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From the Director

Dear Colleague:

With pride in our staff, our partnerships, and our accomplishments, we review our past and, more important, preview our future. With partners inside and outside CDC, we have established a foundation of relationships, programs, and science for a decade-long initiative to realize this vision:

“Every health agency fully prepared, every community fully protected.”

In 2000, a welcome and unprecedented event occurred – the passage of major, national legislation mandating this vision and setting out a clear agenda for its realization. The Frist-Kennedy Public Health Infrastructure Law mandates:

- Establishment of capacities for national, state and local health systems to detect and respond effectively to public health threats;
- Award of grants to evaluate the extent to which the capacities are met and to develop a plan to address gaps and needs; and
- Award of grants and provision of technical assistance for effective response to public health threats through training, electronic information networks, planning, and enhanced laboratory capacity.

This landmark legislation is central to the mission of the Public Health Practice Program Office and our many partners. It presents an extraordinary opportunity to transform public health practice for the 21st century. It presents very substantial challenges as well. We must :

- Establish a vibrant framework of collaboration – the job ahead is massive; we need well-coordinated, closely aligned action;
- Commit to an action plan that focuses benefits on local public health while acknowledging the key role of state and federal partners in strengthening local capacity; and
- Build the scientific and professional capacity of the Public Health Practice Program Office to lead and carry out that plan.

We recognize the significance of this unprecedented opportunity and commit our full energies to the mission. Success will endow every community and state with prepared and accountable public health systems. More important still, success will yield meaningful, lasting advances for the health of the public.

Sincerely,

Edward L. Baker, Jr., M.D., M.P.H.
Assistant Surgeon General
Director
Public Health Practice Program Office



INNOVATIONS IN PUBLIC HEALTH





Public Health Innovation: Transforming Public Health Practice for the 21st Century

A. THE PUBLIC HEALTH THREATS AND EMERGENCIES ACT OF 2000

The year 2000 forged a powerful, new instrument to build the prepared, flexible, and accountable public health system the American people need.

When Congress enacted the Public Health Threats and Emergencies Act of 2000, it created the first national, legislative mandate for all public health organizations to meet high, outcome-based standards of performance. The Act authorizes the Secretary of the U.S. Department of Health and Human Services, in collaboration with community, State, and national partners, to use an innovative approach that will:

- Develop capacities or performance standards for local, State and national public health systems and their workforce
- Assess actual capacities and performance and identify gaps, and
- Develop and implement plans and programs to address core public health capacity needs.

Co-sponsored by Senators Frist and Kennedy, the public health infrastructure provisions of the Act lend new energy to CDC's drive to strengthen the U.S. public health system as described in the public health infrastructure objectives of the Nation's *Healthy People 2010* report. In 2000, CDC's report to the U.S. Senate, *Public Health's Infrastructure*, gave powerful evidence of urgent needs and outlined specific actions and objectives to address core public health capacity needs.

B. MISSION: TO TRANSFORM PUBLIC HEALTH PRACTICE

CDC's 2000 report found grave shortcomings in the infrastructure that undergirds public health services. The public health infrastructure has three major components:

- The public health workforce
- Information and knowledge systems, and
- Organizational capacity.

The infrastructure is the foundation for performance of the essential public health services. Those services, in turn, support front-line response to public health threats of all kinds -- from potential bioterrorism to foodborne disease outbreaks and the insidious epidemics of childhood asthma and obesity.

The *Public Health's Infrastructure* reported, however, that:

- Only 44% of the Nation's approximately 500,000 public health workers had formal training in public health; 78% of local health department executives did not have graduate degrees in public health
- Fewer than one-half of the 3,000 local health departments had high-speed, continuous access to the Internet; 20% lacked e-mail capability
- Some public health laboratories -- often the first to detect a dangerous new pathogen -- still report lab test results by conventional mail, with lag times of up to 10-14 days, and
- Only one-third of the U.S. population is effectively served by State and local public health agencies.

The overarching mission of CDC's Public Health Practice Program Office is to strengthen the capacity of the public health system to prepare for -- and respond decisively to -- threats to the health of the public. We focus on all levels of the public health system -- community, State, national, and international -- with special emphasis on performance of essential public health services at the community level where the health of families and individuals must be protected from a myriad of conventional and rapidly evolving threats.

The public health system is the defense shield against preventable threats to health. In the U.S. the core of the system is the federal-state-local partnership of CDC, state and tribal health departments, some 3,000 local health departments, and hundreds of state, municipal and other public health laboratories. The system also includes a wide spectrum of organizations vital to the health of the public, for example, healthcare organizations, community-based groups, health care payers, education and faith organizations, and many others.

C. STEPS TOWARD TRANSFORMATION: THE DECADE OF THE 1990s

Beginning in the early 1990s, PHPPPO designed and implemented programs to address the infrastructure shortcomings. Many accomplishments -- all realized in collaboration with partners in public health practice, research, and training -- are described in our report "A Decade of Achievement and Service, 1988-1998." Major, continuing initiatives include:

- The National Public Health Performance Standards Program: Designed to develop standards for the functioning of public health agencies and community systems, by 2000 this initiative had designed consensus performance standards and had pilot tested them in three states and 132 local public health agencies, preparing the way for voluntary adoption nationally.
- The Health Alert Network: Focused on linking all state and local health departments to secure Internet information and communications systems, and to train practitioners to use them for bioterrorism and other threat preparedness, the Health Alert Network by 2000 had grant-supported projects underway in 37 states and 3 large cities.
- The Public Health Workforce Development Initiative: In 1999, a national coalition began developing a comprehensive strategy for a Global Life-Long Learning System for public health practitioners. Ten "centers for public health preparedness" received start-up funding in 2000. Two delivery arms -- the Public Health Training Network and the National Laboratory Training Network -- train hundreds of thousands of front-line public health practitioners each year, using state-of-the-art technologies and learning methodologies.
- National Public Health Laboratory System: The Nation today does not have a truly integrated laboratory system to detect and report infectious disease cases and epidemics. Beginning with a focus on standardizing and enhancing public health laboratory testing, this initiative is aimed at developing policies and public-private partnerships to enable accelerated, accurate reporting of all laboratory test results of public health significance to public health authorities for rapid response.
- Extramural Prevention Research Initiative: Through grants of \$15 million for extramural research, through growing partnerships with research institutions, and through intramural research conducted by Public Health Practice Program Office scientists, new information is becoming available for public health practitioners and policy makers about the most effective strategies and interventions for healthy communities.

These and additional initiatives yielded immediate benefits and also laid sound building blocks for the next phase in strengthening the public health infrastructure.

D. REALIZING THE TRANSFORMATION: THE DECADE OF 2000-2010

The Frist-Kennedy public health infrastructure legislation signals unprecedented Congressional recognition that the Nation's public health infrastructure is critical to effective public health services in every U.S. community. The Act represents an extraordinary opportunity for CDC and its partners to apply innovative tools to build a strong, resilient foundation prepared for the public health threats of the new century.

One of the most important features of the Act is its conceptual understanding of public health as an integrated, three-tier system (community, State, and national) and the prescription Congress gives for a "systems approach" to ensuring preparedness. This meshes closely with CDC's approach and with the recommendations of a major 1997 IOM report that called for adoption of a "community health improvement process" in American communities.

Further, the Act creates a framework of accountability and flexibility, empowering State and local governments through targeted capacity building.

Partnership Approach

The spirit of partnership is key to completing the transformation of public health practice. PHPPO has developed a strong base of collaboration with partners in public health practice, research and academic institutions, the private sector, and internationally. That base will energize work to implement the Act.

The first step in implementation will be to form a broad collaborative body with representation for all key stakeholders. We will convene a steering committee that will have membership from existing partners and including additional perspectives critical to fulfillment of the Act's mandate. The role of the committee will be to frame a compelling, shared vision, to shape a practical implementation plan, and to coordinate members' roles and responsibilities.

Innovative Tools for Transformation

The Act requires rapid, concrete action. Sections 319A-C call for capacity or performance standards to be developed. Evaluations of actual capacity are to begin within one year of enactment. Competitive grants to evaluate actual performance are to be made as early as 2001.

Complying with this mandate will be greatly facilitated by the work PHPPO and its partners have devoted to shaping innovative tools that can be used to implement the Act. These tools are being developed by broadly representative task forces under the major initiatives mentioned above.

- **Tools to Establish Critical Capacities and Standards**

Three closely aligned types of capacity or performance standards are now under development: standards for the capacity of local and State public health systems to perform essential public health services; standards for the core competencies and specialized skills of the public health workforce; and, standards for the detection and reporting of infectious disease cases from public health and clinical laboratories.

Core public health competencies include leadership, management, epidemiology, law, and coalition building, among others.

To fulfill the mandate of the Act, expert panels will refine these standards, ensuring that they address the emerging needs of highly dynamic national and global public health settings and that they represent the best scientific knowledge and expert consensus.

- **Tools to Assess Public Health Systems' Needs**

As performance and competency standards are being shaped, simultaneous work is underway to design and test tools to assess the actual capacity and needs of public health systems. Assessment is needed to establish the baseline capacity of local, State and national public health systems and also to conduct periodic, ongoing evaluations of the improvement in capacity stimulated by the grants program authorized by the Act.

Initial assessments of the capacity of public health agencies have been conducted, or are planned, in a number of states, along with a targeted assessment of all states' bioterrorism preparedness capacity. Baseline assessment of public health information and knowledge systems has been completed in 40 states and metropolitan areas through the Health Alert Network.

As the Act requires, PHPPO will provide technical assistance to local and State public health agencies in conducting capacity assessments and also trains local and State counterparts in using assessment tools.

- **Tools to Build Public Health Capacity**

The Act calls for grant awards and technical assistance to State and local health agencies to address the identified core public health capacity needs, beginning as early as 2001. The envisioned program will support training, electronic information and communications networks, laboratory systems, and improved public health emergency response. Implementing this major, time-sensitive commitment will require efficient administrative and oversight mechanisms.

PHPPO has extensive experience with infrastructure-building mechanisms that will provide a basis for the Act's new grants program. PHPPO has established multiple cooperative agreements and grant mechanisms that issued tens of millions of dollars for infrastructure development and research at State and local public health agencies and independent research institutions. Ensuring accountability is a key objective of each of these mechanisms. The lasting effect of the Frist-Kennedy public health infrastructure legislation will be to transform public health practice at all levels. It will do that by marrying the Congressional prescription for an outcome-oriented, standards-based strategy with innovative tools that have been designed by CDC-led coalitions of public health partners. The result will be fully prepared, flexible, and accountable public health systems serving our communities, States, and Nation.

E. EXTRAMURAL PREVENTION RESEARCH

The average U.S. lifespan increased by 30 years during the 20th century -- more than 80% of this gain is attributed to prevention practices. Americans, and especially minorities, still bear a heavy burden of death and disability, much of which can be prevented.

Prevention research generates high rates of return yet historically has been poorly supported. In 1998 CDC, working closely with partners in leading research institutions, developed the Prevention Research Initiative to correct help close the gap.

The goal of CDC's Extramural Prevention Research Initiative -- led by the Public Health Practice Program Office -- is to identify model interventions and "best practices" the Nation's front-line public health practitioners can use to design and implement for hard-hitting community-based prevention programs. Prevention research "takes discovery to the point of practice," giving new, science-based tools to front-line public health professionals.

Congress appropriated \$15 million for the Extramural Prevention Research Initiative in FY 1999 and maintained that funding level in FY 2000 and FY 2001. Fifty-two peer-reviewed research projects are underway in such areas as childhood immunization, prevention of cancer, diabetes, and HIV/AIDS, ergonomics and injury prevention, among many others.

Drawing on the strengths of U.S. academic institutions, extramural prevention research is a powerful engine for improved health and innovative public health practice. Our goals for 2001 are to identify high-priority areas for expanded research investment, strengthen partnerships with CDC programs and extramural researchers, and refine methods for ensuring that research findings are rapidly translated into tools for use in America's communities.

F. GENETIC TESTING: TOOL FOR IMPROVED PUBLIC HEALTH

Genetics technologies are one of the most powerful new tools for improved public health. Yet the great promise of those technologies hinges entirely on the accuracy of genetic tests. This is true both of conventional biochemical tests for inborn metabolic disorders, such as sickle cell disease, and of DNA-based tests for genetic disorders.

The human genome mapping and consequent, rapid proliferation of new genetics technologies and tests raise serious concerns about the ability of health professionals to assure the accuracy of testing. PHPPO's Division of Laboratory System is a national leader in developing the science base and policy approaches to address these concerns and to help public health and clinical professionals realize the full benefit of genetic testing.

Major steps toward this goal include:

- Science: A national survey of personnel standards, quality assurance, and clinical practices in biochemical genetic testing completed by the Mount Sinai Medical School in 2000.
- Policy: Formulation and publication for public review of recommendations to modify regulatory provisions of the Clinical Laboratory Improvement Amendments of 1988 to specifically address genetic testing.
- Training: Development of core competencies public health professionals – epidemiologists, laboratorians, clinicians, and others – must have to fully integrate genetics into their practice, and development of training programs to ensure their mastery of those competencies.

G. TOOLS TO TRANSFORM PUBLIC HEALTH PRACTICE GLOBALLY

As in the U.S., the health systems in many other countries – especially those in Africa, Asia, and Latin America – lack the capacity to address critical threats to the health of their public. Gaps are evident in each of the three components of their public health infrastructure – workforce, organizations, and information/knowledge systems. In response to this growing need, PHPPO has expanded its global activities and we are deploying many of the same innovative tools that will facilitate domestic implementation of the Public Health Threats and Emergencies Act of 2000. For example, the PHPPO National Public Health Performance Standards Program is providing consultation to the World Health Organization (WHO) and the Pan American Health Organization on the development of international performance standards for public health systems in developing countries.

A major PHPPO global focus is workforce development. Many developing countries lack the capacity to train health workers in the core public health competencies essential to effective community-based prevention and health promotion strategies. The PHPPO approach to this problem has two elements:

- **Developing Public Health Management Capacity**
Management ability is an indispensable core public health competency – as recognized by the domestic coalition engaged in the Public Health Workforce Development Initiative. Few developing countries currently have adequate capacity to design and manage prevention programs and to mobilize community support. The PHPPO Sustainable Management Development Program (SMDP) train-the-trainer approach addresses this need through partnership with many CDC programs and international donor agencies.

Since 1992, the program has trained 158 mid- and senior-level trainers from 50 countries. Many of these graduates have established in-country public health management training programs and have, in turn, trained many hundreds of local graduates which has produced a well-documented impact on the effectiveness of public health programs and services.

- **Developing Competencies to Implement HIV/AIDS and Other Epidemic Control Programs**
PHPPO's Division of Professional Development and Evaluation is an active member of the coalition implementing the Leadership and Investment in Fighting an Epidemic (LIFE) initiative. LIFE is a highly coordinated attack on the HIV/AIDS epidemic in Africa and India. PHPPO is supporting development of courses to train front-line HIV/AIDS workers in these regions, beginning with intensive work in Botswana that will create materials for adaptation in other countries. In addition, we are consulting with ministries of health in Botswana, Kenya, South Africa, and Uganda to lay the foundation for robust distance-based training systems that will enable health workers in villages and cities alike to participate in cost-effective training that uses these materials.

H. APPLYING INNOVATIVE TOOLS: HIGHLIGHTS OF 2000 AND 2001

In 2000 PHPPO made significant advances in strengthening each of the major components of the public health infrastructure and, simultaneously, in developing innovative tools to be applied in implementing the Public Health Threats and Emergencies Act of 2000.

2000 MAJOR ACHIEVEMENTS

At the request of the Director, CDC, PHPPO undertook a new effort to identify and complete a “Top Ten List of Achievements.” This process involved the entire organization—both in determining the “Top Ten” and in delivering on commitments. As of December 2000, PHPPO had achieved all ten goals—as well as several additional major milestones, including:

- Development of the *Report to the Senate: Public Health's Infrastructure*
- Passage of the *Public Health Improvement Act of 2000*
- Signing of the *CDC/HRSA Joint Memorandum of Understanding: Developing the Public Health Workforce for the 21st Century*
- Creation of a new family of *Centers for Public Health Preparedness*

Taken together, these achievements represent significant scientific and technical innovations aimed at transforming public health practice at every level.

Public Health Workforce Development

Creation of the *Global and National Implementation Plan for Public Health Workforce Development*

This plan undergirds the establishment of *CDC's Global Life-Long Learning System* and supports our goal of building a stronger frontline against health threats. The plan builds on the 1999 report—*CDC/ATSDR Strategic Plan on Public Health Workforce Development*—as well as recommendations from an Expert Panel Workshop convened in Callaway Gardens, Georgia, in November 2000. Developed in collaboration with a broad array of partners representing the practice and academic communities, it represents significant convergence on key issues and “next-step” actions, including: competencies needed for public health practice; practice-focused curricula; accelerated adoption and use of E-learning technologies; certification and credentialing for public health professionals; and a research agenda to determine linkages between workforce competency, organizational capacity, and public health outcomes. Execution of the plan will be a key area of focus for 2001.

Web Site for “One-Stop Shopping” for CDC/ATSDR Training and Education

In late 1999, CDC Director Dr. Koplan charged PHPPO's Division of Professional Development and Education with creating an enterprise-wide solution to support learners in CDC/ATSDR's training programs. In August 2000, this vision became a reality with the roll-out of *CDC/ATSDR Training and Continuing Education Online*.

This comprehensive online learner support system—a key component of *Global and National Implementation Plan for Public Health Workforce Development*—provides benefits at many levels. For the public health practitioner, the system offers a Web-based “One-Stop Shop” for finding courses and training materials, registering online, and checking on personal continuing education credits. For the CDC program and training manager, the system and its electronic testing module, offer a streamlined way to gather and analyze participant information, including demographic data from the registration profile, pre- and post-test data, and participants' evaluations. The system also provides quick access to program reports. For Agency staff, the system will provide summary reports on the numbers of professionals trained in the wide variety of educational offerings provided across CDC/ATSDR and as well as a rich database for evaluation and forecasting of training needs.

Nicaragua - Establishment of the New Field Management Training Program (FMTP)

Since 1999, the PHPPO SMDP has been working with the CDC/OGH Care/CDC Health Initiative (CCHI) Project to develop a cadre of public health management trainers in Nicaragua who can serve as a national training resource for CARE, the Ministry of Health, and other local non-governmental organizations. In 2000, the new Nicaragua Field Management Training Program (FMTP) was officially established. Since its inception, the Program has trained more than 60 graduates, including 23 project managers and specialists from CARE Nicaragua, 27 public health professionals from the Nicaraguan Ministry of Health, and 8 local CARE staff who serve as adjunct faculty. Workshop participants are required to complete an applied management project aimed at improving the effectiveness of a local public health intervention. The project also helps the participant to demonstrate competency in the newly acquired managerial skills and techniques. The Nicaragua Program has received technical assistance from experienced SMDP alumni from Mexico, building valuable working relationships in the region and enhancing the exchange of best practices.

Information and Knowledge Management

Restricted Web Site for Bioterrorism Information and Protocols

As part of CDC's Bioterrorism Preparedness and Response Initiative, and in collaboration with CDC and external partners, PHPPO computer scientists in the Health Alert Network Activity developed a restricted Web Site for activation during a bioterrorist event. The Web site will include general information about Bioterrorism, as well as features that will facilitate response, including: a chronological record of events as they occur, GIS maps that track the response, an index of all released Health Alerts, and special contact lists. Access to this Web site will require special security measures that can be rapidly distributed to selected public health and other officials who are actually involved in a given incident response. It will be maintained separately from CDC's public BT Web site, so that, even if CDC's site is swamped by too many users during a national crisis, the restricted Web site will remain available. This Web site will complement information on the current “public” Web site established in 1999 and will be further developed and deployed in 2001.

New Assessment Tool for Information Technology/Distance-Learning Capacity in Health Alert Network States/Cities

The Health Alert Network (HAN) Information Technology (IT) Capacity Inventory was developed in collaboration with HAN directors and state Distance Learning Coordinators (DLCs) to accurately assess the capacity of local health departments in their states. The data collected in the inventory produces a “snapshot” of IT and Distance Learning (DL) capacity, particularly as it relates to the HAN architectural standards and specifications. It is also used for program planning and development of the HAN and for the national CDC Bioterrorism Preparedness and Response Program (BPRP). In 2000, 38 HAN cooperative agreement projects were eligible for participation in the HAN assessment. Thirty-one states and one city (82%) submitted completed reports for analysis; these reports include a total of 1,191 local health jurisdictions. Results indicate that 55% now have continuous, high-speed Internet access; 56% have a system for broadcasting urgent health alerts; and 75% check e-mail at least once each workday. Thirty-nine of the 50 states (78%) reported their DL capacity. The assessment shows that 82% now have access to satellite downlink within a 30-minute drive from their workplace. In 2001, PHPPPO will continue to collect data on network deployment and progress toward meeting recommended threshold levels.

Organizational Capacity Building

Finalization of Model Performance Standards for Local Health Departments

In 2000, the Model Performance Standards Tool for Local Health Departments was finalized and field-tested in 132 local public health systems in 3 states: Hawaii, Minnesota, and Mississippi. This instrument is the first of its kind and represents the input of a wide range of public health organizations, including NACCHO, ASTHO, NALBOH, APHA, and PHF. An Internet-based data collection system was established to support use of the tool, and this approach was successfully demonstrated during field test activities. Valuable findings and insights from these field tests are being used to strengthen local assessment and to guide work on similar standards for State health departments. In addition, a companion instrument, *Mobilizing for Action through Planning and Partnership* (MAPP), has been completed to aid local health departments in ongoing decision-making, management, and quality improvement. Nine demonstration sites are leading the way in use of this Internet-based program.

Creation of New WHO Collaborating Center on Public Health Systems

Throughout the world, developed and developing countries face dramatic shifts 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. To strengthen collaboration on investigation of these issues, the World Health Organization (WHO) in 2000 established the Collaborating Center on Public Health Systems with PHPPPO. Based on the caliber of existing CDC collaborative programs, the two-year waiting period required by WHO for Collaborating Center designation was waived to facilitate the designation process.

The existing collaborative project on performance assessment of public health systems throughout Latin America forms an integral part of the PAHO initiative “Public Health in the Americas”. This initiative seeks to improve capacity of infrastructure of public health systems throughout Latin America and the Caribbean. In 2000 the Directing Council of PAHO mandated that performance assessment methodology be incorporated into public health systems and practice in countries of the region.

National Recommendations for Improving Genetics Testing

On May 4, 2000, the CDC published a Notice of Intent in the *Federal Register* to solicit public comment concerning genetic testing in laboratories certified under the Clinical Laboratory Improvement Amendments (CLIA). This work culminates a three year effort to develop recommendations to modify the current CLIA requirements to specifically address genetic testing. The Notice of Intent was developed in response to a 1997 report, the National Institutes of Health (NIH) and the Department of Energy (DOE) Task Force Report on Genetic Testing, which expressed concern about the adequacy of the current CLIA regulations to address the rapidly evolving field of genetic testing. The recommendations were developed by the HHS Clinical Laboratory Improvement Advisory Committee (CLIAC) and supported by the Secretary’s Advisory Committee on Genetic Testing (SACGT), which is also responding to genetic issues arising from the NIH/DOE Task Force Report. CDC continues to support both non-regulatory and regulatory efforts to improve the quality of services offered by genetic testing laboratories and continues to work with professional organizations, academic institutions, and government agencies to achieve this end. The next step in the regulatory process is to develop a proposed rule, which will be based on the Notice of Intent responses and subsequent CLIAC recommendations.

Research Partnerships

Study of Biochemical Genetics Testing in U.S.

Despite the growing importance of genetics testing, until recently, there was no available information on the status of biochemical genetics testing in the U.S. In September 2000, the PHPPO and the Mt. Sinai School of Medicine, completed a landmark study to answer key questions:

1. How many laboratories conduct biochemical genetic testing?
2. What is the scope of this testing?
3. How well do the laboratories performing testing conform to accepted standards of laboratory practice?

Major findings from the study show that:

- A substantial number of laboratories had substandard scores;
- Personnel qualifications were related to the scores, despite the fact that all directors met the CLIA standard for high complexity testing;
- Higher scores for conformance to practice standards were associated with certain types of laboratory directors (MD and American College of Medical Genetics certification);
- Higher scores were associated with participation in proficiency testing;
- Most laboratories do not have a clinical consultant;
- Of the tests for 67 different genetic conditions, 70% were laboratory developed;
- Few labs require informed consent;
- The clinical issues associated with testing were not being uniformly addressed; and
- Reporting practices may need to be enhanced in order to provide adequate information to guide clinical use of test results.

New Partnership Agreement with the Association of American Medical Colleges (AAMC)

On September 30, 2000 the Centers for Disease Control and Prevention (CDC) and the Association of American Medical Colleges (AAMC) entered into a new cooperative agreement, to help strengthen the collaborations between the disciplines of medicine and public health. Along with other areas of focus, this cooperative agreement will strive to train the medical community on public health issues.

AAMC is a non-profit association which represents the 125 schools of allopathic medicine in the U.S. accredited by the Liaison Committee on Medical Education. AAMC's member organizations also include academic medical centers, academic and professional societies (representing 75,000 faculty members), medical student representatives, and resident representatives. These schools represent the primary educational system that provides the Nation's physicians with their undergraduate medical education. The mission of AAMC is to improve the health of the public by enhancing the effectiveness of academic medicine through educating the physician and medical scientist workforce. Additionally, AAMC can comprehensively influence the development and implementation of improved disease prevention and health promotion curricula in all accredited schools of medicine and provide opportunities for students, faculty, and researchers to incorporate the perspectives of public health, and disease prevention and health promotion. AAMC also provides opportunities for medical and public health academicians, practitioners, and researchers to share their experience and expertise; to facilitate incorporation of the theoretical and practical perspectives of public health into curricula for teaching prevention, health promotion, and preventive medicine; and to stimulate participation by medical institutions in prevention research. They currently sponsor national meetings designed specifically for the faculty of medical schools and academic medical centers, to address contemporary issues in medical education and research.

New Research Collaboration with the Georgia Institution of Technology

In 2000, PHPPO developed a new joint program between CDC and the Georgia Institute of Technology to encourage investigators to jointly conduct mutually beneficial preliminary studies in the areas of bioengineering (*e.g.*, biosensors, environmental sensors, biomechanics), bioscience (*e.g.*, cell/tissue engineering, microanalysis, molecular biology), and informatics (*e.g.*, signal detection, pattern recognition, human/computer interface, information retrieval, data integration, simulation, decision science, security, GIS, and networking). Under the program, the first of its kind at CDC, co-investigators from each institution submit proposals for peer review to a joint committee of scientists. Investigators may receive up to \$15,000 of internal funds at each institution for a maximum of two years.

In 2000, four of eight submitted proposals were funded:

1. GIS Integrated Computational Tools to Evaluate Exposure of Populations to Airborne Pollutants (ATSDR);
2. Bioinformatics Approaches to Automated Interpretation of Pathogen-Specific Genomic and Epidemiologic Data (NCID);
3. Improving Vaccine Risk Information: Metrics and Mappings for Probabilities (NIP); and
4. Identification of Selenium Metabolites in Human Samples (NCEH). In 2001 the collaboration will be expanded, with new projects and additional research opportunities.

Organizing for Public Health Practice: Realignment of People and Resources

Innovations in public health practice require innovations in organization, staffing, and management. In 2000, PHPPO completed a comprehensive effort to align its vision, mission, strategies, programs, and resources, to incorporate new programs, and to optimize relationships with internal and external partners and stakeholders. The result is a new combination of people and activities focused on the transformation of public health at the frontlines. New offices include: the Office of Extramural Prevention Research; the Office of Workforce Planning and Policy; the Office of Communication; and the Public Health Law Program. New areas of emphasis include: professional development and evaluation; health systems research; knowledge management; and global health. This new alignment—and increased expertise—position PHPPO and CDC to ensure program effectiveness, efficiency, accountability, and sustainability and to capitalize on new opportunities in public health.

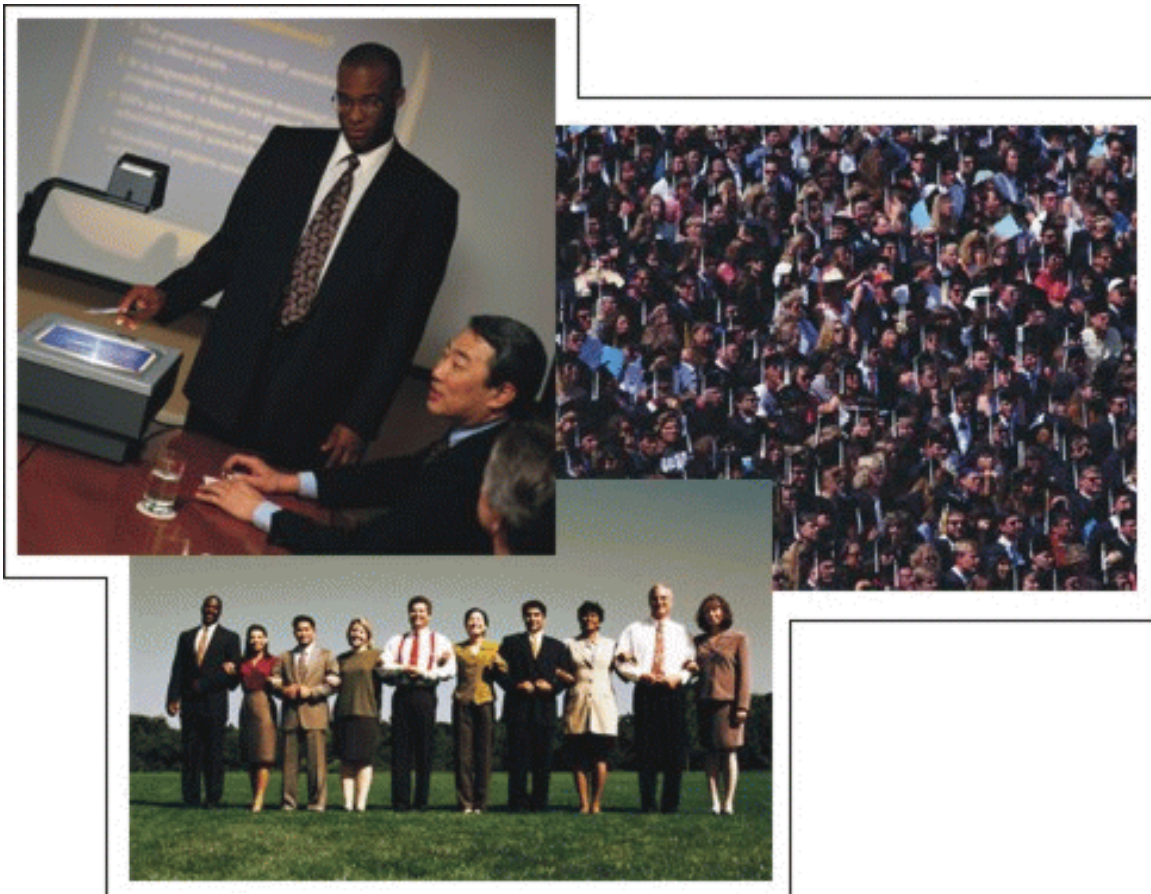
FUTURE DIRECTIONS

In 2001, PHPPO will build on its achievements, with emphasis in several key areas:

- Implementation of the Public Health Improvement Act
- Strengthening of Extramural Prevention Research
- Developing the Global Lifelong Learning System
- Establishing Laboratory Quality Assurance for HIV and TB Testing in Africa and India
- Designing a Knowledge Management System for Public Health Practitioners

We will continue, with our public and private partners, to transform the practice of public health through science, technology, and innovation.

PREPARING THE WORKFORCE





Preparing the Workforce

OVERVIEW

The workforce active in local, State, and federal public health agencies numbers approximately 500,000. At the community level, public health workers are found not only in local health agencies but also in private and nonprofit organizations concerned with the public's health. Major public health professional disciplines are physicians, nurses, environmental specialists, laboratorians, health educators, disease investigators, outreach workers, and managers. The public health ranks include dentists, social workers, nutritionists, anthropologists, psychologists, economists, political scientists, engineers, information technology specialists, public health informaticians, biostatisticians, and lawyers.

According to the Health Resources and Services Administration, in 1989 only 44% of the 500,000 workers had formal, academic training in public health; those with graduate public health degrees were an even smaller fraction. This was true at all levels and in all areas of expertise, including leadership circles. Many public health practitioners lack adequate opportunity for continuing education in these fields. The lack of formal training creates barriers to individual development as well as to the development of public health as a recognized profession.

This profile highlights the gap between the growing demands placed on the dedicated and highly motivated public health workforce by increasingly complex disease patterns, interventions, and partnerships, on one hand, and the technology, tools, and training necessary to meet those challenges, on the other hand. Throughout the public health system, practitioners must have the ability to investigate disease outbreaks, assess the health status of the population, employ computerized information and communications tools, analyze health needs, and formulate community prevention strategies and services.

Major strategies in our work to close these gaps and to assure the preparedness of the public health workforce include:

- Designing and developing the Global Life-Long Learning System for Public Health;
- Developing a national network of Centers for Public Health Preparedness to design and deliver training in public health core competencies and technical skills;
- Developing and implementing the National Public Health Training Plan for Bioterrorism Preparedness and Response;
- Expanding the learning opportunities and accredited training provides to the national and global public health workforce by the Public Health Training Network and the National Laboratory Training Network;
- Strengthening the leadership and management competencies of the public health workforce for improved agency capacity and program effectiveness; and
- Developing and strengthening partnerships with public health practice organizations at the community, State, national, and international levels.

2000 MAJOR ACCOMPLISHMENTS

- Created the Global and National Implementation Plan for Public Health Workforce Development as the basis for establishing the Global Life-Long Learning System for Public Health;
- Established seven new Centers for Public Health Preparedness for a total of ten centers located in local health departments and academic institutions;
- Developed bioterrorism-related workforce competency standards;
- Implemented a Web-based Public Health Training Network "One-Stop Shop" for learners to locate courses, register online, participate in courses, complete tests, and verify their continuing education credits;

- Expanded the network of State and regional public health leadership development programs to a total of nineteen, serving forty states; assisted the Management Academy for Public Health (serving four Southeast states) in developing the management competencies of 200 graduates; and
- Delivered advanced training -- in collaboration with partner organizations -- to more than 2,500 public health nurses across the country.

CHALLENGES AND APPROACHES

- Develop a detailed plan for implementation of the Global Life-Long Learning System for Public Health in collaboration with major, national public health associations, State and local public health leaders, and the Health Resources and Services Administration;
- Establish additional Centers for Public Health Preparedness to expand the spectrum of developmental opportunities available to the workforce in core competencies and specialized skills;
- Develop a core curriculum for bioterrorism training based on adopted competency standards; deliver training in bioterrorism-related Level A laboratory techniques to an estimated 700 clinical laboratory professionals;
- Integrate the Public Health Training Network with the Global Life-Long Learning System for Public Health; and
- Assist in establishing a new State/regional public health leadership development program (for a total of twenty), and in training an additional 200 participants in effective management practices.



Life-Long Learning System for Public Health

PROGRAM OVERVIEW

Over the past two years, CDC spearheaded efforts to stimulate the development of a global and national plan for public health workforce development which would build on partner efforts, support Healthy People 2010 objectives and facilitate alignment of CDC's training/continuing education programs. The Office of Workforce Policy and Planning (PHPPO) is designated as locus for coordinating this effort.

The vision is a global learning enterprise for public health practitioners: founded in sound science; facilitated by learner-oriented technology and integrated into existing public health learning and practice settings. The goal is a public health workforce competent to deliver essential services to protect the health of our communities. Eighty percent of the national public health workforce - 500,000 physicians, nurses, environmental health scientists, laboratorians, health educators, epidemiologists, managers and support staff-have no formal training in public health. Since the 1970s there has been a substantial erosion of public health capacity, including the availability of trained personnel to meet the challenges of new and emerging health threats.

During 2000, the Office of Workforce Policy and Planning developed a global and national implementation plan for public health workforce development in collaboration with a broad range of State, local, academic and community partners. The plan proposes a five year action agenda that will provide accessible competency-based training for all public health workers, enable multiple pathways for certification and credentialing in public health and accelerate adoption and use of technology-mediated learning.

INTENDED AUDIENCE

The life-long learning system will benefit the 500,000 U.S. professions who practice at the frontline of public health in community, State, local and federal public health agencies.

IMPACT

Implementation of the global and national workforce development plan will:

- Establish a national system of Centers for Public Health Preparedness responsible for developing and disseminating practice-focused, competency-based curricula to increase preparedness of frontline staff.
- Accelerate adoption and use of technology-mediated learning (e-learning) by public health agencies and academic partners.
- Facilitate development of basic, discipline-specific and leadership-level certification and credentialing mechanisms in public health which assure competent practice.
- Build the science basis for policy and planning in public health workforce development

2000 ACCOMPLISHMENTS

- Convened expert panel workshop on public health workforce development to provide guidance on issues of science, policy and practice (Callaway Gardens, Pine Mt., Georgia-November 1,2, 2000). Included participation by over 140 public health leaders and workforce experts.
- Developed and vetted implementation plan for "Global and National Implementation Plan for Public Health Workforce Development"

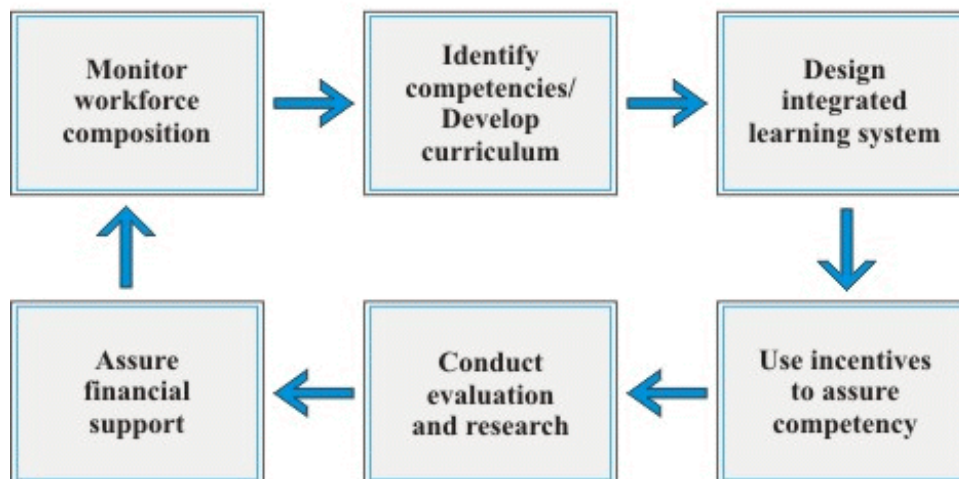
- Disseminated information on CDC/ATSDR Public Health Workforce Development Initiative at 8 regional/national conferences and in 9 publications.
- Initiated a national system of Centers for Public Health Preparedness by funding 4 academic, 3 specialty and 3 local exemplar sites.
- Completed an MOU with HRSA to lay foundation for implementing national plan and submitted a FY 02 Budget Initiative.
- Developed a 3-phase National Bioterrorism Training Plan to complement national workforce initiative.

2001 GOALS

- Fund additional academic and specialty Centers for Preparedness, including one focused on maternal/child health and public health nursing.
- Convene national experts to discuss credentialing/certification in public health.
- Convene 2nd Annual Expert Panel Workshop on Public Health Workforce Development.
- Develop a curriculum for basic and cross-cutting public health competencies; develop related learning materials and disseminate for use.
- Establish a research agenda and evaluation framework.

For more information call WDO, PHPPPO, at 770-488-8118.

STRATEGIC ELEMENTS FOR PUBLIC HEALTH WORKFORCE DEVELOPMENT





A National Public Health Training Plan for Bioterrorism Preparedness and Response

PROGRAM OVERVIEW

CDC, in partnership with local and state health departments, other federal agencies and medical/public health professional associations has developed a strategic plan to reduce the U.S. vulnerability to biological and chemical terrorism through preparedness planning, detection and surveillance, laboratory analysis, emergency response and communication systems.

A key component is the National Bioterrorism Training Plan, a three-phase plan developed in 2000 to strengthen frontline public health. The first phase addresses preparedness of the CDC workforce to implement the Agency's response plan. Phase two focuses on working with State and local partners and other professional organizations to address the unique knowledge and skills needed for bioterrorism preparedness and response. Phase three will integrate bioterrorism preparedness, response, and recovery competencies into the lifelong learning system for public health now being developed by CDC and national partners.

INTENDED AUDIENCE

The National Bioterrorism Training Plan addresses the needs of health professionals involved in bioterrorism preparedness, response and recovery: State, local public health practitioners, healthcare providers, physicians, nurses, and many others.

IMPACT

The plan will ensure that the workforce is fully prepared for effective bioterrorism events response.

2000 ACCOMPLISHMENTS

- Identified competencies that local public health administrative, professional, technical, and support staff need for bioterrorism preparedness and response.
- Initiated a national system of Centers for Public Health Preparedness, including academic, specialty and local exemplar sites. All ten centers support CDC programs in general and bioterrorism/emerging infectious diseases in particular.
- Presented the national bioterrorism training plan at national and regional conferences.

2001 GOALS

- Collaborate with state and local partners to develop a core curriculum for bioterrorism preparedness focused on public health response.(Phase 2)
- Evaluate and report on the impact of training in each of the following areas: laboratory, epidemiology/surveillance, and bioterrorism response.
- Evaluate the first phase of the National Training and Response plan with the focus on preparedness of CDC personnel so that the senior staffs are better prepared to deal with Bioterrorism emergencies.

For more information call PHPPPO at 770-488-8118.



Public Health Training Network

PROGRAM OVERVIEW

Now in its eighth year, CDC's Public Health Training Network (PHTN) is a leader in providing award-winning educational programs at a distance to health professionals.

CDC's Public Health Practice Program Office (PHPPO), as the leader of PHTN, partners with federal, state and local agencies, schools of public health and medicine, and public health associations to reach and to employ the latest technologies, marketing strategies, and community learning centers. Partners include the Association of Schools of Public Health, Association of State and Territorial Health Officers and its affiliates, Association of Teachers of Preventive Medicine, National Association of County and City Health Officers, National Association of Local Boards of Health, Health Resources and Services Administration, Health Care Financing Administration, Food and Drug Administration, Department of Defense, and Department of Veterans Affairs.

Over the past eight years, the number of training and educational programs presented at a distance by state public health organizations has increased with consultation and technical assistance provided by PHPPO's Division of Professional Development and Evaluation (DPDE). DPDE supports the national network of state distance learning coordinators who promote distance learning, and develop, facilitate and maintain distance learning systems. PHTN is expanding its scope internationally and is working with new partners in Africa, India, and Pacific rim countries.

INTENDED AUDIENCE

Public health and health care professionals, educators, health policy makers, and the public all benefit from the learning opportunities made possible by PHTN distance learning programs.

IMPACT

Since its inception, PHTN has provided distance-based training to more than 2 million health professionals. State and local health agencies have built their own capacity to develop and deliver distance learning programs.

DPDE maintains the accreditation mechanisms to offer continuing education credit for physicians, nurses, and other health professionals, most PHTN programs now help participants maintain licensure and certification. In 2000, more than 63,000 health professionals earned continuing education credits through PHTN programs.

2000 ACCOMPLISHMENTS

- PHTN programs trained more than 444,000 health professionals nationally through 128 live satellite broadcasts and 95 videotape, print, computer-based and Web-delivered programs.
 1. 116 non-CDC satellite programs were delivered to 342,213 participants;
 2. 12 live, CDC-produced satellite broadcasts reached 96,850 health professionals; and
 3. PHTN programs served public health professionals in 124 North American, African, Caribbean, Eastern European, and Mediterranean region countries.
- Expanded training participation by offering live and taped PHTN programs on the Internet.
- Co-hosted the National Conference on Informatics and Distance Learning in Public Health with Tulane University and the Louisiana State Health Department. More than 750 public health professionals attended the New Orleans conference; and pre-conferences.
- Through a leadership role in the Presidential Learning Technology Initiative, paved the way to integrate CDC distance learning activities with those of other federal agencies.

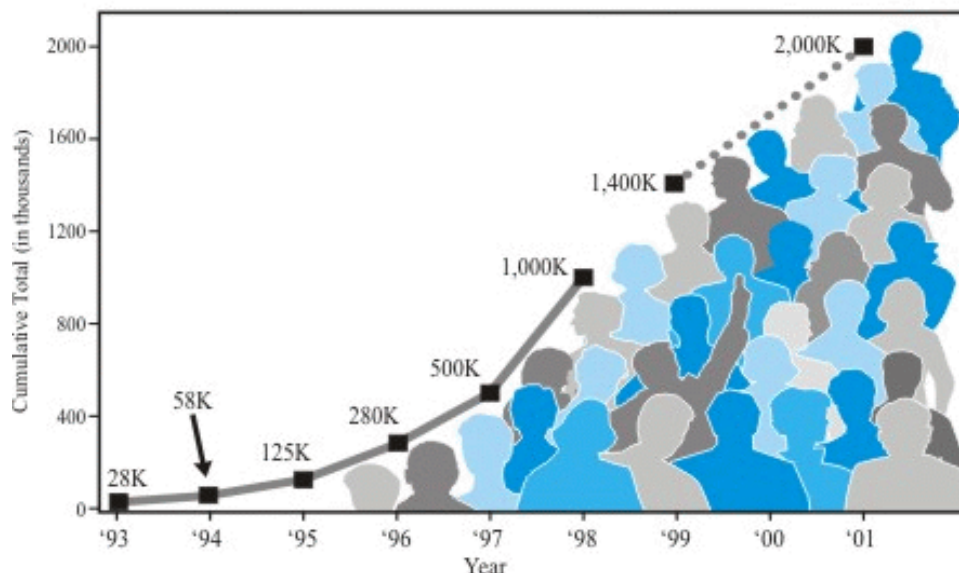
- Collaborated with the Minnesota Department of Health and Division of Nursing and the HRSA in three satellite broadcasts designed to improve the competency of the public health nursing workforce.
- Collaborated with the University of North Carolina School of Public Health in three Public Health Grand Rounds satellite broadcasts.
- Provided consultation to the Office of the Secretary, DHHS, on nationwide distribution of the live conference, “Launch of Healthy People 2010,” by satellite and on-line.
- Collaborated with HCFA and ATPM to develop a series of satellite broadcasts and web-based self-study courses on Medicare, Medicaid, and SCHIP.

2001 GOALS

- Integrate PHTN and DPDE activities and systems with the CDC Global and National Implementation Plan for Public Health Workforce Development and the Health Alert Network.
- Carry out objectives in the CDC Bioterrorism Operational Plan to develop training programs for the web, CD-ROM and satellite broadcast.
- Consult with the Rollins School of Public Health, Emory University to develop an evaluation strategy for CDC-produced PHTN programs based on the CDC Framework for Program Evaluation.
- Continue leadership activity in the Distance Learning Working Group and the Presidential Learning Technology Initiative, to harness the Public Health Service agencies’ distance learning potential.
- Collaborate with the University of North Carolina School of Public Health to develop new Public Health Grand Rounds satellite broadcasts.
- Participate in a global health initiative which will provide distance learning strategy consultation and technical assistance to train Ugandan health professionals in essential public health services.

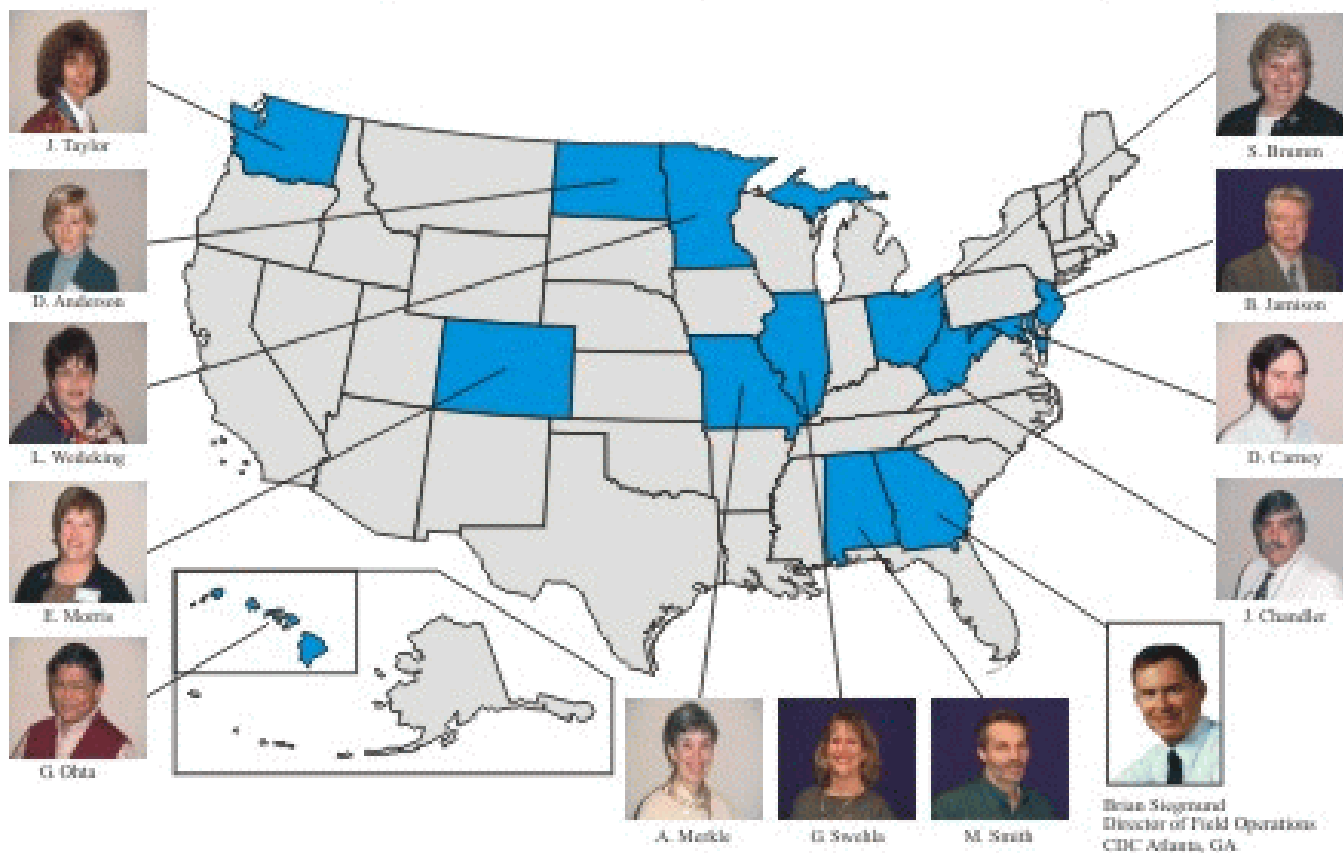
For more information call PHTN and DPDE, PHPPO at 404-639-3707.

PHTN PROGRAM PARTICIPANTS



STATE DISTANCE LEARNING TEAM LEADER NETWORK

State Distance Learning Coordinator Leadership Team And Their Areas of Responsibility





National Laboratory Training Network

PROGRAM OVERVIEW

Training is essential for laboratory professionals both in public health and clinical settings. The National Laboratory Training Network (NLTN) is a unique needs-based laboratory training delivery system sponsored by CDC's Public Health Practice Program Office and the Association of Public Health Laboratories (APHL). The goal of the NLTN is to improve public health and environmental laboratory practices and performance through training.

The NLTN began in 1989. Laboratory training specialists in seven regional offices conduct training programs. Staff work closely with state laboratory training personnel, CDC education specialists, and subject matter experts to identify, prioritize, and address the training needs of laboratory workers.

The NLTN delivers cost-effective training; rapidly transfers new testing technologies; and monitors laboratory training activities. Its focus is national, serving a large audience of laboratorians who practice at the state and local level. The NLTN also disseminates emergency information and testing guidelines, for example, for laboratory identification of *E. coli* O157:H7, multidrug-resistant tuberculosis, and bioterrorism preparedness.

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

NLTN staff conduct assessments of training needed for rabies, virology, mycobacteriology, food microbiology, mycology testing, and other areas of public health concern. 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 the NLTN homepage at <http://www.cdc.gov/phppo/dls/nltn>.

INTENDED AUDIENCE

Laboratory workers who perform tests of public health significance are the primary target audience for NLTN training. However, many courses are also designed to include epidemiologists, nurses, sanitarians, and other public health workers who use laboratory services and data.

IMPACT

The NLTN trains approximately 10,000 public health workers each year. Regular evaluations determine the impact of training on laboratory practice and on the transfer of new testing technologies. An independent national study by Battelle, Inc., verified the effectiveness of NLTN training.

2000 ACCOMPLISHMENTS

- Delivered PHS courses, *Virology Methods for Public Health Laboratories* and *The Laboratory Identification of Rabies* to public health laboratory professionals.
- Developed and delivered a satellite broadcast and regional workshop training to over, 1500 laboratorians about the Select Agent Rule.
- Presented 33 Level A Bioterrorism Awareness and Preparedness courses for Level A clinical laboratorians.

- Developed a 5-day wet workshop for Level B public health laboratorians on the laboratory protocols for the following agents of bioterrorism: *Bacillus anthracis*, *Brucella abortus*, *Franciscella tularensis*, and *Yersinia pestis*.

2001 GOALS

- Develop and deliver training to public health microbiologists from all states on Level B laboratory protocols for potential bioterrorist agents.
- Present multiple Level A bioterrorism courses to an estimated 700 clinical laboratory professionals.
- Develop distance learning workshop packages on high priority topics, including bioterrorism, foodborne illness, and blood lead testing.
- Deliver the PHS courses, *Laboratory Investigation of Foodborne Illness* and *Advanced Mycobacteriology*.

For more information call DLS, PHPPPO, at 770-488-8295 or visit our Web site at <http://www.phppo.cdc.gov/dls/nltn/>.



National Public Health Leadership Institute

PROGRAM OVERVIEW

The mission of the Public Health Leadership Institute (PHLI) is to strengthen the nation's public health system by enhancing the leadership capabilities of senior health officials. Initiated by PHPPO in 1991 in partnership with the University of California at Los Angeles, the program has become the premier program of its kind.

In September 2000, the University of North Carolina (UNC) assumed leadership of the Institute. The UNC Kenan-Flagler Business School, School of Public Health and the Center for Creative Leadership, will join with CDC to develop a rich learning opportunity. The UNC institute curriculum will include topics dealing with transformational leadership in the public health context, building and leading effective teams, and building inter-organizational alliances to improve public health. 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. A second-year fellowship for participants will focus on their interaction and support of CDC-sponsored state and regional leadership development programs.

INTENDED AUDIENCE

Initially designed for public health officials, the PHLI target audience has expanded to include other senior officials in the public and private health sector. The UNC institute will focus on multi-institutional leadership teams. Approximately twenty teams of 2-4 health system professionals will participate in the first year. These include: Managed care professionals, representatives from national health associations, and senior management officials of state and local health agencies; and, CDC and HRSA senior management officials, faculty of schools of public health, and international health officials.

IMPACT

From inception through 2000, nearly 600 health officials from city, state, federal, international, academic, and private organizations graduated from the PHLI program. Over 97% of all graduates report direct contributions to their leadership skills, and over 80% report enhanced communication, motivation, and 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.

2000 ACCOMPLISHMENTS

- The ninth-year class of 55 scholars completed the leadership development program. Ten CDC scholars from nine CDC component units participated in the class.
- The class included managed care professionals, deputy directors of large county and city health departments and participants from the U.S. Health Resources and Services Administration and Department of Defense.

2001 GOALS

- Design and implement the UNC-based PHLI program to ensure the continuation of leadership enhancement for senior health officials.
- Explore additional collaborative relationships with private foundations and federal agencies.
- Develop evaluation measures focused on the impact of leadership development on health outcomes.

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



National Public Health Leadership Development Network

PROGRAM OVERVIEW

The National Public Health Leadership Development Network comprises 19 state and regional leadership development programs that serve 40 states. Stimulated by the Public Health Leadership Institute, these programs have more than 2,000 graduates, including public health directors and professionals, healthcare and managed care professionals, and other leaders at the community and state levels. An estimated 600 people will participate in the programs in 2000-2001. The Network is a consortium 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 2,000 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 the:

- Arizona Public Health Leadership Institute
- Florida Public Health Leadership Institute
- Iowa Public Health Leadership Institute
- Kansas Public Health Leadership Institute
- Kentucky Public Health Leadership Institute
- Massachusetts Public Health Leadership Institute
- Michigan Community Health Leadership Institute
- Mid-America Public Health Leadership Institute
- Mid-Atlantic Health Leadership Institute
- Missouri Public Health Certificate Program
- Northeast Regional Public Health Leadership Institute
- Northwest Regional Public Health Leadership Institute
- Ohio Public Health Leadership Institute
- Oklahoma Public Health Leadership Program
- Rocky Mountain Public Health Leadership Institute
- Southeast Public Health Leadership Institute
- South Central Public Health Leadership Institute
- Texas Public Health Leadership Program
- Wisconsin Public Health Leadership Institute

2000 ACCOMPLISHMENTS

- An estimated 600 participants graduated from state and regional leadership development programs.
- Expanded state and regional leadership development programs to a total of nineteen.
- Expanded the target audience to include CDC staff assigned to state and local health agencies.
- Evaluated leadership development programs.
- Explored the feasibility of using distance learning to serve expanded audiences.

2001 GOALS

- The number of states and regional leadership development programs will be increased to 20.
- The number of graduates in 2000-2001 is projected to reach 850, bringing the cumulative number of graduates to more than 2,500.

For more information call DPHSDR, PHPPPO, at 770-488-2534.



Management Academy for Public Health

PROGRAM OVERVIEW

The Management Academy for Public Health is a joint initiative sponsored by CDC's Public Health Practice Program Office (PHPPO), the W.K. Kellogg Foundation, the Robert Wood Johnson Foundation, and the Health Resources and Services Administration. The University of North Carolina's School of Public Health and the Kenan-Flagler Business School jointly operate the ten-month program. PHPPO provided technical assistance in the development of the program and continues to assist administration of the program. Beginning in 1996, the sponsoring partners 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 began in 1999 with a three-year demonstration program in Georgia, North Carolina, South Carolina, and Virginia.

INTENDED AUDIENCE

Public health administrators and managers in local and state health departments and partners from other community organizations.

IMPACT

Participants who complete the Academy's program bring new and enhanced management skills to their programs and agencies. Training develops a comprehensive array of strategic and technical abilities, including the broader, adaptive abilities that managers require 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.

2000 ACCOMPLISHMENTS

- Recruited and trained 200 mid- and senior-level public health leaders in Georgia, Virginia, and the Carolinas. The program included onsite retreats in Chapel Hill and regional retreats in Durham, Savannah, Atlanta and Roanoke.
- Based on evaluation of the program's first year, refined the program to better address the needs of the participants.
- Initiated discussions to determine the feasibility of expanding the program to other geographical areas.

2001 GOALS

- Recruit and provide training for 200 additional participants.
- Implement a distance-based learning strategy which will include a World Wide Web site accessible to all participants for computer-based learning, electronic mail, self-paced CD-ROMs and video conferencing and with links to other public, private, and academic organizations and institutions for reference and discussion.
- Evaluate the impact management training has on the effectiveness of participants' organizations throughout the four state region.

For more information call PHPPO at 770-488-2534.



Academic Partnerships for Workforce Development

PROGRAM OVERVIEW

CDC's Public Health Practice Program Office manages several programs to encourage young professionals to enter public health as a career, including partnership and fellowship programs that bring interns and fellows from schools of public health and departments of preventive medicine to conduct research and other projects at CDC. In addition, the Minority Visiting Professorship Program (MVPP) works directly to demonstrate to minority medical students the rewards of public health as a profession.

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. In addition to funding specific training programs, PHPPO coordinates cooperative agreements with academic partners including ASPH, ATPM, Association of American Medical Colleges (AAMC) which fund individual research projects in support of CDC programs.

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.

The MVPP brings visiting physicians and other health professionals to the campuses of predominantly minority medical schools for seminars, one-on-one conversations with students, and lectures. Begun in 1991 and recently restructured, the program is conducted in conjunction with the ATPM, an advisory committee representing the MVPP, the National Medical Association, the Hispanic-Serving Health Professions Schools, and other partners.

INTENDED AUDIENCE

- **ASPH Internships:** Are 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:** Are 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. citizen, a foreign national, or qualified non-citizen.
- **ASPH/ATPM Fellowships:** Are open to graduate students or early career professionals with graduate degrees in public health from ASPH/ATPM member schools who are either U.S. citizens or foreign nationals with a visa permitting permanent U.S. residence.
- Minority students in medical schools and other graduate level health professions program are the target audience for the MVPP.

IMPACT

These programs give young professionals direct contact with senior health practitioners, hands-on experience in CDC programs, in research and program activities, and other opportunities that can help them commit to careers in public health.

2000 ACCOMPLISHMENTS

- **ASPH Internships:** Since the inception of the ASPH program, more than 1,100 interns have served at CDC. 66 students participated in the 2000 ASPH Internship Program.
- **ATPM Internships:** More than 176 preventive medicine, medical students and career development awardees received direct experience at CDC in research and other projects through the ATPM Cooperative Agreement. 10 students participated in the 2000 ATPM Internship Program.
- **ASPH/ATPM Fellowships:** The Fellowship Program completed its sixth year in 2000 with 31 ASPH fellows from schools of public health and 35 from departments of preventive and community medicine .

2001 GOALS

- Increase the number and diversity of participants in the intern and fellowship programs.
- Increase the number of CDC programs and ASPH/ATPM member schools participating in the intern and fellowship programs.
- Sponsor MVPP professorship sessions at eight minority institutions including the University of Puerto Rico.
- Complete database inventory of internship and fellowship projects and the products completed by these students such as publications, manuals, and video tapes.
- Work to establish better matches between research capabilities/assets of academic partners and research priorities of CDC CIOs.

For more information call Academic Programs Office, PHPPPO at 770-488-2522.



Wald-trek: a Distance Learning Initiative to Improve the Competency of Public Health Nurses

PROGRAM OVERVIEW

Since mid-1998, the Division of Professional Development and Evaluation (DPDE) has worked in partnership with the Division of Nursing (DN), Bureau of Health Professions, Health Resources and Services Administration (HRSA) and the Association of State and Territorial Directors of Nursing (ASTDN) on Wald-Trek, an initiative to enhance the competencies of the public health nursing workforce in performing the essential services by using distance learning methods. Wald-Trek partners agree on several guiding principles: use existing educational resources whenever possible, link continuing education programs to options for academic credit, and coordinate implementation approaches with the strategies and priorities of the CDC Global and National Implementation Plan for Public Health Workforce Development.

INTENDED AUDIENCE

Wald-Trek targets practicing public health nurses in the U.S., the largest professional segment of the public health workforce.

IMPACT

Wald-Trek related projects have trained:

- In 1999, the satellite broadcast, *The Role of the Public Health Nursing Leader in Relation to Population Health* reached more than 3,000 participants at more than 200 sites across the country.
- In 2000, the satellite broadcast series, *Public Health Nursing Practice for the 21st Century: Competency Development in Population-based Practice* produced in collaboration with the Minnesota Department of Health, reached more than 2,500 participants in 470 sites across the country.

The Wald-Trek initiative also facilitates strong partnerships among CDC, HRSA, ASTDN, State and Local Health Departments, and academic partners.

2000 ACCOMPLISHMENTS

- With partners, DN-HRSA, and ASTDN, convened the first meeting of the Wald-Trek National Steering Committee composed of key leaders in public health nursing practice and education to provide ongoing leadership in the development of a comprehensive educational program designed to meet the needs of the public health nursing workforce
- Provided funding, consultation, and technical assistance to the Minnesota Department of Health to design and deliver a series of three national satellite broadcasts for public health nurses, *Public Health Nursing Practice for the 21st Century: Competency Development in Population-Based Practice*.
- Handled online registration, evaluation, and accreditation for this series with the launch of the new online learner support system, CDC/ATSDR Training and Continuing Education Online; the series reached more than 470 sites and 2500 participants nationwide.
- Formalized the partnership with DN-HRSA with an Interagency Agreement to support a demonstration project to model the process of adapting a continuing education program for public health nurses from the Midwest to the southeast region of the country, a geographically and culturally different area.

- With DN-HRSA, co-funded Emory University's Nell Hodgson Woodruff School of Nursing to act as an agent for the Georgia Nursing Consortium (a consortium of all schools of nursing in Georgia) to execute the Minnesota model in this state-wide demonstration project called Georgia Wald-Trek. Using as a base the satellite broadcast series, *Public Health Nursing Practice for the 21st Century: Competency Development in Population-Based Practice*, Georgia Wald-Trek will:
 1. Use existing educational resources to prepare public health nurses to work with populations.
 2. Establish an option for offering academic credit by building on continuing education materials.
 3. Use a preceptor model to reinforce information shared in the educational programs.
 4. Demonstrate collaboration among a state public health department, an academic consortium, a regional compact, and Federal agencies.

2001 GOALS

- Convene at least one meeting of the Wald-Trek National Steering Committee to continue to tap the enthusiasm in setting priorities and planning curriculum development to facilitate achieving the Wald-Trek vision.
- Plan future project directions through monitoring Emory University's and the Georgia Consortium's results in the Georgia Wald-Trek project demonstration project by June 2001.
- With DN-HRSA and the recommendations of the CDC Global and National Implementation Plan for Public Health Workforce Development, plan and fund an organizational home to sustain the work of the Wald-Trek project.

For more information call DPDE, PHPPPO at 404-639-1626.



CDC/ATSDR Leadership and Management Institute

PROGRAM OVERVIEW

The CDC/ATSDR Leadership and Management Institute (LMI) is a year-long, executive development program designed to enhance the leadership, management and public health competencies of middle- and senior-level managers at CDC and ATSDR. LMI seeks to improve the organizational capacity, leadership effectiveness, team work and collaboration of its participants. LMI is founded on a model that emphasizes program excellence, life-long learning, and a focus on the application of leadership and management principals to workplace issues. The educational model includes: 3 residential learning retreats with presentations from and discussion with leading figures in the fields of management, leadership and public health; individualized assessments of participant strengths and weaknesses through 360 degree, multi-rater instruments; establishment of collaborative relationships with other members of the participants' sponsoring organization and with colleagues from other CDC programs; opportunities to demonstrate newly acquired skills through team and class action learning projects; and Individual Action Plans (IAP) to translate new knowledge into practice.

INTENDED AUDIENCE

LMI serves permanent, full-time, middle- and senior-level staff at CDC and ATSDR. Individuals participate as members of teams sponsored by the nominating CIOs. Team size can vary between 3-8 members and members may be drawn from a single CIO or from cross-organizational teams constructed to resolve cross-cutting problems or issues. There are no minimum or maximum grade levels. Commissioned Corps Officers are encouraged to participate.

IMPACT

During 1999-2000, 35 participants from EPO, NCID, PHPPPO, NCEH, ATSDR completed the year-long program. Three residential learning retreats were conducted and participants completed team and class projects. Formal presentations of the action learning projects were delivered during the residential retreats. Participant evaluations from the three retreats and the year-long summary revealed strong satisfaction with program content and administration.

2000 ACCOMPLISHMENTS

- Graduated 35 participants from 5 CIOs.
- Recruited 45 participants for Year 2 with representation from 8 CIOs (E.O., HRMO, PGO, OGH, PHPPPO, NCCDPPH, NIP, NCHSTP).
- Began development of a LMI web presence that will be accessed through the PHPPPO web site for interactive discussion and program communication.
- Recruited new faculty and worked with existing faculty to revise presentations.
- Presented results of program development at a national "Best Practices" meeting in Washington, DC, with participants from Executive Development programs in over 20 federal agencies. This meeting is expected to lead to the development of a formal network of federal agencies involved in executive development.

2001 GOALS

- Recruit teams for Year 3 from CIOs which have not yet participated in LMI.
- Develop an evaluation strategy that will address long-term program outcomes and impact.
- Complete development of LMI web site.
- Develop and institutionalize a LMI Alumni Network to promote life-long learning, coaching and mentoring, and program marketing.
- Continue to refine program content, curriculum and speakers.
- Begin development of a Resource Center to provide management and leadership resource materials to program participants and their organizations.
- Begin development of a Peer Consultation Network to facilitate cross-CIO collaboration and consultation, particularly in areas related to leadership and management.

For more information call PHPPPO at 770-488-2534.



CDC/ ATSDR for Credit Continuing Education

PROGRAM OVERVIEW

CDC/ATSDR has a history of providing continuing education (CE) credit to health professionals and is one of few federal agencies to offer this service. CDC/ATSDR holds three accreditations and provides continuing medical education (CME) credit for physicians by the Accreditation Council for Continuing Medical Education, continuing nursing education (CNE) contact hours for nurses by the American Nurses Credentialing Center's Commission on Accreditation (ANCC), and continuing education units (CEUs) for other professionals by the International Association for Continuing Education and Training (IACET).

Annually, CDC/ATSDR awards credit to more than 50,000 health professionals through a wide range of educational offerings in a variety of media. For example, the Morbidity and Mortality Weekly Report's Recommendations and Reports Series is a popular print-based offering with physicians. The National Immunization Program and DPDE's Division of Professional Development and Evaluation satellite broadcasts, based on the latest recommendations of the Advisory Committee on Immunization Practices (ACIP), award credit to the greatest numbers of professionals in a single course. A wide range of accredited self-study courses in video, web-based, CD-ROM, and print also provide options for receiving credit in a self-paced format.

INTENDED AUDIENCE

The intended audience is health professionals throughout the U.S., including physicians, nurses, and others.

IMPACT

CDC's free CE credits are valuable to health professionals for professional relicensure and certification. Accreditation enhances the credibility of CDC's training courses; approval by major accrediting organizations puts a stamp of approval on the design and content of educational offerings. Our accreditations also facilitate the cosponsorship of training courses by other federal agencies, State health departments, and academic and other non-profit partners.

2000 ACCOMPLISHMENTS

- Accredited more than 300 CE activities across CDC/ATSDR.
- In 2000, more than 78,000 individuals participated in accredited educational activities and more than 63,000 received some type of CE credit.
- More than 22,000 physicians received CME credit.
- Approximately 2,000 non-physicians received CME attendance certificates.
- More than 23,000 nurses received nursing contact hours.
- More than 17,000 professionals received CEUs.
- Made a presentation to the Excellence in Science Committee to request broader representation on the CME Advisory and Review Committees.

2001 GOALS

- Seek greater visibility for the Continuing Education Program.
- Build physician support of CME activities by acquiring new members from all Centers and ATSDR on the CME Advisory and Review Committees.
- Build a database of professional, technical reviewers (especially physicians) to pilot test all self-study materials.

For more information call DPDE, PHPPPO at 404-639-1626.



The Instructional Innovations Lecture Series

PROGRAM OVERVIEW

Today, there is a growing realization that new technologies can enhance learning, yet require a significant shift in pedagogy to become quality educational tools. To facilitate a shift in implementing innovative technology for faculty and public health program planners, the Division of Professional Development and Evaluation (DPDE), Public Health Practice Program Office (PHPPO), Centers for Disease Control and Prevention (CDC) is collaborating with Emory University's Rollins School of Public Health, Nell Hodgson Woodruff School of Nursing and the School of Medicine on the Instructional Innovations Lecture Series.

The Instructional Innovations Lecture Series is a series of 12 one-hour lectures to teach participants about new innovations in instruction, the value of incorporating innovative techniques in curriculum design and practice, and ways to effectively and easily incorporate instructional innovations into course work and practice

The lecture series began in 1998 with the presentation *Beyond Traditional Distance Education: Distributed Learning*. In 1999, CDC accredited the annual series of 12 lectures for Continuing Medical Education (CME) credit, Continuing Nursing Education (CNE) contact hours and Continuing Education Units (CEUs).

INTENDED AUDIENCE

The Instructional Innovations Lecture Series is designed for faculty of Emory's Schools of Public Health, Nursing, and Medicine and for CDC staff who design innovative educational programs.

IMPACT

The lecture series strengthens the capacity of faculty and public health program developers to adopt innovative technologies in their cadre of instructional methods, enhancing Emory's ability to educate health professionals, and CDC's ability to implement the recommendations of the CDC Global and National Implementation Plan for Public Health Workforce Development.

2000 ACCOMPLISHMENTS

- Expanded the partnership to include Emory's schools of nursing and medicine as collaborators.
- More than 100 participants attended the first session by Dr. Scott Chandler from Healthcon/WedMD Corporation, *The Internet: Revolutionizing the Healthcare Field*; more than 50 participants attended the second session by Dr. Lynne Schrum from the University of Georgia titled, *Technology in Professional Education -- The Possibilities that Await Us!*
- Offered accredited, hands-on computer workshops following each lecture to facilitate interactive learning of the technology tools; approximately 15 persons attended each workshop.

2001 GOALS

- Expand participation from the Emory University's schools of nursing and medicine.
- Conduct a one-day technology workshop for CDC and Emory Clifton Corridor staff.

For more information call DPDE, PHPPO, at 404-639-1626.



ENVISION Videoconferencing

PROGRAM OVERVIEW

Video telecommunications, established in 1990 at CDC, has enabled cost-effective and efficient communication among CDC/ATSDR staff who are dispersed nationally and internationally. More recently, critical communications with public health partners such as state public health agencies has been enhanced through ENVISION. As part of CDC's operational infrastructure, PHPPPO, in partnership with IRMO, provides network and program management using state-of-the-art digital technology to facilitate CDC communications. This technology has exceeded its initial mission – to foster face-to-face meetings between participants at various locations – and now enables broad-based participation in training opportunities and seminars.

INTENDED AUDIENCE

The intended audience include CDC/ATSDR staff and state public health partners.

IMPACT

Since its inception, ENVISION has become an indispensable tool for virtual face-to-face meetings throughout CDC/ATSDR. It allows participants to read all responses from others such as facial expressions and body language--all of which are critical components of communication. Additionally, meeting participants can share information and data visually through graphics or documents. Important regular events such as the CDC Director's All-Hands Meetings and Tuesday Morning Seminars can be attended by CDC/ ATSDR staff at many locations simultaneously. Through ENVISION, CDC/ATSDR events, seminars, and courses are available to staff at almost every CDC site. ENVISION is an invaluable resource which unifies employees in CDC's geographically dispersed family.

This past year, web streaming various CDC seminars over the internet has gained popularity. Streaming allows employees to view seminars from their desktops but does not allow the two-way interactivity videoconferencing allows. Currently ENVISION technology helps to enable web streaming technology and is inextricably linked to it. Successful video conferences with sites outside CDC's network have become more routine because of increased compatibility between manufacturers' equipment due to migration towards established international standards, H.320. Mission-critical video conferences with international, federal, state and local public health partners have increased every year, with this area expanding faster than any other within ENVISION.

2000 ACCOMPLISHMENTS

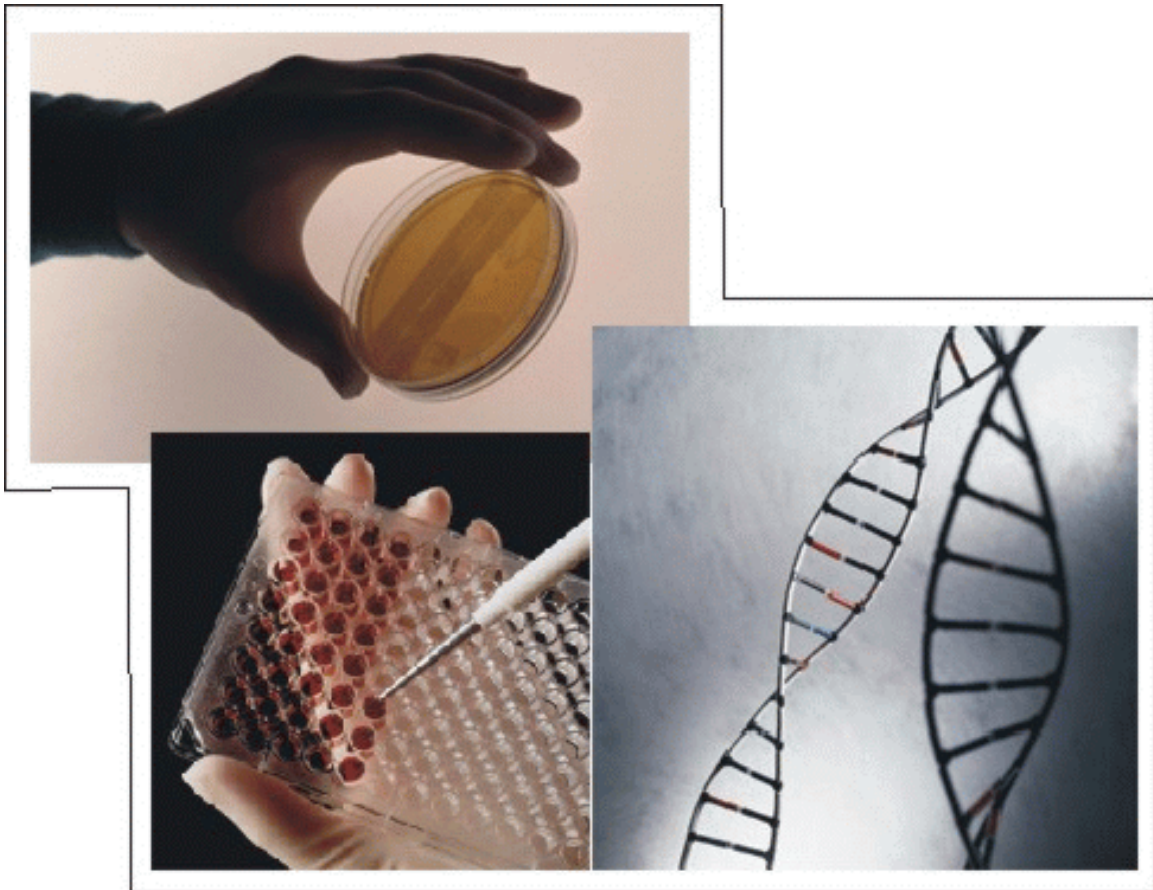
- Enabled 3,397 video conferences, up 8% from FY1999.
- Provided 5,736 hours of ENVISIONed meetings, up 3% from FY1999.
- Included 11,000 more participants, up 23% from FY 1999.
- Increased CDC/ATSDR's ability to include participants external to CDC in organizations such as the Interagency Disability Statistics Committee. Enabled 414 meetings that included sites external to CDC/ATSDR, up 10% from FY 1999.
- Increased the reach of ENVISION meetings and seminars through multicasting and video streaming technology.

2001 GOALS

- Pursue an independent evaluation of current ENVISION operations, management and customer satisfaction levels and obtain recommendations for a three to five year strategic plan.
- Expand ENVISION access to CDC employees in Anchorage, AL, and San Juan, PR.
- Allow greater flexibility by including sites outside CDC that run at lower speeds.
- Enable ENVISION scheduling through the Internet.
- Establish an ENVISION training course for users and presenters.

For more information call DPDE, PHPPPO, at 404-639-3633.

STRENGTHENING SCIENCE





Strengthen Science for Public Health Action

PROGRAM OVERVIEW

The goal of the Public Health Practice Program Office (PHPPO) science program is to expand the knowledge base and tools policy makers and practitioners can use to build a stronger public health infrastructure.

Because our mission focuses on communities as the focus for prevention, all components of our science program ask the same ultimate question: “What strategies and interventions work most effectively 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.

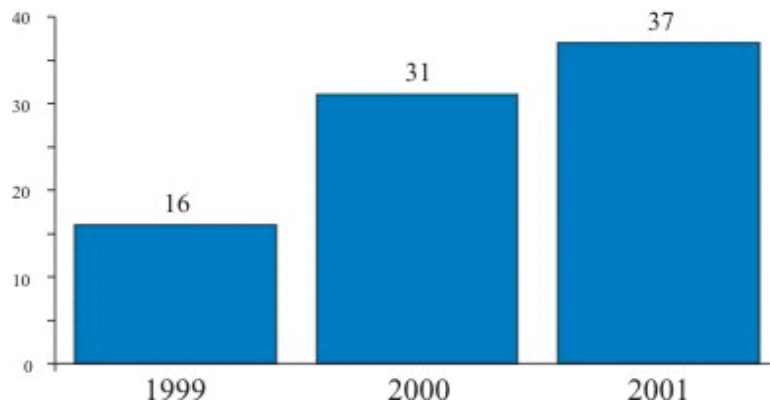
An important focus of the PHPPO research program is on laboratory testing quality. The concerns of laboratory practitioners and their clients drive that research as does federal policy established in the Clinical Laboratory Improvement Amendments of 1988. PHPPO conducts an extensive research program 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, evaluation research to document the impact of PHPPO programs on the infrastructure and on public health practice, and extramural research on the impact of laws on public health.

2000 ACCOMPLISHMENTS

- Strategic Focus on Science: The PHPPO strategic plan identifies science as one of our four key strategies to strengthen the public health infrastructure by:
 1. Building PHPPO’s research capacity;
 2. Stimulating public health practice research; and
 3. Translating prevention research findings into policies and practices to strengthen the public health system.
- Increased scientific productivity
The number of peer-reviewed publications from PHPPO increased from 16 in 1999 and 31 in 2000 to 37 in 2001:

PEER-REVIEWED PUBLICATIONS FROM PHPPO



2001 Program Review

- Science Base for Public Health Performance Standards: A key PHPPO research priority is to develop the science base for the National Public Health Performance Standards Program. In 2000, PHPPO sponsored an expert panel review of the scientific basis for assessing the capacity of State and local health departments.
- Laboratory Testing Quality: Supported extramural and intramural research in seven quality-related areas, including genetic testing, sentinel networks for monitoring laboratory practice, tuberculosis and HIV/AIDS testing, and others.
- Geographic Information Systems (GIS): Funded four geographic information system projects to support infrastructure data collection and analysis through the Small Business Innovation Research program.
- Prevention Research Initiative: 52 awards to individual investigators and research centers were funded for year 2 of a 3 year project period. The Peer Review Manual was edited for publication and distribution in February 2001 to CDC researchers.
- Prevention Research Partnerships: To be truly effective, CDC's prevention research program must help strengthen the extramural research infrastructure. In 2000, we expanded the spectrum of research partners through a cooperative agreement with the Association of American Medical Colleges, and collaborative research programs with the Georgia Institute of Technology and the Emory University Rollins School of Public Health.
- Recognition of Scientific Leadership: PHPPO scientists now serve as associate editors for the *American Journal of Public Health* and the *Journal of Biomedical Informatics* (formerly *Computers and Biomedical Research*).

CHALLENGES AND APPROACHES

- Extramural Prevention Research: PHPPO coordinates this activity with all CDC component units, the CDC Excellence in Science Committee and extramural organizations – in academia and public health practice – to help focus research on shared, high priorities.
- Science Base for Public Health Performance Standards: Developing widely applicable performance measures will involve applying the results of 1999 field tests in selected states to validate and refine preliminary measures developed by expert consensus methods.
- Laboratory Testing Quality: PHPPO's many activities in this area will include research to determine methods to obtain sample materials for genetic testing quality assurance, publication of findings from the *M.tb* nucleic acid amplification program, and performance evaluations of laboratories that perform HIV antibody and related tests.
- GIS: The PHPPO GIS Research Center will digitize the boundaries of the approximately 3,000 U.S. local health departments to provide a foundation data set for CDC and extramural research on the public health infrastructure and services.
- Public Health Informatics Research: PHPPO is leading the establishment of an extramural research program in public health informatics to engage the academic research community in this key domain.
- National Conference on Public Health Informatics: PHPPO has catalyzed the 2001 meeting of the American Medical Informatics Association which will develop a national agenda for public health informatics. The agenda will be published simultaneously in the *Journal of the American Medical Informatics Association* and the *Journal of Public Health Management and Practice*. The Robert Wood Johnson Foundation is the primary sponsor of the meeting, which is co-sponsored by HRSA, NLM, and CDC, and endorsed by ASTHO, NACCHO, CSTE, NAPHSIS, and APHL.

These and other priorities for 2001 are presented in more detail in the following fact sheets.



Extramural Prevention Research

PROGRAM OVERVIEW

During the 20th century, the average U.S. lifespan increased by 30 years. More than 80% of this gain is attributed to improved prevention practices. Despite this achievement, the Nation's 500,000 public health professionals still lack the proven "best practices" and "prevention tools" they need to identify rapidly evolving health threats, to design hard-hitting community and population-based interventions, and to deliver them through State and local health departments, health care organizations, and community-based organizations.

All Americans – and especially minority populations – bear a heavy burden of death and disability. Much of that death and disability can be prevented if effective strategies are developed and made available to Public Health practitioners. Only a tiny fraction of the nation's health research budget supports prevention research.

The overall goal of prevention research is to discover methods to prevent disease and disability and to translate those methods into effective, population-based interventions at the community level. Prevention research, in other words, "takes discovery to the point of practice," giving new, science-based tools to front-line public health professionals

In 1998, CDC formulated the new Extramural Prevention Research Initiative to begin to unlock the extraordinary benefits of prevention research. The driving principles of the initiative are to:

- Support population-based research priorities identified by CDC and external experts in prevention science and public health practice;
- Incorporate community goals and perspectives in research design and conduct;
- Support investigator-initiated extramural research;
- Use external peer review to identify the highest-quality research; and
- Ensure translation of research findings into public health tools and best practices.

Congress appropriated \$15 million annually in FY 1999, FY 2000, and FY 2000,1 to establish the infrastructure for an on-going and expanding program of peer-reviewed extramural prevention research, and, to make the first round of extramural prevention research grants.

In FY 2000, the CDC Office of Prevention Research was transferred to the Public Health Practice Program Office (PHPPO), which already served as CDC's principal facilitator of collaborative research with academic institutions through cooperative agreements with the Association of Schools of Public Health and the Association of Teachers of Preventive Medicine.

INTENDED AUDIENCE

The ultimate audiences for CDC's extramural prevention research are public health professionals at the community level and extramural investigators who conduct prevention research at the highest scientific levels and with direct relevance for front-line public health practitioners.

IMPACT

Prevention research generates extraordinary benefits for public health outcomes and practice. Just a few examples include: developing ways to apply clinical tests, like the Pap smear, to preventive screening for large populations; boosting immunization rates among children of low-income families; educating groups at risk of HIV and other infectious diseases to adopt healthy behaviors; using genetic information to prevent disease, disability and death by finding persons at risk and carrying out appropriate interventions; and developing scientific measures of the performance of critical health services in communities.

2000 ACCOMPLISHMENTS

- Conducted oversight of research projects funded in 1999 and provided funding for a limited number of new projects – 52 projects in total.
- Supported development of systematic CDC prevention research agendas.
- Supported the use of external peer review for research applications across CDC.
- Conducted interviews of academics, researchers and employers to determine gaps in training for scientists to conduct prevention research.
- Interviewed respondents to a poll sponsored by Research!America to determine how best to support and promote prevention research at CDC.

2001 GOALS

- Identify high-priority areas for expanding CDC's portfolio of public health research projects.
- Develop and implement an Office of Extramural Prevention Research Web Site to disseminate prevention research findings.
- Publish the *Peer Review Manual* electronically and on paper.
- Translate interview findings into messages to promote prevention research at CDC.
- Promote the use of peer review for CDC research programs.

For more information call PHPPO at 770-488-2443.



Public Health Systems Research Agenda

PROGRAM OVERVIEW

The Public Health Systems research agenda of the Public Health Practice Program Office (PHPPO) is designed to improve understanding of the functioning and capacity of the public health system, and to provide the evidence base to guide public health infrastructure development efforts. Research is essential to develop the reliable measures needed for accountability, maximize the impact of our systems interventions, and identify the highest priority systems needs. We need to understand which investments have the greatest impact in order to target limited resources. We also need to provide objective public health systems data for support infrastructure development efforts and to ensure that workforce, public health organizations, quality testing laboratory facilities, and communications and information systems support public health service delivery. Finally, research is essential to monitor progress towards the Nation's public health infrastructure objectives described in *Healthy People 2010*.

The work of PHPPO benefits all CDC programs. Our activities primarily utilize a *systems perspective* on public health with a secondary focus on specific diseases and interventions. Our goal is to help improve all public health programs by enhancing the basic capabilities and infrastructure upon which they depend. Improving infrastructure, has a multiplier effect by simultaneously improving the performance of a wide spectrum of categorical activities.

INTENDED AUDIENCE

The PHPPO public health system research agenda communicates our high research priorities to:

- Scientists and researchers across CDC;
- Researchers and other academic partners in research institutions; and
- Organizations that invest in public health systems research.

IMPACT

The public health systems research agenda makes our research priorities explicit, providing a map for our infrastructural research activities and for the academic researchers who partner in public health systems research.

2000 ACCOMPLISHMENTS

- Developed the first comprehensive PHPPO research agenda incorporating the perspectives of extramural public health practitioners and researchers and of CDC programs.
- Disseminated the agenda widely to extramural researchers within CDC.
- Received \$42,000 from the Prevention Research Office to incorporate external perspectives into the research agenda.
- Received \$500,000 from the CDC Office of the Director for extramural research on the impact of laws on public health.

2001 GOALS

- Use the agenda to guide and prioritize existing and planned research supported by PHPPO.
- Seek funding to support expanded intramural and extramural research in the priority areas.

For more information call PHPPO at 770-488-2503.



Research Collaboration with Georgia Institute of Technology

PROGRAM OVERVIEW

In 2000, PHPPPO developed a new joint program between CDC and the Georgia Institute of Technology to encourage investigators to jointly conduct mutually beneficial preliminary studies in three areas:

- Bioengineering – biosensors, environmental sensors, biomechanics;
- Bioscience – cell/tissue engineering, microanalysis, molecular biology; and
- Informatics – signal detection, pattern recognition, human/computer interface, information retrieval, data integration, simulation, decision science, security, GIS, and networking.

Under the program, the first of its kind at CDC, co-investigators from each institution submit proposals for peer review to a joint committee of scientists and engineers, three from CDC and three from Georgia Tech. Investigators may receive up to \$15,000 of internal funds at each institution for a maximum of two years. The total annual commitment from each institution is currently \$75,000. Two-year awards are evaluated after 11 months to ensure satisfactory progress at both institutions.

In 2000, four of eight submitted proposals were funded. Criteria used to evaluate the proposals were scientific merit, including originality, methodology and expected impact; potential to yield additional funding; and capability to enhance research interactions between CDC and Georgia Tech. The funded proposals are:

- GIS Integrated Computational Tools to Evaluate Exposure of Populations to Airborne Pollutants – collaboration between Georgia Tech and the Agency for Toxic Substances and Disease Registry, ATSDR principal investigator M.L. Maslia.
- Bioinformatics Approaches to Automated Interpretation of Pathogen-Specific Genomic and Epidemiologic Data – collaboration between Georgia Tech and the National Center for Infectious Disease, CDC principal investigator Cynthia Warner.
- Improving Vaccine Risk Information: Metrics and Mappings for Probabilities – collaboration between Georgia Tech and the National Immunization Program, CDC principal investigators Robert T. Chen, Beth Hibbs.
- Identification of Selenium Metabolites in Human Samples – collaboration between Georgia Tech and the National Center for Environmental Health, CDC principal investigator Daniel C. Paschal.

INTENDED AUDIENCE

CDC full-time employees and Georgia Tech permanent faculty of assistant professor or higher.

IMPACT

As the nation's prevention agency, CDC has specific interests in developing new and innovative methods for detecting and investigating health problems. In partnering with a nationally recognized academic engineering center, CDC will contribute to bioengineering, bioscience and informatics research.

2000 ACCOMPLISHMENTS

- Developed a Memorandum of Agreement between CDC and Georgia Tech to stimulate collaborative work on bioengineering, bioscience, and informatics.
- Received eight proposals for funding under a request for applications.
- Approved and funded four proposals for collaborative research between Georgia Tech and CDC.

2001 GOALS

- In 2001 the collaboration will be expanded, with new projects and additional research opportunities.

For more information call PHPPPO at 770-488-2404 or visit our Web site at <http://www.phppo.cdc.gov/dls/links/>.



Evaluation of Quality in Laboratory Practice and Standards

PROGRAM OVERVIEW

Through its laboratory practice research agenda – Evaluation of Quality in Laboratory Practices and Standards (EQLPS), the Division of Laboratory Systems (DLS) describes laboratory practices and services in our nation's laboratories and assesses parameters for measuring and assuring testing quality. Highest priority is given to research for testing of public health importance (e.g., HIV/AIDS and *Mycobacterium tuberculosis* (*M.tb*) testing) and to research that furthers efforts to enhance the relevance of the Clinical Laboratory Improvement Amendments (CLIA) standards (e.g., in the areas of cervical cytology and genetic testing). Embedded in the EQLPS agenda are studies mandated by Congress in the CLIA statute. To date, information from the CLIA studies has improved understanding of testing practices in the U.S. and generated information about the utility of regulatory model parameters (e.g., quality control, personnel, and proficiency testing (PT)) as measures of, and ways to ensure, quality testing.

INTENDED AUDIENCE

The EQLPS research program benefits 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; schools of public health; health industry manufacturer associations; and the Department of Health and Human Services' Clinical Laboratory Improvement Advisory Committee (CLIAC).

IMPACT

EQLPS research builds the scientific, technical, and information basis for developing laboratory practice policy, standards, and guidelines--the ultimate goal being improved public health and delivery of patient care. (Additional research project information appears in companion DLS Fact Sheets on CLIA, Quality of Cytology Testing, Quality of Genetic Testing, Model Performance Evaluation Program (MPEP): Retroviral and AIDS-related Testing, and MPEP: *M.tb*, Nucleic Acid Amplification (NAA) and Drug Susceptibility Testing).

2000 ACCOMPLISHMENTS

- Reviewed the proposed EQLPS research strategy with the Clinical Laboratory Improvement Advisory Committee (CLIAC).
- Continued to provide ongoing support to extramural and intramural research in seven project areas: Genetic testing, sentinel networks for monitoring laboratory practices, laboratory reporting for public health, evaluation of the parameters of laboratory quality standards, monitoring proficiency testing performance, tuberculosis and HIV/AIDS testing, and Pap smear performance monitoring.

2001 GOALS

- Develop a 5-year EQLPS research agenda with input from all stakeholders.
- Develop relationships between DLS scientists, intramural collaborators (other scientists within CDC/ATSDR) and extramural collaborators (providers and payers of health care services, medical and laboratory professional organizations, and other federal agency colleagues) to implement the EQLPS research agenda.

For more information call DLS, PHPPPO, at 770-488-8295.



HIV Model Performance Evaluation Program

PROGRAM OVERVIEW

The HIV Model Performance Evaluation Program evaluates the performance of testing laboratories using mailed performance evaluation samples consisting of plasma or whole blood obtained from individual donors and not diluted or pooled with other donor material. Information about the characteristics of laboratories and their testing practices are collected through 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 immunophenotyping (TLI) - which includes CD4 T-Cell testing;
- HIV-1 ribonucleic acid (RNA) determinations (viral load) by RNA and signal amplification technologies; and
- HIV-1 p24 antigen (Ag).

Evaluation results are used by laboratories for self-evaluation (quality assurance); by state and federal agencies, e.g., Association of Public Health Laboratories and the Food and Drug Administration, to monitor laboratory 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 both as a national and international reference system for testing quality. From program information provided by participant laboratories, it is estimated that approximately 43 million HIV-antibody tests, 1.3 million supplemental confirmatory tests, 1.5 million CD4 T-cell tests, 2.7 million viral load tests, 1.2 million p24 antigen tests, and 1 million HTLV-I/II antibody tests are performed annually in the U.S. High-quality testing is essential to ensure public confidence in testing, to ensure reliability of results, and to ensure safety of the nation's blood supply.

2000 ACCOMPLISHMENTS

- Continued working with experts in viral load testing to develop information targeted toward providing guidance to laboratories that perform viral load testing to promote standardization of how patient viral load test results are reported.
- Conducted national performance evaluations (PE) of laboratories that perform 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, HTLV-I/II antibody testing.
- Completed analysis of HIV-1 RNA determinations data to provide information regarding the status of viral load testing in the U.S.. Analysis of the data were presented at two national meetings and were used to develop a draft of a report for publication in the CDC Morbidity and Mortality Weekly Report (MMWR). This MMWR is a collaborative effort with the National Center for HIV, STD, and TB Prevention (NCHSTP) anticipated for publication in FY 2001.
- Completed analysis of HIV-1 RNA determinations data to determine the status of viral load testing in the U.S. Results were presented at two national meetings and will be used to develop an update report for publication in the CDC Morbidity and Mortality Weekly Report (MMWR).

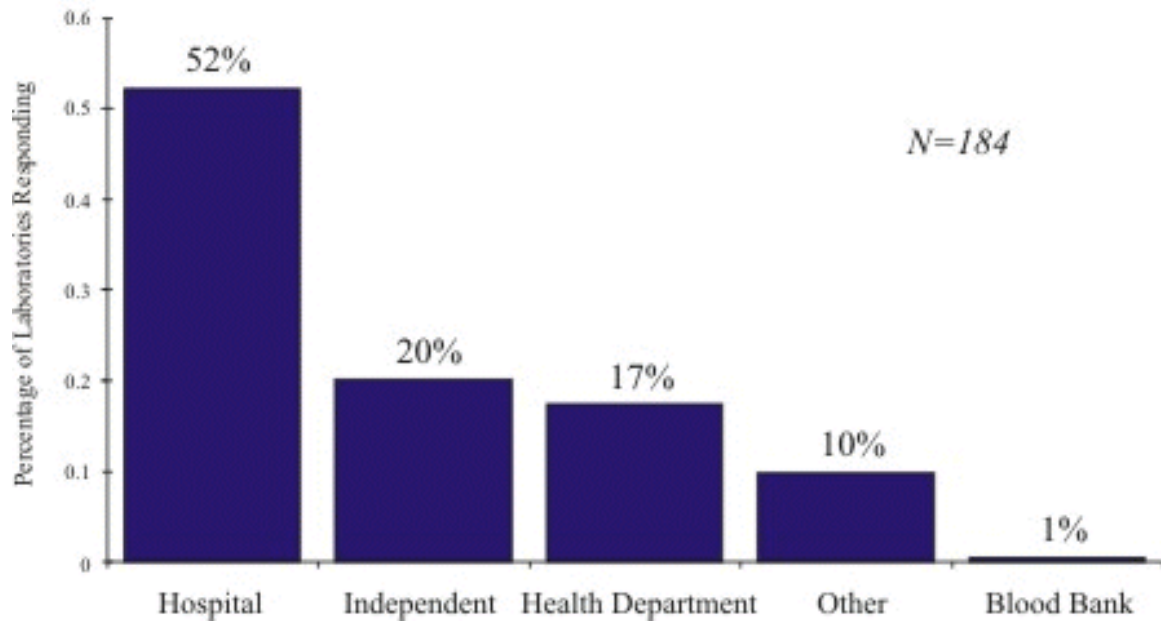
- Completed a statistical analysis of HIV-antibody rapid testing methods data to examine accuracy and precision of these tests when compared with traditional enzyme immunoassay (EIA) and Western blot (WB) methods. Results of this analysis have been developed into a draft MMWR report. A final MMWR report will be developed and will be a collaborative effort with the National Center for HIV, STD, and TB Prevention (NCHSTP) anticipated for publication in FY 2001.
- Began completion of information to accompany graphics produced for a four-section TLI Laboratory monograph. This TLI monograph represents information collected over time from periodic survey questionnaires describing laboratory characteristics and testing practices to illustrate changes over time and the current status of testing practices in this testing arena.
- Began final analysis and development of data that will be used for the production of graphics that will be used to develop an HIV Testing Laboratory monograph. Survey information collected since 1989 - 1999 illustrating laboratory characteristics and testing practices will be used for development of this monograph.

2001 GOALS

- Continue performance evaluation surveys of laboratories performing HIV antibody testing, CD4 T-cell testing, HIV-1 RNA determinations, HIV-1 p24 Ag testing, and HTLV-I/II antibody testing.
- Complete and assemble the text and graphics as a final step before printing of the monograph describing characteristics and testing practices of the TLI testing laboratory.
- Complete all text and graphics for the monograph describing characteristics and testing practices of HIV testing laboratories.
- Collaborate with NCHSTP to produce a final draft MMWR associated with the current variability of viral load testing in the U.S. and with the content and clarity of actual patient viral load testing result reports.
- Collaborate with scientists located in NCHSTP to complete an MMWR draft regarding analysis of the accuracy and precision of rapid testing methods to detect HIV-1 antibody.
- Continue collecting information describing laboratory practices associated with HIV-1 anti-retroviral resistance testing, including what quality assurance practices are used, what quality control materials are used to ensure reliable testing results, and determine what efforts are needed to promote standardization of testing among laboratories.
- Complete revisions of the survey questionnaire data collection instruments for OMB approval during 2001. The information collected through these surveys concerns changes in testing practices for both the Retroviral testing laboratories and TLI laboratories. The continued collection of updated information beyond the year 2001 will be used to update the CDC national data base describing the characteristics of laboratories and to determine what changes may be occurring in their testing practices.

For more information call DLS, PHPPPO, at 770-488-8295 or visit our Web site at <http://www.phppo.cdc.gov/dls/mpep/>.

TYPES OF LABORATORIES PARTICIPATING IN MPEP HIV-1RNA PERFORMANCE SURVEYS





Model Certification Program for Embryo 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 embryo laboratories. The FCSRCA directs the Centers for Disease Control and Prevention to develop a model program for the certification of embryo laboratories, and mandates that the program include quality standards for embryo laboratory procedures. PHPPPO has lead responsibility for the model certification 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 embryo laboratories. The impact of the model certification program will be determined by the number of states that adopt the voluntary program.

2000 ACCOMPLISHMENTS

- Participated in Department of Health and Human Services (DHHS) briefings and workgroup meetings to determine a strategic plan for the Department regarding ART-related activities.
- Collaborated with the National Center for Chronic Disease Prevention and Health Promotion on inclusion of certification status of embryo laboratories in future annual Assisted Reproductive Technology Success Rate Reports.

2001 GOALS

- Assist DHHS in planning for appropriate oversight of laboratory aspects of the ART process.
- Provide consultation to States and others about the model certification program.

For more information call DLS, PHPPPO, at 770-488-8295 or visit our Web site at <http://www.phppo.cdc.gov/dls/art/art.asp>.



Improving the Quality of Genetic Testing

PROGRAM OVERVIEW

The recent mapping of the human genome and subsequent growth of genetic testing presents new challenges for public health and the entire healthcare field. Of primary concern is whether health care providers, laboratory professionals, and government agencies with oversight responsibility can ensure high quality testing in this rapidly evolving area. In response, the Division of Laboratory Systems (DLS), along with public and private sector partners, is developing initiatives to study and monitor human genetic testing.

Biochemical tests for inborn errors of metabolism and sickle cell disease have been offered for some time, and molecular-based tests for genetic disorders are becoming increasingly common. The transition of genetic tests from research to clinical use is expected to occur at an ever increasing rate. Issues raised by these developments include:

- The rapid proliferation of new technologies and tests raises new concerns about obtaining adequate specimens, ensuring quality control in the analytic process, and providing clearly understood test results to clients. The evolution of technology has made it difficult to develop timely laboratory/test performance standards for genetic tests and procedures.
- Existing proficiency testing programs will have difficulty accommodating the expanding numbers of tests and technologies in use, which means that often little will be known about the proficiency of laboratories performing genetic tests in the U.S.
- Molecular genetic tests are varied and complex, which raise concerns about pre-test and post-test communication between laboratory professionals, health care providers, and 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.
- DLS has a major national leadership role in genetic testing assessment activities, in developing regulatory and voluntary laboratory practice standards, and in providing quality assurance largely through genetics training and education.

INTENDED AUDIENCE

Clinicians, laboratory professionals, regulatory agencies, genetic organizations, and policy-makers. Information and data from DLS projects 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 practices in the nation's clinical laboratories will be available to laboratory professionals and CLIAC, helping to promote quality improvement in genetic testing.

2000 ACCOMPLISHMENTS

- A national survey of personnel standards, quality assurance, and clinical practices in biochemical genetic testing, which was carried out by the Mount Sinai Medical School in association with the Association of Teachers of Preventive Medicine and DLS was completed. Results were presented by Dr. Peggy McGovern, the principal investigator, during the September 2000 CLIAC meeting.
- The recommendations of the CLIAC to modify CLIA to specifically address genetic testing were published in a Federal Register as a Notice of Intent. Over 800 comments will help guide final CLIAC recommendations and a Notice of Proposed Rule Making.

2001 Program Review

- In response to activities of the CLIAC and Secretary's Advisory Committee on Genetic Testing (SACGT), a CDC Genetic Laboratory Forum was formed. The Forum is a public/private partnership to help identify issues and consider actions to meet genetic testing concerns.
- In partnership with Dartmouth Medical School, an interactive, multimedia training program for health care providers who are not specialists in medical genetics is developing a "virtual clinic" to demonstrate how to integrate clinical, laboratory, and counseling services into testing services for cystic fibrosis, fragile x, colon cancer, and hemochromatosis.
- In partnership with the CDC Office of Genetics and Disease Prevention, DLS convened representatives from core public health disciplines to draft a set of competencies to integrate genetics into training of public health experts. This effort will identify the critical knowledge, skills, and abilities which the public health workforce will need to meet the challenges posed by the genetics revolution.
- Contracts were awarded to UCLA to develop genetic samples suitable for quality control and proficiency testing for tests of public health significance and to Duke University to establish stable cell lines to supply similar materials. These research activities could provide much needed quality assurance materials for genetics testing laboratories.
- In partnership with Tulane University School of Public Health and Tropical Medicine, laboratory reports for cystic fibrosis and factor V Leiden are being studied systematically to determine how to best convey the results and interpretative information needed by non-geneticist physicians.

2001 GOALS

- Assess the quality assurance efforts for genetic testing in other countries and by international groups. This will help document the cross-cutting international issues related to genetic testing and identify opportunities to participate in the development of global standards for genetic testing.
- Establish a national genetic testing research agenda, in collaboration with major private and public organizations, that will help guide standards development in genetic testing.
- Complete a Notice of Proposed Rule Making based on revised CLIAC recommendations about how to modify CLIA to specifically address genetic testing.
- Enhance the value of the DLS genetic Web Site as a resource for clinical genetic testing laboratories by populating the site with results of studies undertaken by DLS and expanding the number of links to useful laboratory-oriented information.

For more information call DLS, PHPPPO, at 770-488-8295 or visit our Web site at <http://www.phppo.cdc.gov/dls/genetics/>.



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 traditional glass-slide format, however, has been the major impediment to implementing the regulation. In an effort to meet this requirement, the Public Health Practice Program Office (PHPPO) issued a request for proposals (RFP) 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 co-hosted a 1993 symposium, with the Cytology Education Consortium and the College of American Pathologists to discuss alternatives to the glass-slide format. At the following Clinical Laboratory Improvement Advisory Committee (CLIAC) meeting in 1994, the cytology subcommittee recommended that CDC pursue computer imaging as an alternative. 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 system, “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: glass-slide and CBPT. The study determined there was a slight correlation between work performance and both methods of PT.

In 1999, the second prototype, “CytoView™II”, was developed. It has faster access speeds, is more portable, has improved image quality and contains more cases than CytoView™ II has the ability to test in the pathologist mode (interpretive skill test) or the cytotechnologist mode (locator and interpretive skills test). In conjunction with the Health Care Financing Administration’s (HCFA) more educational approach to PT, CytoView™ II provides educational feedback after completion of the test. CytoView™ II received favorable evaluations at professional meetings in the fall of 1999 where cytology educators expressed interest in the program for training students. A study comparing GSPT and CBPT will be conducted in 2001.

INTENDED AUDIENCE

Pathologists and cytotechnologists who perform diagnostic cytology tests.

IMPACT

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

2000 ACCOMPLISHMENTS

- Developed an educational component for CytoView™ II based on recommendations received at professional meetings on evaluation/comment forms from participants.
- In collaboration with HCFA, developed provisions to revise the cytology quality control requirements as part of the CLIA final rule.

- Drafted a proposed rule in collaboration with HCFA to revise the CLIA cytology proficiency requirements to make them more flexible, thereby permitting approval of a greater range of programs, including CBPT programs.
- Filed an Employee Invention Report with CDC/ATSDR Transfer Technology Office which resulted in trademarking the name CytoViewTMII and filing a patent on MicroScreen (software used to collect tiled images for CytoViewTMII).

2001 GOALS

- Publish a proposed CLIA rule to allow for approval of alternative PT programs, such as CBPT.
- Conduct a study comparing pathologists and cytotechnologists scores on GSPT and CBPT.

For more information call DLS, PHPPPO, at 770-488-8295 or visit our Web site at <http://www.phppo.cdc.gov/dls/clia/cyto2.asp>.



Mycobacterium tuberculosis 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*. Rapid *M.tb*-NAA tests can reduce the delays in patient treatment and tuberculosis (TB) control associated with routine *M.tb* tests, thus decreasing the spread of TB.

The Division of Laboratory Systems (DLS) *M.tb* drug susceptibility testing performance evaluation program was implemented in 1995 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 program to stimulate 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, a major cause of opportunistic infections in HIV-infected individuals.

INTENDED AUDIENCE

This program benefits 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 National Center for Infectious Disease and National Center for HIV, STD, and TB Prevention. The program also provides consultation and support for Food and Drug Administration (FDA) review and clearance of *M.tb*-NAA and *M.tb* drug susceptibility testing products.

IMPACT

This program helps identify and correct testing practices 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.

2000 ACCOMPLISHMENTS

- Laboratory practices, outlined in the *M.tb* drug susceptibility testing program, were used as supporting documentation for new National Committee for Clinical Laboratory Standards guidelines on *M.tb* drug susceptibility testing.
- A national survey of laboratory practices was conducted with *M.tb*-NAA program participants.
- The *M.tb*-NAA program results were referenced in an MMWR article providing recommendations on NAA tests for TB. (MMWR 2000;49(26):593-4).
- A national survey of laboratory practices was conducted of all laboratories performing *M.tb* drug susceptibility testing.

2001 GOALS

- Publish findings obtained from *M.tb*-NAA program data will be published in a peer-review journal.
- Analyze the *M.tb* drug susceptibility program data and compare with information on practices and performance.
- Expand participation of laboratories in other countries in the *M.tb* drug susceptibility program to promote international standardization.

For more information call DLS, PHPPPO at 770-488-8295 or visit our Web site at <http://www.phppo.cdc.gov/dls/links/>.



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 spatially-referenced identifiers (e.g., latitude and longitude) to enable rapid manipulation, display, and data analysis of various disparate data sets. Rapidly evolving GIS software, data, and methods are being used in public health. To facilitate the development of networked systems supporting communication and interaction among public health personnel at all levels (local, state, and federal) as well as 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 PHPPPO GIS Research Center has three objectives:

- 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.
- 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*.
- 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.
- 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.

INTENDED AUDIENCE

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

IMPACT

This program will help health practitioners adopt GIS as an essential part of health assessment planning, decision-making, and response to health emergencies.

2000 ACCOMPLISHMENTS

- In collaboration with the National Center for Health Statistics, developed two dedicated issues of the *Journal of Public Health Management and Practice* on "Geographic Information Systems for State and Local Public Health Practitioners."
- Funded GIS software development project for community health planning under the CDC Small Business Innovations Research (SBIR) program. Twelve proposals were received and four were funded.

2001 GOALS

- Develop a plan for a Web-enabled, national GIS of local health department boundaries.
- 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 DPHSDR, PHPPPO, at 770-488-2469 or visit our Web site at <http://www.phppo.cdc.gov/dphs/>.



Public Health Image Library

PROGRAM OVERVIEW

The Public Health Image Library (PHIL) is a digital picture archiving and communication system, accessible via the CDC intranet, as well as the World Wide Web. PHIL contains a variety of images, obtained from the CDC Still Picture Archives. Through a simple user interface, digital images can be easily archived and retrieved for a variety of uses. A simple, powerful indexing system provides rapid access to photographs and computer graphics for CDC staff personnel, public health partners, extramural prevention researchers, and the public worldwide, and has become the standard for still image archiving at CDC.

By linking individual files to other web sites as appropriate and tying into the general CDC search engine, PHIL has become an integrated part of the CDC information system.

The scientific accuracy of PHIL images is ensured thru on-going expert reviews. Public health professionals, laboratory scientists, educators, the media, and the public are welcome to use the contents of PHIL for reference, teaching, presentations, and public health messages.

Usage data, is collected automatically. During the 2000 calendar year, PHIL recorded nearly 100,000 visits. This innovative resource is frequently used by publishers, presenters, and video producers, as well as CDC scientists.

INTENDED AUDIENCE

Public health professionals, the media, laboratory scientists, educators, and the general public.

IMPACT

Much of the scientific information critical to public health research, practice, and communication is pictorial rather than text-based. PHIL offers an organized, universal gateway to CDC's pictures, wherever they reside. PHIL also provides a convenient method for programs throughout CDC to archive and share the images that communicate their public health messages.

2000 ACCOMPLISHMENTS

- Expanded the PHIL database to more than 2000 images, including several image sets and multimedia files.
- To date, approximately 15,000 slides have been digitized via this contract.

2001 GOALS

- To ensure quality and scientific accuracy of images, create a PHIL Review Committee of CDC scientists to review and approve these images.
- Work with other CIOs as well as PHPPO photographers and graphic artists to obtain, review and approve new images.

For more information call DPDE, PHPPO, at 404-639-3801.

DEVELOPING SYSTEMS





Improving the Nation's Public Health Infrastructure

OVERVIEW

Public health organizations, together with information and data systems, are vital components of public health's infrastructure and major foci for the work of CDC's Public Health Practice Program Office to strengthen that infrastructure.

Public health organizations include a network of local, State, and federal health departments and laboratories. The Nation's approximately 3,000 local health departments vary greatly in scale and resources. Local and State public health agencies work in close concert with other public organizations, as well as private and not-for-profit organizations, to monitor the public's health and to deliver essential public health services. They rely critically on information, communications, and data systems to conduct their work.

In spite of significant gains in the capacity of public health organizations during the 1990s, the Nation's public health system is not yet adequately prepared for the health threats of the current decade and the new century. Recent analyses reveal troubling gaps in capacity, for example:

- A 1999 survey of local health departments found that only 45% were able to send broadcast facsimile alerts to laboratories, physicians, State health agencies, CDC, and other partners in public health;
- The same survey found that fewer than one-half have high-speed, continuous access to the Internet, and that 20% lacked e-mail capability;
- CDC's study of three State and 131 local public health systems determined that their ability to conduct essential public health services ranged from 40% to a high of only 62%;
- Two national studies in the 1990s concluded that only one-third of the U.S. population was effectively served by public health agencies.

These results are troubling. They represent a patchwork approach at a time when the health of the public faces emerging dangers that demand a new, higher standard of preparedness and effectiveness.

Our approach to meeting that higher threshold is to strengthen the capacity of the organizations and systems that are the platform or infrastructure for public health service delivery in every American community and State. The strategies we employ are:

- Developing science-based standards for the performance of public health services at the community and State levels;
- Creating the Mobilizing for Action through Planning and Partnerships (MAPP) tool for communities to use in assessing health needs and developing comprehensive public health interventions;
- Linking all local and State health departments to the Internet, developing their information/data and communications systems, and training public health professionals to use informatics tools effectively;
- Designing a truly integrated, nationwide system to ensure that laboratories detect and report disease cases to health authorities accurately, thoroughly, and rapidly; and
- Improving the understanding and use of laws and policies as tools for improved public health.

YEAR 2000 HIGHLIGHTS

- National Public Health Performance Standards Program

1. Conducted field tests of state and local performance measurement instruments in three states (Hawaii, Minnesota, and Mississippi) and 132 counties;
 2. Collaborated with the U.S. Department of Justice to assess local and state preparedness for bioterrorist threats using common performance standards and measures; and
 3. Developed an Internet-based data collection system to facilitate state and local performance assessments.
- Mobilizing for Action through Planning and Partnerships
 1. Completed development of the MAPP tool and created the MAPP Web Site with a full complement of guidance information and tools, references and resources, and case vignettes;
 2. Completed testing the MAPP tool in 44 local health department-review sites; selected nine local health departments for a multi-year demonstration project to update and enhance the tool;
 3. Developed the 24-page MAPP “Field Guide” for community coalitions and public use; and
 4. Developed a 5-year, national marketing plan for MAPP.
 - Health Alert Network
 1. Funded cooperative agreements with 37 states, 3 counties, 3 cities, and 2 academic research centers to build and explore public health information technology capacity as part of the Health Alert Network;
 2. Established the Bioterrorism Preparedness and Response Program Web Site (<http://www.bt.cdc.gov>) to give state and local health agencies and other responders information about biological and chemical agents, real-time response efforts, training courses and, other critical information; and
 3. Documented the information technology and distance learning baseline capacity of CDC-funded Health Alert Network states and cities.
 - National System for Laboratory Testing of Public Health Importance
 1. In collaboration with the Association of Public Health Laboratories, developed requests for proposals from state public health laboratories for two demonstration projects on integrated laboratory testing and reporting for public health threats, including bioterrorist incidents and foodborne outbreaks; and
 2. Funded the *Clinical Laboratory Initiative* project of the Foundation for Health Care Quality in the state of Washington to establish a laboratory network to assess current practices in infectious disease testing and promote testing consistent with consensus standards.
 - Public Health Law Project
 1. Awarded \$3.7 million for seven peer-reviewed extramural research projects on the impact of specific laws on immunization rates, HIV/AIDS, pediatric dental health, ergonomics, prevention practices of managed care organizations, and the reporting of elder abuse;
 2. Competitively awarded \$300,000 to establish the Center for Law and the Public’s Health (one of ten CDC Centers for Public Health Preparedness) at the Johns Hopkins University School of Hygiene and Public Health and the Georgetown University Law Center to serve as a resource on public health law and policies; and
 3. At the request of the CDC Office of Bioterrorism Preparedness and Response, conducted a study of state laws requiring reporting of disease cases potentially associated with bioterrorism.

2001 CHALLENGES AND APPROACHES

- National Public Health Performance Standards Program
 1. Conduct the final field test of the state-level performance assessment tool;
 2. Field-test a local performance assessment tool in a major metropolitan area; and
 3. Initiate national implementation of state and local performance assessment processes using the final performance assessment instruments.
- Mobilizing for Action through Planning and Partnerships
 1. Monitor progress at nine demonstration site communities and provide technical assistance;
 2. Identify technical assistance and training needs of other local health departments and communities implementing MAPP, and implement needed activities; and
 3. Develop a long-range implementation and evaluation plan to measure success with indicators such as MAPP user rates and national population coverage.
- Health Alert Network
 1. Provide strategic consultation and technical assistance to local health departments designated as Health Alert Network Centers for Public Health Preparedness;
 2. Strengthen the capacity of the Health Alert Network and of Centers for Public Health Preparedness located in local health departments to respond to bioterrorism through use of national performance standards; and
 3. Monitor grantees' progress in building the capacity of information/data systems and distance learning systems; measure progress toward adoption of the Health Alert Network technology architecture.
- National System for Laboratory Testing of Public Health Importance
 1. Publish the APHL 1999 consensus statement *Core Functions and Capabilities of State Public Health Laboratories* as an MMWR article to publicize the role and value of public health laboratories;
 2. Assist APHL to award and implement demonstration projects for the National System for Laboratory Testing;
 3. Assist the *Clinical Laboratory Initiative* project with potential expansion into a multi-state laboratory network; and
 4. Assess the status of laboratory practices for microbiological resistance testing in conjunction with CDC's National Center for Infectious Diseases and APHL.
- Public Health Law Project
 1. Sponsor the CDC Symposia in Public Health Law series, including presentations on "Law and Infectious Disease" and "Public Health Law in the 21st Century";
 2. Collaborate with the Center for Law and the Public's Health to educate public health practitioners in legal topics related to public health, and conduct analyses of public health laws, e.g., those related to childhood immunizations, genetics, and bioterrorism; and
 3. Partner with the New York City-based Regional Plan Association, the National Center for Environmental Health, and the National Center for Chronic Disease Prevention and Health Promotion to incorporate public health strategies into urban planning and design policies.



National Public Health Performance Standards Program

PROGRAM OVERVIEW

The purpose of the National Public Health Performance Standards Program is to strengthen the performance of essential public health services by state and local public health systems. In 1994, the U.S. Public Health Service and national public health organizations identified ten essential public health services as critical to the success of all public health programs. The National Public Health Performance Standards Program has developed clear, measurable standards for superior performance by state and local public health systems. The standards have been developed collaboratively by the Association of State and Territorial Health Officials, the National Association of County and City Health Officials, the National Association of Local Boards of Health, the American Public Health Association, and the Public Health Foundation, CDC's Public Health Practice Program Office.

Three goals of the program are to: 1) Create tools for public health practitioners to use in continuous quality improvement processes; 2) Strengthen state and local public health systems by providing a mechanism for demonstrating accountability to constituencies; and 3) Enhance decision-making by strengthening the science base for effective public health practice.

INTENDED AUDIENCE

This program creates tools for improved health outcomes and accountability that can be used by policy makers, community leaders, funding agencies, and public health professionals at all levels.

IMPACT

Public health performance standards guide construction of the strong public health systems needed to improve community health, helping assure that all Americans have access to a defined, optimal level of public health services. Through continuous assessment and improvement guided by model performance standards, state and local leaders can improve collaboration and integration between the many components of a community's or state's public health system, make better use of resources, and improve health intervention services.

2000 ACCOMPLISHMENTS

- Conducted field tests of state and local performance measurement instruments in three states (Hawaii, Minnesota, and Mississippi) and 132 counties.
- Refined standards and performance measurement instruments for local public health governing bodies and local and state public health systems.
- Refined reporting and analysis of performance data; evaluated validity of performance assessment instruments.
- Developed an Internet-based data collection system to facilitate state and local performance assessments.
- Collaborated with the U.S. Department of Justice to assess local and state preparedness for bioterrorist threats using common performance standards and measures.

2001 GOALS

- Conduct the final field test of the state-level performance assessment tool.
- Field-test a local performance assessment tool in a major metropolitan area.
- Initiate national implementation of state and local performance assessment processes using the final performance assessment instruments.

For more information call at 1-800-747-7649 or visit our Web site at www.phppo.cdc.gov/dphs/nphpsp.



Health Alert Network

PROGRAM OVERVIEW

Alarmed at the potential for domestic terrorism disaster, the Federal government initiated counter-terrorism programs in the early 1990s; but wide recognition of public health's key role, however, did not appear until 1998 when a CDC report requested by Congress spotlighted grave weaknesses in the nation's public health infrastructure.

Local health departments are critical to effective response to attacks and bioterrorist disease epidemics; yet most local health departments lack basic information and communications systems and cannot communicate reliably with CDC, state health departments, or emergency response agencies in a crisis. Building on the seminal work of the Information Network for Public Health Officials, the Health Alert Network (HAN) initiative will establish a nationwide, integrated information and communications system connecting the nation's local health departments and providing the foundation for an "early warning and response" system to address bioterrorism and other health threats.

Led by CDC's Public Health Practice Program Office, the HAN is a major component of CDC's bioterrorism initiative.

INTENDED AUDIENCE

The HAN initiative will strengthen the electronic communications and information capacity of local health departments, closing a serious gap in the preparedness and response capability of the nation's public health system.

IMPACT

When fully deployed, the HAN will link local health departments to each other, to other local agencies critical to preparedness and response, to state health departments and CDC, and to other federal agencies. The HAN will establish communications, computing, distance learning, and organizational infrastructure for a new level of defense against bioterrorism and a host of other health threats. More specifically, completion of the HAN will enable: electronic communication; delivery of targeted health alerts from local health departments to the community; local health department access to CDC distance learning offerings, and the World Wide Web; and clear standards for all local health agencies to use to develop bioterrorism preparedness and response plans.

The HAN will be a nationwide platform: enabling local health officials nationwide to instantaneously access and share surveillance data, electronic laboratory test reports, and CDC diagnostic and treatment guidelines; enabling local health departments and community partners, hospitals, emergency departments, emergency medical systems, and clinicians response to health emergencies in a highly coordinated fashion; enabling local, state, and Federal health authorities to communicate and coordinate rapidly and securely with each other and with other agencies; supporting dynamic, local planning for health emergencies, including exercises and simulations involving first-responder agencies and other community organizations; training public health professionals in state-of-the-art skills to address bioterrorism and other high-priority health threats; and ensuring that public health agencies meet high standards of organizational capacity related to bioterrorism and other health threats.

2000 ACCOMPLISHMENTS

- Documented the information technology (IT) and distance learning (DL) baseline capacity of CDC-funded Health Alert Network states and cities.
- Funded cooperative agreements in 37 states, 3 counties, 3 cities, and 2 university research centers to build and explore public health information technology capacity as part of the Health Alert Network.
- Provided the first national workshop and training in public health informatics to key health officials and jurisdictions.

- Established the Bioterrorism Preparedness and Response Program Web Site (<http://www.bt.cdc.gov>) to give state and local health agencies and other stakeholders to obtain information about biological and chemical agents, press releases, training, contacts, and other important information on bioterrorism preparedness and response.

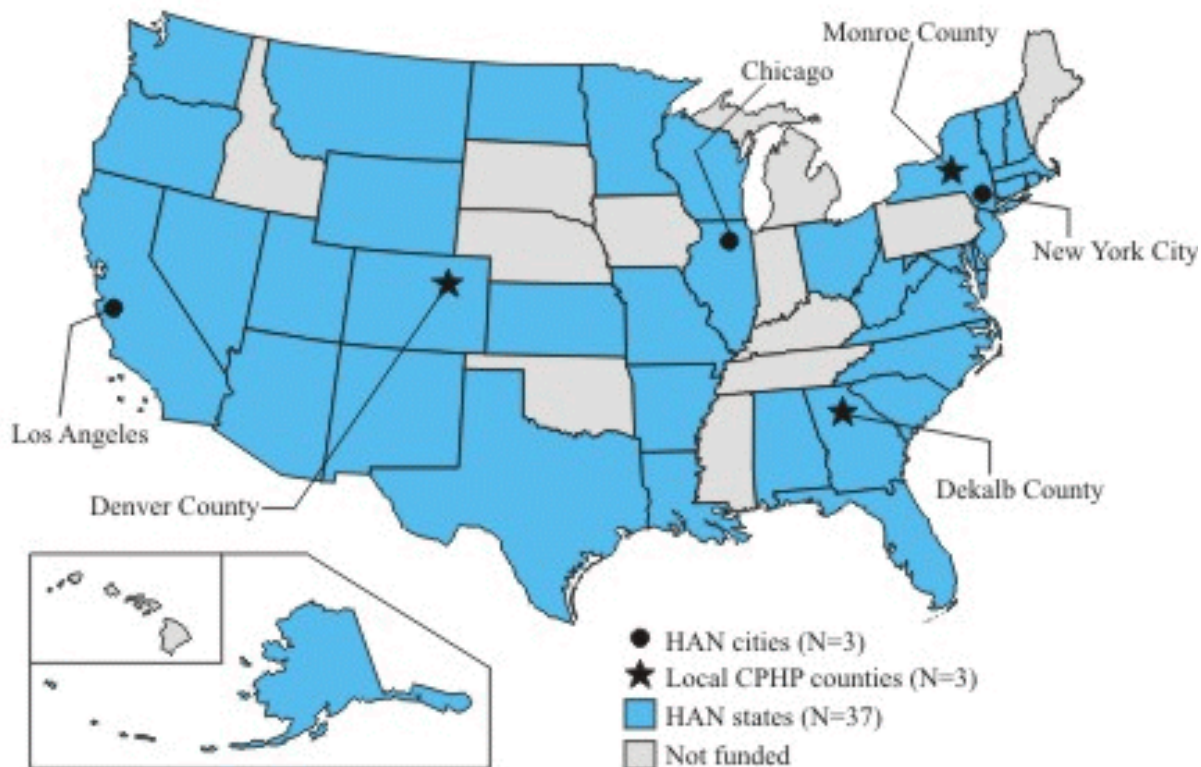
2001 GOALS

- Provide strategic consultation and technical assistance to local health departments designated as HAN; Centers for Public Health Preparedness (CPHP).
- Strengthen the capacity of the Health Alert Network and of CPHP local health departments to respond to bioterrorism by developing and applying national performance standards.
- Monitor progress from baseline of information technology and distance learning capacity among grantees, and measure progress toward implementation of the Health Alert Network technology architecture.
- Provide formal public health informatics training to key health officials and jurisdictions.

For more information, please call 770-488-2425 or visit <http://www.han.cdc.gov>.

HAN & LOCAL CENTERS FOR PUBLIC HEALTH PREPAREDNESS

FUNDED STATES - FY 2000





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.

INPHO laid the foundation for the information systems component of the Health Alert Network (HAN), CDC's initiative to help local health departments address the threat of potential bioterrorism.

2000 ACCOMPLISHMENTS

- Funded the final year of Phase II INPHO projects, emphasizing community-based immunization registries, data warehousing, Web access to data and information, and expanded, distance-based informatics training.
- Presented innovative immunization registry solutions from INPHO states at the annual ALL KIDS Count Conference.
- Provided public health informatics training to key INPHO state personnel at the 2000 National Conference on Public Health Informatics and Distance Learning.
- INPHO state projects developed integrated relational health databases with Web-accessible data screens for use with immunization registries, maternal and child health, and other key data sets.
- INPHO projects established working relationships with HRSA and HCFA to ensure compatibility and success of health data systems integration.

- Planned and coordinated INPHO participation in the 2000 NIP Immunization Registry Conference.
- With CDC's National Immunization Program (NIP) and other partners, developed minimal functional standards for electronic immunizations data, including HL-7 transmission.
- Provided consultation to NIP on their Immunization Registries evaluation project.

2001 GOALS

- Provide technical support, consultation and coordination among INPHO and Health Alert Network projects (18 current and former INPHO states have received HAN funds).
- Assess INPHO project strategies to ensure continuity after the end of the project period.
- With CDC's National Immunization Program and other partners, develop an assessment and consultation method to assure that immunization registries are compliant under the minimum functional standards for electronic immunization data.
- Plan, coordinate, and conduct the 2001 National Public Health Informatics and Distance Conference.

For more information call INPHO, PHPPPO at 770-488-2425 or visit our Web site at <http://www.phppo.cdc.gov/INPHO>.



National System for Laboratory Testing of Public Health Importance

PROGRAM OVERVIEW

The current network of laboratories that perform tests of public health significance is a loose association of public health (state, county and city), hospital, and independent laboratories throughout the country. Recent federal initiatives addressing issues such as bioterrorism, food safety and emerging infectious diseases are categorical initiatives that support activities specific to the identified problem. Using categorical initiatives can help develop a stable, national system of networked laboratories, but maintaining and developing such a system that is efficient at detecting and timely at reporting are critical to minimize the negative impact of disease in the community.

America's health is at increasing risk from diseases caused by emerging infectious diseases, foodborne agents, and environmental factors. The specter of chemical and biological terrorism has introduced additional risks. These increased risks are associated with a variety of factors, including increasing global travel, more widespread access to foods produced in foreign countries, clearer definition of the role of environmental factors in chronic diseases, and the rise of domestic and international terrorist groups. A cohesive and integrated national system of laboratory testing is required to detect and report dangerous disease cases rapidly and accurately.

Recent reports by the General Accounting Office report, George Washington University, and the Lewin Group all underscore the need for development of a cohesive, national laboratory system to assure disease surveillance and an effective response.

INTENDED AUDIENCE

The envisioned National System for Laboratory Testing will serve public health and clinical laboratory professionals, epidemiologists, professional groups, and policy makers.

IMPACT

This initiative will benefit public health and medical practice ensuring the availability of consistent public health laboratory capacity. For example, a bioterrorist event in Wyoming would receive the same laboratory support as one in California. It is accepted that sentinel bioterrorism events are very likely to be first encountered by hospital/independent laboratories. An integrated system of public and hospital/independent laboratories will increase the likelihood of detection of sentinel events of importance to public health and appropriate and timely response.

2000 ACCOMPLISHMENTS

- Sponsored focus groups with major stakeholders to review the concept and to develop an action plan that promotes partnerships, training, assessment, and standards to improve public health laboratory testing.
- Presented the National System for Laboratory Testing concept at the annual meetings of the Association of Public Health Laboratories (APHL), the American Society of Clinical Pathologists (ASCP), the American Clinical Laboratory Association (ACLA), the International Emerging Infectious Diseases Meeting, and the APHL Strategic Planning and Leadership meeting.
- Developed a solicitation, in collaboration with APHL, for proposals from state public health laboratories for two demonstration projects. On integrated laboratory testing and reporting for public health threats, including bioterrorist incidents and foodborne outbreaks.

- Funded the *Clinical Laboratory Initiative* project of the Foundation for Health Care Quality in Washington state to develop a laboratory network to assess current practices in infectious disease testing and promote testing consistent with consensus standards.

2001 GOALS

- Broaden awareness among professional organizations, and state and local public health agencies of the urgent need for a national system.
- Publicize the National System for Laboratory Testing through professional meetings, professional journals, and personal contacts to inform laboratories and in vitro diagnostic manufacturers involved in public health testing.
- Publish APHL 1999 consensus statement *Core Functions and Capabilities of State Public Health Laboratories* as an MMWR article to publicize the role and value of public health laboratories.
- Assist APHL to award and implement demonstration projects for the National System for Laboratory Testing.
- Assist the *Clinical Laboratory Initiative* project with potential expansion into a multi-state laboratory network.
- Assess the status of laboratory practices for microbiological resistance testing in conjunction with CDC's National Center for Infectious Diseases and APHL.
- Establish and convene a National Laboratory System Work Group with representatives from professional laboratory organizations and other stakeholder groups (e.g., Council of State and Territorial Epidemiologists) and hold first meeting.
- Collaborate with CDC's National Center for Infectious Diseases to develop and increase electronic laboratory reporting methods and systems, a key component of the National System for Laboratory Testing.

For more information call DLS, PHPPPO, at 770-488-8295.



Laboratory Sentinel Monitoring Network

PROGRAM OVERVIEW

The Laboratory Sentinel Monitoring Network has been in place since 1994. Using State-based resources, the network is a rapid source of data on changes in the delivery of laboratory testing. States, in cooperation with staff from the Division of Laboratory Systems, develop their own data-gathering devices on topics of interest and report results to network participants (the local laboratories) and CDC. Data provided by the states addresses topics such as waived test usage, quality control and assurance practices, testing service dynamics (when and why tests are introduced and removed), and staffing concerns. Currently the Network program includes Arkansas, New York, and the Pacific Northwest. Data is used for policy-making decisions with respect to the Clinical Laboratory Improvement Amendments of 1988 (CLIA), for health systems research, and to support other CDC programs.

INTENDED AUDIENCE

Network data benefits public health organizations; public and private hospitals; physician office and reference laboratories; professional physician and laboratory organizations; federal health agencies; health care provider organizations; health industry manufacturer associations; and the Department of Health and Human Services' Clinical Laboratory Improvement Advisory Committee (CLIAC).

IMPACT

Since 1994 the Sentinel Monitoring Network has provided rapid response data on topics of vital interest to CDC and the profession. Network studies have resulted in several presentations to CLIAC, many peer-review publications, and are posted in full on the CDC Internet site.

2000 ACCOMPLISHMENTS

- Added networks in New York and Arkansas to the Pacific Northwest network.
- Posted new reports from Washington state and two reports from Arkansas on the Internet site.
- Assisted New York to develop and pilot test the on-site surveys that will start in 2001.
- Conducted a meeting of all the Network programs at CDC.

2001 GOALS

- Focus Network studies on issues involving waived testing.
- Assist New York to conduct on-site surveys.
- Sponsor the second national meeting of the Network.
- Assist in the preparation of peer-review publications.

For more information, call DLS, PHPPPO, at 770-488-8295.



Clinical Laboratory Improvement Amendments

PROGRAM OVERVIEW

In 1988, Congress enacted the Clinical Laboratory Improvement Amendments (CLIA), mandating a broad and wide-ranging change in regulation of laboratories that perform testing for medical diagnoses. CLIA expanded federal regulatory authority to about 170,000 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 the Department of Health and Human Services (DHHS) 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. More specifically, DLS:

- Evaluates standards of accreditation organizations and states for equivalency to the CLIA requirements and assesses proficiency testing programs for CLIA approval;
- 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).

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.

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.

2000 ACCOMPLISHMENTS

- Transferred responsibility for test categorization, including waiver approval, to the Food and Drug Administration.
- Published a Federal Register Notice listing approximately 1,130 laboratory test systems categorized by complexity.
- Published a Federal Register Notice withdrawing a proposed rule concerning the time-frame for conducting cytology proficiency testing.
- Published a Notice of Intent in the Federal Register soliciting comments on the CLIAC recommendations of the CLIA
- Advisory Committee to incorporate specific requirements for genetic testing in CLIA regulations.
- Published a regulation in the Federal Register extending the CLIA phase-in quality control requirements.

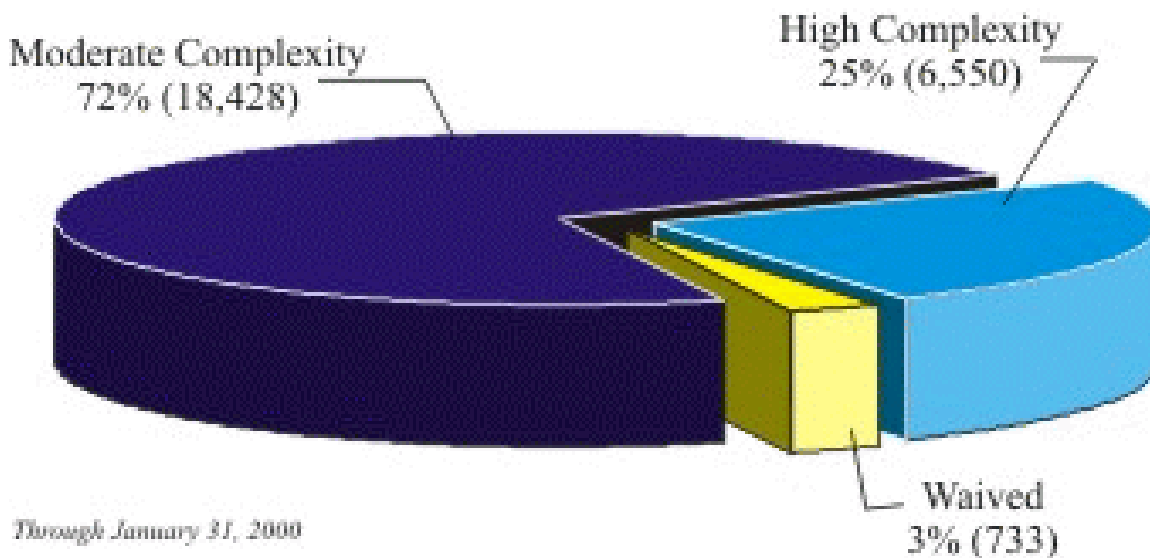
2001 GOALS

- Publish a proposed CLIA rule for cytology proficiency testing.
- Update proficiency testing requirements to more adequately assess the performance of new technology in current testing environments.
- Publish a Notice of Proposed Rulemaking for 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 to review proficiency testing programs, provide data on program performance to HCFA, hold a joint national meeting for all proficiency testing program providers, convene an international meeting of proficiency testing programs.
- Continue reviews of applications and reapplications from private accreditation and state laboratory programs to determine whether they meet CLIA standards and thus are viable alternatives to direct federal oversight of some laboratories.
- Provide technical and scientific support to HCFA and FDA; provide information to the public.

For more information call DLS, PHPPPO, at 770-488-8295 or visit our Web site at <http://www.phppo.cdc.gov/dls/clia/>.

LABORATORY TESTS CATEGORIZED

BY CDC FOR CLIA





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 disease, injuries, and disabilities. The database is an electronically accessible, dynamic, up-to-date repository of the full text, tables and graphics of CDC prevention guidelines and recommendations. The database gives public health practitioners throughout the world quick access to guidelines for prevention and control of such public health threats as HIV/AIDS, bioterrorism, disaster response, dengue fever, suicide, vaccine-preventable diseases, lung cancer, sexually transmitted infections, birth defects, malaria, and food safety.

The database includes all the recommendations of the Advisory Committee for Immunization Practices, CDC's sexually transmitted disease treatment guidelines, and the entire "yellow book" (Health Information for International Travelers). The Public Health Practice Program Office (PHPPO) has lead responsibility for expanding and updating the guidelines with guidance from the PGD Steering Committee. The database is updated weekly.

CDC made the PGD available globally on the Internet in 1995. In 1996, PHPPO, along with CDC's Information Resource Management Office Epidemiology Program Office, and the Excellence in Science Committee, published book and CD-ROM editions of the PGD. The book and CD-ROM contain a selection of the full guidelines.

INTENDED AUDIENCE

Currently, the PGD serves clinicians, public health practitioners, hospitals, managed care organizations, and health researchers. It will be enhanced to be directly usable by the general public as well.

IMPACT

From June 1st through December 31st, 2000, the Web version of the PGD was accessed an average of 7,300 times each day, making it the most heavily used of all forty datasets on CDC's web site. An estimated 2,000 copies of the book and CD-ROM versions have been distributed.

2000 ACCOMPLISHMENTS

- Updated the PGD with all-new 1999 and 2000 documents.
- Initiate development of the next-generation Web-based prototype using cutting-edge technology.
- Began research toward integrating selected PGD clinical guidelines into electronic medical record systems.

2001 GOALS

- Update the database with 2001 CDC guidelines and recommendations.
- Improved user access and functionality.
- Pilot-test new guidelines-centric versions of the database with CDC centers and external public health practitioners.
- Convene an expert panel to advise on setting guideline standards and developing of standard definitions and format.

For more information, call DPHSDR, PHPPO at 770-488-8255.



CDC Public Health Law Program

PROGRAM OVERVIEW

Law is essential to the public's health. Through law and public policy, for example, public officials may require school children to be immunized, require certain diseases to be reported to public health authorities, or establish standards for safe drinking water and food. Yet as necessary as the law is to the health of the public, its potential has not been realized fully.

- Public health practitioners, public policymakers, and the legal community have limited opportunity to learn how to make effective and appropriate use of law as a public health tool because little training is available on that practical subject.
- The public health community is concerned that many existing public health laws may be inadequate to meet the challenges that confront the health of the American public in the 21st century. For example, the Nation's *Healthy People 2010* report notes that "many laws, rules, regulations, and ordinances pertaining to public health are outmoded."
- Public health leaders have expressed concern that compliance with public health laws may be uneven. For example, those required to report child abuse or domestic violence may not comply if they are uninformed about the relevant law or if the penalty for noncompliance is negligible.
- Law sometimes is seen primarily as an impediment to good public health. For example, existing zoning codes may hinder healthy living practices when new approaches could stimulate greater physical activity, reduced air pollution, and safer routes to and from school.

The public health community has asked CDC to assume a leadership role in making public health law once again a tool for improved public health. Created in 2000, the CDC Public Health Law Program is dedicated to improving the understanding and use of law for effective public health practice. We work in close partnership with public health practitioners, public policy makers, and the legal community who comprise the Public Health Law Collaborative.

INTENDED AUDIENCE

The audience for the Public Health Law Program is broad and diverse, including community and local public health practitioners, their legal counsel, public policymakers in state and local government, and CDC's own programs.

IMPACT

The program helps build the capacity of public health practitioners, public policymakers, and the legal community to use the law as a tool to advance the public's health. The law program works through applied research, training and continuing education, dissemination of law-related information, and capacity building.

2000 ACCOMPLISHMENTS

- Awarded \$3.7 million for seven peer-reviewed extramural research projects on the impact of specific laws on immunization rates, HIV/AIDS, pediatric dental health, ergonomics, prevention practices of managed care organizations, and the reporting of elder abuse;
- Competitively awarded \$300,000 to establish the Center for Law and the Public's Health (one of ten CDC Centers for Public Health Preparedness) at the Johns Hopkins University School of Hygiene and Public Health and the Georgetown University Law Center to serve as a resource on public health law and policies;
- Consulted with CDC's Division of TB Elimination in securing legal analysis of a major 2000 Institute of Medicine report;

- At the request of the CDC Office of Bioterrorism Preparedness and Response, conducted a study of state laws requiring reporting of disease cases potentially associated with bioterrorism; and
- Consulted with the CDC Office of Women's Health to shape extramural research on the impact of law on breast and cervical cancer, women's reproductive health, and domestic violence.

2001 GOALS

- Deliver training to the public health workforce in the use of law for public health purposes through partnerships with the National Public Health Leadership Development Network, CDC's Public Health Workforce Development initiative, and other existing delivery systems;
- Sponsor the CDC Symposia in Public Health Law series, including presentations on "Law and Infectious Disease" and "Public Health Law in the 21st Century;"
- Collaborate with the Center for Law and the Public's Health on state-of-the-art assessments of public health laws, e.g., those related to childhood immunizations, genetics, and bioterrorism;
- Partner with the New York City-based Regional Plan Association, the National Center for Environmental Health, and the National Center for Chronic Disease Prevention and Health Promotion to incorporate public health strategies into urban planning and design policies;
- Sponsor workshops on public health law at national public health practice and legal association meetings and conferences; and
- Plan the 2002 National Public Health Law Conference at CDC.

For more information call PHPPPO at 770-488-2404 or visit our Web site at <http://www.phppo.cdc.gov/phlawnet>.



Public Health Grand Rounds

PROGRAM OVERVIEW

Public Health Grand Rounds is the product of a multi-agency partnership, which includes CDC's Public Health Training Network, the Association of Schools of Public Health, the National Association of County and City Health Officials, and the Association of State and Territorial Health Officials. The goal of this broadcast and web-cast series is to promote a leadership-level national dialogue on public health issues of strategic significance.

CDC and the School of Public Health at the University of North Carolina at Chapel Hill (UNC) launched Public Health Grand Rounds in 1999. The first satellite broadcast and Web cast, "Bioterrorism: Implications for Public Health," reached 4,200 public health and safety professionals at 389 sites in 50 states and Canada.

Through in-depth analysis of real world health issues by public health experts, Public Health Grand Rounds is forum for public health leaders, policy makers, managers, and scientists to develop timely, reasoned and effective responses to public health issues of regional and national significance.

Public Health Grand Rounds sessions are moderated by William L. Roper, MD, MPH, Dean of the School of Public Health SPH. The case presenter is Hugh H. Tilson, MD, DrPH, Clinical Professor of Epidemiology and Health Policy. The content expert changes with each program. In the year 2000, "*Disasters, People, and Public Health: Are You Ready?*" featured Richard J. Jackson, MD, MPH, Director of the National Center for Environmental Health at CDC; "*Genetics and Public Health: The Future Is Now*" featured Muin J. Khoury, MD, PhD, Director of the CDC Office of Genetics and Disease Response; and "*Living, Breathing, and Beating Asthma in the Environment: A Community's Initiative*" featured Stephen C. Redd, MD, Chief of CDC's Air Pollution and Respiratory Health Branch.

IMPACT

Public Health Grand Rounds reaches public health professionals across the continent without the expense and inconvenience of travel. Evaluations from three programs show that an average of 92% of the participants, both satellite broadcast and web-cast viewers, traveled less than 15 miles to attend the broadcasts.

Public Health Grand Rounds was the first program of its kind to allow registration via the Internet for continuing education credit. Program materials, notes, resources, and a printable brochure are available at <http://www.PublicHealthGrandRounds.unc.edu>. This comprehensive learner support system was further developed in the year 2000 to include an online discussion forum that extends the interactivity of each broadcast by one week. CDC content experts facilitate discussion forums by answering questions and encouraging participants to share their best practices online.

All broadcasts and learner support materials are archived at the program web site.

1999 Satellite Programs Co-Produced by CDC:

- Bioterrorism: Implications for Public Health – June 11, 1999
- Breast Cancer Screening: More Than Just Mammograms – September 29, 1999

2000 Satellite Programs Co-Produced by CDC:

- Disasters, People, and Public Health: Are You Ready? – January 28, 2000
- Genetics and Public Health: The Future Is Now – May 4, 2000
- Living, Breathing, and Beating Asthma in the Environment: A Community's Initiative – September 29, 2000

2001 Satellite Programs to be Co-Produced by CDC

- Food Safety: A Challenge for Everyone in Public Health – January 26, 2001
- West Nile Virus – May 23, 2001
- Performance Standards – September 28, 2001

For more information call PHPPPO at 404-639-3707 or visit <http://www.grand.rounds@sph.unc.edu>.



Mobilizing for Action Through Planning and Partnerships

PROGRAM OVERVIEW

Mobilizing for Action through Planning and Partnerships (MAPP) is a contemporary, community-driven strategic planning tool for improving community health. Facilitated by public health leadership, this tool will provide communities the opportunity to prioritize public health issues and identify resources to address them.

MAPP was developed by the National Association of County and City Health Officials (NACCHO), in collaboration with the CDC. There is widespread agreement that to fully implement this tool there will be a rapid and determined effort to engage all public and private health professionals and their national and state associations.

The MAPP process represents a significant expansion of strategic planning principles for public health practice. Four assessments, each with a different focus, providing a unique and different perspective of health issues and critical insights into community challenges and opportunities:

- Community Themes and Strengths Assessment – identifies issues that interest the community, perceptions about quality of life, and community assets.
- Local Public Health System Assessment – measures the capacity and performance of the local public health system – all organizations and entities that contribute to the public’s health. This assessment supports the National Public Health Performance Standards Program by providing a vehicle for communities to measure, report and compare health status.
- Community Health Status Assessment – assesses data about health status, quality of life, and risk factors in the community.
- Forces of Change Assessment – identifies forces that are or will be affecting the community or the local public health system.

INTENDED AUDIENCE

MAPP is intended for use by all community organizations. The initial focus will be on local public health agencies; as the probable lead for this effort.

IMPACT

Public health professionals value community planning tools that place emphasis on community linkages and evaluating community resources. Conducting MAPP process will create a sustained community initiative that leads to comprehensive community health improvement. Community ownership is a vital component of MAPP. Because the community’s strengths, needs, and desires will drive the process, MAPP is designed to help residents and organizations come together to ensure that resources and needs are aligned to promote health. Community energy and public participation are crucial to the success of this process.

2000 ACCOMPLISHMENTS

- Completed development of the MAPP tool and converted it to be accessed on the web.
- Created the MAPP Web Site – where all guidance, tools, references and resources, and case vignettes will be available and access to the Web Site is free.
- Developed the MAPP “Field Guide” – a 24-page booklet with an easy-to-read overview for the public.

- Developed a national, 5-year marketing plan for MAPP that will employ oral, written, and electronic mediums to communicate a consistent, persuasive messaging.
- Completed testing of the MAPP tool in 44 local health department-review sites. Selected nine local health departments from among review sites for a multi-year demonstration project to provide ongoing feedback to update and enhance the MAPP tool.
- Developed a MAPP logo, color scheme, and banner exhibit that will facilitate a brand identity and create a consistent, recognizable marketing image.

2001 GOALS

- Increase awareness of the MAPP tool through presentations at conference venues, and promotional products and displays.
- Monitor MAPP progress at nine demonstration site communities and provide technical assistance.
- Identify technical assistance and training needs of other local health departments and communities implementing MAPP, and implement needed activities.
- Develop a long-range implementation and evaluation plan with capacity to measure success using indicators such as MAPP user rates and national population coverage.

For more information, call DPHS DR, PHPPO at 1-800-PHPPO-49 or visit our Web site at <http://www.phppo.cdc.gov/dphs/nphpsp>; or call NACCHO at 1-202-783-5550 or visit their Web site at <http://mapp@naccho.org> or <http://www.naccho.org>.



Strengthening the Public Health System Through Cooperative Agreements with National Public Health Organizations

PROGRAM OVERVIEW

Since 1997, the Public Health Practice Program Office (PHPPO) has established on-going collaboration between CDC and five national public health organizations to support projects that help translate essential public health services into practice:

- American Public Health Association (APHA)
- Association of State and Territorial Health Officials (ASTHO)
- National Association of County and City Health Officials (NACCHO)
- National Association of Local Boards of Health (NALBOH)
- Public Health Foundation (PHF)

These organizations receive funding through cooperative agreements with CDC and collaborate with CDC and each other in a wide area of projects. Selected projects include:

- Developing State and Local Public Health System Performance Standards (including bioterrorism readiness standards)
- Developing State and Multi-state Leadership Development Programs
- Developing the Capacity to Broadcast Selected APHA Annual Meeting Sessions to Individuals Who Cannot Physically Attend the Sessions
- Assessing the Needs of State and Local Areas for Vaccine Coverage Data
- Translating Advances in Human Genetics into Public Health Practice
- Developing Community Health Assessment and Planning Guides
- Broadening the Practice of Environmental Health
- Improving the Capacity of Local Health Departments and Boards of Health to Develop and Strengthen Local Tobacco Control Programs
- Improving the Capacity of Local Boards of Health to Develop Effective Public Health Policy by Developing Education and Training Materials for Local Board of Health Members

INTENDED AUDIENCE

The primary audience is state and local public health policy-makers and practitioners.

IMPACT

In addition to accomplishing the objectives of individual projects, these cooperative agreements have fostered closer collaboration among organizations that represent the nation's public health policy-makers and practitioners and have provided an opportunity for CDC to actively participate in all the projects that have been undertaken by the partners.

2000 ACCOMPLISHMENTS

- ASTHO, NACCHO, and NALBOH collaborated with PHPPO to develop state and local public health system performance standards and to inform the public health community about the National Public Health Performance Standards Program.
- NACCHO collaborated with PHPPO and other partners to develop final drafts a Web Site for the Mobilizing for Action through Planning and Partnerships (MAPP) tool.

- ASTHO and NACCHO supported the Colorado and Ohio Public Health Leadership Development Programs; NALBOH collaborated with the National Public Health Leadership Development Network to create open participation for local board of health members.
- APHA collaborated with CDC's National Center for Chronic Disease Prevention and Health Promotion and the Alabama Department of Public Health to broadcast two sessions from the 2000 APHA Annual Meeting (*Health Disparities: Contributions from Social and Physical Environments* and *CDC on the Move Against Disparities: Program Highlights*) to thousands of public health professionals who could not attend the meeting.
- APHA collaborated with CDC's National Center for Environmental Health (NCEH) to develop and distribute the report, *Recommendations for Core (Environmental Health) Competencies at the Local Level* and the report Protocol for Assessing Community Excellence in Environmental Health (PACE EH).
- ASTHO established a Genetics Advisory Committee which, in collaboration with NCEH, developed a partnership between state and local health officials, federal agencies, and other health partners to translate advances from the Human Genome Project into effective public health policy and practice.
- ASTHO collaborated with CDC and NACCHO to identify common goals and strategies for health information and technology issues that affect state and local health departments. An ASTHO/NACCHO joint committee developed strategies to improve state and local health information and technology capacity. ASTHO assists state health officials in assessing the public health impact of HIPAA and of integrated data systems. To that end, ASTHO partners with the National Association for Public Health Statistics and Information Systems (an ASTHO Affiliate) to ensure that there is a state public health voice on the Public Health Data Consortium and at other data standards organizations.
- NALBOH collaborated with NCEH and the National Environmental Health Science and Protection Accreditation Council to obtain expert review of draft chapters of an Environmental Health Primer for local board of health members.
- NACCHO and NALBOH collaborated with CDC's Office on Smoking and Health and other tobacco control organizations to improve tobacco prevention and control by: 1) Publishing and distributing copies of *Legal Authority for Tobacco Control in the United States* to board members (NALBOH); 2) Distributing copies of *Tobacco Use Prevention and Control Handbook* (NACCHO); 3) Publishing tobacco control articles/information in organization newsletters; 4) Posting tobacco control information on their web sites; and 5) Supporting six representatives to participate in a year-long fellowship to improve the health of their communities through tobacco control initiatives (NALBOH).

2001 GOALS

- Complete the report *Framework for the Role of Genetics in State Public Health Agencies*, the *Brief Synopsis, of Policy Issues in Genetics* and a one-page summary of genetics issues for state health agencies senior deputies.
- Continue the professional relationship between CDC/PHPPPO and all of the partners by announcing the availability of funds under a new, five-year cooperative agreement program for improving the nation's public health infrastructure.
- Collaborate with partners in the implementation of a systematic, nationwide system for assessing and improving state and local public health systems.
- Collaborate with partners in creating opportunities for their constituents to develop and participate in workforce development programs throughout the country.
- Facilitate opportunities for all CDC programs to collaborate with partners in activities to strengthen the public health infrastructure.
- Promote effective collaboration of cooperative agreement partners to more effectively impact public health policy and practice.

For more information, call PHPPPO at 770-488-2460.



EXPANDING GLOBAL CAPACITY





Working with Partners to Improve Global Health

PROGRAM OVERVIEW

As in the U.S., the public health infrastructure in most developing countries is frail and in urgent need of support. Gaps are evident in all the three infrastructure components – people, science, and systems. CDC's Public Health Practice Program Office (PHPPO) has expanded its role in global health over the years in response to a growing number of requests for our assistance from CDC programs and international organizations. PHPPO's strategic approach to global health is to select opportunities and develop interventions which result in permanent, self-sustaining solutions rather than stop-gap measures. By emphasizing infrastructure and capacity building, we magnify the impact of CDC's international investments, strengthen cross-cutting systems, and help build a robust platform for all public health programs which target the needs of specific countries and their communities.

Our four main focal areas in global health are currently:

1. Management and leadership development
2. Laboratory improvement
3. Performance standards development
4. Support for technical training and continuing education

2000 ACCOMPLISHMENTS

- Management and Leadership Development
 1. The Sustainable Management Development Program (SMDP) graduated its 8th class from the annual CDC/Emory *Management for International Public Health* (MIPH) faculty development course, bringing the total number of alumni/ae to 158 trainers in 51 countries.
 2. Published *Healthy Plan-it*TM - a print and video-based training tool designed to teach planning skills to public health practitioners in developing countries. *Healthy Plan-it*TM was the Year 2000 Oracle Award recipient from International Association of Continuing Education and Training. Distribution is being handled by the Public Health Foundation.
 3. Established self-sustaining management development programs in Nicaragua with support from OGH's CARE/CDC Health Initiative and in the Philippines in collaboration with EPO and USAID.
- Laboratory Improvement
 1. Developed and distributed award-winning AFB smear microscopy training and education products (video, slides, audio cassette and print-based materials) for global audience in collaboration with WHO, IUATLD (International Union Against Tuberculosis and Lung Diseases), PAHO, and Mexico's Institucion Nacional de Diagnostico y Referencia Epidemiologico (INDRE).
 2. Developed distance-based laboratory training products (CD-ROM and training video) for the Caribbean Epidemiology Centre (CAREC).
 3. Developed and delivered the first laboratory Quality Assurance (QA) workshop for GAP and CDC/HIV laboratory staff. PHPPO's Division of Lab Systems (DLS) is currently working with NCHSTP/GAP, NCID, and the Association of Public Health Laboratories (APHL) to support and upgrade the laboratory testing services in India and the 14 sub-Saharan African countries that have been impacted by the HIV/AIDS epidemic.
- Performance Standards: Collaborated with WHO and PAHO to develop a framework for defining a global set of essential public health services and public health performance standards.

- Support for Technical Training and Continuing Education
 1. Designed, developed and evaluated a set of innovative training materials (videos, posters, charts, instructors' manuals, public spot announcements for TV and radio) in collaboration with NCHSTP/GAP and the Botswana Ministry of Health aimed at reducing mother-to-child transmission of HIV.
 2. Provided technical assistance and training to Beijing Medical University and the Chinese Ministry of Public Health to develop a satellite-based, web-linked distance learning system designed to deliver continuing medical education to a broad array of public health and other medical professionals

CHALLENGES AND APPROACHES

- Management and Leadership Development
 1. In partnership with ATPM, SMDP will begin offering a career development fellowship at CDC to an outstanding MIPH Course alumnus/a with 3-5 years' field experience developing their own country-level management training program. The Senior MIPH Fellow will join SMDP's staff for 12-24 months and assist in developing new training products and provide technical assistance to other recent MIPH graduates who are starting their own programs.
 2. SMDP will work with Mexico's Secretariat of Health to establish a regional Spanish language MIPH faculty development course to be offered in 2002. Negotiations are underway to identify resources for supporting country-to-country technical assistance by Mexico's MIPH alumni to their future graduates in the region.
 3. SMDP will hold its first regional conference on *Strengthening Public Health Management Capacity in the Asia/Pacific Region* in Manila from Aug 8-11, 2001. The conference will provide a forum for regional MIPH alumni to share experiences and training resources and to make recommendations to CDC and regional donors for ways we can best support further development in this important area.
- Laboratory Improvement
 1. DLS will continue providing technical consultation in laboratory improvement to its partners in WHO and the International Union Against Tuberculosis and Lung Disease, and assist CAREC in enhancing its training programs based on the results of a formal evaluation study.
 2. We will continue providing leadership for laboratory QA and training in GAP-focus countries in collaboration with NCHSTP, NCID, and APHL.
- Performance Standards: PHPPO will continue providing consultation to WHO and PAHO on global performance standards and guidelines for public health practice; we anticipate the formal announcement of PHPPO as a *WHO Collaborating Center for Global Public Health Systems and Practice* by March of 2001.
- Support for Technical Training and Continuing Education
 1. DPDE will work with the Ministries of Health from Botswana, Uganda, South Africa, and Kenya to identify and train a Distance Learning Coordinator in each country. This cadre of individuals will facilitate and coordinate in-country access to PHTN and other CDC training resources.
 2. DPDE will assist NCHSTP/GAP and the Botswana Ministry of Health in producing and evaluating two videotapes on TB preventative therapy aimed at health professionals and HIV - positive patients.
 3. PHPPO will assist China in inaugurating its new satellite distance learning network and make our library of public health training materials available for adaptation.

Additional background information about our global health activities is presented in the fact sheets on the following pages.



Sustainable Management Development Program

PROGRAM OVERVIEW

The mission of the Sustainable Management Development Program (SMDP) is to *strengthen public health management training capacity in developing countries*. An integral part of SMDP's train-the-trainer strategy, the annual 6-week CDC/Emory Management for International Public Health (MIPH) course provides core management skills to approximately 15-20 trainers per year from a variety of training institutions throughout the developing world. Following the course, graduates return home and are assisted by SMDP staff in planning, implementing, and evaluating applied public health management curricula aimed at improving the management competencies of the local public health workforce. A key feature of SMDP-affiliated programs is the requirement for local trainees to complete an *applied management project* following each workshop. These team projects 1) serve to reinforce classroom learning and help translate knowledge into skills; 2) demonstrate competencies in the field; 3) multiply the training by involving local health workers unable to attend the formal workshop; and 4) show a direct impact of the training on public health program goals (e.g., improved immunization coverage, reduced clinic waiting time, reduced errors on report forms, increased numbers of supervisory field visits, reduced inappropriate use of project vehicles, etc.).

Each year, the SMDP works with a variety of internal (CDC) and external partners to carry out its mission; sponsors of the 17 participants who attended the 2000 MIPH course included:

- CARE Ghana
- Commonwealth of the Northern Marianas Islands
- Epidemiology Program Office
- Hebrew University
- National Center for HIV, STD and TB Prevention
- Office of Global Health
- University of Guam
- U.S. Agency for International Development
- Woodruff Foundation (CARE-CDC Health Initiative)

INTENDED AUDIENCE

The MIPH Course targets mid- to senior-level faculty from a variety of training institutions including government training programs (e.g., Philippines Field Management Training Program), academic institutions (e.g., Hanoi School of Public Health) and NGOs which have a strong in-country training mission (CARE/Nicaragua).

The ultimate target audience we are trying to reach through our graduates are public health program managers at the provincial and local levels (i.e., the equivalent of state and county health department personnel in the U.S.).

IMPACT

Since the program began in 1992, SMDP has trained 158 trainers in 50 countries. SMDP is currently working with graduates in several of these countries (e.g., Mexico, Nicaragua, Nigeria, Philippines, and Vietnam) to institutionalize permanent, self-sustaining public health management training programs which will address a critical need in public health workforce development in these countries.

2000 ACCOMPLISHMENTS

- Seventeen faculty from 12 countries successfully completed the 2000 MIPH course.
- Healthy Plan-*it*TM, a print and video-based distance learning tool for teaching planning and priority setting skills to public health professionals was published and is being distributed by the Public Health Foundation.

2001 Program Review

- MIPH Senior Fellowship established at SMDP/Atlanta in collaboration with ATPM which will offer a 12-24 month career development opportunity for an outstanding MIPH alumnus/a. This individual will help SMDP staff develop new training products and provide assistance to new graduates helping them establish new programs based on first experience.
- Nicaragua -- SMDP received a grant from the CARE/CDC Health Initiative (Woodruff Foundation) to assist Nicaragua in developing a management training curriculum for its NGO network. The second cohort of local health workers are currently being trained by MIPH graduates. Our graduates in Nicaragua received on-site technical assistance from MIPH graduates in Mexico -- our first example of regional collaboration among programs.
- Philippines – SMDP assisted the EPO/Division of International Health in establishing a Field *Management* Training Program in the Philippines to complement their well-established FETP. This USAID-funded program is currently training its second cohort of local public health program managers and has developed several training innovations which have been useful for other programs (e.g., field project supervisor's' guide, 2-project curriculum).
- Vietnam -- MIPH graduates at the Hanoi School of Public Health (HSPH) received their first grant from UNFPA to develop a management curriculum for family planning program managers in 8 rural provinces; funds from this grant were used to provide SMDP technical assistance and purchase new training equipment and supplies for the school. The HSPH is currently assisting NCHSTP/TB in developing a management training curriculum for provincial TB program managers in Vietnam – the first round of in-country training will begin in February 2001.
- South Africa/Botswana – NCHSTP/GAP funds were used to train faculty from the Medical University of South Africa (MEDUNSA) and the Botswana National Institute of Development Management in the 2000 MIPH course.

2001 GOALS

- Work with NCHSTP/GAP to strengthen the management capacity of HIV program managers in sub-Saharan Africa; develop workplans and curricula for South Africa and Botswana; expand opportunities for GAP-funded participants from African training institutions to attend the MIPH 2001 course.
- Launch new program in the W. Pacific in collaboration with the Commonwealth of the Northern Marianas Islands, the University of Guam, and WHO/WPRO; assist CDC's Pacific Islands Work Group in developing and securing funding for a long-term sustainable workforce development strategy for the region.
- Establish regional Spanish language version of MIPH in collaboration with Mexico.
- Hold first regional SMDP meeting in August 2001 in Manila on *Strengthening Public Health Management Capacity in the Asia/Pacific Region* in collaboration with the Philippines Department of Health.
- Assist WHO/Thailand and the Thai Ministry of Public Health in establishing a management training program with support from the Thai FETP and Mahidol University.

For more information call SMDP, PHPPPO at 770-488-8297 or visit our Web site at <http://www.phppo.cdc.gov/SMDP/>.

MANAGEMENT FOR INTERNATIONAL PUBLIC HEALTH ALUMNI

at Work Around the Globe - 1992 to Present (158 Graduates from 51 Countries)





Strengthening Public Health Laboratory Systems Internationally

PROGRAM OVERVIEW

The Division of Laboratory Systems (DLS) is emerging as a key partner in CDC programs to strengthen public health laboratory systems globally through laboratory training and quality assurance. DLS provides support for global activities in three main areas:

- Assessment of Laboratory Infrastructure
 1. DLS provides consultation and assessments for laboratory services, training capacity, and laboratory infrastructure in the developing countries. These activities have included inter-CIO collaborations to assess laboratory systems in India, a World Health Organization (WHO) assessment of Ukraine laboratory systems, and assessment of laboratory infrastructure in the Pacific Islands Health Organization.
 2. DLS is collaborating with Mexico's Institucion Nacional de Diagnostico y Referencia Epidemiologico (INDRE) to compare a CDC-designed proficiency testing program with existing quality control programs in 600 Mexican laboratories. The objectives of this study is to compare different forms of quality control and with other indicators of laboratory performance. This program has already helped Mexico obtain a comprehensive national assessment of their laboratories and documented improved performance of proficiency testing.
- Lab Training and the Development of Lab Training Products
 1. DLS is working with NCHSTP, NCID, and the Association of Public Health Laboratories (APHL) to support and upgrade the laboratory testing services in India and 14 Sub-Saharan African countries that have been impacted by the HIV/AIDS epidemic. The DLS role in LIFE is leadership for laboratory training, and developing and implementing quality systems for HIV, TB, STD, and opportunistic infections (OI) testing services. Initial activities have included providing comprehensive laboratory support for Zimbabwe and developing a training course on laboratory quality assurance for CDC, APHL, and LIFE country participants.
 2. DLS is working with APHL and Caribbean Epidemiology Centre (CAREC) to enhance CAREC's capacity to develop and deliver training to member countries through a sustainable distance learning system. DLS is providing technical support in the development of a "Quality Laboratory Management Guidelines" CD-ROM and facilitating the development of a video "Investigating an Outbreak: A Team Approach."
 3. DLS, in collaboration with APHL, WHO, IUATLD (International Union Against Tuberculosis and Lung Diseases), PAHO, and INDRE, has co-developed a training videotape for local laboratories performing AFB microscopy in low-income countries. The training materials which are available in English, Spanish, and French, include a videotape, a set of 2x2 slides, an audio cassette, and a training manual. The materials are being distributed to 600 laboratories in Mexico and countries impacted by Hurricane Mitch. WHO is providing a copy to every country in the world.
- Development of Lab Practice Standards and Guidelines
 1. DLS is organizing an International Conference in Proficiency Testing for Medical Laboratories to be held in Atlanta in September 2001. The conference will promote quality assurance in medical laboratories that will enhance global health.
 2. DLS's Model Performance Evaluation Program for HIV-related testing is the world's largest provider of external quality assurance for HIV serologic testing. More than 140 laboratories in 80 countries participate along with approximately 800 laboratories in the U.S.
 3. DLS provides consultation in preparing ISO (International Standards Organization) laboratory standards and documents – these are the basis for international standards of laboratory practice.

4. DLS is working with WHO, IUATLD, and the Royal Netherlands Tuberculosis Association (KNCV) to develop an international set of guidelines for external quality assurance programs for AFB microscopy in resource-limited countries.

INTENDED AUDIENCE

DLS works with a variety of internal (CDC) and external partners to strengthen the public health laboratory workforce and build high quality laboratory services through out the world to support health promotion and disease prevention activities. Although we work with and through many intermediary partners, our ultimate target audience are the managers and directors of national and sub-national lab services.

IMPACT

DLS services and products strengthen the entire laboratory system and are aimed at improving and maintaining the overall quality of laboratory services. DLS strategies seek to leverage our modest resources and result in impact which is cross-cutting and sustainable.

2000 ACCOMPLISHMENTS

- Completed an evaluation of the CAREC pilot distance learning system and made recommendations to improve and expand the program.
- Results comparing INDRE's national proficiency testing program with those from the standard program of rechecking AFB smears were presented at the IUATLD meeting in Budapest, Hungary and have led to initiatives to revise existing external quality assurance program..
- Completed training materials for AFB microscopy and packaged for distribution. The video won an award for excellence from the American Videographers Association.

2001 GOALS

- Continue working with CAREC to support their newly established distance-based learning system.
- Work with NCHSTP/GAP to implement laboratory upgrades in Zimbabwe, India, Ethiopia, and Zambia; conduct a course in laboratory quality assurance (QA) in Africa and implement QA and external QA systems in multiple countries; develop and conduct 2-3 laboratory training courses in Africa and India.
- Publish results of the analyses of the INDRE/CDC study on external quality assurance for AFB microscopy in a peer-review journal; conduct follow-up study to implement recommendations in two Mexican states.
- Distribute the international AFB microscopy training materials throughout Mexico and Central America. World-wide distribution will be conducted by WHO and IUATLD.
- Finalize and publish consensus guidelines from the international workgroup and distribute document globally through IUATLD.

For more information call DLS, PHPPPO at 770-488-8295.



WHO Collaborating Center for Global Public Health Systems and Practice

PROGRAM OVERVIEW

Throughout the world, all countries are currently facing dramatic changes in their health systems as well as in their social and economic environments. Many of these changes have resulted in reduced access to health services and subsequently, this has had a negative impact on the health of the public. In 1992, the World Health Organization (WHO) responded to this threat by beginning a process to identify a set of essential public health functions that would define minimum standards of preventive and treatment. WHO established the Working Group on Essential Public Health Functions as part of its "Health For All in the 21st Century" policy. The Workgroup used a Delphi approach to solicit international expert opinion and reach consensus on essential public health functions.

Using our experience in defining essential public health services for the U.S., CDC's Public Health Practice Program Office (PHPPO) provided consultation to WHO and 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 the U.S. essential public health services. Further discussions between WHO, PHPPO and the Pan American Health Organization (PAHO) underscored the need for international collaboration to increase research in this area and coordinate efforts aimed at measuring and evaluating public health system performance.

To enhance collaboration, a proposal was submitted in 1999 to designate PHPPO a *WHO Collaborating Center for Global Public Health Systems and Practice*. Approval was granted in 2000 and final designation is anticipated in early 2001. This designation will enhance PHPPO's role in global research and development of public health systems.

INTENDED AUDIENCE

The intended audience consists of all health policy makers and leaders at the international, national, and sub-national levels.

IMPACT

Access to new information about health systems performance will be useful for planning and allocating health resources, and for setting standards which will ultimately enhance the quality of public health services.

2000 ACCOMPLISHMENTS

- DPHS staff worked with PAHO to develop an appropriate performance standards data collection instrument for Latin America .
- DPHS assisted PAHO in field testing the new instrument in Chile.
- Final paperwork submitted to WHO for designation of PHPPO as a Collaborating Center for Global Public Health Systems and Practice.

2001 GOALS

- Obtain final designation as WHO Collaborating Center and begin implementing workplan.

For more information call DP HDR, PHPPO at 770-488-2469.



Strengthening Global Distance Learning Systems

PROGRAM OVERVIEW

The success of the U.S.-based Public Health Training Network (PHTN) has led to an increasing global demand for the expertise of the PHPPO's Division of Professional Development and Evaluation (DPDE) as countries around the world explore distance learning as a strategy to meet the ever-changing educational needs of their public health workforce. DPDE and its domestic PHTN partners are providing consultation to other countries in the following areas:

- Initial assessment to determine the appropriateness and need for distance learning
- Evaluation of existing distance learning systems and technology
- Establishing new distance learning networks
- Network management and operations
- Design and review of network procedures and plans
- Training for key system personnel in areas of leadership, management, and distance learning coordination
- Adaptation and customization of existing PHTN materials
- Development of new distance learning programs/courses

In addition to consultation on distance learning networks, DPDE is also working with internal CDC partners to develop a variety of content-specific videos, audios, and print-based training and health education materials for use in developing countries.

INTENDED AUDIENCE

DPDE's intended audience includes global health leaders who are developing distance learning programs targeted for the health professionals, the public health workforce, and at-risk populations.

IMPACT

The development of an enduring distance learning capacity will provide cost-effective, flexible options for delivering up-to-date training content and professional development to health professionals worldwide – any client, any time, anywhere. Such a system can help standardize the quality of training, reduce travel time and costs, vastly improve access, and greatly simplify public health workforce licensure and certification processes. Last year alone, CDC delivered training content to registered learners in 124 countries throughout the world.

2000 Accomplishments

- DPDE has collaborated with SMDP to introduce MIPH course participants to the basic principles of distance learning, and to the critical duties and responsibilities of a Distance Learning Coordinator (DLC).
- China – DPDE provided consultation to officials from the Chinese Ministry of Public Health and Beijing Medical University helping them design and implement a national distance learning system for medical professionals. This state-of-the-art system was successfully tested in 2000 and the Ministry has designated it as an official vehicle for meeting continuing medical education requirements.

- Botswana – DPDE partnered with NCHSTP/GAP and the Botswana Ministries of Health to design, develop, and evaluate innovative training materials that will be used to help prevent mother-to-child transmission of HIV. These training products (videotapes, audio cassettes, public service announcements, and charts) will be used to train health professionals and educate expectant mothers about ways prevent mother-to-child transmission.

2001 GOALS

- DPDE will work with NCHSTP/GAP, EPO/DIH, and the Ministries of Health in Uganda, South Africa, and Kenya to design, develop, and evaluate training materials (e.g., PSAs, educational videotape, brochures, posters, and flip charts) to prevent mother-to-child transmission of HIV.
- DPDE will work with the Ministries of Health from Botswana, Uganda, South Africa, and Kenya to establish and train a Distance Learning Coordinator in each country. This will facilitate access to PHTN and other CDC training programs.
- DPDE will assist NCHSTP/GAP, the BOTUSA Project/NCHSTP, and the Botswana Ministries of Health in developing two educational videotapes on TB preventive therapy aimed at health professionals and HIV-positive patients.
- PHPPPO will help our Chinese counterparts inaugurate and evaluate their new distance learning system and we will provide them access to CDC training materials for possible translation and adaptation.
- DPDE will continue working with SMDP to expand the cadre of international DLC's by offering an training session on distance learning in the MIPH 2001 course.

For more information call DPDE, PHPPPO at 404-639-3707.

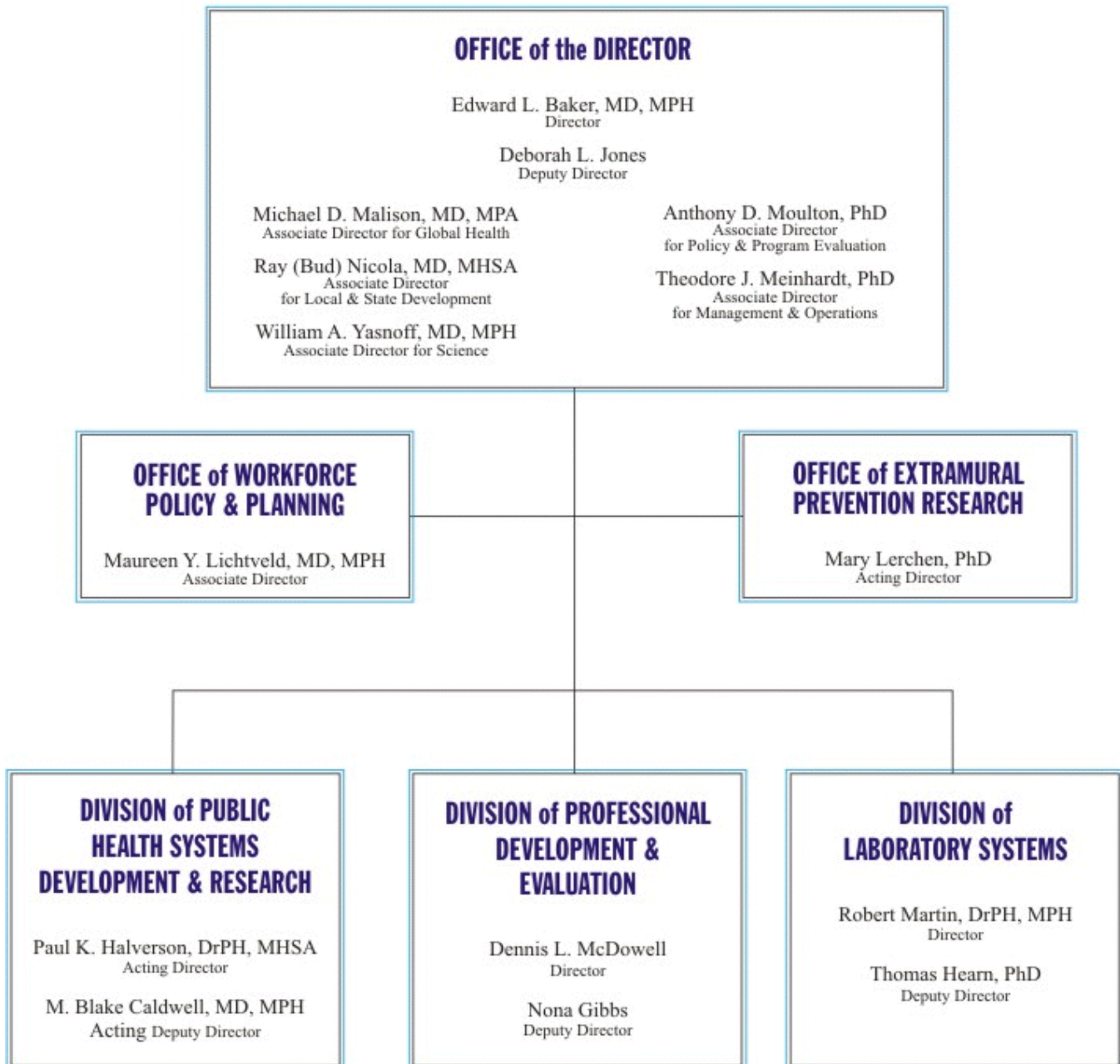


PUBLIC HEALTH PRACTICE PROGRAM OFFICE





Public Health Practice Program Office





Office of the Director

MISSION

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

MAJOR PROGRAMS

- 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. The Extramural Prevention Research Program is currently supporting 52 projects for extramural scientists and research centers to design and implement community-oriented interventions to prevent disease and promote health.
- Workforce Planning and Policy: Implementing a global and national life-long learning system for the public health workforce to strengthen preparedness of the frontline; building a sound science base for workforce development issues.



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
 1. Evaluation of Quality in Laboratory Practice and Standards (EQLPS) : EQLPS, the Division's laboratory practice research agenda, builds the scientific and technical basis for laboratory practice guidelines and regulatory standards. In FY 2000, the National Inventory of Clinical Laboratory Testing, a survey of the distribution of laboratory tests by type and location, was completed. That data set is the first comprehensive body of information about testing menus and testing volumes in the approximately 170,000 U.S. clinical laboratories. The Division, collaborating with the Mount Sinai Medical School, completed a survey of biochemical genetics testing and testing practices. Results were presented to the Clinical Laboratory Improvement Advisory Committee to provide a foundation for deliberations about regulations for genetics testing laboratories.
 2. HIV Model Performance Evaluation Program: Information about testing practices and performance in laboratories that providing testing services for retroviral and AIDS-related testing is collected and 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. For example, in 2000 performance data on HIV Western blot supplemental testing was presented to the FDA's Blood Products Advisory Committee for their consideration in assessing guidance to manufacturers about labeling on interpretation of HIV Western blots.
- Laboratory Practice Standards: Clinical Laboratory Improvement Amendments (CLIA): In 2000 CLIA activity included publication of a Notice of Intent to publish regulations for genetics testing; development of a new computer-based system for use as a training and evaluation tool in cervical cytology screening (Pap smear screening); completion of revised, draft regulations for quality control and quality assurance; and transfer of activities for determining the complexity – and thereby the extent of regulatory oversight for each of over 22,000 laboratory tests – to FDA.
- Laboratory Practice Training
 1. National Laboratory Training Network (NLTN): The NLTN is cosponsored by the Division and the Association of Public Health Laboratories and operates in seven regional offices to train clinical and public health laboratory professionals in laboratory quality control and assurance practices and to provide information on evolving laboratory technologies. The highlight of training in 2000 was training to thousands of laboratory workers in a broad range of testing technologies and practices.
 2. Caribbean Epidemiology Centre (CAREC): Collaboration with CAREC to develop a distance learning system for member countries continued in 2000. The goal is to strengthen the capability of Caribbean laboratories so that they can improve response to public health emergencies and threats.
- National System for Laboratory Testing of Public Health Importance: The expressed and evident need for improved linkages and communications across the spectrum of public and private laboratories which carry out testing and referral of testing of public health significance culminated in the support for partnerships with the states to carry out projects that demonstrate both the process and outcomes that can be achieved by building strong testing systems within states. In 2001 the expectation is that four states will have been funded and will implement activities.



Division of Public Health Systems Development and Research

MISSION

The mission of the Division of Public Health Systems Development and Research (DPHSDR) is to strengthen the capacity and effectiveness of the organizations that perform public health services locally, nationally, and internationally. To fulfill 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 performance by increasing capacities in the public health system.
- Collaborates with partners in CDC and throughout the health system to strengthen their capacity to advance health through prevention.

MAJOR PROGRAMS

- Health Systems Research
 1. Epidemiology of the public health system:
 - S Researching the capacity of local health systems, governance, and State health departments to address performance of essential public health services in communities;
 - S Assessing the status of the public health infrastructure at the local health system level; and
 - S Assisting the World Health Organization in identifying recommended “essential public health functions” for member countries’ adoption as international standards.
 2. Healthy People (HP) 2010 Public Health Infrastructure Objectives: Coordinating development of the first national HP objectives to strengthen the public health infrastructure.
 3. Public Health Policy: Increasing collaboration and fostering the application of resources and capabilities of academic institutions and public health agencies to research and develop policy guidance regarding public health law and fiscal management priorities.
 4. On-line Resource Development: Leading national initiatives to develop on-line resources to support front-line public health practice by integrating CDC’s wealth of information, knowledge, and learning resources.
- Standards and Strengthening Capacities
 1. National Public Health Performance Standards Program: Leading a national collaborative initiative to develop standards of performance for community-level public health services.
 2. Health Alert Network: Leading CDC’s initiative to strengthen the capacity of local and State health departments to address the threat of bioterrorism by developing robust, secure, interoperable electronic platforms that support communications, information and knowledge access, learning, and data transfer.
 3. 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.

- Building Collaborative Partnerships
 1. 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 comprehensive prevention and health promotion strategies.
 2. Management Academy for Public Health regional program to train over 600 public health managers in management competencies and to develop a model for national replication.
 3. Informatics Training: Ensuring the development and delivery of a rich set of public health informatics training offerings to the nation's public health workforce, in order to assist CDC's public health partners in developing their own information systems, in deploying new information technologies, and in using current and future on-line knowledge resources.
 4. Partnering with 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.



Division of Professional Development and Evaluation

OVERVIEW

As far back as the early 1980's it was recognized that CDC's public health training and education efforts were not well documented or comprehensively evaluated. In fact, CDC could not generate critical data such as the number of people trained, the number and nature of courses offered, the impact of the training, or the cost effectiveness of CDC's overall training efforts. Although several evaluation studies have recently been undertaken, they have been characterized by an ad hoc approach limited by incomplete data collection, and have lacked a unifying vision.

Now that DPDE is taking a more formal role in the arena of professional development, and is building the lifelong learning system needed to support professional development, it is time to more systematically operationalize evaluation by incorporating it into DPDE, PHTN, and CDC professional development activities.

Traditionally PHTN evaluation efforts have been focused on performance on post tests. In the future, PHTN training could be evaluated on overall program and content expectations and satisfaction of the target audience. We also need to examine the effectiveness, efficiency, and economics of our programs, as well as the professional development activities and support systems that make them possible.

Consistent with CDC's scientific philosophies, a more rigorous and systematic approach should begin by expanding the scope of our evaluation efforts to include the experience and systems that make the distance learning system possible. We must begin to evaluate findings at all levels, and we should interact with the decision-makers in all our workforce development activities.

Another aspect of increased and enhanced evaluation activity should be tangible outputs:

- Inform participants of their success;
- Report to participants on other aspects of the learning experience;
- Identify results for program planners and instructional designers;
- Annually report back to the CIO Directors on the nature, extent of our work; and
- Provide activity information and findings on what went well, what did not.

A startling realization is that at the dawn of the 21st Century, after CDC has been actively engaged in professional development activities for 50 years, no one can or does report to the CDC Director each year about CDC's training activities. No one compiles important information such as:

- How many people were trained;
- Who were they;
- What topics were they trained in;
- What impact did the training have;
- What reaction did the target audience have to the training; and
- How much did the training activity cost the agency.

Each year this type of basic but comprehensive information should be provided to the CDC Director and Executive Staff. DPDE evaluation activities could play a significant role in this direction.

In an era when CDC will comply with National Performance Standards and GPRA requirements, there is a concern that selective data will be collected, then sent on into a black hole. DPDE intends to focus on meaningful, useful data, gathering and analyzing, then using it for programmatic purposes, providing timely feedback to those who can use it best for decision-making and future action. The recipients of evaluation efforts and information will be: Those for whom the training was designed and provided; and those who planned and implemented the training, and did so at no small cost or effort.

Our greatest challenge will be to ascertain the **true value** of the training we provide: this can be done by obtaining feedback not only on student performance on an examination, but the **impact on the public health system, as reflected in sustained performance improvement.**

MISSION

The mission of the Division of Professional Development and Evaluation (DPDE), formerly the Division of Media and Training Services, is to serve as the operational nexus of the life-long learning system for public health, new in development and also to lead and manage the Public Health Training Network. With its new mandate, DPDE also will serve as CDC's central focus for professional development and learning systems evaluation. DPDE will foster development and adoption of standards for technical quality, and evaluation of innovative distance learning systems, media, and instructional products and will continue to enhance CDC's capacity to design, develop, deliver and evaluate instructionally sound and innovative education and training world-wide.

MAJOR PROGRAMS

- Public Health Training Network: PHTN is the hub of the Nation's public health distance learning systems. Innovative strategies, partnerships and programs strengthen the knowledge and effectiveness of the entire public health workforce.
 1. PHTN Field Operations - DPDE coordinates distance learning system development, program promotion, and Health Alert Network activities through 50 state-based Distance Learning Coordinators (DLCs) who will establish local DLCs in up to 500 sites.
 2. Learner Support and Accreditation - DPDE manages the accreditation process on behalf of CDC to provide continuing education credits for physicians, nurses, and other health professionals.
 3. Conference on Information and Distance Learning in Public Health - DPDE and co-sponsors manage the annual *Conference on Informatics and Distance Learning in Public Health* to enhance capacity of decision makers and front-line staff to effectively integrate informatics and distance learning into public health practice.
 4. Global PHTN - DPDE provides consultation on distance learning systems and strategies around the world. Working with PHPPPO's Sustainable Management Development Program (SMDP), disseminates distance learning innovations by training SMDP graduates in the fundamentals of distance learning and the functions of distance learning coordinators.
- Distance Learning System Consultation: DPDE helps CDC programs, state health departments, academic institutions, federal agencies, and other domestic and global partners to build the capacity to educate and train the health workforce and to inform a wide range of organizations how to use innovative, technology-mediated strategies.
- ENVISION: DPDE and CDC's Information Resource Management Office manage CDC's ENVISION and video conference communications network enabling CDC staff to conduct virtual meetings, team work sessions, and updates, and to share large events and PHTN satellite broadcasts as one CDC community. Innovative technology now enables routine meetings with partners outside CDC.
- CDC Learning and Media Infrastructure: DPDE advises CDC's master planners on building renovations and plans for the new Global Communications and Training Facility, which will give CDC a state-of-the-art, world-class conference and media production facility.

2001 PRIORITIES

In order to accelerate the process of putting the "e" in PHTN learning systems, DPDE priorities for FY Focus on these key areas:

- Expanding e-systems for learner support, including enlarging the current online web-accessible CDC training catalogue to encompass all CDC accredited training and educational programs, and supporting them with registration, pre- and post-testing, participant recognition, and transcripts, data collection and activity reports.

- Making all CDC stand-alone learning resources available on the web. DPDE will review, revise and disseminate new distance learning design, development, delivery and learner support technical standards, and assure the all new learning resources developed at CDC, regardless of the original production media, are accessible on the web.
- Conduct scientific studies of the impact of learning systems and resources on the performance of public health workers and programs. DPDE will develop the data collection capability across CDC programming and provide critical findings and strategic recommendations to CDC program managers. DPDE also will initiate development of a framework for impact evaluations.
- Collaborate with Centers for Public Health Preparedness and the Association of Schools of Public Health to integrate distance learning into their communication and training efforts; and develop a multi-disciplinary curriculum for the public health workforce in the essential public health services.
- Assist planning efforts for the new CDC Global Communications and Training Facility, which will expand the capacity to support the growing demand for CDC training programs with an emphasis on the essential public health services, the Health Alert Network and the CDC Global and National Implementation Plan for Public Health Workforce Development.
- Develop an Internet-based informatics course specifically to provide public health managers with the knowledge and skills they need to effectively apply informatics principles and practices in the public health setting.

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.

Paul K. Halverson, Dr.PH.

Acting Director of the Division of Public Health Systems Development and Research and Director of the National Public Health Performance Standards Program, Public Health Practice Program Office. Previously, he served as a faculty member in the Department of Health Policy and Administration at the University of North Carolina (UNC), School of Public Health. While at UNC, he served as the Senior Health Policy Advisor to the State Health Director in North Carolina.

Dr. Halverson has published extensively on public health systems. He serves as an Associate Editor for the American Journal of Public Health and on the Editorial Board of the Journal of Public Health Practice and Management. Prior to his appointment at UNC, Dr. Halverson served as a senior health system executive for nearly fifteen years in Arizona, Minnesota, and Michigan. Halverson completed his Master of Health Services Administration from Arizona State University and his Doctor of Public Health in Health Policy and Administration at the University of North Carolina. He is board certified in Healthcare Management and is a Fellow of the American College of Healthcare Executives.

Deborah L. Jones

Deputy Director, Public Health Practice Program Office. Ms. Jones' CDC career spans three decades and seven program areas. Her career began 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 scientific and health communications, hospital infections, public health training, information systems, agency management, and public health practice. Ms. Jones has chaired a number of agency and interagency workgroups and task forces and helped establish both the Information Resources Management Office and the Office of Communication at CDC. Her technical areas of expertise include information systems, health communications, and public health administration. Ms. Jones was awarded the Bachelor of Science degree in Communications, magna cum laude, from the University of Tennessee in 1972. She attended law school at Boston University in 1976. Ms. Jones is a graduate of the CDC/University of California Public Health Leadership Institute.

Mary L. Lerchen, Dr.PH., M.S.

Acting Director of Extramural Prevention Research Program, Public Health Practice Program Office. Prior to this position she was the Deputy Associate Director for Science PHPPO. From 1991 to 1998 Dr. Lerchen was an epidemiologist with the National Center for Chronic Disease Prevention and Health Promotion where she was instrumental in planning and implementing that National Program of Cancer Registries. Before joining the CDC, she designed and led epidemiologic studies of occupation and lung cancer and treatment trends using interview and cancer registry data. She has several years' experience as program manager and principal investigator in statewide cancer registries. More recent interests include developing innovative uses of encoded pathology reports for cancer reporting. She is a member of the American Medical Informatics Association and the Institute of Medicine's Clinical Research Roundtable. Dr Lerchen received her DrPH from the University of Texas School of Public Health in Houston. Earlier she received a BSN from Stanford University, worked as a nurse in the community and in hospitals, became a certified nurse clinician, and taught nursing at the University of Texas School of Nursing. Her first job was as public health nurse in Los Angeles County where Spanish speaking ability was required.

Maureen Y. Lichtveld, M.D., M.P.H.

Associate Director for Workforce Development, and Director, Office of Workforce Planning and Policy, Public Health Practice Program Office. In this role, she provides leadership in implementing the CDC/ATSDR National Public Health Workforce Development Strategic Plan. Dr. Lichtveld's efforts combine biomedical, social, epidemiological, behavioral, and policy data to address issues of science, policy and public health practice associated with public health workforce preparedness. Programs directed by Dr. Lichtveld include a life-long public health learning system to assure preparedness on the Nation's frontlines; a national system of Centers for Public Health Preparedness; and a national Public Health Training Program for Bioterrorism Preparedness and Response. Dr. Lichtveld also leads CDC's national academic partnership programs. These programs are designed to engage member institutions from key national academic professional associations, including ASPH, ATPM, MHPF, and AAMC in conducting a growing spectrum of CDC-supported prevention research training and fellowships.

Prior to joining PHPPPO, Dr. Lichtveld held several key leadership and management positions at the Agency for Toxic Substances and Disease Registry (ATSDR), including Acting Deputy Assistant Administrator; Assistant Director for Public Health Practice, Chief Biomedical Officer, and Director, Division of Health Education and Promotion. Dr. Lichtveld has received numerous honors, including the Public Health Service Special Recognition Award, an ATSDR Outstanding Science Group Award, Environmental Health Scientist of the Year, CDC Service to the Public Honor Award, and letters of appreciation from members of Congress. Dr. Lichtveld is recognized nationally and internationally and has made several scholarly contributions of major significance to the field of public health throughout her career. She has authored numerous publications and serves on editorial boards of contemporary public health journals. Dr. Lichtveld received her MD from the University of Suriname and her MPH from Johns Hopkins School of Hygiene and Public Health. She is also a graduate of CDC's National Public Health Leadership Institute.

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 medical degree from the University of Miami in 1978. He joined CDC in 1981 as an Epidemic Intelligence Service Officer and served in a field assignment with the Florida Department of Health and Rehabilitative Services. He completed CDC's Preventive Medicine Residency in 1983 and is a Fellow of the American Board of Preventive Medicine. Dr. Malison served in a variety of international assignments during his career with CDC and was the resident advisor to the Taiwan Field Epidemiology Training Program from 1984-1988. He attended Harvard's John F. Kennedy School of Government on a CDC Career Development Award where he obtained a Masters degree in Public Administration in 1990. Dr. Malison founded CDC's Sustainable Management Development Program in 1992 which he still directs. He is also an Adjunct Associate Professor in the Department of International Health at the Rollins School of Public Health, and serves on the Board of Directors of American Bureau for Medical Advancement in China. Dr. Malison is fluent in Spanish and conversant in Chinese mandarin.

Robert Martin, Dr.PH, M.P.H.

Dr. Robert (Bob) Martin joined CDC on February 1, 1999, as Director, Division of Laboratory Systems, Public Health Practice Program Office. Dr. Martin was formerly with the Michigan Department of Community Health since 1973 where he was the Laboratory Director since 1991. He is a graduate of the Michigan State University (BS, 1971), Michigan Technological University (M.S., 1975), and the University of North Carolina (M.P.H., 1976 and Dr.PH., 1979). In addition to responsibilities in the laboratory, he was Adjunct Associate Professor at Michigan State University where he taught undergraduate medical microbiology. Bob brought to CDC valuable experience in bridging laboratory science and public health action. The experience comes from his outstanding record as the Michigan Public Health Laboratory Director and from active participation as a leader in a variety of 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 (ASM). He is also the Chair-elect of the Public Health Division (Division Y) of the ASM. He currently serves on the Board of Councilors of the American Society of Clinical Pathologists.

Dennis L. McDowell, B.S.

Director, Division of Professional Development and Evaluation, Public Health Practice Program Office (PHPPO), 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.

Theodore J. Meinhardt, Ph.D.

Associate Director of Management and Operations of the Public Health Practice Program Office, serving in that role since July, 1999. Previously, he has served in various capacities at the National Institute for Occupational Safety and Health (NIOSH). Starting in 1976, Dr. Meinhardt first served as an occupational epidemiologist studying cancer and genotoxicity, next he worked in occupational health and safety policy and risk assessment, and then he assumed a series of management roles leading to his preceding position as NIOSH's Associate Director for Extramural Programs and Special Projects. During his tenure at NIOSH he authored a number of peer reviewed articles and policy documents that covered a range of topics in occupational health and safety.

Dr. Meinhardt received his Ph.D. from the University of California at Berkeley in 1983 through NIOSH/CDC sponsored long-term training. His major and minor fields of study included epidemiology, genetic toxicology and occupational health. Prior to that he received an MSPH from the University of Missouri, School of Medicine's Department of Community Health and Family Practice in environmental health and epidemiology.

Anthony D. Moulton, Ph.D.

Associate Director for Policy and Program Analysis, and Director, Public Health Law Program. 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.

Dr. Bud Nicola, Senior Consultant and CDC Assignee to the Turning Point Program and Senior Advisor to the Director of the Public Health Practice Program Office. Dr. Nicola joined CDC in August, 1991, and has recently moved from Atlanta to Seattle to join the Turning Point National Program Office. Earlier Dr. Nicola was the Director of the Seattle-King County Health Department in Seattle, Washington, Director of the Tacoma-Pierce County Health Department in Tacoma, Washington, and Associate Director of the Tri-County District Health Department in Englewood, Colorado.

In his current position Dr. Nicola is working with CDC components and the Robert Wood Johnson Turning Point National Program Office to improve public health systems through: The development of leadership within the public health system; the measurement, standards, and guidelines of public health practice; the use of information technology in public health; the mobilization of communities to action on health issues; and the study of the role of government in a changing health system.

Patrick O'Carroll, M.D., M.P.H., FACPM

Medical Epidemiologist, Public Health Practice Program Office. Dr. O'Carroll is currently assigned to the University of Washington as an Executive Fellow in Public Health Informatics, at the CDC-sponsored Northwest Center for Public Health Preparedness. Prior to this assignment, Dr. O'Carroll served as the Associate Director for Health Informatics at PHPPO, in which capacity he directed the national Health Alert Network program. In a previous assignment to the State of Washington, Dr. O'Carroll served as the Director of the Northwest Center for Public Health Practice, leading a variety of informatics training, systems development, and research projects in that capacity. Dr. O'Carroll has now worked in the field of public health informatics for almost a decade. For example, Dr. O'Carroll co-lead the development of CDC WONDER (an on-line system providing remote, ad hoc query access to CDC's scientific databases), and was lead scientist for the CDC Prevention Guidelines Database project. Prior to his informatics work, Dr. O'Carroll led the epidemiology research unit at NCIPC/CDC that addresses the prevention of suicide and violence. In addition to his CDC responsibilities, Dr. O'Carroll holds Clinical Associate Professor appointments in the Departments of Epidemiology and Health Services at the University of Washington School of Public Health and Community Medicine.

William A. Yasnoff, M.D., Ph.D., FACMI

Associate Director for Science, Public Health Practice Program Office, since late 1997. Dr. Yasnoff previously served as Director of Oregon's INPHO (Information Network for Public Health Officials) project and the statewide immunization registry. He 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, and is the author of over 120 publications and presentations. In 1989, he was elected to Fellowship in the American College of Medical Informatics, joining 200 other nationally recognized leaders in his field. Dr. Yasnoff chairs the Advisory Committee to EPO's Public Health Informatics Fellowship and also represents CDC on the Computer-based Patient Record Workgroup of the National Committee on Vital and Health Statistics, ASTHO's Public Health Information and Infrastructure Policy Committee, and NACCHO's Information Technology Committee.

In 2000, he worked with the Georgia Institute of Technology to develop and initiate the CDC/GA Tech cooperative research seed funding program. He also co-authored the recent "field-defining" paper on public health informatics (Yasnoff WA, O'Carroll PW, Koo D, Linkins RW, Kilbourne EM: Public Health Informatics: Improving and Transforming Public Health in the Information Age. *J Public Health Management and Practice* 6(6):67-75, 2000), and was appointed as one of five Associate Editors of the *Journal of Biomedical Informatics*. In 2001, he is serving as Scientific Program Chair for the Atlanta meeting of the American Medical Informatics Association, with primary sponsorship from the Robert Wood Johnson Foundation. The meeting will develop a national agenda for public health informatics. Along with Dr. Patrick O'Carroll and others, he is writing and editing the first textbook in public health informatics.

PUBLICATIONS, ABSTRACTS, AND PRESENTATIONS





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