Introduction

In 1999, CDC's Public Health Practice Program Office (PHPPO) enters its second decade with renewed commitment to effective prevention for every community through a strong public health system.

From its inception, PHPPO has led creation of innovative programs to strengthen the public health infrastructure through:

- Workforce development;
- Information systems development; and,
- Organizational capacity building.

Our primary focus has been on building capacity outside CDC in collaboration with other partners, especially at the community level where public health is practiced daily across the Nation and around the world. We have designed and built programs and networks that will continue to energize and strengthen the practice of public health far into the future. These innovative approaches have given public health practitioners access to valuable tools and knowledge to deliver essential public health services.

To test our direction and refocus our energies, we embarked in 1998 on a strategic planning initiative that is entering its final stage. Partners at CDC and throughout the health system were generous in sharing their perspectives on our successes and on future strategies and goals. Their valuable counsel, analysis of the needs of the public health system, and examination of our own strengths argue that we now need to both:

- Maintain and strengthen approaches that have proven effective; and,
- Establish new strategies and goals that will best address CDC's priorities and the evolving health needs of communities at home and in other lands.

Our paramount goal is to develop science-based performance standards for health organizations and competency standards for practitioners. We will use standards and the Healthy People 2010 Public Health Infrastructure objectives as a framework for action.

Despite the concerted efforts many have made in the past decade, the public health system remains far too fragile and undeveloped. We are committed to helping build a robust public health infrastructure for the 21st century through energetic partnerships, our strong science base, dedicated professional staff, and unique capacity in consultation, training and technical assistance.

Sincerely,

Edward L. Baker, Jr., M.D., M.P.H.

CONTENTS

To Strengthen the Public Health System

TO STRENGTHEN THE PUBLIC HEALTH SYSTEM

The Centers for Disease Control and Prevention

The Public Health Practice Program Office (PHPPO) works in support of the vision, mission, and priorities of the Centers for Disease Control and Prevention. CDC -- "The Nation's Prevention Agency" -- is the federal health agency that spearheads research, policy development, and programs aimed at improving the health of all Americans through prevention. Beyond its domestic activities, CDC plays a large and growing role internationally as reflected in the agency's vision statement: "Healthy People in a Healthy World-Through Prevention."

The CDC mission -- "To promote health and quality of life by preventing and controlling disease, injury, and disability" -- embodies the agency's master strategy toward fulfilling that vision. Four major priorities guide all of CDC's work:

- Strengthen Science for Public Health Action;
- Collaborate with Healthcare Partners for Prevention;
- Promote Healthy Living at Every Stage of Life; and
- Work with Partners to Improve Global Health.

The public health system is the defense shield against preventable threats to health. In the U.S. the public health system is comprised of many partners. At its core is the federal-state-

Our overarching purpose is to help strengthen the capacity of CDC and all public health practitioners to apply these priorities to prevention and health promotion at the community level.

The PHPPO Vision

Ultimately, to paraphrase former U.S. House Speaker Tip O'Neill, all public health is local. PHPPO works to help actualize CDC's vision, mission, and priorities by focusing on communities -- where every day the health of families and individuals is protected from, or put at risk of, a myriad of conventional and evolving threats. This reality is captured in the overarching vision of the Healthy People 2010 initiative, "Healthy People in Healthy Communities."

Our vision -- ***"Effective Prevention for Every Community through a Strong Public Health System"*** -- recognizes that CDC's efforts and those of the many other organizations that promote the public's health serve people in the communities where they live and work. Communities are where prevention and health promotion programs are put into effect or, when public health systems are weak, where they are dangerously lacking.

local partnership of CDC, State health departments, nearly 3,000 local health departments, and hundreds of State, municipal, and other public health laboratories. The public health system encompasses a still larger spectrum of organizations vital to effective, community-oriented prevention. These include managed care and other healthcare organizations, community-based groups, businesses and other payers for health services, educational institutions, faith organizations, and many other public- and private-sector organizations.

In 1988, the Institute of Medicine published the landmark report, *The Future of Public Health*, which found the Nation's public health system "in disarray." That diagnosis was revalidated in the 1996 IOM report, *Health Communities: New Partnerships for the Future of Public Health.*

Significant progress has been made since the 1988 IOM report. Yet there is new, convincing evidence that the public health system is not prepared to address the growing array of health threats. Nor does the system have the resilience needed to withstand additional challenges -- and capitalize on new opportunities -- that stem from powerful social and economic forces shaping the public health system and its environment.

The U.S. public health system is fragile because it rests on a weak foundation or infrastructure. Nationally, each of the major components of public health infrastructure – strong science, strong professionals, and strong systems – displays serious shortcomings. A recent study found that effective public health services are available in only 22 percent of all U.S. localities. Because CDC relies on local and state health agencies to implement virtually all of its prevention programs, those weaknesses undercut CDC's own effectiveness.

The PHPPO Mission

Created in 1988, PHPPO is charged to lead CDC's commitment to strengthen the Nation's public health system. Our mission is ***"To Strengthen the Public Health Infrastructure."***

Our work supports specific, categorical CDC programs as well as the capacity of the many partners outside CDC who rely on a strong infrastructure.

In recognition of our leadership role, PHPPO was invited to lead development of national public health infrastructure objectives as an integral part of the Healthy People 2010 initiative. The unprecedented incorporation of infrastructure objectives in the Nation's blueprint for public health action underscores mounting national concern with the issue.

Three fundamental operating principles guide us:

- First, our work is community-focused. The ultimate purpose of our work is to benefit the community-based practice of public health.

- Second, our work is partnership-driven Virtually everything we do is in partnership with another CDC program, with partners outside CDC, or with both. Our decade-long experience demonstrates that effective partnerships are the foundation for effective public health practice.

- Third, our work is system-oriented. We aim to strengthen both the public health system and the larger health system itself -- comprised of healthcare and managed care organizations, community coalitions, health policy makers, and many others.

PHPPO Strategies

We employ four strategies that support CDC's vision, mission, and priorities; serve the needs of our constituents; and work toward realization of the Healthy People national public health objectives:

- Strengthen the Professional Competencies of the Health Workforce;
- Strengthen access to Public Health Knowledge, Information, and Communications;
- Strengthen the Capacity of Organizations that perform essential public health services; and,
- Strengthen the Science Base for infrastructure development.

Major Achievements, 1988-1998

The following are some of PHPPO's major program successes since 1988.

SCIENCE AND HEALTH SYSTEM RESEARCH

- Descriptive Epidemiology of the Public Health System

  PHPPO has collaborated with several public health associations to address the need for comprehensive, organized information about the nation's public health system. In 1990, PHPPO researched and published the Profile of State and Territorial Public Health Systems. We have partnered with NACCHO to develop three successive profiles of the characteristics and services provided by the Nation's 3,000 local health departments: in 1989, 1993, and 1997. The most recent is the basis for development of the Sentinel Health Network System which will monitor trends in the public health system nationally. PHPPO also has collaborated with NACCHO to survey local health agencies regarding their electronic information systems and the impact of managed care on tuberculosis control and other community programs, and with NALBOH to develop a detailed profile of the powers and resources of the Nation's local boards of health.

- Public Health Laboratory Practice Research

  Through the Model Performance Evaluation Program (MPEP), established in 1988, we monitor the conduct of HIV diagnostics (i.e., serology, viral load, and CD4 testing) in more than 1,500 laboratories in the U.S. and in more than 120 laboratories in other countries. In 1995, multidrug-resistant tuberculosis testing was added to the MPEP. The MPEP has been a centerpiece of public health efforts to monitor and assure quality of those vital assays and has been instrumental in specific efforts to detect problems and enhance testing quality throughout the U.S.

- Clinical Laboratory Practice Research

  We conduct research into clinical laboratory practice related to the three regulatory parameters of quality -- proficiency testing, quality control, and personne

l requirements -- and to broader questions about the extent and impact of errors in laboratory testing. As recommended in the Clinical Laboratory Improvement Amendments of 1988, we have used the results of these studies to develop and refine laboratory practice standards for the U.S. Genetics testing, increasingly important to public health

and to health care providers, represents a new focus of our practice research.

- Assessment of Practice

  Beginning in 1988, we have collaborated with researchers at the University of North Carolina and the University of Illinois to develop methods to evaluate local and State public health management and practice. These methods are being applied to develop performance standards for public health agencies. Assessment methods have been developed and validated and will serve a central role in our high-priority1999 development of performance standards for public health agencies.

- Program Impact Evaluation

  We evaluate the "output" impact of specific programs and their "outcomes" as well. These studies have documented that training and information system development have a demonstrable impact not only on the knowledge, skills, and abilities of participants but also on their practice in public health programs. These research findings have been used to guide future program development and to enhance the function of these networks and development systems.

- Research Partnerships

  Through cooperative agreements with ASPH and ATPM, we facilitate the conduct of extramural research funded by CDC programs. In FY 1998, 89 projects were supported in schools of public health and departments of preventive medicine at a total funding level of nearly $20 million. In addition to acting as a broker and facilitator linking CDC researchers with academic partners, we directly fund public health practice research related to our mission.

  In addition to developing national training networks, we have been actively engaged in developing and delivering specific

WORKFORCE DEVELOPMENT

- Technical Skills Development

  Technical skills are enhanced through training developed in partnership with CDC programs and external partners. Technical training focuses on specific disease, injury or risk factor subjects (e.g., immunization, tuberculosis prevention, injury control, radiation hazards, nutrition, etc.) These programs address needs identified by CDC program managers in response to changing program policies, new laboratory techniques, and other factors. Distance-based and classroom training is delivered to more than 100,000 professionals annually through the Public Health Training Network (PHTN) and the National Laboratory Training Network (NLTN.)

- Leadership and Management Competencies

  In addition to technical training, public health professionals need broad-based competencies, include leadership, management, informatics, health communications, community health planning, and other competencies that undergird of public health practice. Leadership and management development is accomplished through the Public Health Leadership Institute, state and regional leadership programs participating in the National Public Health Leadership Development Network, and the Sustainable Management Development Program. The new Management Academy for Public Health will begin operation in 1999.

- Public Health Informatics for Local- and State-Level Practitioners

  courses. As part of the INPHO program, we have developed a public health informatics training course which has been

delivered to local and state public health professionals and to CDC field staff.

- Developing the New Generation

  We work with all CDC programs to offer internship and fellowships for future members of the public health workforce who are enrolled in schools of public health and medicine. These programs have provided experience in CDC programs to hundreds of students at formative stages of their careers and have led to many permanent positions following graduation.

INFORMATION SYSTEMS DEVELOPMENT

- Information Infrastructure for Public Health Practice

  PHPPO led creation of the CDC Information Network for Public Health Officials (INPHO) beginning in 1993. The INPHO initiative now has stimulated 19 states to develop Internet connectivity for public health professionals, design and implement applications and data tools responsive to their specific needs, and improve the exchange and use of data. State immunization registry projects have benefitted significantly along with other program-specific tools. States have created data warehouses, developed extensive Web-based information resources, and put many other innovative uses of information technology at the fingertips of public health professionals in front-line settings. Experience gained in the INPHO program will provide invaluable insights as we develop the Health Alert Network.

- Electronic Guidelines and Publications

  The CDC Prevention Guidelines Database and the on-line MMWR were developed through the INPHO initiative to facilitate instantaneous, online access to CDC guidelines and reports for practitioners around the world.

- Laboratory Information

  Laboratory information systems represent a major source of information needed by prevention programs. With the advent of computer networks and the Internet, electronic reporting of laboratory information holds promise as a tool for many public health programs. We are involved in standards-setting activities and field demonstration projects designed to improve the quality and quantity of electronically-reported laboratory information.

- Digital Public Health Imagery

  Historically, many of CDC's most valuable, scientific images have been stored in still picture and video archives that contain paper-based and tape-based imagery. In response to the growing need for an online system providing global access to CDC-generated images, we are developing the CDC Public Health Image Library (PHIL) in partnership with the National Center for Infectious Diseases and the Information Resources Management Office. This online system will provide access to images for research, training, and general communications purposes over the Internet and will link to counterpart archives at the National Institutes of Health and at other research organizations and institutes around the world.

DEVELOPING ORGANIZATIONAL CAPACITY

- Laboratory Testing Quality

Our work under the Clinical Laboratory Improvement Amendments of 1988 has established a policy framework and a set of organizational practices and standards for all U.S. clinical laboratories. In addition to improving the quality of personal health care, CLIA standards have benefitted public health laboratory testing by encouraging increased linkages between state and local laboratories to create more efficient state-wide networks. In addition to our CLIA activities, we have worked with the Association of Public Health Laboratories to develop policies on core public health laboratory functions common to all states and have shared these with the entire laboratory community.

- Community Health Assessment and Planning

  In 1990, PHPPO and the National Association of County and City Health Officers (NACCHO) completed the Assessment Protocol for Excellence in Public Health (APEX/*PH)*, now the most widely used community health planning tool in the U.S. By 1993, 59 percent of all local health departments were using APEX/*PH* as their primary community health planning tool. PHPPO now is working with NACCHO to update and enhance this instrument to make it equally useful to healthcare and other nontraditional public health partners.

- Guide to Community Preventive Services

  As another step to improve the practice of public health, PHPPO and CDC's Epidemiology Program Office are assisting a task force of national leaders in developing the *Guide to Community Preventive Services* which will provide public health practitioners, community partners, and policy makers with authoritative information on the most effective prevention strategies, policies and programs for their communities. PHPPO is responsible for field testing, training, implementation, and evaluation of the *Guide.*

- Building New Partnerships

  We have led and contributed to national dialogues on public health issues and to publications that have shaped public health practice. In the early 1990s, we cosponsored, along with the Robert Wood Johnson Foundation, a national workshop on "Reinventing Public Health" which led to seminal publications and program innovations. In 1994, we cosponsored, along with the Group Health Association of America and the Robert Wood Johnson Foundation, the first national conference on managed care and public health, bringing together national leaders to focus on the need for collaboration between the two communities.

  PHPPO participated in the Institute of Medicine project that produced the report *Healthy Communities, New Partnerships for the Future of Public Health*. We also participate actively in the Medicine and Public Health Initiative designed to enhance collaboration and foster program development at the local, state, and national levels. More recently, we, other CDC programs, and outside partners developed the report *Principles of Community Engagement* which distilled "lessons learned" from community health initiatives into a set of widely applicable guidelines.

- National Public Health Performance Standards

  We recently launched the National Public Health Performance Standards Program, an initiative to develop performance standards for local and state public health systems. A collaborative effort, this program will create instruments for measuring, analyzing, and tracking changes in the capacity of local and state health departments and local boards of health across the U.S. These tools, now in design and development, will enable state and local leaders to assess performance and to direct organizational improvement efforts to the areas of need. The pilot performance measurement tools will be tested in 1999 and refined for broader adoption.

Major Scientific Findings and Publications

PHPPO's science program focuses on generating information on the factors that contribute to a stronger public health practice and infrastructure to support the health system. Because our mission focuses on communities as the locus for prevention, all components of our research program, in a sense, ask the same ultimate question: What works for better health in the community?

Major accomplishments in 1998 include:

- Development of Consensus Indicators for Surveillance of the Public Health System

  Based on eight years of PHPPO-supported research, a consensus set of 20 indicators was developed and used in several studies of local public health system capacity. The most recent of those studies indicates In collaboration with the Mt. Sinai School of Medicine, CDC researchers have completed the first nationwide assessment of molecular genetic testing practice. The survey revealed that 15% of 245 laboratories had quality assurance scores that only 10% of sizeable local health systems perform at an excellent level (>90% of indicators present); 15% perform at an adequate level (80-89%); 16% perform at a fair level (70-79%); 36% perform at a poor level (50-69%); and 22% perform at a very poor level (less than 50%.)

  Publications:

  - Mays GP, Miller CA, Stevens R, Halverson PK, Richards TB. Public Health Performance in Large Jurisdictions, United States, 1998. Manuscript in preparation.

  - Mays GP, Halverson PK, Miller CA. Assessing the Performance of Local Public Health Systems: A Survey of State Health Agency Efforts. Journal of Public Health Management and Practice 1998; 4(4):63-78.

  - Halverson PK, Nicola RM, Baker EL. Performance Measurement and Accreditation of Public Health Organizations: A Call to Action. Journal of Public Health Management and Practice 1998; 4(4):5-7.

  - Richards TB (Roundtable editor). The Accreditation of Local Health Agencies. Journal of Public Health Management and Practice 1998; 4(4):1-53.

- Developing the Scientific Foundation for Assuring Quality Genetic Testing

  below 70% based on the recommendations of the American College Medical Genetics (mean score 90%). Higher scores were associated with a larger test menu, the qualifications and board certification of the director, participation in proficiency

testing and CLIA certification. Seventy per cent provided access to genetic counseling, 69% had policies on confidentiality and 45% required informed consent before testing. Using these and other scientific findings, the Clinical Laboratory Improvement Advisory Committee developed a comprehensive , science-based policy framework to guide development in 1999 of a new standard for genetic testing under the CLIA laboratory regulatory system.

Publication:

- McGovern M, Bernach M, Wallenstein S, Desnick RJ, Keenlyside RA. Personnel standards, quality assurance, and clinical practices of molecular genetic testing laboratories in the U.S. Manuscript for submission to JAMA in clearance.

- Assessing the Impact of Distance Learning on Professional Practice

  To assess the impact of distance-based learning on job performance, PHPPO has conducted a series of investigations to refine methodologies and assess program benefits. A recent evaluation of the "Epidemiology and Prevention of Vaccine Preventable Diseases" course, conducted in collaboration with CDC's National Immunization Program, compared the effectiveness of satellite-based delivery with that of conventional, classroom delivery. The study found that 12-hour, satellite-based delivery and 32-hour, classroom delivery had approximately equivalent effects. Both "significantly increased participants' knowledge of the [polio vaccine] schedule, agreement with it, self-efficacy in relation to it, and adherence in practice to the General Recommendations."

  - Taylor R, Gagnon MB, Lange J, Lee T, Draut R, Kujawski E. A prototype computer-image-based Papanicolaou smear proficiency test: CytoView. Acta Cytologica (In press)

  Report:

  - Umble KE, Cervero RM, Yang B. Final Report: Evaluation of the Satellite and Land-Based Epidemiology and Prevention of Vaccine-Preventable Diseases Training Course. Report prepared for CDC, National Immunization Program, September 30, 1998.

- Evaluation of proficiency testing (PT) as a measure of performance in Pap smear screening

  Computer technology presents new opportunities for measuring the quality of testing performance and for education. PHPPO has developed a computer based system (Cytoview) as a tool for PT and education for cytologists who read Pap smears. Computer based and glass slide PT were evaluated as measures of performance in Pap smear screening. We measured the work performance of 85 cytologists who screen Pap smears by rescreening their work. The derived performance scores were compared with their performance on a glass slide and computer based proficiency test. Both proficiency tests were positively correlated with work performance.

  Publications :

  - Keenlyside RA, Collins CL, Hancock JS, Gagnon C, Cohn RD, Menoff AL, Dodd LG, Kurtycz DFI. Do proficiency test results correlate with the work performance of cytologists who screen Papanicolaou (Pap) smears? Submitted for publication to Am J Clin Path.

- Assessing the Impact of CLIA Regulations

Two recent studies illustrate the need for CLIA regulations. In one study of 17,058 laboratories, rates of satisfactory performance in proficiency testing (PT) for 30 commonly performed tests in previously regulated hospital and independent laboratories were compared to all other testing sites, such as physician office laboratories, nursing homes, and health care agencies. The rates during this first year of compulsory PT were significantly higher for previously regulated laboratories than for the newly regulated laboratories, with odds of unsatisfactory performance 2-7 times higher in the newly regulated laboratories. In the other study, results of four National Ambulatory Medical Care Surveys (NAMCS), two conducted before CLIA'88 and two after CLIA implementation began, indicate that quality laboratory practice indicators increased over this period, with PT participation rising from 32% to 53%, and use of daily quality control rising from 79% to 89%.

Publications:

- Stull TM, Hearn TL, Hancock JS, Handsfield JH, Collins CL. Variation in Proficiency Testing Performance by Testing Site. JAMA 1998;279:463-467.

- St. John TM, Lipman HB, Krolak JM, Hearn TL. Improvement in Physician Office Practices, 1989-94. Submitted to JAMA

- Stull TM, Hearn TL, Hancock JS, et. al. Variation in Proficiency Testing Performance by Testing Site. JAMA 1998; 279:463-467.

Systematic assessment of public health practitioners' information and data needs is a prerequisite to development of effective, practice-oriented information systems. In collaboration with the National Library of Medicine, PHPPO reviewed studies of the needs of local public health professionals, health service professionals, and health policy makers at the local, state and national levels and . This research found significant need for new systems to make the large body of information on best practices, policy

- Assessing the Quality of HIV-1 Antibody Testing

  The HIV Laboratory Testing Model Performance Evaluation Program generates quality assurance and laboratory practice information used to gauge testing performance, identify predictors of performance, measure the effects of changes in laboratory policy and regulations, and inform national policy decisions. HIV-antibody testing performance data (n=18085) from 824 laboratories were grouped by quality control practices to examine associations with testing accuracy. Laboratories that used external quality control samples had a 29% lower error rate (P=.0009) than those which used only the kits' supplied control samples. These data were presented to FDA's Blood Advisory Panel in December 1997 and the FDA subsequently changed its guidance to require the use of external quality control samples for HIV-antibody testing.

  Publication:

  - Astles JR, Lipman HB, Schalla WO, Blumer SO, Fehd RJ, Smith C, Hearn TL. Impact of Quality Control on Accuracy in Enzyme Immunoassay Testing for HIV-1 Antibodies. Arch Pathol Lab Med 1998; 122(8):700-707.

- Assessing the Need for and Impact of Information System Development Programs

documents and other practice-oriented literature available to the target audiences.

Publication:

- O'Carroll PW, Chan MA, Auston I, Selden C. Information Needs in Public Health and Health Policy: Results of Recent Studies. J Urban Health: Bull New York Academy of Medicine; 75(4): 785-793.

PHPPO Strategies and Goals

Our long-term strategies and goals appear in our new strategic plan, developed in close consultation with those we serve at CDC and throughout the health system. The draft strategic plan document -- which will be put in final form following review and comment by key partners -- is summarized below.

Public Health Practice Program Office
Draft Strategic Plan
Summary

OUR VISION

"Effective Prevention for Every Community through a Strong Public Health System"

OUR MISSION

"To Strengthen the Public Health Infrastructure"

OUR APPROACH

We work to improve the health of communities globally through leadership and vigorous partnerships with all organizations -- public and private, active in prevention and in healthcare -- that perform essential public health services.

Strategies And Goals

STRATEGY I: Strengthen the Professional Competencies of the Health Workforce

Goal 1a: Assess the capacities and competency needs of the health workforce.

Goal 1b: Develop guidelines for public health practice competencies based on the needs of the workforce

Goal 1c: Expand the capacity of CDC and partner organizations to develop and deliver training and education to the workforce and the public

Goal 1d: Develop a model to certify individual competency in high-need areas with priority on informatics and bioterrorism response readiness

STRATEGY II: Strengthen Access to Public Health Knowledge, Information, and Communications

Goal 2a: Assess the information and communications needs and capacity of public health organizations

Goal 2b: Develop guidelines for health information and communications capacity based on the needs of the public health system

Goal 2c: Link public health organizations electronically, equip them with needed information tools, and provide informatics training, consultation, and technical assistance

Goal 2d: Enhance the utility of the CDC Prevention Guidelines database

and disseminate and evaluate the Guide to Community Preventive Services

STRATEGY III: Strengthen the Capacity of Organizations that Perform Essential Public Health Services

Goal 3a: Assess the performance of local and state public health systems, including laboratory systems

Goal 3b: Develop standards for the performance of essential public health services

Goal 3c: Expand the capacity of CDC, health departments and laboratories, healthcare organizations, and other partners to meet standards of performance

Goal 3d: Develop and encourage adoption of new standards for laboratory testing in the field of molecular genetics

STRATEGY IV: Strengthen the Science Base for Infrastructure Development

Goal 4a: Establish a sentinel network for surveillance and research on the public health system and make an epidemiological database on the public health system widely accessible

Goal 4b: Conduct a program of laboratory practice research, disseminate findings, and apply findings to policies and actions to strengthen the health laboratory system

Goal 4c: Assist academic colleagues, professional organizations, and other partners in strengthening the science base for infrastructure development

Goal 4d: Build internal capacity to conduct research to strengthen the public health infrastructure.

1999 Priorities for Action

Our goals for 1999 are identified in the program fact sheets that are an integral part of this report. The fact sheets are aligned with the CDC priority areas they most closely support even while we recognize that most PHPPO programs serve all four CDC priorities. A number of PHPPO programs help build elements of infrastructure that undergird all CDC priorities and, indeed, all public health programs and services. Fact sheets for those programs appear immediately below.

HEALTHY PEOPLE 2010 PUBLIC HEALTH INFRASTRUCTURE OBJECTIVES

Program Overview

The public health infrastructure is the foundation for the public health system and for performance of essential public health services. Public health infrastructure has several elements that cluster into three fundamental components: science, people and systems. Each component must be robust, undergirding the ability to deliver and assure essential public health services for all.

In 1997, the Public Health Practice Program Office (PHPPO) was designated the lead federal agency to coordinate development of the public health infrastructure objectives that will be included in the *Healthy People 2010* goals for the nation. PHPPO earlier had developed consensus goals for strengthening the public health infrastructure linked to the "Essential Public Health Services" framework in collaboration with national public health associations and other public health stakeholder groups.

Intended Audience

Public health policy makers, advocates and practitioners throughout the nation.

Impact

Establishing clear goals that will catalyze action to buttress the nation's public health infrastructure and build a stronger foundation for effective public health practice in every area:

- To preventing epidemics and the spread of disease;
- Protecting the community from environmental hazards;
- Preventing injures;
- Promoting and encouraging healthy behavior;
- Responding to disasters, and,
- Assuring the quality and accessibility of health services.

1998 Accomplishments

- Led the national infrastructure workshop that developed 17 draft objectives for the *Healthy People 2010* focus area on public health infrastructure; objectives relate to a

skilled workforce, integrated electronic information systems, effective public health organizations, prevention research and resources.

- Developed successive working drafts and extensive review and comment process.

- Convened national public hearings Infrastructure Workgroup meetings to develop infrastructure interactive draft objectives.

- Participated in five *Healthy People 2010* regional meetings to receive and respond to public comments on draft *Healthy People 2010* Infrastructure Objectives.

1999 Goals

- Revise 2010 public health infrastructure objectives based on public comments.

- Assure that each adopted infrastructure objective has established baseline measurement and tracking systems.

- Assure that objectives are clear and meaningful to broad based audiences and assure that they relate to *Healthy People 2010* goals; are prevention-oriented, drive action toward clear targets and within a specific time frame, are useful and relevant for state, local and private sector use, have measurable impact on health outcomes and quality of life, and provide sound scientific evidence in support of the objectives.

For more information call DPHS, PHPPO, at 770-488-2469

HEALTH ALERT NETWORK

Program Overview

Alarmed at the potential for domestic terrorism disaster, the federal government initiated counter terrorism programs in the early and mid-1990s. However, wide recognition of the key public health role did not appear until 1998 when a CDC report requested by Congress spotlighted serious weaknesses in the infrastructure of public health, especially at the community level.

Local health agencies will be closely involved in detecting and verifying bioterrorist attacks, directing rapid treatment for victims, minimizing exposure and contagion, coordinating local and state-wide response, and making fast, accurate information available to the public and the media.

The CDC Health Alert Network (HAN) report found that the great majority of local health departments lack the capacity to mount bioterrorism defenses. Most lack basic information and communications systems and cannot communicate reliably with CDC, State health departments, or emergency response agencies in a crisis. 50 percent lack Internet access; 20 percent lack adequate computer capacity, and 70 percent lack adequate training in using electronic information systems for conventional public health purposes. Most public health professionals have not had formal training in public health competencies. An estimated 1,000 local health departments lack the capacity to deliver essential public health services. A recent study, corroborating the CDC report, concludes that only 29 percent of all Americans live in communities that have effective public health services.

Intended Audience

In 1998, CDC developed the HAN proposal to address the urgent need for greater local health department capacity to deal with bioterrorism.

Impact

When fully developed, the HAN will be a new, nationwide defense shield against the bioterrorism threat to health. Focused primarily on local health departments, but also addressing critical needs of their State counterparts, the HAN will have three components: networked electronic information and communications systems; professional staff trained in bioterrorism response and informatics skills; and robust organizational capacity.

The Health Alert Network will enable:

- Timely investigations of adverse health events, including acts of bioterrorism

- Provision of necessary laboratory services to support investigation of adverse health events

- Rapid electronic communication among health-related organizations, the media, and the public to support response to bioterrorism and other health threats, and

- Assured access to information public health professionals need to respond to bioterrorism events.

1998 Accomplishments

- Developed the CDC report, requested by Congress, "Strengthening Community Health Protection Through Technology and Training: The Health Alert Network."

1999 Goals

- Collaborate with other CDC programs and with public health practice organizations, develop standards for local and state health department preparedness for, and response to, potential bioterrorist attacks.

- Contribute to the CDC grant program supporting bioterrorism preparedness capacity in local and state health departments, public health laboratories, and other elements of the Nation's health system.

- Lead development of the HAN component of the CDC initiative, strengthening the information systems, workforce competencies, and organizational capacities of local health departments to protect their communities from the bioterrorism threat; coordinate development of a training program.
- Establish threshold HAN capacity in 15-25 metropolitan areas.

For more information call DPHS, PHPPO, at 770-488-2469

INFORMATION NETWORK FOR PUBLIC HEALTH OFFICIALS

Program Overview

The goal of the Information Network for Public Health Officials (INPHO) is to help State health departments define and implement new, electronic information tools to support public health objectives.

Public health has been -- and is increasingly becoming -- an "information business." The joint CDC-State INPHO program is a constant stimulus for innovation in public health informatics. With major financial support by CDC's National Immunization Program, INPHO stimulates innovative immunization registries, enhancing the nationwide drive to raise childhood immunization rates.

Sophisticated public health data warehouses have been implemented by participating State health departments and serve as national models. INPHO is helping accelerate implementation of wide-area, electronic networks in participating states. The CDC INPHO team designs and develops new tools for health practitioners worldwide, for example, the Web-accessible CDC Prevention Guidelines Database. In addition, INPHO delivers informatics training to help State and local health professionals apply information systems and tools in practice settings.

Intended Audience

INPHO increases the effectiveness of State and local public health executives, program directors and front-line practitioners as well as healthcare professionals. The CDC Prevention Guidelines Database is available worldwide and is a model for making CDC prevention information accessible directly by families and individuals.

Impact

Georgia pioneered the INPHO initiative in 1993 with CDC and Robert W. Woodruff Foundation support. By 1997, 14 additional states had begun INPHO Phase I projects. INPHO Phase II projects were awarded to nine states in 1998. CDC's investment in INPHO has leveraged matching investments in excess of $30 million from State appropriations, foundation grants, and other federal agencies.

1998 Accomplishments

- Funded nine new INPHO state projects in collaboration with the CDC National Immunization Program.

- Co-chaired the Investment Analysis Committee of CDC's Health Information and Surveillance Systems Board.

- Expanded public health informatics training focused on community practice.

- Updated and enhanced the CDC Prevention Guidelines Database accessible on the CDC Website which received an average of 1,600 "hits" per day in FY 1998, making it the most intensively accessed CDC data set.

1999 Goals

- Provide technical support, consultation and coordination between INPHO and the HAN initiative.

- Support Phase II INPHO projects, emphasizing community-based immunization registries, data warehousing, Web access to data and information, and expanded, distance-based informatics training.

- Collaborate with the National Library of Medicine, ASTHO, NACCHO, and HRSA in the "Partners in Information Access for Public Health Professionals" project to provide public health professionals with expanded electronic access to information.

- Collaborate with the Dartmouth College Interactive Media Lab to demonstrate uses of next-generation Internet capabilities in public health education and training.

- Develop a comprehensive evaluation protocol for INPHO Phase II.

For more information call INPHO, PHPPO, at 770-488-2428

PUBLIC HEALTH

TRAINING NETWORK

Program Overview

The Public Health Training Network (PHTN) was founded in 1993 to respond to the urgent training needs of the Nation's public health workforce that had been identified in the landmark 1988 Institute of Medicine report, *The Future of Public Health*. Today, PHTN is the recognized leader in distance learning for public health.

PHTN is a vibrant partnership of organizations committed to better health through effective, high-quality training and education. Joined with CDC in this growing program are state health departments, leading schools of public health and medicine, public health practice and academic associations, federal agencies and others. Among the partners are the National Association of County and City Health Officers and National Association of Local Boards of Health, Association of State and Territorial Health officers and its affiliates, the National Laboratory Training Network, teaching and research organizations such as the Association of Schools of Public Health and the Association of Teachers of Preventive Medicine, and a steadily increasing number of federal agencies, including the National Institutes of Health, the Health Resources and Services Agency and the Health Care Financing Administration, Food and Drug Administration, and the Department of Defense and the Department of Veterans Affairs.

As the coordinating hub for this partnership, the PHPPO Division of Media and Training Services facilitates the strengthening of PHTN through consultation, technical assistance, provision of national forums and support for the national network of State Distance Learning Coordinators. PHPPO provides consultation internationally as well -- to support design of the ambitious, nationwide distance learning system envisioned by the government of China, to help the Caribbean Epidemiology Centre build a 20-nation system, and to support similar initiatives in North America, Eastern Europe, and the Mediterranean region.

PHTN training programs incorporate principles of adult learning, advanced instructional design, state-of-the-art communications technologies, and systematic, outcome-oriented evaluation. The content of training programs is developed in collaboration with the partners -- CDC programs directors and others -- who identify specific training needs. Many PHTN courses

are accredited for award of valuable continuing credit to participants.

Impact

Since 1993, PHTN has delivered nearly 1,000,000 training encounters to professionals in public health settings and, increasingly, in healthcare and related settings. Evaluation studies demonstrate that PHTN programs, and distance learning as a medium, are effective ways to update and enhance professional competencies. PHTN's success has stimulated state and federal health agencies to produce training programs and to build their own capacity to meet training needs through distance learning. State health departments are expanding their own capacity, supporting field operations, and developing new courses that address their unique needs. International partners are taking similar action and helping PHTN move toward realization of its long-term vision of a global network that will serve the training and learning needs of public health practitioners worldwide.

1998 Accomplishments

- PHTN programs combined trained more than 435,000 health professionals through 122 live satellite broadcasts and 40 videotape, print, computer-based, and Web-delivered programs.

- CDC-produced PHTN programs trained more than 224,000 health professionals.

- Awarded accredited continuing education credit to 46,170 participants: 24,458 receiving continuing education units; 6,348 receiving continuing medical education credit; and 15,364 receiving continuing nursing education credit.

- Produced 22 live satellite video-conferences (82 program hours), 25
- Co-hosted the 6th Conference of Distance Learning in Public Health, with the University of Illinois at Chicago School of Public Health and the Illinois Department of Public Health; 350 public health professionals attended.

instructional videotape programs, 16 courses using multimedia techniques including interactive Web-based training and CD-Rom; expanded use of the Internet by producing and offering PHTN programs on-line.

- Coordinated evaluation and prepared evaluation reports for all CDC-initiated PHTN programs.

- Collaborated with the Association of Schools Public Health and four schools of public health to develop five new PHTN products.

- Provided consultation, technical assistance, and training to CDC programs, other federal agencies, public and private distance learning networks, and to the Caribbean Epidemiology Centre to integrate distance learning into its training programs.

- Enhanced the capability of PHTN through 50 state Distance-Learning Coordinators who promote programs, provide technical assistance, and expand human and technical resources.

- Completed initial design of a new Internet-based PHTN learner-support system to enable on-line registration, ordering, testing and evaluation.

- Hosted, and provided consultation to, two-high level delegations from the China Ministry of Health and Beijing Medical University to assist their plans to establish a PHTN counterpart in China.

- Delivered training to public health practitioners in 23 North American, Caribbean, Eastern European, and Mediterranean region countries with PHTN programs.

1999 Goals

- Expand the capacity to support the growing demand from CDC programs and the Health Alert Network (HAN) for distance learning through collaborative projects, and enhanced product capacity including implementation of the "TV 2000" renovation plan.

- Align the PHTN infrastructure to support the HAN initiative; support the initiative with an informatics distance learning course, "Bioterrorism Grand Rounds," and a Web-based bioterrorism course, *Medical Management of Biological Terrorism.*

- Continue in collaborative efforts to develop a multi-disciplinary curriculum for the public health workforce.

- Implement the new, on-line PHTN learner support system for participant registration, evaluation, and tracking and streamline the continuing education process.

- Link digital technology projects into a knowledge management system with learner support; digital image capture, archiving, indexing, and retrieval; and Internet delivery.

- Integrate CDC distance learning activities with those of other federal agencies under the auspices of the Presidential Learning Technology Initiative.

- Will provide direct assistance to the China Ministry of Health for implementation of a national distance learning network.

- Collaborate with the University of Washington at Seattle and the Washington State Health Department to offer the 7th Annual Conference on Distance Learning and Public Health.

For more information call DMTS, PHPPO, at 404-639-3707

NATIONAL LABORATORY TRAINING NETWORK

Program Overview

Training is essential for laboratory workers whose efforts support national, state, and local public health objectives. The National Laboratory Training Network (NLTN) is a unique needs-based laboratory training delivery system sponsored by the Public Health Practice Program Office and the Association of Public Health Laboratories (APHL). Since its inception in 1989, the goal of the NLTN has been to improve public health and environmental laboratory practices and performance through training.

Seven regional field offices are staffed by laboratory training specialists. Staff work closely with state laboratory training personnel, CDC education specialists and subject matter experts to identify, prioritize, and address training needs of laboratory workers.

NLTN offers a mechanism for delivering cost effective training; transferring testing NLTN needs assessments identify training needed in rabies, virology, mycobacteriology, food microbiology, mycology testing to other technologies; and monitoring training activities. Its focus is national, serving a large

audience of laboratorians who practice at the state and local level. NLTN also provides a mechanism for quickly disseminating emergency information, such as laboratory identification of *E. coli* O157:H7, multidrug-resistant tuberculosis, and bioterrorism preparedness.

The NLTN uses a variety of training products, delivery systems, and formats to meet the need for improved laboratory quality control and quality assurance practices and to provide information on evolving laboratory technologies. These delivery systems, used to overcome local barriers such as distance and training expenses, include satellite programs, facilitated distance learning modules, computer-assisted instruction, hands-on laboratory courses, seminars, symposia, video- and audio-conferences.

areas. NLTN staff and partners, developed the Public Health Series (PHS) courses, which

have reached virtually all U.S. public health laboratories.

NLTN courses are marketed through mailings to targeted audiences, professional organizations, journals, and via the NLTN Homepage located on the CDC Website (www.cdc.gov/phppo/dls/nltn.htm).

Intended Audience

Healthcare workers are the primary target audience for NLTN training. Although the intended audience is predominantly laboratorians, courses are often designed to include epidemiologists, nurses, sanitarians, and other public health workers.

Impact

NLTN trains approximately 10,000 public health workers each year. Regular evaluations determine the impact on transfer of technology and improvement of laboratory practices. In 1996, a national study performed by Battelle, Inc., verified the effectiveness of the training developed and delivered by the NLTN.

1998 Accomplishments

- Delivery of Public Health Series (PHS) courses, *Foodborne Illness Outbreak Investigation, Advanced Mycobacteriology, Laboratory Methods for Detecting Rabies Virus* (71 students representing 36 states).
- Presented multiple HIV/viral load courses (337 students).

1999 Goals

- Repeat delivery of PHS rabies course.
- Develop and deliver PHS virology course.
- Complete second computer-assisted instruction module, *DNA: The Foundation of Molecular Technology.*
- Develop second National Laboratory Training Conference.
- Present multiple bioterrorism courses.

For more information call DLS, PHPPO, at 770-488-8295

PUBLIC HEALTH LEADERSHIP INSTITUTE

Program Overview

Initiated by PHPPO in 1991, the Public Health Leadership Institute (PHLI) is a CDC partnership with the University of California at Los Angeles. The PHLI mission is to strengthen the nation's public health system by enhancing the leadership capabilities of senior health officials. The 12-month PHLI training program includes a week-long learning retreat and interaction with national experts in leadership and public health. The institute curriculum develops competencies in strategic planning, managing change, individual and organizational dialogue, communication in high-risk/low-trust situations, media advocacy, and creativity and innovation. Personal learning and scholar interaction are promoted through an on-site retreat, electronic seminars, completion and scholar-initiated learning communities, leadership assessment and learning projects.

Through 1998, over 384 health officials from city, state, federal, international, academic, and private sector organizations graduated from the year-long program. Over 97% of PHLI graduates report direct contributions to their leadership skills, and over 80% report enhanced communication, motivation, and

Intended Audience

Initially designed for public health officials, the target audience has been expanded to

include other senior officials in the public and private health sector. These include:

- Managed care professionals, representatives from national health associations, and senior management officials of state health agencies; and,
- CDC and HRSA senior management officials, faculty of schools of public health, and international health officials.

Impact

conflict resolution skills. Over 150 graduates are active in the Public Health Leadership Society, created in 1991 to help alumni continue their leadership development, and maintain professional and personal relationships.

1998 Accomplishments

- Seventh-year class of 52 scholars completed the leadership development program. Ten CDC scholars from nine CDC component units participated in the class.

- The class included managed care professionals, representatives from the Department of Defense, deputy directors of large county and city health departments and a participant from the Health Resources and Services Administration.

- Continued redesign of the leadership curriculum and new faculty recruitment.

1999 Goals

- Design and implement new curriculum (e.g., collaborative leadership, community partnerships) and retrain faculty.

- Explore additional collaborative relationships with private foundations and federal agencies.

- Continue work to develop evaluation measures focused on the impact of leadership development health outcomes.

For more information call DPHS, PHPPO, at 770-488-2417

NATIONAL PUBLIC HEALTH LEADERSHIP DEVELOPMENT NETWORK

Program Overview

The National Public Health Leadership Development Network comprises 13 state and regional leadership development programs that serve 28 states. Stimulated by the Public Health Leadership Institute, these programs have more than 1,000 graduates, including public health directors and professionals, healthcare and managed care professionals, and other leaders at the community and state levels. An estimated 500 people will participate in the programs in 1998-1999. The Network is a consortium of the state and regional programs that helps refine and expand state and regional efforts to facilitate, demonstrate, and evaluate increased capacity of public health leadership.

Intended Audience

Network leadership development programs serve diverse target audiences made up of public health and health care professionals, community leaders, participants in health-related learning projects, and many others active in public health policy and practice.

Impact

More than 1,000 public health, health care, and other leaders have graduated from state and regional leadership development programs. The Network has developed a compendium of leadership competencies and is assisting member programs in systematic evaluation of improvement in participants' leadership competencies.

Programs in operation include:

- Florida Public Health Leadership Institute
- Illinois Public Health Leadership Institute
- Kansas Public Health Leadership Institute
- Michigan Community Health Leadership Institute
- Mid-Atlantic Health Leadership Institute

- Missouri Public Health Certificate Program
- Northeast Regional Public Health Leadership Institute
- Ohio Public Health Leadership Institute
- Oklahoma Public Health Leadership Program
- Public Health Leadership Institute of North Carolina, Virginia and West Virginia
- Rocky Mountain Public Health Leadership Institute
- South Central Public Health Leadership Institute
- Texas Public Health Leadership Program

1998 Accomplishments

- Graduated an estimated 440 participants from state and regional leadership development programs.

- Expanded state and regional leadership development programs to a total of thirteen.

- Expanded the target audience to include CDC state assignees.

- Evaluated leadership development programs.

- Explored the feasibility of using distance learning to serve expanded audiences.

1999 Goals

- The number of states and regional leadership development programs will be increased to 14.

- The number of graduates in 1998-1999 is projected to reach 500, bringing their cumulative number of graduates to more than 1,500.

For more information call DPHS, PHPPO, at 770-488-2496

MANAGEMENT ACADEMY FOR PUBLIC HEALTH

Program Overview

The Management Academy for Public Health is a joint initiative of the Public Health Practice Program Office (PHPPO), the Robert Wood Johnson Foundation, the W. K. Kellogg Foundation, and the Health Resources and Services Administration (HRSA). PHPPO is assisting in developing and administering the program. Beginning in 1996, the partners have convened public health leaders and practitioners to assess the need for public health management development, forge a conceptual framework for the initiative, and design a program to deliver high-quality management development and training to the staff of local and state health departments. The Academy will begin in 1999 with a three-year regional demonstration program in Georgia, North Carolina, South Carolina, and Virginia.

Intended Audience

Public health managers and administrators in local and state health departments.

Impact

Local and state health department managers who complete the Academy's program will bring new and enhanced management skills to their programs and agencies. Training will focus on developing a comprehensive array of strategic and technical abilities. In addition to specific skills, the Academy aims to develop the broader, adaptive abilities managers can use to position their agencies for maximum effectiveness in the face of new health challenges, continuing shifts in the health care sector, and the emergence of new partners in prevention and health promotion.

1998 Accomplishments

- Completed assessment of management competencies and needs in the four-state region based on interviews with managers more than 150 local and state public health leaders and managers.

- Through the CDC Foundation, issued a request for proposals to operate the Academy's three-year demonstration program.

1999 Goals

- Award contract to operate the Academy.

- Graduate a minimum of 100 mid-level and senior public health managers from the Academy.

- Conduct an evaluation of the program's first year program and apply findings to future years and classes.

For more information call DPHS, PHPPO, at 770-488-2530

BUILDING PARTNERS' CAPACITY:

LOCAL BOARDS OF HEALTH

Program Overview

Local boards of health are responsible for ensuring the development and implementation of public health policy in communities throughout the country. However, until 1992, they had no way to bring local public health concerns to the attention of policymakers. In addition, they lacked means to communicate with each other and to access information and training to strengthen their communities.

To address those problems, representatives of local boards of health from six states met in Atlanta in 1991 and catalyzed formation of the National Association of Local Boards of Health (NALBOH), 1992. The NALBOH mission is *to provide a national voice for the concerns of local boards of health and to assist local boards of health in obtaining the knowledge, skills, and abilities necessary to protect and promote public health in their communities.*

NALBOH established its national office in 1995 and in 1997 successfully competed for financial assistance from CDC. It now is in the second year of a 3-year cooperative agreement to collaborate with CDC and other national public health organizations to improve the translation of the Essential Public Health Services into practice.

Intended Audience

The primary audience is local boards of health and, through their leadership, the many other stakeholders and decision-makers groups important to improving community health.

Impact

This PHPPO initiative facilitated creation of NALBOH. NALBOH researches, develops, and disseminates information about local boards of health, provides up-to-date information on public health issues and programs to local boards of health and convenes local policymakers to participate in national and state public initiatives.

1998 Accomplishments

- NALBOH and CDC collaborated to distribute over 6,500 copies of the first-ever National Profile of Local Boards of Health to public health policy-makers, practitioners, and practitioners.

- Collaborated with PHF, ASTHO, and NACCHO to develop a methodology and

tool to measure community-level expenditures for the essential public health services.

- Initiated efforts to establish governance performance measures for use with NACCHO's APEX/CPH project and with PHPPO's National Public Health Performance Standards Program.

- Activated a Web site that provides a full range of information and an interactive forum for discussion of public health issues.

- Initiated a study of jurisdictional authority to regulate tobacco in each states and took action to reduce the use of tobacco products, including joining and participating in ENACT, participating in a White House ceremony to encourage the passage of comprehensive tobacco legislation, and participating in the Healthy People 2010 process.

- Initiated and pilot-tested a training and orientation program for boards of health and published the *Guide for Development of a Local Board of Health* and the *Guidebook for Developing State Associations of Local Boards of Health*.

- Educated audiences about local boards of health at the national meetings of the Association of Physicians for the Underserved, the National Public Health Leadership Institute, APHA, the Wisconsin State Association, the Nebraska Association of County Officials, and the National Rural Health Association.

- Represented local boards of health on the Public Health Functions Steering Committee, the Public Health Infrastructure Steering Committee, the Advisory Committee on Expenditures, the Expert Panel on Performance Standards, the Expert Panel on Performance Standards for Governance of Local Boards, the Public Health Week Steering Committee, the World Health Day Steering Committee, the Children's Health Day Steering Committee and the Institute of Medicine panel reviewing the study, *The Future of Public Health*.

1999 Goals

- PHPPO will continue to collaborate with NALBOH, providing technical and financial assistance in its efforts to improve the development and implementation of public health policy.

For more information call DPHS, PHPPO, at 770-488-2490

Strengthen Science for Public Health Action

STRENGTHEN SCIENCE FOR PUBLIC HEALTH ACTION

Overview

The goal of the Public Health Practice Program Office (PHPPO) research program is to build the science base for a stronger public health infrastructure.

Because our mission focuses on communities as the locus for prevention, all components of our research program ask the same ultimate question: "What works for better health in the community?" Our research program includes on-going epidemiologic study of the public health system, analysis of public health practice, and a developmental component that includes designing and testing prototypes in the field.

As recently as 1990, no comprehensive, systematic body of information existed on local and state public health agencies or on the public health workforce. Our research program now collects and analyzes that information and we are instituting a national sentinel research network that will generate a rich, evolving body of reliable data on key measures of the local and state public health system and its infrastructure.

An important focus of the PHPPO research program is on laboratory testing quality. The concerns of laboratory practitioners and their clients drive that research as does federal policy established in the Clinical Laboratory Improvement Amendments of 1988. PHPPO conducts an extensive research program that assesses the practice of laboratory testing nationally, identifies factors that contribute to improved quality, and disseminates that information nationally and internationally.

Important complements are research to develop empirical standards of performance for public health agencies and evaluation research to document their impact of PHPPO programs on the infrastructure and on public health practice.

1998 Major Accomplishments

- A high PHPPO research priority is to develop the science base for standards of performance of public health services. In 1998, PHPPO convened an expert, national panel to review the existing science base, collaborated with local and State public health leaders to assess the functional requirements of standards and indicators, and published the proceedings of the first national roundtable on accreditation of local health agencies in the *Journal of Public Health Management and Practice*.

- Sentinel Health Network: To address the critical need for reliable data on the status and functioning of the public health system, PHPPO initiated development of a national sampling frame that will generate representative, scientifically grounded data for use in a wide array of health systems research. A national panel of researchers and organization specialists advise on project. PHPPO presented on the initiative at the 1998 annual APHA conference. To develop new applications of geographic

information systems (GIS) technology for public health, PHPPO researched current applications, initiated an SBIR development project, and prepared two dedicated journal issues on "GIS for State and Local Public Health Practitioners."

- Conducted a survey of the menus and volumes of testing in 2,100 laboratories, the first use of the PHPPO-developed National Inventory of Clinical Laboratory Testing (LICLTS), a scientifically valid set of the Nation's laboratories usable for a broad range of research into such topics as antimicrobial susceptibility and vaccine efficiency testing, among many others of interest to CDC programs and other partner organizations.

Challenges and Approaches

- The next phase of the performance standards research program will focus on field testing and evaluating the utility of pilot standards and measures, with guidance from CDC programs and external stakeholders. Specific attention will be given to establishing the internal and external scientific validity of performance measurement instruments.

- Sentinel Health Network: Research plans include operational specification of the characteristics of effective public health systems, pilot testing of an early warning system that will incorporate benchmark measures, and development of capability to generate data collection for implementation and evaluation of the *Guide to Community Preventive Services.* The Network also will support the data needs of the Healthy People 2010 public health infrastructure objectives. PHPPO will digitize the boundaries of all local health departments as a foundation data set to support systems research by CDC and other researchers.

- Laboratory Research: To enhance the value of laboratory practice and standards research, PHPPO will expand participation in research design and conduct by healthcare providers and payers. The findings of the 1998 LICLTS survey will be disseminated, the final data set will be posted on the Internet (with protection for laboratory confidentiality) and plans will be made for the second LICLTS survey.

- Prevention Research: The CDC Prevention Research Initiative holds great promise for enhanced research on the public health system, public health practice, and a host of other vital topics. PHPPO will continue to contribute to definition of research priorities and to development of rigorous processes for conducting peer-reviewed research. PHPPO is lead sponsor of the 1999 conference "Eliminating Health Disparities through Prevention Research" which is focused on identifying priorities and extramural partners to advance CDC's prevention research agenda.

- Laboratory Research: An important challenge is to ensure that the findings from research on laboratory practices are applied to improve quality laboratory testing quality. Our approaches include planned publications in the MMWR and other journals, dissemination of findings to the laboratory community through the Association of Public Health Laboratories, and appropriate changes to update laboratory training programs.

These and other priorities for 1999 are presented in more detail in the following fact sheets.

NATIONAL PUBLIC HEALTH PERFORMANCE STANDARDS

PROGRAM

Program Overview

To ensure the delivery of essential public health services, clear and measurable performance standards are needed. To facilitate the development of such standards, the Public Health Practice Program Office coordinated development of the National Public Health Performance Standards Program (NPHPSP). Begun in 1997, the NPHPSP and its partners - NACCHO, ASTHO, NALBOH, PHF - and APHA are developing performance indicators for state and local health systems based on the ten Essential Services of Public Health adopted by the Public Health Functions Steering Committee in 1994.

The three goals of the NPHPSP are to:

- Strengthen the capacity of state and local public health systems to provide necessary services by providing a mechanism for demonstrating accountability to constituencies;

- Create tools to be used by public health practitioners in a continuous quality improvement process; and,

- Enhance decision-making by increasing the science base for effective public health practice.

1998 Accomplishments

Intended Audience

The audience for public health performance standards includes private and public funding agencies, public health professionals, policy makers, community leaders, and national health leaders dedicated to building a strong public health infrastructure.

Impact

Measurable performance standards will increase the likelihood that all Americans have access to a defined optimal level of public health services. The anticipated widespread participation in the NPHPSP will identify strengths and weaknesses of the public health system and guide appropriate health interventions, effective use of resources, and suitable training and development activities. It will also assist policy makers in evaluating the effectiveness and efficiency of program operations and administration.

- Worked with NACCHO to develop standards and a performance measurement instrument for local public health systems.

- Worked with ASTHO to initiate the development of state standards and a state-level performance measurement instrument.

- Convened a national panel of experts that included representatives from leading academic institutions as well as state, and local public health agencies.

- Published the proceedings of the first national roundtable on accreditation of local health agencies in the *Journal of Public Health Management and Practice*.

1999 Goals

- Develop standards for public health governing bodies to accompany the local public health system performance standards.

- Pilot test both the local and state performance measurement instruments.

- Develop standards and performance measures for responding to bioterrorist threats.

- Link the national program to international performance measurement efforts.

- Convene a national symposium to strengthen the scientific foundation for and raise the awareness of performance measurement in public health.

- Begin research to establish the internal and external scientific validity of the performance measurement instruments.

For more information call NPHPSP, PHPPO, at 770-488-8043

SENTINEL HEALTH NETWORK

Program Overview

Increasingly, large urban health departments are examining their roles and responsibilities, changing basic organizational practices to meet the rapidly evolving public health and personal health care needs of the populations they serve. Driven by such forces as the growth of Medicaid managed care, "safety net" responsibilities to continue services to uninsured and underinsured persons, and historical public health mandates, these complex organizations are evaluating how to respond strategically to systems change. Using principles derived from organizational science and findings from on-going health systems research, the Division of Public Health Systems is conducting a research to develop effective response strategies to systems change.

Intended Audience

Large urban public health departments, policy makers at all levels, health system leaders and managers, and state health departments.

Impact

This program provides policy-relevant information to leaders of large urban public health departments to support their decision-making, leadership, and management practices in response to the opportunities and challenges that result from constant change in the environment surrounding public health agencies and potentially destabilizing systems change.

1998 Accomplishments

- Convened site visits to Columbus, Ohio; San Antonio, Texas; Oakland, California; Philadelphia, Pennsylvania; and Birmingham, Alabama.
- Convened a panel of experts in organizational theory and practice to review findings from site visits.
- Developed criteria for sentinel practice visits.
- Presented on the project and initial field research findings the 1998 Annual American Public Health Association meeting.

1999 Goals

- Convene an expert panel to review and specify principals of effective organizations applicable to public health systems in transition.
- Publish comparative analyses of urban health department responses and adaptations to systems change based on findings of case studies.

- Identify urban health systems performance measures for incorporation in early warning systems suitable for adoption by urban health departments.

- Issue a comprehensive report on the adaptation of urban health departments to major transitions and on successful strategies of change management.

For more information call DPHS, PHPPO, at 770-488-2469

GEOGRAPHIC INFORMATION SYSTEMS RESEARCH CENTER

Program Overview

Geographic information systems (GIS) are a powerful, new tool for better community health assessment and planning, program design, and emergency response. GIS electronic maps and digitized data bases are stored with linked geo-referenced identifiers (e.g., latitude and longitude) to enable rapid manipulation, display, and data analysis. Rapidly evolving GIS software, data, and methods already are being used in public health. New uses will facilitate the development of networked systems supporting communication and interaction among public health personnel at all levels (local, state, and federal) and data interchange between managed care organizations and public health. A new frontier for public health practice is development of public health GIS enterprise models (shared spatial data within an agency), community GIS enterprise models (shared spatial data involving more than one organization), and Web-enabled GIS models.

The PHPPO GIS Research Center has three objectives: The first is to help "jump start" the use of GIS by state and local public health practitioners by developing a working atlas of successful GIS maps that support health planning initiatives, can be easily replicated or modeled, and include training materials for practitioners. The second is to integrate GIS software, data, and methods with community planning tools such as the *Assessment Protocol for Excellence in Public Health* and the *Guide to Community Preventive Services*. The third is to develop a national set of GIS-based public health system directories, including standardized, up-to-date contact information and boundary maps for local public health agencies.

Intended Audience

Local health departments, healthcare organizations, community health coalitions, and state national health organizations.

Impact

This initiative will help health practitioners adopt GIS as an essential part of health assessment planning, decision-making, and response to health emergencies. The GIS public health system directories and profiles will: facilitate dissemination of national health alerts; improve health departments' access to critical health

data; and establish a national GIS sampling frame for research on community public health, accelerating the availability of information on critical public health policy issues and trends, linking survey results with other data sources, and generating new insights into health problem and effective strategies through spatial analysis techniques.

1998 Accomplishments

- In collaboration with the National Center for Health Statistics (NCHS), developed two dedicated issues (February and July 1999) of the *Journal of Public Health Management and Practice* on "Geographic Information Systems for State and Local Public Health Practitioners."

- In collaboration with NCHS, developed the CDC-wide Video presentation "Towards a Working Atlas of Model GIS Maps for State and Local Public Health Practitioners," as part of the NCHS 12th annual Geography Awareness Week commemoration.

- Collaborated with the National Association of County and City Health Officials (NACCHO) to develop "GIS, Pollution Prevention, and Public Health," background paper on its Website at http://www.naccho.org.

- Initiated GIS software development project for community health planning under the CDC Small Business Innovations Research (SBIR) program. Twelve proposals were received, one-third of all the proposals submitted and twice the number of proposals for any other topic.

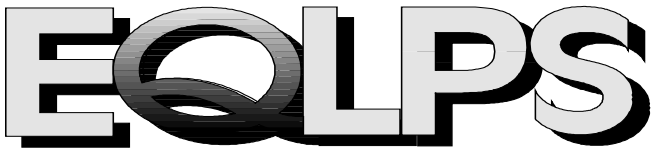
1999 Goals

- Publish and disseminate the *Journal of Public Health Management and Practice* issues "Geographic Information Systems (GIS) for State and Local Public Health Practitioners" in book format.

- Collaborate with the selected SBIR firm and CDC program on Phase 1 of work on GIS software development for community health planning.

- Digitize the boundaries of the approximately 3,000 U.S. local health departments as a foundation data set for a wide range of applications by practitioners nationwide.

For more information call DPHS, PHPPO, at 770-488-2469



EVALUATION OF QUALITY IN LABORATORY PRACTICES AND STANDARDS

Program Overview

The Division of Laboratory Systems' (DLS) laboratory practice research agenda– Evaluation of Quality in Laboratory Practices and Standards (EQLPS) - focuses on providing a scientific, technical, and informed basis for developing laboratory practice guidelines. Laboratory practice guidelines for specific tests, (e.g., HIV, CD4+ T-cell, *Mycobacterium tuberculosis* (*M.tb)),* and Pap smear tests, and practice guidelines, including the Clinical Laboratory Improvement Amendments (CLIA) standards, which can be applied across testing disciplines, are high priorities. Embedded in the EQLPS agenda are the CLIA studies, requested by Congress in the CLIA statute. To date, information from the CLIA studies has provided an improved understanding of testing practices in the U.S. and information about the extent to which parameters of the regulatory model (e.g., quality control, personnel, and proficiency testing (PT)) can serve as measures of, and ways to ensure, quality testing.

Intended Audience

Schools of public health; public health organizations; public and private hospitals; physician office and reference laboratories; professional physician and laboratory organizations; federal and international health agencies; health care provider organizations; PT program providers; health industry manufacturer associations; and a federal Clinical Laboratory Improvement advisory committee.

Impact

Through EQLPS we seek a picture of laboratory practices and measurable outcomes, such as performance data, which can assist

laboratorians and clinicians in improving the practice of laboratory medicine--the ultimate goal being improved delivery of patient care. EQLPS encompasses all of the Division's research programs, and specific information can be found in each program area including CLIA, Quality of Cytology Testing, MPEP: Retroviral and AIDS-related Testing, and MPEP: *M.tb*, Nucleic Acid Amplification (NAA) and Drug Susceptibility Testing.

1998 Accomplishments

- Completed and published an inventory of laboratory practices in a statistically representative sample of the nation's laboratories.
- Built linkages among laboratory practice data sets (e.g., PT, test categorization, HCFA laboratory registration) to facilitate laboratory practice surveillance research.
- Advocated the important role of the laboratory and of good laboratory practices in achieving health outcomes.

1999 Goals

- Complete studies underway and publish findings.
- Develop a research strategy that maximizes leverage of CDC resources.
- Seek broader participation in research projects by CDC scientists and by providers and payers of health care services.

For more information, call DLS, PHPPO, at 770-488-8295

NATIONAL INVENTORY OF CLINICAL LABORATORY TESTING

Program Overview

The National Inventory of Clinical Laboratory Testing (NICLTS) is a scientifically valid survey of the distribution of laboratory tests by type and location in the fifty states. NICLTS is designed to answer fundamental questions about the menus and volumes of laboratory testing in the U.S. The first round of NICLTS, completed in 1998, determined the distribution by six laboratory types, based on the Health Care Finance Administration's (HCFA) 23 laboratory types and the 10 Medicare regions. Tests were categorized using the CLIA Complexity Model as a guide. Approximately 900 moderately and high complexity laboratories were tabulated using on-site trained tabulators, all with medical technology backgrounds. An additional 1,300 waived and PPM laboratories were tabulated using a mail/telephone survey, with 110 visited on-site for validations.

NICLTS is intended as an on-going study. Our capability of visiting a scientifically valid set of the nation's laboratories allows extension into other on-site information such as antimicrobial susceptibility data, quality control practices, vaccine efficiency testing, etc. These studies are of interest to other CDC programs.

1998 Accomplishments

Intended Audience

The data from NICLTS are intended for use by all and will be posted as a database with defined queries on our Internet site early in 1999. Those specifically benefitting from NICLTS data will be policy planners and health systems researchers who have questions concerning the sites in which laboratory test are conducted.

Impact

Internally NICLTS will be used to model the distribution of laboratory testing and provide a way to predict how regulatory or other changes in the health care system will impact access to testing. It is envisioned that others outside will use the data for similar studies. It will also give health systems researchers a way to find geographic regions where testing is performed or clustered. The data will allow identification of types of facilities doing the bulk of testing of public health interest, such as reportable disease organism identification.

Interest in future NICLTS data collection has been shown by the National Immunization Program, the National Center for Infectious Diseases, and the Department of Defense.

- Received the NICLTS data in final form.

- Prepared a condensed test and analysis list for posting and queries.

- Started preparation of final analysis database.

- Prepared initial paper describing NICLTS.

1999 Goals

- Post the 1998 database on the Internet and prepare defined queries that will preserve privacy of tabulated laboratories.

- Prepare papers and MMWR articles on initial findings of NICLTS, including the 50 most frequently performed tests and the impact of blood supply testing on the nation's laboratories.

- Prepare for the second NICLTS survey in collaboration with other CDC programs.

For more information call DLS, PHPPO, at 770-488-8295

MODEL PERFORMANCE EVALUATION PROGRAM

Program Overview

The HIV Model Performance Evaluation Program evaluates laboratory results based on mailed samples containing undiluted, unaltered specimens from individual donors. Profiles of laboratories and their testing practices are collected from periodic survey questionnaires.

Performance evaluation activities are conducted for laboratories that test for:

- Human immunodeficiency virus type 1 (HIV-1) antibodies,
- Human T-lymphotropic virus types I and II (HTLV-I/II) antibodies,
- T-lymphocyte immuno-phenotypes (TLI) -- including CD4,
- HIV-1 ribonucleic acid (RNA) determinations (viral load) by RNA and signal amplification technologies, and
- HIV-I p24 antigen (Ag).

Evaluation results are used by laboratories for self-evaluation (quality assurance), by state and federal agencies to monitor performance and to shape policy decisions, by the World Health Organization (WHO), and by the Pan American Health Organization (PAHO) to support international quality assurance efforts.

Intended Audience

Laboratorians who perform retroviral and AIDS-related testing, including HIV-1 antibody testing, HTLV-I/II antibody testing, CD4 T-cell testing, HIV-1 RNA determinations (viral load), and HIV-1 p24 Ag testing; physicians who order the tests; the public for whom tests are performed; government agencies who have regulatory oversight responsibilities; and organizations with contractual or other binding arrangements with laboratories.

Impact

This program serves as an international reference system for quality. More than 40 million HIV tests are performed annually in the U.S. High-quality testing is essential to ensure public confidence in testing and to ensure the safety of the blood supply.

1998 Accomplishments

- Conducted national performance evaluations (PE) of laboratories that perform HIV-1 RNA determinations (viral load), HIV-1 p24 Ag testing, HIV-1 antibody testing, CD4 T-cell testing, and HTLV-I/II antibody testing.
- Completed statistical analysis of HIV-1 RNA determinations data to determine the status of viral load testing in the United States. Results will be used to develop an update report for publication in the CDC Morbidity and Mortality Weekly Report.

- Began statistical analysis of rapid testing methods data to examine accuracy and precision of these tests when compared with traditional enzyme immunoassay (EIA) and Western blot (WB) methods.

- Completed three sections of the four-section TLI Laboratory monograph and produced all data for inclusion in the HIV Testing Laboratory monograph.

- Using data concerning the use of quality control (QC) materials, published a manuscript in Archives of Pathology and Laboratory Medicine showing error rate using QC materials is lower than the error rate not using QC materials.

1999 Goals

- Continue PE of laboratories performing HIV and CD4 T-cell testing, HIV-1 RNA determinations, and HIV-1 p24 Ag testing.

- Print TLI monograph, and complete and print HIV laboratory monographs describing testing laboratories and their testing practices.

- Disseminate information regarding accuracy and precision of rapid testing methods to detect HIV-1 antibody.

- Complete collection of information describing laboratory practices associated with HIV-1 anti-retroviral resistance testing.

- Conduct survey questionnaires for both HIV-1 testing laboratories and TLI laboratories to update information in the CDC national data base describing the characteristics of laboratories and their testing practices.

For more information call DLS, PHPPO, at 770-488-8295

Program Overview

Photographs and computer graphics contain much of the scientific information critical to public health research, practice, and communication. As a unified, standardized electronic gateway to ultimately thousands of images, PHIL serves the growing demand documented in written survey results from all CDC programs and from nine national public health organizations.

Sponsored by the Public Health Practice Program Office, National Center for Infectious Diseases (NCID), and the Information Resources Management Office, the Public Health Image Library (PHIL) is an Internet-accessible picture archiving and communication system for digital-format still pictures, sets of still pictures, and multimedia files. A simple but powerful indexing system provides rapid access to photographs and computer graphics and the public worldwide, and is becoming established as the standard for still images and multimedia files at CDC.

Individual files are linked to other Web sites as applicable and will be tied into the general CDC search engine, making PHIL the pictorial cornerstone of an integrated information system at CDC. PHIL images and their documentation are reviewed by a panel of experts to ensure scientific accuracy.

1998 Accomplishments

- Migrated the system from a workstation to a dedicated, high-capacity server accessible worldwide via Internet at http://phil.cdc.gov/phil2.
- Expanded the database to include over 600 images, including several image sets and multimedia files and established links to other Intranet sites.
- Began archiving a special collection of scanning electron micrographs for NCID/HIP directly from a laboratory workstation.
- Began archiving Medical Mycology teaching sets for the Division of Bacterial and Mycotic Diseases, NCID. The sets are geared for medical students and medical microbiologists.

Impact

1999 Goals

- Install 1,200 new images from internal CDC sources.
- Establish direct indexing and inclusion of additional images from external online digital image libraries.
- Develop a plan for indexing and incorporating multimedia content from various sources. Candidates include the 761 videotapes in the PHPPO/DMTS tape library and many other videotapes currently residing throughout CDC.

For more information call DMTS, PHPPO, at 404-639-1291

PREVENTION RESEARCH WITH ACADEMIC PARTNERS

Program Overview

The Academic Programs Office creates and sustains linkages between all CDC units and the academic communities of public health and preventive medicine. A major focus is on mobilizing CDC-academia partnerships to address high-priority prevention research needs. The Academic Programs Office also sponsors the annual "Partnering" conference and other forums for exchange of ideas and research findings between public health practitioners and academic researchers, makes experiential opportunities available at CDC for young professionals, and provides strategic consultation to academic partners. Through the Academic Liaison Assignee Program, PHPPO helps schools of public health strengthen linkages between their programs and the world of public health practice.

PHPPO manages cooperative agreements with the Association of Schools of Public Health (ASPH) and the Association of Teachers of Preventive Medicine (ATPM) that supported nearly $20 million in cutting-edge, collaborative prevention research projects in 1998.

The PHPPO Extramural Services Activity administers these and all other PHPPO extramural grants, cooperative agreements and contracts.

CDC/ASPH Cooperative Agreement: The cooperative agreement connects the research capabilities of member schools of public health with the public health practice needs of CDC and state and local health departments. The cooperative agreement supports research, the training of present and future public health practitioners, and the development of new curriculums.

CDC/ATPM Cooperative Agreement: The cooperative agreement promotes attainment of *Healthy People* national public health objectives by enhancing the practice of public health professionals, preventive medicine specialists, and primary care physicians in research and education.

Annual "Partnering" Conference: This annual symposium is designed to familiarize potential collaborators, members of ASPH, ATPM, and the Minority Health Professions Foundation with CDC's role in public health and preventive care and with current research, education, and funding priorities. It also serves to provide a forum for participants to share experiences and disseminate information about successful collaborations.

1998 Accomplishments

- The ASPH cooperative agreement supported $11.5 million in projects and professional development in FY 1998, its 17th year.

- The ATPM cooperative agreement, in its 13th year, supported $7.5 million in projects and professional development.

- The 1998 Partnering conference, "Partners in Prevention Research" convened national public health leaders to explore the potential of CDC's new Prevention Research Initiative.

1999 Goals

- Expand the Academic Liaison Assignee Program to serve additional schools of public health.

- Analyze and report on reasons for the under-representation of minority groups among those seeking graduate degrees in the health professions.

- Conduct the 1999 symposium, "Eliminating Health Disparities through Prevention Research"CDC," to identify research and educational priorities that CDC programs share with academic partners.

For more information call Academic Programs Office, PHPPO, at 770-488-2501

ACADEMIC PUBLIC HEALTH INTERNSHIP AND FELLOWSHIP PROGRAMS

Program Overview

The Public Health Practice Program Office manages the programs that bring interns and fellows from schools of public health and departments of preventive medicine to conduct research and other projects at CDC.

Association of Schools of Public Health (ASPH) internships provide opportunities for public health graduate students from accredited graduate schools of public health to gain practical experience in CDC programs. Interns conduct defined projects under the direction of CDC staff, usually for 12-week periods.

Association of Teachers of Preventive Medicine (ATPM) internships provide opportunities for graduate students and medical residents at schools of medicine, and graduate programs in public health (as well as such fields as journalism, behavioral science, health education, and economics) to gain a wide variety of field experiences in the practice of public health. Interns conduct defined projects under the direction of CDC staff for 12-week periods.

ASPH and ATPM fellowships provide opportunities for graduate students, medical residents, and early career professionals to complement their academic training and gain hands-on public health experience while developing expertise and applied public health skills. Fellows work on important projects at the national level and may receive degree credit for their work from their home institutions.

Intended Audience

ASPH Internships:
Open to any full or part-time student who is enrolled in a masters or doctoral degree program in an ASPH member school and is either a U.S. citizen or foreign national with a visa permitting permanent U.S. residence.

ATPM Internships:

Open to any full- or part-time student or resident who is enrolled in a master's or doctoral level degree program in the fall semester in an ATPM member institution or is an individual member. To be eligible for the internship, an applicant must be a

U.S. citizens, a foreign national, or qualified non-citizen.

ASPH Fellowships:
Open to graduate students or early career professionals with graduate degrees in public health from ASPH member schools who are either U.S. citizens or foreign nationals with a visa permitting permanent U.S. residence.

Impact

Participants in the internship program are studying for their MPH or have just completed their MPH. They have only classroom training and no skill building. They are the future public health professionals. Most schools require a practicum experience to obtain the MPH degree. The internship program bridges this gap and offers practice experience at the world's leading public health agency. The fellowship program provides a pool for the future CDC workforce.

1998 Accomplishments

ASPH Internships:
Since the inception of the ASPH program, more than 800 interns have served at CDC. In 1998, 100 participated, including twelve in Prevention Research Centers. Completed a study of all internship projects since 1994 and their products such as publications, manuals, and video tapes.

ATPM Internships:
Five internships participated; two were health communications interns who worked in various centers, and the program had its first intern serving in a Prevention Research Center.

ASPH/ATPM Fellowships:
The Fellowship Program completed its fourth year in 1998 with 44 fellows, 34 from schools of public health and 10 from departments of preventive and community medicine.

1999 Goals

- Increase the number and diversity of participants in all programs.
- Increase the number of CDC programs and ASPH/ATPM member schools participating.
- Offer a second annual cycle of internships (fall/winter) through ASPH and ATPM.

For more information call Academic Programs Office, PHPPO, at 770-488-2501

Collaborate with Healthcare Partners for Prevention

COLLABORATE WITH HEALTHCARE PARTNERS FOR PREVENTION

Overview

The Public Health Practice Program Office's work is community-focused and partnership-driven. The PHPPO mission -- to strengthen the public health infrastructure -- is aimed at strengthening the capacity of organizations that perform public health services benefitting community health.

Healthcare organizations have been integral partners in PHPPO programs since our founding in 1988. The Assessment Protocol for Excellence in Public Health (APEX/PH) was developed in collaboration with healthcare and public health organizations and is currently being updated and revised with those partners. PHPPO chaired the planning committee for the 1994 CDC-Group Health Association of America conference "Public Health Agencies and Managed Care: Partnerships for Health" and plays a lead role for CDC in the "Medicine and Public Health" initiative sponsored by the American Medical Association and the American Public Health Association.

For public health-healthcare partnerships to succeed, the organizations in each sector must have the capacity to work together. Helping forge this "infrastructure for partnership" is a key PHPPO strategy.

1998 Major Accomplishments

- Guide to Community Preventive Services: Conducted field tests and focus groups to assess the utility of the first prototype chapter of the *Guide* and developed dissemination and evaluation plans for the Task Force on Community Preventive Services.

- Laboratory Testing Quality: In 1998, PHPPO instituted automatic CLIA waiver status for "home use" tests cleared by the FDA (simplifying requirements for healthcare providers), conducted national performance evaluations of laboratories that perform critical HIV-related tests, published a Congressionally mandated model certification program for embryo laboratories, and completed the first-ever national survey of personnel standards, quality assurance, and clinical practices in molecular genetic testing.

- Electronic Laboratory Reporting: Based on collaboration with CDC's National Center for Infectious Diseases and the Health Information Systems and Surveillance Board, PHPPO initiated evaluation of the capability of commercial laboratory Information system vendors to support automated reporting of clinical laboratory

test results. The *Journal of the American Medical Informatics Association* accepted a PHPPO article on electronic laboratory reporting.

Challenges and Approaches

- Guide to Community Preventive Services: PHPPO's continuing role is to ensure that the *Guide* serves as a user-friendly source of Information on the most effective public health strategies, policies, and programs for communities. With guidance from the Task Force and the practice community, PHPPO will conduct field tests of forthcoming chapters, develop training courses for practitioners, develop dissemination plans and conduct formative and impact evaluations.

- Genetics Testing for Healthy Living: The growth of genetic testing presents new challenges for laboratorians, health care providers, and consumers. In response, PHPPO is developing an initiative to study and monitor activities in human genetic testing to assure the safety and accuracy of test results.

- A key challenge in laboratory testing quality is to develop testing criteria and standards that will ensure quality practices in the rapidly evolving field of genetic testing. Our approaches include research into the "total testing environment" of genetic testing, development of indicated regulatory policies, and development and delivery of new training programs in genetic testing through the National Laboratory Training Network.

- Cervical Cancer Screening: Quality assurance is critical in cervical cytology screening programs. Based on its research into the validity of standard glass slide proficiency tests for evaluating the performance of cytologists who read Pap smears, PHPPO has developed and evaluated a new, computer-based testing system for use as a training and evaluation tool in cervical cytology screening. PHPPO will promote the "CytoView" system and will support its incorporation into training programs.

These and other priorities for 1999 are presented in more detail in the following fact sheets.

GUIDE TO COMMUNITY PREVENTIVE SERVICES

Program Overview:

Under the auspices of the Department of Health and Human Services, the Task Force on Community Preventive Services is developing the *Guide to Community Preventive Services*. The *Guide* will summarize what is known about the effectiveness and cost-effectiveness of population-based interventions for prevention and control. Based on available evidence, the *Guide* will provide recommendations on these population-based interventions and methods for their delivery.

The first volume of the *Guide* is expected to be published in the year 2000, with individual components released as they are available. Fifteen chapters are in development. Topics include: Tobacco, Alcohol, Other Addictive Drugs, Physical Activity, Nutrition, Sexual Behavior, Cancer, Diabetes, Improving Pregnancy Outcomes, Mental Impairment and Disability, Motor Vehicle Occupant Injury, Oral Health, Vaccine-Preventable Diseases, Violent and Abusive Behavior and Sociocultural Environment.

The development of evidence-based guidelines is a major accomplishment.

Impact

Lessons learned from past initiatives, such as the U.S. Preventive Services Task Force's *Guide to Clinical Preventive Services*, highlights the difficulty and importance of implementation by public health practitioners. The Public Health Practice Program Office (PHPPO) is responsible for field tests, implementation and evaluation of the *Guide*. Through a highly interactive and collaborative process, PHPPO staff are engaging a broad range of stakeholders in providing feedback to chapter development teams and in planning effective implementation. PHPPO plans to enhance adoption and use of the *Guide* recommendations through innovative training and by integrating them into with other CDC-supported planning tools such as APEX/CPH.

Intended Audience

The primary target audience of the *Guide* is "people involved in the planning, funding and implementation of population based services and policies to improve health at the community and state level." Secondary audiences include public health educators, researchers, and the media.

The purpose of the *Guide* is to provide public health practitioners, their community partners

and policy makers with the information needed for informed decision making on the most effective and cost-effective public health strategies, policies and programs for their communities.

1998 Accomplishments

- Assembled core staff to support PHPPO *Guide* activity with expertise in project management, medical epidemiology, health policy and communications.
- Conducted eleven focus groups (immunization program managers, a community coalition, local health officers, and managed care medical directors) to assess the quality and usefulness of the first completed prototype *Guide* chapter (Vaccine Preventable Disease).
- Presented initial plans for dissemination and evaluation to the Task Force.
- Identified potential partners for dissemination, implementation and evaluation which include CDC programs, other federal agencies, professional associations and membership organizations.
- Conducted literature review on dissemination of guidelines/diffusion of scientific findings.
- Assembled examples of ancillary materials used to implement evidence-based guidelines.

1999 Goals

- Convene an expert panel on evaluation and incorporate recommendations into the *Guide* evaluation plan.
- Conduct a national baseline survey on community preventive services.
- Incorporate plans for implementation and evaluation of the *Guide* into the PHPPO sentinel site system.
- Continue field tests using the Motor Vehicle Occupant Injury and Tobacco chapters.
- Develop collaborative plans for dissemination/implementation of the *Guide* with federal and non-federal partners including public health organizations, other professional organizations, and managed care and business community partners.
- Coordinate the identification and development of ancillary materials, planning tools and training which will support the use of the *Guide* by state and local health officers .
- Continue to support to the Task Force on Community Preventive Services.

For more information call DPHS, PHPPO, at 770-488-2469

PRIVATIZATION AND PUBLIC HEALTH

Program Overview

Once the sole province of government, the management and delivery of essential public health services are increasingly entrusted to private providers. Privatization is usually motivated by a desire to cut costs, improve quality and increase flexibility in implementing programs. Fiscal concerns are often the primary catalyst for privatization in state and local health agencies. Although many public health services have been privatized, little is known about the frequency and types of services being privatized nationally, the reasons for privatization, barriers to privatization, effectiveness in cost control, quality, and access and, and most important, the impact on the health of communities and defined populations.

The Division of Public Health Systems, in collaboration with other organizations, is conducting research to evaluate the effects of changes and the delivery of quality public health services in this new environment.

Impact

Research into privatization, its driving forces, and its implications for public health will aid in developing policies and programs to protect the health of the public.

1998 Accomplishments

- Researched and delivered the presentation, "Privatization and Deregulation: Accountability for Essential Public Health Functions" at the Public Health Symposium 1998: *Change Affecting Pennsylvania State and Local Public Health Agencies.*
- Engaged the Keystone Research Center for a report on the impact of privatization on Pennsylvania's state health center.
- Collaborated with the University of Pittsburgh and Emory University to establish a baseline of information on privatization activities in state/local public health agencies.

1999 Goals

- Develop and disseminate a report on privatization in state and local governments based on survey findings.
- Conduct case studies of selected models of privatization in communities to identify core functions of public health that are impaired by privatization.

For more information call DPHS, PHPPO, at 770-488-2469

PARTNERS IN INFORMATION ACCESS FOR PUBLIC HEALTH PROFESSIONALS

Program Overview

"Partners in Information Access for Public Health Professionals" was initiated in 1997 by the Public Health Practice Program Office (PHPPO) and the National Library of Medicine. This initiative combines the strengths of PHPPO's Information Network for Public Health Officials (INPHO) Public Health Training Network, and the National Laboratory Training Network with those of the National Library of Medicine. Other partners are NAACHO, and ASTHO, HRSA.

Intended Audience

Public health and health care professionals, researchers, educators, and program managers.

Impact

The goal of this program is to provide public health and health care practitioners with rapid and convenient access to a wide spectrum of information resources. The program also provides training in effective access to information resources and use of information resources and services. An additional program objective is to increase the awareness of public health professionals' information needs and resources among National Library of Medicine member libraries.

1998 Accomplishments

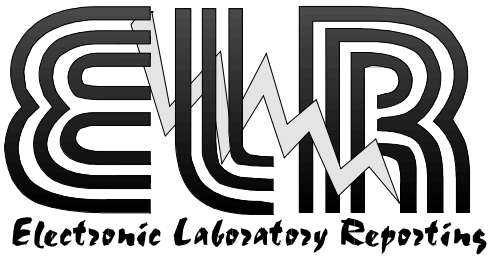
- Co-sponsored with the New York Academy of Medicine the 1998 health policy and public health conference, "Accessing Useful Information: Challenges in Health Policy and Public Health".
- Developed materials for distance-based training in the application of electronic information resources to front-line practice in public health and healthcare settings.
- Funded projects to train public health professionals in using CDC and NLM information resources.

1999 Goals

- Produce the live, national, satellite program, "Accessing HIV/AIDS Information Resources" on February 11, 1999, and similar programs in the future for practitioners in other disease and risk factor areas.
- Provide regional training in public health information needs and resources for medical librarians.
- Support training for public health professionals through NACCHO and ASTHO.

For more information call INPHO, PHPPO, at 770-488-2428

ELECTRONIC LABORATORY REPORTING



Program Overview

In 1994, Division of Laboratory Systems (DLS), Public Health Practice Program Office, and the Department of Pathology at the University of Alabama, Birmingham, joined in a cooperative agreement to investigate the potential for developing a network of laboratories to report quality assurance data directly from laboratory information systems (LIS) to a central site for analysis. In 1995, DLS made this project available as a test bed for direct reporting of clinical laboratory data to public health agencies, a high priority of the National Center for Infectious Disease (NCID) need and. DLS is integrally involved with the Health Information Systems and Surveillance Board (HISSB) and CDC efforts in this activity.

Intended Audience

Clinical laboratories, the users of clinical laboratory results, and state and federal agencies responsible for gathering public health data to support regulatory and surveillance activities.

Impact

The goal of this effort is to make all surveillance active and to rely more on first-responders in private health. Direct transmission of clinical laboratory information in standard formats will allow public health programs to more rapidly receive the information now required by many state laws. Use of primary source data will allow more complete case-findings and, through mathematical tools under development in NCID, perhaps earlier identification of outbreaks. Although the benefits to traditional public health activities are obvious, benefits to new areas of public health, such as emerging infectious diseases, cancer cluster investigations, and environmental health impact studies are also very significant.

1998 Accomplishments

- Funded a contract to evaluate the capabilities of LIS vendors to meet the requirements of the 1997 CDC ELR specification.

- Served as CDC's Liaison to the College of American Pathologist's Systematic Nomenclature for Human and Veterinary Medicine (SNOMED) Editorial Board.

- The Journal of the American Medical Informatics Association (JAMIA) professionally accepted on electronic laboratory reporting to public health agencies.

- Participated in a meeting on HL7 Reporting for Cancer Registry Data sponsored by the National Center for Chronic Disease Prevention and Health Promotion, Division of Cancer Prevention and Control (DCPC).

- Continued to assist DCPC with is efforts in introducing SNOMED coded reporting from anatomical pathology laboratories.

1999 Goals

- Initiate pilot ELR reporting according to the 1997 CDC specification in select states.

- Continue SNOMED related activities and explore the feasibility, a Public Health SNOMED License agreement.

- Continue to participate in HISSB meetings concerning electronic laboratory reporting and combined surveillance systems.

- Prepare at least two academic publications on issues associated with ELR.

For more information call DLS, PHPPO, at 770-488-8295

MODEL CERTIFICATION PROGRAM FOR EMBRYOLOGY LABORATORIES

Program Overview

The Fertility Clinic Success Rate and Certification Act of 1992 (FCSRCA) was implemented to furnish consumers with reliable information on the pregnancy success rates of individual clinics that provide Assisted Reproductive Technology (ART), and to ensure the quality of such services by providing for voluntary certification of embryology laboratories. FCSRCA mandates that the model certification program include quality standards for embryology laboratory procedures. PHPPO has lead responsibility for the program.

Intended Audience

State health agencies and professional accreditation organizations.

Impact

The intent of the FCSRCA is to provide the public with comparable information concerning the effectiveness of infertility services and to ensure the quality of such services by providing for the certification of embryology laboratories. The impact of the model certification program will be determined by the number of states that adopt the voluntary program.

1998 Accomplishments

- Conducted consultations with numerous professional and consumer organizations with an interest in and expertise with ART to optimize development of the model certification program. Consultants included the College of American Pathologists (CAP), the American Society for Reproductive Medicine (ASRM), the Society for Assisted Reproductive Technology (SART), the American Association of Bioanalysts (AAB) and the consumer group RESOLVE.

For more information call DLS, PHPPO, at 770-488-8295

- Engaged numerous technical consultants with expertise in embryology laboratory procedures as well as other Federal agencies such as the Food and Drug Administration (FDA) and the Health Care Financing Administration (HCFA) for consultation during the development of the model certification program.

- Published the proposed model certification program as a Notice for Public Comment in the Federal Register on November 6, 1998.

- Conducted a survey of all known embryo laboratories in the U.S. (approximately 350) to determine current practices and procedures and to provide baseline data from which to examine the impact and effectiveness of the final model certification program.

- Conducted briefings with Congressional staff regarding the development and publication of the proposed model certification program for embryology laboratories.

1999 Goals

- Collaborate with National Center for Chronic Disease Prevention and Health Promotion on inclusion of certification status of embryo laboratories in future pregnancy success rate publications.

- Analyze public comments on the proposed model certification program, make appropriate revisions, and publish the final model in the Federal Register.

- Analyze data gathered from embryology laboratory survey.

CLINICAL LABORATORY IMPROVEMENT AMENDMENTS

Program Overview

In 1988, Congress enacted the Clinical Laboratory Improvement Amendments (CLIA), thus mandating a very broad and wide-ranging change in regulations of laboratories that perform testing for medical diagnoses. CLIA expanded federal regulatory authority to more than 150,000 laboratories, most of which were previously unregulated physician office laboratories. In 1997, these laboratories performed an estimated 8 billion tests at a cost of approximately $30 billion. In June 1991, the Secretary of HHS delegated responsibility for development and implementation of the scientific and technical aspects of regulations to CDC. CDC works closely with professional organizations, academic institutions, industry, governmental agencies and the Health Care Financing Administration (HCFA) to develop laboratory standards that ensure that the nation's clinical laboratories provide the public with accurate and reliable test results. The Division of Laboratory Systems (DLS), Public Health Practice Program Office, carries out this comprehensive program of standards development and laboratory improvement while HCFA administers the program. DLS:

- Determines the complexity and thereby the extent of regulatory oversight required for each of over 22,000 laboratory tests;
- Provides training to thousands of laboratory personnel each year;
- Evaluates the effects of differences in laboratory practice parameters on the accuracy and reliability of test results; and,
- Manages the Clinical Laboratory Improvement Advisory Committee (CLIAC).

Impact

Since virtually everyone requires laboratory testing at some time, the entire public benefits from improvements in test quality. Efforts to improve the quality of laboratory testing must be ongoing, since inaccurate testing poses a serious threat to the public's health. Even a low rate of inaccuracy may translate into hundreds of thousands of potentially inappropriate medical decisions.

Intended Audience

Clinical laboratories, the users of clinical laboratory services, professional organizations and state and federal regulatory agencies that are responsible for clinical laboratory oversight.

1998 Accomplishments

- Implemented Congressional change to the CLIA law that requires automatic waiver of any test cleared by the Food and Drug Administration (FDA) for home use.

- Solicited CLIAC recommendations for revisions and clarifications to the CLIA

requirements to specifically address genetic testing.

For more information call DLS, PHPPO, at 770-488-8295

1999 Goals

- Collaborate with the FDA to explore ways to reduce duplicate review process.

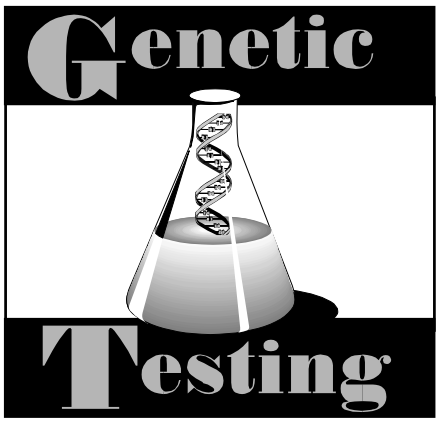
- Develop revisions to the final CLIA rule, particularly those for quality control and cytology.
- Update proficiency testing requirements to more adequately assess the performance of new technology in current testing environments.

- Update CLIA regulations to ensure quality genetic testing and continue to provide consultation to DHHS to promote quality in this rapidly changing and expanding laboratory testing area.

- Continue reviews of applications from private accreditation and state laboratory programs to determine whether they meet CLIA standards and thus would be viable alternatives to direct federal oversight of some laboratories.

- Provide technical and scientific support to HCFA and FDA; provide information to the public.

IMPROVING THE QUALITY OF GENETIC TESTING



Program Overview

The growth of genetic testing presents new challenges for laboratorians, health care providers and those concerned with quality assurance in the testing process. In response, the Division of Laboratory Systems (DLS) is developing an initiative to study and monitor activities in human genetic testing.

Biochemical tests for inborn errors of metabolism and sickle cell disease have been offered for some time, but DNA-based tests for genetic disorders are now increasingly common. The latter began in small, research-based laboratories, but now larger laboratories are offering the tests on a large scale for diagnostic rather than research purposes.

- With new technologies and tests, there are concerns about obtaining adequate specimens, ensuring quality control in the analytic process and providing clearly understood test results to clients. The fast evolution of technology has made it difficult to develop timely laboratory/test performance standards for genetic tests and procedures.

- Little is known about the proficiency of laboratories performing genetic tests in the U.S. Existing proficiency testing programs have difficulty accomodating the expanding numbers of tests and technologies in use.

- Molecular genetic tests are varied and complex. There are concerns about communication before and after the tests are performed between laboratory professionals, health care providers and their clients. More than in other areas, laboratory professionals may be directly involved in the choice of the appropriate test(s) and may participate in pre- and post-test counseling of clients.

Intended Audience

Laboratorians, clinicians, professional groups, regulatory laboratory organizations, genetic

support groups and policymakers. Information and data from the DLS project will be shared through presentations and publications and will be made available to the Clinical Laboratory Improvement Advisory Committee (CLIAC).

Impact

Information gathered about the quality of genetic testing and practice in the nation's clinical laboratories will be available to laboratory professionals and CLIAC to promote quality improvement in genetic testing.

1998 Accomplishments

- A national survey of personnel standards, quality assurance and clinical practices in molecular genetic testing was carried out by the Department of Human Genetics and Pediatrics of the Mount Sinai Medical School in association with the Association of Teachers of Preventive Medicine and DLS. The findings have been presented at national meetings and submitted for publication. A similar study, to be carried out by Mt. Sinai, is planned for biochemical testing.

- A Genetic Testing Subcommittee of CLIAC was established to advise on issues related to quality and standards for genetic testing as defined under CLIA. This was supported by staff from DLS.

- A contract was awarded to a private firm to gather recommendations from experts on possible new approaches to proficiency testing and model performance evaluation programs in molecular genetic testing.

1999 Goals

- Increase the laboratory technical expertise in genetic testing.

- Develop a program for measuring the performance of genetic testing laboratories.

- Develop general guidelines for quality assurance in molecular genetic testing laboratories.

- Examine in greater detail the pre-and post-test components of molecular genetic testing as they apply to laboratory practice.

- Modify CLIA to fill the gaps in quality assurance of genetic testing.

- Complete the development of a computer-interactive genetic training module for laboratory workers and make available through the National Laboratory Training Network.

For more information, call DLS, PHPPO, at 770-488-8295

IMPROVING THE QUALITY OF CYTOLOGY TESTING

Program Overview

Due to public concern about the quality of cytology services, Congress included special provisions in the Clinical Laboratory Improvement Amendments of 1988 (CLIA) for cytology testing. These provisions required "periodic confirmation and evaluation of the proficiency of individuals involved in screening or interpreting cytological preparations..." The regulation, published in February 1992, specified requirements for a glass slide proficiency testing (PT) program. The glass-slide format, however, has been the major impediment to implementing the regulation. In an effort to meet this requirement, Public Health Practice Program Office (PHPPO) issued a request for proposals in 1993 to assemble a library of glass slides sufficient to provide a national glass slide proficiency testing (GSPT) program. No one responded to the RFP. To date only one CLIA-approved state GSPT program exists; it is in the state of Maryland.

PHPPO later co-hosted a symposium with the Cytology Education Consortium and the College of American Pathologists to discuss alternatives to the GSPT format. At the following Clinical Laboratory Improvement Advisory Committee (CLIAC) meeting in March 1994, the cytology subcommittee recommended that CDC pursue computer imaging as an alternative to GSPT. This recommendation was approved by the entire CLIAC. To achieve this goal, PHPPO worked with the American Society of Clinical Pathologists, New England Medical Center and Thomas Jefferson University to develop three prototype computer-based proficiency testing (CBPT) programs. The three prototypes were evaluated in a pilot study in 1994.

In 1996, PHPPO developed a CBPT, "CytoView," based on recommendations from the participants in the cooperative agreement pilot study. The first prototype was used in a CDC contract study (1995-1997) to determine if PT was a measure of individual work performance. PHPPO examined correlations between scores of rescreens of 500 slides of individual's recent work with the scores on two methods of PT: GSPT and CBPT. The study determined there was a correlation between work performance and both methods of PT.

The CytoView prototype is being further developed based on recommendations from the evaluations submitted during the study.

The second prototype, CytoView II, will have faster access speeds, be more portable, have improved image quality, and contain more cases than CytoView. CytoView II will be presented at professional meetings, and a beta test will be conducted in 1999.

Intended Audience

Pathologists and cytotechnologists who perform diagnostic cytology tests.

Impact

Congress mandated cytology PT to ensure competency of individuals who perform cytology testing. The Division of Laboratory Systems computer-based PT program has demonstrated that this technology may be used to measure individual competency.

1998 Accomplishments

- Prepared a paper, accepted for publication in *Acta Cytologica*, that describes the development of CytoView.

- Prepared a paper describing the findings of the study that showed a correlation between both computer-based and glass slide PT with a measure of actual work performance. Results were also presented at the American Society for Clinical Pathologists/College of American Pathologists fall meeting.

- Met with state providers of proficiency testing programs to review the strengths and weaknesses of their PT programs and how their experiences could influence future regulations.

1999 Goals

- Publish a proposed rule in collaboration with HCFA that revises the CLIA requirements to be more flexible, thereby permitting approval of a greater range of programs, including CBPT programs.

- Develop CytoView II based on recommendations for improvement made by participants in the 1997 study and demonstrate its enhancements at professional meetings.

- Conduct beta test of CytoView II using pathologists and cytotechnologists.

For more information call DLS, PHPPO, at 770-488-8295

M.tb NUCLEIC ACID AMPLIFICATION AND DRUG SUSCEPTIBILITY TESTING

Program Overview

The *Mycobacterium tuberculosis (M.tb)* nucleic acid amplification testing (*M.tb*-NAA) performance evaluation program assesses the quality of testing and laboratory practices of tests that can rapidly detect *M.tb*. The *M.tb*-NAA tests may avoid the delays in patient treatment and tuberculosis (TB) control associated with routine *M.tb* tests, thus decreasing the spread of TB.

The *M.tb* drug susceptibility testing performance evaluation program was implemented as part of the National Action Plan to Combat Multidrug-Resistant Tuberculosis (MDR-TB) to increase the use of rapid test methods. One initiative involves sharing *M.tb* strains with the World Health Organization (WHO) program to increase the international standardization of *M.tb* drug susceptibility testing in support of international surveillance for MDR-TB. The program now includes drug susceptibility testing for non-tuberculosis mycobacteria (NTM); major causes of opportunistic infections in HIV-infected individuals.

Intended Audience

State public health and private laboratories that perform *M.tb*-NAA testing and *M.tb* drug susceptibility testing in support of TB control. Internal CDC collaborators include NCID and NCHSTP. Consultation and support for FDA review and clearance of *M.tb*-NAA and *M.tb* drug susceptibility testing products are provided through these programs.

Impact

This program provides a way to identify and correct problems in an extremely important worldwide area of public health testing. For example, analysis of the first shipment of test samples revealed that many laboratories were not following recommended quality assurance practices for *M.tb*-NAA testing. Specifically laboratories were not isolating nucleic acid processing areas from amplification areas and this practice was shown to be associated with inaccurate test results. Changing this quality assurance practice will improve accuracy.

1998 Accomplishments

- Comparison of the WHO and CDC program data for the detection of drug resistance indicated a high level of agreement for *M.tb* drug susceptibility testing with selected strains of *M.tb*.

- Analysis of results of the *M.tb*-NAA program demonstrated a correlation between inaccurate test results and specific laboratory practices (presented at the National Institute for Standards and Technology workshop on standards for NAA testing)

- A comparison of the CDC and WHO *M.tb* drug susceptibility testing programs demonstrated good agreement for detection of drug resistant between countries using different test methods (presented at IUATLD meeting, Thailand).

- The first report of testing practices for NTM drug susceptibility testing provided a national assessment outlining the variability of practices and demonstrated a need for standardization of NTM drug susceptibility testing methods.

- Laboratory practices, outlined in the *M.tb* drug susceptibility testing program, are being used as a basis for guidelines on susceptibility testing that were developed by the American Thoracic Society and CDC.

1999 Goals

- Findings in the *M.tb*-NAA program data will be published in a peer-review journal.

- The analysis of *M.tb* drug susceptibility program data with information on practices and performance.

For more information call DLS, PHPPO at 770-488-8295

Promote Healthy Living at Every Stage of Life

PROMOTE HEALTHY LIVING AT EVERY STAGE OF LIFE

Overview

In most cases, CDC promotes healthy living in collaboration with partner organizations that work directly with the public and populations that bear disproportionate burdens. This strategy capitalizes on our comparative strengths and leverages the resources CDC has available.

To be effective in this role, CDC's partners must have the capacity to support healthy living programs and to perform other, related public health services. The Public Health Practice Program Office's on-going contact with CDC's partner organizations demonstrates that they rely critically on CDC to conduct and translate applied research, develop standards for program performance, develop and deliver training, design information and communications tools, and support the cross-cutting infrastructure that undergirds the entire public health system.

Most local and State health departments, and many other partner organizations, lack the capacity to support fully effective health promotion programs. A recent study found, for example, that only 29% of all Americans live in communities where essential public health services (as defined by the national Public Health Functions Steering Committee) are performed adequately.

1998 Major Accomplishments

- Direct Education: Since its founding in 1993, the Public Health Training Network has delivered educational programs directly to public health professionals and to the concerned public. In 1998, PHPPO, in collaboration with other CDC programs, delivered healthy living educational and information teleconferences to national audiences of practitioners and the lay public. Those programs improved the skills and knowledge of practitioners, informed health policy-makers and
- CDC Prevention Guidelines Database: First available on the Internet in 1995, the CDC Prevention Guidelines Database gives the public and practitioners immediate, Web-based access to over 400 CDC-approved guidelines for prevention of disease, injury, and disability on the CDC "home page." In 1998 the Guidelines were accessed an average of 1,600 times per day. (They are available also in CD-ROM and book formats.) In addition to health conditions that affect all populations, the database includes guidelines for specific groups and conditions, for example, HIV testing and counseling for pregnant women, influenza and other vaccinations for the elderly, lead poisoning in children, breast cancer, and others.

community groups, and gave families and individuals information for their own decision-making.

- Public Health and the Faith Community: Through the CDC-Carter Center Interfaith Partnership, PHPPO has provided technical assistance to the Faith and Health Action Team of the Coalition for Healthier Cities and Communities.

Challenges and Approaches

- "Public Health Practice Grand Rounds" and Direct Education: PHPPO, other CDC programs programs, and external partners plan to expand their use of teleconferences and other distance-based vehicles to serve the growing demand for healthy living education and information. In addition, PHPPO envisions collaborating with CDC and other partners to develop an on-going "Public Health Practice Grand Rounds" program of national teleconferences to extend CDC's ability to deliver health living knowledge and information to a wide spectrum of stakeholders and consumers.

These and other priorities for 1999 are presented in more detail in the following fact sheets.

CDC PREVENTION GUIDELINES DATABASE

Program Overview

The CDC Prevention Guidelines Database (PGD) contains over 400 official guidelines and recommendations approved by CDC for prevention of diseases, injuries, and disabilities. The database gives public health practitioners quick access to guidelines for prevention and control of such public health threats as HIV infection and AIDS, cholera, disaster response, dengue fever, suicide, vaccine-preventable diseases, lung cancer, sexually transmitted diseases, birth defects, and malaria. It includes all the recommendations of the Advisory Committee for Immunization Practices, CDC's sexually transmitted diseases treatment guidelines, and the entire "yellow book" (Health Information for International Travelers). This database is a central, electronically accessible, dynamic, up-to-date repository of the full text, tables and graphics of CDC prevention guidelines and recommendations. PHPPO has lead responsibility for expanding and updating the guidelines with guidance from the Prevention Guidelines Database Steering Committee. The database is updated weekly.

CDC made the PGD available globally on the Internet in 1995. In 1996, PHPPO, IRMO, EPO, and the Excellence in Science Committee published book and CD-ROM editions of the Guidelines. The book and CD-ROM contain a selection of CDC guidelines on public health topics not typically covered in medical or public health texts.

Intended Audience

Clinicians, public health practitioners, hospitals, managed care organizations, and health researchers.

Impact

The Web version of the PGD is accessed an average of 1,600 times each day, making it the most intensively accessed of the 40 datasets on CDC's website. An estimated 2,000 copies of

the book and CD-ROM versions have been distributed.

1998 Accomplishments

- Convened a CDC expert panel to advise on setting strategic directions for PGD for the next 3 years.

- Convened a CDC expert panel to plan how to transform data that will permit the integration of the PGD into electronic physician and health care reminder systems.

- Added all new 1998 guidelines to the database.

1999 goals

- Begin development of next generation prototype of "Guidelines-centric" on-line, CDC Prevention Guidelines database, e.g., bioterrorism, food safety, or immunization.

- Explore and select from technologies for storing GPD to enable its integration into existing clinical care information systems.

- Assemble and publish on-line bioterrorism-related guidelines from CDC in support of the Health Alert Network.

For more information, contact DPHS, PHPPO, at 770-488-2469

INTERFAITH HEALTH PARTNERSHIP

Program Overview

The goal of the Interfaith Partnership, a collaboration of CDC and the Carter Center's Interfaith Health Program, is to integrate the strengths and resources of faith communities with those of public health.

The Partnership strategy is to:

- Build and extend the network of faith organizations involved in community health and quality of life improvements;
- Facilitate the sharing of models and tools that support faith organizations working with individuals and communities on health issues;
- Promote collaboration between academic centers of theology, public health, medicine, and nursing;
- Promote collaboration between community health practice sites and academic centers;
- Provide consultation to CDC programs and state and local public health organizations seeking to work with faith organizations in community health initiatives; and
- Provided consultation, continuing education, and network linkages to build and strengthen partnerships between local, state and national faith and health organizations (e.g., Alameda and San Mateo Counties in California, the
- Promote evaluation of interfaith health initiatives.

Intended Audience

Faith communities, public health agencies, and academic institutions committed to promoting faith health partnerships in communities.

Impact

To improve health at the community level by integrating the strengths and resources of faith communities with those of public health.

1998 Accomplishments

- Assisted development and dissemination of the publication *Strong Partners: Realigning Religious Health Assets for Community Health* that promotes use of public health science and planning tools to guide community investment and resource plans for religious hospitals and for new religious foundations facing redeployment of health assets following the sale of health care facilities or other assets.
- Facilitated exchange of information on best practices in faith and health collaborations through the CDC Faith and Health Interest Group.

American Public Health Association, The Coalition for Healthier Cities and Communities, the National Health Ministries Association, the National Civic League, Community Care Network, the Public Health Institute and numerous religious health foundations).

- Assisted in convening a national panel of community health and religious researchers to design approaches to evaluating the impact of community-based faith and health interventions.

1999 Goals

- Increase support and assistance to the Faith Health Consortium and its work to link public health and theology centers around community health research and practice.

- Publish the report *Engaging Faith Communities in Community Health*, highlighting issues of separation of church and state, scientific understanding between faith and health, best community collaboration practices between faith and health organizations.

- Assist the National Health Ministries Association in expanding the learning opportunities of congregational health promoters through consultation and speaker identification for their 1999 annual conference.

- Assist the Public Health Leadership Society in establishing a forum where faith community leaders can explore their leadership challenges and acquire approaches to collaboration between the sectors.

- Work with religious health systems and foundations to establish a set of principles that link public health science to decision-making and accountability on redeployment and community investment of nonprofit religious health assets generated through the sale of hospitals and other health care assets.

- Facilitate CDC Faith Interest Group activities including publication of "Engaging Faith Communities as Partners in Community Health."

For more information call DPHS, PHPPO, at 770-488-2530

PROMOTING HEALTHY LIVING THROUGH THE PUBLIC HEALTH TRAINING NETWORK

Program Overview

Since its founding in 1993, the Public Health Training Network (PHTN), a national, distance-based teleconference and training system, has delivered educational programs directly to audiences in specific life-stage populations and to public health and health care providers who serve them. PHTN uses an array of media to communicate CDC's healthy living and disease prevention messages.

Examples of PHTN programs that address defined populations include: "Youth and Elders", a 1993 teleconference targeted at reducing teen smoking and sponsored by the Office on Smoking and Health; "Programs that Work: HIV Prevention for Teens", a 1994 videoconference sponsored by the Division of Adolescent and School Health; "What's in Store? The New FDA Rules on Tobacco", a 1997 interactive broadcast that targeted parents and public health professionals; and "Chronic Fatigue Syndrome: Current Issues", a 1997 satellite broadcast that reached victims of chronic fatigue syndrome. Listed below are examples of PHTN's 1998 broadcasts and planned1999 programs which relate to CDC's priority "Healthy Living at Every Stage of Life".

- Vaccine Safety and Risk Communication

Intended Audience

PHTN teleconferences and training programs serve the concerned public, public health practitioners and medical care professionals, educators, and health policy makers.

Impact

PHTN teleconferences and training programs educate at-risk groups, improve the skills and knowledge of public health and medical care professionals, and inform health policy-makers and researchers on a wide spectrum of current public health issues.

1998 Broadcasts:

- Healthy People 2000: Progress Review on Adolescents and Young Adults.
- Healthy People 2000: Women's Health
- HIV Prevention Update.
- Putting the Pieces Together: Managing Occupational Exposures to HIV.
- Vaccinating Adults: the Technical Issues.
- Immunization Update 98.

- Epidemiology and Prevention of Vaccine Preventable Diseases

1999 Broadcasts
(Planned as of January 1998)

- Healthy People 2000: Clinical Preventive Services.
- HIV Update (Two Programs).
- Accessing HIV/AIDS Information Resources.
- Primer on Tuberculosis.
- Immunization Update 1999.
- Surveillance of Vaccine Preventable Diseases.
- Epidemiology and Prevention of Vaccine Preventable Disease.
- Preparing for the Next Influenza Pandemic.

For more information call DMTS, PHPPO, at 404-639-3707

Work with Partners to Improve Global Health

WORK WITH PARTNERS TO IMPROVE GLOBAL HEALTH

Overview

As in the U.S., the public health infrastructure of many other countries -- especially the developing countries of Asia, Africa, and Latin America -- is stressed and in urgent need of strengthening. Gaps are evident in all elements of the infrastructure: science, people and systems.

When the Public Health Practice Program Office (PHPPO) was created in 1988, our vision was almost exclusively domestic in scope. Today all our programs have a global dimension as well, a growing role urged by both our CDC and international partners.

By focusing our strengths on building strengthening infrastructure, we help build self-sustaining, in-country systems that can ensure the performance of public health services. The infrastructure components our global activities focus on include: management development, training and education, informatics and information/ communication systems, performance standards, laboratory practice systems, tools for health assessment, and others.

A strategy that emphasizes infrastructure magnifies the impact of CDC investments internationally. Investing in infrastructure strengthens cross-cutting systems, creating a robust platform for design and delivery of programs targeted on the needs of specific countries and their communities.

1998 Major Accomplishments

- With PHPPO's leadership, the Public Health Training Network (PHTN) delivered satellite-based training and education programs to public health
- The Sustainable Management Development Program completed the seventh class of the annual Management for International Public Health course, increasing the total number of graduates to 124 middle- and senior-level public health managers from 43 countries. Through the MIPH train-the-trainer program, participants return to their home countries where they conduct in-country management training programs that have equipped hundreds of public health professionals with up-to-date management skills targeted specifically on public health program needs.
- PHPPO's Office of Global Health developed the new *"Healthy Plan-it"* public health management training program for use by MIPH graduates in their home countries.
- PHPPO's Office of Global Health and Division of Media and Training Services (DMTS) consulted with China's Ministry of Health and Beijing Medical University to develop a strategic plan and operational requirements for a planned 20,000-site, nationwide distance-learning network modeled on the U.S. Public Health Training Network.

professionals in 23 countries in the Caribbean, Eastern Europe, the Mediterranean region, and North America.

- The Division of Laboratory Systems, in collaboration with CDC's Office on Global Health, provided strategic planning and technical assistance to the Caribbean Epidemiology Centre to establish a distance learning network serving all twenty member nations.

- At the request of the World Health Organization (WHO), the Division of Public Health Systems advised on a WHO initiative to define "essential public health functions" for adoption by member countries. In addition, PHPPO consulted with WHO toward designation as a Collaborating Center for Health Systems Development

Challenges and Approaches

- "Global PHTN:" A growing number of international public health partners is calling for CDC leadership and consultation in development of a worldwide, distance-based learning system like the CDC-led PHTN. This is an important opportunity to extend the reach of CDC's science and programs internationally. We will work with the Office of Global Health and other CDC programs to identify their priorities, and will emphasize consulting to assist international partners in developing strategies and technical solutions toward the goal of a seamless distance-learning system for public health.

- WHO Collaborations: PHPPO will continue to support the WHO "essential public health functions" initiative -- co-sponsoring an international conference on the issue in 1999 -- and to finalize PHPPO's recognition as a WHO Collaborating Center.

- Laboratory Management: Demand for international training in laboratory operations management has grown significantly and, practically speaking, can be met only with leadership by the Division of Laboratory Systems. To begin to address this need, PHPPO plans to develop a training program for middle- and senior-level laboratory managers integrated into the annual Management for International Public Health course and, in addition, to include on-site fellowship experiences with State health laboratories. PHPPO is exploring potential participation by WHO in this program.

These and other priorities for 1999 are presented in more detail in the following fact sheets.

SUSTAINABLE MANAGEMENT DEVELOPMENT PROGRAM

Program Overview

The mission of the Sustainable Management Development Program (SMDP) is to strengthen management training capacity in the health sector in developing countries. The goal is to improve health and productivity through enhanced public health management and decision-making skills, innovations in problem-solving, and mobilization of community support for public health interventions. An integral part of the program, the Annual Train-the Trainer Management for International Public Health (MIPH) course, is offered in collaboration with Emory University every fall to approximately 20-25 management trainers. The course prepares public and private health professionals to plan, implement, and evaluate applied public health management curricula in their countries. Sponsors of the 1998 course included: Academy for Educational Development, Basic Support for Institutionalizing Child Survival (BASICS), Caribbean Epidemiology Research Centre, CDC/EPO, CDC/NCHSTP, Project HOPE, Reproductive and Child Health Alliance (Cambodia), Rockefeller Foundation, USAID, and the World Bank.

- Development of a public health management curriculum for the Hanoi School of Public Health in collaboration with the Rockefeller Foundation.

- First presentation of management projects by MIPH graduates at an international scientific meeting (1998 International

Intended Audience

Mid- and upper level public health officials from developing countries.

Impact

Since the program began in 1992, SMDP has trained 124 *management trainers* from 43 countries. In many of these countries (e.g., Nigeria, Vietnam, the Philippines, Mexico), graduates have used their new skills to establish and teach their own public health management training curricula to local epidemiologists and program managers. In countries where CDC/SMDP has provided in-country technical assistance for training and evaluation, the program has had a well-documented impact on health program goals (e.g., improvement in compliance with program management norms, reduction in program operating costs.

1998 Accomplishments

- SMDP received the *1998 Exemplar Award* from the International Association for Continuing Education and Training.

  Clinical Epidemiology Network Conference, Querétaro, Mexico) in collaboration with Epidemiology Program Office, Division of International Health.

- Began production of a monograph on Total Quality Management with specific application for public health professionals

-- will include case studies by MIPH graduates from at least 5 countries.

- Completion of "*Healthy Plan-it*", a distance-based (print and video) learning product designed to teach planning skills to public health program personnel in developing countries.
- New SMDP Website established (www.cdc.gov/phppo/smdp).

1999 Goals

- Develop regional management training program for the Middle East in cooperation with WHO/EMRO, UNWRA, NCCDPHP/RH, and EPO.

- Field-test *Healthy Plan-it* in the Philippines, Israel, and Nigeria; revise and distribute.

- Begin new Vietnam management training project funded by UNFPA, in collaboration with the Hanoi School of Public Health.

- Provide technical support to newly established Philippines Field Management Training Program in collaboration with USAID and EPO.

- Expand collaboration with EPO and other CIOs and with local counterparts who need additional management skills.

For more information call SMDP, PHPPO, at 770-488-8297

WHO COLLABORATING CENTER AND RESEARCH

Program Overview

Throughout the world developed and developing countries face dramatic shifts changes in their health systems and social and economic environment. Many of these changes have caused, or threaten to cause dislocation in health services and deterioration in the health of the public. Recognizing these threats, the World Health Organization (WHO) in 1992 proposed to identify a set of essential public health functions that would define minimum standards of preventive and treatment services. WHO established the Working Group on Essential Public Health Functions as part of its policy "Health For All in the 21st Century." The Workgroup used an international Delphi approach to solicit expert opinion and reach consensus on the essential public health functions. Using our experience in helping develop the U.S. Essential Public Health Services, we provided consultation to WHO as it identified key participants for the panel and, in addition, served on the core project monitoring group. The results of the Delphi study were published by WHO in 1998.

The Essential Public Health Functions defined by WHO are similar to, but different from the U.S. Essential Public Health Services. Discussions between WHO, the Pan American Health Organization (PAHO), and CDC identified the need for international collaboration and coordination of efforts related to the essential public health services/functions and related measures of performance.

Intended Audience

The WHO Essential Public Health functions will give health policy makers and leaders in all countries a meaningful framework for defining core functions and for measuring the performance of the public health system.

Impact

Public health systems must retain - - and strengthen - - their capacity for early detection of health threats, rapid communication, and decisive response. As WHO member countries adopt the new framework, they will have standards against which to measure performance, identify weakness, and take corrective action.

1998 Accomplishments

- Participated in the international WHO Delphi process to identify essential public health functions.

- Participated in a PAHO regional conference in Mexico City on essential public health functions.

- Initiated planning with PAHO and WHO for an international meeting on essential public health functions/services.

1999 Goals

- Convene and co-sponsor-- with WHO and PAHO – an international meeting at CDC on essential public health functions/services.

For more information call DPHS, PHPPO, at 770-488-2530

DISTANCE-BASED LABORATORY TRAINING FOR THE CARIBBEAN

Program Overview

During 1998, the Public Health Practice Program Office's Laboratory Practice Training Branch (LPTB) and the Caribbean Epidemiology Centre (CAREC) joined forces to develop a distance learning system for CAREC's member countries. CAREC is the disease monitoring and prevention agency of the Caribbean, serving twenty-one countries. CAREC's mission is to improve the health status of the Caribbean people by advancing the capability of member countries in epidemiology, laboratory technology and related public health disciplines through technical cooperation, service, and training.

To strengthen the capability of Caribbean laboratories to respond to public health threats, CAREC embarked upon an initiative to introduce quality assurance standards to laboratories in the region. One of the strategies involved in this initiative includes a substantial training component. The goal of the PHPPO-CAREC partnership initiative is to build a distance-based learning system that will strengthen CAREC's ability to meet the training needs of its members. To begin the initiative, PHPPO and CAREC developed a pilot approach to convert by which existing courses on laboratory quality assurance could be converted to one or more distance learning formats. The pilot course will be used to evaluate the effectiveness of distance learning for Caribbean laboratorians and will give CAREC staff experience in the process of adapting course materials to a selected distance learning medium. With that experience CAREC will be able to develop a sustainable master plan for distance learning that also will be used to deliver training in epidemiology, as well as other public health disciplines.

Intended Audience

The pilot course targeted public and private sector laboratorians in ten CAREC member

countries: Jamaica, Trinidad, Tobago, Bahamas, St. Lucia, St. Vincent, Barbados, Suriname, Cayman Islands, Belize.

For more information call DLS, PHPPO, at 770-488-8295

Impact

CAREC will have a model and capacity to provide urgently needed high-quality needed distance-based laboratory training in the region.

1998 Accomplishments

- Produced a series of five training videotapes on aspects of laboratory quality control and quality assurance.
- Conducted a training course for facilitators of the pilot program in Kingston, Jamaica.
- Conducted the pilot course; "Laboratory Quality Does Make A Difference." This course used a combination of instructional media; printed material, videotapes, and a series of audio conferences.
- Provided CAREC with basic infrastructure for its on-going distance learning, computers, software, phone equipment, and other resources.

1999 Goals

- Analyze data from the pilot course to measure the reach, knowledge gained, and application of training.
- Based on data from situational analysis, determine the technical feasibility of originating a live, interactive satellite videoconference in the Caribbean to CAREC member countries.
- Complete project report and make recommendations to CAREC on strategies to make distance learning a sustainable component of its training program.

IMPROVING THE DIAGNOSIS OF TUBERCULOSIS IN MEXICO AND OTHER LOW-INCOME COUNTRIES

Program Overview

In 1996, cases of tuberculosis (TB) among foreign-born persons in the U.S. constituted 37% of the national total and persons born in Mexico represented 8-9% of the U.S. national total. Public health officials recognize that controlling TB in the U.S. requires expanded support for international efforts. Improving the laboratory diagnosis of TB is a crucial component of control programs on our border. Two Public Health Practice Program Office activities are focused on improving the laboratory diagnosis of TB in Mexico, Vietnam and other low-income countries:

- TB diagnosis in low-income countries relies on direct microscopic examination of sputum for acid-fast bacilli (AFB). Mechanisms to verify the accuracy of this method are not always available in low-income countries. The Division of Laboratory Systems (DLS) is working with Mexico, Vietnam, Texas, and Massachusetts to develop a proficiency testing (PT) program that low-income countries can use as quality control for AFB microscopy. This multinational project uses a well-tested package of protocols, procedures, and software that low-income countries can access to implement a national or regional PT program to evaluate the performance of AFB microscopy at the local level.

- The CDC/APHL U.S./Mexico Border TB Laboratorian Binational-Training Project is a CDC/APHL cooperative agreement project involving participation by INDRE (Instituto Nacional de Diagnostico y Referencia Epidemiologicos), the Mexican national laboratory program, 6 Mexican border states, 4 U.S. border state laboratories, and the National Laboratory Training Network (NLTN). This Project, based on recommendations of a 1997 U.S./ Mexico Border TB Laboratory planning meeting, includes a training course in methods to isolate and identify TB and cross-training between laboratorians in the U.S. and Mexico state TB laboratories. A new border project involves developing a video on AFB microscopy in low-income countries as a collaborative effort in INDRE, WHO, PAHO, and the International Union Against TB and Lung Disease (IUATLD)

Intended Audience

Audiences include the clinic-based laboratories for Mexico's TB control program and the Mexican state public health laboratories, emphasizing the border states of Nuevo Leon, Coahuila, Tamaulipas, Baja California, Chihuahua, and Sonora. The Vietnam National TB Programme is both the collaborator and focus of several CDC studies because Vietnam is a leading country of origin for U.S. TB cases. The AFB PT program is intended to be a product for international distribution. The state public health laboratories and APHL are collaborators and a source for providing technical assistance to low-income countries.

Impact

Both Vietnam and the Mexican states have pilot tested the AFB microscopy PT protocols and microscopic slides in 60 laboratories using existing networks of local clinics. Results from the pilot tests of 22 laboratories in Mexico indicated that 70% of low-positive PT samples were missed, however, performance improved with successive PT events. Based on the results of these pilot tests, INDRE is implementing a national PT program for AFB microscopy.

1998 Accomplishments

- INDRE is implementing a national program of inspection and PT testing, based on the CDC protocol, for all 600 local laboratories performing AFB microscopy in Mexico. The PT tests have documented the need for improving microscopy skills in a large percentage of laboratories.

- Results of the pilot study of AFB microscopy PT, documenting errors in microscopy with correlation of errors detected with existing quality control programs, were presented at Mexico's national symposium "Challenges in the Diagnosis of Tuberculosis."

1999 Goals

- The results of the AFB microscopy PT program pilot testing will be published in a peer-review journal and promoted as a mechanism for countries with no quality control.

- The U.S./Mexico Border TB Laboratory Training Project will support travel for U.S. state representatives to visit their partner laboratories in Mexico and develop objectives for improving quality and infrastructure.

- CDC will collaborate with INDRE to analyze the results of inspection and PT data for all the local laboratories in Mexico.

- A team of experts from CDC, APHL, WHO, PAHO, INDRE, and IUATLD will develop the technical content and script for a training video on AFB microscopy to be filmed in Mexico, with distribution to laboratories in Mexico and South America.

For more information, call DLS, PHPPO, at 770-488-8295

Government Performance and Results Act

GPRA PERFORMANCE MEASURES FOR FY 1999

Goal

The Public Health Practice Program Office (PHPPO) enthusiastically supports the Government Performance and Results Act (GPRA) as a means to assure our programs' accountability. PHPPO's performance measures reflect our goals and mission to strengthen the public health infrastructure. Seven PHPPO performance measures have been included in CDC's GPRA Performance Plan for FY 1999 and FY 2000.

FY 1998 Performance Measures

- The number of health service providers participating in distance learning activities annually will be increased from 100,000 to 105,000 (PHTN - DMTS).
- The number of states and regional leadership development programs will be increased from 9 in 1997 to 13 (PHLI - DPHS).
- The impact of training on the adoption of improved laboratory methods will be evaluated (NLTN - DLS).
- The number of states with a plan for a comprehensive information network will be increased from 14 in 1997 to 18 (INPHO).
- The number of states which have implemented a comprehensive information network will be increased from 0 to 2 (INPHO).
- The number of public health professionals trained in management who conduct training in developing countries will be increased from 86 in 1997 to 142 (SMDP).
- The number of major metropolitan areas with secure communications systems to facilitate or expedite detection and response to terrorist events will be increased to between 15 and 25 through the Health Alert Network.

FY 1999 Performance Measures

- The number of health service providers participating in distance learning activities annually will be increased from 105,000 to 110,000 (PHTN - DMTS).
- The number of states and regional leadership development programs will be increased from 13 in 1999 to 14 (PHLI - DPHS).
- The impact of training on the adoption of improved public health laboratory methods will be evaluated (NLTN - DLS).

- The number of states with a plan for a comprehensive information network will be increased from 18 in 1999 to 22 (INPHO).

- The number of states which have implemented a comprehensive information network will be increased from 2 to 4 (INPHO).

- The number of public health professionals trained in management who conduct training in developing countries will be increased from 142 in 1999 to 160 (SMDP).

- The number of major metropolitan areas with secure communications systems to facilitate or expedite detection and response to terrorist events will be increased to between 25 and 35 through the Health Alert Network.

PHPPO Organization

OFFICE OF THE DIRECTOR

Mission

The Office of the Director establishes the goals and strategies of the Public Health Practice Program Office, builds partnerships with CDC programs and throughout the health system, and ensures the effectiveness and accountability of PHPPO programs.

Major Programs

- Health Alert Network: Leading CDC's initiative to strengthen the capacity of local and State health departments to address the threat of bioterrorism.

- Information Network for Public Health Officials: Assisting State health departments and other partners in applying information technology, tools; and, training to their public health strategies.

- Global Public Health: Partnering with international health professionals to strengthen management capacity, information and training systems, laboratory practice, and the performance of public health services at the community level.

- Science: Strengthening the PHPPO science agenda; stimulating practice-oriented research and teaching in schools of public health and medicine; and, creating learning opportunities for young health professionals

- Extramural Partnerships: Supporting CDC's priorities through administrative mechanisms for extramural research, program and policy development; and, workforce development.

DIVISION OF LABORATORY SYSTEMS

Mission

The mission of the Division of Laboratory Systems is to improve the quality of laboratory practice by providing global leadership, fostering partnerships and collaboration with partners in support of continuous improvement of the public's health. To fulfill that mission, the Division:

- Develops voluntary and mandatory laboratory practice standards.
- Promotes the use of laboratory practice standards.
- Advocates the important role of the laboratory and of good laboratory practices in achieving health outcomes.

Major Programs

- Laboratory Practice Research
  - Evaluation of Quality in Laboratory Practice and Standards: A laboratory practice research agenda that focuses on providing a scientific, technical, and informed basis for develop laboratory practice guidelines.
  - Clinical Laboratory Improvement Amendments: Determining the complexity and thereby the extent of
  - National Inventory of Clinical Laboratory Testing: A scientifically valid survey of the distribution of laboratory tests by type and location that established the first comprehensive body of information about testing menus and testing volumes in the approximately 158,000 clinical laboratories in the United States.
  - Model Performance Evaluation Program: Information from the performance evaluation of laboratories that perform retroviral and AIDS-related testing is used by participants for quality assurance, by federal and state agencies to monitor performance and shape policy decisions, and by international organizations to support international quality assurance efforts.
- Laboratory Practice Standards

  regulatory oversight for each of over 22,000 laboratory tests; development and evaluation of a new computer-

based testing system for use as a training and evaluation tool in cervical cytology screening.

- Laboratory Practice Training National Laboratory Training Network: A system of seven regional offices cosponsored by the Association of Public Health Laboratories to train clinical and public health laboratory professionals in laboratory quality control and assurance practices and to provide information on evolving laboratory technologies.

- Caribbean Epidemiology Centre (CAREC): Collaboration with CAREC to develop a distance learning system for member countries to strengthen the capability of Caribbean laboratories to respond to public health threats.

DIVISION OF MEDIA AND TRAINING SERVICES

Mission

The mission of the Division of Media and Training Services is to strengthen the knowledge and skills of health practitioners, their ability to communicate with professional and lay audiences, and the capacity of public health and healthcare organizations to embody the principles of continuous learning.

Major Programs

- Public Health Training Network: Developing the knowledge and effectiveness of health professionals, policy makers, and the concerned public through high-quality, distance-based training programs and teleconferences.

- Continuing Education: Enabling physicians, nurses, and other health practitioners to maintain high levels of proficiency and earn continuing education credits through accredited learning programs.

- Distance Learning System Consultation: Stimulating the capacity of CDC programs, State health departments, academic institutions, Federal agencies, and other domestic and global partners to educate and train the health workforce and to inform public groups using distance-based methodologies.

- Public Health Image Library: Creating CDC's archive of digitized, scientific and educational images accessible to practitioners around the world on the World Wide Web.

- Intramural CDC Services: Providing CDC and other Federal agencies with teleconferences, satellite- and Internet-based training programs, television and other electronic services as well as a wide array of other visual and audio services.

DIVISION OF PUBLIC HEALTH SYSTEMS

Mission

The mission of the Division of Public Health Systems is to strengthen the capacity and effectiveness of the organizations that perform public health services locally, nationally, and internationally.

To full that mission, the Division:

- Conducts research to measure the status and capacity of the health system and its components, identify determinants of effectiveness, and support strategies to strengthen health organizations.

- Develops standards, guidelines, and goals for public health service performance and system improvement.

- Collaborates with partners at CDC and throughout the health system to strengthen their capacity to advance healthy lives through prevention

Major Programs

- Health Systems Research

  - Epidemiology of the public health system: Researching the capacity of local and State health departments, the adequacy of the performance of essential public health services in communities, and the status of the public health infrastructure. Assisting the World Health Organization in identifying recommended "essential public health functions" for member countries' adoption.

  - HP 2010 Public Health Infrastructure Objectives: Coordinating development of the first national Healthy People objectives to strengthen the public health infrastructure.

- Standards and Guidelines

  - National Public Health Performance Standards Program: Leading a national collaborative initiative to develop standards of performance for community-level public health services.

  - *Guide to Community Preventive Services*: Lead field testing, implementation, evaluation, and training for the *Guide to Community Preventive Services*

being developed by the U.S. Public Health Service-sponsored Task Force on Community Preventive Services.

- Leadership Development: Stimulating expansion of a national network of programs developing the abilities of leaders in public health, healthcare, communities, and other settings to champion and implement comprehensive prevention and heath promotion strategies.

- Management Academy for Public Health: Starting in 1999, a three-year, regional program to train over 600 public health managers in management competencies and to develop a model for national replication.

- National Associations: Assisting the National Association of County and City Health Officials, the National Association of Local Boards of Health, the Association of State and Territorial Health Officers, the Public Health Foundation, the American Public Health Association, and other professional and service organizations to build their capacity to lead local and national public health improvement strategies.

- Institution Building

BIOGRAPHICAL SKETCHES

EDWARD L. BAKER, JR., M.D., M.P.H.

Assistant Surgeon General and Director of the Public Health Practice Program Office since March 1, 1990. Previously he was Deputy Director of the National Institute for Occupational Safety and Health (NIOSH). Dr. Baker came to NIOSH from the Harvard School of Public Health where he had served as Associate Professor of Occupational Medicine, and Director, Occupational Medicine Residency Program. He held appointments at Brigham and Women's Hospital, Cambridge Hospital, Massachusetts General Hospital, and Norfolk County Hospital, where he was active in the clinical practice of occupational medicine. From 1980-82, he served as Occupational Physician for the Commonwealth of Massachusetts, Department of Labor and Industries.

Dr. Baker served in the Epidemic Intelligence Service program from 1974-76, and has authored numerous scholarly publications, particularly in the area of neurotoxicology. He graduated with honors from Vanderbilt University and received the M.D. degree from Baylor College of Medicine, and M.P.H. and M.Sc. from Harvard School of Public Health. He is board certified in internal medicine and occupational medicine. He was presented the Adolf G. Kammer Merit in Authorship Award by the American College of Occupational Medicine and was named Visiting Professor in Occupational Medicine by the Royal Society of Medicine, London.

DEBORAH L. JONES, B.S.

Associate Director for Management and Operations, Public Health Practice Program Office. Ms. Jones began her career with CDC in 1972 as the Managing Editor of the Morbidity and Mortality Weekly Report (MMWR). She has worked in a variety of program and management areas, including the former Bureau of Epidemiology, the Hospital Infections Program, the Bureau of Training, and the Information Resources Management Office. She has also served on a number of cross-cutting, agency-wide and departmental work groups. Most recently, she served as the Deputy Director, Office of Program Support, providing leadership and overall direction to CDC's six core administrative and management operations. Ms. Jones attended the University of Tennessee, earning the Bachelor of Science degree in Communications, magna cum laude, in 1972. She attended law school at Boston University in 1976. Ms. Jones is a graduate of the seventh-year Public Health Leadership Institute.

ARTHUR P. LIANG, M.D., M.P.H.

Director, Academic Programs Office, Public Health Practice Program Office. Dr. Liang has more than 20 years of experience in medicine and public health with broad background in clinical work, epidemiology and management. He previously served as Associate Director for Public Health Practice, Division of Applied Public Health Training, Epidemiology Program Office, where he directed CDC's Preventive Medicine Residency, one of the Nation's largest residencies in public health and general preventive medicine. He is Vice Chair of the Residency Review Committee for Preventive Medicine, Accreditation Council for Graduate Medical Education, and a member of the Preventive Medicine Residency Advisory Committee for the Walter Reed Army Institute of Research. He is a recent past member of the Board of Directors of the Association of Teachers of Preventive Medicine. From 1987-93, he was the Assistant Director for Science in the Division of Public Health Systems, Public Health Practice Program Office, CDC, focusing on public health capacity building at the local level. He is a former state epidemiologist, Chief of the Communicable Disease Division, Hawaii Department of Health, and a former Epidemic Intelligence Service Officer, CDC. Dr. Liang worked in primary care for five years prior to embarking on his public health career. He is board certified in General Preventive Medicine and Public Health. He has an M.P.H. from the University of Hawaii (1980); M.D. from the University of Maryland (1974); and a B.A. from Oberlin College (1970).

MICHAEL D. MALISON, M.D., M.P.A.

Associate Director for Global Health, Public Health Practice Program Office.
Dr. Malison received his Bachelor's Degree from Catholic University in Washington, D.C. 1973, and his Doctorate of Medicine from the University of Miami in 1978. He joined CDC in 1981 as an Epidemic Intelligence Service Officer assigned to the Florida Department of Health and Rehabilitative Services and completed CDC's Preventive Medicine Residency in 1983 assigned to CDC's International Health Program Office. Dr. Malison has served in a variety of CDC missions in Latin America, Africa, and Asia, and was CDC's resident advisor to the Taiwan Field Epidemiology Training Program from 1984-1988. Dr. Malison was sponsored by CDC to obtain a Masters in Public Administration in 1990 from Harvard's John F. Kennedy School of Government. Upon returning, he founded the Sustainable Management Development Program which has trained more than 120 management trainers in developing countries since 1992.
Dr. Malison also serves as Adjunct Associate Professor in the Department of International Health at the Rollins School of Public Health.

ROBERT MARTIN, DR.PH, M.P.H.

Dr. Robert (Bob) Martin will join the Centers for Disease Control Prevention, Public Health Practice Program Office, February 1, 1999, as Director, Division of Laboratory Systems. Dr. Martin has been with the Michigan Department of Community Health since 1973 and has been the Laboratory Director since 1991. He is a graduate of Michigan State University (BS, 1971), Michigan Technological University (MS, 1975), and the University of North Carolina (MPH, 1976 and DrPH, 1979). In addition to

responsibilities in the laboratory he was Adjunct Associate Professor at Michigan State University where he taught undergraduate medical courses.

Dr. Martin brings to CDC extensive experience in bridging laboratory science and public health action, reflecting his service as Michigan Public Health Laboratory Director and active leadership in professional organizations. He has been President of the Michigan Public Health Association (1992-93), Laboratory Division Chair of the American Public Health Association (1987), President of the Association of Public Health Laboratories (1995-96), and Public Health Committee member of the Public Health Division of the American Society for Microbiology (since 1996). He also serves as a consumer advocate on the Microbiology Devices Panel of the FDA.

DENNIS L. MCDOWELL, B.S.

Director, Division of Media and Training Services, Public Health Practice Program Office, since July 1986 and the Public Health Training Network since 1993.
Mr. McDowell came to PHPPO from the Center for Professional Development and Training where he was Chief of the Planning and Analysis Branch, Division of Field Services. After joining CDC as a Public Health Advisor in 1972, he served in a variety of supervisory, management, and leadership positions in the Sexually Transmitted Disease Program, Center for Prevention Services, in locations around the country at state and local levels. Mr. McDowell has authored/presented more than 25 scientific papers, strategic/management studies, program initiatives, and training programs in areas ranging from HIV/AIDS, STD control, community collaboration, and patient counseling to laboratory procedures, communications media, and distance learning. He received a B.S. degree from Troy State University, with majors in chemistry, biology, and social science. He did graduate work at Tulane School of Public Health and Tropical Medicine, where he also taught. He has received executive management training at OPM's Federal Executive Seminar Centers and has studied and taught epidemiology and partnership development at CDC. Mr. McDowell has earned numerous commendations during combat in Vietnam, as a student, community supporter, public health professional, and leader in distance learning.

ANTHONY D. MOULTON, PH.D.

Associate Director for Policy, Program Analysis, and Academic Programs, Public Health Practice Program Office. Earlier he served as Special Assistant for Information and Communications Policy for the CDC Information Network for Public Health Officials infrastructure building initiative. Before joining CDC in 1993, Dr. Moulton was Director of the Governor's Office of Planning and Budget, State of Missouri, 1989-1993, and Director of the Policy Planning and Development Program of that office, 1979-1989. He has been active in national public policy associations and holds a B.A. degree in government from Dartmouth College and a doctoral degree in Political Science from the University of Chicago.

RAY M. (BUD) NICOLA, M.D., M.H.S.A.

Director, Division of Public Health Systems, Public Health Practice Program Office. Dr. Nicola previously served as Associate Director of PHPPO. He came to CDC from the University of Washington School of Public Health, where he directed the Preventive Medicine Residency Program and was Associate Clinical Professor in the Health Services Department. From 1985 through January 1991, he was the Director of the Seattle-King County Health Department, the largest local health department in the Pacific Northwest. He previously served as Director of the Tacoma-Pierce County Health Department in Tacoma, Washington, and Associate Director of the Tri-County District Health Department in Englewood, Colorado.

Dr. Nicola holds the M.D. degree from the University of Oregon Medical School and a master's degree in Health Services Administration from the University of Michigan School of Public Health. He completed a Rotating Internship at the University of Oregon Medical School Hospitals, a Preventive Medicine Residency at the University of Michigan School of Public Health, and is board certified in Preventive Medicine and a Fellow of the American College of Preventive Medicine.

PATRICK W. O'CARROLL, M.D., M.P.H.

Associate Director for Health Informatics, Public Health Practice Program Office. Dr. O'Carroll began his career with CDC in 1985 as an Epidemic Intelligence Service officer. He came to the Public Health Practice Program Office in November 1995 as Special Assistant to the Director, on assignment to the Northwest Center for Public Health Practice, University of Washington School of Public Health and Community Medicine. While at the University of Washington, he served as Co-Director, (1996-97), and Director (1997-98) of the Northwest Center for Public Health Practice and Director of the Washington INPHO II Project. He has served as an Adjunct Assistant Professor at the Emory University School of Medicine Department of Community Medicine, and visiting medical staff at Grady Memorial Hospital. Dr. O'Carroll currently serves as Clinical Associate Professor in the Department of Health Services, University of Washington School of Public Health and Community Medicine, and member of the adjunct faculty, CDC Preventive Medicine Residency program.

Dr. O'Carroll has authored numerous scholarly publications. He graduated Magna Cum Laude with a B.S. degree in Biology from Claremont Men's College, Claremont, California, with freshman and sophomore years at the University of Notre Dame. He received the M.D. in 1983 from the Johns Hopkins University School of Medicine and the MPH in 1983 from the Johns Hopkins School of Hygiene and Public Health. He is Board Certified in Public Health and General Preventive Medicine. He has received several awards, including the 1997 Health Care Award for Intergovernmental Open Systems Solutions of the Federation of Government Information Processing Council.

WILLIAM A. YASNOFF, M.D., PH.D., FACMI

Associate Director for Science, Public Health Practice Program Office since September 1997. In August, 1998, he was appointed to the additional position of Acting Director, Information Network for Public Health Officials. He serves as PHPPO representative to the Health Information Systems and Surveillance Board and CDC representative to the computer-based patient record workgroup of the National Committee of Vital Health Statistics. Prior to his work at CDC, Dr. Yasnoff served as Director of the Distributed Oregon on-Line Public Health INformation (DOLPHIN) Network, Oregon's INPHO project. Dr. Yasnoff also organized and directed the Health Division's privacy and confidentiality task force that developed the first state-level policies for electronic data access in a U.S. public health agency.

Dr. Yasnoff also directed the Oregon Immunization ALERT Program, pioneering use of special bar-coded forms for rapid and easy immunization reporting by private providers. He initiated the collaboration with the Yale University Medical School's Center for Medical Informatics to produce IMM/Serve, a rule-based expert system that automatically produces immunization recommendations according to ACIP guidelines. A variant of this system is used by the Indian Health Service. Dr. Yasnoff also developed the plan for financial sustainability of the immunization registry using per-child assessments of health plans.

Previously, Dr. Yasnoff was Medical Director of AMA/Net, the American Medical Association's national online information network for physicians. He has also served in a number of other positions in academia and the private sector, including numerous consulting engagements. He is the author of over 100 publications and presentations in medical informatics. Dr. Yasnoff is a 1975 graduate of the Honors Program in Medical Education at Northwestern University, where he also earned his Ph.D. in computer science in 1980. In 1989, he was elected to Fellowship in the American College of Medical Informatics, joining 150 other leaders in the field.

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