

Reconciling Supply and Demand for State and Local Public Health Staff in an Era of Retiring Baby Boomers



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Introduction: The purpose of this study is to reconcile public health workforce supply and demand data to understand whether the expected influx of public health graduates can meet turnover events.

Methods: Four large public health workforce data sources were analyzed to establish measures of workforce demand, voluntary separations, and workforce employees likely to retire at state and local health departments. Data were collected in 2014–2016 and analyzed in 2016 and 2017. Potential workforce supply (i.e., candidates with formal public health training) was assessed by analyzing data on public health graduates. Supply and demand data were reconciled to identify potential gaps in the public health workforce.

Results: At the state and local level, $\cong 197,000$ staff are employed in health departments. This is down more than 50,000 from 2008. In total, $\geq 65,000$ staff will leave their organizations during fiscal years 2016–2020, with $\leq 100,000$ staff leaving if all planned retirements occur by 2020. During 2000–2015, more than 223,000 people received a formal public health degree at some level. More than 25,000 students will receive a public health degree at some level in each year through 2020.

Conclusions: Demands for public health staff could possibly be met by the influx of graduates from schools and programs of public health. However, substantial implications exist for transferal of institutional knowledge and ability to recruit and retain the best staff to sufficiently meet demand. *Am J Prev Med* 2018;54(3):334–340. © 2018 American Journal of Preventive Medicine. Published by Elsevier Inc. All rights reserved.

INTRODUCTION

Concerns about worker supply have been at the forefront of public health workforce planning discussions for decades.^{1–3} Public health has been bracing for the possibility of mass retirements as the workforce ages,⁴ and the economic recession has had a substantial influence on funding for public health, resulting in the loss of approximately 50,000 state and local public health jobs attributable to layoffs and attrition since 2008.^{5–7} Although studies report that some job loss associated with budget reductions has stabilized in recent years,⁸ the governmental public health workforce is still operating at reduced capacity at a time when turnover, recruitment, and retention are challenging across occupations^{9–11} and service demands are changing with healthcare reform and the growth of Federally Qualified Health Centers and other safety net providers.^{12–14}

Periodic point estimates of public health workforce size and composition have been drawn from multiple sources that represent different study methodologies and varying data quality.¹⁵ The most recent estimates enumerating the federal, state, and local public health workforce report a steady drop in overall size from approximately 500,000 (220/100,000 population) in 1980,¹⁶ to approximately 448,000 (158/100,000 population) in 2000,^{17,18} and to 291,000 (93/100,000

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population) in 2014.¹⁸ Further, the public health system lacks a framework for systematically evaluating the workforce capacity required to ensure effective delivery of essential public health services, making supply needs and demand difficult to project.

Workforce projections rely on the reconciliation of the potential inflows and outflows of workers into a system. For the public sector more broadly, and public health more specifically, this means reconciling the potential supply of new public health workers with the demand generated by those leaving governmental public health. However, limited information is available about voluntary turnover, and even less about eligible, planned, or actual retirements.^{8,10,19} This study reconciles public health workforce supply and demand data from state and local health departments to understand more fully whether the expected influx of public health graduates could plausibly meet needs generated by retirement and other worker turnover events in these settings.

METHODS

Demand for state and local governmental public health staff was assessed by reconciling data from four sources: Association of State and Territorial Health Officials (ASTHO) and National Association of County and City Health Officials (NACCHO) 2016 profile surveys; 2014 Public Health Workforce Interests and Needs Survey (PH WINS); and the 2016 Workforce Gaps Survey (WGS; [Appendix Figure 1](#), available online). ASTHO and NACCHO profiles are mainstays in public health workforce research.^{20,21} PH WINS represents the first large-scale, nationally representative survey of the public health workforce with >23,000 respondents.^{4,22} The WGS included four primary domains: workforce characteristics, retirement, leadership perceptions around workforce gaps, and succession planning. This study draws from the first two WGS domains. Data source methodology has been described elsewhere.^{11,12,23}

ASTHO and NACCHO profiles provided workforce size data. Measures of demand (i.e., positions vacated through retirement and voluntary separation from the public health workforce) were reconciled across the four data sources. Because attrition, where vacancies are left purposefully unoccupied, is a well-known and common means of dealing with budget shortfalls, measures of demand might be reasonably viewed as maximum estimates. The ASTHO profile collects data on retirement eligibility, the NACCHO profile on retirements, PH WINS on intent to leave or retire, and WGS on retirement eligibility, actual retirements, and voluntary separations. The data sources aligned to measure all components for fiscal year (FY) 2015, and certain components for FY2013–2016; local health department (LHD) staff size and full-time employees data were aligned to identify correlation with the size of the population served. Demand was first examined by way of total turnover and was then adjusted to account for the relatively limited number of current state health agency (SHA) positions nationwide that are held by those with public health degrees. Retirement eligibility, planned retirements, and actual retirement data were used to estimate the proportion of the workforce likely to

retire by 2020. Intent to leave and actual nonretirement voluntary separations data were used to estimate the proportion of the workforce likely to leave governmental public health. PH WINS data were used to conduct demographic comparisons among staff, new hires, and those with positions designated within the public health sciences (PHS) planning to leave and retire. PHS positions were used as coded by PH WINS, as opposed to clinical or administrative positions.⁴

Potential workforce supply was defined as the supply of candidates with formal public health training in the U.S., using data from the U.S. National Center for Education Statistics (NCES), which collects graduation, financial, staffing, and enrollment data from >7,400 U.S. colleges and universities, 2,100 of which have awarded graduate degrees or certificates.²⁴ The following NCES Classification of Instructional Program categories were used: public health–related (51.22), epidemiology (26.1309), biostatistics (26.1102), and health policy analysis (44.0503).²⁵ Because the field considers formal public health training as the standard entry degree for new public health staff,^{26–30} this study considers all public health graduate students and those with public health undergraduate degrees as potential workforce supply for health departments, even if preparing for work in other health sectors.^{31,32}

Demand and supply data were reconciled to identify potential gaps in the public health workforce; to create conservative estimates, the authors anticipated a relatively stagnant-sized workforce for the near future given recent cuts^{11,21,33} and considered supply scenarios where graduates per year were constant at 2015 levels, and one scenario where growth in the number of degrees awarded per year grew linearly (baseline 2013–2015). Datasets were integrated and managed in Stata, version 13. The Centers for Disease Control and Prevention IRB determined that this study was not human subjects research.

RESULTS

The 2016 NACCHO profile indicates that the LHD workforce is estimated at 147,000 full-time and part-time staff (95% CI=135,000, 159,000), down from 162,000 in 2013 and 190,000 in 2008. Approximately 103,000 of these staff are employed by local governments, 18,000 by state governments, and 26,000 in shared state–local arrangements. At the state level, the ASTHO profile estimates that SHAs employ \cong 104,000 staff across the country: 50,000 work in the central office and 54,000 work within local or regional offices, which likely include those reported by NACCHO, employed by state government and in shared state–local arrangements.²¹

The alignment of NACCHO and ASTHO enumeration data yielded \cong 197,000 staff across state health departments and LHDs in 2016. Significant interstate variation was observed ([Figure 1](#)), with \cong 6% of the LHDs employing 42% of all LHD staff nationwide. When examining full-time employees, \cong 80% of LHDs employ \leq 50 staff, 17% employ 51–250 staff, and 3% employ >250 staff. LHD total staff size and number of full-time

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