, social service and advocacy organizations, and academia. Partnerships help private and public organizations develop, implement, and evaluate national, community-based interventions for cancer prevention and early detection. They also test new methods and replicate proven strategies to educate constituents about the prevention, early detection, and control of cancers; increase access to screening among underserved populations; and create new collaborations to enhance cancer control efforts in priority populations. CDC funds a strong and effective network of partners that are well positioned in communities at risk and that bring critical knowledge, skills, credibility, and resources to CDC's cancer control efforts for priority populations. These populations include uninsured persons and minority groups such as American Indians, Alaskan Natives, African Americans, Hispanics, Asian/Pacific Islanders, lesbians, women with disabilities, and persons living in hard-to-reach communities in urban and rural areas.

CDC collaborates with the National Cancer Institute (NCI) in a variety of areas. One example is CDC's partnership with NCI's Cancer Information Service to develop demonstration projects to improve early detection among older women. The goal is to increase and sustain the participation of eligible underserved women, aged 18-64, in the education and screening services offered through CDC and to educate women who are diagnosed with breast or cervical cancer about state-of-the-art treatment options. A memorandum of agreement between CDC and the Indian Health Service (IHS) provides support for collaborative scientific and training activities. The aim of these agreements is to develop, deliver, and promote chronic disease prevention activities for American Indians and Alaska Natives. CDC has also assisted the Food and Drug Administration (FDA) in conducting quality assurance training programs for

mammography.

Performance Summary

Through March 2001, CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) has provided more than 3 million screening tests to over 1.3 million women. The program has diagnosed 10,649 breast cancers, 45,154 precancerous cervical lesions, and over 700 cases of invasive cervical cancer. In 2000, excluding breast cancers diagnosed on an initial screen (first mammogram provided through CDC), at least 66% of women aged 40 and older were diagnosed at the localized stage. In 2000, excluding invasive cervical cancers diagnosed on an initial screen (first Pap test provided through CDC), the age-adjusted rate of invasive cervical cancer in women aged 20 and older was 16 per 100,000 Pap tests provided.

A recent CDC study of the NBCCEDP identified a problem with reporting stage data for breast cancer. Since completing the study, reporting of stage data has been corrected in several states. This data improvement has impacted the distribution of women diagnosed at a localized stage. Since the data have improved, CDC recommends that the target be modified to more realistically reflect program progress. The new targets for FY 01 and FY 02 for women aged 40 and older diagnosed at the localized stage will be 69% and 70% respectively.

Even though CDC has exceeded its goal of "no more than 22 per 100,000 Pap tests provided," CDC does not recommend changing the target. Effective April 2000, CDC changed the policy for Pap screening to reach a larger proportion of underserved women – i.e., rarely and never screened women. CDC does not know whether the change in policy will affect the ability to maintain the successful 19 per 100,000 rate. Data for FY 2001 will be available after April 2002.

CDC is also supporting activities to improve the quality and effectiveness of NBCCEDP. To that end, CDC is examining: 1) factors that influence rescreening behaviors, 2) behaviors that might contribute to the etiology of breast cancer, 3) survival differences between black and white women, 4) economic barriers to cancer screening, and 5) follow-up and treatment of precursor conditions of cervical cancer. Hopefully, continued improvement in screening utilization will contribute to one of our nation's successes in eliminating disparities in cancer death rates among various populations.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Increase early detection of breast and cervical cancer by building nationwide programs in breast and cervical cancer prevention, especially among high-risk, underserved women.**

Performance Measures	**Targets**	**Actual Performance**	**Ref.**

Excluding breast cancers diagnosed on an initial screen* in the NBCCEDP, diagnose at least 70% of women aged 40 and older at the localized stage. (first mammogram provided through CDC's NBCCEDP)	**FY 03**: 70% **FY 02:** 70% **FY 01:** 69% **FY 00:** 72% **FY 99:** 71%	**FY 03:** 4/2004 **FY 02:** 4/2003 **FY 01:** 4/2002 **FY 00:** 66% **FY 99:** 70% **FY 98:** 70% **FY 95:** 70%	Page 96
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Excluding invasive cervical cancers diagnosed on an initial screen* in the NBCCEDP, lower the age-adjusted rate of invasive cervical cancer in women aged 20 and older to not more that 22 per 100,000 Pap tests provided. (first Pap test provided through CDC's NBCCEDP)	**FY 03:** 22/100,000 **FY 02:** 22/100,000 **FY 01:** 22/100,000 **FY 00:** 22/100,000 **FY 99:** 22/100,000	**FY 03:** 4/2004 **FY 02:** 4/2003 **FY 01:** 4/2002 **FY 00:** 16/100,000 **FY 99:** 19/100,000 **FY 98:** 23/100,000 **FY 95:** 26/100,000	Page 96

Verification/Validation of Performance Measures: CDC uses the Minimum Data Elements (MDEs) to report the percentage of women aged 40 and older who are diagnosed at a localized stage. States, territories, and tribal organizations submit MDEs electronically twice a year (January 15 and July 15) to a data management contractor, who analyzes the data and submits a data file to CDC. These files are made available in April and October. CDC uses the January 15 submission to report performance for this measure. Data provided in the performance report include only screening exams through March 31 of the previous year to allow adequate time to gather the data and present a complete program report. States, territories, and tribal organizations are provided 9½ months after the initial screening date (March 31) to gather diagnostic and treatment information and prepare the data submission by January 15. The data management contractor analyzes the data by March and sends the report to CDC. All data collected and submitted by states have indicators to assess completeness. Data are also assessed against established clinical standards.

Developing and Evaluating Community-based Prevention Research

II-B.1b Tobacco Use Prevention

Tobacco use is the leading preventable cause of disability and death, directly contributing to the deaths of more than 400,000 Americans each year and costing up to $73 billion annually in direct medical costs. Every day 6,000 young people try cigarettes for the first time. Of today's children, 5 million can be expected to die prematurely if current smoking trends continue. CDC is committed to reducing tobacco use, with an ultimate goal of reducing the burden of tobacco-attributable disease. Comprehensive state

programs, including school-based programs and local outreach efforts, have been shown to be effective in reducing the prevalence of tobacco use.

Much of CDC's current tobacco budget is directed toward states. In 2001, CDC significantly increased financial and technical support to all 50 states, territories, and tribes. In addition, as a result of the recent settlement agreement with the tobacco industry, states now have additional resources available to devote to tobacco control. As of February 15, 2001, 36 states have invested $654.9 million from the settlement agreements in FY 2001 for tobacco use prevention and control programs. Excise taxes are also an important source of funds for tobacco control in 8 states, which have appropriated $218.4 million for this purpose. In addition, 9 states have appropriated $9.9 million from their general revenue to support tobacco use prevention and control programs. In total, state investment for tobacco control activities in fiscal year 2001 is $883.2 million. Another $9 million in grant funds is also available to 20 states through the American Legacy Foundation, which was created as a part of the settlement agreement between states and the tobacco industry, to support tobacco programs for youth. However, the total investments in states from state, federal, and national sources averages about 59% of the lower bound funding estimate in *Best Practices*. In 5 states and the District of Columbia, federal and private funds are the only funds being invested in tobacco control, and in at least 20 states, they make up 50% or more of the funds being invested. Fiscal Year 2002 funds will be used to sustain CDC's level of funding and to provide technical assistance to states by advancing the science behind comprehensive tobacco use prevention and control programs. Although CDC intends to keep a predominant focus on domestic programs, a proportion of the tobacco funds for FY 2002 will be for global tobacco control.

Link to DHHS Strategic Plan

Performance objectives relate to DHHS Goal 1: *Reduce major threats to health and productivity of all Americans*, especially Objective 1.1: *Reduce tobacco use, especially among youth*.

Partnerships

It is important to note that while CDC serves as a focal point for DHHS tobacco prevention activities, prevention or reduction of tobacco use is a shared effort. Multiple agencies in DHHS, in addition to CDC, address tobacco use. NIH conducts biomedical and applied research, surveillance, and public health interventions. SAMHSA conducts surveillance and implements regulations on minors' access to tobacco. Other agencies with roles in tobacco policy are the Federal Trade Commission (with oversight of the testing protocol for tar and nicotine yields in cigarettes and the monitoring and regulation of advertising practices), USDA (through their work with tobacco farming communities), Department of Commerce (regarding the manufacturing sector and related businesses), Treasury Department (with customs and taxation issues), and EPA (regarding issues related to secondhand smoke). State and local governments, non-governmental organizations (e.g., American Cancer Society, Robert Wood Johnson Foundation), and healthcare providers also play important roles in efforts to reduce tobacco use. CDC works with community-based programs, health communication campaigns, and schools to prevent and reduce smoking among youth.

It is important to note that marketing and other factors (e.g., tobacco advertising, industry pricing patterns, glamorization of tobacco use in the popular media) can counteract efforts to reduce tobacco use.

Performance Summary

Between 1991 and 1997, cigarette use among youth (grades 9-12) increased from 27.5% to 36.4%, although the rate of increase in youth smoking slowed from 1995 - 1997. Data released from CDC's Youth Risk Behavior Survey in June 2000 indicate that the percentage of youth (grades 9-12) who smoke then dropped slightly to 34.8% in 1999. Thus, CDC has already met the youth smoking goal for FY 2001. Success in reducing the youth smoking rate is attributed to restrictions on the tobacco industry, increased state funding for tobacco control programs, technical assistance from the federal government to determine

effective tobacco-control strategies, and coordination of tobacco-control efforts among public agencies and non-governmental organizations.

CDC has revised its teen smoking prevalence projections based on the success in achieving reductions in rates and also by recognizing the important countervailing environmental influence of tobacco industry advertising, which has soared to $8.24 billion in 1999 - an increase of 65% since 1996. The continued success of tobacco-control activities will be determined by monitoring cigarette use among youth.

Goal-by-Goal Presentation of Performance

Performance Goal: **Reduce cigarette smoking among youth.**

Performance Measure	Target	Actual Performance	Ref.
Reduce the percentage of youth (grades 9-12) who smoke by conducting an educational campaign, supporting state programs, and working with non-governmental entities.	**FY 03:** 32.3% **FY 01:** 34.2%* **FY 99:** 36.4% *June 2000 YRBSS data indicated achievement of the FY01 target, and CDC revised the teen smoking projections.	**FY 03:** 7/2004 **FY 01:** 7/2002 **FY 99:** 34.8% **FY 97:** 36.4% **FY 95**: 34.8% **FY 93:** 30.5% **FY 91:** 27.5%	Page 96

Verification/Validation of Performance Measures: CDC monitors cigarette use among youth and reports performance on a biennial basis using the Youth Risk Behavior Survey (YRBS), which is a component of the YRBSS (see Appendix A.2). Three additional surveys, the National Household Survey on Drug Abuse (NHSDA) the Monitoring The Future (MTF) Survey, and the National Youth Tobacco Survey (NYTS), provide complementary data for examining trends and understanding youth-related tobacco issues. The NHSDA is conducted annually by SAMHSA; the MTF is conducted annually by the University of Michigan's Institute for Social Research; and the NYTS is currently conducted by the American Legacy Foundation, but will transfer to CDC in 2004.

II-B.1c Community-Based Prevention Research

CDC's Health Promotion and Disease Prevention Research Center (PRC) program integrates the resources of 26 academic centers to develop and implement community-based prevention research interventions to remediate the nation's primary causes of death and disability. Expertise from the university-based PRCs is made available to health agencies, community-based organizations, and national nonprofit organizations. The link between university research and grassroots organizations helps promote the application of findings and results in practical, cost-effective, and innovative community programs. CDC's PRC program is also conducting the community prevention component of NIH's multi-year Women's Health Initiative – one of the largest U.S. studies of women's health. Seven of the 26 PRCs are creating models for preventing heart disease, diabetes, and the consequences of osteoporosis;

detecting breast and cervical cancer; and evaluating hormone replacement therapy and dietary and vitamin supplement use in women.

Link to DHHS Strategic Plan

This performance objective relates to DHHS Goal 6: *Strengthen the nation's health sciences research enterprise and enhance its productivity*.

Partnerships

The PRCs work through established partnerships among state and local health departments, community-based organizations, and other stakeholders to conduct research on a particular theme. For example, CDC is working with NIH's Office of Extramural Research on NIH's Women's Health Initiative, mentioned previously. The PRC program's mission is "connecting science and practice through a network of academic, public health, and community partnerships for scholarly, community-based prevention research, research translation, and education."

Performance Summary

CDC achieved the FY 2000 target of community-based, participatory research projects in every PRC. Based on a review of PRC demonstration projects and core continuation applications, CDC believes that the PRCs will continue to conduct research projects that reflect the needs of their communities.

For example, the PRC at St. Louis University is engaged in a research and demonstration project entitled "Coalition-based Efforts to Prevent Chronic Diseases and Disseminate Prevention Research Findings". This project is designed to induce changes in three modifiable risk factors for CVD–smoking, sedentary behavior, and diet. Environmental and policy objectives include: 1) the establishment of comprehensive smoke-free schools policies in all school districts in intervention areas; 2) local clean indoor air ordinances that severely restrict smoking in public places; 3) walking trails in at least 50% of communities in intervention areas; 4) school nutrition policies leading toward reduced fat consumption and increased fruit and vegetable consumption in all school districts in intervention areas; and 5) increase health professional activities in counseling and referral for smoking cessation, diet modification, and initiation and maintenance of physical activities in intervention areas by 100%.

An example of a core research project at the University of Kentucky PRC involves controlling cancer in central Appalachia. Goals to be completed within a three-year project period include: 1) implement surveillance, behavioral, and epidemiological studies to better understand the cancer problem and associated risk factors; 2) design implement, and evaluate intervention strategies for significant cancer prevention and control issues; 3) link findings from behavioral and translational research into public health and clinical practice; and 4) provide cancer prevention and control research training opportunities for clinicians and scientists throughout central Appalachia.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Support prevention research to develop sustainable and transferable community-based behavioral interventions.**

Performance Measure	Target	Actual Performance	Ref.

Ensure that at least one PRC in each DHHS region establishes research priorities and develops interventions in collaboration with a constituent community.	**FY 03:** At least 1 research project per PRC that reflects community-based participatory research **FY 02:** At least 1 research project per PRC that reflects community-based participatory research **FY 01:** At least 1 research project per PRC that reflects community-based participatory research **FY 00:** At least 1 research project per PRC that reflects community-based participatory research **FY 99:** 1 PRC in each region	**FY 03:** 6/2004 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00:** Achieved **FY 99:** Achieved **FY 98 :** 0	Page 96
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Ensure that PRCs work toward closing the gap between research findings and public health practices.	**FY 03:** At least 2 research projects per PRC aimed at closing the gap between research and practice. **FY 02:** At least 1 research project per PRC aimed at closing the gap between research and practice. **FY 01:** At least 1 research project per PRC aimed at closing the gap between research and practice.	**FY 03:** 6/2004 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00**: Achieved	Page 96

Verification/Validation of Performance Measures: Data are available from grantee progress reports and will be verified through site visits and publications. CDC program consultants validate information received through site visits and telephone consultations. No data lags are expected.

Building Chronic Disease Prevention Capacity in State Health Departments and State Departments of Education

II-B.1d Heart Disease and Stroke

Cardiovascular disease (CVD) - primarily heart disease and stroke - is the nation's number-one killer of men and women across all racial and ethnic groups. More than 40% of deaths in the United States – 900,000 each year – are directly attributable to heart disease and stroke, and CVD is the leading cause of death in all states. Associated annual costs exceed $286 billion. Major disparities exist among population groups, with a disproportionate burden of death and disability from heart disease and stroke in racial/ethnic populations. For example, the rate of premature deaths caused by heart disease and stroke

is greater among African Americans than among white Americans. Disparities also exist in the prevalence of risk factors. The number of people with CVD is likely to increase as the population ages, particularly in populations with increased risk factors for heart disease and stroke.

Scarce public health resources have prohibited the development of an effective nationwide cardiovascular health (CVH) program. Such a program is needed to move beyond traditional educational approaches and bring about policy and environmental changes that foster and maintain heart healthy behaviors (e.g., policy, social, and environmental supports that encourage physical activity, good nutrition, tobacco cessation, and control hypertension and cholesterol). In response to this need, CDC is building a nationwide program to prevent heart disease and stroke and their complications and to promote cardiovascular health (CVH). CDC's crosscutting approach focuses on prevention of risk factors (tobacco use, high blood pressure, high cholesterol, physical inactivity, poor nutrition), surveillance, epidemiologic research, and health promotion. To initiate this effort, CDC is building state-specific capacity, starting with states with the greatest disease burden. Initial funding is used for capacity building at the core level, which includes seven components: 1) partnership development; 2) scientific capacity; 3) policy and environmental strategies; 4) state CVH plan; 5) training and technical assistance; 6) population-based strategies; and 7) strategies for priority populations. States that achieve these seven capacities are eligible for a comprehensive level of funding support.

CDC currently funds 6 states at the comprehensive level. These states are developing and implementing policy and environmental actions to reduce risk factors for CVD and promote cardiovascular health. As the programs mature, CDC will develop a performance measure to evaluate each state's ability to influence policy and environmental improvements to prevent and control heart disease and stroke. Performance measures at the comprehensive level will consist of anticipated outcomes such as: 1) improvements at the health-systems level in quality indicators for the treatment of congestive heart failure, stroke, and acute myocardial infarction that are routinely measured by state peer review organizations, and 2) improvements in environmental indicators in communities, work sites, and schools.

Links to DHHS Strategic Plan

CVD performance objectives are related to DHHS Objective 5.1: *Improve the capacity of the public health system to identify and respond to threats to the health of the nation's population*.

Performance Summary

CDC has expanded its pioneering effort to protect Americans from cardiovascular disease. In FY 1998 (the program's first year of funding), CDC funded 8 states, 7 of which achieved five of the seven core capacities. In FY 1999, 3 additional states were funded, for a total of 11 states. The funding increase for FY 1999 was designated for reductions in racial disparities in CVD. The additional funds supported racial disparity prevention projects in 10 of 11 participating states and supported 2 of 3 additional core programs initiated in FY 1999. In FY 1999, all 11 states met at least five core capacities. In FY 2000, CDC funded an additional 14 states, bringing the number of states in this program to 25, more than tripling the number of participants in the 2 years since its inception. In FY 2001, CDC funded an additional 3 states, bring the number of states to 28, with 22 receiving core or planning funds and 6 receiving comprehensive or implementation funds. In FY 2002, CDC will continue to target core capacities by increasing the number of states that achieve 5 of the 7 core heart disease and stroke prevention capacities.

States are already documenting prevention achievements. New York, funded at the comprehensive level, is making work sites more supportive of heart health by training more than 600 business and community leaders on the specifics of a heart-healthy work site. More than 300 sites are implementing changes to promote heart-healthy activities, such as offering low-fat food choices in vending machines, being smoke-

free, and providing physical activity breaks. New York also works with the American Heart Association (AHA) to ensure heart disease is treated according to AHA guidelines. Maine is funding CVD prevention activities in it State's five American Indian tribes and is working with the Maine Women's Health Campaign to address CVD in women. West Virginia, funded at the core level, convened a conference, *Cardiovascular Health in Appalachia: Partnering for Change*, at which public health and healthcare providers developed a vision for a heart-healthy state. The core-funded program in Mississippi initiated Sisters Together, a community-based project that encourages African-American women to become more active and eat healthier foods. Kentucy, with its Department of Education, is integrating CVH into coordinated school health programs.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Increase the capacity of state cardiovascular health programs to address prevention of cardiovascular disease at the community level.**		
Performance Measures	**Target**	**Actual Performance**	**Ref.**
Increase the number of states with five of the seven core heart disease and stroke prevention capacities.	**FY 03:** 18 states **FY 02:** 18 states **FY 01:** 15 states **FY 00:** 11 states **FY 99:** 8 states	**FY 03:** 6/2004 **FY 02:** 6/2003 **FY 01:** 6/2002 **FY 00**: Exceeded/15 **FY 99:** Exceeded/11 **FY 98:** 7	Page 96

Verification/Validation of Performance Measures: CDC collects and evaluates state data on heart disease and stroke prevention capacity via annual reports.

II-B.1e Diabetes

Nearly 16 million Americans suffer from diabetes, and the number of new cases is increasing steadily – by approximately 800,000 per year. Diabetes is the seventh leading cause of death in the United States and the primary cause of new cases of blindness, non-traumatic amputations, and kidney failure in adults. CDC's National Diabetes Control Program supports and promotes access to quality care and services for affected persons. This effort requires a multifaceted approach for translating research findings into clinical and public health practice, with an emphasis on: 1) support for diabetes control programs in all 50 states to develop or expand diabetes control efforts, with additional funding for selected states to conduct comprehensive statewide efforts; and 2) activities to improve the quality of care for persons with diabetes. CDC funds diabetes control programs in 16 states at an enhanced Comprehensive Capacity-building level and diabetes control programs in 34 states at the Core Capacity-building level. Comprehensive programs

are expected to expand the basic core activities to function throughout the state.

Links to DHHS Strategic Plan
Performance objectives relate to DHHS Goal 4: *Improve the quality of health care and human services*, and specifically to Objective 4.1: *Enhance the appropriate use of effective health services*.

Partnerships
CDC and NIH provide federal leadership for the development, coordination, and implementation of the National Diabetes Education Program (NDEP). CDC has primary responsibility for: coordinating the NDEP Partnership Network of more than 200 organizations, coordinating several of the 10 NDEP planning workgroups, and administering the NDEP community interventions component. CDC is collaborating with IHS and other organizations to conduct the research and training activities of the National Diabetes Prevention Center (NDPC). The NDPC was established to address the serious diabetes epidemic in American Indians. CDC's state-based diabetes control programs partner with HRSA community health centers to improve the health status of persons with diabetes who receive care at these sites. CDC also collaborates with state health departments, American Diabetes Association, Juvenile Diabetes Research Foundation, American Association of Diabetes Educators, and managed-care organizations in the control of diabetes and its complications.

Performance Summary
CDC supports state and territorial diabetes control programs (DCPs) in 50 states, the District of Columbia, and 8 territories to reduce the complications associated with diabetes. The programs inform and educate health professionals and persons with diabetes about the disease and its complications. The programs also identify high-risk populations, improve the quality of diabetes care, involve communities in controlling diabetes, and increase access to diabetes care – with measurable success. For example, over a 2-year period, the New York DCP, which collaborates with 14 regional community coalitions and 3 diabetes centers of excellence, reduced hospitalization rates by 35% and decreased lower-extremity amputations rates by 39%. In Michigan, a long-standing DCP has produced a 45% lower rate of hospitalizations, a 31% lower rate of lower-extremity amputations, and a 27% lower death rate for participants.

In FY 2001, CDC documented that 100% of DPCs adopted, promoted, and implemented guidelines for improving the quality of care for persons with diabetes. Influencing positive change in the preventive care practices undertaken in health systems is essential to the task of reducing diabetes. In reaching this critical goal, CDC will continue its work with states to sustain this effort. In FY 2000, CDC documented that while 85% of the DCPs had committed to guidelines, the remaining programs had not yet formally adopted, promoted, and/or implemented guidelines. Many of the programs depend on their Diabetes Councils, health professions organizations or other health care partner organizations to help them formally establish the state's guidelines and that process was still underway.

CDC also conducted 8 prevention research studies to understand how to apply diabetes scientific findings in clinical and public health practice. For example, the Translating Research into Action for Diabetes (TRIAD) study is examining the influence of managed care structure on process and outcomes of diabetes care. TRIAD is important because it is the first multi-center study of diabetes quality of care, quality of life and and factors affecting them. Ultimately, CDC will develop interventions to overcome the identified barriers.

In FY 2001, Behavioral Risk Factor Surveillance System (see II-B.1h) data from 12 of 16 Comprehensive DCPs showed that CDC had achieved the performance target for increasing the percentage of person with diabetes who receive annual foot exams. Diabetes is the leading cause of non-traumatic lower

extremity amputations, yet over half of the nearly 70,000 amputations that occur annually could be prevented through appropriate preventive care and treatment. Although the data showed an increase in eye exams, CDC is still striving to achieve the target for eye exams in persons with diabetes. The estimates calculated for eye and foot exams are only among the 16 comprehensive states, and among these states, some of them are missing data each year. CDC usually has data on 10-12 of the 16 states each year. States conduct the BRFSS telephone survey annually, however not all of the states choose to include the Diabetes Module each year. It is possible that with all 16 states reporting, the target would be achieved. CDC will encourage all states to use the Diabetes Module regularly. CDC will also continue to work with the state DCPs to influence the preventive care practices of health systems and to inform providers and persons with diabetes about the importance of receiving annual eye exams to discover and treat diabetes-related eye disease in the earliest stages.

CDC's last performance measure monitoring the percentage of DCPs that achieve core capacities presents a reporting challenge because the level of achievement for the several core capacities identified in the measure varies among the 58 DCPs. Nevertheless, reports indicate an increase in FY 2000 and FY 2001 in this area. All states have established the necessary capacities in surveillance and partnership networks; however development of the capacity to establish and sustain communication networks, to assess quality of care, and to increase public awareness varies among the DCPs.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Increase the capacity of state diabetes control programs to address the prevention of diabetes and its complications at the community level.**

Performance Measures	**Target**	**Actual Performance**	**Ref.**
Increase the percentage of diabetes control programs that adopt, promote, and implement guidelines for improving the quality of care for persons with diabetes.	**FY 03:** 100% **FY 02:** 100% **FY 01:** 100% **FY 00:** 100%	**FY 03:** 12/2003 **FY 02:** 12/2002 **FY 01:** 100% **FY 00:** 85% **FY 99:** 70% **FY 98:** 60%	Page 96
Conduct studies on translating research findings into clinical and public health practice, and publish results in peer-reviewed journals.	**FY 03:** 8 studies **FY 02:** 8 studies **FY 01:** 8 studies **FY 00:** 7 studies **FY 99:** 5 studies	**FY 03:** 10/2003 **FY 02:** 10/2002 **FY 01:** Achieved **FY 00:** Achieved **FY 99:** 4 studies	Page 96

For states receiving comprehensive CDC funding for diabetes control programs (DCPs), increase the percentage of persons with diabetes who receive annual eye and foot exams.	**FY 03:** Eye/72%; foot/62% (Increase baseline by 10%) **FY 02:** Eye/72%; foot/62% (Increase baseline by 10%) **FY 01:** Eye/72%; foot/62% (Increase baseline by 10%) **FY 00:** Eye/72%; foot/62% (Increase baseline by 10%)	**FY 03:** 10/2004 **FY 02:** 10/2003 **FY 01**: 10/2002 **FY 00:** Eye/69.0%; Foot/62.4% **FY 99:** Eye/67.3%; foot/57.8% **FY 98:** Eye/64.7%; foot/56.5% **FY 97:** Eye/65.6%; foot/56.6% **FY 96:** Eye/61.7%; foot/52.4% (baseline)	Page 96
Increase the percentage of DCPs with core capacity in all key areas (e.g., surveillance, partnerships, communication networks, assessment of quality of care, public awareness).	**FY 03:** 100% **FY 02:** 100%. **FY 01:** 100% **FY 00:** At least 85% **FY 99:** At least 75%	**FY 03:** 12/2003 **FY 02:** 12/2002 **FY 01:** 80% - 100% **FY 00:** 75% - 100% **FY 99:** 69% - 100% **FY 94:** 36%	Page 96

Verification/Validation of Performance Measures: CDC verifies performance through quarterly state reports and periodic site visits. For efforts in American Indian/Alaskan Native populations, data are verified via program reports and documentation of support. The BRFSS collects data on receipt of annual eye and foot exams in persons with diabetes (Appendix B).

II-B.1f Arthritis

Arthritis affects nearly one of every six Americans – an estimated 43 million persons – making it one of the most common diseases in the United States. The nation's leading cause of disability, arthritis limits daily activities for more than 7 million people. By 2020, an estimated 60 million persons will be affected and more than 11 million persons will have some disability because of arthritis. Although all Americans are at risk, the prevalence of arthritis rises dramatically with age and is higher among women than men. The cost of arthritis treatment and lost productivity because of arthritis-related disability are the enormous costs – totaling almost $65 billion.

CDC works with partners to implement the *National Arthritis Action Plan: A Public Health Strategy* (NAAP). The goal of CDC's arthritis program, consistent with NAAP, is to improve the quality of life of persons affected by arthritis by decreasing pain and disability and improving physical, psychosocial, and work functions. The multifaceted approach for translating research findings into public health practice emphasizes: 1) support to states to develop/enhance public health programs that address arthritis, 2) activities to monitor the burden and impact of arthritis, 3) activities to increase public awareness and

appropriate self management, and 4) efforts to improve the quality of care. CDC has been successful in helping states monitor the burden of arthritis and its impact in their populations using the BRFSS.

Links to DHHS Strategic Plan

Arthritis performance objectives relate to DHHS Goal 4: *Improve the quality of health care and human services*, and specifically Objective 4.1: *Enhance the appropriate use of effective health services*. They also relate to Goal 5: *Improve the Nation's public health systems*.

Partnerships

CDC collaborates with the Arthritis Foundation to increase awareness of arthritis and its impact and to increase the availability of self management education and physical activity programs for persons with arthritis. CDC also works with state health departments, the Association of State and Territorial Directors for Health Promotion and Public Health Education, and the Association of State and Territorial Chronic Disease Program Directors.

Performance Summary

In FY 2001, 21 states were funded at the enhanced establishment level ($120,000) to further develop basic public health components (staff, partnerships, monitoring, planning) to address arthritis and to implement one pilot project. Eight states continued with core level funding (average award, $300,000) to enhance monitoring activities and partnerships, educate the public, and develop and implement pilot programs to decrease the impact of arthritis in select populations. No states are funded at the comprehensive level to implement statewide activities. In FY 2001, all arthritis state programs conducted arthritis surveillance using the Behavioral Risk factor Surveillance System (BRFSS); 16 states had the resources to monitor health-related quality of life using the BRFSS.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Increase the capacity of state arthritis programs to address the prevention of arthritis and its complications at the community level.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
Enhance state-based arthritis surveillance by increasing the number of states using BRFSS modules on arthritis and quality of life.	**FY 03:** 50 states **FY 02:** 28 states **FY 01:** 35 states	**FY 03:** 1/2003 **FY 02:** 1/2002 **FY 01:** 50/arthritis; 15/quality of life **FY 00:** 36/arthritis; 19/quality of life **FY 99**: 8	Page 96

Increase the number of states addressing arthritis at the core level.	**FY 03:** 8 states **FY 02:** 8 states. **FY 01:** 8 states	**FY 03:** 10/2003 **FY 02:** 10/2002 **FY 01**: Achieved **FY 00:** 8	Page 96

Validation/Verification of Performance Measures: CDC will confirm data via annual reports, site visits, and an inventory of BRFSS questions used by the states.

II-B.1g National Program of Cancer Registries

Cancer is the second leading cause of death among Americans. In 2002, an estimated 555,500 Americans will die of cancer, and approximately 1.3 million new cases of cancer will be diagnosed. The United States spends an estimated $156.7 billion annually on cancer care, including healthcare expenditures and lost productivity from illness and death. CDC's National Program of Cancer Registries (NPCR) is a fundamental component of CDC's state-based cancer control strategy. CDC supports registry development/enhancement in 45 states, the District of Columbia, and 3 territories, representing 96% of the U.S. population. CDC also provides training in data collection, analysis, interpretation, and quality assurance for completeness, timeliness, and quality.

Cancer registries help states report on cancer trends, assess program impact, identify cancer clusters, and respond to public inquiries and reports of suspected increased cancer occurrence. In 1991, 35% of Kentucky women diagnosed with breast cancer had advanced (late-stage) disease, for which the survival rate is low. Registry data were used to identify areas with high rates of late-stage and low rates of early-stage breast cancer. In 1994, Kentucky received CDC funding to enhance registry and breast and cervical cancer activities, enabling the state to expand mammography outreach activities in these communities. By 1996, the percentage of Kentucky women diagnosed with late-stage breast cancer had declined to 30 percent. In addition to the lives potentially saved by early detection of these cancers, Kentucky estimates that it saved about $4.7 million in treatment expenditures.

To maximize the benefits of state-based cancer registries, CDC implemented the NPCR-Cancer Surveillance System for receiving, assessing, enhancing, aggregating, and disseminating data from NPCR programs. This system of cancer statistics has provided valuable feedback to help state registries improve the quality and usefulness of their data. By summarizing regional- and national-level data, NPCR will facilitate the study of rare cancers, cancer in children and racial and ethnic minority populations, and occupation-related cancer.

NPCR has made it possible for the vast majority of states to collect a standard set of data elements on all cancer cases for each year. Collection of complete data is critical to the program. Expected NPCR outcomes – i.e., the ability to monitor trends in cancer by site of the cancer, age and ethnicity of the patient, geographic region, and treatment result. The proposed performance measure is therefore the most critical to the eventual success and usefulness of the program.

Links to DHHS Strategic Plan

Cancer registry objectives relate to DHHS Objective 5.1: *Improve the capacity of the public health system to identify and respond to threats to the health of the nation's populations*.

Partnerships

CDC works with the American Cancer Society, American College of Surgeons, North American Association of Central Cancer Registries (NAACCR), and National Cancer Registrars Association. These

groups have formed a consortium, the National Coordinating Council for Cancer Surveillance, that encourages and facilitates voluntary reporting of cancer cases from federally supported facilities to state registries. CDC helps states and organizations use cancer surveillance data to describe disease burden, evaluate cancer control activities, and identify populations at high risk for certain cancers.

Performance Summary
CDC supports 45 state registry programs and the District of Columbia: 44 for enhancement of established central registries and 2 for planning and implementation of registries. According to FY 2000 data (for cancer cases diagnosed in 1998), case counts from 70% of CDC-funded states were at least 95% complete within 24 months of the close of the diagnosis year. Based on an evaluation of registry systems and data, CDC reassessed the program's goals and objectives, extended the time allowed for states to achieve 95% completeness (from 12 to 24 months), and increased target levels. Program standards for the second 5-year project period stipulate that data in a state central cancer registry should be 95% complete within 24 months of the close of a diagnosis year.

Goal-by-Goal Presentation of Performance

Performance Goal: Improve the quality of state-based cancer registries.

Performance Measure	Targets	Actual Performance	Ref.
Increase the percentage of states funded by CDC's NPCR that report at least 95% of unduplicated, expected cases of reportable cancer in state residents in a diagnosis year.	**FY 03:** 85% **FY 02:** 80%. **FY 01:** 75% **FY 00:** 60% **FY 99:** 30%	**FY 03:** June 2004 **FY 02:** June 2003 **FY 01**: June 2002 **FY 00:** 70% **FY 99:** Exceeded/60% **FY 98:** 29% **FY 97:** 17%	Page 96

Verification/Validation of Performance Measures: Participating states are expected to collect information on at least 95% of cancer cases diagnosed or treated in their state each year. NPCR funded states are required to incorporate NAACCR standards for data quality and format. CDC receives an annual administrative summary from each NPCR program, as well as reports three times per year on progress toward goals of completeness, timeliness, and quality of registry data. NPCR staff also prepare annual internal evaluations of program progress. State cancer registries do not report raw data to CDC, and CDC aggregates de-identified NPCR data.

Variations in states' capacities (planning or enhancement status) and initial funding year result in differences across reference years used for calculating registry data completeness. NAACCR has established a process by which states can apply for certification to ensure that member registries are collecting useful and high-quality data. Member registries are evaluated yearly and provided confidential feedback. Data for FY 2001 will be available in June 2002 for reporting.

II-B.1h HIV Prevention among School-Aged Youth

Performance Summary
CDC funds 56 state and territorial education agencies, 18 local education agencies, and 41 national non-governmental organizations to implement HIV prevention education programs in schools. Performance measures for this aspect of CDC's HIV/AIDS prevention program monitor students' exposure to HIV/AIDS prevention education in schools and youth behaviors that affect their risk of becoming HIV infected.

In FY 1999, CDC reached its performance targets for school health. The data from the 1999 YRBSS demonstrate that 91% of high school students have been taught HIV/AIDS prevention in school. The

target measure (achieve and maintain the percentage at 90% or greater) indicates a significant increase since 1991 (83%) Continued increases will be relatively small at this point in the epidemic because the remaining schools are unlikely to be convinced of the importance of providing HIV/AIDS prevention education. This measure will remain because it is highly relevant and important to prevention efforts.

In FY 2000, CDC decided to replace two previous HIV performance measures (i.e., never having intercourse and using condoms if sexually active) with the a single measure, the leading health indicator on responsible sexual behavior from HP 2010: "Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if sexually active." This measure is consistent with language in the draft CDC HIV Prevention Plan, which states that "our nation's efforts should increase the proportion of adolescents who consistently engage in behaviors that reduce risk of HIV acquisition or transmission." The 1999 YRBSS data indicate that the proportion of adolescents (grades 9-12) who abstained from sexual intercourse or used condoms if currently sexually active was 85%. Because this measure was recently developed and adopted for use (May 2000), a FY 1999 target was never established.

To address the issue of health disparities among ethnic groups, two additional measures were added to address black/African-American and Hispanic/Latino populations. Surveillance summaries demonstrate that these two groups are disproportionately affected by HIV/AIDS and consequently warrant special attention. By including these two new measures, CDC acknowledges the importance of the HP 2010 goal to eliminate health disparities. In addition, the inclusion of the measures complements CDC's Racial and Ethnic Approaches to Community Health (Reach 2010) Demonstration Program.

Data to report on performance measures for this part of CDC's FY 2001 GPRA Annual Performance Report will be available in summer of 2002 when the 2001 YRBSS data are expected to be released. An analysis of whether or not actual performance results met the performance goals will be provided at that time. In addition, targets for FY 2003 will be re-evaluated based on actual performance for FY 2001.

Performance Goal:	**Reduce the percentage of HIV/AIDS-related risk behaviors among school-aged youth through dissemination of HIV prevention education programs.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
Achieve and maintain the percentage of high school students who are taught about HIV/AIDS prevention in school at 90% or greater.	**FY 03:** 90% or more **FY 01:** 90% or more **FY 99:** 90% or more	**FY 03:** 7/2004 **FY 01:** 7/2002 **FY 99:** Achieved/91% **FY 97:** 92% **FY 95:** 86%	Page 96
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Increase the proportion of adolescents (grades 9-12) who abstain from sexual intercourse or use condoms if currently sexually active.	**FY 03**: 89% **FY 01:** 89%	**FY 03**: 7/2004 **FY 01**: 7/2002 **FY 99**: 85% **FY 97**: 85% **FY 95:** 83% (YRBSS)	Page 96

Increase the proportion of black or African-American adolescents (grades 9-12) who abstain from sexual intercourse or use condoms if currently sexually active.	**FY 03:** 87% **FY 01:** 87%	**FY 03:** 7/2004 **FY 01:** 7/2002 **FY 99**: 83% **FY 97:** 80% **FY 95:** 82% (YRBSS)	Page 96
Increase the proportion of Hispanic or Latino adolescents (grades 9-12) who abstain from sexual intercourse or use condoms if sexually active.	**FY 03:** 88% **FY 01:** 88%	**FY 03:** 7/2004 **FY 01:** 7/2002 **FY 99**: 84% **FY 97:** 82% **FY 95:** 77% (YRBSS)	Page 96

Verification/Validation of Performance Measures: Data are collected on a biennial basis (during odd-numbered years) through CDC's YRBSS, a system designed to focus attention on priority behaviors among youth that are associated with the most important health problems (see Appendix B). The YRBSS was developed in partnership with federal agencies, state departments of education, scientific experts, and survey research specialists. The YRBSS includes separate national, state, and local school-based surveys of high school students. A recent study provides evidence that this adolescent survey has good reliability in measuring health behavior. Baseline data from the 1995 YRBSS are used because: 1) they were the most recent data available when the original measures were created, and 2) they will allow a more accurate illustration of trends in sexual behaviors over time.

Providing Credible Information to Enhance Health Decisions

II-B.1i Monitoring Risk Behaviors (Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a unique, state-based telephone survey through which states routinely collect information on behavioral risk factors and demographics. Active in all 50 states, the BRFSS continues to be the primary source of information (for many states it is the only source) on risk behaviors that contribute to the leading causes of death among U.S. adults. For almost 20 years, the BRFSS has served as the backbone of surveillance for chronic disease prevention and health promotion. CDC provides funding, consults with state staff, edits and processes the data from each state's monthly interviews, and returns prevalence information and reports to states for their use. Nationwide, the BRFSS conducts about 200,000 interviews per year.

States use BRFSS data to make program decisions, target resources, monitor and evaluate program performance, educate the public, and alert public officials to health risks and disease prevalence. More than 60% of states use BRFSS data to set health objectives, prepare planning documents, and design disease prevention programs. Nearly two-thirds of states use BRFSS data to support legislative efforts (e.g., tobacco-related legislation). Although the BRFSS was designed to produce state-level estimates, data have been used in research studies and combined across states, for example, to estimate the extent of alcohol and tobacco use among pregnant women. Alabama used BRFSS data to support legislation restricting indoor smoking and mandating seatbelt use; Maryland determined priorities for Healthy Maryland 2010; and Michigan developed, implemented, and evaluated programs to reduce the risk of CVD. After the bomb explosion in Oklahoma City, health department staff analyzed questions on stress, nightmares, and feelings of hopelessness to better address the psychological impact of the disaster. In Arkansas, BRFSS data assessing the correlation between physical activity and hypertension among black women have been used to target special intervention and education programs.

Link to DHHS Strategic Plan

BRFSS objectives related to DHHS Objective 5.1: *Improve the capacity of the public health systems to identify and respond to threats to the health of the nation's population.*

Performance Summary

Meaningful estimates from BRFSS data depend on an adequate sample size of respondents. At present, sample sizes in states range from approximately 1,700 to approximately 7,500. A sample size of 4,000 completed interviews per state per year is adequate to measure progress towards state goals and HP 2010 objectives and to monitor prevalence among certain population groups in terms of race, ethnicity, and age. A sample size of 4,000 will permit better identification of geographic and demographic variations in health risk behaviors that programs can use to target interventions. In FY 2000, 18 states had a sample size of at least 4,000 completed interviews; 18 states are projected to achieve 4,000 between FY 2001 and FY 2002.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Help states monitor the prevalence of major behavioral risks associated with premature morbidity and mortality in adults to improve the planning, implementation, and evaluation of health promotion and disease prevention programs.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Increase the number of states participating in the BRFSS that complete 4,000 telephone interviews per year.	**FY 03:** 18 states **FY 02**: 18 states **FY 01:** 18 states	**FY 03:** 4/2004 **FY 02:** 4/2003 **FY 01:** 4/2002 **FY 00**: 18 **FY 99**: 9	Page 96

Verification/Validation of Performance Measures: CDC will obtain data from grantee progress reports.

II-B.2 Preventive Health and Health Services Block Grant

Total Program Funding (Dollars in thousands)

FY 2003:	$134,966	(Estimate)
FY 2002:	$134,967	(Current Estimate)
FY 2001:	$135,029	(Actual)

Mandate

The Preventive Health and Health Services (PHHS) Block Grant provides funding to state health departments to implement preventive health services that reduce illness, premature deaths and disabilities to improve the quality of life for their citizens.

Problem

Congress recognizes that state health departments do not have adequate funding to combat all leading causes of illness, death, disability, and injury and that states need a source of flexible funding to confront state specific priority health problems and unexpected health threats.

Strategies, Activities, and Resources

Through the PHHS Block Grant, CDC funds all 50 states, the District of Columbia, 8 Pacific Island territories, and 2 Native American Indian tribes to support them in combating their leading causes of death and disability. The Block Grant is the primary source of flexible funding which provides states the latitude to choose and fund 265 of the national health objectives available in the Nation's Healthy People 2010 health improvement plan. States use Block Grant dollars to fund a variety of program activities including clinical services, preventive screening, laboratory support, outbreak control, workforce training, public education, data surveillance, and program evaluation targeting such health problems as cardiovascular disease, cancer, diabetes, emergency medical services, injury and violence prevention, infectious disease, environmental health, community fluoridation, and sex offenses. Because of the variance in the allowable uses of the funds, no two states allocate their Block Grant resources in the same way, and no two states provide similar amounts of funding to the same program or activities.

In fiscal year 2001, the ten leading programs and the number of states choosing to fund them with their PHHS block grant dollars were:

Program	Number of States
Cardiovascular health	45
Community based health education	38
Data surveillance	36
Unintentional Injuries	33
Cancer	22
Emergency Medical Services	21
Environmental Health	20
Tuberculosis	16
Food and Drug Safety	12
Clinical preventive services	10

States invest their PHHS block grant dollars in a variety of public health areas. PHHS block grant dollars are used to support existing programs, implement new programs, and respond to unexpected emergencies. In FY 2001, the PHHS block grant contributed to such activities as blood lead testing for uninsured children, skin cancer prevention kits to child care centers, laboratory analysis and rapid testing for food and drinking water contamination, a physical activity program for 150 inner-city children, installation of 4,500 smoke alarms in high risk residences, activation of a new law for child restraint protection, activation of a new law for bicycle safety helmets, development and analysis of health needs assessments for numerous local and county health departments, training of emergency medical service providers, initial development of cancer and trauma registries in state health departments, law enforcement activities for prohibition of tobacco sales to minors, screenings for diabetes, cholesterol, and hypertension to under-served and uninsured populations; fluoridation of local community water systems, and nurse outreach programs for rural counties.

States often use the flexibility of the Block Grant to establish programs when no other federal funding is available. For example, the Block Grant is currently the sole source of funding for the Promoting Lifetime Activity for Youth (PLAY) program in Arizona. Because physical education is not legally mandated in Arizona, PLAY is the only organized physical activity in many schools. Approximately 1,000 teachers and 28,000 students in high-risk, rural communities participate in the program. Using classroom discussions on healthy living as well as structured and unstructured physical activity, PLAY encourages children to form habits that will help reduce their risk for chronic diseases.

CDC continues to help states obtain the optimum benefit from these scarce flexible dollars through technical assistance, an annual training workshop, and development of an electronic grant application and reporting system. In 2001, major modifications were made to the Block Grant's electronic grant application and reporting system (GARS). The modifications were made to link all Block Grant-funded activities with the Healthy People 2010 goals and objectives. Prior to 2001, the Block Grant funded activities were linked to the Healthy People 2000 goals and objectives. The goal of the new GARS design is to provide States the ability to use the application system for both priority setting and program planning. The new voluntary evaluation component includes detailed reporting on program activities funded with block grant dollars and their impact on the health problem.

Beginning in 2003, the uniform data sets linked to Healthy People 2000 goals and objectives will be discontinued. The CDC plans to establish a Block Grant website which will enable the states to directly access the various online data resources now available to track the Healthy People 2010 goals and objectives. CDC feels this efficient and direct data tracking capability will be less burdensome to the states and provide them with more up to date and reliable data.

Links to DHHS Strategic Plan

This activity relates to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans;* Goal 2: *Improve the economic and social well-being of individuals, families, and communities in the United States*, specifically Objective 2.4: *Improve the safety and security of children and youth*; Goal 3: *Improve access to heath services and ensure the integrity of the nation's health entitlement and safety net programs*, specifically Objectives 3.6: *Improve the health status of American Indians and Alaskan Natives*, 3.7: *Increase the availability and effectiveness of services for the treatment and management of HIV/AIDS*, and 3.8: *Increase the availability and effectiveness of mental health care services*; and Goal 5: *Improve the nation's public health systems*, specifically Objectives 5.1: Improve the capacity of the public health system to identify and respond to threats to the health of the nation's population, and 5.2: *Improve the safety of food, drugs, medical devices, and biological products.*

Because the goals and objectives coincide with HP 2000/HP 2010 objectives, grantees may choose to fund programs addressing any of these areas.

Presentation of Performance

Protecting Health and Promoting Partnerships

Performance Summary

The General Accounting Office (GAO) and others have addressed the issue of measuring Block Grant performance. GAO's inquiry was based on their examination of the feasibility and appropriateness of applying GPRA requirements to block grants across the government. CDC and its partners have worked for years to develop a means of accountability under the Block Grant. CDC has considered the use of several general indicators, including life expectancy, years of potential life lost, premature mortality, and disability-adjusted life years. CDC has also looked at specific program indicators for programs that are most commonly funded by states. States vary widely in the programs they support and the funding allotted to each program. No single indicator or group of indicators can appropriately capture the activities of the grantees.

From 1994-2001, CDC and States were responsible for reporting on a complete range of program data -- the uniform data set -- for every program supported with Block Grant funds. The data set (which corresponded directly to programs) included outcome, risk factor, and service delivery data items based on 116 health status outcome objectives from HP 2000. The 116 objectives constituted a total of 8,432 data items. The measure – to increase the proportion of data reported to CDC annually – reflected the agency's efforts to better capture each state's accomplishments attributable to Block Grant funds, while at the same time addressing accountability.

In FY 2001, the release of the Healthy People 2010's 467 health objectives and the availability of internet data capabilities, required the reassessment of the uniform data sets model. In conjunction with state health departments, the agency developed a standardized application and report format that allows for a more detailed description of the role that the block grant dollars play within the various program strategies states employ to combat their health problems. To maintain the ability to measure success using data to evaluate outcomes, the block grant program plans to construct a web page that will give the states direct on line data available from the various federal sources.

In FY 2001, states reported 73% of the data required from programs funded by the Block Grant, thus not meeting the goal of 85%. The reason for not meeting the goal was attributable to the inability to collect data items established in 1995 which had been changed and/or were no longer collected by federal data sources. In FY 2002, states are required to submit annual reports reflecting progress on activities. Uniform data sets will not be required due to the transition into the Healthy People 2010 format.

In FY 2003, two new measures will be addressed. The goal of the new measures are to capture more program specific information on the impact of how and where PHHS block grant dollars are being invested by the states.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Support high-priority state and local disease prevention and health promotion programs.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Increase the number of grantees who submit as part of their annual report 1 health outcome impact success story.	**FY 03:** 30 grantees **FY 02:** 25 grantees	**FY 03: 3/2004** **FY 02: 3/2003**	Page 195
Increase the number of grantees who submit both an annual application and annual report using the standardized electronic grant application and reporting system (GARS).	**FY 04**: 53 grantees **FY 03:** 50 grantees **FY 02**: 45 grantees	**FY 04: 3/2005** **FY 03: 3/2004** **FY 02: 3/2003**	Page 195
At least 85% of total required data from all programs funded by the Preventive Health and Health Services Block grant will be reported to CDC annually.	**FY 01**: At least 85% **FY 00**: At least 85% **FY 99**: At least 80%	**FY 01**: 3/2002 **FY 00:** 73% **FY 99:** 82% **FY 98:** 82% **FY 97:** 77%	Page 195

Verification/Validation of Performance Measures: To verify and validate performance, CDC will collect on February 1 of each fiscal year annual progress and impact reports from each funded program for the prior fiscal year's performance.

II-C.1 Public Health Improvement

Total Program Funding (Dollars in thousands)

FY 2003:	$118,836	(Estimate)
FY 2002:	$150,123	(Current Estimate)
FY 2001:	$112,443	(Actual)

Mandate

CDC protects the health and safety of the American people by strengthening, enhancing, and maintaining the elements that are essential to an effective community public health presence: knowledgeable and skilled public health workers; effective, proactive, and well-organized public health departments; well-functioning public health laboratories; and modern public health surveillance and information systems.

Health Burden

There are huge health disparities in many American communities. Part of the solution to resolving these inequalities resides in the capacity of state and local health departments to effectively manage the business of public health in their communities. During the past several decades, as old threats have resurfaced and new ones have emerged, the infrastructure undergirding our public health safeguards has struggled to meet escalating and increasingly complex demands. There are serious gaps in our line of defense, leaving the public health system inadequately prepared for rapidly evolving health threats. Many American communities are unprotected.

Workforce: The public health workforce is not fully trained in essential skills and competencies. Only 44% of the nation's public health workers have formal training in public health; 78% of local public health officials in leadership positions do not have graduate degrees in public health. Nearly two-thirds of public health nurses – the largest profession in public health – lack bachelor's level education. Many public and private laboratory scientists lack access to continuing education in the safe and accurate use of ever-evolving, high-technology laboratory tests and procedures.

Public health information and surveillance systems: Many health departments lack modern electronic systems to detect public health threats and respond to health emergences. Fewer than half of the nation's 3,000 local health departments have high-speed, continuous access to the Internet; 20% lack e-mail capability. The nation operates some 200 separate, non-integrated public health surveillance and information systems. Although microbes and disease vectors move around the world at jet speed, some public health laboratories – often the first to detect a dangerous new pathogen– still report laboratory test results by conventional mail, with lag times of up to 10-14 days; the nation's surveillance systems still rely, in many cases, on paper-based reporting and telephone calls.

Organizational capacity: The Nation's *local* public health agencies perform, on average, at only an estimated 60 percent of needed capacity, with an alarming number serving minority and rural populations at far lower levels. Similarly, a study of sampled *state* health departments found performance at only 50% of needed capacity. As a result of such deficiencies, only one-third of all Americans are effectively served by state and local health agencies.

Strategies, Activities, and Resources

A sound public health infrastructure is essential for protecting community health. The deficits in the nation's public health infrastructure were summarized in CDC's report to the U.S. Senate, *Public Health's Infrastructure* in 2000. In recognition of the seriousness of the problem, in November 2000, Congress passed the Frist-Kennedy Public Health Improvement Act, mandating immediate actions to remedy these

deficiencies. CDC's strategy to improve public health is built on these recommendations. CDC and partners are implementing a plan to ensure that: 1) every U.S. community is served by a fully trained public health team, 2) every health department can electronically access health information and emergency alerts, monitor local health trends, and detect emerging problems, and 3) every health department and laboratory perform essential services optimally. CDC's implementation approach has five components – a combination of broad-based efforts to build core public health capacities and targeted programs to address special needs:

I-A Eliminate racial and ethnic health disparities in health status by developing targeted public health interventions and testing their effectiveness in racial and ethnic minority communities;
I-B Strengthen public health practice by strengthening the components of the public health infrastructure that undergird public health – public health workforce, health departments and laboratories, and information, communications, and knowledge management systems;
I-C Build the National Electronic Disease Surveillance System (NEDSS) to integrate disease detection and monitoring and ensure rapid reporting and follow up;
I-D Stimulate extramural prevention research to discover how to apply the latest biomedical research at the local level and how to supply frontline public health workers with evidence of what works;
I-E Build cross-cutting capacities and expertise at CDC to support key components of all categorical prevention programs.

Through these strategies – and in concert with external public health partners – CDC is committed to improving public health at all levels.

Presentation of Performance

Protecting Health and Promoting Partnerships

II-C.1a Eliminating Racial and Ethnic Disparities

There are continuing disparities in the burden of illness and death experienced by African Americans, Hispanics, American Indians, Alaska Natives, Asian-Americans, and Pacific Islanders compared to the U.S. population as a whole. For example, rates of death from stroke are 60% higher among African Americans than among whites. The prevalence of diabetes is about 1.7 higher among non-Hispanic African Americans, 1.9 times higher among Hispanics, and 2.8 times higher among American Indians and Alaska Natives than among non-Hispanic white Americans of similar age. Although African-American and Hispanic persons represent 21% of the country's population, more than half the AIDS cases reported to CDC have been among these minority populations; for children, the contrasts are even more dramatic, with African-American and Hispanic children representing 84% of pediatric AIDS cases.

The demographic changes that are anticipated over the next decade amplify the importance of addressing disparities in health status. Racial and ethnic groups will increase in upcoming decades as a proportion of the total U.S. population; therefore, the future health of America will be influenced substantially by our success in improving the health of these populations. A national focus on disparities in health status is particularly important as changes unfold in the delivery and financing of health care.

REACH 2010: In FY 1999, CDC received funding for Racial and Ethnic Approaches to Community Health 2010 (REACH 2010), a demonstration project to support community-based coalitions that have a high potential to develop, implement, and evaluate innovative strategies to eliminate racial and ethnic disparities in health. The program's six target areas are: infant mortality, breast and cervical cancer screening and management, cardiovascular disease, diabetes, HIV/AIDS, and immunizations. Target populations are African Americans, American Indians, Hispanic Americans, Asian Americans, Pacific

Islanders, and Alaska Natives. The 5-year demonstration project is being implemented in two phases. Phase I is a 1-year planning period, and Phase II is a 4-year implementation and evaluation period.

Health disparities in American Indians and Alaska Natives: HP 2000 progress reviews of the specific health needs of American Indians and Alaska natives identified disparities between these groups and the general population in several priority areas. For example, infant mortality is 1.5 times higher for Native Americans compared to whites. Native Americans suffer nearly three times the average rate of diabetes, and one tribe, the Pimas of Arizona, has the highest known prevalence of diabetes of any population in the world. Alaska Native men and women suffer disproportionately higher rates of cancers of the colon and rectum compared to whites; American Indian/Alaska Native women also have low rates of screening and treatment for breast and cervical cancers. Age-adjusted death rates from homicides, suicides, and unintentional injuries for American Indians and Alaska Natives are also higher than for the total population.

In FY 2001, CDC will conduct activities to address these disparities in conjunction with REACH 2010. CDC will award core capacity grants ranging from $200,000 to $300,000 to 5 to 7 organizations to target health priorities, gaps in prevention, and service delivery interventions. Grantees will include tribal organizations representing more than one tribe, tribal projects with three or more collaborating tribes, Urban Indian Health Programs, Indian Health Boards, and Inter-Tribal Councils. Applicants will be encouraged to apply for funds for at least one focus area where the disparity is 25% or greater between the general population and American Indians/Alaska Natives. The grants are designed to: 1) improve the lives and health status of American Indians and Alaska Natives who suffer disproportionately from the burden of preventable disease and disability; 2) enhance the collection of standardized data to identify populations at risk and monitor the effectiveness of health interventions targeting these groups; and 3) develop strategies and tools to reduce health disparities.

Links to DHHS Strategic Plan

These performance objectives relate to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans*.

Partnerships

Development and implementation of the plan to eliminate racial and ethnic health disparities is an interagency effort in DHHS. CDC collaborates with the Office of Public Health and Science, Office of Minority Health, Assistant Secretary of Planning and Evaluation, Agency for Health Care Research and Quality, HRSA, and others in implementing REACH 2010. CDC will also collaborate with federal agencies (to be determined) to implement the component addressing American Indians and Alaska Natives. Specific objectives will be determined through a collaborative interagency process.

Performance Summary

REACH 2010: In FY 1999, CDC funded 32 grants (Phase I) to establish infrastructure for data collection, partnerships, and linkages with other state and local agencies and to work with federal agencies and others to identify best practices and program activities. As a demonstration project, outcomes measures are critical for showing that the strategies made a difference in the communities served and in other communities through technology transfer. Phase I activities therefore include the development of evaluation measures by each project.

In FY 2000, CDC funded 14 new communities with planning grants and supported 24 (from the 32 former Phase Is) communities in the implementation and evaluation of the interventions they had developed (Phase II). To improve access to care, communities plan to initiate activities such as locating sources of health care closer to underserved communities, establishing breast cancer education programs in senior centers and retirement communities, increasing access to low-cost or free prenatal care, and establishing and supporting peer educator programs in youth organizations, middle schools, and high

schools to encourage healthy living skills. Proposed activities to address diabetes include providing guides in local restaurants to describe healthy meal alternatives, distributing low-fat menus and recipes at local supermarkets, and offering awareness seminars at senior centers and retirement communities. Infant mortality prevention initiatives include training and preconception counseling to reduce risk for low birth weight and infant death.

Activities specific to breast and cervical cancer include providing incentives for women to obtain regular mammographies and Pap smears. For example, one demonstration project in Chicago draws on the dedication of local African-American and Latino churches to mobilize low-income women of color to seek early breast and cervical cancer detection. During its planning phase, the Reach Out coalition worked with focus groups in churches to establish pilot programs. With CDC funding to implement the program, *Reach Out* will expand its work with low-income African-American women and Latinos in their churches to change beliefs and behaviors regarding early detection of breast and cervical cancer.

Performance measures will be developed for each priority area. CDC, with input from the grantees and collaborators, has developed an evaluation model to guide data collection. In FY 2001, CDC has commenced work with one evaluation contractors to collect outcome data and has announced funding for a second which will assist communities in the collection of process data. CDC will also select from several options for comparison communities; the most likely is to add questions to the BRFSS. CDC has provided funding through the Prevention Research Center at the University of South Carolina to manage a Special Interest Project. This project will inform the evaluation process for REACH 2010 through the formation of a Blue-Ribbon panel of experts tasked to develop evaluation guidance documents. These documents will be useful in the development of performance measures.

American Indians and Alaska Natives: Performance assessment will begin in FY 2001.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Improve the lives of racial and ethnic populations who suffer disproportionately from the burden of disease and disability, and develop tools and strategies that will enable the nation to eliminate these health disparities by 2010.**

Performance Measure	Target	Actual Performance	Ref.

Fund selected communities to implement REACH 2010 interventions based on community planning activities.	**FY 03:** Provide continuation funding to Phase II grantees; **FY 02:** Provide continuation funding to Phase II grantees; **FY 01:** Provide continuation funding to Phase II grantees; announce the availability of funds for new Phase II coalitions. **FY 00:** Fund selected communities to implement Phase II interventions; fund 4-6 more Phase I grantees. **FY 99:** Develop a community planning RFA; fund 1 Phase I grantee.	**FY 03:** 10/2004 **FY 02:** 10/2003 **FY 01**: Six new Phase II projects to be funded based on objective competition. **FY 00:** Funded 14 Phase I coalitions and 24 Phase II coalitions. **FY 99:** Funded 32 Phase I coalitions.	Page 198

Performance Measure	Target	Actual Performance	Ref.
Develop national strategies (recommendations) for eliminating gaps in each of the six health priority areas based on the interventions and findings from the REACH 2010 Projects.	**FY 03:** Convene panel of experts to review strategies developed to date. Convene annual meeting of grantees to review and describe strategies developed to date. **FY 02:** Convene annual meeting of grantees to review and describe strategies developed to date. Receive guidance from a group of evaluation experts supported by CDC to evaluate community-driven strategies to eliminate health disparties. Establish database of strategies developed by grantees. Assist DHHS with the implementation of a National Leadership Summit on Health Disparities highlighting effective strategies with input of REACH 2010 grantees. **FY 01:** Complete strategies not expected until FY 2005. Interim measures include: abstracts, presentations and publications on grantee planning and implementation strategies.	**FY 03:** 10/2004 **FY 02:** 10/2003 **FY 01:** Published article and abstract in peer-reviewed journals on strategies to eliminate racial and ethnic health disparities.	Page 198
Develop a comprehensive dissemination plan for transferring lessons learned from the REACH 2010 projects to Communities across the country.	**FY 03:** Review and field test dissemination plan **FY 02:** Develop draft dissemination plan **FY 01:** Commence process to develop dissemination plan. Conduct formative research concerning state-of-the art dissemination plans. Present REACH 2010 dissemination issues at APHA annual conference. Develop REACH At-A-Glance (4 page description of the program). Develop web site for REACH 2010.	**FY 03:** 10/2004 **FY 02:** 10/2003 **FY 01:** Visiting scientist (Epidemiologist) commenced process to develop dissemination plan; Conducted formative research concerning state-of-the art dissemination plans; abstract accepted for presentation at APHA. REACH 2010 At-A-Glance published and Web Site completed.	Page 198

Verification/Validation of Performance Measures: Grantees will report on the development of implementation and evaluation plans, which will be reviewed by CDC staff. CDC will evaluate FY 2000

measures via site visits. For FY 2001, data will be acquired by the CDC grant reporting system. No data lags are expected.

Performance Goal: Improve the lives of American Indian and Alaska Native populations who suffer disproportionately from the burden of disease and disability, and develop tools and strategies that will enable the nation to eliminate these health disparities by 2010.			
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Fund American Indian/Alaska Native organizations to address health priorities, prevention gaps, and service delivery interventions for their communities.	**FY 03:** **FY 02:** 5 organizations **FY 01:** 5 organizations	**FY 03:** 10/2004 **FY 02:** Continuation funding for five organizations anticipated. **FY 01:** Five AI/AN organizations to be awarded funding 9/2001 **FY 99:** 0 (baseline)	Page 198

Verification/Validation of Performance Measures: The measure will be verified by the CDC grant reporting system.

II.C.1b Public Health Workforce

The health of America's communities hinges on the expertise of the public health workforce – the 500,000 physicians, nurses, environmental health specialists, educators, laboratorians, managers, and others who work on the front lines of public health. The public health workforce is the first line of defense. Virtually all health problems in our communities – infectious disease outbreaks, chemical hazards, chronic diseases, injuries – are recognized first by local public health professionals who work in concert with state and national partners to control these threats and save lives.

Several barriers impede the development and maintenance of a competent public health workforce. There is no consensus on competency standards. This hampers the assessment of workforce preparedness and the development of nationally recognized public health practice curricula. There is no integrated public health training and continuing education system to sustain preparedness and foster lifelong learning. Data on effective strategies for sustaining workforce preparedness and translating research findings into interventions at the front lines are also lacking. CDC is actively implementing a strategy to address these barriers, close the gaps in public health capacity, and strengthen the practice of public health at the front lines.

Training is one route to improving the public health workforce's performance and preparing its members for the challenges ahead. Infrastructure development also involves working with partners in federal, state, and local agencies to set meaningful performance standards, identify gaps, and devote resources to the most critical training and performance areas, such as those highlighted in efforts to increase preparedness for bioterrorist attacks. In FY 2000, CDC and partners completed the *Global and National Implementation Plan for Public Health Workforce Development*. The plan calls for concerted action to ensure a robust and competent public health workforce to protect the health and safety of Americans.

Performance Summary
In FY 2000, CDC established a national system of Centers for Public Health Preparedness to strengthen the capacity of state and local health agencies and to support CDC's prevention programs and bioterrorism/emerging infectious disease programs in particular. By 2001, seven comprehensive academic centers were active in schools of public health including the University of Illinois-Chicago, University of North Carolina-Chapel Hill, University of Washington, and Columbia University and in 2001, St. Louis University, University of South Florida and University of Iowa. Four speciality centers include Dartmouth Medical College (applied communications technology), Johns Hopkins/Georgetown University (public health law), and St. Louis University School of Public Health (emerging infections/bioterrorism), and the University of Finday (Ohio) (all hazards terrorism preparedness). Plans to expand to a total of 15 academic centers are developed and ready for implementation based on available funding.

The Centers are developing curricula, e-learning techniques, certification and credentialing methods, and applied research. For example, the Illinois Public Health Preparedness Center has developed and distributed an introductory public health course "Public Health 101" and "Bioterrorism 101" via distance learning; provide online instruction for public health administrator certification; and initiate certificate programs for community health improvement specialists and for other state-defined priorities. The development of 8 additional Centers will complete nationwide coverage.

CDC continues to implement new systems to broaden training options nationally and internationally. CDC designed a life-long learning system and increased training opportunities through distance-based learning technology. CDC exceeded the distance-learning performance target by expanding the range of programs offered and increasing the number of participants. The 135,000 distance-learning participants in FY 1999 surpassed the number targeted through FY 2002. In FY 2000, CDC increased the number of participants to 148,000. These increases were facilitated by partnerships with federal agencies and public health practice and academic organizations. During FY 2001, more than 202,000 public health professionals participated in distance learning activities. This dramatic increase was in part due to heightened interest in the CDC Responds" satellite broadcasts series in response to the September 11, 2001 terrorists attack on the United States.

CDC is also addressing workforce training gaps in developing countries. Because management ability is an indispensable core public health competency, CDC – in collaboration with international partners – implemented a train-the-trainer approach for sustainable management development. CDC increased the number of trainees from 142 in FY 1999 to 159 in FY 2000 and due to continued demand for management training, increased the number of trainees to 183 in FY 2001. CDC also increased the number of states served by U.S. state and regional leadership development programs from 32 in FY 1999 to 34 in FY 2000. CDC was able to exceed the target because states already operating leadership programs could leverage their limited resources to help new states.

Through the National Laboratory Training Network, CDC improves public health and environmental laboratory practices and performance through training. In FY 2000, network staff continued to conduct assessments of training needs related to rabies, virology, mycobacteriology, food microbiology, mycology testing, and other areas of public health concern.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Prepare local, frontline public health workers to respond to current and emerging public health threats.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Establish a national system of Centers for Public Health Preparedness to develop and disseminate competencies based public health curricula	**FY 03:** Evaluate adoption and use of competency-based curricula. **FY 02:** Develop and disseminate competency-based public health curricula for informatics, genomics, public health law, emergency response and basic public health. **FY 01:** Establish 4 additional Centers at Academic Institutions.	**FY 03:** 3/2004 **FY 02:** 3/2003 **FY 01**: 4 additional Centers established. **FY 00:** Baseline: 7 Centers established: 3 are specialty Centers in Public Health Law, Applied Communications Technologies and St Louis' University Center for Research and Education on Bioterrorism.	Page 198
Build capacity for technology based learning at Federal, State, and local levels.	**FY 03:** Evaluate gaps in capacity of technology-based learning at State and local levels **FY 02**: Identify gaps in capacity for technology-based learning at State and local levels. **FY 01:** Establish standards, guidelines and governance structure to enhance integrated global national operations.	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01:** Technology standards and guidelines revised; roles of State and local distance learning coordinators established.	Page 198

Performance Measure	Target	Actual Performance	Ref.
Recommend changes in public health practice based on findings from applied research in workforce preparedness.	**FY 03:** Implement research within the national system of centers for public health preparedness to address top priority areas. **FY 02:** Identify priority areas for applied research in public health workforce preparedness. **FY 01:** Develop an applied research agenda to strengthen the science base associated with ascertaining the impact of a competent workforce on the capacity to implement effective public health interventions.	**FY 03:**12/2003 **FY 02:** 9/2002 **FY 01:** Expert Panel Workgroup convened in November 2000 and June 2001 to develop an evaluation framework for workforce development plans and recommend research priorities.	Page 198

Performance Goal:	**Implement training programs to provide an effective workforce for U.S. health departments and laboratories and ministries of health in developing countries.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
The number of public health professionals participating in distance learning activities will be increased.	**FY 03:** 125,000 **FY 02:** 125,000 **FY 01:** 120,000 **FY 00:** 115,000 **FY 99:** 105,000	**FY 03:** 12/2003 **FY 02:** 12/2002 **FY 01**: 202,000 **FY 00:** 148,000 **FY 99:** 126,000 **FY 98:** 100,000	Page 198
The number of Sustainable Management Development graduates who conduct training in developing countries will be increased	**FY 03:** 225 **FY 02:** 203 **FY 01:** 176 **FY 00:** 160 **FY 99:** 142	**FY 03:** 11/2003 **FY 02:** 11/2002 **FY 01:** 183 **FY 00:** 158 **FY 99:** 142 **FY 98:** 125	Page 198

Performance Measure	Target	Actual Performance	Ref.
Evaluate the impact on laboratory practice of training programs conducted by the National Laboratory Training Network.	**FY 03:** Laboratory training using Distance learning "workshop-in-a-box" educational programs to assess changes in practices and improve laboratory inspections. **FY 02:** Laboratory training in Bioterrorism response to increase the number of laboratories participating in the laboratory response network; and to increase adoption of protocols to identify agents of bioterrorism by State laboratories. **FY 01:** Evaluate the impact of training on laboratory methods in rabies. **FY 00:** Evaluate the impact of training on laboratory methods in food microbiology, *M. tuberculosis* identification, and virology. **FY 99:** Evaluate the impact of training on clinical laboratory methods.	**FY 03:** 8/2003 **FY 02:** 8/2002 **FY 01:** NLTN completed workshops on the laboratory identification of rabies for 26 state public health virologists. A survey, sent to assess the impact of the workshops, yielded a 69% response. Of those, 94% reported changing their testing methods, 67% improved their QA practices, and 44% adopted improved safety measures. Sixteen other changes in practices were cited as a result of the workshops. **FY 00:** Reports of increased confidence in test results, communication with public health contacts, and knowledge of CDC and other testing resources. **FY 99:** Physician office laboratories reported a 71% increase in test result confidence due to training. **FY 92-98:** Evaluation of NLTN training programs, 1992-98.	Page 198
The number of states served by state and regional leadership development programs will be increased.	**FY 03**: 44 states **FY 02**: 42 states **FY 01:** 38 states **FY 00:** 32 states **FY 99:** 30 states	**FY 03**: 11/2003 **FY 02**: 11/2002 **FY 01:** Exceeded/40 **FY 00:** Exceeded/34 **FY 99**: Exceeded/32 **FY 97:** 25	Page 198

Verification/Validation of Performance Measures: CDC will monitor performance through routine evaluation of data collected by programs.

II-C.1c Enhanced Capacity for Public Health Departments and Laboratories

As with the public health workforce, the nation's state and local public health systems are not adequately prepared for rapidly evolving health threats. Independent studies have found that only one-third of the U.S. population is effectively served by public health agencies. A CDC study in 2000 – the first-ever assessment of the performance of state public health systems – yielded average performance scores of 40% to 56% for three state public health systems. Other studies have shown that local health departments provide somewhere between 50% and 70% of the services deemed essential for protecting the public's health. These data document the deficiencies in organizational capacity that constrain health departments in their efforts to serve and protect Americans.

The National Public Health Performance Standards Program facilitates the performance of essential public health services through voluntary performance measurement, improvement planning, and systems development. The program, started in 1998, is a CDC partnership with various public health agencies. Partners have established model national public health performance standards and are facilitating their use by state and local public health systems and governing bodies. Instruments to assess state, local, and governance capacity to meet performance standards are being field tested in states and localities, preparing the way for voluntary adoption nationally. In addition, CDC and DOJ are assessing the capacity of local public health systems nationally to respond to bioterrorism and other community health emergencies.

Performance Summary

As part of the CDC-led National Public Health Performance Standards Program, 6 more states and their counties will field test assessment instruments in FY 2001. Model performance standards for essential public health services are already influencing changes in test states. In Florida, performance assessment has been incorporated into the state's management and quality improvement program. In Mississippi, performance standards have been used in the legislature's review of public health agency responsibilities, and the Texas legislature has adopted the essential public health services as the basis for public health activity. CDC will continue working with American Indian/Alaskan Native governments to help them assess the preparedness and capacity of their public health systems. This is a continuation of the successful project we completed in FY 2001 regarding the National Public Health Performance Standards program and its use by tribal nations.

Because performance measures must link to the goals of states and communities, CDC and the National Association of County and City Health Officials are implementing a new tool – *Mobilizing for Action through Planning and Partnerships* – to help communities, health professionals, and their partners identify health priorities, mobilize to address them, and evaluate impact. These initiatives are laying the foundation for implementation of Sections 319 A-C of the Frist-Kennedy Public Health Improvement Act of 2000. On the international front, CDC consults with WHO, PAHO, and the World Bank to assist in the adoption of public heath performance standards globally.

CDC will begin to collect and analyze findings from four demonstration projects to test elements of the envisioned National System for Laboratory Testing of Public Health Importance in conjunction with APHL. The projects will increase public-private laboratory interaction and improve testing practices for specific diseases. CDC is also promoting the core functions and capabilities of state laboratories articulated in a recent APHL consensus guideline and is developing performance standards for state and local public health laboratories. Internationally, CDC is improving laboratory infrastructure in less-developed countries through the Global AIDS Program, with a focus on quality assurance, policy development, and training in Africa and India. International projects include: creation of laboratory training programs in the Carribean; creation of guidelines and models for national laboratory quality programs with an emphasis on HIV and TB; and promotion of multi-organizational cooperation through laboratory training.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Prepare frontline state and local health departments and laboratories to respond to current and emerging public health threats.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
States demonstrating Improvement in laboratory testing and reporting of priority diseases.	**FY 03:** 4 states **FY 02**: 4 states **FY 01:** 4 states	**FY 03:** 4/2003 **FY 02:** 4/2002 **FY 01:** 11/ 2001	Page 198
Conduct collaborative assessments of the capacity of state and local health departments and laboratories.	**FY 03:** Development of implementation plan for dissemination of assessment instruments in a select number of states. **FY 02:** Validate selected instruments for dissemination to health departments and laboratories. **FY 01:** Conduct a pilot, and refine draft instruments. **FY 00:** Develop draft consensus capacity-assessment instruments.	**FY 03:** 3/2004 **FY 02:** 3/2003 **FY 01:** Piloted consensus capacity instruments in 4 states and 175 local health departments **FY 00:** Achieved	Page 198

Verification/Validation of Performance Measures: CDC will monitor performance through routine evaluation of data collected by programs.

II-C.1d Public Practice: Information, Communication, and Knowledge Management Systems

As with the workforce, demands on our Nation's public health information infrastructure have never been greater. Today, global travel, immigration, and commerce can move microbes and disease vectors around the world at jet speed, yet our public health surveillance systems still rely, in many cases, on a time-consuming, resource-intensive "Pony Express" system of paper-based reporting and telephone calls.

In our day-to-day world of pagers, cell phones, and frequent e-mail communication between everyone from kindergartners to grandparents, it is sobering to consider the current status of public health's data and information systems. In 1999, CDC and the National Association of County and City Health Officers conducted an e-mail test to see how quickly local health departments could be contacted in the event of a health alert or bioterrorist emergency. In this test, only 35 percent of CDC's e-mails were delivered

successfully, for a variety of reasons. Some public health laboratories – often the first to detect a new pathogen – still report their results by surface mail, with lag times up to 10 to 14 days.[i]

In a February 1999 survey of local health departments, CDC found that only 45 percent had the capacity to send broadcast facsimile alerts (i.e., multiple "faxes" sent simultaneously to labs, physicians, State health agencies, CDC, or others). Similarly, fewer than half had high-speed continuous access to the Internet, and 20 percent lacked e-mail capabilities.

Lack of access to communication networks is not the only issue of concern. In response to a 1998 survey about infrastructure problems, a local health department confessed to not reporting diseases because doing so would have meant a long-distance phone call.

These gaps in the basic information infrastructure are troubling because not only do they prevent public health agencies from communicating with each other in a timely manner, but they also hinder communication between public health staff, private clinicians, or other sources of information about emerging health problems.

These basic communication gaps also exacerbate other problems, particularly the existing fragmentation of surveillance systems and the variability between various jurisdictions in terms of their communication infrastructure. A strong and responsive communication and surveillance system cannot realize its full public health potential if some jurisdictions lack the skills and/or technology to detect and report emerging problems. The public health surveillance system is a network that simply cannot perform its protective function if its detection and reporting capacity is uneven.

Performance Summary

Several recent infusions of funding and attention have begun to address some of these problems. CDC is leading the development of Web-based systems to translate collected data and scientific findings into practical information for health professionals and the public. One of these systems is the CDC Prevention Guidelines Database, an online repository of all CDC intervention and treatment guidelines available on CDC's Internet Web Site. This system is currently the single most accessed feature of CDC's online information and is being revised and expanded to incorporate new prevention research findings and to leverage new interactive Web capabilities.

Complementing this system is the Public Health Image Library, a unique online gallery of scientific photographs, electronic images, stored video, and other objects representing significant public health visual information. This gallery is currently being populated with images from a wide range of CDC and public health partners and will be expanded in FY 2001. A third system, the Health Alert Network, is a major component of CDC's Bioterrorism Initiative, and is serving the "dual use" of providing a platform for rapid electronic communications for bioterrorist events as well as for other health threats. When fully deployed, the network will link local health departments to each other, with other local agencies critical to emergency response, to State health departments, to CDC, and to other federal agencies. Functionally, the network will support an "early warning and response" system, rapid communication and response coordination, rapid communication of laboratory disease test results, distance-based training delivered to public health workers' desktops, as well as the National Electronic Disease Surveillance System application described below.

In FY 1999, with congressional support and funding, CDC launched the national Health Alert Network to improve information access and training for local health departments. A total of 40 sites—37 States and 3 large cities—have now been funded to begin *basic* implementation of Internet connectivity, broadcast communications, and distance-learning capacity at the local level. In addition, 3 local health departments have been funded as "Centers for Public Health Preparedness" to develop more advanced applications for sister agencies nationwide. The Network is being jointly developed by local, State, and Federal partners, and initial implementation is progressing successfully in the funded sites. Resources for the Health Alert Network activities are provided through the CDC Bioterrorism initiative described in Section 2.15 of this performance plan.

Performance Goal: **State and local health departments are able to electronically access and distribute up-to-date public health information and emergency health alerts, monitor the health of communities, and assist in the detection of emerging public health problems.**

Performance Measure	Target	Actual Performance	Ref.
Expand front-line public health practitioners' access to Internet based, CDC-approved public health practice guidelines, scientific/disease reference images, health and medical data, and information on the effectiveness of public health interventions.	**FY 03**: Continue implementation of plan. **FY 02**: Continue implementation of plan. **FY 01**: Initiate implementation of plan. **FY 00**: Develop plan for continuous review and enhancement of online, CDC-approved information resources.	**FY 03:** 9/2003 **FY 02:** 9/2002 **FY 01**: Implementation ongoing. Anticipate August 2001 web release of new public practice guidelines. **FY 00**: Plan developed; new and enhanced guidelines, images and other resources added.	Page 198

Verification/Validation of Performance Measures: Performance for all objectives will be monitored through routine evaluation of data collected by programs

II-C.1e Prevention Research

Many of the premature deaths, illnesses, injuries, disabilities, and healthcare costs in the United States can be eliminated by effective community-based interventions. Prevention research can identify and test promising interventions and ensure their effectiveness in protecting the health of Americans. Minorities bear a disproportionate burden, but all Americans feel the impact on health and accelerating healthcare costs and in diminished economic productivity. For example, asthma among young children increased by 160% from 1980 to 1994 and accounts for an estimated 10 million missed school days each year. Cardiovascular disease kills nearly 1 million Americans annually, afflicts 58 million, and costs the nation an estimated $274 billion annually. The number of Americans with diabetes grew six-fold from the 1950s to 1997; diabetes now affects nearly 16 million persons and kills 200,000 each year.

The nation's public health professionals need science-based information on the best prevention practices to address these and other health threats. Although CDC research shows that 70% of premature mortality is related to factors amenable to a population-based prevention approach, less than 2% of the nation's healthcare budget goes to population-based disease prevention and health promotion. Research!America polls conducted in 1999 show that 66% of the public wants population-based prevention research. However, only a small fraction of the national health research budget supports such research.

CDC's extramural prevention research develops scientific knowledge about effective approaches to preventing illness and injuries in communities, the workplace, and the home. This vital work takes four forms: investigator-initiated research on a spectrum of issues; research on issues key to CDC's public health programs; support for research centers at academic institutions; and career development for promising young researchers.

Links to DHHS Strategic Plan

These performance measures relate to DHHS Goal 6: *Strengthen the nation's health sciences research enterprise and enhance its productivity through the Prevention Research Initiative*, and to "Healthy People 2010 focus area, Educational and Community-Based Programs

Performance Summary

Inaugurated in FY1999, the Prevention Research Initiative is central to CDC's extramural prevention research strategy. The driving principles are to: 1) support population-based research priorities identified by CDC and external experts, including researchers, practitioners, policy makers and community groups; 2) incorporate community goals and perspectives into research design and conduct, 3) support investigator-initiated research, 4) use external peer review to identify the highest quality research, and 5) translate research findings into public health tools and best practices.

The program's $15 million FY 1999 appropriation funded 52 multi-year research grants on prevention of cancer, asthma, diabetes, cardiovascular disease, and STDs, and on child safety, immunizations, physical activity, nutrition, and other high-priority subjects. Funds made available from projects with shorter terms supported 3 additional research grants in FY 2000. Awards were made to academic research institutions in 21 states and all 10 DHHS regions. Approximately 83% of appropriated funds were awarded extramurally. The balance supported program operations and administration (scientific personnel, design of peer-review mechanisms, research grant administration). CDC also supported development of systematic prevention research agendas.

Prevention research generates great benefits for public health practice, such as boosting immunization rates among children of low-income families; using genetic information to prevent disease, disability, and death by finding persons at risk and carrying out interventions; and developing ways to supply clinical tests, like Pap smears, to large, high-risk populations. In FY 2002, the program will fund investigator-initiated proposals from academic institutions that identify research needs, methods, and plans for implementation of findings in partnership with public health practitioneers. At the $15 million level, CDC will award an estimated 25 new prevention research grants. These awards will target the development and testing of community-based intervention methods; efficacy trials of interventions; and the dissemination, translation, and uptake of research findings that impact public health policy and practice. They will require that the grantees demonstrate the full partnership of community groups in the design, analysis, and interpretation of studies.

Goal-by-Goal Presentation of Performance

Performance Goal: Conduct research to identify and evaluate community-based prevention interventions.

Performance Measure	Target	Actual Performance	Ref
Develop effective interventions to prevent or delay disease and disability.	**FY 03:** Monitor Year 1 progress of FY 02-04 intervention projects. **FY 02:** Facilitate development of effective community-based interventions to include continued participation by advisory groups and multi-disciplinary teams in setting research priorities.	**FY 03**: 9/2003 **FY 02:** 9/2002	Page 198
Disseminate research findings in formats that encourage uptake by decision-makers (clinicians, administrators, and legislators)	**FY 03:** For FY 99-01 projects, use special formats to disseminate findings. **FY 02:** Identify formats and modes of dissemination accessible to decision-makers.	**FY 03:** 9/2003 **FY 02:** 9/2002	Page 198
Evaluate the extent of dissemination and uptake of research findings on public health practice and policy.	**FY 03:** For FY 99-01 projects, d evaluate extent of dissemination and uptake of findings. **FY 02:** Identify methods to monitor disemmination and uptake of research findings by decision-makers.	**FY 03:** 9/2003 **FY 02:** 9/2002	Page 198

Verification/Validation of Performance Measures: CDC will obtain data for these measures from analyses and reports by the Office of Extramural Prevention Research.

Goals for FY 1999 - 2001

Performance Goal:	**Strengthen the ability to obtain and disseminate extramural research findings to partners, public health practitioners, and the public through a prevention research communications program.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Develop reporting mechanisms and communication strategies to ensure that study results stimulate new and improved disease prevention interventions.	**FY 01:** Assess communication strategies and targets for efficacy and reach to specific audiences. **FY 00:** Develop, approve, and execute an extramural research communications plan.	**FY 01:** Assessment not completed due to reevaluation of communication strategies and targets (currently in progress) by new program leadership **FY 00:** Plan developed and approved; execution phase to be completed 7/2001. **FY 99:** No reporting mechanisms or communication strategies.	Page 198

Verification/Validation of Performance Measures: CDC will examine written reports and documents showing reporting mechanisms and communication strategies and review published documents, including journal articles and mass media and other reports.

Performance Goal:	**Increase input from the external scientific community on extramural prevention research.**		
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Promote the use of research advisory groups and multi-disciplinary collaborative teams to develop and conduct research.	**FY 01:** Promote/facilitate promotion of use of research advisory groups and multi-disciplinary collaborative teams to set research priorities. **FY 00:** Establish goals for use of research advisory groups and collaborative teams; use results of FY 99 research advisory projects to inform future partnerships and programs. **FY 99:** Promote use of research advisory groups.	**FY 01:** Draft research priorities developed at Public Health Service/Systems Research Meeting, May 2001. **FY 00:** Achieved/established research agendas **FY 99:** PRI funds available for external assessment and review and advisory projects in 8 CIOs and ATSDR.	Page 198

Verification/Validation of Performance Measures: Data will be available from information obtained from CIO

program announcements, strategic plans, and Federal Register announcements. Data will be verified using data obtained through site visits and reports to CDC's Committee Management program.

Performance Goal:	**Disseminate research findings and other relevant information from prevention research programs to public health practitioners, managed-care organizations, and consumer groups.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Disseminate research findings by investigators receiving Prevention Research Initiative funds.	**FY 01:** Implement tracking; display results on website. **FY 00:** Establish dissemination goals and methods for PRI-funded projects, including number of published peer-reviewed studies and number of products developed and distributed.	**FY 01:** August 2001, project status report displayed on website. **FY 00:** Developed initial design and plan for website; established dissemination goals/ 80% of awards will submit results for publication within 1 year of study completion. **FY 99:** Developed initial design and plan for a website.	Page 198
Distribute information on availability of research findings.	**FY 01:** Establish website, with highlights of selected PRI-funded studies and links to project websites as available. **FY 00:** Establish website, with highlights of selected PRI-funded studies and links to project websites as available.	**FY 01:** August 2001, website with links established. **FY 00:** Developed initial website design and plan; contract for development by March 2001. **FY 99:** Developed initial website design and implementation plan.	Page 198

Verification/Validation of Performance Measures: Data will be available from grantee applications for new/continuation funds, grantee progress reports, and bibliometric studies. Data will be verified through site visits and published reports.

Performance Goal: Strengthen the scope and nature of extramural public health research programs.			
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Expand the scope of public health research to multidisciplinary research efforts that bridge the gap between public health practice, public health research, bioethics, and health policy research.	**FY 00:** Expand the scope of public health research. **FY 99:** Expand the scope of public health research.	**FY 00:** Achieved/funded public health law projects. **FY 99:** Funded projects with multidisciplinary teams; funded 2 career development awards; funded review of prevention research training programs.	Page 198

Verification/Validation of Performance Measures: Data will be available from program announcements, Federal Register announcements, grantee progress reports, and reports to the CDC Director on CDC-funded training programs. Data will be verified through site visits.

Performance Goal: Increase collaborations focusing on innovative intervention methods that provide results to state, local, and community-based organizations through CDC's Prevention Research Centers Program and prevention research demonstration projects.			
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Develop and implement a research communications plan to ensure rapid diffusion of information on interventions, outcomes, scope, and methods to public and private public health organizations; all grantees will be subject to annual assessments of their work to disseminate findings/best practices.	**FY 01:** Implement at least 3 recommendations related to diffusion of findings. **FY 00:** Make key recommendations available for review and comment by organizations and other federal agencies; conduct the first annual assessment of grantee dissemination activities and outcomes.	**FY 01:** March 2001, reviewed communications plan. June 2001, reviewed year 1 progress reports. Delayed disseminations of findings because few to be reported before 10/2002. **FY 00:** Revised research communications plan; available for review 3/2001; progress report requested 10/2000. **FY 99:** No plan for assessment/review of research dissemination and diffusion activities.	Page 198
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Track and analyze diffusion and dissemination activities for all PRI extramural and intramural projects.	**FY 01:** Track and analyze diffusion and dissemination activities for extramural and intramural projects. **FY 00:** Perform initial monitoring of diffusion and dissemination activities using media monitoring and bibliometric services, to provide baseline data for projects funded in FY 99.	**FY 01:** June 2001, analyzed year 1 diffusion/dissemination activities. Few studies were complete. **FY 00:** Not done/change in program priorities.	Page 198

Verification/Validation of Performance Measures: Data will be available from annual inventory of PRI-funded projects, reports from project officers, grantee progress reports, and external information systems (media monitoring and bibliographic/metric), and will be verified through interviews with managers.

II-C.1f National Electronic Disease Surveillance System (NEDSS)

Public health surveillance – the ongoing, systematic collection, analysis, and interpretation of health-related data – is the foundation of CDC's programs to protect the health of Americans. Public health surveillance is essential to program planning, implementation, and evaluation. Public health surveillance is needed to detect outbreaks, epidemics, and bioterrorist events. Current systems are neither complete nor efficient, but CDC is using advances in information technology to improve public health surveillance.

CDC has been instrumental in developing a public health conceptual data model and guidelines that recommend a minimum set of demographic data that should be collected as part of routine public health surveillance. As a result of this effort, in FY 2000, CDC created the National Electronic Disease Surveillance System (NEDSS) with $20 million made available for this purpose. Approximately $10 million was used to set up the necessary CDC infrastructure, such as training, hardware, and software for the system. The remainder was awarded to states to begin development. In FY 2000, CDC funded 14 states for NEDSS development and 32 states and 3 large metropolitan areas for assessment of current health department information systems and ways to implement NEDSS specifications and standards. In FY 2001, approximately $29 million was awarded to continue development of the NEDSS infrastructure.

NEDSS is planned as a national, integrated, standards-based public health surveillance infrastructure that will: 1) allow rapid reporting of disease trends to control outbreaks, 2) create public and private healthcare sector linkages to increase the volume, accuracy, completeness, and timeliness of the data available for disease monitoring, and 3) provide local health departments with Internet access to permit rapid sharing of information on infectious disease outbreaks, bioterrorist incidents, and other health threats. NEDSS will result in solutions that can be generalized, whether in systems developed by states or CDC. NEDSS standards are also consistent with relevant software industry standards to facilitate use of commercial software products when appropriate..

To implement NEDSS, CDC is: 1) developing and implementing national data standards for public health surveillance and reporting, 2) providing technical infrastructure support for state and local communities, 3) establishing local, state, and regional demonstration projects that create linkages between the public health and healthcare data systems, and 4) providing standards and technical assistance to maintain stringent security standards to protect confidentiality.

Performance Summary

CDC met goals for FY 2000 in all areas, and anticipate funding more states in FY 2001 to meet NEDSS' goals. The 14 states funded in FY 2000 received level funding for FY 2001 to continue development of surveillance systems in their states. However, a majority of the extramural FY 2001 funding will not be completed until September 30, 2001. With some of the FY 2001 funds, CDC has worked to develop the NEDSS Base System which will be available to some states that request it during this funding cycle. In addition, CDC continued to support electronic message development, membership in public health standards organizations, and integration of disease-specific systems into the NEDSS architecture.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Develop a national, integrated, standards-based public health surveillance infrastructure that is securely linked to healthcare practice.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Conduct pilot projects to develop and test electronic linkages between public health agencies and the healthcare sector.	**FY 03:** Fund 10 states **FY 02:** Fund 10 states. **FY 01:** Fund 5 states. **FY 00:** Fund 1 state.	**FY 03:** **FY 02:** **FY 01:** Re-funded same 14 states at same level. **FY 00**: Funded 14 states to build capacity for linkages. **FY 99:** 0	Page 198

Increase the number of states using electronic laboratory reporting.	**FY 03:** 40 states **FY 02:** 30 states **FY 01:** 15 states **FY 00:** 10 states	**FY 03:** **FY 02**: **FY 01:** 15 states are using electronic laboratory reporting. **FY 00:** 10 (baseline)	Page 198
Increase the percentage of state-based, CDC-developed surveillance systems that implement enhanced security measures for reporting most public health surveillance data.	**FY 02:** 100% **FY 01:** 80% **FY 00:** 20%	**FY 02:** **FY 01:** 80% of state-based, CDC-developed surveillance systems have implemented enhanced security measures for most public health surveillance data. **FY 00:** Projects funded 9/00. **FY 99:** 10%	Page 198
Increase the percentage of CDC-developed, web-based surveillance systems that implement enhanced security messages for transmission of case-level data.	**FY 02:** 100% **FY 01:** 80% **FY 00**: 20%	**FY 02:** **FY 01:** 80% of CDC-developed, web-based surveillance systems have implemented enhanced security messages for transmission of case-level data. **FY 00:** Developed Secure Data Network (SDN) **FY 99:** 10%	Page 198

II-C.2 Health Statistics

Total Program Funding (Dollars in thousands)

FY 2003:	$130,088	(Estimate)
FY 2002:	$130,674	(Current Estimate)
FY 2001:	$125,459	(Actual)

Mandate

CDC's National Center for Health Statistics (NCHS) is the nation's principal health statistics organization. NCHS collects and analyzes data and disseminates information to guide actions and policies that improve the health of Americans.

In order to meet NCHS' mission and to assist in the attainment of CDC and DHHS' missions, as well as fulfill its legislative intent, NCHS' broad program goals are:

- **Monitor trends in the nation's health through high quality data systems addressing issues relevant to decision makers.** NCHS data systems monitor a broad range trends and issues key to understanding the health of Americans and the national health care system. Topics range from trends in mortality, teen childbearing, health insurance coverage, asthma rates, and nursing home usage. Understanding this wide range of issues allows for a greater understanding of health and the health care system. These data systems are also instrumental in providing data for the *Healthy People 2010* initiative.

- **Improve the nation's vital statistics system.** The backbone of the health data, the national vital statistics system is in need of modernization and improvements. Through working with states, NCHS will strive to create an electronic birth and death registration system.
- **Improve racial and ethnic data for programmatic and policy decision-making.** While data is available for most of the large racial and ethnic groups, there is little or no data available for smaller population groups. More data is needed to better understand the needs and risks for a wide array of population groups.
- **Deliver timely data to the nation's health decision makers.** In order to have an accurate understanding of the health of the Nation, data must be processed and analyzed in a timely manner. To make data more useable, it is critical for release to occur much more quickly than in the past, reducing the time between data collection and data release.
- **Disseminate health data in innovative ways.** It is important for NCHS to continually improve accessibility and continue to create new and innovative ways to disseminate data to meet the needs of our users, as NCHS data is necessary for programmatic and policy decision-making.

Problem

Public health professionals and policy makers need timely, complete, and reliable information on the amount, distribution and effects of illness and disability in the United States. They also need to identify and monitor trends in medical conditions, risk behaviors and risk factors, health habits, environmental exposures, and emerging public health issues and technologies.

Strategies, Activities, and Resources

Through NCHS, CDC collects and analyzes health data and disseminates health information through many venues. These include:

National Vital Statistics System: NVSS is the source of the nation's birth and death statistics. The collection and registration of these vital events are governed by the laws of states and registration areas. Vital records and reports originate with hospitals, physicians, and funeral directors. Records are compiled by the states and forwarded to CDC.

National Health Interview Survey: NHIS obtains information on the health status of the nation through confidential household interviews. Interviewers collect information each year on topics such as health status, health insurance coverage, utilization of health care, access to health care, causes of injury, immunization rates, and HIV testing practices. The data are used by health agencies and organizations to plan and monitor health policies and programs.

National Survey of Family Growth:The National Survey of Family Growth (NSFG) uses the sample of the NHIS. A multipurpose survey, the NSFG consists of personal interviews with a national sample of women and, for the first time, men 15-44 years of age in the civilian noninstitutionalized population of the United States. Its main function is to collect data on factors affecting pregnancy and reproductive health in the United States. Data are currently being gathered in the field.

National Health Nutrition and Examination Survey: NHANES is the only national source of objectively measured health data capable of providing accurate estimates of both diagnosed and undiagnosed medical conditions in the population. Through physical examinations, clinical and laboratory tests, and interviews, NHANES assesses the health status of a representative sample of U.S. adults and children. Mobile exam centers travel throughout the country to collect data on chronic conditions, nutritional status, behavioral risk factors, dental health, vision, and other factors that cannot be assessed by use of interviews alone. Findings from this survey are essential for determining rates of major diseases and health conditions and for developing public health policies and interventions.

National Health Care Survey: NHCS provides a picture of how hospitals, emergency and outpatient departments,

ambulatory surgery centers, nursing homes, hospices, and office-based physicians deliver health care on a rotating or periodic basis. The survey is a rich source of data on healthcare utilization and characteristics of patients and providers. CDC constitutes a significant resource for monitoring healthcare use, the impact of medical technology, and the quality of care provided to a changing U.S. population.

CDC data are used for decision making and research. To support these uses, CDC makes its data available through a variety of mechanisms. These include CDC and DHHS publications, articles in peer-reviewed journals, de-identified electronic data sets, and electronic access to summary reports via the Internet. CDC also serves as a resource for other agencies and the public on statistical methods, analytic techniques, and data sources. CDC uses all reasonable methods, technologies, and legislative authority to protect the privacy and confidentiality of citizens who participate in its surveys.

Biomedical research also depends on CDC's NCHS data. High quality data are essential to researchers, assisting them in setting research priorities, informing medical hypotheses, and evaluating clinical findings using nationally representative benchmarks. NCHS surveys, such as the NHANES, allow researchers to apply a finding from limited clinical setting to a broad population context. In order to understand the impact of a clinical discovery, NCHS data describe the impact and burden within the national population. NCHS surveys also help to track the diffusion of technology, procedures, and medicines, as well as prevention techniques, through the health care system.

CDC data systems and related activities support DHHS programs and policies by providing health information for identifying and understanding health problems, tracking goals, and evaluating programs. For example, CDC data support the following DHHS priorities: 1) addressing racial and ethnic differentials in health, by providing data to identify problems and track progress; 2) implementing HP 2010 by providing the underlying data infrastructure for setting targets and tracking progress in meeting health objectives; and 3) supporting GPRA by providing data to identify action areas and by providing neutral, objective tracking data used across DHHS agencies.

Links to DHHS Strategic Plan

The mission of CDC's NCHS is linked to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans*; Goal 5: *Improve the nation's public health systems* (Objective 5.1); Goal 2: *Improve the economic and social well-being of individuals, families, and communities in the United States* (Objectives 2.5 and 2.6); Goal 3: *Improve access to health services and ensure the integrity of the nation's health entitlement and safety net programs* (Objectives 3.1-3.3, 3.6, 3.9); Goal 4: *Improve the quality of health care and human services* (Objectives 4.1 and 4.4); and Goal 6: *Strengthen the nation's health science research enterprise and enhance its productivity* (Objectives 6.1-6.3 , 6.6-6.7).

Partnerships

CDC collaborates with the DHHS Data Council, the National Committee on Vital and Health Statistics, representatives from the states, users of CDC data in the public and private sectors, and other federal agencies. Close cooperation with state vital statistics offices ensure timely reporting of data.

Presentation of Performance

Providing Credible Information to Enhance Health Decisions

Performance Summary

CDC met or exceeded all health statistics performance measures for FY 2000 and most for FY 2001. With the

return of NHANES to field operations, all four of NCHS' major data systems are in operation, adding a critical dimension to the ability to monitor trends in the nation's health. CDC established NHANES as an ongoing – instead of periodic – survey with its return to the field in 1999. A new, automated, state-of-the-art communications infrastructure collects and processes all NHANES data, nearly eliminating the need for paper forms and manual coding. In FY 2000, NHANES has interviewed and examined approximately 5,000 individuals in 15 scientifically selected communities across the nation to generate national estimates. This same sample size has been obtained in FY 2001 and is expected to be maintained in FY 2002.

The most recent topical focus of States and Local Area Integrated Telephone Survey (SLAITS) began field testing in 1999 and began full implementation in Fall 2000. SLAITS will provide data to 50 states and the District of Columbia on children under 18 with special healthcare needs. It will also provide state-specific estimates of health insurance coverage for all children and national estimates for the reasons low-income uninsured children are not enrolled in Medicaid or the State Children's Health Insurance Program (SCHIP). In FY 2001, CDC continued to provide necessary technical assistance to the survey. Data collection will end in FY 2002 and a data file will be released to the public in fall 2002. In 2002, a survey of asthma prevalence and treatment will be conducted in 4 states. SLAITS modules are partnerships between NCHS and sponsor organizations. In 2001, partners included Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB), National Center for Environmental Health (CDC/NCEH) and the Assistant Secretary for Planning and Evaluation (ASPE).

CDC's NCHS exceeded the 5% reduction in time lag for the release of data from the major data systems. This goal will be maintained to ensure continuous improvement in the timeliness of CDC data. Final 1998 birth data were released in March 2000, 15 months after the end of data collection. This is a 17% reduction from the baseline of 18 months. In FY 2001, CDC met or exceeded the 5% reduction in time lag for the release of data from the major data systems for most elements. Preliminary 2000 vital statistics data were released in July 2001 -- just 7 months after data collection – two months earlier than anticipated. Final Hospital Discharge data were released in just 14 months, a 33% reduction from baseline of 21 months and 4 months sooner than anticipated.

Early release of selected estimates for the 2000 and early 2001 National Health Interview Surveys in just 9 months of data collection. Selected elements include data on insurance coverage, pneumococcal vaccination, obesity, and participation in leisure time physical activities. Final 1999 mortality data were released in 21 months instead of the planned 18 months – 3 months longer than anticipated but a 19% reduction from the baseline of 26 months. This delay was due in part to a major change in the coding system through the implementation of the 10th revision to the International Classification of Diseases (ICD 10), used to categorize cause of death. CDC is working with states and other partners on efforts to develop electronic birth and death registration systems to improve the timeliness and accuracy of vital statistics data. It is anticipated that the delay in data release will continue in FY 2002 with the 2000 final mortality data because of the ICD 10 implementation.

CDC's NCHS has produced and released data in new formats to document trend, issues, and problems in health. The Adolescent Health Chartbook, part of *Health, United States, 2000*, documents changes in health status by single year of age for many of the measures of adolescent health. Findings showed that death rates for motor vehicle traffic-related injuries among female adolescents increased from 3.1 to 22.2/100,000 females ages 10 and 18, respectively. For male adolescents, the rates increased from 4.87 to 46.7/100,000 in males ages 10 and 18, respectively. Death rates for firearm-related injuries also increased substantially with age: for female adolescents, the rate increased from 0.5 deaths/100,000 at 11 years of age to 5.2/100,000 at 18 years; for male adolescents, the rate of 1.8/100,000 at 11 years to 49.8/100.000 at 19 years represents a 28-fold increase.

In FY 2001, CDC released an updated *Health, United States*, which featured a Chartbook on Rural and Urban Health. This annual report on the nation's health included information on health status, health care utilization, health care resources and expenditures, as well as the latest and trend data on about 200 major health indicators. The report showed that Americans are healthier today than 25 years ago, there was longer life expectancy, better infant survival, fewer smokers, less hypertension and lower cholesterol levels. This year's urban and rural health chartbook showed differences in health depending upon whether one lives in a highly urbanized area, the suburbs, or in rural

America. Americans who live in the suburbs of large metropolitan areas generally fare best on health measures, and residents of the most rural and most urban areas face the greatest challenges such as higher mortality rates, prevention, risky health behaviors, and access to health care. *Health United States, 2002* will feature *Trends in Health of the Nation*. The expected release for this document is late summer, 2002.

Through the Research Data Center, CDC has made vital research data, including data from small geographic areas more timely, relevant, and accessible to approved researchers. The RDC provides a secure environment for research and analysis without compromising the confidentiality of respondents. RDC data facilitated: 1) a study of differences in age-specific hospital admission rates for breast cancer between white and African American women; 2) investigation of possible causal relationships between higher education and increased life expectancy; and 3) development of an economic model to explain the incidence of sexual activity, contraceptive use, STDs, and pregnancy among teenage girls.

CDC has taken advantage of technological advances, such as use of the Internet, to make data more timely and accessible to users. Virtually all NCHS publications are available on the Internet concurrent with their release in published form (or earlier) – an objective accomplished far ahead of schedule. For the first time, charts from *Health, United States, 2000* was updated on the Internet, making data more timely and accessible and speeding the release of data on high-priority topics. In FY 2001, NCHS has launched a new Early Release initiative, allowing data on key health indicators from the National Health Interview Survey (NHIS) which was released ahead of schedule. CDC has established (and continues to improve) an electronic data warehouse on Trends in Health and Aging. This web-enabled tool serves as a source for up-to-date information on the health of older Americans, specifically designed to show trends in health-related behaviors, health status, health care utilization, and cost of care for the older population in the United States. Using this warehouse, users can retrieve and display tabular information, generate graphics, and create customized tables. Information can also be downloaded for use on the user's PC.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Monitor trends in the nation's health through high-quality data systems addressing issues relevant to decision makers.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Conduct ongoing surveys and data systems that produce detailed trend data for monitoring health.	**FY 03:** 4 data systems **FY 02:** 4 data systems **FY 01:** 4 data systems **FY 00:** 4 data systems **FY 99:** 4 data systems	**FY 03:** **FY 02:** **FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved **FY 97:** 3 (baseline)	Page 131

Develop, test, and support SLAITS.	**FY 03:** Provide management, oversight, technical support to prospective SLAITS users. **FY 02:** Provide management, oversight, technical support to prospective SLAITS users. **FY 01:** Provide management, oversight, technical assistance to prospective SLAITS users. **FY 00:** Provide management, oversight, technical coordination for a survey on children with special healthcare needs. **FY 99:** Develop SLAITS; pretest in 3 sites, including 1 Indian reservation.	**FY 03:** **FY 02:** **FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved	Page 131
Develop new monitoring tools to address emerging topics.	**FY 03:** Provide management oversight and technical support to prospective users of Community Health and Nutrition Examination Survey (CHANES). **FY 02:** Refine plans to implement new tools to assess racial/ethnic data and other key health issues. **FY 01:** Move NHANES to an ongoing data system. **FY 00:** Complete Year 1 of NHANES data collection using automated survey, examination, and laboratory methods. **FY 99:** Finalize development of NHANES; conduct a pretest.	**FY 03:** **FY 02:** Transition to new race categories as indicated in OMB Classification System **FY 01:** Achieved **FY 00:** Achieved **FY 99:** Conducted pretest; fielded survey.	Page 131
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Increase and maintain participation in NCHS surveys through improved outreach with communities, constituents, States, and policy-makers.	**FY 03:** Maintain 78% response rate for NHANES. **FY 02:** Improve response rate of NHANES to 78% through enhanced approaches to media and outreach, including Congressional briefings, meetings with state health departments, or press releases. (Measure was refined for greater specificity and clearer linkage to program priorities).	**FY 03:** 11/2003 **FY 02:** Anticipate exceeding 78% response rate **FY 99:** Baseline 72% response rate.	Page 131

Performance Goal: Improve the nation's vital statistics system

Performance Measure	Target	Actual Performance	Ref.
Work with partners on efforts to implement electronic death registration systems to improve the timeliness and accuracy of vital health data.	**FY 03:** Work with NAPHSIS & other partners to assist states in implementation **FY 02:**Work with NAPHSIS to define specific and standards for electronic registration system.	**FY 03:** 11/2003 **FY 02:** 11/2002 **FY 00:** 0 States, non-profit groups such as NAPHSIS.	Page 131

Performance Goal: Improve racial and ethnic data for programmatic and policy decision making.

Performance Measure	Target	Actual Performance	Ref.
Increase the number of subgroups with available data in the HP2010 template.	**FY 03:** To be determined. **FY 02:** Maintain baseline level of 67.7%	**FY 03:** TBD **FY 02:** **FY 00:** NCHS is able to fill 67.7% template.	Page 131

Performance Goal: Deliver timely data to the nation's health decision makers.			
Performance Measure	**Target**	**Actual Performance**	**Ref**

Reduce time lags for release of core data systems by 5%.	**FY 03:** Maintain time lag of data release at 2002 level Vital Statistics (VS):Release Preliminary 2002 data in **9 months from end of data collection period**; Release final 2001 Natality data within 16 months, **16% reduction from baseline**; Release final 2000 mortality data within 18 months, **30% reduction from baseline**. Health Interview Survey: Release selected data within 6 months of collection and complete data set within 18 months, **a 30% reduction from baseline**. **FY 02:** Reduce time lag of data release by 5%. Vital Statistics (VS): Release of 2000 final mortality data in **18 months** or a **30% reduction** from baseline; release of 2000 final natality data in **16 months** or an **11% reduction** from baseline; preliminary VS 2001 data available **within 9 months** or a **10% reduction** from baseline. Health Care Surveys: Release of 2000 National Hospital Discharge Survey data in **18 months** or a **14% reduction** from baseline. Health Interview Surveys: Release of 2000 National Health Interview Survey data in **20 months** or a **23% reduction** from baseline. **FY 01:** Vital Statistics: Release 1999 mortality data in 18 months, 30% reduction and natality data in 16 months 11% reduction; make preliminary 2000 data available in 9 mos, 10% reduction. Health Care Surveys: Release 1999 NHDS data in 18 months, 14% reduction from baseline. Health Interview Surveys: Release 1999 NHIS data in 20 mos. (23% reduction). **FY 00:** Reduce time lag in release of final VS by 2 months. Note: Data are currently released within 21 months after the end of data collection year. **FY 99:** Reduce time lag in release of core data systems by 5%.	**FY 03:** 11/2003 **FY 02:** 11/2002 **FY 01:** Met or exceeded all except release of 2000 Final Mortality data. Data were released in 21 months, a 19% reduction from baseline. **FY 00:** Achieved **FY 99**: Vital Statistics: 1997 mortality data in 18 mos. (30% reduction) and natality data in 16 mos. (11% reduction); prelim. 1995 data in 10 mos. (11% reduction). Health Care Surveys: 1997 NHDS data in 20 mos. (5% reduction). Health Interview Surveys: 1997 NHIS data in 20 mos. (23% reduction). **FY 96**: Baseline: Vital Statistics: 1993 mortality data in 26 mos; 1994 natality data in 18 mos; prelim. 1995 data in 10 mos. Health Care Surveys: 1995 NHDS data in 21 mos. Health Interview Surveys: 1994 NHIS data in 26 mos. Health Examination Surveys: NHANES III 2nd half (1991-1994) in 31 months.	Page 131

Performance Goal: Disseminate health data in innovative ways.

Performance Measure	Target	Actual Performance	Ref.
Make health statistics available via the Internet.	**FY 03:** Maintain current products. **FY 02:** Develop at least one new product for the Internet. (Target was increased based on ability to do more.) **FY 01:** Develop at least one new product for the Internet. **FY 00:** Monthly vital statistics available for viewing, searching, downloading within 4 months. **FY 99:** Monthly vital statistics available for viewing, searching, downloading within 4 months.	**FY 03:** 11/2003 **FY 02:** 11/2002 **FY 01:** Achieved. **FY 00:** Achieved **FY 99**: Achieved **FY 96:** Within 6 months	Page 131
Release statistics in new formats to speed the release of data on high-priority topics.	**FY 03:** Maintain release of statistics in current formats. **FY 02:** Release one data set in new format. (Target was increased based on ability to do more.). **FY 01**: 1 report in new format **FY 00**: 1 report	**FY 03:** 11/2003 **FY 02:** 11/2002 **FY 01:** Achieved. **FY 00:** Achieved **FY 99:** Multiple publications and products **FY 98:** *Teenage Births in the United States: National and State Trends 1990-96*	Page 131
Produce reports and publications that document trends, issues, and problems in health.	**FY 03:** Produce reports and publications. **FY 02:** Produce reports and publications. **FY 01:** Produce reports and publications. **FY 00:** Produce reports and publications.	**FY 03:** 11/2003 **FY 02:** *Health, United States 2002 -- Trends in Health of the Nation* will be released late Summer 2002. **FY 01**: *Health, United States 2001*+ Urban and Rural Health Chartbook **FY 00:** *Health, United States, 2000* + Adolescent Health Chartbook.	Page 131

Performance Measure	Target	Actual Performance	Ref.
Increase the number of articles using NCHS data that are published in peer-review journals.	**FY 03:** Increase number of articles by non-NCHS researchers by 10% over 5 years. **FY 02:** a) Increase number of articles by non-NCHS researchers by 10% over 5 years. b) Increase number of articles by non-NCHS researchers by 10% over 5 years.	**FY 03:** 11/2003 **FY 02:** 11/2002 **FY 01:** Baseline to be determined.	Page 131
Increase the number of persons who obtain health information from the NCHS website.	**FY 03:** Develop at least one product to facilitate use of statistical data on the web. **FY 02:** a) Increase the number of people who obtain statistical information from the website by 5%. b) Develop a product to educate the public on the use of statistical data.	**FY 03:** 11/2003 **FY 02:** 11/2002 **FY 01:** 3.2 million visitor sessions where user obtained selected data or information.	Page 131

Verification/Validation of Performance Measures: CDC will verity performance via contractor reports, pretest reports, meeting proceedings, publications, and website records.

II-C.3 Epidemic Services and Response

Total Program Funding (Dollars in thousands)

FY 2003:	$81,343	(Estimate)
FY 2002:	$83,326	(Current Estimate)
FY 2001:	$80,630	(Actual)

2.4.1 Program Description, Context and Performance Summary

CDC's epidemic services and response include acute and chronic infectious and noninfectious diseases, injuries, nutrition, reproductive health, environmental health, and occupational problems. When state, local, or foreign health authorities request help in controlling an epidemic or solving other health problems, skilled epidemiologists from CDC's Epidemic Intelligence Service are sent to investigate and resolve the problem. As part of CDC's efforts to implement the Healthy People 2010 National Prevention Objectives, CDC conducts a program of scientific inquiry and applied research to solve public health problems and supports selected programs to assist states, health organizations, and other allied health providers to achieve prevention goals. Rapid resolution of public health problems ensures cost effective health care and enhances health promotion and disease prevention. Activities involving rapid solutions range from local identification of food poisoning to national and international investigations of deadly diseases, environmental hazards, and natural disasters. CDC's efforts will continue to provide the U.S. with a trained professional staff able to investigate health problems affecting the U.S. population. Changing needs in public health require that the public health workforce in states, counties, cities, and other countries all be trained to keep abreast of effective techniques for containing health threats.

Epidemic services and response covers a vast spectrum of activities: preventing and controlling epidemics and protecting the U.S. population from public health crises including biological and chemical emergencies; developing, operating, and maintaining surveillance systems, analyzing data, and responding to public health problems; training public health epidemiologists; developing leadership and management skills of public health officials at the federal, state, and local levels; carrying out the quarantine program as required by regulations; and publishing the *Morbidity and Mortality Weekly Report*, CDC's main channel for communicating public health news about disease outbreaks and trends in health and health behavior.

Partnerships and Links to DHHS Strategic Plan

These performance measures are related to DHHS Goal 1: Reduce the major threats to health and productivity of all Americans and DHHS Goal 5: Improve the Nation's public health systems.

Performance Summary

In FY 2001, the *Morbidity and Mortality Weekly Report (MMWR)* provided a series of multiple channel publications including 158 *MMWR* weekly articles, 24 Recommendations and Reports, 4 CDC Surveillance Summaries and articles highlighting key health events such as Walk to School Day, National Cholesterol Education Month, National HIV testing Day, World No-Tobacco Day, National Hepatitis Awareness Month, Buckle Up America! Week, National Arthritis Month, Workers' Memorial Day, World TB Day, National Colorectal Cancer Awareness Month, American Heart Month, World AIDS Day, Great American Smokeout, and National Diabetes Awareness Month. CDC met its target for the FY 1999, FY 2000 and FY 2001 goals to enhance the scientific quality and public health applicability of the *MMWR* to communicate public health news about disease outbreaks and trends in health and health behavior by publishing 86 issues of the *MMWR*. The *MMWR* series of publications include Reports and Recommendations, Surveillance Summaries, and the Annual Summary to communicate major public health events to the media, public policy makers and health professionals through multiple media channels - print, television, radio, and the interactive World Wide Web. Available in print and on the Internet (http://www.cdc.gov.mmwr/), it is read by millions of public health and health-care providers, policymakers, program managers and others around the world every week and is

disseminated through both the lay press and the scientific media. *JAMA* reprints weekly articles routinely, and the Massachusetts Medical Society publishes and distributes the *MMWR* to approximately 25,000 additional subscribers. Further dissemination through the development of communications partnerships began shortly after the attacks on September 11. Continuing the effort begun in FY 2000, the *MMWR* offers continuing education for physicians and other public health workers through the printed and on-line versions of the *MMWR Recommendations and Reports* and is the largest provider of continuing medical education at CDC. The *MMWR* continuing education program (CEP) for physicians, nurses, and other public health practitioners provides electronic and paper text and testing delivered simultaneously with the electronic and paper editions of the *MMWR*. The on-line user is able to compare their answers to the correct answers, print an award certificate and a transcript on a local printer after each test. Users may also mail or fax answers to the *MMWR* CEP and receive a certificate of completion and transcript through the mail. The *MMWR* CEP provides an incentive for health professionals who may not otherwise read information from CDC. In FY 2001, the *MMWR* CEP provided 15 examinations based on CDC public health recommendations and was used by over 36,000 participants. Since its inception, the CEP program has awarded over 85,000 continuing education credits to more than 43,000 participants in the United States and 49 foreign countries. The majority of participants were physicians (65%) who earned CME credits making the *MMWR* CEP the largest CME provider at CDC; nurses (24%) and others (11%) comprised the remaining participants. Most physicians (60%) were in clinical practice while the majority of nurses practiced in public health (43%) or hospital (32%) settings. The *MMWR* CEP uses state-of-the-art on-line and paper-based communications technology. The impact is dramatic with 72% of all participants reporting that the continuing education program content will affect their clinical and public health practice. In FY 2002, efforts continue to implement the CDC-wide communications plan to enhance health communications as a vital component of public health strategies in promoting health and preventing disease and injury.

In FY 1999, CDC continued to recognize the need of state health departments to develop public health comprehensive information networks to support all essential public health services. CDC approached this challenge systematically by assisting state health departments in developing plans for comprehensive networks and in implementing those networks. In FY 1999, this initiative expanded to address the need of major metropolitan areas for health-sector dedicated communication systems to support detection and response to terrorist events. (See Section 2.12, "Public Health Response to Terrorism ").

In FY 2001, the Epidemic Intelligence Service (EIS) Program coordinated 87 Epidemic Assistance Investigations (Epi-Aids), and over 275 state-based field investigations. Epidemics are prevented and controlled by mobilizing and deploying CDC staff, primarily Epidemic Intelligence Service (EIS) officers, to respond rapidly to disease outbreaks and disaster situations. At the request of public health officials-at the state, national, or international level-CDC provides assistance by participating in epidemiologic field investigations. During these investigations, CDC staff act as consultants to a state or local health department or the health ministry of the host nation, investigating the patterns of disease or injury occurrence, the levels of risk behaviors, the identity of the causative agent, the transmission of the condition of concern, and the impact of preventive interventions. Each year, some requests for assistance are received which do not meet the established criteria or definition of a disease outbreak. Each request is reviewed, and once it is established that the request complies with the criteria, EIS Officers are deployed to aid in the investigation or disaster relief.

In FY 1999 and 2000, CDC exceeded its target of responding to "at least 95%" of the requests for epidemic assistance from domestic and international partners by responding to 99% of the requests. The requests for which CDC did not respond (1%) were international requests and could not be conducted due to the inability to get country clearance, the lack of funding from international organizations, or safety issues. During investigations, CDC staff provide training to public health staff on-site resulting in the ability of state and local staff to manage outbreak investigations without direct CDC assistance. In this event, technical assistance is provided by CDC in resolving outbreaks at the local level. In FY 2002 and beyond, CDC will continue to conduct activities involving rapid solutions to problems such as local identification of food poisoning to national and international investigations of deadly diseases, bioterrorism events, environmental hazards, or natural disasters. To accomplish this, CDC will maintain well trained professionals able to investigate health problems affecting the U.S. population and to achieve prevention

goals.

CDC was successful in meeting the established target for completing the second phase of the evaluation of the Epidemic Intelligence Service. Results of the plan are being implemented. The immediate results are up-to-date training programs which better prepare EIS Officers to respond to disease outbreaks, acts of bioterrorism, natural disasters, and other major health hazards. CDC's Epidemiology Program Office does not work directly with laboratories.

An expanding mission, new programs, and new partners in public health underscore the need for a public health work force able to apply a broad range of disciplines and strategies to develop effective prevention programs that improve and promote health. As a result, the Public Health Prevention Service (PHPS) program was established as a 3-year program of training and service to develop a work force skilled in applying pertinent research related to epidemiology, social and behavioral science, health program management, and other public health sciences. The PHPS programs aids the development, implementation and evaluation of prevention strategies that are practical and effective at community, state, and national levels. The first class of Prevention Specialists began in September 1997. The PHPS program is designed to provide two different assignments at CDC in the first year of the program. In the second and third years, Prevention Specialists work in a state or local health department, where they lead direct, hands-on work with communities and local public health issues. The combination of federal, state, and local experiences, augmented by formal and informal instruction, provides a wide range of program activities to develop broad public health skills. Currently, there are 79 Prevention Specialists in the PHPS program. Forty five are in state and local health departments and 34 are in assignments at CDC. One hundred thirty four Prevention Specialists have entered the program over the past 5 years; 44 have completed the program and are PHPS alumni (97 and 98 PHPS classes). To date (12/2001) 11 Prevention Specialists have resigned from the PHPS Program with an overall retention rate of 92%. The first class of Prevention Specialists completed the PHPS Program early in September 2000.

Prevention Specialists are involved in a breadth of public health issues during their assignments. In all settings, Prevention Specialists infuse programs with their interest and skill in public health and with their ability to apply sound public health principles. At the same time, they are developing additional skills needed to be part of a well-trained public health workforce. The PHPS program adds to the pool of state and local public health workers who, through formal training and supervised on-the-job training, are skilled and understand the mission of public health. In FY 2001, CDC was unable to meet the target of "90% of the first class of the Public Health Prevention Service will remain in public health and 50% will be working in state/local health departments". On September 22, 2001, 25 Prevention Specialists in the 1998 PHPS Class completed the Program and became alumni. Of the 25 Prevention Specialists completing the Program this year: 13 (52%) are employed by CDC; 7 (28%) are employed at State or Local Health Departments; 1 (4%) is working for a community based organization; 3 (12%) are working with academic or research centers, and 1 (4%) is undecided. Recruitment efforts continue. The PHPS Program targeted accredited schools and programs of public health around the country and made more than 40 recruitment visits since the beginning of the year. Recruitment efforts have focused on reaching the largest academic institutions producing masters prepared professionals in public health; reaching graduates in historically black colleges and universities; reaching applicants from rural areas; and involving current Prevention Specialists and alumni in the recruitment efforts. University-based efforts included the direct mailing of more than 130 letters to Deans and career counselors at Schools of Public Health and placing job postings on university websites at the University of Minnesota, University of Michigan, Saint Louis University, and Emory University. Follow-up efforts continue. The target goals for FY 2002, 2003, and 2004 remain unchanged. Based on the evaluation of the graduated PHPS classes, the program is being revised and targeted to supplying a skilled workforce at all levels of public health.

In FY 2001, CDC continually sought to improve health but to do so in economically responsible ways. When human and financial resources are limited, public health efforts must focus on prevention strategies that yield the most benefit for the investment. The Prevention Effectiveness program includes a fellowship and a training course.

Together these demonstrate how spending money to prevent disease and injury and promote healthy lifestyles makes good economic sense. Prevention strategies are evaluated on: 1) the health impact of the related disease, injury, or disability on U.S. society; 2) the effectiveness of the prevention strategy; 3) the costs of the disease, injury, or disability; and 4) the cost-effectiveness of the strategy. For instance, some childhood vaccines, save up to $29 in direct medical costs for each dollar spent. Other strategies, such as yearly mammograms, carry a net cost but are considered cost-effective because they provide considerable value in return for the money invested. CDC met its established target for FY 2000 and FY 2001 in building expertise to conduct prevention effectiveness studies of public health interventions and will continue to determine what prevention strategies work and what it costs to implement them.

In FY 1999, CDC recognized the need of state and local public health professionals for high quality training. CDC approached this problem through a systematic needs assessment and development of programs to provide up-to-date knowledge and skills using distance-based learning technologies. CDC exceeded its FY 1999 distance learning target by expanding the range of programs offered. Examples include training in public health response to bioterrorism, childhood immunization schedules, epidemiology and prevention of vaccine-preventable diseases, and preparing for an influenza pandemic.

2.4.1 Goal-by-Goal Presentation of Performance

Performance Goal: Maximize the distribution and use of scientific information and prevention messages through modern communication technology.

Performance Measures	Targets	Actual Performance	Ref.
Based on established criteria continue to publish the Morbidity and Mortality Weekly Reports (MMWR) series of publications including Reports and Recommendations, Surveillance Summaries, and the Annual Summary to communicate major public health events to the media, public policy makers and health professionals through multiple media channels -- print, television, radio, interactive World Wide Web.	**MMWR Issues Published:** **FY 04:** 86 **FY 03:** 86 **FY 02:** 86 **FY 01**: 86 **FY 00:** 81 **FY 99:** 77	**MMWR Issues Published:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 86 issues **FY 00**: 81 issues **FY 99:** 77 issues published and available on the CDC Internet site at http://www2.cdc.gov/mmwr/.	Page 122

Performance Measures	Targets	Actual Performance	Ref.
The MMWR will refine communication efforts through a Center-wide communications plan to provide a framework for current activities and maximize communicating public health messages through print and the World Wide Web.	**FY 03:** Continue implementation of the CDC communications plan. Initiate evaluation based on market testing and research. This goal will be completed in FY 03. **FY 02:** Prepare final report on the implementation and enhancements of the CDC communications plan. **FY 01:** Plan implemented and enhanced based on CDC communications assessment. **FY 00:** Communication plan developed.	**FY 03:** **FY 02**: **FY 01**:Plan is completed and implementation is underway. The MMWR is undergoing redesign and will reflect the changes in February 2002. **FY 00**: Communication Plan developed. **FY 99:** Communications Plan under development.	Page 122

Performance Goal: Encourage state health departments to develop efficient and comprehensive public health information and surveillance systems by promoting the use of Internet and by focusing on development of standards for communications and data elements.

(*Note: Beginning in FY 1999, this initiative was expanded to address the need of major metropolitan areas for health-sector dedicated communications systems to support detection and response to terrorist events with support from the Public Health Response to Terrorism/Bioterrorism activity (see section 2.12 Bioterrorism).

Performance Measures	Targets	Actual Performance	Ref.
The number of states with a plan for a comprehensive information network will be increased.	**FY 01:** 20 states **FY 99:** 18 states	**FY 01:** **FY 99:** 33 states **FY 97:** 14 states.	Page 122
The number of states who have implemented a comprehensive information network will be increased.	**FY 01:** 9 states. **FY 99:** 2 states.	**FY 01:** **FY 99:** 4 states **FY 98:** 0 states	Page 122

Performance Goal: Efficiently respond to the needs of our public health partners through the provision of epidemiologic assistance.

Performance Measure	Target	Actual Performance	Ref.
Based upon established criterial for participation, Epidemic Intelligence Service (EIS) officers will respond to at least 95% of the requests for epidemic assistance from domestic and international partners	**EIS Response to Requests:** **FY 04:** At least 95% **FY 03:** At least 95% **FY 02:** At least 95%. **FY 01:** At least 95%. **FY 00:** At least 95%. **FY 99:** At least 95%.	**EIS Response to Requests:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 99% **FY 00**: 99%. **FY 99:** 99%	Page 122

Performance Goal: Build expertise within CIOs to conduct prevention effectiveness studies of public health interventions.

Performance Measure	Target	Actual Performance	Ref.
*Increase the number of professional prevention effectiveness staff and fellows.	**Number of Fellows:** **FY 04:** 43 **FY 03:** 43 **FY 02:** 43 **FY 01:** 43 **FY 00:** 40 **FY 99:** 32	**Number of Fellows:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 43 **FY 00:** 32. **FY 99:** 24	Page 122
Increase the number of staff in CIOs who can use prevention effectiveness methods. (Measured by the number of staff completing the annual Prevention Effectiveness Course).	**Increase in Staff:** **FY 04:** By 120 persons **FY 03:** By 120 persons **FY 02:** By 110 persons **FY 01:** By 110 persons **FY 00:** By 80 persons **FY 99:** By 80 persons	**Increase in Staff:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 110 persons **FY 00:** 80 persons **FY 99:** 80 persons **FY 98**: 60 persons	Page 122
Increase the number of prevention effectiveness studies conducted by CIOs.	**Increase in Studies:** **FY 04:** By 60 studies **FY 03:** By 60 studies **FY 02:** By 60 studies **FY 01:** By 60 studies **FY 00:** By 60 studies **FY 99:** By 60 studies	**Increase in Studies:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 60 studies **FY 00**: 60 studies **FY 99:** 7 studies	Page 122

Performance Goal: As a long-term objective, CDC will implement accessible training programs to provide an effective work force for staffing state and local health departments, laboratories, and ministries of health in developing countries.

Performance Measure	Target	Actual Performance	Ref.
Provide for effective workforce for staffing state and local health departments and in other public health related organizations.	**FY04:** 90% of the fourth and fifth year Public Health Prevention Service (PHPS) graduates will remain in public health and 50% will be working in state/local health departments.	**FY 04:**	Page 122
	FY 03: 90% of the third and fourth of the Public Health Prevention Service (PHPS) will remain in public health and 50% will be working in state/local health departments.	**FY 03:**	
Continued...	**FY 02:** 90% of the second and third classes of the Public Health Prevention Service (PHPS) will remain in public health and 50% will be working in state/local health departments.	**FY 02:**	
	FY 01: 90% of the first and second classes of the PHPS will remain in public health and 50% will be working in state/local health departments.	**FY 01**: 80% of the first and second PHPS classes have remained in public health and 28% are working in state/local health departments	
	Continued...		

Performance Measure	Target	Actual Performance	Ref.
...continued. Provide for effective workforce for staffing state and local health departments and in other public health related organizations.	...continued. **FY 00:** 90% of the first class of the PHPS will remain in public health and 50% will be working in state/local health departments.	...continued. **FY 00:** Following graduation, 76% of the first class remained in public health and 26% are working in state/local health departments. **FY 99:** 50 field assignees.	Page 122
By FY 2002, implement the plan to address needed changes in EIS training methodologies identified in the evaluation study.	**FY 02**: Finalize the implementation of the second phase of the plan. Prepare final report on the implementation process. **FY 01:** Implement the second phase of the plan. **FY 00:** Develop the plan. **FY 99:** The second phase of EIS evaluation will be completed and the first phase findings will be implemented.	**FY 02:** **FY 01:** Second phase of the plan was implemented **FY 00:** Plan Developed. **FY 99**: Second phase of the EIS evaluation has been completed. Results of the first phase are being implemented.	Page 122

II-C.4 Birth Defects/Developmental Disabilities/Disabilities and Health

Total Program Funding (Dollars in thousands)

FY 2003:	$89,982	(Estimate)
FY 2002:	$90,539	(Current Estimate)
FY 2001:	$71,197	(Actual)

Mandate

CDC leads the federal effort to prevent birth defects and developmental disabilities and to improve the quality of life of Americans living with disabilities.

Health Burden

More than 120,000 infants are born with birth defects each year in the United States. The most common 17 birth defects cost approximately $6 billion for children born in a single year. With medical advances, more babies with serious birth defects are surviving, and many experience lifelong disabilities, illness, and social challenges. In addition, 17% of U.S. children under the age of 18 have some type of developmental disability. Children and adults living with disabilities often suffer from secondary medical, social, emotional, family, and community problems. Causes of birth defects and developmental disabilities are unknown for about 75% of cases.

Strategies, Activities, and Resources

CDC monitors and seeks causes for birth defects and developmental disabilities, promotes optimal child development, and enhances the health and well-being of individuals living with disabilities. When causes or risk factors are known, CDC develops, implements, and evaluates prevention programs.

Links to DHHS Strategic Plan

Performance objectives are related to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans*, and Goal 5: *Improve the nation's public health systems*.

Partnerships

CDC works in partnership with state health departments, health care professional organizations, academic institutions, and many non-profit organizations such as March of Dimes, Autism Society of America, United Cerebral Palsy, and American Association on Health and Disability.

Presentation of Performance

Because the causes of most birth defects are not yet known and prevention is not possible until causes or risk factors are known, reductions in the incidence of specific birth defects cannot be used to measure performance. Even when prevention is possible, such as for fetal alcohol syndrome and folic acid-preventable spina bifida, efforts to measure progress through decreases in prevalence rates are slow and difficult because of the need to monitor very large numbers of births to draw conclusions about changes in rates. CDC is monitoring those rate changes but also collecting data on behavior associated with the risk factors for specific birth defects and developmental disabilities.

Protecting Health and Promoting Partnerships

II-C.4a Birth Defects and Developmental Disabilities Prevention

CDC has major prevention programs underway in two areas – folic acid for prevention of spina bifida and fetal alcohol syndrome (FAS) prevention. A national effort in underway to encourage all women of reproductive age to take folic acid (a B vitamin) because insufficient folic acid in the mother around the time of conception was found to cause serous birth defects of the spine (spina bifida) and brain (anencephaly). The FY 00 target of 40% for the performance measure to get 50% of women of reproductive age to consume 400 micrograms of folic acid every day

– as measured by women reporting daily vitamin supplement use on a Gallup survey – has not been met and may not reflect actual increased consumption of folic acid through fortified food. Next year this performance measure will be changed to a measure of blood folate levels for women of reproductive age since it will reflect true consumption of the vitamin from any source.

A new objective has been added this year for FAS prevention since we had a major increase in funding in this area. New programs are underway and they should lead to a decrease in the fetal exposure to alcohol. As more birth defects prevention breakthroughs are made, new objectives will be added.

CDC is working collaborative with the Health Resources and Services Administration to assist states to implement a new program, the Early Hearing Detection and Intervention (EDHI) program. CDC's role is to assist states to establish programs to track the children who screen positive for hearing loss to ensure that these children get the follow-up diagnostic testing and, if needed, enter early intervention programs. This tracking program can also be used to provide data for research into causes of hearing lost and for cost-benefit studies. A new performance goal and measures have been developed for this program.

CDC continues to increase the number of states (and thereby the number of births) that are monitored through high-quality birth defect and developmental disabilities surveillance systems. CDC conducts a model birth defects program in five metro-Atlanta counties and supports 26 state programs with cooperative agreements. CDC also supports the National Birth Defects Prevention Network, an independent organization which sets guidelines, acts as a clearinghouse for state birth defects data, and publishes annual reports summarizing the data. The Network is designed for data sharing to increase the availability of information about rare defects and geographic variations in rates of specific birth defects. The Network also assists CDC in the implementation of prevention strategies. The Network grew very rapidly to include every state, so rather than count the number of states participating in the Network, we are actually counting only the states that provide data on birth defects to the Network. Standards for this data increase every year; therefore, we are not meeting previously set targets only because some states cannot met these higher standards. We expect to reach the targets but it will take longer. The improved quality is well worth the minor delay.

Monitoring developmental disabilities is a newer program at CDC. We conduct a model program for monitoring 5 developmental disabilities – mental retardation, cerebral palsy, hearing impairment, vision impairment, and autism – in metropolitan Atlanta.

To look for causes and risk factors for birth defects, CDC has funded 7 Centers for Birth Defects Research and Prevention to conduct a large collaborative study of the causes of birth defects, the National Birth Defects Prevention Study. The Centers have developed a surveillance system to identify infants born with (case) and without (control) a selected list of birth defects. A telephone interview with the infant's mother asks questions about the pregnancy and mother's medical history, lifestyle, diet, medication use, and occupational and environmental exposures. All of the summary data from cases and controls are compared to identify any environmental and genetic factors that increase or decrease the risk of a birth defect. When the database is sufficiently large, it will be analyzed to look for differences in cases of specific birth defects and controls that may provide clues to cause of that birth defects. The analysis will begin soon for some of the more common birth defects but the rare birth defects will require a much larger database before analysis will be meaningful. A new goal and performance measure has been added to measure the growing database that will eventually lead to discovery of causes of birth defects.

CDC efforts to monitor prevalence and to look for causes for developmental disabilities is not yet as well developed as the efforts for birth defects, but this program is now beginning to grow rapidly. We have added new goals and performance measures in this area this year and expect to add additional performance measures in the next few years.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Increase the consumption of folic acid among women of reproductive age to prevent serious birth defects.**		
Performance Measure	**Targets**	**Actual Performance**	**Ref.**
Increase the percentage of women of reproductive age who consume 400 micrograms of folic acid daily.	**FY 02:** 36% **FY 00:** 40%	**FY 02:** **FY 00:** 34% **FY 98:** 32% **FY 96:** 25% (data available biannually)	Page 89

Verification/Validation of Performance Measures: Measured using a Mach of Dimes Gallup survey of women of reproductive age. This survey is conducted every 2 years.

Performance Goal:	**Decrease the number of women drinking during pregnancy**		
Performance Measure	**Targets**	**Actual Performance**	**Ref.**
Decrease the percentage of women who report any alcohol consumption during pregnancy.	**FY 03:** 10%	**FY 03:**	Page 89

Verification/Validation of Performance Measures: Measured using data from CDC's Behavioral Risk Factor Surveillance System.

Performance Goal:	**Monitoring speech, language, and other developmental outcomes of infants with hearing loss.**		
Performance Measure	**Targets**	**Actual Performance**	**Ref.**
By 2010, increase the number of states and territories participating in the National Early Hearing Detection and Intervention (EHDI) Database to 50. (based on 1999 data, 24 states are participating)	**FY 03:** 40	**FY 03:** **FY 02:** **FY 01:** 30 (baseline)	Page 89
By 2010, decrease the percentage of newborns who screen positive for hearing loss but are lost to follow-up to 10% . (based on 1999 data from 9 states, 51% of infants who screen positive are lost to follow-up.)	**FY 03:** 35%	**FY 03:** **FY 02:** **FY 99:** 51% (baseline)	Page 89

Verification/Validation of Performance Measures: Monitored using the EHDI state tracking network, maintained by CDC.

Performance Goal:	**Improve the data on the prevalence of birth defects and developmental disabilities.**		
Performance Measure	**Targets**	**Actual Performance**	**Ref.**
Increase the number of states providing quality data to the National Birth Defects Prevention Network.	**FY 05:** 42 states **FY 04:** 40 states **FY 03:** 38 states **FY 02:** 38 states	**FY 05:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 29 Baseline	Page 89
Increase the number of states collecting community-based data on the prevalence of one or more developmental disabilities.	**FY 05:** 16 **FY 04:** 14 **FY 03:** 12 **FY 02:** 10	**FY 05:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 4 Baseline	Page 89

Verification/Validation of Performance Measures: For birth defects, the measure will be the number of states providing data for the National Birth Defects Prevention Network annual report. For developmental disabilities, the measure will be the number of states funded by CDC to collect data.

Performance Goal:	**Find causes and risk factors for birth defects and developmental disabilities in order to develop prevention strategies**		
Performance Measure	**Targets**	**Actual Performance**	**Ref.**
Increase the number of maternal interviews completed for the National Birth Defects Prevention Study	**FY 03:** 14,000	**FY 03:** **FY 02:** **FY 01:** 8,000 (preliminary) **FY 00:** 5,000 **FY 99:** 2,000	Page 89
Increase the number of studies being conducted to find causes of autism, cerebral palsy, and mental retardation.	**FY 05:** 11 **FY 04:** 9 **FY 03:** 7 **FY 02:** 4	**FY 05:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 2 (baseline)	Page 89

Verification/Validation of Performance Measures: The count of maternal interviews completed for the NBDPS will be the number in the database at the end of the fiscal year. The number of studies being conducted to find causes of these conditions will be the number funded by CDC plus any others in the US our CDC program is aware of.

II-C.4b Disabilities and Health

Lack of health promotion and disease prevention activities targeting individuals with disabilities has allowed these individuals to continue to experience medical, social, emotional, family, or community problems that can be prevented. Increased understanding of these preventable conditions may yield promising prevention approaches that can improve the quality of life for individuals living with disabilities. CDC is therefore focusing on preventing these secondary conditions, promoting health, and improving the quality of life among persons with disabilities. Activities include monitoring health status, cost-effectiveness research, identification of risk and protective factors, and implementing health promotion strategies that are proven effective.

Performance Summary

The emphasis on secondary conditions is a relatively new prevention approach for CDC, which has historically focused on primary prevention of disabling conditions. Currently, there is no data collection system to measure changes in the quality of life of people with disabling conditions. One performance measure is a first step toward building a system that will enable CDC to monitor trends related to the health and quality of life among people with disabilities.

CDC relies on states' use of the Behavioral Risk Factor Surveillance System (BRFSS) disability module as a major source of information on the health status of Americans with disabilities. Because initial results from the disability module were less than adequate for the intended purposes, starting in FY2001, the demographic variable "disability status" will be included in the core information collected annually as part of the BRFSS. CDC anticipates that the information from this new demographic category will allow a better understanding of the health status of Americans with disabilities. In addition, CDC is revising the BRFSS disability module to improve the quality and relevance of the information generated. Because it will be included in the core information, it will be used in every state. Therefore, counting the number of states using it will be removed as a performance measure.

CDC currently funds state disability and health programs to assess the magnitude of disabilities in state populations, develop state-based health promotion programs that include people with disabilities, and build and strengthen each state's infrastructure and collaborations so that environmental and lifestyle issues affecting the health and well-being of people with disabilities can be better addressed. CDC also funds university- and hospital-based research projects to examine health status, levels of social participation, and ways to prevent secondary conditions associated with limitations in mobility, personal care and home management, communication, and learning; and develop and evaluate cost-effective public heath interventions. New performance goals have been added for these programs.

The two overarching goals of Healthy People 2010 related to people with disabilities are to 1) increase the quality and years of healthy life for all Americans and 2) eliminate health disparities. These goals are particularly poignant for people with disabilities. The traditional notion that disability must naturally be equated with poor health is no longer tenable. Public health and medical care are expanding their paradigms to include health promotion and disease prevention in this population. In addition, people with disabilities often experience health disparities related to environmental barriers, including problems with physical accessibility, societal attitudes, and access to care. CDC plans to add a new goal next year to monitor these disparities.

Goal-by-Goal Presentation of Performance

Performance Goal: Monitor, characterize, and improve the health status of Americans with disabilities.

Performance Measure	Targets	Actual Performance	Ref.
Increase the number of states that implement *Living Well With a Disability* or a similar health promotion intervention	**FY 05:** 20 **FY 04:** 15 **FY 03:** 10 **FY 02:** 5	**FY 05:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 1 (baseline)	Page 89
Through research, increase scientific knowledge targeting the health of people with disabilities as measured by new peer reviewed publications produced by the program	**FY 05:** **FY 04:** **FY 03:** 20 **FY 02:** 10	**FY 05:** **FY 04:** **FY 03:** **FY 02:** **FY 01:** 10 (baseline)	Page 89

Verification/Validation of Performance Measures: For state using the BRFSS to monitor disabilities, CDC will verify data via reviews of reports required from cooperative agreement recipients. Based on these reviews, CDC will be able to determine which states are using the disability module. The number of publications each year will be monitored by the publications tracking program in NCBDDD.

II-C.5 Injury Prevention and Control

Total Program Funding (Dollars in thousands)

FY 2003:	$146,075	(Estimate)
FY 2002:	$150,698	(Current Estimate)
FY 2001:	$143,769	(Actual)

Mandate

CDC's injury research and programs protect Americans from harm.

Health Burden

Injuries are the leading cause of years of potential life lost before the age of 65. Injury takes a high toll on the lives of Americans and is the leading killer of children, teenagers, and young adults. Every year, nearly 150,000 Americans die from injuries, and hundreds of thousands are nonfatally injured; many suffer permanent disabilities. Although the greatest cost of injury is in human suffering and loss, the financial costs are also staggering: more than $224 billion a year for medical care and rehabilitation and in lost income.

Despite great progress in injury prevention and control during the past several years, injuries remain an enormous problem in the United States:

- Rates of homicide and suicide for young Americans, particularly men, are alarmingly higher than for any other Western industrialized nation.
- Violence among intimate partners continues to result in large numbers of lives lost; each year over 30% of women murdered in the United States are killed by a spouse or ex-spouse.
- Home fires and falls among older persons cause thousands of deaths and injuries each year and result in high medical costs and substantial property loss.
- An estimated 1.5 million Americans suffer a traumatic brain injury each year. Of these, about 230,000 are hospitalized annually and 50,000 die. An estimated 80,000 to 90,000 people survive a TBI and are disabled .
- Approximately 4 million poisonings occur each year, with associated yearly healthcare costs of approximately $3 billion.
- About 127,000 children and 29,200 adults receive treatment in hospital emergency departments each year for bicycle-related head injuries.
- Violence is a leading cause of nonfatal injuries among young people. In 1995, almost 400,000 15- to 19-year-olds went to emergency departments because of interpersonal violence.
- Over 1 million children each year are victims of abuse and neglect.

Strategies, Activities, and Resources

Preventing injuries costs far less than treating them. CDC's science-based approach encompasses: 1) surveillance to find out the extent of the problem, 2) research to determine risk factors, 3) development and implementation of prevention programs, 4) evaluation to find out which interventions work best, 5) support to states and local public health programs, and 6) partnerships with public and private agencies organizations.

In January 1999, the Institute of Medicine published *Reducing the Burden of Injury: Advancing Prevention and Treatment*, which encouraged the expansion of CDC's work in all of these areas and provided recommendations to guide CDC in the development of new activities. The performance measures for injury prevention and control reflect CDC's mission to provide leadership in preventing and controlling injuries through research, surveillance, implementation of programs, and communication.

Links to the DHHS Strategic Plan

Injury prevention performance objectives and measures relate to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans.*

Presentation of Performance

The presentation of performance for programs in injury prevention is necessarily broad because of the range and breadth of CDC's cross-cutting activities. These activities are summarized in the table below and are detailed in the following sections.

Protecting Health and Promoting Partnerships

a. Youth violence prevention
b. Prevention of violence against women
c. Rape prevention and education grants
d. Child Maltreatment
e. Head injury prevention
f. Fire-related injury prevention
g. Injury prevention and control research

Providing Credible Health Information to Enhance Health Decisions

h. Data access
i. Electronic emergency department public health reporting

Protecting Health and Promoting Partnerships

II-C.5a Youth Violence Prevention

Homicide and suicide take the lives of more than 30 of America's youngest citizens every day. Homicide is the second leading cause of death for U.S. youth aged 15 to 24 and the third leading cause for children aged 1 to 4. Youth violence is also responsible for hundreds of thousands of nonfatal injuries among young persons every year. Youth violence is a complex issue that goes to the heart of our social system and even to the family structure. Over the last 15 years, CDC has used science to understand the problem and determine what works to prevent it. As with most problems addressed by CDC, the public health approach to youth violence has four components:

Description of the problem: CDC analyzes and reports findings on deaths and injuries resulting from violence. CDC also supports the development of surveillance systems that enhance the understanding of violence-related injury and risk factors.

Identification of risk factors and protective factors: CDC-supported research suggests that children who have good social and communication skills, learn the basics of resolving conflicts nonviolently, and receive emotional support from parents or other adults are less likely to behave violently than children without these advantages. Poverty, discrimination, and lack of opportunities for education and employment are important risk factors for violence and must be addressed as part of any comprehensive solution to youth violence. Strategies for reducing violence should begin early in life, before young persons adopt violent beliefs and behavioral patterns. In 1992, CDC began funding projects to evaluate ways to prevent and reduce aggressive behavior among youth. Most projects emphasized primary prevention and cooperative efforts among schools, health departments, and community partners.

Evaluation of interventions and programs designed to reduce violence: CDC has funded several projects to look at a range of promising interventions – peer mediation, conflict resolution training, mentoring, role playing, improvements in parenting skills. Some targeted young children and families to prevent the onset of risk factors, whereas others targeted adolescents who are at high risk. These interventions will serve as the framework for performance measures aimed at reducing the incidence of youth violence.

Implementation of promising programs at the community level: CDC works with many partners to ensure that information is widely available.

Performance Summary

CDC supports ten universities as National Centers of Excellence to develop and implement programs that work, conduct research, and help communities address their own youth violence problems. Chosen for their strong research capability and community involvement, the centers study ways to translate research into community action and serve as national models for the prevention of youth violence. CDC's National Youth Violence Prevention Resource Center, a collaboration with other federal agencies, provides a single point of access for information online and toll-free in English and Spanish.

To further help communities, CDC developed a resource on the most promising approaches for preventing youth violence. *Best Practices in Youth Violence Prevention: A Source Book for Community Action* builds on the lessons learned from the first CDC-funded evaluation projects and draws on the expertise of the nation's leading scientists and practitioners and the scientific literature on youth-violence prevention. *Best Practices* is the first publication to describe effective, science-based practices in four key areas: parent- and family-centered activities, home visits, social and conflict resolution skills, and mentoring. Within days of announcing the availability of the source book, CDC distributed more than 3,000 copies. Rather than disseminating this tool via one-time regional seminars, CDC chose a more broad dissemination and implementation plan involving hard copy distribution, implementation through a comprehensive youth violence prevention program that is being implemented and evaluated at 40 middle schools in 4 states, and by making the sourcebook electronically available through our National Resource Center for Youth Violence launched in January, 2001. Technical assistance on implementing prevention programs that work is being provided by CDC staff, as well as our 10 Academic Centers of Excellence for Youth Violence.

To help researchers and prevention specialists conduct risk- and protective-factor research and to evaluate youth-violence prevention programs, CDC also published *Measuring Violence-Related Attitudes, Beliefs, and Behaviors: A Compendium of Assessment Tools*. The compendium includes questions, scales, and instruments for measuring attitudinal, psychosocial, behavioral, and environmental factors related to violence.

CDC collaborated with DOE and DOJ on a second national study of school-associated violent deaths, 1994 - 1999. The study was published in the Journal of American Medicine in December 2001. The first national study, conducted by CDC and DOE, examined the period 1992 to 1994. Of the school-associated violent deaths in that study, the highest level of risk was in students in secondary schools, in urban school districts, and of minority racial and ethnic background. Some of the findings indicated that most events occurred around the start of the school day, during the lunch period, or a the end of the school day. The study further concluded that while school associated deaths are rare events, they have occurred often enough to allow for the detection of patterns and the identification of potential risk factors. This report provides information that can assist school administrators and faculty in planning the timing and focus of violence prevention programs.

CDC's newest project is an innovative, multi-site evaluation of a state-of-the-art violence prevention protocol for middle schools. Four sites are collaborating with CDC to implement best practices, such as conflict resolution, anger management, and family-based interventions, at multiple sites simultaneously. The project involves 9,000 middle school students in 40 schools across 4 states, making it one of the largest efforts to date.

The measures below will have been achieved by the end of FY 2003. In the FY 2004 Performance plan, CDC will propose new measures that reflect the current directions of our youth violence prevention program.

Goal-by-Goal Presentation of Performance

Performance Goal: Reduce the incidence of youth violence.

Performance Measure	Target	Actual Performance	Ref.
In a CDC-funded youth violence project, reduce the number of students reporting incidents of fighting.	**FY 00:** Reduce by 30%	**FY 00:** Achieved **FY 96:** Reduced by 30% **FY 94:** 50% (baseline)	Page 174
Develop best practice protocols for implementation and evaluation of youth violence prevention programs.	**FY 03**: Increase materials and technical assistance provided via the Resource Center by 15 percent **FY 02:** Develop capacity for technical assistance through the National Youth Violence Prevention Resource Center. **FY 01**: Provide technical assistance to at least 5 communities. **FY 00**: Disseminate to at least 1 target audience. **FY 99**: Develop protocols.	**FY 03:** **FY 02:** Bilingual/Technical staff such as writers, graphic artists, etc. have been hired. **FY 01:** Technical assistance provided via Academic Centers of Excellence **FY 00:** Completed protocol development. **FY 99:** Compiled into *Best Practices* sourcebook.	Page 174
Increase the number of regional best practices workshops, and disseminate workshop results.	**FY 01:** 8 workshops **FY 00:** Develop/test dissemination mechanisms (e.g., website).	**FY 01:** Achieved Best Practices training via other mechanisms (see narrative) **FY 00:** Launched website **FY 97:** 0 workshops	Page 174

Verification/Validation of Performance Measures: CDC will use progammatic oversight to verify and validate performance measures

II-C.5b Violence against Women Prevention

Each year, 2 million American women experience domestic or sexual violence; 75% of these women are assaulted by their intimate partners. Female victims of violence often have physical and mental health problems and use healthcare facilities more than non-victimized women. CDC's long-term goal of reducing the incidence of violence against women may take many years to achieve. In the interim, an ongoing system is needed to monitor the problem, improve the level and scope of prevention and intervention services, evaluate what works and

communicate what we know to service providers, and gain a greater understanding of the social norms that allow violence against women. The short-term goal is therefore to develop surveillance, communications, and evaluation/feedback systems that will speed reductions in the incidence of violence against women.

Performance Summary

CDC funds all 50 states to provide rape prevention and education services. CDC has 10 projects that work in communities to improve coordination among social, legal, justice, public health, and other agencies to respond to violence against women. Because special interventions are needed to reach specific underserved populations, CDC supports 10 innovative demonstration projects to implement and evaluate culturally appropriate approaches to prevent violence against women. CDC is also extending efforts to hard-to-reach groups. CDC funded California health workers to implement an award-winning training program to teach migrant women to address domestic violence. CDC is evaluating and replicating this program in Wisconsin and Texas.

With the help of experts in family violence, CDC developed uniform definitions for intimate partner violence and recommended data elements for surveillance of such violence. CDC continues to fund surveillance systems for intimate partner violence in five state health departments (Kentucky, Michigan, Oklahoma, Minnesota and Oregon).

CDC ensures that the latest research reaches practitioners and other professionals who serve women who are victims of violence. CDC hosted the inaugural National Sexual Violence Prevention Conference, where more than 800 participants shared and learned about successful strategies to prevent violence against women. CDC supports the Violence Against Women Prevention Research Center and an electronic network to provide domestic violence and sexual assault coalitions and allied organizations with timely information and efficient ways to communicate about prevention and intervention initiatives.

A classroom-based initiative in North Carolina that focuses on dating violence is among the most promising prevention programs evaluated by CDC to date. As a direct consequence of the curriculum, which addresses gender stereotypes, conflict-management skills, and social norms, eighth and ninth graders have exhibited less tolerance for violence against women, with a corresponding reduction in violence among dating teens.

Goal-by-Goal Presentation of Performance

Performance Goal: Reduce violence against women.

Performance Measure	Target	Actual Performance	Ref.

Establish a biennial survey of the incidence and prevalence of violence against women.	**FY 03:** Evaluate Pilot test results **FY 02:** Pilot test the survey **FY 01:** Develop a survey instrument. **FY 00:** Establish a committee to develop a survey instrument.	**FY 03:** **FY 02:** Make OMB suggested revisions **FY 01:** Contractor has developed questions for survey. **FY 00:** Committee established **FY 99:** No survey	Page 174
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Establish demonstration projects to address prevention of violence against women.	**FY 03:** Modify curricula and research instruments as appropriate and continue interventions **FY 02:** Develop and publish a progress report based on pilot testing of research instruments **FY 01:** Finalize curricula and research instruments for CDC IRB review. **FY 00:** Implement/begin evaluation of 2 innovative community-based programs.	**FY 03:** **FY 02:** First year progress reports being analyzed **FY 01:** Five (5) of 10 projects received CDC IRB protocol approval. **FY 00:** 10 projects funded **FY 99:** 0 evaluations	Page 174
Establish a research program to address understudied aspects of violence against women (e.g., assess factors of perpetration of IPV that would inform development of interventions and treatment).	**FY 03:** Begin translating findings to communities. **FY 02:** Identify and initiate studies of other factors which lead to perpetration **FY 01:** Address at least 2 understudied topics from the research plan, with a long-term goal of translating findings to communities. **FY 00:** Develop a research plan; identify potential research institutions.	**FY 03:** **FY 02:** Injury research plan is being reviewed. **FY 01:** Funds awarded to VAW Prevention Research Center to conduct research. **FY 00:** Identified priorities; developed RFP; reviewed applications; made funding decisions. **FY 99:** No research plan	Page 174

Establish at least one surveillance system for collecting intimate partner violence data representative of an entire state.	**FY 03:** Integrate IPV with other surveillance systems **FY 02:** Continue to develop state-wide surveillance systems **FY 01:** Develop and pilot the surveillance system. **FY 00:** Identify data sources at the state level.	**FY 03:** **FY 02:** State-wide surveys completed in two additional states **FY 01:** One state (MI) has established a state-wide sample **FY 00:** Funded 3 more states. **FY 99:** Funded 3 states to explore data collection methods.	Page 174
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Evaluate the effectiveness of funded communities with coordinated community responses.	**FY 03:** Provide technical assistance **FY 02:** Fund additional community based projects. **FY 01:**Provide technical assistance. **FY 00:** Increase at least 1 measure.	**FY 03:** **FY 02:** Received data from contractor which is now being analyzed. **FY 01:** Data not ready. No Cost extension granted. **FY 00:** Analyzed first set of preliminary data. **FY 99:** Received data.	Page 174

Verification/Validation of Performance Measure: CDC will use programmatic oversight to verify and validate performance measures.

II-C.5c Rape Prevention and Education Grants

From a recent Violence Against Women Survey, CDC estimates that more than 450,000 rapes occur each year. CDC addresses this problem by supporting every state and territory through the rape prevention and education grant program. Previously funded from the Violent Crime Reduction Trust Fund via the Preventive Health and Health Services Block Grant, the $45 million grant program has been modified to comply with the Victims of Trafficking and Violence Protection Act of 2000 (PL 106-386). This Act requires CDC to provide resources and assistance to states for rape prevention and education programs conducted by rape crisis centers, state sexual assault coalitions, and other public and private nonprofit entities. Resources are used for: 1) educational seminars, 2) operation of hotlines, 3) staff training, 4) informational materials, 5) education and training of students and campus personnel at colleges and universities, 6) education and training to increase awareness about drugs that facilitate rapes or sexual assaults, and 7) other efforts to increase awareness about or prevent sexual assault. CDC assists state and coalition staff through training opportunities, support for the National Sexual Violence Resource Center, and research to learn what works in preventing rape.

Performance Summary
CDC funding for rape prevention and education activities in all 50 states and the territories is enabling programs to address sexual violence more effectively, provide more and better services to survivors of sexual assault and rape, and implement prevention and education programs. CDC is continuing to build a national program in sexual assault prevention. Staff have facilitated training on health communications and media advocacy intended to help state sexual assault prevention coordinators and coalition staff apply effective communications strategies to sexual violence issues.

Through an extensive collaborative process, CDC and a panel of experts (comprising federal and state representatives, researchers, physicians, and practitioners) developed a set of case definitions designed to promote consistency in the use of terminology and data collection related to sexual violence. These case definitions will improve our ability to monitor national incidence and trends, determine the scope of this problem, assess the effectiveness of interventions, and inform policy. CDC is currently revising the sexual violence case definitions and revisions are expected to be published in FY 02.

CDC has contracted with the Institute of Medicine (IOM) to conduct an assessment of the training needs of healthcare providers to detect, and refer victims of family and intimate violence or sexual assault. The results of this contract will provide the basis to support prevention-oriented research that will lead to greater knowledge of prevention strategies for professional training and education. The report was finalized in September 2001.

The CDC-funded National Sexual Violence Resource Center is designed to: 1) strengthen the support system for sexual-assault survivors, 2) provide leadership in preventing sexual violence, 3) provide information and resources, policy analysis, and development, and 4) enhance prevention of sexual violence and community response to such violence by providing technical assistance and professional consultation to sexual-assault programs, state and local organizations, community volunteers, and the media. CDC continues to provide technical assistance and consultation to state sexual assault coalitions, state health departments, local programs, and researchers.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Enhance the capacity of states to implement effective rape prevention and education programs.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Develop case definitions for sexual assault.	**FY 02:** Publish and disseminate case definitions	**FY 02:** Case Definitions currently being revised.	Page 174
Conduct state training programs.	**FY 03:** Conduct at least 1 training session based on a needs assessment **FY 02:** Assess training needs of sexual assault prevention program staff	**FY 03:** **FY 02:** Conducted needs assessment.	Page 174

Verification/Validation of Performance Measure: CDC will collect annual project reports from each program funded to verify performance.

II-C.5d Child Maltreatment

Over 1 million children each year are victims of abuse and neglect. Since 1998, congressional language annually indicated that NCIPC should support initiatives directed to prevent physical and emotional injuries associated with child maltreatment. In response, a group of child maltreatment experts (representing researchers from a variety of academic disciplines, federal agencies and service providers) were convened in October 1999 to determine NCIPC's future activities in the area of child maltreatment.

Despite basic protections for children, the literature demonstrates that there is great variability in the application of interventions for children who are maltreated or at risk of being maltreated (Kaplan et al. 1999). Also, the incidence of child maltreatment has been increasing (Sedlak Broadhurst, 1996). Even though some of the increase can be attributed to increased sensitivity in reporting, an increase in severity of injuries attributable to maltreatment during the period 1980 through 1993 is clearly documented. There is a need, then, for more information on interventions that prevent child maltreatment, or that prevent repeat occurrences of maltreatment.

Performance Summary

The CDC contracted with ORC Macro International to evaluate STOP IT NOW!, a social marketing campaign designed to reduce child sexual abuse.

Funds were awarded for (1) 4 state-based mortality surveillance projects (MI, CA, RI, MN) to compare alternative approaches to surveillance for fatal and nonfatal child maltreatment and (2) 3 state-based morbidity surveillance projects (CA, MO, RI) to test methods that may be employed for the surveillance of violence at all ages. Work will involve exploring various reporting systems which could be used to collect surveillance data, pilot test data sources for improved information on child maltreatment (physical, sexual and psychological abuse/neglect), and determine the reliability of the data.

The Child Abuse/Suicide/IPV/SV Data Collection Pilot continues work begun in FY01 to pilot test data screened to collect epidemiologic information on child maltreatment, suicide, IPV and SV. Emergency Department visits include frequency of visits, injury details, multiple injury data, and social services referral information.

A comprehensive review of all published literature in English (within and outside of the United States) is being conducted to identify and describe evaluated and unevaluated child maltreatment programs in the United States and Canada since 1980.

To work on the combined problem of child maltreatment and intimate partner violence, CDC is participating in The "Green Book" Project, a collaboration among 8 federal agencies to stop the victimization of women and children. This collaboration has funded 6 projects developed to impact the judicial and social services systems abused women and children come in contact with.

Presently, NCIPC is working with California State University through the Intergovernmental Personnel Act Mobility Program with a temporary assignment of a research fellow to work with the Oklahoma state program to evaluate a statewide network of Comprehensive Home Based Services (CHBS). The Oklahoma project is a large-scale effectiveness trial of the Project SafeCare model, which provides home- based parenting, and family preservation services to approximately 2,000 families annually. The fellow is assisting in the implementation, data collection and analysis, of the overall Project Safe Care model effectiveness trial.

Funds support one research proposal in response to an RFP developed by the NIH Child Abuse and Neglect Working Group consisting of several federal agencies in and outside NIH. The study is a multi-site longitudinal study of 560 adolescent mothers and 180 adult mothers and their children recruited from prenatal clinics and health providers in four different sites. The project is aimed at clarifying and measuring neglect from five different measurement sources (e.g., cell phone interviews and direct observation of parent-infant interactions), establishing a screening tool based on prenatal parent behavior, examining impact of neglect on several characteristics (e.g., intelligence) over the first three years of life, and testing and refining a conceptual model relating parental characteristics and other factors to child outcome.

The Parenting Community Trial will be a multi-site, multi-level evaluation of a parenting improvement program that includes a variety of approaches to family interventions. The interventions that CDC will evaluate will include brief primary care consultations, and a variety of more intensive training for parents. It can be delivered in many ways, so we are hopeful that it will be effective in many different communities in reducing child maltreatment, youth violence, and family violence.

In the FY 2003 Performance Plan, CDC will propose performance goals and measures that reflect the current directions of our child maltreatment prevention program.

II-C.5e Unintentional Injury Prevention

Unintentional injury is the leading cause of death for Americans ages 1-34. Each year, more than 90,000 people die in the U.S. as a result of unintentional injuries. During an average year in the U.S., unintentional injuries account for nearly 31 million emergency room visits. For children, injury is the leading cause of death, accounting for 41% of these deaths after the first year of life. Medicaid pays $1 billion annually for emergency treatment of injured children. Among older Americans, 7,000 die each year, due to motor vehicle crashes and another 175,000 sustain nonfatal injuries. Traumatic brain injury (TBI) rates are highest among persons 75 years and older, predominantly due to falls, which often result in disability or death. Many of these deaths are preventable. CDC funds community-level programs in 25 states in collaboration with state health departments and other partners implement, and evaluate multifaceted injury prevention and surveillance programs. CDC also funds research at our ten injury control research centers of excellence and supports research grants across the country.

Head Injury Prevention
CDC data indicate that approximately 1 million individuals are treated for TBI in hospital emergency departments (ED) annually, with rates of ED visits of 390 per 100,000 per year. Population-based data from South Carolina indicate that 80% to 90% of TBI cases are treated in EDs and that the highest rates occur among those less than age 19 years and those aged 65 years and older. Surveillance data from 14 states documented hospitalization rates for TBI of about 90 per 100,000 population and fatality rates of about 18 per 100,000. Males represent 66% of hospitalized cases. Roughly 50% of TBI hospitalized cases in those states resulted from motor vehicle crashes, another 25% resulted from falls, and about 6% from non-firearm assaults.

Other CDC data shows that annually about 3,000 children under 14 years of age die from TBI, 29,000 are hospitalized and another 400,000 receive treatment in emergency departments.

Each year bicycle mishaps result in an estimated 127,000 children and teens and 29,200 adults being treated in emergency departments for injuries to the brain, face, eye, or ear. Of these, about 33,000 are traumatic brain injuries; almost 80% are sustained by children. Bicycles are associated with more childhood injuries than any other consumer product except motor vehicles. In 1998, an estimated 362,000 children were treated in emergency departments for bicycle-related injuries. A bicycle helmet is the single most effective safety device available to reduce injury to the brain and upper face from bicycle crashes. CDC-funded research has demonstrated that wearing a bike helmet reduces the risk of head injury by 85% and the risk of traumatic brain injury by 88%.

Performance Summary
In FY 1998, CDC began a second round of bicycle head injury prevention cooperative agreements in 5 states. Nearly all of these projects showed early increases in observed helmet use. The helmet use rate for the 15 intervention communities in 5 states was 40% before implementation of the program and increased to 58% by the end of the second grant year – exceeding the HP 2000 objective of 50% use. The funded projects were not reaching the populations of greatest risk, underscoring CDC's limited capability to make a substantial impact on the reduction of these injuries.

Due to the exceptional efforts of private, national nonprofit partner organizations such as the National SAFE KIDS Campaign and the Bicycle Helmet Safety Institute, CDC has limited activities in this arena. In FY 2001, CDC funded SAFE KIDS to address bicycle-related injuries and the need for bicycle helmets, among other prevention activities. CDC also funded the National Bicycle Safety Network – a group of federal, nonprofit, and advocacy agencies dedicated to promotion of bike safety – to develop a national action plan that will include recommendations for CDC and other partners. A bicycle helmet use project was funded by CDC in FY 2001 at the Arizona State Department of Health.

To address the medical and social aspects of disability associated with traumatic brain injuries, CDC began creating a surveillance system to track TBIs. Since 1994, CDC has funded more than 15 state health departments to report the number of persons who die or seek hospital care with TBIs. CDC also funds follow-up studies in two states to describe TBI-related disability and use of services. CDC has modified the TBI performance goal to align with these program directions. CDC has also changed performance measures and targets to focus on outcomes rather than processes.

CDC and States will continue to use data from the uniform reporting system to guide the development of Traumatic Brain Injury (TBI) programs. CDC will continue TBI follow-up registries to understand better the impact of TBI on employment/other daily living activities and to explore the use of registries to link TBI victims to services. CDC will also improve public awareness of TBI by providing information on the treatment, outcomes, and resources available for persons with less severe TBI. CDC believes that its TBI surveillance system (12 states were being funded in FY 2001 at approximately $135,000/state) will continue to have a substantial local impact -- State TBI data have been used to target prevention programs for falls, All Terrain Vehicles, snowmobiles and suicide. Other impacts include:

- In South Carolina, TBI data were used to advocate for and increase state funding for services for people with TBI and SCI from $1 million to $9 million.
- In Georgia, CDC data were used by advocates to help pass the TBI Trust Fund which will generate millions of dollars from DUI fines to provide services to persons with TBI, and
- In Oklahoma, a bank loan for a rehabilitation center was obtained using CDC TBI data.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Reduce the number and severity of head injuries in CDC funded projects by increasing bicycle helmet use.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Reduce the number of bicycle-related emergency department visits by 5% per year from 123,475 in 1995.	**FY 00:** 5% reduction **FY 99:** 5% reduction	**CY 00:** 127,500 **FY 99:** Data collection began in FY 2000 **FY 95:** 123,475	Page 174

Increase the use of bicycle helmets by child and teen bicyclists in CDC-funded project areas.	**FY 01:** Increase use by 7%. **FY 00:** Increase use by 25%. **FY 99:** Increase use by 30%.	**FY 01:** Partially Achieved--funding ended in FY 00 **FY 00:** Percent above baseline. CA +15% CO +6% FL +40% OK +616% RI 0% **FY 99:** Percent above baseline. CA. + 7% CO + 3% FL - 8% OK +250% RI 0% **FY 98:** Percent above baseline. CA. + 4% CO + 16% Florida + 5% OK + 333% RI + 325% **FY 97:** Baseline: Proportion of children wearing helmets. CA .54 CO .30 FL .62 OK .06 RI .08	Page 174

Performance Goal:	**Improve the timeliness and quality of data used to determine the medical and social impact of traumatic brain injury.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Develop a uniform reporting system for TBI; determine incidence and prevalence; report on uses of state surveillance and follow-up registry data; disseminate information on TBI trends.	**FY 03:** Revise CNS surveillance guidelines to include protocols for collection of data on mild TBI; **FY 02:** disseminate revised protocol for CNS TBI surveillance; conduct an expert conference to develop protocols for mild TBI; **FY 01:** Use State surveillance and follow registries data to disseminate information of TBI trends. **FY 00:** Report on uses of state TBI surveillance data; report incidence and prevalence. **FY 99:** Increase TBI follow-up registries from 1 in FY1997 to 2 by FY 1999.	**FY 03:** **FY 02:** Surveillance data submission guidelines disseminated to 12 states; Panel was convened. **FY 01:** TBI data has been analyzed to assess trends and impact of changes in healthcare delivery **FY 00:** Achieved **FY 99:** Funded 2 registries, 15 surveillance systems; formed uniform reporting system. **FY 98:** 1 follow-up registry;15 state surveillance systems.	Page 174
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Implement CDC guidelines for design and use of TBI registries in 2 states by 2004; report outcomes associated with TBI.	**FY 03:** Disseminate findings of feasibility study **FY 02:** Determine the feasibility of linking registry data to service provision for persons with TBI. **FY 01:** Develop a questionnaire for TBI follow-up; collect, analyze and disseminate information on disability and other TBI-related outcomes. **FY 00:** Disseminate report on TBI and public health, with recommendations on use of registries; disseminate TBI brochure. **FY 99:** Develop guidelines for registries for collecting follow-up data by 2002.	**FY 03:** **FY 02:** Linkage feasibility projects in 2 states have been completed; one final report has been prepared and one linkage implementation project is in progress. **FY 01:** Questionnaire has been developed, data have been collected and been presented at more than 10 conferences, a data book summary of TBI outcomes has been prepared and disseminated. **FY 00:** Achieved; Guidelines for registries for collecting follow-up data completed (See FY99 target). **FY 99:** Guidelines under development; reviewed surveillance activities in 33 states; 12 states reported use of systems to identify TBI survivors and provide information on services. **FY 98**: Guidelines under development.	Page 174

Verification/Validation of Performance Measures: CDC will validate performance by use of surveillance data and follow-up information from TBI registries, along with programmatic oversight.

II-C.5f Fire-Related Injury Prevention

The United States has the third highest death rate from fires of any industrialized country. Fires and burns are the sixth leading cause of unintentional injury death in this country. In 1999, the most recent year for which we have data, home fires (which include houses, apartments and manufactured homes) accounted for 73% of fire-related injuries and 81% of fire-related deaths. An estimated 383,000 residential fires killed nearly 3,600 persons in the United States in 1999 (1.1/100,000) and injured an additional 16,000. Property damage caused by fires exceeded $4.6 billion. About 40% of home fires reported to U.S. fire departments and 52% of home fire deaths occur in homes with no smoke alarms. House-fire death rates are highest for children under age 5 and for adults older than 65. Death rates for Blacks and Native Americans are more than twice the rate for whites. The rate of death from house fires is high among the poor, the less educated, and those living in mobile homes built before 1976, when HUD construction safety standards were initiated.

Most fire-related deaths occur during fires that start at night while residents are asleep, a time when effective detection and alerting systems are of special importance. Working smoke alarms on every level give residents

enough warning to escape nearly all types of fires. If a fire occurs in a home, a working smoke alarm can reduce the risk of death by about 50%. Any smoke alarm– ionized or photoelectric, AC or battery powered – will offer adequate warning, provided the alarm is listed by an independent testing laboratory and is properly installed and maintained. An estimated 94% of U.S. households have at least one smoke alarm, but at least one-fourth are nonfunctional because people either remove the batteries (often because of nuisance alarms from cooking) or fail to replace batteries yearly. To address the functionality of smoke alarms, CDC funded a Small Business Innovative Research project that led to the development of a long-lasting lithium battery-powered alarm with a hush button for nuisance alarms.

Although alarms provide an early warning, they do not prevent fires. More education is needed about escape plans and fire prevention. Since 1996, CDC has collaborated with the National Fire Protection Association (NFPA), the U.S. Consumer Product Safety Commission (CPSC), United States Fire Administration (USFA) and others to develop and test an educational program to reduce the incidence of fire- and fall-related injuries among older adults. In FY 02, CDC will work with USFA and CPSC on establishing a collaborative program/initiative to significantly reduce residential fire deaths. Activities will include establishing surveillance, educational programs, evaluating programs that work, and conducting research.

Performance Summary

In 1994, CDC started funding states to establish smoke-alarm installation projects in high-risk communities. In 1997, CDC funded 5 states to compare different approaches to promoting use of smoke alarms in high-risk households. Data analysis is currently underway. In 1998, CDC funded 14 states to conduct smoke alarm installation programs coupled with fire safety education in at least 2 communities (each project year) at high risk for home-fire deaths. The goal of this program is to increase the proportion of households -in state-funded projects with functional smoke alarms, particularly those at highest risk for fire deaths and injuries. Project staff identify high-risk homes and target populations under age 5 and over 65. Health departments work with fire departments and community-based organizations. In 2.5 years, CDC's 14-state smoke alarm installation/education program has installed over 100,000 smoke alarms in program homes and over 150 lives have been saved by early warning from a smoke alarm. Funding for this round of state projects ended in FY 01. Beginning in FY 2002, CDC will fund a new 13-state, 5-year smoke alarm installation/education program.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Reduce the incidence of residential fire-related injuries and deaths by increasing functional smoke alarms on every habitable floor.**		
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
The incidence of residential fire-related deaths will be reduced.	**FY 03:** 1.1 per 100,000 **FY 02:** 1.1 per 100,000 **FY 01:** 1.1 per 100,000 **FY 00:** 1.1 per 100,000 **FY 99:** 1.1 per 100,000	**FY 03:** 10/2004 **FY 02:** 10/2003 **FY 01:** 10/2002 **FY 00:** 1.2 per 100,000 **FY 99:** 1.2 per 100,000 **FY 97:** 1.1 per 100,000	Page 174
In CDC-funded projects within 13 states (our new round of state projects), increase the number of homes with at least one smoke alarm on each habitable floor.	**FY 03**: 41,600 **FY 02:** 20,800	**FY 03:** **FY 02:** Data available 12/2002 **FY 01:** Began installation of smoke alarms	Page 174
Performance Measures	**Targets**	**Actual Performance**	**Ref.**

In CDC-funded projects within 14 states (our previous round of state projects), increase the proportion of homes with at least one smoke detector on each habitable floor. *This data sources has changed from the 1-time CPSC Smoke Detector Survey to the annual National Health Interview Survey	**FY 01:** 65% **FY 00:** 60% **FY 99:** The proportion of homes with at least one smoke detector will be increased from 80% in 1993 to 88% in 1999.*	**FY 01:** 72% **FY 00:** 69.4% **FY 99:** 87%*	Page 174
Publish recommendations for conducting and evaluating smoke alarm promotion programs.	**FY 02:** Publish and disseminate recommendations. **FY 01:** Disseminate recommendations. **FY 00:** Publish recommendations. **FY 99:** Develop recommendations for constituent review.	**FY 02:** **FY 01:** Recommendations drafted. **FY 00:** Data analysis in progress **FY 99:** Achieved	Page 174

Verification/Validation of Performance Measures: CDC will verify the first measure via the annual project reporting system from each state health department.

II-C.5g Injury Prevention and Control Research

The CDC injury prevention and control research program funds and monitors extramural and intramural research in three phases of injury control: prevention, acute care, and rehabilitation. The program also funds research in the two major disciplines used in injury control research: biomechanics and epidemiology. Research supported by the program focuses on the broad-based need to reduce morbidity, disability, death, and costs associated with injury. The research program classifies injuries as intentional or unintentional:

- Intentional injuries result from interpersonal, or self-inflicted, violence and include homicide, assaults, suicide attempts, elder and child abuse, domestic violence and rape;
- Unintentional injuries include those that result from such causes as motor vehicle crashes, falls, fires, poisonings, and drownings;

CDC's extramural research program supports individual, investigator-initiated research that is targeted to a specific set of research questions. The program funds ten injury control research centers or "Centers of Excellence," two specialized prevention research centers, which address suicide and violence against women, and individual research grants and small business innovative research grants.

In the intramural program, CDC scientists conduct high quality studies that apply established epidemiologic and behavioral science methods to evaluate the efficacy and effectiveness of interventions, analyze mortality and other data to understand the scope of the injury problem and who is as greatest risk, and study information on why people are at risk for injury and what factors keep some from becoming injury victims.

In FY 2002, CDC seeks to address:

fall related injuries among older adults, elderly drivers, and child passenger safety; and child maltreatment, suicide, violence against women, and youth violence.

Injuries among high-risk populations are a special focus. Primary research activities involve the rigorous assessment of the effectiveness (i.e., the impact or outcome) of interventions to reduce unintentional injury risk behaviors, injury morbidity, mortality, and/or costs related to injuries at home, in recreation, and during travel. CDC conducts and sponsors research that focuses on surveillance of unintentional injuries and on the efficacy and effectiveness of interventions, such as the development and evaluation of promising new interventions, and the evaluation of widely implemented interventions for which evaluation is needed. Research projects address counseling, epidemiology, health services delivery, training, education, product engineering, environmental and behavioral change, and policy. Projects are variously carried out in community settings, laboratories, schools, academic centers and clinical settings. Research areas include falls prevention among the elderly, reducing residential fires and burns, bicycle safety, decreasing alcohol-impaired driving, playground injury prevention, suicide, violence against women, youth violence, older driver risks, child passenger safety, Native American injury prevention, drowning prevention, water safety, sports injuries, motor vehicle occupant protection, dog-bites, and pedestrian injuries.

Performance Summary

The extramural program supports a productive and relevant research portfolio and uses an extramural process that is both credible and transparent. This is achieved through the use of a peer review approach, referred to as the "dual review system, " which is based on two sequential levels of review. These two levels of review are conducted by the Injury Research Grant Review Committee (IRGRC) and the Advisory Committee for Injury Prevention and Control (ACIPC). The IRGRC is composed of experts in injury-related scientific disciplines or current research areas that enables their evaluation of the scientific and technical merits of grant applications, and is chartered specifically for grant application review. The ACIPC is composed of both scientific and lay representatives who are noted for their expertise, interest, or activity in matters related to the mission of the CDC. ACIPC recommendations are based not only on considerations of scientific merit, as judged by the IRGRC, but also geographic balance and the relevance of the proposed study to CDC's programs and priorities. At present, CDC does not conduct a peer review process for intramural research or for many evaluation projects funded within state and local health departments, community-based organizations, or research institutions.

Goal-by-Goal Presentation of Performance

Performance Goal: Increase external input on the research priorities, policies, and procedures related to the extramural research supported by CDC.

Performance Measures	Target	Actual Performance	Ref.
Increase efficiency and effectiveness of research investments by employing competitive peer-review processes.	**FY 03**: fund 1 research project for top level injury research priority. **FY 02:** Complete a CDC injury research agenda for defining the scope and priorities for injury research at CDC. All research projects will be peer-reviewed. **FY 01**: Initiate an injury research agenda development process.	**FY 03:** **FY 02:** Draft injury research agenda reviewed by advisory committee **FY 01:** Injury research agenda drafted **FY 00:** Baseline - only investigator initiated extramural grants and Injury Control Research Center applications are peer-reviewed.	Page 174

Verification/Validation of Performance Measure: Programmatic oversight will be used to verify and validate performance measures.

II-C.5h Data Access

CDC continues to expand the existing model system for injury mortality data from the National Vital Statistics System called WISQARS™ (Web-based Injury Statistics Query and Reporting System) (http://www.cdc.gov/ncipc/wisqars) that can be accessed through the CDC home page. This system - which was developed by CDC to provides injury and violence-related death data to injury control colleagues, decision makers, the press, students, and the public worldwide - has proven to be very helpful. Recently we have had an average of over 500 visits per day to this site from all over the world suggesting that this system is meeting important data needs. This menu-driven system allows the user to request data as needed for their particular purpose and presents the data in a standard table format or in a table format easily downloaded. This system enhances reporting of injury data beyond "only mortality data" from the National Vital Statistics System by adding non-fatal injury data obtained from the National Electronic Injury Surveillance System–All Injury Program conducted jointly with CPSC.

Performance Summary
During FY 2000, CDC completed development of the initial phase of WISQARS™, a system for injury mortality data from the National Vital Statistics System, which can be accessed through the CDC home page. This system which provides injury and violence-related death data to injury control colleagues, decision makers, the press, students, and the public worldwide has proven to be very effective means of making injury-related data available for general usage. CDC continues to assist epidemiologists, statisticians, and injury practitioners with data requests as needed for their particular purpose. In FY 01, CDC expanded WISQARS™, to include national estimates on non-fatal injuries treated in hospital emergency departments. In future years, CDC will add additional data for specific injury types, such as traumatic brain injury.

Goal-by-Goal Presentation of Performance

Performance Goal: Provide online access to injury prevention data.

Performance Measures	Target	Actual Performance	Ref.
Implement a user-friendly, personal computer-based system for accessing Federal injury data in a variety of national and state-based systems	**FY 03:** Expand WISQARS to include years of potential life loss and injury death data. **FY 02**: Expand WISQARS to include nonfatal injury statistics.	**FY 03:** **FY 02:** Nonfatal injury statistics added. **FY 01**: Baseline – includes only mortality statistics.	Page 174

Verification/validation of Performance Measures: Programmatic oversight will be used to verify and validate performance measures.

II-C.5i Electronic Emergency Department Public Health Reporting

The nearly 5,000 Emergency Department (EDs) in the United States are strategically well positioned for public health surveillance of a wide spectrum of diseases and injuries, from emerging infections, asthma, and adverse drug events to unintentional injury, violence, and the threat of chemical and biological terrorism. However, variation in the way that data are entered in ED patient records, missing data, and lack of timely availability have impeded the use of ED records for public health surveillance. As electronic patient record keeping enters into the mainstream of ED practice, these shortcomings can be addressed through careful attention to structured data entry and health data standards applicable to each data element, safeguards to protect the privacy and confidentiality of personally identifiable data, and the specific needs of surveillance systems at the local, state, and national levels.

Secure, computer-to-computer transmission of ED data from DEEDS implementation sites to state health agencies in a standard, structured format will provide a sound technological framework for electronic public health reporting by EDs throughout the United States. Improvements in the uniformity, quality, and accessibility of ED data will yield immediate benefits for public health surveillance, and as more effective ties between EDs and health agencies are established, these linkages will be available for use in responding to any future, population-wide health emergencies that may arise.

Performance Summary

To ensure that we will have consistent data to study and improve trauma care, along with more timely data for public health surveillance of injuries and other acute medical problems, CDC is leading a national effort to develop uniform data elements for emergency department (ED) records. CDC published Data Elements for Emergency Department Systems (DEEDS) as a set of recommendations to foster uniformity in the way that emergency department records are created, stored, transmitted, and used. The specifications are intended primarily for electronic patient records but also are useful for paper-based record keeping. Specific uses/achievements include:

- The DEEDS project anticipates increasingly rapid migration to electronic record systems with new opportunities for public health use of clinical information;
- DEEDS is being used by emergency medical and nursing practitioners, record system developers, health data standards organizations, and federal agencies seeking more uniform and accessible emergency department data;
- The Centers for Medicare & Medicaid Services (CMS) has incorporated DEEDS in its plans for implementation of the Health Insurance Portability and Accountability Act (HIPAA), specifically the emergency department claims attachment;
- Leading national data standards organizations, such as Health Level 7 (HL7) have incorporated parts of DEEDS into their own specifications; and
- Projects in Oregon and North Carolina, funded by CDC's Health Information and Surveillance Systems Board (HISSB), a cross-cutting organizational unit that seeks to integrate information and surveillance systems using CDC-wide standards, are using DEEDS in innovative electronic public health reporting projects.

Goal-by-Goal Presentation of Performance

Performance Goal: Improve the uniformity, quality, and accessibility of emergency department (ED) data for public health surveillance in several States, ultimately developing the capacity to improve data in all States through development of guidelines, recommendations, or technical assistance.

Performance Measures	Targets	Actual Performance	Ref.
Establish the capability of state health departments to receive secure transmission of non-identifiable patient data from participating emergency departments.	**FY 02:** Expand beyond 2 states **FY 01:** Fund at least one State to strengthen the capability of emergency departments to electronically report data to state health departments.	**FY 02:** Complete RFA and award funds **FY 01:** 2 states have been funded on a trial basis **FY 00:** Health departments can not receive secure data transmissions from hospital EDs (baseline).	Page 174

Verification/Validation of Performance Measures: Programmatic oversight will be used to verify and validate performance measures.

II-C.6 Occupational Safety and Health

Total Program Funding (Dollars in thousands)

FY 2003:	$258,309	(Estimate)
FY 2002:	$286,561	(Current Estimate)
FY 2001:	$269,620	(Actual)

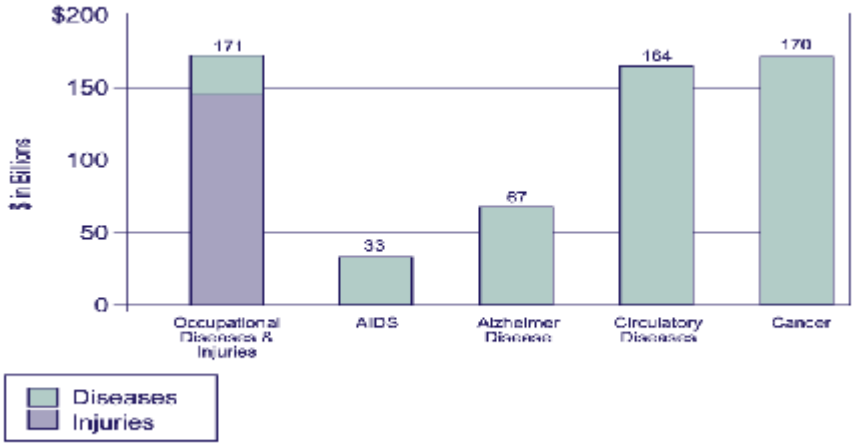
Mandate

CDC is charged by Congress with developing ways to improve and protect the health and safety of US workers.

Health Burden

Americans are working more hours than ever before in environments that profoundly affect their health. Despite improvements over the last several decades, 9,000 Americans suffer a disabling injury on the job every day, and 16 die from these injuries. Work-related diseases add to this costly toll, taking the lives of 137 American workers every day.

Economic Burden of Disease and Injury



Occupational diseases are often insidious, developing slowly over the lifetime of a worker. The economic burden for workplace injuries, diseases, and violence is high – estimated at more than $171 billion annually.

Strategies, Activities, and Resources

CDC's National Institute for Occupational Safety and Health (NIOSH) is the federal entity responsible for conducting research on and making recommendations for the prevention of work-related illness and injury. Through NIOSH, CDC conducts research and monitors workplace injuries and diseases to identify risk factors, engineering designs and other solutions to prevent these hazards, and communicates up-to-date information about work-related threats to health and safety personnel so that the knowledge gained can be applied quickly and effectively in settings ranging from corporate offices to construction sites and coal mines.

CDC's efforts are guided by an overall research strategy – the National Occupational Research Agenda (NORA). NORA is the product of a consensus-building process that included CDC, other federal partners, employers, and

workers and has become the cornerstone of CDC's effort to prevent workplace illness and injury in the 21st century. The NORA process resulted in a consensus on the top 21 research priorities for occupational safety and health. CDC-sponsored research has focused on dangerous occupations – such as firefighting, construction, mining, and agriculture – as well as specific consequences, including falls, lung disease, and hearing loss. Through research in laboratories and at work sites, CDC develops procedures and equipment for measuring and controlling occupational health hazards. Most important, CDC moves research results quickly from the laboratory to the workplace.

By using a research agenda to focus the agency's efforts, continuously monitoring old and new hazards, and rapidly disseminating useful information, CDC has helped to contribute to the substantial progress in reducing workplace injuries and illnesses. These methods will help CDC confront the inevitable new challenges that are the byproducts of progress and make the workplace as safe as possible in the future.

Links to DHHS Strategic Plan

Performance measures relate to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans*, specifically Objective 1.2: *Reduce the incidence and impact of injuries and violence in American society*; Goal 2: *Improve the economic and social well-being of individuals, families, and communities in the United States*, specifically Objectives 2.4: *Improve the safety and security of youth*, and 2.5*: Increase the proportion of older Americans who stay active and healthy;* Goal 5: *Improve the nation's public health systems*, specifically Objective 5.1: *Improve the capacity of the public health system to identify and respond to threats to the health of the nation's population*; and Goal 6: *Strengthen the nation's health sciences research enterprise and enhance its productivity*, specifically Objectives 6.2: *Improve our understanding of how to prevent, diagnose and treat disease and disability*, 6.3: *Enhance our understanding of how to improve the quality, effectiveness, utilization, financing, and cost-effectiveness of health services*, 6.4: *Accelerate private-sector development of new drugs, biologic therapies and medical technology*, 6.5: *Strengthen and diversify the base of well-qualified health researchers*, and 6.6: *Improve the communication and application of health research results.*

Partnerships

Through NORA, partnerships have continued between CDC and over 200 organizations to ensure the NORA agenda is implemented. With stakeholder and partnership input, CDC is better positioned to address the toll of workplace injury, illness and death and is assured of having an appropriate research agenda.

Presentation of Performance

Protecting Health and Promoting Partnerships

II-C.6a Occupational Safety and Health Research

Performance Summary

In 1996, CDC and partners established NORA to guide occupational safety and health research. This broad-based initiative involves more than 500 organizations and individuals focusing on 21 priority areas in three categories: disease and injury, work environment and workforce, and research tools and approaches. To date, 17 scientific organizations have replicated aspects of the NORA process. The success of the NORA partnership was highlighted by its selection as a semi-finalist in the 1998 Innovations in American Government Award.

CDC conducts both intramural and extramural research, allocating 75% of new research funding to its extramural program. This commitment will assure scientific quality and ensure that the proposed grant topics cover the areas most essential to advancing worker safety and health. To ensure scientific quality, the extramural program is fully integrated into the NIH grants system. To ensure relevance, CDC has rapidly aligned its extramural grants and intramural program with NORA priorities. CDC has established and achieved annual targets to increase investments in NORA-related research. In 1996, CDC invested 50% of extramural funds in NORA priority areas; this figure climbed to 92% in 1999. To extend the reach and impact of NORA and to leverage federal research dollars, CDC developed joint funding opportunities with other federal agencies. These government partnerships grew from 3 in 1998 to 11 in FY 2000.

NORA has begun to shift the spectrum of occupational safety and health research to achieve more balance between problem-identification research and problem-solving research, as evidenced by a nine-fold increase in CDC funding of intervention effectiveness research between 1996 and 2000. These types of studies provide crucial information to employers, workers, and others on the effectiveness of specific strategies for preventing workplace injury and illness. In FY 2000, 10% of NORA funding was used for intervention effectiveness research. For FY 2001, a 12% increase in intervention effectiveness research was seen.

Through geographically diverse cooperative research agreements, CDC targets agriculture and construction for special attention. These two industries consistently lead the nation in occupational fatalities and sustain high levels of injury and illness. These investments are paying off. CDC supported and collaborated in research to prevent tractor roll-overs, the leading cause of fatalities on farms. In two counties in Kentucky, the purchase of roll-over protection retrofit kits jumped from 4 in 1998 to 69 in 1999. Buoyed by success in these two industries, CDC has begun to focus attention on the healthcare industry. CDC stepped up its commitment to protecting healthcare workers in FY 2001 by initiating the NORA project— *Strategies for the Prevention of Injuries/Illnesses among Nurses.* The goal of this program is to reduce illness and injury among nurses and related occupations in the healthcare workplace through the conduct of focused research projects. Four individual projects are included in this project: 1) exposure to antineoplastic drugs, 2) prevention of violence, 3) risks for adverse reproductive outcomes, and 4) effects of work schedules.

CDC's intramural research program is nationally and internationally recognized as a world resource in occupational safety and health. Research conducted by CDC scientists is producing information of practical importance to millions of workers and their employers. For example, recent laboratory findings confirmed the ability of common solvents to cause hearing damage, revealed the mechanisms by which inhaled metal dusts may be causing lung cancer, and determined the physical characteristics of inhaled fibers that cause occupational lung diseases. Engineering research identified effective technology for protecting workers from chemical emissions in automobile repair and lifting injuries in nursing homes and beverage delivery.

In FY 2001, CDC increased financial support for NORA research by 15 percent. A total of $89.2 million was attributed to 187 extramural research grants and a variety of new and continuing intramural research programs and projects. In FY 2000, CDC's commitment to NORA is reflected in the impressive upward trends in both intramural and extramural research funding. In FY 2000, CDC funded 165 extramural research grants in several NORA research priority areas, making this the largest infusion of extramural funding ever by the federal government for occupational safety and health research. CDC increased its overall investment in NORA-related research by $*73.7* million compared to FY 1996 (405% increase). This was achieved through Congressional support and the reinvestment of research funds into NORA priority areas.

Dedication to NORA and occupational safety and health has produced a broad-based NORA liaison committee, a network of public-private partnerships, successful efforts of 20 NORA teams (including outreach, conferences and symposia, and production of white papers, documents, and journal articles), a grants process that has produced record-breaking funding for target research areas (for 3 consecutive years), and recognition as a partnership model for other organizations embarking on similar planning efforts. Using key words, NIOSH tracks peer-reviewed publications in selected NORA priority areas. Since NORA was initiated in April 1996, the average annual publication count for 1993-1995 serves as a baseline measure of publication activity for each of the NORA topic areas. Similarly, the average publication activity for the 3-year period following the introduction of NORA (1997-1999) was calculated. This metric has shown a 26% increase in overall NORA-related publications. A slight decrease in overall publications related to the 21 NORA topic areas (24% for the period 1998-2000) was observed. Factors such as variations in funding, journal activity and publishing practices account for this decrease.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Conduct a targeted program of research to reduce morbidity, injuries, and mortality among workers in high-priority areas and high-risk sectors.**

Performance Measure	Target	Actual Performance	Ref.
Increase intramural and extramural research in NORA priority areas, and ensure the quality and relevance of the research.	**FY 03:** Maintain FY 02 funding level and large-scale intramural research programs in targeted NORA areas. Continue evaluation of components of the intramural research program through the CDC/NIOSH Board of Scientific Counselors or other external mechanisms.	**FY 03:**	Page 186
	FY 02: Maintain large-scale intramural research programs in targeted NORA areas. Establish a measure of success for extramural activity.	**FY 02:** Available 12/2002	
	Maintain FY 01 funding; maintain intramural research; evaluate intramural research through NIOSH Board of Scientific Counselors or other external mechanism.		
	FY 01: Increase FY 00 funding by 12%; establish 2 additional intramural research programs in targeted NORA areas.	**FY 01**: Extramural $40.8 million; Intramural $47.9 million. Exceeded target. Established 4 large-scale intramural NORA programs (Organizational Risk Factors for Depression and CVD, Occupational Traumatic Injury Prevention and Identifying Effective Hearing Loss Prevention Strategies, and Strategies to Prevent Injuries Among Health Care Workers (Nurses).	
	FY 00: $32.7 million in extramural grants; $42.8 million in intramural projects.	**FY 00:** Extramural/$32.7 million; intramural/$42.8 million; 3 large-scale intramural programs. **FY 99:** Extramural/$26.7 million; intramural/$34.4 million). **FY 96:** Baseline: Extramural/$6.7 million; intramural/$8.7 million.	

Performance Measure	Target	Actual Performance	Ref.
Expand involvement of other federal agencies in NORA-related research.	**FY 03:** Seek additional funding partners for NORA-related grants and cooperative agreements. Maintain number of conferences in FY02.	**FY 03:**	Page 186
	FY 02: Track funding of other federal agencies in NORA-related research; seek funding partners for grants and cooperative agreements; co-sponsor 5 research and scientific conferences.	**FY 02:** 5/2003	
	FY 01: Increase over FY00; co-sponsor 3 research and scientific conferences with other federal agencies.	**FY 01:** 5/2002 Exceeded target, 9 research and scientific conferences	
	FY 00: Increase over FY99.	**FY 00:** $51 mil. reported by other federal agencies for NORA-related funding	
	FY 99: Determine current levels of CDC and other agencies' intramural and extramural research funding in NORA areas as a baseline, and calculate annual increases.	**FY 99:** In 1998, other federal agencies reported $23.4 million for NORA-related funding.	
		FY 96: $15 million for NORA-related funding	

Increase the science base for occupational safety and health through publications, innovations, and research partnerships.	**FY 03:** Maintain the number of peer-reviewed publications by NIOSH and NIOSH- sponsored researchers. Maintain the number of NIOSH innovations. **FY 02:** Increase the number of peer-reviewed publications by NIOSH and NIOSH-sponsored researchers; increase the number of NIOSH innovations. **FY 01**: Establish baseline of peer-reviewed publications of NIOSH-sponsored researchers; establish baseline for NIOSH innovations such as inventions and technology developments.	**FY 03:** **FY 02**: 12/2002 **FY 01:** 1) Baseline of 42,300 pubs. for '93-95 established. (2) Baseline for NIOSH innovations: 3 devices, 3 training videos, 9 new patents and 58 continuing patents.	Page 186
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Report annual NIOSH research accomplishments in high-priority and high-risk areas (e.g., agriculture, construction, mining, healthcare workers).	**FY 01**: Maintain publication productivity. **FY 00**: Publish 254 peer-reviewed articles. **FY 99**: Establish baseline.	**FY 01**: Exceeded/278 articles and peer-reviewed mining articles increased from 17 in FY00 to 32 in FY01. **FY 00**: Exceeded/260 articles **FY 99:** 234 articles	Page 186

Demonstrate impact of NORA on research activity through bibliometrics and other proxy measures, such as accomplishments of NORA partnership teams.	**FY 03:** Continue to track frequency of publications on NORA priority areas. Continue to track NORA team products, including publications, scientific meetings, etc.	**FY 03:**	Page 186
	FY 02: Continue to track frequency of publications in NORA priority areas and NORA team products, including publications, scientific meetings, etc.	**FY 02:** 12/2002	
	FY 01: Begin to track frequency of peer-reviewed publications in selected NORA priority areas for 1996-2000; track NORA team products, including publications and scientific meetings.	**FY 01:** Specific NORA topic areas with increases greater than 30% between the baseline period and 1998-2000 included Asthma/Chronic Obstructive Pulmonary Diseases, Health Services Research, Intervention Effectiveness Research, and Risk Assessment Methods	
	FY 00: Establish baseline bibliometrics/citation counts for all NORA areas.	**FY 00**: Achieved/baseline established for 9 remaining priority areas; early reviews for FY97-99 show a 26% increase in NORA-related publications.	
	FY 99: Establish protocol on the use of bibliometrics and other proxy measures.	**FY 99:** Established baseline protocol using NLM and Institute of Scientific Information databases; established baselines for 12 of 21 NORA priority areas; established 20 partnership teams; tracked team products as a measure of NORA's success.	

Validation/Verification of Performance Measures: Information will be reported through the Project Planning System of the CDC Integrated Resources Information System (IRIS). CDC senior scientists will review all data for accuracy. Baseline data and data for subsequent years are collected in the same format to ensure accurate comparisons. Partnering efforts have increased the ability to track resources outside the organization.

II-C.6b Surveillance

Performance Summary

Ongoing surveillance activities in occupational safety and health form the foundation for the prevention activities needed to protect Americans from work-related injuries and illnesses. CDC plays a key role in the tracking of occupational hazards, diseases, and injuries, working closely with many states and other federal agencies. In FY 2000, CDC supported scientists and public health agencies across the country to develop state-based occupational disease and injury surveillance programs. In addition, CDC supports several state-based surveillance activities and maintains national databases of occupational injuries and fatalities.

Twenty-seven states participate in the CDC-supported Adult Blood Epidemiology Surveillance (ABLES) program, an effort to count blood lead levels among U.S. adults. Through the use of this system, Connecticut reduced blood lead levels among construction workers by 50%. In addition, in the past 18 months, there have been 12 additional awards provided to the states to support core and enhanced occupational surveillance.

CDC collaborates with 13 state health departments to improve the recognition, tracking, and prevention of work-related sentinel events. Targeted events include pesticide-related illness, asthma, silicosis, carpal tunnel syndrome, dermatitis, work-related fatalities, burns, and youth injury. For example, a targeted effort in Colorado identified deep-fat fryers in restaurants as a leading cause of burns resulting in hospitalization. CDC worked with industry to develop a hazard alert that was distributed statewide during health inspections. The SENSOR program (Sentinel Event Notification System for Occupational Risk), provides funding and technical support to health departments in seven states to support pesticide-related illness and injury surveillance. One article was published in the CDC Morbidity and Mortality Weekly Report which had important public health impacts. This article described acute pesticide-related illnesses among health care professionals who were exposed while treating a pesticide-contaminated patient. Recommendations were provided on how to prevent future illnesses in this exposure setting. The program also finalized criteria for determining the severity of acute pesticide-related illness or injury. Finally, the program received NIOSH Lead Team approval to develop a “How-to” guide for establishing and maintaining a state-based pesticide poisoning surveillance program.

CDC collaborates with the Consumer Product Safety Commission to collect work-related injury and illness data from a national sample of hospitals through the National Electronic Injury Surveillance System (NEISS). In 1998, NEISS collected information on injuries and their causes for 47,000 persons. Further in-depth information is collected through telephone interviews with special populations of workers, such as youth, older workers, and children in agricultural settings. Since 1995, information gained from this surveillance system has yielded significant prevention successes, particularly in the area of working youth. Analysis of surveillance data from 1993-1999 collected by the Massachusetts Department of Public Health (MDPH), with support from CDC, revealed both high rates and numbers of injury cases in the retail bakery industry, which had not previously been identified as high risk for working youth. Analysis revealed that approximately 60% of the injured workers were employed at establishments of a single large franchised retail bakery chain. Burns accounted for 10% of all injuries identified by the surveillance system, with approximately 40% of all injuries to youth in these establishments being attributed to burns. Hot coffee was identified as a leading culprit--in particular hot coffee spilled when removing brew baskets on the coffee machines. Additionally, lack of health and safety training at work, inadequate procedures for responding to injuries, and the supervisor not present on site at the time of injuries were identified as contributing risk factors. Since the summer of 2000, MDPH has required owners purchasing new equipment to install brew baskets with shields to prevent spillage, and by spring 2002, new, high volume coffee brewing equipment, which reduces the need to change brew baskets, will be required in establishments making new equipment purchases. Continued surveillance of occupational burn injuries to youth in this retail bakery chain should provide important information about the effectiveness of these interventions.

In FY 2000, CDC published the *Worker Health Chartbook 2000*. The first of its kind, the *Chartbook* is a matchless resource for occupational safety and health professionals, researchers, policy makers, and industry and labor organizations who need data to track health outcomes and their associated workplace conditions and to target interventions. The *Chartbook* was disseminated widely and, along with its data tables, has been made available electronically.

With broad stakeholder involvement, CDC recently completed a comprehensive strategic planning process to address occupational health surveillance needs for the 21st century. Internal and public meetings were held, soliciting input from more than 400 occupational health professionals. The resulting strategic plan, *Tracking Occupational Injuries, Illnesses, and Hazards for Prevention: the NIOSH Surveillance Strategic Plan*, seeks to balance national and state-based activities and to achieve a balance among disease, injury, and hazard surveillance. The plan will guide CDC into the next decade.

Goal-by-Goal Presentation of Performance:

Performance Goal:	**Identify high-risk working conditions by developing a surveillance system for major occupational illnesses, injuries, exposures, and health hazards.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Implement the strategic plan, and seek opportunities for enhancement via stakeholder interaction.	**FY 03:** Maintain activities among stakeholders (e.g. cooperative agreements, best practices workshops, prevention activities, etc.). **FY 02:** Increase stakeholder activities. **FY 01:** Establish baseline for stakeholder activities.	**FY 03:** **FY 02:** Best Practices in Workplace Surveillance Conference held in November 2001 **FY 01:** Target results delayed to Spring 2002. Currently a coordination group has been formed which will detail how to implement strategic plan and include establishment of baseline for stakeholder activities.	Page 186
Complete a comprehensive surveillance planning process, and implement recommendations.	**FY 00:** Finalize a surveillance strategic plan, and begin implementation. **FY 99:** Undertake a collaborative planning process; establish priorities and roles.	**FY 00:** Achieved **FY 99:** Achieved	Page 186
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Collect, analyze, and disseminate surveillance data on occupational illnesses, injuries, and hazards.	**FY 03:** Publish surveillance reports on 2 topics annually; target 1 national activity annually; prepare/distribute public use data sets. **FY 02:** Publish surveillance reports on 2 topics annually; target 1 national activity annually; prepare/distribute public use data sets. **FY 01:** Initiate web-based data dissemination; pilot improved data collection methods; initiate hazard surveys, by workforce sector. **FY 00:** Collect, analyze, and disseminate data. **FY 99:** Collect, analyze, and disseminate data.	**FY 03:** **FY 02:** Spring 2002 **FY 01:** Achieved, websites created: Farm Family Health and Hazard Survey (http://www2.cdc.gov/ffhhs/) National Electronic Injury Surveillance System (February 2002 launch date) National Surveillance System for Pneumoconiosis Mortality (http://mtn.niosh.cdc.gov/drds/sb/nsspmhlp.htm) Access to data from the Mine Safety and Health Administration. (future launch date) **FY 00:** Achieved. *Injury, Illness and Hazard Exposures in Mining Industry 1986-1995* was released in Summer 2000. MMWR article collected through the Toxic Exposure Surveillance System (TESS) published 6/9/00, Vol 29. **FY 99:** Achieved	Page 186

Validation/Verification of Performance Measures: Information will be reported through the Project Planning System of CDC's Integrated Resources Information System (IRIS). CDC senior scientists will review all data for accuracy.

II-C.6c Investigation of Worksite Illnesses, Injuries, and Deaths

Performance Summary
CDC conducts three programs for the systematic investigation of key events in occupational safety and health:

Health Hazard Evaluation (HHE): Each year, CDC's NIOSH conducts about 300 investigations of occupational health problems at work sites in response to requests from employers, employees, and other government agencies. The HHE program has led to the identification of many of the emerging occupational health problems of the past three decades – e.g., occupational asthma, cumulative trauma disorders, indoor air quality. HHEs have been particularly useful to the service sector, especially healthcare settings, where they address problems ranging from job stress and ergonomics to infectious disease transmission and reproductive toxicants. In FY 2000, NIOSH mistakenly projected a decrease in the number of site visits conducted in response to HHE requests. The intention was to respond to a larger number of HHEs through technical assistance letters while maintaining or increasing the number of site visits based on the volume and complexity of the requests received.
In FY 2000, CDC established the HHE Effectiveness Evaluation Program, a question-based survey of 50% of HHE requests. The establishment of a followback survey program for evaluating the Health Hazard Evaluation (HHE) program involves a series of surveys conducted on a 50% sample of valid HHE requests. In-person or mailed survey forms are distributed at the close of the initial NIOSH site visit (when a site visit is made), one month after the issuance of the final report, and one year after the issuance of the final report.

By the end of FY 2001, some of the components of the survey program produced sufficient data to analyze and report results. This write-up will report on results of the site visit evaluation. During the 23-month period ending August 2001, site visit evaluation data were received for 44 HHEs (of the 46 included in the sample). Surveys were distributed to 284 individuals, and responses were received from 204 (72%). Overall satisfaction with the CDC HHE thus far, 46% described it as "excellent," 41% as "good," 12% as "fair," and 1% as "poor." Eighty-eight percent of respondents felt they were kept well informed about CDC activities and 80% felt the response was timely. Ninety-five percent felt that the recommendations made at the closing meeting appropriate and practical.

Fatality Assessment Control and Evaluation (FACE): The FACE program determines factors that contribute to fatal worksite events, identifies emerging hazards, and develops safety recommendations. Each year, CDC conducts 100 to 200 investigations of work situations at high risk for fatal injury. One emerging hazard identified through FACE was discovered by investigation of fatalities among workers who construct or maintain communications towers. The widespread use of wireless communication devices has accelerated the construction of towers to hold transmitting devices for cellular phones, personal communication services, and radio and television broadcast antennas. CDC estimated that this sector accounts for 49 to 468 deaths annually per 100,000 workers, versus 5 per 100,000 workers overall. These results are informing voluntary and regulatory approaches to this emerging safety problem.

Each year, nearly 100 workers are killed and more than 20,000 are injured in the highway and street construction industry. In FY 2001, CDC published a document that details hazards to workers in road construction and promising prevention efforts that can be undertaken by various groups including: agencies that contract out road construction and maintenance, employers, standards-setting bodies, manufacturers, and employees. This document provides recommendations to enhance the safety of workers in this high risk occupation where an increase in activity is expected over the next decade due to an infusion of funds. CDC staff worked with traffic and worker safety organizations to emphasize the importance of worker safety both within the work zone as well as from passing motorists, assisted in the development of the Nation's first OSHA 10-hour course designed for road construction workers, contributed to flagger and work zone training documents and videos, and co-sponsored an international work zone safety conference. Specific recommendations from the document have been implemented by road constructors, are being considered by State and Federal regulatory agencies, and guided new research initiatives.

Firefighter Fatality Investigation and Prevention (FFIP): This program identifies causes of death among firefighters and provides recommendations for prevention and improved safety. In FY 2000, CDC's NIOSH conducted 57 investigations of fatalities, including 17 of firefighters who suffered fatal heart attacks in the line of duty. CDC uses FFIP data to generate a database to guide prevention and intervention activities. CDC also posts information and

recommendations from each investigation on the NIOSH firefighter website and disseminates information by mail to all U.S. fire departments. Fire departments use FFIP results to modify standard operating procedures, justify and support equipment needs, and improve training. For example, an investigation attributed an explosion that severely burned several firefighters to the use of aluminum in certain resuscitation equipment. In response, CDC and FDA issued a joint public health advisory that led to a manufacturer's recall and redesign of the equipment.

During Fiscal Year 2001, CDC conducted 38 investigations in 26 states. Of the 38 investigations, 36 involved fatalities and two involved injuries. The 36 fatality investigations encompassed 40 deaths. Additionally, in response to three injury investigations that involved oxygen regulator fires, CDC collaborated with the U.S. Food and Drug Administration on a thirty-one minute video entitled "Hidden Danger: Oxygen Regulator Fires." The training video was produced in order to enhance safe handling of oxygen regulators to minimize the hazard. Also as a result of the oxygen regulator investigations, NASA, in collaboration with CDC, developed methods to determine if oxygen regulators have a propensity to flash or explode. The new test method, "Standard Test Method for Evaluating the Ignition Sensitivity and Fault Tolerance of Oxygen Regulators Used for Medical and Emergency Applications" is more reliable than prior test methods and has been adopted as a provisional ASTM standard (ASTM PS 127-00.)

Along with these epidemiologic programs, CDC conducts, analyzes, and translates an enormous amount of research each year in support of public health policy. This work is reflected in policy recommendations, scientific input into rule making, and the development of enforcement procedures by EPA, OSHA, Mine Safety and Health Administration (MSHA), and other agencies. In FY 1999, CDC produced policy documents on occupational exposures and cancer, TB respiratory protection in healthcare facilities, prevention of injuries and deaths in firefighters, and stress at work.

National Skill Standards Board (NSSB), a Congressionally mandated activity, is building a voluntary national system of skill standards, assessment, and certification that will enhance the ability of the United States to compete effectively in the global economy. The NSSB has divided the economy into 15 sectors for the purpose of developing partnerships with industry, education, labor, civil rights, and community-based organizations to develop appropriate standards for workers based on high performance work in modern work environments that will be portable across industry sectors. The MSSC has completed its efforts and published their standards. NIOSH, along with other partners were very successful in having OS&H as a key component of this standard. The overall effort of the NSSB will train workers to recognize hazards and prevent injuries and illness as they develop necessary work skills.

Goal by Goal Presentation of Performance

Performance Goal:	**Promote safe and healthy working conditions by increasing occupational disease and injury prevention activities through workplace evaluations, interventions, and CDC recommendations.**

Performance Measure	Target	Actual Performance	Ref.
Respond to requests for workplace evaluations from employers, workers, and others, and provide practical advice to address problems.	**FY 03:** Initiate a cross-cutting project focusing on safety and health problems of Health Care Workers that addresses workplace violence, exposure assessment, reproductive outcomes and work organization.	**FY 03:**	Page 186
	FY 02: Conduct site visits for at least 30% of HHE requests; provide consultation for the rest; conduct follow-up assessments via the HHE Effectiveness Evaluation Program, with periodic data analysis/reports.	**FY 02:** Fall 2002	
	FY 01: Report on results from the HHE Effectiveness Evaluation Program.	**FY 01:** Responses received reflected positive feedback (see performance summary).	
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Report annual performance on workplace evaluations, technical assistance visits, and preparation of policy and technical documents.	**FY 01:** Maintain HHE site visits; increase consultations; conduct follow-up assessments via the HHE Effectiveness Evaluation Program, and prepare a report; produce documents on emerging issues; provide comments and testimony to federal agencies, as needed. **FY 00:** Decrease HHE site visits to 95; increase technical assistance letters; conduct follow-up assessments of 5% of site visits; produce policy and technical documents on emerging issues; provide comments and testimony to federal agencies, as needed. **FY 99:** Establish baseline.	**FY 01:** 572 requests for health hazard evaluations (HHEs). This represents a 30% increase in the number of requests received in FY 2000. Site visit data available 2/02. 54 final reports, 270 technical assistance letters sent. Testimony given to 2 agencies on 3 regulatory activities. **FY 00:** 122 site visits; 57 final reports; 271 technical assistance letters; follow-up of 20% of site visits; established HHE Effectiveness Evaluation Program; testimony to 3 agencies on 5 regulatory actions. **FY 99:** 334 HHEs; 100 HHE site visits; 234 technical assistance letters; 68 other site visits; testimony to 4 agencies on 12 regulatory actions; policy documents.	Page 186
Provide scientific support for policy development, testimony, and non-regulatory initiatives.	**FY 03:** Seek improvement **FY 02**: Seek improvement. **FY 01:** Establish baselines for number of international collaboration on occupational safety and health documents and criteria documents.	**FY 03:** **FY 02**: **FY 01:** Helped publish Concise International Chemical Assessment documents (CICADS), International Safety Cards (ICSC), and a criteria document on Occupational Exposure to Asphalt Fumes.	Page 186

Performance Measure	Target	Actual Performance	Ref.
Evaluate the extent to which recommendations are being implemented.	**FY 01:** Complete reports and analysis. **FY 00:** Begin evaluation. **FY 99:** Design and implement 2 model information dissemination and training programs for target hazards/populations; with partners, develop a system to assess/determine a baseline and increase the use of CDC-recommended exposure limits.	**FY 01:** The NIOSH FFIP report describes fire fighting activities in a vacant building and the subsequent outcome, and provides prevention recommendations which may be applicable to all fire departments in the U.S. *Six Career Fire Fighters Killed in Cold-Storage and Warehouse Building Fire - Massachusetts*. published. **FY 00:** Conducted FFIP investigations; published prevention and intervention activities on website. **FY 99:** Developed and implemented training curricula on electrical safety for vocational and technical education; developed and implemented training program to prevent hearing loss in miners; initiated evaluation of use of CDC-recommended exposure limits.	Page 186

Performance Measure	Target	Actual Performance	Ref.
Evaluate the effectiveness of targeted prevention programs.	**FY 03:** Continue application of lessons learned to other efforts	**FY 03:**	Page 186
	FY 02: Continue application of lessons learned to other efforts. Begin Implementation of the National Skill Standards Board, set baseline measures.	**FY 02:** Fall 2002	
	FY 01: Begin application of lessons learned to other efforts.	**FY 01:** A prospective study of hearing damage of newly hired construction workers (research), tracking noise exposure and hearing loss among sand and gravel miners (surveillance), and developing innovative interventions to prevent hearing loss in underground and surface mining operations (prevention) are some of the activities NIOSH began in FY 01.	
	FY 00: Continue intervention studies; report results.	**FY 00:** Performed ~1,000 hearing tests and noise dosimetry measurements on participants in mining study; established Quiet by Design partnerships for major types of mining machinery.	
	FY 99: Implement intervention effectiveness study.	**FY 99:** Achieved/studied effectiveness of a hearing loss program in different sectors; intervention to reduce low-back pain in retail industry; intervention to reduce injuries in sanitation workers.	

Validation/Verification of Performance Measures: NIOSH will obtain data from surveys of a representative sample from the occupational safety and health community and will develop evaluation reports for targeted intervention programs.

Providing Information for Informed Decision Making

II-C.6d Information, Training, and Capacity Building

Performance Summary

CDC translates occupational research findings into various media for workers, employers, policy makers and practitioners. This information is used to: 1) inform policies and rulemaking, 2) identify unrecognized threats to health or safety, 3) alert citizens about hazardous conditions, and 4) develop related prevention strategies. CDC distributes >1 million paper copies of documents annually and also makes information available through the NIOSH website. Several NIOSH publications – such as the *Pocket Guide to Chemical Hazards* – are best-sellers among government documents. The *Manual of Analytical Methods*, which lists ways to monitor contaminants in workplace air and in the blood and urine of workers, is used in workplaces and research laboratories worldwide. NIOSH Alerts help employers and workers identify and respond to work-related health hazards. For example, *Preventing Needlestick Injuries in Health Care Settings*, provides data and recommendations for both employers and workers on how to prevent needlestick injuries and associated bloodborne infections and evaluate safer needle devices.

The NIOSH website is experiencing increasing demand, posting 25% of the total information disseminated through the NIOSH website. CDC also operates a toll-free telephone service to answer public inquiries – often providing life-saving advice to callers. Since 1995, calls to the toll-free line have increased by 60%, from 88,432 to 141,000 in FY 2000. In FY 2000, inquiries on healthcare topics increased dramatically, 100% more than in FY 1999. CDC's NIOSH created three searchable databases to improve the tracking of requests to these sources: 1) an electronic version of the *800-Number Resource Guide*, 2) a database to process and track 800-number requests and statistics, and 3) a database to track website requests and statistics.

CDC continues to address the needs of the agricultural community by continuing to fund its nine Agricultural Centers throughout the country. These centers provide geographically targeted research, education, and prevention projects that address pressing agricultural health and safety problems.

CDC will continue to provide key information to individuals and decision makers to help reduce work-related injuries and illnesses and seek new and better ways of reaching stakeholders, including through expanded use of the Internet as a method of information dissemination. CDC will also evaluate NIOSH publications to assess their value and usefulness to primary users of this information.

Training efforts continue to be an important focus, as CDC seeks new ways to reach workers, employers, and providers with the latest findings and recommendations. In FY 2000, CDC established its 16th Education and Resource Center (ERC) to conduct education programs for occupational health and safety professionals. Each year, ~700 students graduate from these programs, with training in nursing, industrial hygiene, and safety engineering. CDC also funds more than 1,000 continuing education courses in occupational safety and health each year, with awards to 32,659 participants in FY 2000. In school year September 1999-August 2000, CDC funded over 1,300 courses in occupational safety and health with over 33,000 trainees.

In FY 1999, a draft curriculum titled *Electrical Safety* was readied for field study and evaluation. The curriculum was tested in 52 secondary classrooms in Florida, Georgia, Illinois, Massachusetts, New York, Ohio, Oklahoma, and Vermont. Data analysis will be completed in early FY 2001, and a prototype curriculum will be prepared for dissemination based on the results of the study. A final report should be issued in FY 2001. Results will be used in articles submitted to peer-reviewed journals.

Performance Goal:	Foster safe and healthy working conditions by providing workers, employers, the public, and the occupational safety and health community with information, training, and capacity to prevent occupational diseases and injuries.

Performance Measure	Target	Actual Performance	Ref.
Transfer scientific and technical information to employers, workers, the public, and the occupational safety and health community.	**FY 03:** Seek Improvement **FY 02:** Seek improvement. **FY 01:** Baseline level of information transferred via web-, telephone-, and print-based requests; quarterly review of NIOSH website.	**FY 03:** **FY 02:** **FY 01:** 11,000 requests for information via web, 20,000 requests via telephone and 5,000 requests via mail	Page 186
Track information products and levels of information dissemination.	**FY 00: Increase to** 24 educational and informational documents; 4 videos; report on progress for other information sources. **FY 99**: Establish baseline.	**FY 00:** 57 HHE reports; 30 NIOSH publications; 4 videos; 15.6 million hits to website; >141,000 calls to hotline. **FY 99:** 43 HHE reports; 42 NIOSH publications; 12 educational documents; 14.4 million hits to website; 148,000 calls to hotline.	Page 186
Conduct, arrange, and sponsor technology transfer and training sessions.	**FY 03:** Target will be established once baseline is established. **FY 02:** Set target. **FY 01:** Establish baseline.	**FY 03:** **FY 02:** Spring 2002 **FY 01:** 28 training sessions given, 3 training videos released.	Page 186

Support capacity-building activities.	**FY 03:** Seek Improvement. Establish number of Interagency Agreements with other federal agencies **FY 02:** Increase through establishment of NPPTL and OCAS. **FY 01:** Establish baseline.	**FY 03:** Fall 2003 **FY 02**: Fall 2002 **FY 01:** Baseline of 500 Partners supporting NORA efforts.	Page 186
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Support training for occupational safety and health professionals.	**FY 03:** Continue support **FY 02:** Continue support **FY 01:** Continue support. **FY 00:** Continue support. **FY 99:** New measure.	**FY 03**: **FY 02:** **FY 01:** 16 ERC's in 15 states, totaling $14.7 million,$2.9 million with 35 TPG's in 24 states plus Puerto Rico. **FY 00:** 1 new ERC for a total of 16 in 15 states, totaling $11.9 million; established Heartland Center for Occupational Health and Safety at the University of Iowa for Training Program Grants $2.3 million with 35 TPGs in 22 states plus Puerto Rico. **FY 99:** $10.3 million to 15 ERCs in 14 states; $2.6 million to 41 training program grants in 26 states/territories.	Page 186

Review a sample of documents, training materials, and communication efforts, and begin implementation of findings.	**FY 03:** Continue to review and implement findings. **FY 02:** Continue to review and implement findings. **FY 01:** Continue implementation of findings. **FY 00:** Continue to review a sample of documents, training materials, and communication efforts, and begin implementation of findings. **FY 99:** Review the most widely distributed training materials to ensure readability, clarity, and usefulness for intended user	**FY 03:** **FY 02:** **FY 01**: Over 20,000 copies distributed of The NIOSH Pocket Guide to Chemical Hazards - CD-ROM version was the most requested NIOSH publication. **FY 00:** Distributed >34,000 copies of *Preventing Needlestick Injuries in Health Care Settings*; produced a video for healthcare workers, *Respirators: Your TB Defense.* **FY 99:** Analyzed data and reported preliminary results of an evaluation of the NIOSH latex allergy alert; updated 30 analytical methods, based on a survey of 347 laboratories.	Page 186

Validation/Verification of Performance Measures: CDC will obtain data from internal reviews and will use Efficiency and Effectiveness Ratio Evaluations to compare actual to planned results.

II-C.7 Environmental Health

Total Program Funding (Dollars in thousands)

FY 2003:	$155,606	(Estimate)
FY 2002:	$156,723	(Current Estimate)
FY 2001:	$140,104	(Actual)

Mandate

CDC plans, directs, and coordinates programs that prevent or control those diseases or deaths that result from interactions between people and their environment.

Health Burden

Many of the public health successes that were achieved in the 20th century can be traced to innovations in environmental health practices. However, over the past several decades, the nation's capability to determine and address potential environmental health threats has eroded. Such threats continue to pose risks to our health and pose significant challenges to public health and environmental policy makers. For example, a cluster of 14 cases of childhood leukemia in the small town of Fallon, Nevada - a rate 42 times higher than the national average - continues to stump health officials and frighten local parents as they seek to determine the cause of the disease cluster. There has been much speculation about possible environmental links to neurological diseases, autism, and attention deficit disorder. Some researchers have hypothesized that diseases such as multiple sclerosis, Parkinson's

disease, and Alzheimer's disease may be linked to environmental hazard exposures. Currently, the nation's environmental public health systems lack the capacity necessary to conduct the scientific studies needed to answer these critical questions.

Environmental factors may also be linked to existing health conditions that have worsened over the past few years. For example, an estimated 14.9 million Americans have asthma (including 4.8 million children). The number of people with asthma increased by 102% between 1980 and 1994. The financial burden of asthma was $6.2 billion in 1990 and approximately $11 billion in 1998. Racial disparities for certain conditions have also become more evident. For instance, the problem of childhood lead poisoning is currently concentrated in racial and ethnic minorities and low-income households; nearly 22% of black children living in homes built before 1946 have elevated blood lead levels, compared with less than 2% in whites living in newer homes. Global health disparities are also becoming more pronounced; environmental factors such as micronutrient malnutrition, poor air quality, and poor sanitation cause much greater loss of life and health in some parts of the world outside of the U.S.

Strategies, Activities, and Resources

CDC intends to continue fully supporting its asthma and childhood lead poisoning prevention programs in FY 2003. CDC also will continue to provide assistance to states for public health genetics activities and expand efforts to integrate genetics into CDC research.

CDC intends to help build sustainable public health capacity at state and local levels by assigning CDC staff to health departments, creating guidelines for professional use, and providing education to form a highly trained public health workforce. By building the environmental public health infrastructure and developing the workforce, CDC will be able to respond to current and future environmental health threats. This activity addresses the Pew Environmental Health Commission's 18-month examination (culminating in January 2001) of the ability of America's public health system to respond appropriately to current and future environmental health threats. The Commission found existing environmental health systems to be inadequate and fragmented at every level of government, with environmental response and protection responsibilities scattered among environmental regulatory and public health programs.

The Commission called upon the Department of Health and Human Services and the CDC in particular to 1) strengthen the nation's environmental health defense system; and 2) prevent disease and improve the health of all Americans by identifying and controlling the environmental precursors of chronic illness and establishing public health's readiness to respond to environmental health threats nationwide. In particular, it was recommended that the CDC create a national health tracking network to provide necessary information to better understand, respond to, and prevent chronic disease in the U.S. Since CDC's mission for its National Center for Environmental Health is to promote health and quality of life by preventing or controlling those diseases or deaths that result from interactions between people and their environment, the performance plan for FY 2003 consists primarily of filling this information and capacity gap. In FY 2003, CDC aims to continue to build such capacity in environmental health, which will facilitate the accomplishment of specific performance goals in all programs.

Links to DHHS Strategic Plan

Environmental health measures relate to DHHS Goal 1: *Reduce major threats to the health and productivity of all Americans*, and Goal 5: *Improve public health systems*.

Presentation of Performance

Protecting Health and Promoting Partnerships

II-C.7a Environmental Health Laboratory Science – Biomonitoring

To protect the public from death and disease resulting from exposure to environmental chemicals, CDC and other health agencies need accurate and reliable measurements, from *actual human tissue* samples, of the extent and degree of such human exposures. Although scientists can estimate these exposures, it is more accurate to actually measure the levels of toxicants in people's bodies, a process called "biomonitoring". Without adequate exposure

measurements, health officials might declare dangerous situations as safe, threatening the health of the public; similarly, they might declare safe situations as dangerous, causing undue alarm and wasting large sums of money on needless remediation efforts. However, routine biomonitoring of human tissue samples representative of the U.S. population occurs for only 6% of 1,400 known or potentially toxic chemicals.

Through its National Biomonitoring Program, CDC is expanding the information on the amount and types of environmental chemicals that affect people's health. CDC can now measure the presence of more than 200 such substances – metals, pesticides, dioxins, and others– in blood and urine. CDC uses state-of-the-art analytical methods to measure the presence of chemicals at low levels, such as parts per trillion or parts per quadrillion. Typically, CDC measures these levels in less than a teaspoon of blood or urine.

CDC produced the *National Report on Human Exposure to Environmental Chemicals*, which provides information about the U.S. population's exposure to such chemicals. Currently, most assessments of human exposure to toxicants are based on indirect surrogates of exposure, such as questionnaire data or concentrations of toxic substances measured in air, water, food, soil, and dust. The first Report, released in March 2001, provided information on levels of 27 environmental chemicals actually found in people. The report will improve the public's health by: 1) providing information on the level of exposure to chemicals that may cause cancer, birth defects, and respiratory and other diseases; 2) determining exposures in different demographic groups; 3) identifying and tracking exposures that may be on the rise; and 4) tracking the impact of programs designed to reduce exposures.

CDC also uses its biomonitoring expertise to investigate unusual exposures and to study the causes of diseases and birth defects. For example, after the pesticide methyl parathion was illegally sprayed in homes in seven states, CDC developed a better way to measure the presence of that pesticide in urine. CDC will expand its biomonitoring efforts to measure more toxic substances and to transfer technology to state laboratories. Over the next 3 years, CDC will also increase the number of environmental chemicals in the exposure report to at least 100.

The performance measures for this program represent important outcomes for addressing a major public health gap. Limitations in the ability to measure environmental chemicals in humans impede the ability to deal effectively with environmental emergencies and compromise the results of studies seeking causes of environmental diseases. Greater availability of methods for assessing human exposure will enhance CDC's ability to respond to emergencies when people are sick or dying from unknown causes, to implement and evaluate prevention programs, and to measure trends in exposure of the U. S. population to environmental chemicals. CDC's biomonitoring efforts will be expanded over time to include a greater focus on technology transfer; to achieve this, CDC is providing financial and technical assistance to state public health laboratories to help them develop capacity to measure environmental chemicals in human samples. Such assistance allows state officials to study environmental chemicals that are priority concerns in their states and accurately determine if their populations have been exposed.

Performance Summary

CDC achieved the FY 1999 target for methods to measure human exposure to environmental chemicals and the FY 2000 target for methods to measure 8 additional substances. CDC has increased the FY 2002 target to 13 new substances due to an improvement in analytical methods. CDC anticipates meeting this new performance goal of 13 new substances by the end of FY 2002, for a cumulative total of 41 new substances since FY 1999. The availability of new methods allows CDC to participate in additional studies of the impact of exposure on development of disease and allows for additional substances to be included in the annual national exposure report. In FY 2001, CDC released the first such report, entitled the *National Report on Human Exposure to Environmental Chemicals*. Given the events of September 11 and subsequent shift in priorities to intensify anti-terrorism activities, CDC's expected release date for the second National Report will be delayed until December 2002.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Develop laboratory capacity to monitor human exposures to environmental chemicals in the environment.**

Performance Measure	Target	Actual Performance	Ref.
Develop laboratory methods to measure human exposure to environmental chemicals.	**FY 03:** 13 new substances **FY 02:** 13 new substances **FY 01:** 12 new substances **FY 00:** 8 new substances **FY 99:** 8 new substances	**FY 03:** **FY 02:** **FY 01:** Achieved **FY 00:** Achieved **FY 99:** Achieved **FY 97:** 200 (baseline)	Page 113

Performance Goal:	**Periodically determine the number of Americans exposed to environmental chemicals and the degree of their exposure.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Test a sample of Americans for tissue exposure to an increasing number of priority environmental chemicals.	**FY 03:** 100 substances; report on the 75 substances from the previous year **FY 02:** 75 substances; report on the 50 substances from the previous year **FY 01:** 50 substances; report on the 27 substances from the previous year **FY 00:** 25 substances	**FY 03:** **FY 02:** **FY 01:** Released report on 27 chemicals/completed testing of 50 substances for subsequent report **FY 00:** Exceeded/27 **FY 98:** 0 (baseline)	Page 113

Verification/Validation of Performance Measures: The development of new methods requires certification under the Clinical Laboratory Improvements Act of 1988 (CLIA). Data systems are in place to monitor CDC's performance under CLIA (see Appendix A.2). CDC also conducts internal quality assurance procedures to confirm results and ensure validity. The National Exposure Report will use CLIA-approved methods for the priority toxic substances to be measured as a part of the NHANES surveys. The use of the CLIA-approved methods will be verified by both internal quality assurance personnel and senior staff. The sample size and control mechanisms for the exposure report are established as part of NHANES (see Appendix B).

II-C.7b Environmental Health Laboratory Science – Newborn Screening Quality Assurance

In addition to its critical work in biomonitoring, CDC's environmental health laboratory plays a role in the screening of newborns for inherited disorders such as phenylketonuria (PKU), hypothyroidism, and sickle cell disease. If such disorders are detected early, actions can be taken to reduce mental retardation, disability, or death in affected infants. CDC laboratory technology is improving the ability of the healthcare community to detect treatable medical conditions early through newborn screening. More than 4 million babies born each year are tested through screening programs using dried blood spots collected at birth. Accuracy in screening ensures that affected babies are identified quickly, that cases are not missed, and that the number of "false positive" results are minimized. To ensure that these screening efforts meet the highest standards, CDC operates a Newborn Screening Quality Assurance program to assist state public health laboratories that conduct screening.

Performance Summary

CDC's Newborn Screening Quality Assurance Program has been the only comprehensive source of essential quality improvement services for more than 20 years and is recognized worldwide as the center of expertise in dried

blood spot technologies. Each year, approximately 3,000 babies with severe disorders are detected, and thousands of children are living healthy and productive lives as a result of newborn screening and CDC's quality assurance program. As technology to detect newborn disorders advances, states are expanding screening programs to include additional disorders. For example, the use of tandem mass spectrometry allows for identification of a number of additional disorders. Therefore, CDC is expanding its quality assurance program to include these added illnesses. CDC's efforts at expanding newborn screening quality assurance through the use of tandem mass spectrometry will not be fully operational until the end of FY 2002.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Ensure the quality of laboratory technologies to quickly and accurately detect inherited disorders in newborns.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Increase the number of disorders covered by the Newborn Screening Quality Assurance Program.	**FY 03:** 32 disorders **FY 02:** 32 disorders **FY 01:** 15 disorders	**FY 03:** **FY 02:** **FY 01**: 15 **FY 00:** 15 (baseline)	Page 113

Verification/Validation of Performance Measure: New disorders will be verified through collaboration with state public health and other laboratories and publication in peer-reviewed journals.

II-C.7c Asthma

The number of Americans with asthma doubled between 1979 and 1994. An estimated 14.9 million persons in the U.S. currently have asthma, and 4.4 million of these people are children. While the cause of asthma remains unknown, it is possible to control asthma attacks in people who have asthma. CDC is working towards the goal of developing cost-effective environmental interventions that, in conjunction with improved medical management, will reduce the number of asthma exacerbations and improve the quality of life of people with asthma. While it is difficult to measure improvements in quality of life, CDC uses three indicators to best estimate quality of life in its strategy to attain this goal: number of missed school days due to asthma, number of days characterized by activity limitation due to asthma, and number of missed work days due to asthma.

In spite of the fact that improved medical management in combination with environmental interventions has proven effective in preventing asthma attacks, CDC did not meet its Healthy People 2000 objectives related to reductions in hospitalizations related to asthma. In fact, the minimal national data (which are neither complete nor timely) that are available indicate that rates of asthma among both children and adults are increasing. Outcome goals are not currently feasible, because there is no suitable system for measurement (since asthma programs do not currently exist). Essentially, there is currently no national program to address the asthma epidemic. The first step in overcoming this barrier is to enable all states and major cities that can document an asthma problem to implement core asthma programs. A core asthma program is composed of three activities: tracking (surveillance), ensuring that interventions are science-based, and developing relevant partnerships within the state (i.e., with medical facilities, schools, etc.). Once states have these capabilities, we can strengthen our efforts to improve the quality of life of people with asthma. As part of the effort to assist states in gaining the capability to document their asthma problems and to appropriately target resources, CDC has: developed an asthma module to be used by a national tracking system for addressing adult asthma; begun development of a module for a national tracking system that focuses on children; and begun to provide funding to states to develop their own asthma tracking capabilities.

Due to the newness of the state programs, the current performance measure is of a more process-based nature. As the state-based programs become fully implemented, the performance goal and measure will be changed to reflect long-term health outcomes and will be guided by the Healthy People 2010 asthma objectives.

Performance Summary
In 1998, CDC established asthma contacts in all 50 states to act as focal points for initiation of asthma programs. CDC provided the asthma contacts with critical information on the epidemiology of asthma, surveillance, interventions, legislation, and medical management. In 1999, CDC funded states to build core capacity for responding to the increased prevalence of asthma. CDC planned to fund 6 states in FY1999, but funding was adequate for only 4 states. In FY 2000, CDC funded 8 states, bringing the total to 12. CDC was able to exceed the estimated FY 2001 target of 18 states due to the fact that CDC received more funding for FY 2001 asthma activities than expected. Similarly, since FY 2002 appropriations include an unexpected funding increase for asthma the FY 2002 target has been increased to 28 states.

CDC developed asthma questions for the state-based BRFSS to estimate the prevalence of asthma in adults in all states. CDC also implemented a sentinel asthma surveillance project in hospital emergency departments and developed an asthma questionnaire that focuses on children to be used in the State and Local Area Integrated Telephone Survey (SLAITS). CDC is funding several universities and hospital emergency departments to conduct research on asthma screening and sentinel surveillance.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Improve state and local public health capacity to prevent and control asthma.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
States will have implemented core asthma programs	**States with Asthma Programs:** **FY 03:** 28 states **FY 02:** 28 states **FY 01:** 18 states **FY 00:** 8 states **FY 99:** 6 states	**States with Asthma Programs:** **FY 03:** **FY 02:** **FY 01:** Exceeded/25 **FY 00:** Exceeded/12 **FY 99:** 4 **FY 97:** 0	Page 113

Verification and Validation of Performance Measure: Data verification is based on required reporting by grantees. CDC project officers will verify that states are fulfilling the requirements of cooperative agreements through routine monitoring of the grants process. CDC epidemiologists will review all statistical and surveillance data to ensure appropriate application of statistical and epidemiologic methods.

II-C.7d Childhood Lead Poisoning

Lead poisoning is a major environmental health threat to children. The National Academy of Sciences has reported that even relatively low levels of lead exposure - 10 micrograms per deciliter (µg/dl) - are harmful and are associated with decreased intelligence, behavior problems, and other physical problems. During the past two decades, there has been a dramatic reduction of the prevalence of lead poisoning in young children in the U.S. This reduction was due to a number of different strategies, including the removal of lead from gasoline and new house paint and the implementation of prevention programs by CDC, Housing and Urban Development, and the Environmental Protection Agency.

Despite these successes, however, childhood lead poisoning remains a serious problem. CDC estimates that as many as 890,000 young children still have elevated blood lead levels. Children from low-income backgrounds, especially racial and ethnic minorities who live in rundown housing built before 1960, are at highest risk for lead poisoning. Nearly 22% of non-Hispanic black children living in homes built before 1946 have elevated blood lead levels, compared with <2% in non-Hispanic whites living in newer homes. Medicaid-enrolled children account for 60% of all children with elevated blood lead levels. Recent data show that only 19% of Medicaid-enrolled children have been screened for lead poisoning.

In response to recent findings, CDC has shifted the emphasis from universal screening of all U.S. children to targeted screening of high-risk children and has revised policy recommendations and funding guidelines accordingly. CDC supported a federal advisory committee to develop recommendations for screening and improved case management. CDC also developed its first geographic information system (GIS) website using U.S. census data on income, race, and housing age to identify high-risk geographic areas. CDC works closely with other agencies to increase screening of Medicaid-enrolled children and is expanding technical assistance, consultation, and training to support state and local health officials and their prevention programs. Through an interagency agreement with CMS (formerly HCFA), CDC provides technical assistance and consultation to improve the screening rate of children enrolled in Medicaid.

Performance Summary

CDC provides national leadership, technical assistance, and surveillance to prevent and reduce childhood lead poisoning. Traditionally, NHANES has provided the basis for estimating the prevalence of children with elevated blood lead levels over a 3-year period; thus, results for the first performance measure can be assessed only every three years.

However, CDC continues annually to actively support lead poisoning prevention and surveillance efforts in states throughout the country. CDC has a performance measure to ensure that supported states establish a system that determines the number of children participating in Medicaid who are being screened for elevated blood lead levels. This requires that states engage in an information exchange with CMS. Working out the mechanics in establishing such a system of information exchange is a cumbersome task for these states. Some states are able to do this more quickly than others, sometimes due to differing starting points. The FY 2000 target for this measure was 15% of CDC-supported states, and actual performance was 12.5%. While CDC offers as much support as possible to these states, it is impossible to predict which ones will experience technical difficulties or delays in establishing their systems with CMS. Although only 12.5% of CDC-supported states had such a system in place at the end of FY 2000, many states have begun efforts to at least link Medicaid information with childhood lead poisoning surveillance data, paving the way to developing such a system. In FY 2000, 45% (18) of the forty CDC-supported states had begun dialogue with Medicaid staff, and 35% (14) had begun using Medicaid data. The target of 25% was achieved for FY 2001. Based on the trends from these data, CDC believes that its targets for FY 2002 will also be achieved.

Goal-by-Goal Presentation of Performance

Performance Goal: **Help states reduce the burden of lead poisoning in children.**

Performance Measure	Target	Actual Performance	Ref.
Reduce the number of children with elevated blood lead levels.	**FY 03:** 35% reduction **FY 02:** **FY 01:** **FY 00:** **FY 99:** 25% reduction	**FY 03:** **FY 02:** **FY 01:** **FY 00:** **FY 99:** No data in FY 99 NHANES; next NHANES data available FY 03. **FY 91-94**: 890,000 children with blood levels >10 micrograms per deciliter.	Page 113

Increase the percentage of CDC-supported states with systems to determine the number of Medicaid-enrolled children who are screened for lead poisoning.	**FY 03:** 40% **FY 02:** 40% **FY 01:** 25% **FY 00:** 15%	**FY 03:** **FY 02:** **FY 01:** Achieved **FY 00:** 12.5% **FY 99:** 0%	Page 113

Verification/Validation of Performance Measures: CDC regularly reviews grantees' progress reports to ensure adherence to grant requirements. Reviews include updates on the ability of states to determine the number of Medicaid-enrolled children who are screened for lead poisoning.

II-C.7e Genetics and Disease Prevention

CDC integrates discoveries in human genetics into disease prevention strategies as outlined in the CDC strategic plan, *Translating Advances in Human Genetics into Public Health Action*. CDC promotes public health genetic knowledge and capacity through: 1) state- and community-level health assessment and planning, 2) public health research on gene:environment interactions, 3) evaluation of genetic testing, 4) a national program for implementing effective and ethical disease interventions, and 5) communication and training strategies for providing relevant genetics information to various audiences. These programs are collaborative efforts among public, academic, and private organizations that strengthen crosscutting research, training, laboratory, and preventive health programs. By integrating genetics into existing public health programs, CDC and partners are expanding opportunities to target interventions to persons with specific genetic variants that reduce their risk of disease and disability.

Performance Summary

CDC actively promotes the integration of human genetics into public health prevention activities. CDC's genetics activities in this pursuit can be broken down into two facets: integrating scientific advances in genetics into public health action and developing state public health capacity for such integration. CDC began providing technical assistance to states to begin integrating genetics into their public health activities in FY 2001 and achieved its goal of assisting between 3 and 5 states. CDC also works collaboratively with other federal agencies to facilitate the integration of genetics into their federal and state activities. CDC has started assessing DNA-based tests for clinical and public health utility, and the goal of three tests was achieved during FY 2001. The original FY 2002 target was developed based on a funding level not granted in the actual FY 2002 appropriations. Therefore, the FY 2002 target of 7-9 states was decreased to 3-5 states and the FY 2003 target was decreased from 12 states to 7-9 states. However, the decrease in expected funding will not affect the targets for the second genetics performance goal.

Goal-by-Goal Presentation by Budget

Performance Goal:	**Help states use genetic information in their public health programs.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Increase the number of states receiving technical assistance from CDC to integrate genetics into public health.	**FY 03:** 7-9 states **FY 02:** 3-5 states **FY 01:** 3-5 states	**FY 03:** **FY 02:** **FY 01:** Achieved/4 **FY 00:** 0 (baseline)	Page 113

Performance Goal:	**Increase the availability to public health professionals and the public of information on specific DNA-based tests.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Increase the number of DNA-based tests assessed using a core set of data to define clinical and public health utility.	**FY 03:** 6 tests **FY 02:** 4 tests **FY 01:** 3 tests	**FY 03:** **FY 02:** **FY 01:** Achieved **FY 00:** 0 (baseline)	Page 113

Verification/Validation of Performance Measures: Performance measures will be verified by reviews of reports required by contract recipients. CDC project officers will regularly review requirements to ensure compliance.

II-C.7f Environmental Health Tracking and Infrastructure

In January 2001, after an 18-month examination of the ability of America's public health system to respond to environmental health threats, the Pew Environmental Health Commission reported such capacity to be severely deficient. In particular, the Commission identified a variety of individual chronic disease surveillance systems that were unable to link to each other or to existing data bases containing information about environmental exposures. While there is a wealth of information that exists in hazard, exposure, and health outcome databases at the state and national levels, there is little synchronization in the collection, analysis, and dissemination of this information. In order to correct the disjointed nature of these systems, it was recommended that CDC create a National Health Tracking Network to properly integrate existing and newly acquired information into a system for effective environmental public health tracking, analysis, and evaluation.

CDC concurs that such a deliberate process could document possible links between environmental hazards and chronic disease, thereby providing the fundamental information needed to design, implement, and evaluate disease prevention strategies. Such knowledge could be used in responding to outbreaks, disease clusters, and trends in identified health conditions. CDC's vision for a National Health Tracking Network is that the health of Americans is improved by tracking and linking health data to environmental hazards and exposures and assuring that communities have the capacity to act on this information.

Another necessity in safeguarding the public's health against environmental health threats is adequate infrastructure at the local, state, and federal levels to ensure rapid and effective delivery of surveillance, analysis, and interventions to all of the potentially impacted people, and to ensure appropriate and rapid response to reduce or eliminate the environmental health impact. Many of the emerging and re-emerging public health issues occurring today require a coordinated and sophisticated environmental health response, dependent on solid infrastructure. Currently, such infrastructure and coordination does not exist at the state and local levels, where it is most important. State and local environmental health programs do not have an adequate workforce (both in number and skills) to prevent or respond to many environmentally-related diseases and emergencies. CDC is currently attempting to correct this gap through the provision of training and other means of workforce development to states.

Performance Summary

The new environmental health tracking program encompasses the "Core Capacity" goals from FY 2002's performance plan. The first performance measure has been changed, however, to more accurately reflect the activities that CDC will undertake in pursuit of the goal of increasing understanding of the relationship between environmental exposures and health effects. In FY 2002, CDC will support up to 20 state-based demonstration projects that will focus on defining a core set of tracking functions that can be implemented within the state. In addition to coordinating these collaborative extramural planning efforts, CDC will support the development of CDC teams that can respond to environmental disease outbreaks and cancer clusters.

Regarding its goal of developing core capacity in environmental health services, CDC has begun the process of developing such capacity by providing relevant services to and expanding collaborations with its constituents. CDC achieved and exceeded its goal of assisting 5 sites in FY 2001 and has changed the target for FY 2002 and FY 2003 from 7 states to 17 states. The goal of 5 sites for FY 2001 was greatly exceeded due to unexpected funding from discretionary sources. The goals for FY 2002 and FY 2003 were increased to 17 sites for similar reasons; FY 2002 appropriations included funding for tracking and capacity development that was not expected until FY 2003 and that was at higher levels than expected.

Goal-by-Goal Presentation by Budget

Performance Goal:	**Increase understanding of the relationship between environmental exposures and health effects.**		
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Number of state-based demonstration projects to define tracking functions for a National Health Tracking Network	**FY 03:** up to 20 demonstration projects **FY 02:** up to 20 demonstration projects	**FY 03:** **FY 02:** **FY 01:** 0 (baseline)	Page 113

Performance Goal:	**Increase the capacity of state and local health departments to deliver environmental health services in their communities.**		
Performance Measure	**Target**	**Actual Performance**	**Ref**
Increase the number of state and local health departments provided with consultation and/or technical assistance to address environmental health service issues.	**FY 03:** 17 sites **FY 02:** 17 sites **FY 01:** 5 sites	**FY 03:** **FY 02:** **FY 01:** Exceeded/14 **FY 00:** 0 (baseline)	Page 113

Verification/Validation of Performance Measures: Performance measures will be verified by reviews of the reports required by cooperative agreement recipients. CDC project officers will regularly review requirements to ensure compliance.

II-D.1 Buildings and Facilities

Total Program Funding (Dollars in thousands)

FY 2003:	$ 64,000	(Estimate)
FY 2002:	$250,000	(Current Estimate)
FY 2001:	$175,000	(Actual)

Mandate

CDC's management has responsibility for ensuring that: 1) CDC facilities and equipment are adequate for carrying out the agency's public health mission; 2) all facilities, particularly laboratories, are safe for both workers and the community; 3) taxpayers' investment in these facilities is protected through effective maintenance and operations; 4) facilities meet applicable fire and safety codes; and 5) facilities are operated in a responsible manner to reduce energy consumption.

Problem

Although CDC has expanded its workforce and responsibilities considerably since its post-World War II origins, the agency's buildings and laboratories have not kept pace. The majority of CDC's infectious disease and environmental laboratories are so crowded and outdated that they could create safety hazards for employees testing organisms and hazardous substances. As public health challenges have become more serious and complex, CDC's laboratory- and nonlaboratory-based programs have also expanded to meet changing needs. Because of this growth, CDC-owned buildings cannot house current staff. Approximately half of CDC's Atlanta workforce is scattered in 23 leased office spaces that cost more than $20 million to rent each year.

Strategies, Activities, and Resources

Beginning in 1993, CDC undertook a master facilities planning effort to identify and systematically address severely inadequate conditions at CDC's Clifton Road and Chamblee campuses in Atlanta, Georgia. In this process, CDC has assessed the work needed to consolidate Atlanta operations into two secure campuses and to properly maintain existing facilities. CDC continues to update this assessment to ensure that the appropriate needs receive the highest priority.

CDC uses the assessments from the facilities planning effort and its annual Repair and Improvements (R&I) Plan to determine the need for and to schedule major and minor renovation, construction, and other facilities projects. CDC's goal is to provide safe, modern, efficient, and physically secure laboratories and support facilities in the most economical manner possible.

Links to DHHS Strategic Plan

Performance measures relate to DHHS Goal 5: *Improve the nation's public health systems*, and Goal 6: *Strengthen the nation's health sciences research enterprise and enhance its productivity*

Performance Summary

As of December 2000, implementation of approved projects was proceeding according to schedule, with adjustments to reflect actual authorization and appropriations. Organizational and structural changes to CDC's facilities continue to be implemented. For example, to make more efficient use of time and money, the Engineering Services Office has been reorganized into three components focused on: 1) planning and project management, 2) design and construction management, and 3) property management and operations.

CDC has implemented the first part of an innovative new contracting structure to speed the procurement

of major capital projects. CDC will use a highly competitive process to "pre-qualify" architecture and construction firms to form a pool of resources readily available for use on a task order basis for design and construction. To date, CDC has successfully procured design services for two major new construction projects in approximately one-third to one-quarter the time normally needed for traditional procurements. Another feature of the contract is to bring the architect and builder together from inception of a project rather than after the design is complete. This feature will ensure a better final product, reduce change orders, and allow better adherence to budget and schedule. CDC will monitor projects currently entering the design and construction cycle to obtain quantitative data on performance objectives.

Goal-by-Goal Presentation of Performance

Performance Goal: Implement scheduled improvements, construction, security, and maintenance consistent with available resources and priorities identified in CDC's master facilities planning process.

Performance Measure	Target	Actual Performance	Ref.
Begin Design and construction of Roybal East Campus Consolidated Lab Project, to replace or modernize existing Buildings 3, 1 South, 4, 7, 8, and 9.	**FY 03:** Begin Design	**FY 03:**	Page 208
Construct Phase II of Building 17 (Infectious Disease Research Laboratory) at the Clifton Road campus.	**FY 01:** Complete construction of Phase II. **FY 00:** Construct Phase II.	**FY 01:** Projected occupancy Sept 01 (Complete) **FY 00:** Construction on schedule and on budget; structure up to 3rd floor. **FY 99:** Construction on schedule and on budget; structure up to 3rd floor. **FY 98:** Planning stage.	Page 208

Design and construct a new Emerging Infectious Disease Laboratory, Building 18, Clifton Road campus, to vacate and modernize Building 1 South, house bioterrorism activities, and provide additional BSL-4 capacity.	**FY 03:** Continue Construction **FY 02:** Continue construction. **FY 01:** Complete design. **FY 00:** Begin design.	**FY 03:** **FY 02:** **FY 01:** On schedule -- construction contract award estimated by September 01. **FY 00:** Acquisition of A/E contract underway; task order award anticipated. **FY 99:** Acquisition of A/E contract underway; task order award anticipated. **FY 98:** Planning stage.	Page 208
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Begin design of a Scientific Communications Center to replace Building 2 and vacate and modernize Building 3, Clifton Road campus.	**FY 03:** Begin Construction **FY 02:** Complete design. **FY 01:** Begin design. **FY 00:** Complete A/E and CMC contract acquisition.	**FY 03:** **FY 02:** **FY 01:** On schedule – Design at SD stage **FY 00:** Achieved. **FY 99:** POR to develop program, location, budget, and implementation strategies completed. **FY 98:** Planning stage.	Page 208

Complete construction of infectious disease laboratory, Building 109, to replace Buildings 4, 6,7,8, and 9, Chamblee campus.	**FY 03:** Complete Construction of Phase II **FY 01:** Complete construction. **FY 00:** Begin construction.	**FY 03:** **FY 02:** **FY 01:** Complete – Occupancy estimated for January 2002 **FY 00:** Acquisition of construction contract underway; task order award anticipated in 2000. **FY 99:** Design underway; expected to be completed on schedule/within budget. **FY 98:** Planning stage.	Page 208
Complete construction of infrastructure project in Security Buffer Zone, Clifton Road campus.	**FY 01:** Complete construction. **FY 00:** Complete construction.	**FY 01:** Complete. **FY 00:** Construction temporarily delayed. **FY 99:** Property acquisition and demolition 99% complete; initial work ahead of schedule. **FY 98:** Planning stage.	Page 208
Design and construct an Environmental Toxicology Laboratory, Building 110, to replace Buildings 17, 25, 31, and 32, Chamblee campus.	**FY 03:** Continue construction **FY 02:** Complete design; begin construction. **FY 01:** Begin design.	**FY 03:** **FY 02:** **FY 01:** On schedule. Design at SD stage. **FY 98:** Planning stage.	Page 208
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Begin design of New Headquarters Building 21, Clifton Road campus, for lease consolidation project.	**FY 03:** Begin construction. **FY 02:** Complete design. **FY 01:** Begin design.	**FY 03:** **FY 02:** **FY 01:** Construction start delayed. **FY 98:** Planning stage.	Page 208
Begin design of Building 106, Chamblee campus, for Lease Consolidation Project.	**FY 02:** Complete design; begin construction. **FY 01:** Begin design.	**FY 02:** **FY 01:** Project deferred. **FY 98:** Planning stage	Page 208

Verification/Validation of Performance Measures: CDC will collect data through contractor reports and on-site verification.

II-D.2 Office of the Director

Total Program Funding (Dollars in thousands)

FY 2003:	$47,688	(Estimated)
FY 2002:	$46,600	(Current Estimate)
FY 2001:	$36,406	(Actual)

Mandate

The Office of the Director (OD) manages and directs CDC's programs.

Strategies, Activities, and Resources

Goals and performance measures relate to: scientific integrity and human subjects protection, technology transfer, minority health, equal employment opportunity, program planning and evaluation, and health communication.

II-D.2a Scientific Integrity, Human Subjects Protection, and Technology Transfer

The Office of the Associate Director for Science (ADS) provides direction and training on matters of scientific integrity and human subjects protection. The ADS also manages CDC's intellectual property (e.g., patents, trademarks, copyrights) and promotes the transfer of new technology from CDC research to the private sector to facilitate and enhance the development of diagnostic products, new research methods, vaccines, and other products, and methods to improve occupational safety.

Performance Summary

In FY 2001, the Office of the ADS provided training and technical assistance for CDC staff on scientific integrity, protection of human subjects, and technology-transfer policies and procedures.

Technology Transfer

Federal technology transfer is generally defined as an active partnership between the Government and its scientists/engineers with members of the commercial enterprise to bring Federally developed technologies into practical application more rapidly than is likely to be achieved by passive sharing of information. Success in technology transfer requires effective activity at both ends of that partnership.

From the Government side, it starts with the recognition by Federal employees of their many inventions and the benefits to the Government of reporting those inventions and working with commercial interests to promote their development into commercial products or services made available to the American public. For many new technologies, the best and most efficient, indeed for certain technologies the only, way to achieve practical application and availability to the American public is through further development and marketing by private industry or through R&D collaboration with other public sector institutions. Partly because of the office's increased in-reach efforts aimed at CDC's scientists and engineers, the number of new employee invention reports has been increasing over the last several years.

The number of employee invention reports increased from 29 in FY 1998 to 34 in FY 1999 to 45 in FY 2000. The slight reduction seen in this measure in FY 2001reflects the need in that fiscal to defer costs incurred to the next fiscal year as a result of a sudden significant increase in patent processing costs. The number of patent applications filed and issued tend to follow invention reports by one or more years, and reflect the patentability and marketability of the inventions. They are a reflection of the strength and breadth of the Agency's portfolio of technologies available for practical application by the private sector. The number of patents issued in FY 2001 is a result of the decision to postpone some patent prosecution actions to the succeeding fiscal year for the reason noted above for employee invention reports, and does

not necessarily reflect a decrease in the quality or quantity or the Agency's patent portfolio.
The value of trying to achieve a predetermined ratio of licensed to unlicensed patents in our portfolio has been reconsidered and determined to be an inadequate measure of the effectiveness of technology transfer. As a world leader in disease control and prevention research, and with the mission of a Federal lab to anticipate public health needs and crises, a substantial number of our new technologies are "ahead of their time" or directed to niche markets. For example, notable in this category are inventions related to injury and workplace safety, which may not increase industry profit, yet are necessary to enhance the public health. In many instances, the private sector is not yet suitably positioned to exploit the advantages of these inventions. Nevertheless, it is important to maintain them in our portfolio for the time when the need becomes critical and companies are better positioned to make them available to solve needs as they develop. Therefore, this measure will be dropped.

Activities on the commercial side are important to successful technology transfer as well. Interest on the part of the commercial world in CDC's new technologies is partially reflected by the number of companies working with the agency either collaboratively in developing new technologies or refining and adapting them to commercial use through our technology licensing program. These collaborations have increased as a direct result of CDC's expanded outreach and marketing activities over the last few years. Largely as a result of the Agency's increasing marketing efforts, companies continue to recognize the value of CDC research and intellectual property rights. CDC executed 5 new patent license agreements and 5 other intellectual property (trademarks, copyright) license agreements, reflecting a continuing increase in licensing activities. License revenues for this fiscal year ($151,116) were down from last year's $346,530, which included a large one time license execution fee, but still a substantial increase over the previous year's revenue of $100,110. CDC uses these revenues to provide incentives to inventors and to support additional laboratory research. In addition, CDC has continued to make excellent use of biological materials license agreements to transfer specific CDC materials to universities and commercial entities for research and development purposes. Additional revenues from biological materials licensing agreements totaled more that $150,000 for FY 2001, continuing the increasing trend from the two previous fiscal years.

Much of this increased licensing activity reflects the success not only of our efforts to market specific new technologies, but also of our increased emphasis on more general outreach activities. These consist of ensuring visibility and understanding of CDC's technologies and research capabilities at various research, trade, and technology transfer meetings and conferences. The increasing use of the Cooperative Research and Development Agreement (CRADA) to foster collaborative research with private companies and universities also reflects this success. CRADAs provide an opportunity for CDC scientists to work with industry investigators to develop new or improved products or processes. The number of new CRADAs has increased steadily over the last few years, to an agency high of 11 new CRADAs initiated this year. CDC is a partner in 37 active CRADAs, generating approximately $1 million in non-appropriated funds for cooperative research. Several CRADAs have been renewed at least once, attesting to the benefits to both the agency and the participating companies.

However, another performance measure that has been used in the past has been reevaluated and determined to be an inaccurate reflection of the purpose of CRADAs. The measure of the number of employee invention reports arising from cooperative research with the private sector is a misleading measure of the success of the collaboration. It is, of course, a desired result since it tends to lead to more rapid practical application of new inventions and quicker delivery to the public. But it is not the primary benefit of such a collaboration. More often, the benefit to both the company and to CDC is a better understanding of the science or engineering underlying a companies products or processes or an area of interest to CDC, and which leads to more efficient operation, more effective pursuit of new opportunities, reduction in costs (and price), or cost avoidance. All of these ultimately benefit the mission of the Agency and the technology transfer program.

Overall, we continue to have increasing success in making our researchers aware of the opportunities available through the technology transfer program, and in recruiting private sector involvement in developing, manufacturing, and marketing new CDC technologies to the benefit of the American economy and the public welfare.

Human Subjects Protection

Increase IRB approvals after no more than one report from the CDC IRB: In September 2001, the Human Subjects Activity (HSA) hired one IRB administrator, and in January, 2002 the National Center for Infectious Diseases hired an additional administrator, increasing our total IRB support staff from one to three employees. When these new employees are fully trained, individual administrative workloads for HSA staff will decrease. This will allow our staff to devote considerably more time to human subjects educational and training activities targeted to both IRB reviewers and CDC researchers. As the authors and recipients of IRB reports develop a better working knowledge of the ethical principles and regulatory requirements embodied in 45 CFR 46, the number of reports required to bring reviewed protocols into compliance will decrease.

Increase the number of states with assurances of compliance and IRBs: CDC's Assurance Coordinator provides advice and assistance to State and local health departments seeking to obtain Federal-Wide Assurances (FWA), and our Intranet and Internet home pages both contain links to the Office for Human Research Protections (OHRP) Assurance Guidance Website. However, CDC has limited influence over State health departments to persuade them to obtain FWAs - the decision to apply for and obtain an FWA is affected by many factors. CDC's advice and support on this topic are usually minor considerations in the States' ultimate decision on whether to go through the application and certification process. CDC indirectly influences State health departments to obtain FWAs by requiring them as a condition of funded research or when we enter into a research collaboration. For a variety of reasons, neither of these indirect modes of influence apply to many state health departments, especially those that lack the resources to engage in research. Therefore, this performance measure should be eliminated.

Increase the number of CDC scientists who receive computer-based training in scientific ethics: Since 1998, CDC has required mandatory scientific ethics training of all CDC scientists engaged in research involving human subjects. Those scientists not engaged in human subjects research are encouraged to complete the training; however, at this time it is not mandatory that they do so. The training is offered via the CDC intranet or CD-ROM (for field personnel). The FY 01 goal of 80% all CDC scientists passing the training was not achieved, probably because the training is not mandatory. Also, a culture of performing science ethically has been assumed. Greater media exposure to unethical science at various research institutions in the United States and abroad, more scrutiny by the Office of Human Research Protections in violations of research subjects' rights, and increased efforts on the part of the Office of Research Integrity to train scientists in the Responsible Conduct of Science have shown that previously held assumptions may not be accurate. Efforts will be made in FY 02 to achieve projected goals through more education.

CDC trains CDC investigators on regulations, policies, and procedures to protect human subjects in research. A total of 706 investigators were trained in human subjects issues during FY2001 and four workshops were held that trained 59 members of Institutional Review Boards on regulations, policies, and procedures. An additional 10 IRB members were tutored to serve as expeditors. Presentations on the protection of human subjects in research were provided to the EHDI Grantees (NCEH), CDC's Procurement and Grants Staff, the Roosevelt Warm Springs Institute for Rehabilitation, Epidemic Intelligence Service incoming class, Morehouse School of Medicine, and the Association of Black Cardiologists. In addition, a Public Health Ethics Seminar Series was established and 3 seminars were held in the Atlanta area during FY 2001.

Goal-by-Goal Presentation of Performance

Performance Goal: Identify, evaluate, and protect novel technologies.

Performance Measure	Target	Actual Performance	Ref.
Increase the number of technology transfer education and awareness activities.	**FY 03:** 10 activities **FY 02:** 10 activities **FY 01:** 10 activities **FY 00:** 7 activities	**FY 03:** **FY 02:** **FY 01:** Exceeded/11 **FY 00:** Exceeded/10 **FY 99:** 2	Page 213
Increase the number of employee invention reports (EIRs) filed per year.	**FY 03:** 55 EIRs **FY 02:** 50 EIRs **FY 01**: 50 EIRs **FY 00:** 35 EIRs	**FY 03:** **FY 02:** **FY 01:** 42 **FY 00:** Exceeded/45 **FY 99:** 31	Page 213
Increase the number of patent applications filed per year.	**FY 03:** 82 applications **FY 02:** 79 applications **FY 01:** 79 applications **FY 00:** 76 applications	**FY 03:** **FY 02:** **FY 01:** 80 **FY 00:** 68 **FY 99:** 73	Page 213
Increase the number of patents issued per year.	**FY 03:** 24 patents **FY 02:** 24 patents **FY 01:** 24 patents **FY 00:** 23 patents	**FY 03:** **FY 02:** **FY 01:** 15 **FY 00:** 22 **FY 99:** 22	Page 213

Review and manage CDC's patent portfolio to maximize return for public health benefit.	**FY 02:** See Change Chart **FY 01:** <30% of unlicensed patents maintained beyond 4 years of issue date. **FY 00:** <30% of unlicensed patents maintained beyond 4 years of issue date.	**FY 02:** **FY 01:** 64% of unlicensed patents maintained beyond 4 years of issue. **FY 00:** New evaluation needed due to transfer of mining patent files to CDC from the former Bureau of Mines; early estimate is 70% of unlicensed patents maintained beyond 4 years of issue. **FY 99:** 38% of unlicenced patents maintained beyond 4 years of issue.	Page 213

Performance Goal: Facilitate the commercialization of unique technologies.

Performance Measure	Target	Actual Performance	Ref.

Market all available licensing opportunities for CDC's intellectual property, and update availability of new technologies on a quarterly basis.	**FY 03:** Conduct/publish 12 marketing update activities **FY 02:** Conduct/publish 10 marketing update activities **FY 01:** Conduct/publish 10 marketing update activities **FY 00:** Conduct/publish 7 marketing update activities	**FY 03:** **FY 02:** **FY 01:** Conducted or published 20 marketing update activities, including trade shows, partnering conferences, marketing visits, *Federal Register*, industry publications. **FY 00:** Established Pink Dot licensing service link between IBM patent search engine and TTO website; updated TTO website; published new technology in *Federal Register*; marketed technologies at BIO2000; marketed CDC capabilities at AAAC. **FY 99:** Established TTO home page on CDC website; published technologies semiannually in *Federal Register*.	Page 213
Increase the number of patent license agreements (PLAs) executed annually.	**FY 03:** 4 PLAs **FY 02:** 3 PLAs **FY 01:** 3 PLAs **FY 00:** 3 PLAs	**FY 03:** **FY 02:** **FY 01:** 5 PLAs and 5 trademark/copyright licenses executed **FY 00:** Exceeded/5 **FY 99:** 2	Page 213
At least annually, provide new evidence that CDC licenses provide a substantial basis for development of commercially significant products and processes.	**FY 03:** 10% growth in royalties **FY 02:** 10% growth in royalties **FY 01:** 10% growth in royalties **FY 00:** 10% growth in royalties received from patent licenses	**FY 03:** **FY 02:** **FY 01:** $151,116 received **FY 00:** $346,530 received **FY 99:** $110,110 received	Page 213
Performance Measure	**Target**	**Actual Performance**	**Ref.**

Increase CDC outreach activities through participation in national and international research, trade, and technology transfer meetings/conferences.	**FY 03:** 7 events **FY 02:** 5 events **FY 01:** 5 events **FY 00:** 5 events	**FY 03:** **FY 02:** **FY 01:** Exceeded/11 **FY 00:** Achieved **FY 99:** 2	Page 213

Performance Goal: Promote private-sector participation and investment in applications of novel research discoveries.

Performance Measure	Target	Actual Performance	Ref.
Increase the number of CRADAs, Material Transfer Agreements, Clinical Trial Agreements, and other CDC-private sector research cooperation mechanisms.	**FY 03:** 5% increase from previous year **FY 02:** 5% increase from previous year **FY 01:** 5% increase from previous year **FY 00:** 5% increase from previous year	**FY 03:** **FY 02:** **FY 01:** 11 CRADAs **FY 00**: 10 CRADAs **FY 99:** 6 CRADAs	Page 213
Increase the number of EIRs arising from cooperative research with the private sector.	**FY 02:** See change chart **FY 01:** 5% increase from previous year **FY 00:** 5% increase from previous year	**FY 02:** **FY 01:** 3 EIRs from collaborative research with private sector **FY 00:** 0 **FY 99:** 0	Page 213

Performance Goal: Increase public health scientists' knowledge and practice of human subjects protection in research.

Performance Measure	Target	Actual Performance	Ref.
Increase IRB approvals after no more than one report from the CDC IRB.	**FY 03:** maintain 98% approval **FY 02:** 98% approval **FY 01**: 97% approval **FY 00:** 96% approval	**FY 03:** **FY 02:** 402/415 (96%) **FY 01**: Achieved **FY 00:** Achieved **FY 99:** 95%	Page 213
Increase the number of states with assurances of compliance and IRBs.	**FY03:** See change chart **FY 02:** 50 states **FY 01:** 40 states **FY 00:** 30 states	**FY 03:** **FY 02:** **FY 01:** 23 **FY 00:** 15 **FY 99**: 13	Page 213
Increase the number of CDC scientists who receive computer-based training in scientific ethics.	**FY 03:** 85% of CDC scientists will pass the computer-based training. **FY 02:** 80% of CDC scientists pass computer-based training. **FY 01:** 80% of CDC scientists pass computer-based training. **FY 00:** All CDC scientists engaged in human subjects research pass computer-based training.	**FY 03:** **FY 02:** **FY 01:** 73% of CDC scientists (including 100% of those conducting IRB-reviewed human subjects research) have passed training. **FY 00:** 16.5% passed computer-based training; a total of 35% of CDC staff have passed training. **FY 99:** 18.5% of CDC scientists passed computer-based training.	Page 213

II-D.2b Minority Health

The Office of Minority Health provides leadership, advocacy, assessment, coordination, and evaluation regarding CDC's minority health activities related to preventable disease, death and injury among racial and ethnic minority populations. The Office also provides funding assistance to academic institutions, national and community-based organizations for prevention research, program development and analysis, and evaluation to improve the health status of minorities and reduce health disparities.

Performance Summary

The FY 2001 performance goal to support Historically Black Colleges and Institutions, Hispanic-Serving Institutions, and Tribal Colleges and Institutions was achieved through the award of cooperative agreements. CDC increased the number of funding mechanisms in FY 2001 to include four cooperative agreements. The increase is attributed to CDC's efforts to expand and diversify partnerships with academic institutions and to increase the competence and diversity of the public health workforce. The number of schools reached through this funding mechanism in FY 2001 will not be available until January 2002.

CDC surpassed the FY 2001 target to enroll 59 students in three summer training programs designed to encourage minority students to pursue graduate careers in public health and to diversify the public health workforce.

In FY 2001, CDC will continue to develop partnerships with Historically Black Colleges and Institutions, Hispanic-Serving Institutions, and Tribal Colleges. These partnerships will expand training opportunities, foster development of minority health research capabilities at colleges and universities, and enhance recruitment opportunities.

Goal-by-Goal Presentation of Performance

Performance Goal: Prepare minority students for graduate-level careers in public health.

Performance Measure	Target	Actual Performance	Ref.
Increase the number of minority students participating in Project: IMHOTEP; Public Health Summer Fellowship Program; and Ferguson Infectious Disease Fellowship Program.	**FY 03:** 65 students **FY 02:** 65 students **FY 01:** 59 students **FY 00:** 57 students	**FY 03:** **FY 02:** **FY 01:** 64 **FY 00:** 55 **FY 99:** 55	Page 213

Verification/Validation of Performance Measures: Demographic data are compiled for all training programs annually.

Performance Goal: Support Historically Black Colleges and Institutions, Hispanic-Serving Institutions, and Tribal Colleges and Institutions.			
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Increase the number of funding mechanisms and the number of minority-serving institutions receiving support.	**FY 03:** 4 cooperative agreements and 37 schools **FY 02:** 4 cooperative agreements and 37 schools **FY 01:** 3 cooperative agreements; 37schools **FY 00:** 2 cooperative agreements; 27 schools **FY 99**: 1 cooperative agreement; 22 schools	**FY 03:** **FY 02:** **FY 01:** 4 cooperative agreements **FY 00:** 2 cooperative agreements; 27 schools **FY 99:** 1 cooperative agreement; 37 schools	Page 213

Verification/Validation of Performance Measures: Demographic data are compiled for all training programs annually.

Performance Goal: Foster a stronger collective departmental perspective on AI/AN issues			
Performance Measure	**Target**	**Actual Performance**	**Ref.**
Working in conjunction with IHS, identify and pursue areas of mutual interest and benefit.	**FY 03:** Clarify/quantify CDC resources targeting AI/AN populations. **FY 02:** Create a Senior Policy Group comprising Executive-level staff from CDC and IHS who will identify areas for collaboration.	**FY 03:** **FY 02:**	Page 213

II-D.2c Equal Employment Opportunity

Performance Summary

The Office of Equal Employment Opportunity (OEEO) is responsible for advising management on EEO program requirements and providing technical advice to agency employees, union officials, employee organizations, and applicants on the EEO program and complaint process: conducting a continuing

campaign to eradicate every form of prejudice or discrimination; managing an accountability system for achieving the agency's EEO objectives of a diverse workforce; and establishing a system for periodically evaluating the effectiveness of the agency's overall equal employment opportunity effort. Our civil rights responsibilities require that we develop and issue internal policy guidance on the implementation of nondiscrimination statues in the agency programs and/or activities.

The OEEO will provide a developmental opportunity for up to 4 students from Hispanic Serving Institutions, Tribal Colleges and Universities, and Historically Black Colleges and Universities beginning FY 2002, if budget constraints will allow. This is in keeping with our performance goal to enhance minority recruitment and a commitment to the process.

We will discontinue Performance Goal: To Provide a tool to measure CIO performance and management accountability under the EEO Program. CDC's Human Resource Management Office (HRMO) has automated data on workforce statistics and provided management this information through the intranet.

There will be no reduction in FY 2003 as it relates to a reduction in the inventory of complaints. Because of the number of variables (employment freezes relating to hiring and promotion, budgetary constraints, possible reorganizations and outsourcing), it is not possible to predict the impact of these actions on the number of complaints which may be filed and consequently resolved through settlement or Alternative Dispute Resolution.

Goal-by-Goal Presentation of Performance

Performance Goal: Enhance agency recruitment efforts to ensure the availability of applicant pools that include qualified minorities, women, and persons with disabilities.

Performance Measure	Target	Actual Performance	Ref.
Increase our participation in the Agency's recruitment activities with HBCUs, HACUs, Tribal Colleges & Universities, Persons with Disabilities and build and expand other partnerships.	**FY 03:** Increase participation by 30% **FY 02:** Increase participation by 30% **FY 01:** Increase participation by 20%	**FY 03:** **FY 02:** **FY 01:** 7 sessions **FY 00:** 6 sessions	Page 213

Performance Goal: Provide continuing EEO and diversity training to managers, supervisors, and employees.

Performance Measure	Target	Actual Performance	Ref.

Increase the opportunities for EEO Training for CDC/ATSDR workforce.	**FY 03:** Increase training by 5% **FY 02:** Increase training by 20% **FY 01:** Increase training by 20%	**FY 03:** **FY 02:** **FY 01:** 81 Sessions **FY 00:** 16 Sessions	Page 213

Performance Goal: Through early intervention and Alternative Dispute Resolution (ADR), reduce the number of EEO complaints.

Performance Measure	Target	Actual Performance	Ref.
Reduce the number of complaints in the inventory.	**FY 03:** No reduction **FY 02:** 10% Reduction of complaints **FY 01:** 10% Reduction in complaints	**FY 03:** **FY 02**: **FY 01:** 51 as of 8/7/01 **FY 00:** 75	Page 213

Performance Goal: To provide a tool to measure CIO performance and management accountability under the EEO Program.

Performance Measures	Targets	Actual Performance	Ref.
Develop and disseminate an EEO report to each CIO quarterly.	**FY 01:** Quarterly dissemination	**FY 01:** Prepared 1 report, distributed by HRMO	Page 213

II-D.2d Program Planning and Evaluation

The Office of Program Planning and Evaluation analyzes agency needs by guiding policymaking, planning, and evaluation, and establishes priorities, programs, and partnerships to address internal and external public health needs. OPPE coordinates annual planning, legislative proposals, program reauthorizations, and budget initiatives for the agency and serves as the liaison between CDC's centers, institutes, and offices and the Department on legislation and regulations affecting CDC.

Performance Summary

In 2001, OPPE met and/or exceeded all of its targets. A variety of training sessions were provided for GPRA staff, including a session co-facilitated by Departmental and OMB staff. This workshop focused on our stakeholders' insights and perceived areas for improvement of CDC's Performance Plan. One-on-one training sessions were also conducted for each of the CIOs, with particular emphasis on CIO-specific measurement issues. OMB clearance materials were updated and posted on the OPPE intranet site, and intensive training efforts were also carried out with OMB clearance contacts in each of the CIOs. OPPE review time for OMB clearance packages has averaged 10 working days, and the number of outstanding Reports to Congress has decreased. In addition, a major priority of OPPE in FY 2001 has been to increase evaluation capacity across CDC. OPPE staff provided 45 1-2 day facilitations on logic modeling, evaluation and strategic planning technical assistance to 11 of 13 CIOs over a 12 month period. Training courses on evaluation and logic modeling were provided for 150 CDC staff through CDC Corporate University courses and new courses have been developed in logic modeling and strategic planning.

Goal-by-Goal Presentation of Performance

Performance Goal: Provide leadership and coordination for support activities across CDC.

Performance Measure	Target	Actual Performance	Ref.
Develop and provide technical assistance and consultation for CDC staff.	**FY 02:** Conduct 2 training sessions for GPRA staff; disseminate training materials on OMB clearance via website; provide technical assistance to all recipients of 1% evaluation funds. **FY 01:** Conduct 2 training sessions for GPRA staff; disseminate training materials on OMB clearance via website; provide technical assistance to all recipients of 1% evaluation funds.	**FY 02:** **FY 01:** Achieved. **FY 99:** 1 training session; clearance materials/ guidance for statements of work available electronically by request.	Page 213
Coordinate the development and timely submission of correspondence, reports, and OMB clearance packages.	**FY 02:** Meet 90% of suspense deadlines for controlled correspondence; reduce review time for clearance packages to 10 days. **FY 01:** Reduce outstanding Reports to Congress by 10%; reduce review time for clearance packages to 10 days.	**FY 02:** **FY 01:** Achieved. **FY 99:** 15-day review time for clearance packages; inventory of outstanding Reports to Congress.	Page 213

Enhance the capacity of CDC policy staff to perform their official duties through training, team building, and sharing best practices, and promote better collaboration among policy teams.	**FY 02:** Conduct a major conference that provides training for and enhances collaboration among policy staff; develop Intranet website providing information on OPPE's roles and responsibilities in relation to CDC policy staff.	**FY 02:**	Page 213

Performance Goal: Improve CDC's Performance Plan

Performance Measure	Target	Actual Performance	Ref.
Develop and implement a formal process for evaluating performance goals and measures	**FY 03:** Implement and refine process and identify additional areas for improvement within the Performance Plan **FY 02:** Begin a cross-CIO review process utilizing specific review criteria to enhance performance stories.	**FY 03:** **FY 02:**	Page 213
Develop and implement a process to ensure narrative goals and measures are more effectively linked to CDC's budget	**FY 03:** Convene meeting at the beginning, and end, of the budget cycle with CDC budget and planning groups and to develop clear, concise, and consistent program messages in budget and Performance Plan documents. **FY 02:** Begin disseminating to CIOs joint instructions for budget and Performance Plan.	**FY 03:** **FY 02:**	Page 213

Providing Credible Information to Enhance Health Decisions

II-D.2e Health Communication

The American people require up-to-date, credible information about health and safety in order to make rational decisions. To help support this crucial decision-making, CDC has continued to increase and apply the disciplines of crisis communication, issues management, media relations, health promotion, entertainment-education, social marketing, risk communication, health education, informatics, and health communication. CDC applies the science that underpins these disciplines to develop and disseminate credible and practical health information to meet the diverse needs of its many clients including policymakers, public health professionals, health care providers, and the public.

CDC's Office of Communication is responsible for leading strategic communication efforts throughout the agency by integrating both the science and practice of many communication disciplines (e.g., media relations, health communication, risk communication, visual information, etc.) The Office of Communication has two major divisions, each with unique technical expertise: the Division of Health Communication and the Division of Media Relations.

The Division of Health Communication provides guidance and resources to enhance the quality and effectiveness of CDC's health behavior interventions. The division has developed a CD-ROM based tool, called CDCynergy, which guides program staff step-by-step through the process of planning, implementing, and evaluating a health communication program. The Division helps CDC's Centers, Institutes, and Offices (CIOs) achieve their objectives in reducing morbidity and mortality where individual or collective behaviors contribute to risk, and "communication" is perceived as a means to influence behaviors. The Division of Health Communication works in tandem with the Division of Media Relations to help CIOs also influence the policies that enable or create obstacles for individual change, primarily by providing accurate and timely release of scientific information to numerous news media outlets. The partnership between these two divisions is extremely important when CDC needs to communicate quickly and accurately about complex health topics as evidenced during the recent anthrax investigations. Poor communication and/or untimely communication can harm the public; CDC is committed to responding rapidly, accurately, and ethically to meet the information needs of its many constituents: policymakers, public health professionals, health care providers, the news media, and the public.

Goal-by-Goal Presentation of Performance

Performance Goal: To practice/implement strategic communication on behalf of CDC.

Performance Measures	Targets	Actual Performance	Ref.
Develop strategic plans for integrated communication at each CIO and across CIOs that is aligned with DHHS priorities.	**FY 03:** All CIO's will have an integrated communication plan and OD/OC will have a CDC-wide plan	**FY 03:**	Page 213
Ensure that CDC campaign and news materials are made broadly available.	**FY 03:** Mechanism established for sharing campaign and news materials via the Internet.	**FY 03:**	Page 213

Performance Goal: To increase awareness of public health issues.

Performance Measures	Targets	Actual Performance	Ref.
Build strong partnerships with national, international public health agencies, non-governmental agencies, and relevant private sector partners.	**FY 02:** Establish at least two *new* partnerships. **FY 01:** Maintained one strategic partnership (NPHIC).	**FY 02:** **FY 01:** Achieved.	Page 213
Develop a multi-tiered strategy for working with the private sector on communication initiatives.	**FY 02:** Establish guidance document for facilitating public-private sector partnerships.	**FY 02:**	Page 213
Develop a strategy for working with the news media on communicating about biological and chemical terrorist events.	**FY 02:** Establish a pro-active mechanism to brief journalists about BT issues.	**FY 02:**	Page 213

Performance Goal: To effectively communicate CDC's scientific information to multiple audiences by increasing our understanding of each audience.

Performance Measures	Targets	Actual Performance	Ref.
Develop policy that ensures that all communication products for non-scientific audiences incorporate audience input before materials are mass-produced and disseminated.	**FY 04:** Implement policy. **FY 03:** Establish policy.	**FY 04:** **FY 03:**	Page 213
Develop an expedited OMB clearance process that makes audience research/input more timely and do-able.	**FY 03:** OMB package approved. **FY 02:** OMB package submitted.	**FY 03:** **FY 02:**	Page 213

Expand capacity to obtain accurate and timely audience information which can be made available to all CDC programs and public health partners.	**FY 05:** Develop an Internet-based mechanism for sharing audience information with public health partners. **FY 04:** Develop a database that allows for efficient location of audience information for use by CDC programs. **FY 03:** Establish a mechanism for systematically collecting and organizing audience information for use by CDC program staff via the Intranet.	**FY 05:** **FY 04:** **FY 03:**	Page 213

Performance Goal: To strengthen the science and practice of health, risk, and crisis communication through *research*.

Performance Measures	Targets	Actual Performance	Ref.

Increase the amount of funds allocated for communication research and evaluation among CDC's programs and CDC's public health partners (through cooperative agreements, fellowships, or competitive grants processes).	Among CDC programs: **FY 02:** 25 programs will allocate a total of $4,500,000. **FY 01:** 22 programs allocated a total of $4,365,000. Among CDC's partners: **FY 02:** Fund 2 external research projects totaling $55,000.	**FY 02:** **FY 01:** **FY 00:** 24 programs allocated a total of $4,095,000. **FY 99:** 12 programs allocated a total of $1,905,000. **FY 02:** **FY 01:** None funded	Page 213
Conduct research that advances the science and practice of risk and crisis communication in a Bioterrorism response.	**FY 02:** Conduct formative research.	**FY 02:**	Page 213
Conduct research that advances the science of health communication and clearly indicates the contribution communication makes in health behavior change interventions.	**FY 03:** To have one successful behavior change communication program as measured by positive behavioral changes at a national level.	**FY 03:** **FY 02:** Formative research is underway.	Page 213
Increase the number of publications authored by CDC communication professionals.	**FY 02:** To collect baseline data so that goals can be established.	**FY 02:**	Page 213

Performance Goal: To strengthen the science and practice of health, risk, and crisis communication through *building capacity.*			
Performance Measures	**Targets**	**Actual Performance**	**Ref.**
Enhance the capacity of CDC communication staff to perform their official duties through training, team building, sharing best practices, and promoting better collaboration among communication offices.	**FY 03:** Conduct a major conference that provides training for staff that also enhances collaboration among communication staff. Also, develop an Intranet website..	**FY 03:** **FY 02:** Trained 52 CDC staff in 5 courses. **FY 01:** Trained 133 CDC staff in 8 courses.	Page 213
Enhance the capacity of CDC's public health partners to rapidly and accurately communicate critical information about biological and chemical terrorist events.	**FY 03:** Develop CD-ROM based job-aid to respond effectively. **FY 02:** Conduct risk communication training.	**FY 03:** **FY 02:**	Page 213
Enhance the capacity of CDC's public health partners to do effective communication planning, implementation, and evaluation.	**FY 03:** Develop a web-based version of CDCynergy **FY 02:** Work with at least 2 public health partners to disseminate CDCynergy.	**FY 03:** **FY 02:** **FY 01:** Completed development of new version of CDCynergy*.	Page 213
Recruit, train, and retain health communication interns, fellows, and professionals.	**FY 02:** Recruit between 4-6 health communication interns.	**FY 02:** **FY 01:** Established the health communication internship program.	Page 213

** CDCynergy is a CD-ROM based tool developed by the Health Communication Division. It is used by communication professionals to systematically plan, implement, and evaluate a health communication program.*

II-D.3 Program Support

Problem, Strategies, Activities, and Resources
Several management activities are important for ensuring the integrity of CDC processes and resources. In addition, high-priority management activities, including CDC's implementation plans for the President's Management Plan and restructuring efforts are addressed in this section. For the purpose of accountability, CDC has included performance plans and reports for these activities.

CDC's work in this area is consistent with the goals of the President's Management Plan related to information technology and expansion of electronic government. In addition to assisting in the development of the five-year Enterprise Information Technology Plan mandated by the Secretary, CDC is actively contributing to its achievement through resource commitments, program management, and technical expertise. CDC has also ensured that IT-related goals delineated in our Restructuring and Delayering Plan strongly support the "one HHS" theme embodied in the development of an enterprise architecture business model. CDC will achieve the 5% goal in FY 2002 for competitive sourcing under the FAIR Act and A-76.

CDC awarded approximately $3 billion in extramural funds in FY 2001 through grants, roughly 70% of which went to states. CDC will actively consolidate and streamline its grants programs particularly in the area of chronic diseases in FY 2002.

CDC has a multifaceted grants management improvement project underway, one aspect of which is to implement an E-Grants process wherein announcements, applications, and processing of grants will all be conducted electronically. This initiative is designed to provide states with a significant increase in flexibility and to reduce the burden of grants management. Specific CDC activities which reinforce the Administration's emphasis on E-Government and citizen-centered services include:

- Reengineering the CDC web site to serve as a public health portal for information
- Meeting the Government Paperwork Elimination Act goals and deadlines
- Conducting E-Commerce business through E-Procurement and E-Grants.

Presentation of Performance

II.D.3a Information Access, Security, and Reliability

CDC is an information-intensive organization. CDC's mission largely revolves around the collection, analysis, and dissemination of data and information on health events, vital statistics, and other health determinants. Access to authorized data and information assets is vital to personal and public health decision making, research, policy development, and program management. Protecting the confidentiality, privacy, and integrity of sensitive data and information is of utmost importance to CDC, the agency's data-provider partners, and the persons and organizations that entrust public health agencies with these data. Ensuring the reliable and continuous operation of critical systems is also vital as programs and business processes are dependent on information technology and systems.

Performance Summary
Information access: CDC's success in developing and providing useful data and information for a wide range of uses such as personal health choices, medical practice, public policy, health research, etc., can be measured in part by tracking the number of people who seek and access such information. CDC has two primary methods for providing information related to CDC's many public health programs to the public, health professionals, and others. These are the CDC Voice/FAX Information Service (VIS) and CDC's

website. This performance measure is based on the number of people who request CDC's information rather than a measure of documents, pages, website hits, or other possible measures.

CDC's VIS provides callers with immediate access to automated prerecorded voice information on public health topics over the phone or automated faxed information, data, and graphics to any fax machine upon request at any time. While the web has become extremely popular for accessing information, the CDC VIS remains an important method to ensure access by persons without Internet access or convenient access at the time of need. The CDC VIS is toll-free, multilingual, and serves persons with hearing disabilities. CDC's website is one of the most popular government websites of all types and is especially important in providing trusted health information to consumers and health professionals.

Information security: CDC has a comprehensive security program for establishing and operating a secure technology and information environment through controls, systems, processes, expertise, awareness, and other means. While the risks and vulnerabilities from the complexity of computer software and world-wide exposure to the Internet continue to increase, CDC has concomitantly increased its focus on prevention, detection, and response capabilities.

Information systems reliability: Information systems that are critical to the CDC mission and the underlying information technology infrastructure that supports those systems need to be reliable, available, and operational round-the-clock every day. This is especially important given the global access to CDC's information products as well as the global locations of CDC staff. Consequently, critical systems and infrastructure must be engineered, managed, and monitored such that any unscheduled loss of service is minimized.

Goal-by-Goal Presentation of Performance

Performance Goal: Provide a variety of standardized and integrated means for access to CDC information resources by health practitioners and the public.

Performance Measure	Target	Actual Performance
Enhance CDC's information content and technology infrastructure to increase public access to CDC information resources through the CDC website and CDC's Voice/Fax Information Service (VIS).	**FY 03:** 15% increase **FY 02:** 20% increase **FY 01:** 25% increase **FY 00:** 25% increase **FY 99:** 25% increase	**FY 03:** **FY 02:** **FY 01:** 3.6M website visitors/month; 54,000 VIS calls/month (combined 29% increase) **FY 00:** 2.8M website visitors/month; 46,000 VIS calls/month (combined 47% increase) **FY 99:** 1.9M website visitors/month; 51K VIS calls/month (combined 171% increase) **FY 98:** 0.7M website visitors/month; 45K VIS calls/month

Performance Goal: Enhance CDC's information security program.

Performance Measure	Target	Actual Performance
Protect CDC's information system from serious losses, alterations, or releases of data or information that are critical, highly sensitive, or covered by privacy or confidentiality requirements.	**FY 03:** No serious losses, alterations, or releases **FY 02:** No serious losses, alterations, or releases **FY 01:** No serious losses, alterations, or releases **FY 00:** No serious losses, alterations, or releases **FY 99:** No serious losses, alterations, or releases	**FY 03:** **FY 02:** **FY 01:** No serious losses, alterations, or releases, one limited and contained system compromise. Major increase in robust authentication use through digital certificates (>3,000) and one-time passcode tokens (>7,000). **FY 00:** No serious losses, alterations, or releases; infrastructure enhanced to address computer viruses **FY 99:** No serious losses, alterations, or releases; security measures (e.g., network and host-based intrusion detection systems) added **FY 98**: No serious losses, alterations, or releases; security measures added to address Internet connectivity.

Performance Goal: Ensure that critical information systems and infrastructure operate reliably.

Performance Measure	Target	Actual Performance
Ensure the reliable and continuous operation of CDC's critical information systems and information technology infrastructure (data center, wide area network, e-mail, Internet/web services, and telecommunications).	**FY 03:** 99.5% continuous availability **FY 02:** 99.5% continuous availability **FY 01:** 99% continuous availability **FY 00:** 98% continuous availability	**FY 03:** **FY 02:** **FY 01:** 99.94% continuous availability (89% reduction in service unavailability) **FY 00:** 99.46% continuous availability

II.D.3b Financial Management Processes and Internal Controls

The Chief Financial Officers' Act requires federal agencies to have audits of their financial statements. An

audit consists of a review of the agency's financial statements and underlying assessment and accounting principles. To receive an "unqualified" opinion from an auditor, the agency's financial statements must be determined to be presented fairly in accordance with the hierarchy of accounting principles and standards approved by the Federal Accounting Standards Advisory Board.

Performance Summary

CDC's first financial statement audit was performed in FY 1997, and CDC received a qualified opinion. Since then, CDC has received three consecutive unqualified opinions for FY 1998, FY 1999, and FY 2000. Although CDC is pleased with the success of the financial audits, CDC is devoting significant resources to upgrading the accounting system, improving management controls over budget execution, and increasing training opportunities for financial staff members.

Goal-by-Goal Presentation of Performance

Performance Goal:	**Ensure the proper preparation and presentation of CDC's financial statements.**

Performance Measure	**Target**	**Actual Performance**	**Ref.**
Achieve 100% audited financial statements with no qualifications.	**FY 03:** 100% with no qualifications **FY 02:** 100% with no qualifications **FY 01:** 100% with no qualifications **FY 00:** 100% with no qualifications	**FY 03:** **FY 02:** **FY 01:** 01/2002 **FY 00:** Achieved **FY 99:** 100% with no qualifications **FY 98:** Two items (validation of beginning balances; grant accrual process) prevented CDC from receiving an unqualified opinion.	Page 233

Verification/Validation of Performance Measures: Audited financial statements are published annually in the Chief Financial Officers Report for CDC and ATSDR. The measure and goal will be validated and verified by the published report of the independent audit firm, Ernst & Young.

II.D.3c Recruitment Timeliness

CDC's workforce is a critical strength of the agency. A top priority is the recruitment of highly qualified staff who represent the public.

Performance Summary
CDC did not meet the goal of reducing time for referral of candidates. Although the time to classify positions increased only slightly from 13.9 days in FY 00 to 14.1 days in FY 01, the time to refer candidates increased from 59.3 days to 64.3 days during this same time period. Classification and referral of candidates are integrally linked when filling any position. The increase in time to refer candidates occurred because of the added complexity of the hiring controls that were placed on CDC in January 2001. These hiring controls affected a number of job series across CDC. Due to the uncertainty of when the hiring controls may be lifted, many selecting officials preferred not to receive certificates (which expire in 30 days) for positions they may not be authorized to fill for many months. Frequently, they opted to receive certificates only after the hiring controls for those specific occupational series were lifted. This practice resulted in the delays reflected in the data.

Goal-by-Goal Presentation of Performance

Performance Goal: Decrease the time needed to classify positions and refer candidates for vacancies.

Performance Measure	Target	Actual Performance	Ref.
Decrease the time needed to refer candidates to fill positions.	**FY 03:** < 55 days to refer **FY 02**: < 60 days to refer **FY 01:** < 60 days to refer **FY 00:** 25% time reduction	**FY 03:** **FY 02:** **FY 01:** 14.1 days to classify; 64.3 days to refer **FY 00:** Achieved/13.9 days to classify; 59.3 days to refer **FY 98:** 15 days to classify; 80 days to refer	Page 237

Verification/Validation of Performance Measures: Data are collected through the Staffing Tracking and Reporting System (STARS) in the Human Resources Management Office, CDC. This system is monitored monthly for system errors and data irregularities.

II.D.3d Workforce Planning: Restructuring and Delayering Initiatives

The CDC Restructuring and Delayering Plan delineated specific goals and time lines for achievement of those goals. Additional detail about the plan is provided within the plan, submitted in tandem with this budget. In brief, the goals of the CDC Restructuring and Delayering Plan are to:

improve supervisory ratio
increase span of control/organizational control
reduce the number of organizational units
increase delegations of authority
eliminate duplicative administrative functions.
eliminate 8 sections in the Procurement and Grants Office and balance the workload
outsource the Vessel Sanitation Program
outsource the Tuskegee Medical Voucher Program

consolidate or outsource specialized travel
re-engineer the CDC Web site as a public health portal to support citizen-centered government
re-engineer/restructure to support the centralization of HR and Financial Systems
deploy the Integrated Contracts Expert (ICE)
pilot implementation of NASA's Electronic Handbook (EBB) E-Grants System

Goal-by-Goal Presentation of Performance

Performance Goal: Enhance workforce planning efforts at CDC.

Performance Measure	Targets	Actual Performance	Ref.
Improvement of supervisory ratio	**FY 03:** Increase supervisory ratio to 1:8. **FY 02:** Increase supervisory ratio to 1:7.	**FY 03:** **FY 02:** **FY 01:** The current supervisory ratio is 1:5.5 (baseline)	Page 237
Increase in the span of control and organizational size.	**FY 03:** Increase the minimum number of FTEs required to 11 FTEs per branch and 6 FTEs per section. **FY 02:** Increase the minimum number of FTEs required to 10 FTEs per branch and 5 FTEs per section.	**FY 03:** **FY 02:** **FY 01:** The current CDC guidance requires a minimum of 9 FTEs per branch and a minimum of 5 FTEs per section. **(**Baseline)	Page 237

Reduction in the number of organizational units.	**FY 03:** Reduce the number of organizational units to 499. **FY 02:** Reduce the number of organizational units to 527.	**FY 03:** **FY 02:** **FY 01:** There are currently 555 organizational units in CDC/ATSDR. (Baseline)	Page 237

II.D.3e SES Performance Contracts

As part of the President's Management Agenda, agencies have been asked to develop and implement Senior Executive Series (SES) Performance Contract for all SES members. SES Performance Contracts will measure specific program outputs and focus on results. CDC/ATSDR plans to use the SES Performance Contracts for appraisals, pay increase decisions, and to enhance managerial accountability.

Goal-by-Goal Presentation of Performance

Performance Goal: Development and implementation of SES Performance Contracts.

Performance Measure	Targets	Actual Performance	Ref.
Development and implementation of SES Performance Contracts.	**FY 03:** SES Performance Contracts will continue to be used for appraisal and pay increase decisions. Changes will be made to contracts as needed to better enhance accountability. **FY 02:** Develop and implement SES Performance Contracts for 26 SES members.	**FY 03:** **FY 02:**	Page 237

II.D.3f Recruitment and Retention Strategies

CDC/ATSDR utilizes several recruitment strategies to attain a high-quality, diverse workforce. The Human Resources Management Office, Outreach and Marketing Branch, in coordination with each Center, Institute, or Office (CIO) prepares a recruitment plan. This plan addresses the gains, losses, predicted retirements, and racial breakdown of the workforce. It allows planning for new initiatives and projected retirements. CDC/ATSDR is also placing more emphasis on utilizing non-competitive authorities in the recruitment process. Some of these include the Persons with Disabilities program, Veteran Readjustment Program, Outstanding Scholar, Bilingual/Bicultural Program, Presidential Management Intern (PMI) Program, Student Career Experience Program, Hispanic Association of Colleges and Universities (HACU) National Internship Program, other student programs and the various hiring flexibilities offered by Title 42.

Goal-by-Goal Presentation of Performance

Performance Goal: Increase Hispanic/Latino representation at CDC			
Performance Measure	**Targets**	**Actual Performance**	**Ref.**
Increase percentage of Hispanic/Latino representation in the workforce.	**FY 03:** 7.07% **FY 02:** 5.07%	**FY 03:** **FY 02:** **FY 01:** 3.07% (CY 01)	Page 237

CDC/ATSDR also utilizes current human resource compensation authorities to assist in recruitment and retention, such as "above the minimum" appointments, recruitment bonuses, and retention allowances. Current law and regulations permit the appointment of a candidate at a rate above the minimum rate of the appropriate grade because of the candidate's superior qualifications or a special need of the government for the candidate's services. Recruitment bonuses may be used to pay a newly appointed employee up to 25% of the annual basic rate of pay when there is difficulty in filling the position. When the unusually high or unique qualifications of an employee or a special need of the agency for the employee's services makes it essential to retain an employee and the agency determines that the employee would be likely to leave the Federal service, an agency may authorize a retention allowance of up to 25% of the employee's basic pay.

Goal-by-Goal Presentation of Performance

Performance Goal: Recruitment and retention of a highly qualified workforce.			
Performance Measure	**Targets**	**Actual Performance**	**Ref.**
Use of above the minimum appointments to attract superior candidates.	**FY 03:** 87 **FY 02:** 81	**FY 03:** **FY 02:** **FY 01:** 78	Page 237
Use of recruitment bonuses for hard-to-fill positions.	**FY 03:** 32 **FY 02:** 29	**FY 03:** **FY 02:** **FY 01:** 25	Page 237
Use of retention allowances to retain essential employees.	**FY 03:** 12 **FY 02:** 9	**FY 03:** **FY 02:** **FY 01:** 9	Page 237

Appendix A
Approach to Performance Measurement

CDC and partners are concerned with a spectrum of health issues, including infectious diseases, chronic conditions, adverse reproductive outcomes, environmentally related conditions, occupationally related health events, and injuries. This array of health conditions and outcomes requires a variety of intervention strategies for populations, in addition to clinical preventive services for individuals. CDC engages in extensive dialogue with partners, communities, and the public to identify and implement intervention strategies that address the specific needs of diverse populations. Examples include the provision of prophylactic measures (e.g., vaccination, post-exposure prophylaxis), educational services (e.g., dissemination of public health messages, counseling), inspection of food establishments, and control of disease outbreaks. For these activities, the rational development of public health policy depends on public health information.

A variety of CDC data systems provide the science base for identifying health problems, designing interventions, and monitoring program performance (See Appendix B). These data systems face considerable challenges in addressing each of these three areas. For the most part, data systems that were designed to support scientific objectives are now becoming important for the monitoring of performance. Challenges in obtaining data to monitor performance under GPRA include the following:

1. As GPRA measures are refined over time, data systems to produce data with a frequency that corresponds to the periods during which performance is measured.
2. As health system changes, historical data series may not continue to produce needed data. For example, the move toward managed care may make medical information increasingly proprietary and impede access to data for research and statistical purposes. Similarly, changes in relationships among healthcare providers and laboratories may make public health surveillance based on case reports more difficult. At the same time, these changes present opportunities for new data-system partnerships.
3. Data systems will need to produce information of sufficient quality and precision to detect relatively small changes in performance indicators. This may require investments in larger sample sizes for surveys and new technologies for improving data quality. Continuing research will be required to establish the data systems and underlying evaluation approaches to assess causes (program interventions) and effects (outcomes) for performance monitoring.
4. Many national data systems are the source of GPRA measures for CDC and other health programs. These systems must be assessed and upgraded to remain current with the public health infrastructure. Resources to ensure the maintenance and strengthening of these data systems are included in the FY2002 CDC budget request and need to be continued.
5. Because many CDC and DHHS programs are implemented at state and local levels, it will be increasingly important to obtain reliable, systematic data at these levels for monitoring of program implementation, performance, and outcomes.

Ascertaining what information is needed and how to collect it is a complex issue. Information for action must be useful to public health programs at local, state, and national levels. CDC and partners use at least seven categories of information to understand and address disease, injury, and disability using the public health model. These categories of information include:

- Reports of health events affecting individuals
- Vital statistics on the entire population
- Information on the health status, risk behaviors, and experiences of populations
- Information on potential exposures to environmental agents
- Information on public health programs
- Information useful to public health but obtained by organizations not directly involved in public

health practice

- Information on the healthcare system and its impact on health

Reports of health events: Reports of cases of diseases of public health importance form the basis for many CDC programs. The National Notifiable Disease Surveillance System (NNDSS) seeks reports on all cases of >40 conditions in the United States. To minimize the burden placed on those who report the data, CDC limits the amount of information collected for each case. NNDSS data are used to monitor disease trends, evaluate public health programs, and identify unusual occurrences of conditions that may require further epidemiologic investigation at the local level.

For some public health purposes, effective action requires additional details on each case. Supplemental data collection systems have therefore been developed for some of the diseases reported to NNDSS. These systems may be less comprehensive in terms of populations represented but provide more detailed information on characteristics of the occurrence of disease. For example, cases of hepatitis are reported weekly to NNDSS for publication in the *Morbidity and Mortality Weekly Report (MMWR)*. In addition, the Viral Hepatitis Surveillance Project collects data on risk factors for different types of viral hepatitis in selected geographic areas. These data have been used to document the importance of behaviors associated with sexual activity and drug use as risk factors for transmitting hepatitis B virus and to target education and vaccination programs.

Control of some conditions requires more detailed information than can be obtained feasiblely from a large group of clinicians or institutions. Networks of selected healthcare providers have therefore been organized to meet these targeted information needs. For example, CDC's Sentinel Event Notification System for Occupational Risks (SENSOR) targets groups of healthcare providers as a component of a comprehensive approach for obtaining data on which to base efforts to prevent workplace-related morbidity. The National Nosocomial Infections Surveillance System (NNIS) receives reports from a selected group of hospitals on the incidence and characteristics of hospital-acquired infections. Data from this system have been instrumental in alerting health authorities to the emergence of antibiotic-resistant strains of bacteria, which in turn has led to the development of recommendations for the appropriate use of antibiotics.

Vital statistics: Vital records (e.g., births, deaths) are the primary source of some of the most fundamental public health information. Data on teen births, access to prenatal care, maternal risk factors, infant mortality, causes of death, and life expectancy are among the staples of public health information provided by vital statistics. Vital statistics are often the most complete and continuous information available to public health officials at the national, state, and local levels; the timely availability of these data is critically important.

In the United States, the legal authority for vital registration rests with the states and territories. CDC's National Center for Health Statistics (NCHS) produces national vital statistics by collecting data from the vital records of the states. NCHS works with the states to ensure a uniform national data base through the promotion of standard data collection forms and data preparation and processing procedures and also provides partial financial support for state systems.

Health status, risk factors, and experiences of populations: Since the determinants of many health problems are behavioral, environmental, or genetic, health agencies need information that is not readily available from medical records on the prevalence of various types of behavior and on access to care. Thus, regularly conducted surveys of the general population are needed for public health. These surveys range from large-scale assessments of the general population to assessments targeted at high-risk (i.e., particularly vulnerable) populations. This need is particularly acute at the state and local levels. Surveys provide information on: 1) baseline health status, 2) morbidity, 3) prevalence of behavioral risk factors, 4) use of healthcare services and identification of underserved populations, and 5) potential for exposure to toxic agents. Information generated from the surveys is used in developing prevention and control programs and in ensuring adequate delivery of health services.

Potential exposure to environmental agents: Information on exposures to environmental agents can be

used in evaluating the risks to health from noninfectious diseases, injuries, and certain infectious diseases. For example, measurement of airborne particulates is useful in assessing risks related to pulmonary disorders such as asthma and lung cancer. Information on vectors that may carry agents of infectious disease is important in evaluating the risk for acquiring such infections.

Program information: Data needed to operate public health programs include the number of clients served and the costs of services rendered. These data are useful to public health officials in assessing the effectiveness of public health programs, comparing programs, documenting the need for continuing a particular program, and maintaining accountability for tax dollars spent.

Information from other organizations: Data useful for public health are currently or potentially available from organizations whose functions may not be related to those of CDC and state and local health departments. Data from the Bureau of the Census, for example, are needed for both the reliable computation of rates and the proper adjustment of rates for comparison over time or in different geographic areas. The Environmental Protection Agency (EPA) compiles environmental air-monitoring data to assess compliance with standards for air pollutants established by the Clean Air Act. Data collected through this system are used by public health officials for hazard alerts when pollutants exceed federal standards and in studies of the effects of air pollutants on morbidity associated with respiratory diseases. The Occupational Safety and Health Administration (OSHA) and the Bureau of Labor Statistics compile data on the occurrence of work-related injuries and illnesses and exposure to hazards in the workplace, which can be used for surveillance and research. The Department of Transportation operates the Fatal Accident Reporting System, used in public health to assess risk factors for motor-vehicle-related injuries and deaths. Crime statistics gathered by the Federal Bureau of Investigation (FBI) assist in evaluating the public health impact of intentional injuries, and the Consumer Product Safety Commission collects data on injuries related to consumer products.

Information on the healthcare system: Information is also needed on the healthcare system and the health impact resulting from changes in the system. CDC provides a great deal of information to monitor the capacity of the healthcare system, utilization of the system, and access to health insurance and services by the American people. These data include: inventories of healthcare providers; patterns of utilization of health services such as hospitalization rates and uptake of new technologies; and access to health care and barriers (both financial and non-financial) to access.

Appendix B
Data Verification and Validation

Data verification and validation help to ensure that the data CDC uses to assess performance is of sufficient quality. The following data systems have been referenced in the CDC Performance Plan as sources for data used in assessing program implementation and effectiveness.

Behavioral Risk Factor Surveillance System

In 1984, CDC initiated the Behavioral Risk Factor Surveillance System (BRFSS), a unique, state-based surveillance system designed to collect prevalence data on behavioral risks and conditions that affect health. States conduct monthly telephone surveys using a standardized questionnaire to determine the distribution of behavioral risk factors. Survey responses are forwarded to CDC, where the data are aggregated and published at year's end. The BRFSS provides flexible, timely, and ongoing data collection that allows for state-to-state and state-to-nation comparisons. Participating states use data derived from the BRFSS to identify demographic variations in health-related behaviors, target services, address emerging and critical health issues, propose legislation for health initiatives, and measure progress toward state and national health objectives. The system's broad network of information gathering also enables states to evaluate their disease prevention and health promotion efforts.

The BRFSS survey instrument is a three-part questionnaire developed jointly by CDC and the states:

- Core component: The *fixed core* is a standard set of questions asked by all states on demographic characteristics and behaviors that affect health (e.g., tobacco use, alcohol consumption). The *rotating core* includes two sets of questions, each asked in alternating years by all states, that address different topics. The *emerging core* consists of up to five questions that typically focus on late-breaking issues. These questions are added to the core for one year and evaluated at year's end to determine their potential value in future surveys.
- Optional CDC modules: These are sets of questions on specific topics (e.g., smokeless tobacco use, arthritis) that states can opt to include in their questionnaires.
- State-added questions: These questions are developed or acquired by participating states and added to their questionnaires.

Each year, states and CDC agree on the content of the core components and optional modules. For ease of comparability and use, many of the questions are taken from established national surveys. More than 30 validity and reliability studies attest to the quality and validity of data derived from the BRFSS.

Clinical Laboratory Improvements Act of 1988 (CLIA)

The Clinical Laboratory Improvements Act of 1988 (CLIA) is designed to ensure the sound and scientific development of new laboratory methods. CLIA includes standards that must be met before certification of a laboratory method. These standards include an exacting series of internal and external evaluations. Among the internal checks is the development of a detailed procedures manual for each method. Manuals must be verified and approved by senior laboratory personnel who were not directly involved in the development of the method. CLIA also provides detailed specifications for quality control and calibration of laboratory equipment. Further internal control is provided through regular review from a designated Quality Assurance Officer tasked with ensuring that generally accepted international scientific standards are being followed in the development of the method. External evaluation and control are provided through regular on-site inspections by statutorily approved, independent inspection teams. Inspectors review the internal procedures established by the organization to ensure compliance with CLIA standards. To date, CDC has passed all on-site CLIA inspections.

Group B Streptococcal Disease Surveillance, part of the Active Bacterial Core Surveillance (ABCs)
In 1989, CDC initiated active surveillance for group B streptococcal (GBS) disease as part of the Active Bacterial Core Surveillance (ABCs) system, an active surveillance system for several pathogens that cause invasive disease. Surveillance was conducted in five geographic areas that were awarded contracts after a competitive request for proposals. In 1994, active surveillance for GBS disease was included as a core activity of the newly established Emerging Infections Program (EIP) network, a cooperative agreement program that addresses important public health issues related to infectious diseases. In 1999, the EIP network comprised eight states; all participated in ABCs and conducted active surveillance for invasive GBS disease.

Specific objectives for GBS disease surveillance are to: 1) assess the impact of CDC prevention guidelines published in May 1996, 2) determine the extent to which continuing cases of early-onset GBS disease are preventable through current prevention strategies, 3) identify serotypes responsible for disease to guide vaccine development, 4) evaluate progress in the elimination of serotype b disease, 5) detect possible emergence of disease due to other capsular types, and 6) determine possible preventable reservoirs of the bacteria. Data collection focuses on disease occurrence. State surveillance officers contact personnel in all microbiology laboratories that process bacterial cultures from sterile sites to find cases of GBS. Laboratory audits are also conducted semi-annually to detect possible underreporting. Data are transmitted electronically from the EIPs to CDC's ABCs team on a monthly basis. Annual surveillance reports are made available on the Internet at the ABCs website. Laboratory testing of isolates collected as part of surveillance is performed in reference laboratories. Electronic files containing results of laboratory testing of each state's isolates are fed back to that state on a monthly basis.

Routine laboratory audits to ensure the completeness of data collection represent a tremendous strength of the system. Each month, CDC staff review data and transmit potential errors to state personnel for evaluation. Performance standards for active surveillance have been established in each site to permit aggregation of data collected via somewhat different approaches. Detailed instructions for completion of case report forms ensure consistency across sites. State surveillance officers and CDC's ABCs team hold monthly conference calls to address logistical and technical aspects of the system and meet annually to review and update protocols, present special studies, and discuss innovations. Site visits are currently conducted on an as-needed basis, but annual site visits are planned.

Easy access to the data is provided through a website that includes the basic protocol and one-page yearly surveillance reports for each pathogen. Additional information on GBS is available on a website focused on that infection, with many materials targeted to pregnant women or healthcare providers and public health workers concerned with pregnant women.

The principal limitation of GBS disease surveillance through the ABCs is that it is not conducted throughout the United States. Substantial geographic variation in the incidence of invasive GBS disease has been noted, and it is unclear whether states outside ABCs areas have experienced changes in the incidence of GBS disease that are comparable to those noted in the surveillance areas. One way of addressing this limitation is to increase the availability of ABCs methods and tools. Through the website and frequent publications, CDC is attempting to provide other state health departments with information that can help them assess whether the efforts involved in conducting invasive GBS disease surveillance, particularly for early-onset disease in infants <7 days, are feasible in their locales.

Integrated Resources Information System
CDC's Integrated Resources Information System (IRIS) is a collection of applications to assist management in budget, staffing, and project planning, tracking, and reporting. The IRIS budget application provides detailed budget information by CDC component. It allows managers to view budget reports grouped by a variety of options. IRIS staffing is a view-only application designed to allow users to quickly access personnel data reports and project employee salaries for a specified time period. The projects application allows managers to plan, track, and manage various types of projects. This application provides access to project data, resources, and administrative functions. All information for a project must be maintained in the IRIS projects component to ensure consistency and reliability of data.

The IRIS reports application is the data. retrieval, and reporting component.

National Health and Nutrition Examination Survey

The National Health and Nutrition Examination Survey (NHANES) is a program of studies to assess the health and nutritional status of adults and children in the United States. Started in the early 1960s, NHANES is the only national source of objectively measured health data capable of providing accurate estimates of both diagnosed and undiagnosed medical conditions in the population. Findings from the survey are essential for determining rates of major diseases and health conditions and for developing public health policies and prevention interventions. The survey screens 15,000 households per year and selects 3,500. From this sample, 5,000 persons are interviewed and examined annually. Samples are recruited from 15 counties or clusters of counties each year. Samples comprise sufficient numbers to provide reliable estimates by gender and age group for non-Hispanic whites, Mexican Americans, and African Americans.

Data are collected via health interview, physical examination, and clinical and laboratory tests. Interviews are conducted in respondents' homes. Physical examinations are performed in specially designed mobile examination centers that travel to survey locations throughout the country. These centers allow for the collection of data on chronic conditions, nutritional status, medical risk factors, dental health, vision, illicit drug use, blood lead levels, food safety, and other factors that are not possible to assess by use of interviews alone. The medical team consists of a physician, dentist, medical and health technicians, and dietary and health interviewers; trained bilingual staff conduct the household interviews.

An advanced computer system using high-end servers, desktop PCs, and wide-area networking is used to collect and process all NHANES data, nearly eliminating the need for paper forms and manual coding operations. Household interviewers use notebook computers with electronic pens for data collection in the field. Data collected in the mobile examination centers are automatically transmitted via a frame relay network into central databases. Survey information is available to CDC within 24 hours of collection.

Information from NHANES is disseminated through an extensive series of publications and articles in scientific and technical journals. Survey data are also available on CD-ROM and computer diskettes. In previous years, data were available for analysis approximately 31 months after collection. A goal is to improve the timeliness of data dissemination. The computerized system has already substantially improved access to the data from the field.

A comprehensive quality assurance program is instituted before data collection begins, with appropriate training that requires significant practice time for the health examiners and interviewers. Training focuses on hands-on experience rather than didactic methods. During data collection, health examiners and survey staff meet regularly to discuss operations, updates, and problems. Staff are retrained as needed.

NHANES relies on both passive and active monitoring systems for operational and content-related quality control. Passive quality control uses automated computer procedures for detecting data anomalies. After careful analysis, appropriate activities can be undertaken to resolve any data collection issues. Active quality control relies on examiner feedback to identify and evaluate problems and select remedies. NHANES primarily relies on physical measurements from well-established biomedical procedures. In most instances, these measurements represent the gold standard data against which self-reported data might be validated for other subjective data collection modalities. New technologies under consideration are evaluated to determine if they provide valid estimates of the condition, risk factor, or measurement for which they are being used. The evaluation might include a scientific literature review, expert workshop, or validity study.

National Health Interview Survey
The National Health Interview Survey (NHIS) is the principal source of information on the health of the civilian, non-institutionalized population of the United States. The purpose of the NHIS is to monitor the health of the U.S. population through the collection and analysis of data on a broad range of health topics. A strength of the survey is the ability to display these health characteristics by many demographic and socioeconomic factors. NHIS data are used widely throughout DHHS to monitor trends in illness and disability and to track progress toward achieving national health objectives. The data are also used by the public health research community for epidemiologic and policy analysis.

The NHIS is a cross-sectional household interview survey. Sampling and interviewing are continuous throughout each year. Households chosen for interviews are a probability sample representative of the target population. NHIS data are collected annually from approximately 43,000 households including about 106,000 persons. Survey participation is voluntary, and the confidentiality of responses is ensured. The annual response rate is >90% of eligible households in the sample.

The NHIS has three modules:

- The basic module remains largely unchanged from year to year and allows for trend analysis. Data from more than one year can also be pooled to increase the sample size for analytic purposes. The basic module contains a family core, a sample adult core, and a child core through which data are collected on the family unit and from one randomly selected adult and child.
- Periodic modules collect more detailed information on some of the topics included in the basic module.
- Topical modules respond to new data needs as they arise.

Data are collected through a personal household interview conducted by staff employed and trained by the U.S. Bureau of the Census according to procedures delineated by CDC. Data are reviewed and analyzed extensively to ensure their validity and reliability. The survey sample is designed to yield estimates that are representative and that have acceptably small variations. Before the actual survey, cognitive testing is performed by CDC's Questionnaire Design Research laboratory, and pretests are conducted in the field. Once collected, data are carefully edited, checked, and compared to data from earlier surveys and/or independent sources. Staff members calculate descriptive statistics and perform in-depth analyses, which result in feedback on the analytic usefulness of the data.

In the past, it has taken approximately 26 months for the survey data to be released for a given year. Improving the timeliness of NHIS data is a GPRA performance measure.

National Hospital Discharge Survey
The National Hospital Discharge Survey (NHDS), conducted annually since 1965, is a national probability survey designed to meet the need for information on characteristics of inpatients discharged from non-federal, short-stay hospitals in the United States. The NHDS collects data from a sample of approximately 300,000 inpatient records acquired from a national sample of about 500 hospitals. The NHDS provides national and regional estimates of U.S. inpatient hospital utilization by the demographic characteristics of patients discharged, conditions diagnosed, and surgical and non-surgical procedures performed. Approximately 95% of eligible sample hospitals respond to the survey.

The NHDS uses two data collection methods: 1) a manual system in which hospital staff or staff of the U.S. Bureau of the Census abstract data from medical records, and 2) an automated system in which CDC purchases machine-readable medical record data from commercial organizations, state data systems, hospitals, or hospital associations. Approximately 40% of hospitals provide data through the automated system. Data are generally available about 17 months after collection. Timeliness is being addressed as part of the GPRA effort.

An ongoing quality control program helps to ensure the accuracy of NHDS data. NHDS data have been

found to be a good reflection of information found in medical records. What is not known is the degree to which medical record information reflects actual performance.

National Immunization Survey

The Childhood Immunization Initiative (CII) is one of many federal, state, and local programs mounted to raise vaccination levels in young children. The CII established a 1996 goal of increasing vaccination levels for 2-year-old children to at least 90% for measles-mumps-rubella, diphtheria and tetanus toxoids and pertussis vaccine, oral poliovirus vaccine, and *Haemophilus influenzae* type b vaccine. In addition, the CII established a goal for 1996 to increase vaccination levels for 2-year-old children to at least 70% for three or more doses of hepatitis B vaccine.

The National Immunization Survey (NIS) is used to assess progress towards these goals. NIS data provide current, population-based, state and local estimates of vaccination coverage produced by a standard methodology. Quarterly data are collected via household interviews in 50 states, the District of Columbia, and 27 urban areas. Interviews are conducted by telephone with randomly selected households. . Each quarter, CDC calculates estimates of vaccination coverage levels and makes valid comparisons of state efforts to deliver vaccination services. CDC uses NIS data to evaluate progress towards national vaccination goals and to identify states with the highest and lowest immunization rates.

To ensure the accuracy and precision of coverage estimates, immunization data for surveyed children are also collected through a mail survey of their pediatricians, family physicians, and other healthcare providers. The parents and guardians of NIS-eligible children are asked during the telephone interview for consent to contact childrens' medical providers. Types of immunizations, dates of administration, and additional data about facility characteristics are requested from immunization providers identified during the telephone survey of households. NIS estimates of vaccination coverage therefore reflect a comparison of information provided by both immunization providers and households.

National Vital Statistics System

Vital statistics are often the most complete and continuous information available to public health officials at the national, state, and local levels. The National Vital Statistics System is responsible for the nation's official vital statistics. The registration of vital events – births, deaths, marriages, divorces, fetal deaths – is a state function, and vital statistics are provided through state-based registration systems. Since 1902, the federal government has obtained use of the records for statistical purposes through cooperative arrangements with the responsible agencies in each state. Standard forms for the collection of data and model procedures for the uniform registration of events are developed and recommended for state use through cooperative activities of the states and CDC. CDC also provides training and instructional materials to the states as part of ongoing technical assistance.

The purpose of collecting the data is to monitor trends over time through vital life events. Vital records and reports originate with private citizens, such as the family affected by the events, physicians, or funeral directors. By law, birth registration is the direct responsibility of the hospital of birth or the attendant at the birth. In the absence of an attendant, the parents of the child are responsible for registering the birth. Although procedures vary from hospital to hospital, personal information is usually obtained from the mother; medical information may be obtained from the chart or from a worksheet completed by the birth attendant. Reporting requirements vary from state to state; in general, the completed certificate must be filed with the state or local registrar within 10 days of birth. Published data represent all counties and places of 10,000 or more population. Electronic files include data for states, counties, large cities (population of 100,000 or more), and metropolitan statistical areas.

By law, death registration is the direct responsibility of the funeral director or person acting as such. The funeral director obtains the data required, other than the cause of death, from the decedent's family or other informant. The attending physician provides a best medical opinion about the cause and manner of death; later this information is coded by the state or CDC according to uniform codes. Demographic information is also recorded. If no physician was in attendance or if the death was due to other than natural causes, the medical examiner or coroner investigates the death and provides the cause and manner. Reporting requirements for death vary, but in general the completed certificate must be filed

within 3 to 5 days of the death. Published data include all counties and places of 10,000 or more population. Electronic files include data for states, counties, large cities (population of 100,000 or more), and metropolitan statistical areas.

Fetal deaths are also reported through the National Vital Statistics System. All fetal deaths of 20 weeks or more gestation that occur in the United States are recorded. A linked birth/infant death file allows for the analysis of demographic and health characteristics from certificates of live births in combination with causes of death and other data from death certificates of infants who died before their first year of life. The linked file set includes information on all the infants who died in the United States each year, as well as information on all live births. An additional file includes information on death records not linked to birth certificates. The match rate is about 97%-98%. Data are organized by calendar year.

Provisional and final estimates of the number of marriages and divorces are obtained from each state able to provide these figures. Since data are not available from all states, national divorce rates are not produced. Detailed characteristics of marriages and divorces have not been available since 1996.

Vital statistics data are collected using uniform procedures and are accurate and consistent. The data are reported as soon as they are analyzed by CDC staff. Monthly provisional numbers and rates are published in the *National Vital Statistics Reports.* These figures are based on approximate counts of the number of events that occurred in a given state; an estimation procedure is used to convert these occurrence estimates into state-specific estimates of the number and rate of resident events. Preliminary data collected through the National Vital Statistics System are made available to the public approximately 10 months after the end of the collection year. Data are presented for a 12-month period and are published semi-annually in the *National Vital Statistics Reports*. Final data are released about 18 months after collection via *National Vital Statistics Reports*, public use data tapes, CD-ROM, Series Reports, the Internet, and journal articles. Use of electronic products have greatly increased the accessibility of the data and reduced the costs to researchers and other users.

The data collected through the National Vital Statistics System represent all registered vital events in the United States and adequately represent the true rates of events. To more accurately record birth and death information, new birth and death certificates are being designed through a collaborative effort with states, researchers, and other interested parties. The revised certificates reflect changing data needs and emerging public health applications; they will be implemented in 2003.

Sentinel Surveillance for Chronic Hepatitis C

Although a large number of persons in the United States are chronically infected with HCV and many will develop chronic liver disease, the burden of disease has not been well characterized. There is no ongoing surveillance, and few population-based studies have been conducted from which to determine the incidence and prevalence of chronic liver disease and the relative proportion of cases attributable to viral hepatitis and other etiologies. To begin to collect this information, CDC established a pilot surveillance system for chronic liver disease in 1998. The data-collection system has three components:

- A <u>standard interview questionnaire</u>, developed by CDC, is used by all sites to ensure comparability of data and facilitate aggregation of data as appropriate. The instrument includes questions from other established surveillance systems and from previous studies of chronic liver disease. Questions focus on demographic characteristics, clinical information, quality of life issues, and exposures and risk factors.
- A <u>standard form</u> is used to abstract clinical and laboratory information from the patient's clinical chart. This information, collected consistently across sites, includes data needed to determine disease etiology, treatment history, medication use, and other relevant clinical information.
- A <u>serum sample</u> is collected and sent to CDC to identify serologic markers for viral hepatitis.

An important characteristic of the pilot is its comprehensiveness. For the first time, all patients with chronic liver disease in several geographic areas are being identified using a common methodology, with consistent information collected in all sites. The goal is to expand the use of the methodology and data

collection instruments to other sites throughout the United States to develop a comprehensive picture of the occurrence and characteristics of chronic liver disease and to monitor trends.

Although quality assurance and quality control instruments are still under development, several validation studies have been conducted. To assess the completeness of reporting, CDC conducted a survey of primary care practitioners and a review of all first-time liver biopsies. These studies indicated that overall surveillance was comprehensive and was successful in identifying the vast majority of patients in the target population. A review of a randomly selected subset of charts failed to reveal any significant errors in chart abstraction. To assess the overall validity of the study, early preliminary results have been compared to the few existing relevant data. This evaluation, demonstrating that the incidence of newly diagnosed chronic liver disease has increased in recent years, is already contributing to CDC's efforts to more accurately estimate the burden of illness from chronic liver disease.

U.S. Sentinel Physician Surveillance for Influenza

Established in 1982, the U.S. Sentinel Physician Surveillance for Influenza is one of four primary sources of influenza surveillance data. The sentinel physician surveillance system is an active system of surveillance conducted from October through May. Each week during that period, several hundred volunteer physicians around the country report the total number of patients seen and the number of those patients with influenza-like illness by age group.

During the 1997-98 influenza season, 27 states and the District of Columbia elected to participate in a pilot program to upgrade the sentinel physician surveillance system. The pilot merged CDC's national sentinel surveillance system and state-based systems into one integrated system based on common methodologies and standards. During the 1998-99 influenza season, the enhanced sentinel physician surveillance system was expanded to include 40 states and the District of Columbia, and an Internet reporting system was developed. States are responsible for establishing, recruiting, and maintaining state-based sentinel physician groups and for ensuring that data are collected and transmitted regularly to a central data repository at CDC, which is updated daily. CDC is responsible for coordinating the system nationally, maintaining the reporting systems, processing and analyzing the data, and maintaining the Internet site. Efforts to improve the system are continuous.

Sentinel physicians can report data via any of three methods: 1) Internet reporting, 2) touchtone phone reporting, or 3) facsimile transmission with manual entry of data. A program developed by CDC integrates the three sources of data and uploads the data to the Internet site. Data are available daily to each state coordinator. A summary of influenza activity is available to the general public each week.

CDC has undertaken a continuous process to simplify use of the system, clarify case definitions, and offer multiple options for input and access. With daily updates and weekly summaries, the information is extremely timely and pertinent for decision making. CDC epidemiologists analyze the data for outlying information and perform routine checks for coherence. State coordinators routinely check the timeliness of reporting and troubleshoot problems at the local level. Guidelines are provided to sentinel physicians for optimal timing of specimen collection for virologic testing on certain patients. There is no way to ascertain that the data on influenza-like illness is free of error, but, as the number of participating sentinel physicians increases, the potential consequences of errors decrease. Given that sentinel surveillance provides an index of current influenza activity, consistent reporting by a stable group of physicians is imperative for data reliability. Increasing sentinel physician sites and sentinel physician participation in each state would greatly increase the validity of the data.

Youth Risk Behavior Surveillance System

CDC established the Youth Risk Behavior Surveillance System (YRBSS) in 1990. One of the components is a national school-based survey that was first conducted in 1990 and has been repeated biennially since 1991. The national Youth Risk Behavior Survey (YRBS) measures six categories of

priority health risk behaviors that contribute to the leading causes of mortality and morbidity among youth and adults in the United States: 1) behaviors that contribute to unintentional and intentional injuries; 2) tobacco use; 3) alcohol and other drug use; 4) sexual behaviors that contribute to HIV infection, other sexually transmitted diseases and unintended pregnancy; 5) dietary behaviors; and 6) physical activity.

The YRBS is administered in the spring to nationally representative samples of students in grades 9-12 attending both public and private schools. Professional data collectors, trained specifically for the YRBS, are used as field staff to ensure standard administration procedures. The YRBSS uses a three-stage cluster sample to select schools and classes of students within schools. African-American and Hispanic students are oversampled to provide accurate estimates for these subgroups in each survey cycle. By combining data from multiple survey cycles it is also possible to obtain accurate estimates for Asian and Native American youth. The sample size totals approximately 12,000 students per survey. School response rates average 76%; student response rates average 88%.

The YRBS questionnaire is designed for self-administration by use of a computer-scannable booklet. The questionnaire has been modified as needed to address emerging public health problems. A reliability study of the questionnaire conducted in 1993 demonstrated that students reported health risk behaviors reliably over time. Psychometric work has demonstrated that the questionnaire yields accurate and high-quality data. Standardized data editing and cleaning procedures improve data accuracy and consistency. Data are released within 12 months of data collection and are made available to the public via the Internet. A new psychometric study of the questionnaire is planned for Spring 2000.

Appendix C
Key Improvements in the CDC FY 2003 Performance Plan

As of December 31, 2001, CDC has achieved or exceeded targets set for 145 of the 217 performance measures in CDC's FY 2001 Performance Report. Only 20 targets were not met, and data is outstanding for 52 of the performance measures contained in the plan. Measures with outstanding data will be reported on as soon as results become available. We anticipate that we will have data available for 45 measures in CY 02 and 6 measures in CY 03; one measure will not be available until CY 04. However, at this point, CDC has achieved or exceeded 88% of its targets for which data is available.

Numbers tell only part of CDC's performance story. In an on-going effort to improve our performance plan and report, we have recently extensively revised our plan. Each section of the plan now addresses each of CDC's identity themes in greater detail. These themes are: protecting the health and safety of Americans, providing credible information to enhance health decisions, and promoting health through strong partnerships. In addition, more complete descriptions about CDC's programs, their intended results, and on-going activities have been provided.

In FY 2001, CDC achieved or exceeded a variety of goals in each of the identity theme areas.

Protecting the health and safety of Americans:

- Protecting Americans from infectious diseases begins with well-staffed and well-equipped state and local health departments. In FY 2001 57 sites including 50 state, six local, and one territorial health department were funded for the Epidemiology and Laboratory Capacity (ELC) program to strengthen their capacity to identify and respond to public health threats. Because of outbreaks such as West Nile virus and the threat of other emerging infectious diseases, expanding this program to all eligible state and local health departments became a key priority.

- In March 2000 a panel of experts reviewed extensive information from a variety of sources and concluded that measles is no longer an epidemic in the United States. The elimination of endemic measles from the US is an historic public health achievement and the fulfillment of a goal expressed by public health experts even before the first vaccine was licensed in 1963. In 2000 there were only 86 cases of indigenous measles reported in the US.

- The US has seen dramatic reductions in perinatal HIV transmission rates in the past decade. In 1999, an estimated 300 to 400 babies were born with HIV infection, compared to 1,000 to 2,000 US infants born with HIV infection during the early 1990s. These declines reflect the success of widespread implementation of PHS recommendations for routine counseling and voluntary HIV testing of pregnant women and the use of zidovudine (AZT) by infected women during pregnancy and delivery and for treatment of the infant after birth. Revised guidelines were published in 2001.

- The diabetes control programs (DCP) – funded in all 50 states, the District of Columbia, and eight territories – identify high-risk populations, improve the quality of care, involve communities in controlling diabetes, and increase access to care with measurable success. For example of a 2-year period the New York DCP reduced hospitalization rates by 35% and decreased lower extremity amputations rates by 39%. In Michigan a long-standing DCP has produced a 45% lower rate of hospitalizations, a 31% lower rate of lower-extremity amputations, and a 27% lower death rate for participants.

- Because most fire-related deaths and injuries occur while residents are asleep effective detection and alerting systems are essential. Indeed a working smoke alarm can reduce the risk of death

by about 50%. In 2.5 years CDC's 14-state smoke alarm installation/education program has installed over 100,000 smoke alarms in homes. This program has been credited with saving 150 lives.

Providing credible information to enhance health decisions:

- In FY 2001 CDC continued to expand the information on the amount and types of environmental chemicals that affect people's health. CDC can now measure the presence of more than 200 such substances including metals, pesticides, dioxins, and others in blood and urine. To communicate these findings to the public, CDC produced a *National Report on Human Exposure to Environmental Chemicals* in FY 2001. This report provides the public an assessment of the US population's exposure to environmental chemicals that may cause cancer, birth defects, and respiratory diseases, and other illnesses. Information from this report will also aid in monitoring the effectiveness of programs designed to reduce exposures.

- The health of America's communities hinges on the expertise of the public health workforce – they are our first line of defense against virtually all health problems in our communities. Training is an important aspect of improving public health performance. CDC continues to implement new systems to broaden training options nationally and internationally. CDC designed the Life-Long Public Health Learning System and increased training opportunities through distance-based leaning technology. CDC exceeded the distance-leaning performance target by expanding the range of programs offered and increasing the number of participants. The 135,000 distance-learning participants in FY 1999 surpassed the number targeted through FY 2002. In FY 2000 CDC increased the number of participants to 148,000.

- CDC translates occupational research finding into various media for workers, employers, policy makers, and practitioners. In addition to expanding information on its website, the National Institute for Occupational Safety and Health (NIOSH) operates a toll-free telephone service to answer public inquiries – often providing life-saving advice to callers. Since 1995 calls to this line have increased by 60%. In FY 2000, inquiries on health care topics increased 100% over 1999.

Promoting health through strong partnerships:

- Through the Global AIDS Program, CDC is working with experts from US and international agencies such as HRSA, USAID, CAREC, UNAIDS, WHO, and UNICEF to help ministries of health in Africa, Asia, and Latin America address the devastating impact of HIV/AIDS. In FY 2001 CDC expanded programs to support improve national surveillance programs to 22 countries and to prevent perinatal transmission of HIV to 13 countries.

- CDC's Bioterrorism Preparedness and Response program is a crosscutting, collaborative effort among multiple CDC offices, ATSDR, FBI, FEMA, DOJ, APHL, FDA, USAMRIID, NACCHO, and VA. Through this program CDC provides funding to 50 states, four localities, and one US territory to enhance some or all of their areas of bioterrorism preparedness. CDC achieved or exceeded all targets for FY 01 bioterrorism measures.

- As long as polio transmission occurs anywhere in the world, it remains a threat to American children. CDC continues to collaborate with many partners including WHO, Rotary International, USAID, the Task Force for Child Survival and Development, UNICEF, and other international agencies to bolster polio eradication efforts by providing scientific assistance and financial support. This collaboration is unique among public health initiatives for the unprecedented level of partnership. This global initiative is on target for certification of polio eradication by 2005. Global polio incidence has declined more than 99% from 1988 to 2000, about 250,000 lives have been saved and 4 million cases of childhood paralysis have been avoided, and the number of polio-endemic countries dropped from 125 to only 20 at the end of 2000. In 2000 the American Region of WHO completed its ninth year without a reported case of polio. CDC did not meet the

target for purchase of polio vaccines in FY 2001 largely because the price of the vaccine increased by 27% thus decreasing the amount of vaccine CDC was able to purchase.

Appendix D
Performance Measurement Linkages with Budget, Cost Accounting, Information Technology Planning, Capital Planning, and Program Evaluation

Clinger-Cohen Act

CDC is currently implementing the requirements under the Clinger-Cohen Act of 1996 (CCA) for information technology (IT) capital investment planning, monitoring, and performance measurement. The Information Technology Investment Review Board (ITIRB) process has been established and was released CDC-wide on January 5, 1999, via the CDC Intranet. CCA compliance became a component of the CDC budget planning process for the FY2001 budget. Major IT investments associated with budget initiatives required responding to the "Raines Rules" as part of the submission.

Also in compliance with CCA, CDC has developed several components of the agency's information technology architecture, such as certain health data standards, networking and telecommunications architecture, information security, and the majority of the agency's administrative procedures. More extensive work on other core business processes, information flows, process and data models is ongoing.

In addition to efforts in the implementation of CCA, CDC has a well integrated GPRA and IRM Strategic Plan that aligns IT products and services with CDC's ever-changing mission needs and directions. The IRM strategic goals, strategies and performance measures support the mission, mission goals, and CDC's GPRA performance plan.

Appendix E
Change Chart
Government Performance and Results Act:
FY 2003 Change Chart for Goals and Performance Measures

Program Activity	Goal	FY 2002 Original Performance Measure	Revision and Explanation
Infectious Diseases Control	Protect Americans from death and serious harm caused by medical errors and preventable complications of healthcare.	Build capacity for measuring processes of care (compliance with best practices), outcomes of care (death from harm, and complications) in all US hospitals and affiliated healthcare facilities using methods and criteria consistent with CDC reporting standards	New goal and measure.
		Build capacity to measure incidence of medication and laboratory adverse events attributable to medical errors in NNIS/HSN hospitals.	New measure.
		Build capacity to enable eligible US hospitals to participate in the NNIS/HSN reporting program.	New measure.
		Build capacity in states to measure and report incidence of medical errors, adverse health events, and complications of care to CDC through state-based demonstration projects.	New measure.
		Establish base rate of incidence of medication and laboratory adverse events attributable to medical errors through demonstration healthcare systems.	New measure.

		Build capacity for measuring processes of care (compliance with best practices), outcomes of care (death, harm, and complications) in all U.S. hospitals and affiliated healthcare facilities using methods and criteria consistent with CDC reporting standards	New measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Infectious Diseases Control	(continued)	Build capacity to measure incidence of medication and laboratory adverse events attributable to medical errors in NNIS/HSN hospitals	New measure.
		Build capacity for all U.S. hospitals to participate in the NNIS/HSN reporting program	New measure.
		Build capacity in states to measure and report incidence of medical errors, adverse health events, and complications of care to CDC though state-based demonstration projects	New measure.
Bioterrorism	Procure, maintain, and upgrade the materials and supplies in the National Pharmaceutical Stockpile as necessary to augment federal, state, and local response to a bioterrorist event.	Increase the number of state and local health departments to be funded to create guidance for the receipt, breakdown, and distribution of the National Pharmaceutical Stockpile.	New measure.
	Enhance the capacity of CDC and state/local health departments to rapidly detect and investigate potential biological events.	Increase the number of jurisdictions developing secure communications systems linking *Epi-X.*	New measure.

Immunization	Reduce the number of indigenous cases of vaccine-preventable diseases.	The number of indigenous cases of mumps in persons of all ages will be reduced from 666 (1998 baseline) to 0 by 2010.	New measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Immunization	Increase the proportion of adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease.	Achieve a vaccination rate of 90% among persons 65 years for influenza and pneumococcal pneumonia by 2010.*	Revised performance measure to be more outcome-oriented.
		Achieve a vaccination rate of 60% among non-institutionalized high-risk adults aged 18 to 64 years for influenza and pneumococcal pneumonia by 2010.	New measure.
	Collaborate with domestic and international partners to help achieve WHO's goal of global polio eradication.	Achieve and sustain zero cases of global poliomyelitis eradication by 2005.	New measure.
	Work with global partners to reduce the cumulative global measles-related mortality rate.	By 2005, reduce by 50% the cumulative global measles-related mortality compared with 2000 estimates (baseline: 888,000)	New goal and measure.
		Eliminate indigenous measles transmission in the Americas.	New measure.

	Improve vaccine safety surveillance.	Eliminate vaccine-associated paralytic polio (VAPP) by 2010.	New measure.
		By 2010, reduce febrile seizures following pertussis vaccines by 50% of 1998 baseline (152 seizures).	New measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Immunization	(Continued)	Increase the number of persons under active surveillance for vaccine safety via large linked databases to 13 million people by 2010.	New measure.
Chronic Disease Prevention and Health Promotion	Monitor state-level development of early prevention programs that motivate children and teenagers to eat healthily, exercise regularly, and avoid tobacco use–behaviors that prevent disease later in life.	For all states that receive CDC funding for school health programs and conduct state Youth Risk Behavior Surveys, increase the median percentage of teenagers (in grades 9-12) who consume at least five daily servings of fruits and vegetables.	New goal and measure.
		For all states that receive CDC funding for school health programs and conduct state Youth Risk Behavior Surveys, increase the percentage of adolescents (grades 9-12) who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 minutes or more per occasion.	New measure.

		For all states that receive CDC funding for school health programs and conduct state Youth Risk Behavior Surveys, reduce the median percentage of children and adolescents who are at risk for overweight or overweight.	New measure.
		Increase the number of childhood diabetes registries used to capture information about the nature and extent of childhood diabetes.	New measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Chronic Disease Prevention and Health Promotion	Support prevention research to develop sustainable and transferable community-based behavioral interventions.	Ensure that in all 13 community demonstration programs, the hub organization and at least 5 partners implement 3 or more programs to prevent teen pregnancies in response to community needs assessments in at least 2 neighborhoods.	New measure.
	Influence America's children to develop habits that foster good health over a lifetime–including physical activity, good nutrition, and the avoidance of illicit drugs, tobacco and alcohol.	Develop health messages and materials for specific youth audiences.	New goal and measure.
Preventive Health and Health Services Block Grant	Support high-priority state and local disease prevention and health promotion programs.	Increase the number of grantees who voluntarily submit as part of their annual report 1 health outcome impact success story.	New goal and measure.

		Increase the number of grantees who voluntarily submit both an annual application and annual report using the standardized electronic grant application and reporting system (GARS).	New goal and measure.
Public Health Improvement	Public health practitioners at the nation's front lines–local, state, and federal–are prepared to effectively respond to current and emerging public health threats.	Establish a national system of Centers for Public Health Preparedness to develop and disseminate competencies based public health curricula.	New measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Public Health Improvement	(Continued)	Build capacity for technology-based learning at Federal, State, and local levels.	New measure.
		Recommend changes in public health practice based on findings from applied research in workforce preparedness.	New measure.
	Conduct research to identify and evaluate community-based prevention interventions.	Develop effective interventions to prevent or delay disease and disability.	New goal and measure. Measure was formerly a goal.
		Disseminate research finding in formats that encourage uptake by decision-makers (clinician, administrators, and legislators).	New measure. Measure was formerly a goal.
		Evaluate the extent of dissemination and uptake of research findings on public health practice and policy.	New measure. Measure was formerly a goal.

Health Statistics	Monitor trends in the nation's health through high-quality data systems addressing issues relevant to decision makers.	Produce a report documenting a systematic assessment of alternative strategies for establishing a marriage and divorce statistics systems.	New measure.
Birth Defects/ Develop-mental Disabilities/ Disabilities and Health	Decrease the number of women drinking during pregnancy.	Decrease the percentage of women who report any alcohol consumption during pregnancy.	New goal and measure.
	Monitoring speech, language, and other developmental outcomes of infants with hearing loss.	By 2010, increase the number of states and territories participating in the National Early Hearing Detection and Intervention.	New goal and measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Birth Defects/ Develop-mental Disabilities/ Disabilities and Health	(continued)	By 2010, decrease the percentage of newborns who screen positive for hearing loss but are lost to follow-up to 10%. (Based on 1999 data from 9 states, 51% of infants who screen positive are lost to follow-up)	New measure.
	Improve the data on the prevalence of birth defects and developmental disabilities.	Increase the number of states collecting community-based data on the prevalence of one or more developmental disabilities.	New measure.
	Find causes and risk factors for birth defects and developmental disabilities in order to develop prevention strategies.	Increase the number of maternal interviews completed for the National Birth Defects Prevention Study.	New goal and measure.

		Increase the number of studies being conducted to find causes of autism, cerebral palsy, and mental retardation.	New measure.
	Monitor, characterize, and improve the health status of Americans with disabilities.	Increase the number of states that implement *Living Well With a Disability* or similar health promotion intervention.	New measure.
		Through research, increase scientific knowledge targeting the health of people with disabilities as measured by new peer reviewed publications produced by the program.	New measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Buildings and Facilities	Implement scheduled improvements, construction, security, and maintenance consistent with available resources and priorities identified in CDC's master facilities planning process.	Begin design and construction of Roybal East Campus Consolidated Lab Project to replace or modernize exiting Buildings 3, 1 South, 4, 7, 8, and 9	New measure.
Office of the Director	Foster a stronger collective departmental perspective on AI/AN issues.	Working in conjunction with IHS, identify areas of mutual interest and benefit.	New goal and measure.

Program Support	Enhance workforce planning efforts at CDC.	Improvement of supervisory ratio.	New goal and measure.
		Increase the span of control and organizational size.	New measure.
		Reduction in the number of organizational units.	New measure.
	Provide a variety of standardized and integrated means for access to CDC information resources by health practitioners and the public.	Enhance CDC's information content and technology infrastructure to increase public access to CDC information resources through the CDC website and CDC's Voice/Fax Information Service (VIS).	New goal and measure.
	Ensure that critical information systems and infrastructure operate reliably.	Ensure the reliable and continuous operation of CDC's critical information systems and information technology infrastructure (data center, wide area network, e-mail, Internet/web services, and telecommunications).	New goal and measure.
Program Activity	**Goal**	**FY 2002 Original Performance Measure**	**Revision and Explanation**
Program Support	Enhance CDC's information security program.	Protect CDC's information system from serious losses, alterations, or releases of data or information that are critical, highly sensitive, or covered by privacy or confidentiality requirements.	New goal and measure.
HIV/AIDS	Improve the ability to measure access to care, adherence to treatment, and impact of therapy on long-term survival of persons with HIV/AIDS.	Expand the number of states that are able to measure:* 1. Adherence to treatment 2. Impact of antiretroviral therapy (ART) on long term survival.	Revised measure

	Among persons who acquire HIV infection through heterosexual transmission, injecting drug use, or male-to-male sexual contact, increase the proportion who are diagnosed with HIV before a diagnosis of AIDS.	Among persons with HIV infection attributed to heterosexual behavior, increase the proportion diagnosed before progression to AIDS.	Revised measure.
		Among persons with HIV infection attributed to injecting drug use, increase the proportion diagnosed before progression to AIDS	Revised measure.
		Among persons with HIV infection attributed to male-to-male sexual contact, increase the proportion diagnosed before progression to AIDS.	Revised measure.