The Global Health Activities of

CDC'S EPIDEMIOLOGY PROGRAM OFFICE (EPO)

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

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

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

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

Public Health Surveillance and Response

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

Public Health Infrastructure and Capacity-Building

The Field Epidemiology Training Program (FETP) builds public health capacity by training cadres of epidemiologists and other public health practitioners to apply public health methods to health issues in their own countries. The FETP's "train-the-trainer" approach has been in place in some countries for over a

decade, with training capacity gradually transferred entirely from CDC advisors to staff within that country. For example, in recent years, the FETP program in Saudi Arabia has been staffed by Saudi nationals. The program's graduates now hold positions throughout the Ministry of Health's central and district offices, further expanding public health capacity with the knowledge gained through this program.

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

Disease and Injury Prevention and Control

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

Applied Research for Effective Health Policies

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

Exchange of Information and Lessons Learned

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

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