On Linkages

CONFRONTING THE PUBLIC HEALTH WORKFORCE CRISIS: ASPH STATEMENT ON THE PUBLIC HEALTH WORKFORCE

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Dramatic public health advances in the 20th century have improved quality of life—an increase in life expectancy, worldwide reduction in infant and child mortality, and the elimination or reduction of numerous life-threatening communicable diseases. These achievements could not have occurred without the research, practice, and service of professionals who comprise the public health workforce. This multidisciplinary workforce includes public health clinicians, occupational and environmental health specialists, epidemiologists, biostatisticians, health program administrators and educators, health economists, planners, and policy analysts. Employed by governmental public health agencies, community-based service organizations, academic and research institutions, private organizations, hospitals, health plans, and medical groups, these professionals function broadly, with activities including health surveillance, protection, promotion, planning, regulation, and health services organization, delivery, and evaluation.[1]

The world increasingly relies upon the public health workforce to confront emerging communicable diseases (e.g., Ebola and avian influenza), prevent environmental hazards (e.g., protect food security and combat climate change) and chronic disease (e.g., obesity and its myriad health consequences), and assist communities in preparing for disasters such as earthquakes and biological and chemical terrorist attacks. The growing complexity of public health science necessitates that more specialists be trained in additional public health subdisciplines. In the era of globalization, the U.S. public health workforce needs to be adequately prepared to handle health threats that often arise from outside our national boundaries.

The existence of a significant public health workforce shortage in the U.S. is generally acknowledged but difficult to quantify, given numerous challenges including inconsistent enumeration of the existing workforce and no systematic effort to date to assess national needs[2–4] (Table 1).

FORECAST

As a result, today's public health workforce, faced with daunting public health challenges, has been forced to do more with fewer people. For example, in the U.S. in the year 2000, there were about 50,000 fewer public health employees than in 1980.[5,6] While the 1980 workforce ratio (220 per 100,000) may in fact be an underestimate of the ideal number of public health workers, it provides a benchmark for estimating current and future needs.[2] And although technological advances may to some extent mitigate the impact of the decrease in the size of the public health workforce, this trend cannot continue without drastically compromising the public's health.

To have the same public health workforce-to-population ratio in 2000 as existed in 1980, there would have had to have been more than 600,000 public health workers, or an additional 150,000 on top of the 450,000 that existed at the time. In 2020, to have the same ratio (220:100,000), the public health workforce would need to number 700,000+, or 250,000+ workers more than the most recent count.

More than 50% of states cite the lack of trained personnel as a major barrier to our nation's preparedness.[7] Additionally, a recent Institute of Medicine (IOM) report states that there is a shortage of 10,000 public health physicians—double the amount estimated to be

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Table 1. Ratio of public health workforce to U.S. population

Year	*U.S. population*	*Ratio of public health workforce to U.S. population*	*Number of people in the public health workforce*
1980	226,542,199[a]	220 per 100,000	500,000[b]
2000	281,421,906[a]	158 per 100,000	448,254[c]
Projected need			
2020	335,805,000[a]	220 per 100,000	738,771

[a]U.S. Census Bureau [cited 2008 Jan 31]. Available from: URL: www.census.gov

[b]Health Resources and Services Administration, Department of Health and Human Services (US). Public health personnel in the United States 1980: second report to Congress. Washington: U.S. Public Health Service; 1982.

[c]Center for Health Policy, Columbia University School of Nursing. The public health work force enumeration 2000. Washington: Health Resources and Services Administration (US); 2000.

practicing currently.[8] Other reports have documented and forecast shortages among public health nurses, epidemiologists, health-care educators, and administrators. Moreover, there are demonstrated disparities in the public health workforce related to racial and ethnic parity, as well as geographic maldistribution. As stated by the Sullivan Commission on Diversity in the Healthcare Workforce: "Today's physicians, nurses, and dentists have too little resemblance to the diverse populations they serve, leaving many Americans feeling excluded by a system that seems distant and uncaring. The fact that the nation's health professions have not kept pace with changing demographics may be an even greater cause of disparities in health access and outcomes than the persistent lack of health insurance for tens of millions of Americans."[9]

Public health workforce shortages are even more critical in much of the developing world. For example, despite representing 11% of the world's population and 24% of the global burden of disease, sub-Saharan Africa has only 3% of the world's health workers and commands less than 1% of the world's health expenditures.[10] The 2006 World Health Report states that there is a "major mismatch" between population needs and the available public health workforce in terms of overall numbers, relevant training, practical competencies, and sufficient diversity to serve all individuals and communities. Multifaceted efforts are needed to increase the capacity of the global public health workforce, given the increasingly easy cross-country transmission of disease.[11]

Retirement projections of public health professionals are not available for most private-sector positions. However, for the public sector, the estimated retirement potential is sobering (Table 2). If we assume that the public health workforce numbered 450,000 in the years when each of the retirement waves is projected (2003, 2010, 2012), then by 2012 a total of more than 100,000 public health workers (or 23% of the current workforce) will retire, leaving a large void of expertise to be filled. Of note, this projected retirement wave will place an added burden on the looming workforce shortage of 250,000 estimated for 2020.

Table 2. Percent of public health workers eligible to retire by 2012 (*n*=450,000)

Level	*Percent eligible to retire*	*Percent of total workforce*[a]	*Number eligible to retire*
Federal	44[b]	19	37,620
State	29[c,d]	33	43,065
Local	19[e]	34	29,070
Total eligible to retire			109,755

[a]Center for Health Policy, Columbia University School of Nursing. The public health work force enumeration 2000. Washington: Health Resources and Services Administration (US); 2000.

[b]Partnership for Public Service. Homeland insecurity: building the expertise to defend America from bioterrorism. Washington. 2003.

[c]Association of State and Territorial Health Officials. State public health employee worker shortage report: a civil service recruitment and retention crisis. Washington: ASTHO; 2004.

[d]Association of State and Territorial Health Officials. ASTHO 2007 state public health survey. Washington. 2007.

[e]National Association of County and City Health Officials. 2005 national profile of local health departments. Washington. 2006.

THE RESPONSE

Provide funding for public health education

Federal financial support for public health professional education has been steadily eroding since 1980.[12] Two recent IOM committees found that federal support for graduate public health education is woefully inadequate. The dearth of support could be addressed by increasing federal funding for students in public health degree programs through mechanisms such as training grants, loan repayment and forgiveness programs, and service obligation grants. Improved practice experiences for public health students should be supported by increased numbers and types of agencies and organizations that would serve as sites for practice rotations.[3]

Increase public health educational capacity

As stated in IOM's report, *The Future of the Public's Health in the 21st Century*, "The public health workforce must have appropriate education and training to perform its role."[12] There are currently 40 accredited schools of public health (SPHs) that are the primary providers of public health education in the U.S., training more than 85% of public health graduates from accredited schools and programs. To reach the goal of having more than 250,000 additional trained public health workers by 2020, SPHs will have to increase the number of graduates threefold over the next 12 years.

Expanding the capacity of the 40 accredited SPHs is necessary to achieve this goal. Today, many schools do not have the resources or capacity to manage larger class sizes and are forced to turn away qualified applicants. Many states across the U.S. have reduced their support to SPHs, forcing them to struggle to support their valuable programs. Added resources, combined with student recruitment efforts, have the potential to dramatically increase the numbers of highly trained public health workers.

In addition, a number of new SPHs are in formation or under consideration. These schools also will provide additional capacity to address the public health workforce shortage, although usually these new ventures are more expensive on a per-student basis than adding capacity as a marginal cost to an existing school infrastructure.

Additionally, while graduate education is the traditional and gold-standard approach to training public health professionals, schools' capacity to offer short courses and certificate programs should be expanded to meet existing professionals' needs. However, training budgets are very limited for most health departments and federal funding is waning in this area.

Further, additional efforts are needed to deliver public health education to cross-disciplinary professions. Increasing undergraduate public health education is one way of availing basic training to all health professions' students, as well as those in policy-related fields of study. Joint degrees are also offered in disciplines including medicine, veterinary medicine, dentistry, law, nursing, business, public administration, public policy, and social work, among others. An example of why this cross-training is so critical comes from the veterinary medicine field, where an estimated 75% of emerging diseases are zoonotic.[13] The workforce needs individuals who recognize future threats, and resources are needed to support programs to train this workforce.

Increase the diversity of the public health workforce

Large disparities in health indicators exist among racial/ethnic groups, and studies show that increasing the number of health professionals from the groups with these poor health indicators will help to eliminate the disparities. To address this issue, the National Institutes of Health (NIH) Center for Minority Health and Health Disparities and other funding agencies should offer postdoctoral training opportunities for underrepresented minorities (as well as non-minorities) who are involved in health disparities research. Further, NIH should establish a loan forgiveness program specific to public health graduate students whose work focuses on the elimination of racial and ethnic health disparities.

Create a U.S. Global Health Service

As previously mentioned, the international public health workforce is facing crippling shortages. Establishing a U.S. Global Health Service would help to coordinate and centralize U.S. efforts to assist our global neighbors. The U.S. Global Health Service would serve as the umbrella organization for a Global Health Service Corps, a health workforce needs assessment, a fellowship program, a loan repayment program, a twinning program, and a clearinghouse.[14] These components would contribute to growing the international public health workforce in the U.S., but also from within the countries themselves.

Provide funding for efforts to track the public health workforce

The most recent enumeration of the public health workforce was conducted by the Health Resources and Services Administration in 2000, and the previous enumeration was completed in 1980.[5,6] Public health needs a legislative mandate for data collection and

workforce studies, or a federal agency regularly collecting enumeration data. This institutionalized, periodic enumeration (or census) would provide better data on the size of the public health workforce, which would be used to improve descriptions of current demographics of the public health workforce, identify shortages and surpluses, track trends over time, and forecast future needs. Further, improved public health enumeration data could guide students' decisions regarding which aspects of public health to pursue, better ensuring the future of the public health workforce.

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