Health Workforce Abstract

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Public Health Workforce and Community Health Outcomes

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ISSUE: The need for a robust public health system has become increasingly clear due to the COVID-19 pandemic. Public health provides essential services - monitoring population health, investigating and addressing health hazards, providing education, partnering with communities, championing and implementing policies – that protect communities and improve health. Research on the public health workforce has been limited in frequency and scope. A few studies have examined characteristics of the workforce and suggest top executive degree types (specifically a registered nurse degree), years of work experience, education levels, and types and relative staffing of the public health workforce are associated with public health agency performance and health outcomes. Initial work at the state level and in one state at the county level suggests public health workforce staffing is associated with community-level mortality outcomes. This study examines the change in local health department (LHD) staffing between 2013 and 2019 across U.S. counties, as well as the association between public health workforce staffing and community-level health outcomes.

METHODS: We used NACCHO National Profile of Local Health Departments survey data from 2013 and 2019 and County Health Rankings data for county-level health outcomes. We consolidated our data to the county level and examined three groupings of LHD staffing: 1) all FTE per population, 2) core public health FTE population (Group 1), and 3) core plus business/admin FTE (Group 2) per population. We examined change in county FTE per population from 2013 to 2019 and used multivariate regression models to examine the association between LHD staffing and health outcomes in 2019 for multiple health outcomes: infant mortality, low birth rate, adult smoking rate, and teen birth rates. Control for county population, age over 65, race/ethnicity, sex, median income, and rural/urban location. We also included a state fixed effect to account for the influence of state factors on health outcomes.

FINDINGS: Among 1,614 counties with complete reporting in 2013 and 2019, 690 (42.75%) saw a decrease in the density of the public health workforce per population between 2013 and 2019, while 924 (57.25%) saw an increase. On average, counties experienced a decrease of 6.54 total LHD FTEs per 100,000 population. Group 1 decreased by 6.47 FTEs per 100,000, and Group 2 increased by 1.48 FTEs per 100,000. In 2019, an increase of 1 total FTE per 100,000 population of a county was associated with a 0.00140 increase in the county's average life expectancy (p<0.1). In addition, every additional core FTE is associated with an improvement of 0.00314 years of life expectancy in the county (p<0.05). Every additional core plus business/admin FTE is associated with an improvement of 0.00200 years (p<0.1).

DISCUSSION: Changes in the workforce between 2013 and 2019 show a decline in the public health workforce, with an average of 6.54 fewer total FTEs in LHDs across counties. In 2019, we found that counties with greater FTEs had, on average better health outcomes, with one additional core public health FTE associated with an increase in life expectancy of a county on average by 0.00314 years.

Key Words: public health workforce, community health, outcomes