The Public Health Workforce:

Moving Forward in the 21st Century

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In 1994, the Core Public Health Functions Steering Committee, which was convened by the Assistant Secretary for Health and included representatives from U.S. Public Health Service agencies and other major public health organizations, was organized to clarify the public health functions of assessment, policy development, and assurance identified by the IOM Committee on Public Health. Among its other activities, the Steering Committee was charged with developing the framework for the Essential Public Health Services to categorize all public health activities.[1] It also commissioned a subcommittee on public health workforce, training, and education to provide a profile of the public health workforce and make projections regarding the workforce of the 21st century.

Twenty years later, the Essential Public Health Services continue to serve as a framework for public health initiatives across public health organizations; additionally, substantial advances have been made in establishing strong national, state, and local leadership with emphasis in collaborative partnerships among practice and academic entities to deliver the Essential Public Health Services across the nation. Efforts to better understand the workforce composition also followed these seminal efforts. Gebbie et al.[2] estimated the size and composition of the public health workforce in 2000, and others[3–5] followed more recently with comprehensive assessments of the epidemiologist, public health nurse, and other public health workforce capacity. Despite continuing challenges with defining position classifications and the organizational level and location of departments of health, workforce information is now routinely collected by the National Association of County and City Health Officials and the Association of State and Territorial Health Officials in their regular profile surveys of local and state public health agencies, respectively. The Council of State and Territorial Epidemiologists and Association of Public Health Laboratories also have contributed similar efforts for their respective constituents. Improvements have also occurred in training and educating the public health workforce. Within the last 10 years, schools of public health and health professions schools have made substantial changes in their curricula, including improved practice-based education and stronger applied research agendas. Both schools of public health and liberal arts colleges have introduced public health education at the undergraduate level, where it has become one of the fastest-growing

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majors. Enhancements in the continuing education curricula to support training of public health workers, including use of integrated distance learning systems built on existing public networks, make information on best public health practices readily available.[6,7] Additionally, as information systems and technologies improve, the introduction of the evolving field of public health informatics is fundamentally transforming certain aspects of public health practice, research, and learning.[8]

Despite these overwhelming advances, and as the definition of the public health system has been broadened, [9] key questions remain unanswered. What disciplines are included in the public health workforce? Do we have sufficient numbers of capable public health personnel to deliver Essential Public Health Services to the population? How does the role of public health change as the healthcare system changes? What workforce disciplines are needed to address future and emerging public health challenges, including use of technology in public health practice?

As the U.S. healthcare system evolves and communities gain more access to care, diverse forces are driving change, and the practice of public health is adapting.[10] Given the challenges to the public health system and those faced as a nation—including urgent health threats (e.g., antibiotic resistance, prescription drug use and overdose, global health security) and decreased funding for addressing public health concerns[11]—having trust in public health practitioners, their scientific knowledge, and particularly the public health system, has never been more important.[12]

The public health workforce is now not only required to take a lead in protecting citizens' health but it also must provide the evidence base needed for linking public health information with clinical services and activities; offer targeted, scalable public health interventions; and support clinical services in a way that affects populations at large. This supplement issue of the *American Journal of Preventive Medicine* is both timely and important because it reviews some of the critical challenges faced by the public health workforce, discusses selected changes under way, and highlights data-driven research to advance the field of public health services and systems research.

In this issue, Drehobl and colleagues[13] describe the approaches to characterizing the multifactorial public health workforce challenges and identify succinctly, in a roadmap, the goals and strategies to address these challenges through collective solutions, partnership, and prioritization. The supplement also offers examples of specific methodologies and approaches being used to enhance public health practice training and competency (Catalanotti, Dick, Zahner, Duffus),[14–17] as well as strategic approaches to capacity building and leadership development (Dean, Xierali, Kattan).[18–20] Regular assessment of the size and composition of the U.S. public health workforce has been a challenge for decades. Newman and Bender[21,22] discuss implications regarding the shrinking workforce and other problems facing the public health workforce, and Keeling and Leider[23,24] offer additional insights into understanding the health workforce composition at the local level.

Additionally in this issue, Beck et al.,[25] using multiple data sources analyzed in 2014, offer an updated estimate of the size of the governmental public health workforce, constituting the

first step toward creating a comprehensive, accessible, and current data source on this workforce. Boulton and colleagues[26] provide a public health taxonomy to support the standardization of occupational classifications and the identification of the size and distribution of the public health workforce across public health agencies. This taxonomy is a much-needed contribution to the field of enumeration and study of the public health workforce and will help ensure that any changes in expectations for practice can be assessed over time.

Commentaries from experts in the field provide additional insight and direction, with implications for public health workforce development and research. Sepulveda[27] elaborates on major contextual changes, including technology and urban growth and their impact on public health. Hunter and colleagues[28] describe their experience with open online courses as a means to address the need for scale-up of education of public health professionals worldwide.

Similarly, Samet and Brownson[29] identify macro trends and the need for epidemiologic training to evolve and adapt, and Hassmiller[30] comments on the role and criticality of the public health nursing workforce. Plough[31] addresses a strategic direction and national measurement framework being developed to catalyze a national movement to build a culture of health. Finally, Tilson[32] highlights the need to shift the paradigm of workforce data collection from occasional and ad hoc surveys to the time-honored public health approach of ongoing surveillance, and Honore[33] provides a sense of urgency to straighten the structures for educating and training the public health workforce if we are to achieve population health improvement goals.

The guest editors of this issue have been pleased at the level of interest evidenced by the number of manuscripts submitted for consideration and the quality of the material we have been able to include. It bodes well for the continuing development of the public health workforce, the intrinsic and essential collaboration among partners in the field and other stakeholders, and the ability to change and adapt the practice of public health so that its workforce continues to contribute and improve the health of the nation's population.

Despite constraints of the fiscal situation faced by all levels of the public health enterprise,[10] we are buoyed by the increased efforts to meet workforce challenges and the valuable contribution of researchers and practitioners to strengthen the public health workforce. Efforts to strengthen the public health workforce should be a continuing priority involving well-planned, evidence-based, and coordinated actions from decision makers undaunted by the mission of transforming public health and improving the population's health while facing the complex landscape of the 21st century.

Acknowledgments

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