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Partnership for Front-Line Success: A Call for a National Action Agenda on Workforce Development

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Despite more than a decade of dialogue on the critical needs and challenges in public health workforce development, progress remains slow in implementing recommended actions. A life-long learning system for public health remains elusive. The Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry in collaboration with other partners in federal, state, local agencies, associations and academia is preparing a national action agenda to address front-line preparedness. Four areas of convergence have emerged regarding: (1) the use of basic and crosscutting public health competencies to develop practice-focused curricula; (2) a framework for certification and credentialing; (3) the need to establish a strong science base for workforce issues; and (4) the acceleration of the use of technology-supported learning in public health.

Key words: *public health infrastructure, public health practice, public health workforce*

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Introduction and Background

In September 1994, the Public Health Functions Steering Committee focused national attention on the challenges confronting the public health workforce in addressing current and emerging health threats facing Americans. The committee identified the need for an integrated system to ensure a stronger public health workforce in the 1997 report, *Public Health Workforce: An Agenda for the 21st Century.*[1] Despite more than a decade of dialogue on the critical needs and challenges in public health workforce development, progress remains slow in implementing recommended actions.[2–5]

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The health of American communities depends upon the competence of the national public health workforce—an estimated 500,000 physicians, nurses, environmental health scientists, laboratorians, health educators, epidemiologists, and managers—working at the frontlines of public health throughout the country. This workforce is unevenly prepared to perform the essential functions deemed most critical to the public's health: preventing epidemics and injuries, protecting against environmental hazards, responding to disasters, promoting healthy behaviors, and ensuring access to quality health services. Many of the nation's front-line public health workers lack formal training in public health. Of primary concern is 1993 data suggesting that 78 percent of the 3,000 public health officials in leadership positions nationwide lack graduate degrees in public health.[6] Fifty-two percent of public health nurses lack baccalaureate level nursing education, which provides some foundation in community health.[7] Only an estimated 23 percent of environmental health training needs are being addressed.[8]

The 1997 workforce report[1] identified five areas for action: (1) national leadership, (2) state and local leadership, (3) workforce composition, (4) curriculum development, and (5) distance learning. For the first time, *Healthy People 2010* identified objectives to bolster the nation's public health infrastructure.[9] Prominently included are the following three objectives that provide direction for national public health workforce development: (1) incorporate specific competencies in the essential public health services into local, state, federal, and tribal agency personnel systems (Objective 23-8); (2) integrate specific content on the essential public health services into school of public health curriculum (Objective 23-9); and (3) provide continuing education on essential services to workers (Objective 23-10). More recently, a 1999 Florida survey again highlighted the need. Despite a decade of statewide public health quality improvement efforts, scores for workforce development capacity ranked lowest due to a lack of available training in basic and crosscutting public health (essential services) competencies.[10]

A major impediment to progress is equating public health workforce development with training rather than understanding it as a system for preparedness. Other obstacles include the following:

- lack of data on the size, composition, and distribution of the workforce
- lack of standards for the architecture of the learning delivery system
- no national framework for certification/credentialing
- no coherent policy framework for financing workforce development
- limited research to evaluate the relationship among individual competency, organizational performance, and health outcomes

Many of these barriers are interrelated. The absence of a consensus on competency standards hampers the assessment of workforce preparedness and the development of nationally recognized comprehensive public health practice curricula to prepare the frontline to effectively eliminate or reduce health threats. Similarly, lack of access to an integrated public health training and continuing education system fails to sustain preparedness and foster life-long learning. In addition, limited data exist regarding effective strategies for sustaining workforce preparedness and translating research findings into interventions at the frontlines.

A Strategic Plan for Public Health Workforce Development

As the nation's prevention research agency, CDC has a long and proud tradition of training the public health workforce, including the Epidemic Intelligence Service, sexually transmitted disease (STD)/human immunodeficiency virus (HIV)/tuberculosis (TB) training centers, National Institute of Occupational Safety and Health (NIOSH) Education and Research Centers, and numerous fellowship/internship programs. In the mid-1990s, CDC and other governmental and private partners in public health recognized the increasing need to establish a stronger foundation that would enable more effective categorical training and foster sustainability at the frontlines. As a first step, CDC with its partners developed several basic and crosscutting public health

We thank the large number of individuals who have participated in the strategic planning process and expert panel workshop on public health workforce development and through whose continued efforts we believe a national action agenda will be achieved.

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training programs/services such as the Public Health Training Network (PHTN), Information Network for Public Health Officials (INPHO), the National Laboratory Training Network (NLTN), and leadership development programs including state, regional, and national public health leadership institutes and the Leadership Management Institute (LMI).

In 1999, through collaboration with partners in local, state, and federal agencies, academia, managed care, professional associations, and community organizations, the CDC convened a 40-member taskforce that outlined a more cohesive, integrated approach for the future in the *CDC/ATSDR Strategic Plan for Public Health Workforce Development.*[11] Incorporating findings from the 1997 report, this plan describes a vision of an integrated life-long learning system for developing the public health workforce. The primary goal is a competent workforce able to deliver the essential public health services. The six strategic elements for such a system are presented in Figure 1. They are as follows:

1. Monitor workforce composition and forecast needs.
2. Identify required competencies and develop related curricula.
3. Design an integrated learning system.
4. Provide incentives to ensure competency.
5. Conduct evaluation and research.
6. Ensure financial support.

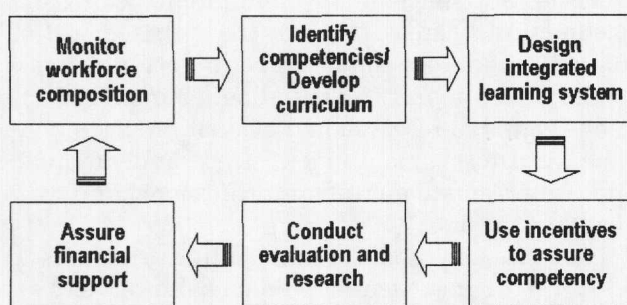

Figure 1. Strategic Elements for Public Health Workforce Development. *Source:* Reprinted from Centers for Disease Control and Prevention, Agency for Toxic Substances and Disease Registry. *Strategic Plan for Public Health Workforce Development: Report from the Task Force on Public Health Workforce Development.* Atlanta, GA: CDC, Public Health Practice Program Office, 1999.

A Systems Approach To Improving Public Health Workforce Development

The six elements in Figure 1 convey several important messages about achieving measurable progress in public health workforce development: (1) although outlined as individual elements, the framework represents interdependent actions; (2) implementation on multiple elements requires broad partnership efforts; and (3) action on each element should proceed simultaneously and converge as critical path milestones. A brief overview of 1999 taskforce recommendations follows.

Monitor current workforce composition and project future needs

A systematic, ongoing monitoring of public health workforce composition using standard data definitions (i.e., standard occupational classifications and uniform practice setting descriptions) is desirable and is the foundation for any national effort.[12,13] A newly completed enumeration has provided a current snapshot.[14] In addition, a systematic, nationally consistent process should be developed to forecast future needs and recommend changes in workforce composition in relation to trends in public health practice.

Identify competencies and develop related curriculum

A public health practice curriculum for all public health workers is recommended as well as basic to advanced skill building in crosscutting competencies. The latter should be made available to specific categories of the workforce, including public health nurses and environmental health scientists, specialists, and technicians. The introductory or orientation-level curriculum (i.e., "Public Health 101") at a minimum would reinforce the essential public health services as the work of public health and explain the basic and crosscutting competencies that underlie all areas of public health practice regardless of setting or role.

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Design an integrated learning system

Learners currently face a fragmented and bewildering array of choices. A nationwide delivery system with a unifying structural design should have learner-centered components including: an online "shopping guide" or registration system; high-quality, competency-based programs; and capacity to provide feedback on and documentation of individual competency.

Provide incentives to ensure competency

To encourage participation in life-long learning, a synergistic set of incentives and a variety of competency certificates should be developed. To be successful, these incentive and certification mechanisms must function at the national, state, and local level; in public, nonprofit, and private organizations; and must complement established personnel systems. Ability to link incentives to financial compensation or career development also should be considered as well as the intended and unintended consequences of such strategies. Competency certification for public health practice can be specified and tied to eligibility requirements for certain jobs. Organizational accountability for demonstrating a comprehensive approach to public health workforce development can be made explicit by developing and disseminating performance standards for local and state public health systems.

Conduct evaluation and research

There should be a strong commitment to research on workforce development as well as evaluation of the life-long learning system itself. Evaluation of individual learner performance, program/curricula, and system/structural/operational components is needed. Without well-designed research and evaluation methods, the national dialogue on public health workforce needs and challenges will remain unfocused and void of the strong science base that enables evidence-based decisions. The capacity of the public health system to respond to current and emerging health threats rests on an infrastructure foundation–organizational capacity, information and communications systems, and workforce competency. A research agenda to articulate the link between public health systems infrastructure and health outcomes is long overdue.

Ensure financial support

Without stable funding—which ensures the availability of the financial resources needed to develop, coordinate, support, and evaluate learning programs—the vision for a unified system will not be realized. Both CDC and HRSA recognize this element as a critical success factor for any long-term implementation strategy. Initial taskforce recommendations included pooling existing funds, increasing funding levels, and supporting innovative approaches to leveraging funds to support workforce development efforts. The CDC director established the Office of Workforce Development in February 2000 in the Public Health Practice Program Office (PHPPO) to lead implementation of a national plan for workforce development in collaboration with partners.

Creating a National Agenda for Action

CDC/ATSDR convened an Expert Panel Workshop on Public Health Workforce Development from October 31 through November 2, 2000, at Callaway Gardens, Pine Mountain, Georgia. The purpose of the workshop was to facilitate the development of a national action agenda for strengthening the public health workforce, which builds on both the strategic plan's recommendations and other partner efforts. Workshop panels were charged to provide guidance on issues of science, policy, and public health practice in four key areas: (1) competency-based curriculum; (2) technology-mediated learning and delivery; (3) certification and credentialing for public health; and (4) applied research and evaluation. Each panel was asked to evaluate urgent needs and promising approaches and to identify priorities for action in the next 3 to 5 years.

The following premises and guiding principles applied: (1) use the essential public health services as a framework for identifying workforce competency requirements; (2) assume a multidisciplinary, multisector, diverse, and geographically dispersed workforce; (3) build a comprehensive public health practice curriculum model based on three levels of competency and development (basic, crosscutting, and technical skills); (4) build upon existing CDC and partner resources; (5) focus on the needs of frontline public health practitioners; and (6) strengthen

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competency and certification and credentialing systems.

One panel was asked to develop a public health practice-focused curriculum model, which defines the basic and crosscutting competencies that form the foundation for effectively delivering technical and categorical programs, regardless of practice setting. The technology-supported learning panel focused on system design requirements for accommodating diverse target audiences; integrating multiple delivery modalities; and providing high-quality, competency-based interactive learning for front-line practitioners. Another panel discussed certification and credentialing models from related disciplines,[15] reviewed current efforts,[16] and identified strategies for developing a framework for a national certification and credentialing system for public health. This framework should incorporate current workforce needs and composition, required competencies, and existing certification and credentialing systems. The applied research and evaluation panel identified strategies for developing a national research program focused on public health workforce development that examines factors influencing workforce composition, facilitates the development of an integrated evaluation framework, provides the science base to explore linkages between workforce competency and organizational capacity; and evaluates the relationship between workforce competency and improved health outcomes. The panelists and other participants represented a broad array of individual experts, professional organizations, and agencies highly committed to maintaining momentum for a national action agenda.

Anticipated Outcomes

An implementation plan synthesizing the recommendations from the expert panel workshop and the strategic plan was developed for CDC/ATSDR and partner review in early 2001. Four areas of convergence on needed action have emerged to date.

Basic and crosscutting public health competencies

Despite a variety of well-designed efforts in competency development, consensus on a uniform set of core competencies for front-line public health practitioners remained elusive until recently. The expert panel recommended designating the competencies under development through the Council on Linkages between Academia and Public Health Practice as a starting point.[17] The CDC/ATSDR-funded Centers for Public Health Preparedness (described in the next section) will design a public health practice-focused curriculum model based on these competencies. This model will define the individual competencies that underlie organizational capacity to deliver essential public health services. Moreover, the proposed curriculum model will allow for development of courses and other learning opportunities customized for target audience and delivery modality. Both the competencies and model curriculum should be available by December 2001.

Certification and credentialing in public health

Panelists came from many facets of public health background, including academic institutions and practitioners in the field. During the workshop, important progress was made toward a national framework for certification and credentialing in public health. Panelists envisioned a framework with agreement on three levels of certification: (1) basic, (2) discipline specific, and (3) integrator/leader. The basic or orientation level would be available for every public health practitioner based on completion of the core curriculum. Discipline-specific certification would result from strengthening public health competencies within existing certification systems, such as medical specialty boards and discipline-specific licensing bodies. The integrator level would address the unique competencies required of public health system leaders. A preliminary review of existing resources indicated that only the integrator-level certification might require a new certification and credentialing entity. Significant progress in discussing the first two levels is anticipated within 6 months. The panelists affirmed that a broader look at incentives remains an important challenge and that a framework for certification and credentialing will be successful only if unintended consequences are addressed.

Public health workforce research

While it is logical to assume that a competent workforce able to perform essential services contributes to organizational capacity to achieve health outcomes, evidence of the effects of workforce quantity (staffing levels and mix) and quality (professional

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education/credentialing) on performance of core functions is limited. Further, evidence from other areas of workforce research suggests that the effect of the workforce will be modified substantially by characteristics of the agencies in which individuals work; however, the science base to predict the nature and extent of such effects is substantially lacking. Finally, the research base needs strengthening to link improved performance and organizational productivity to improved health outcomes. Panelists agreed that a research program focused on public health workforce development should be considered an integral part of a national public health systems research agenda. Research is integral to the sustainability of a life-long learning system as it provides the evidence base for decisions. Development of an integrated evaluation framework was considered the highest priority. Refinement of a national workforce research agenda, including specific definition of research priorities, is anticipated within the next 6 months.

Technology-supported learning in public health

Achieving a competent public health frontline depends in large part on the degree to which a *learner-oriented* delivery system is adopted. The panelists supported action in two key areas: (1) developing the systems' building blocks and (2) facilitating implementation. Pivotal building blocks include a cadre of educators/developers crosstrained in public health education and learning technologies; an infrastructure that maximizes access to learning at the frontline; and adoption of national, uniform standards and guidelines governing distance learning in public health. For facilitating implementation of a life-long learning system, technology-supported learning must be marketed as a cost-effective strategy to achieve workforce competence. A governance structure for the system must permit a broad array of partnerships. A sound framework for evaluation and system performance monitoring must be established at the outset. Significant progress toward laying the foundation for the proposed system is anticipated within 12 months, with completion of some core components targeted for mid-2001.

Continued dialogue on overarching and interdependent issues will explore certification and core curriculum; research and credentialing; and discipline-specific opportunities for strengthening public health competencies within existing credentialing systems. In fall 2001, the panel will reconvene to review progress and revise the implementation plan as needed.

Maintaining Momentum

Recently, CDC/ATSDR initiated a national system of Centers for Public Health Preparedness in the four key areas: (1) curriculum, (2) technology-mediated learning, (3) credentialing, and (4) research issues. The national system is composed of academic, specialty, and local exemplar sites and is designed to work in partnership with the public health training centers supported by HRSA. Academic centers, or comprehensive sites, are the cornerstone of the system and link schools of public health, state and local health agencies, and other academic and community health partners to foster individual preparedness at the frontline. Specialty centers focus on a topic, such as professional discipline, core public health competency, practice setting or application of learning technology. Local exemplar centers, or advanced practice sites, are hubs for developing and disseminating best practices at the local level. CDC/ATSDR's long-term goal is to work with its public health partners in using this national system to facilitate translating public health science into practice at the frontline. The centers are designed to support CDC/ATSDR's prevention programs in general, and bioterrorism/emerging infectious diseases in particular.

Multiple complementary workforce development efforts are underway in a broad array of partner organizations in addition to the CDC- and HRSA-funded centers. Keeping track of progress and aligning activities toward mutual goals will remain a challenge. It is hoped that the efforts described here will provide the basis for a three-phase global and national action agenda for public health workforce development.

- PHASE I outlines CDC/ATSDR-specific responsibilities and builds on existing infrastructure including the Public Health Training Network (PHTN) and the recently funded Centers for Public Health Preparedness and HRSA Public Health Training Centers.

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- PHASE II will focus on working with *key* partners to build workforce development capacity at state and local levels.
- PHASE III will expand further the partnerships needed and foster greater integration of activities for national and global implementation.

A quote attributed to an editorial in the 1893 *Journal of the American Medical Association* is often used to echo current concerns.

> There has probably been no time in the history of this country, when trained, competent, and efficient health officers were needed so much as they are now. It is unfortunate that in the absence of epidemics and pestilence, too little attention is paid to...those whose duties require them to guard the public health.[18(p.189)]

Although West Nile Virus, *Escherichia coli* outbreaks, antibiotic resistance, and bioterrorism threats stimulate immediate concern and calls for action, it will be the steady commitment of multiple partners that achieves a sustainable life-long learning system for public health.

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