State Health Officials: Backgrounds and Qualifications

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ABSTRACT

Context: State health officials (SHOs), the executive and administrative leaders of state public health, play a key role in policy development, must be versed in the relevant/current evidence, and provide expertise about health issues to the legislature and the governor.

Objective: To provide an empirical examination of SHO backgrounds and qualifications over time.

Design, Setting, and Participants: Cross-sectional survey of current/former SHOs.

Main Outcome Measures: State health official educational backgrounds; public health experience; previous employment setting.

Results: Two-thirds of respondents (64.6%) reported having a medical degree, approximately half (48.3%) a formal public health degree, and almost one-quarter (21.8%) a management degree. The majority had governmental public health experience at some prior point in their career (70.0%). Almost two-thirds worked in governmental public health immediately before becoming an SHO. The proportion that was female increased significantly by decade from 5.6% in the 1970s/80s to 46.4% in the 2010s ($P = .02$).

Conclusions: The main finding from this study shows that more than two-thirds of SHOs have had governmental public health experience at some point in their career. This is not a new trend as there were no statistical differences in public health experience by decade. More than half of the SHOs were appointed to the role directly from governmental public health, indicating that their public health experience is timely and likely germane to their appointment as SHO. Findings also indicate improvements in gender diversity among one of the most influential leadership roles in governmental public health whereas significant changes in racial and ethnic diversity were not identified. Women are increasingly being appointed as SHOs, indicating increasing gender diversity in this influential position. Given that governmental public health employees are predominantly women, there is still room for gender equity improvements in executive leadership roles. This is coupled with the need for further racial and ethnic diversity improvements as well.

KEY WORDS: gender diversity, leadership, public health, public health workforce, state health official

State health officials (SHOs) are the executive and administrative leaders of state public health agencies. They are often selected and appointed by newly elected governors and are tasked with focusing their efforts on protecting and improving population health.[1] Given that governmental public health responsibilities have expanded,[2] the SHO role has become increasingly complex. The SHOs play a key role in policy development and must be versed in the relevant science and current evidence for policy initiatives and are an important resource about health issues to the legislature and the governor.[3,4] As such, SHOs are often required to be experts in navigating the political landscape.[5] The SHOs also serve as the face of the agency when public health issues are in the news or when public health emergencies and disasters occur.[6] In these and many other ways, being a SHO is a unique and crucial leadership position.

Studies from industry and government have noted the importance of previous professional experience[7] and leadership style[8] when selecting organizational leaders including chief executive officers (CEOs) or their equivalent, especially during a crisis. In

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fact, studies of technology companies[9] and federal agencies[10] have concluded that an organization's current strategic needs are paramount in the selection of a successful leader. For example, when IBM was in trouble in the early 1990s, directors realized that they needed a CEO who was more business-oriented than technological. Instead of focusing on technology experts, the individual chosen had business acumen and customer orientation and the organization went from failing to growth.[9] For newly appointed SHOs, common leadership challenges include successfully navigating the political environment, understanding key public health issues of their state, which sometimes include crises, and working with external partners. However, unlike studies from industry,[7-9] to our knowledge, no studies exist that describe SHO qualifications or backgrounds that are necessary for the organization's success.[10]

The purpose of the current study is to provide the first in-depth empirical examination of SHO backgrounds and qualifications. Specifically, the current study utilizes original data collected in a survey of current and former SHOs who served as far back as 1973. We examine SHO responses by decade of appointment and US census region to see whether backgrounds or qualifications have changed as public health policies and public health agencies have evolved over time. Our analyses of SHO characteristics provide an overview of these crucial leaders and insight that contributes to the discussion around the demands of this position and what type of training and backgrounds are desirable when filling these roles.

Methods

Population studied

All current and former living SHOs (including state commissioners of health and similarly titled leaders of state public health agencies) along with their counterparts from all US territories (together referred to as SHOs in our study) were surveyed as part of the SHO-CASE Study to assess their experiences as health officials and their perspectives regarding their experiences that may serve as guidance for future SHOs. A research brief detailing the methods for the survey is included in this volume of the journal. For reference, see "State Health Official Career Advancement and Sustainability Evaluation—Description of the Methods Used in the SHO-CASE Study."[11]

The surveys (a primary or initial survey and a longer, follow-up survey) were mainly conducted electronically via SurveyMonkey and telephonically or through the mail when electronic surveying was not possible. The surveys were administered between March and September 2017. The respondents were asked to provide identifying information including their names, dates, and state of service, but consistent with the approval from the human subjects committee at our university, only aggregate information is reported.

Variables

The following variables were used to examine demographic characteristics of SHO respondents: gender (eg, male or female), race (eg, white, black/African American, Asian, other/2 or more races), and educational attainment. Education was categorized by type of degree received. Binary variables for education included having a medical degree (MD), having any type of public health degree (eg, MPH/Master of Public Health, MHA/Master of Health Administration, DrPH/Doctor of Public Health, MSPH/Master of Science in Public Health), having any type of management degree (e.g., MBA/Master of Business Administration or MPA/Master of Public Administration or MHA/Master of Health Administration), and/or having a law degree (Juris Doctorate/JD). Degrees were not mutually exclusive.

A decade variable was generated to group respondents into decades based on the date they were first appointed as an SHO. Given that the number of respondents who served in the 1970s and 1980s was relatively small, these 2 decades were combined for analyses. The 4 decades used for analyses included 1970/80s, 1990s, 2000s, and 2010s. A variable for US census region was also used to examine SHO characteristics by the region of the state in which they served (eg, Northeast, Midwest, South, and West).

In addition, the survey included questions about whether respondents had previous governmental public health work experience before becoming an SHO and to name and describe the organization of their previous employment immediately before becoming an SHO. Open-ended responses to the question about previous employment were coded into organization categories on the basis of details provided by respondents and organizational information available on the Internet.

Analysis

Our analyses focused on characterizing SHOs by gender, educational attainment, and race and determined whether these characteristics changed over the decades and/or were related to geographic area. To do so, we utilized χ^2 analyses to examine how each of these variables was related to both decade of appointment and US census region. Statistical significance was measured at the $P < .05$ and $P < .10$ levels.

The human subjects review board at Indiana University deemed this study to be in the exempt category.

Findings

A total of 147 out of 262 SHOs responded to the primary survey representing a 56.1% participation rate (86.4% or 51/59 of current and 47.3% or 96/203 of former SHOs). The response rate for the follow-up survey was 74.0% (108/147) of primary survey respondents overall. In all, the respondents served as SHOs from 1973 to 2017 (current) and represented all 50 states, the District of Columbia, and 3 US territories.

Among all respondents, the majority of SHOs were male (n = 90/147, 61.2%) and/or white (n = 116/139, 83.5%) (Table 1). Two-thirds of respondents (n = 95/147, 64.6%) reported having a medical degree (MD), approximately half (n = 71/147, 48.3%) had a formal public health degree, and almost one-quarter (n = 32/147, 21.8%) had a management degree. Approximately 1 in 10 SHO respondents (n = 14/147, 9.5%) had a law degree. Just over a third of SHOs had both a medical degree and a masters or doctorate of public health (n = 51/147, 34.7%) (data not shown).

The majority of SHOs reported having governmental public health experience at some prior point in their career (n = 98/140, 70.0%). A total of 57.0% of SHOs (n = 80/138) worked in governmental public health immediately before becoming an SHO. Across all SHO respondents, 34.8% (n = 48/138) worked at the State Health Department, 17.4% (n = 24/138) at a local or tribal health department, and 5.8% (n = 8/138) worked at the federal level in a public health agency before becoming an SHO.

When examining demographic characteristics of SHOs by decade (see Table 2), the proportion of SHOs who were female increased significantly by decade from 5.6% women in the 1970s/80s to 46.4% in the 2010s ($P = .02$). There were no significant changes in educational backgrounds by decade and while the racial diversity of SHOs increased after the 1980s, these changes were not statistically different over time. Although we did not observe differences in SHO gender by US census region, educational attainment differed by region. Specifically, SHOs in the South and West were more likely than their counterparts in the Northeast and Midwest to have a public health degree (58.1% vs 53.1% vs 48.3% vs 27.5%, $P = .03$).

The proportion of SHOs with previous public health experience did not differ by decade but was significantly related to US census region (see Table 3). Specifically, a larger proportion of SHOs in the South and West had previous public health experience than

TABLE 1
SHO Demographics[a]

Variables	All Respondents, N (%)
Gender	
Male	90 (61.2)
Female	57 (38.8)
	N = 147
Education (categories not mutually exclusive)	
MD	95 (64.6)
Public health degree	71 (48.3)
Management degree	32 (21.89)
Law degree	14 (9.5)
	N = 147
Race	
White	116 (83.5)
Black/African American	10 (7.2)
Asian	9 (6.5)
Other/2 or more races	4 (2.9)
	N = 139
Prior public health government experience[b]	
Yes	98 (70.0)
No	42 (30.0)
	N = 140
Organization of employment immediately before becoming SHO[c]	
State health department	48 (34.8)
Hospital	36 (26.1)
Local/tribal health department	24 (17.4)
Private	11 (8.0)
Federal health department	8 (5.8)
Nonpublic health state/tribal agency	8 (5.8)
Governor office/legislative body	3 (2.2)
	N = 138
Census region	
Northeast	29 (19.7)
Midwest	40 (27.2)
South	43 (29.3)
West	32 (21.8)
US territory	3 (2.0)
	N = 147
Decade of appointment	
1970s-1980s	18 (12.2)
1990s	26 (17.7)
2000s	34 (23.1)
2010s	69 (46.9)
	N = 147

Abbreviation: SHO, state health official.

[a] *Percentages may not equal 100% due to rounding.*

[b] *Have you ever held a position in governmental public health prior to becoming a SHO?*

[c] *Organizations were coded into categories based on details provided by respondents and organizational information available online.*

TABLE 2
State Health Official Demographics by Appointment Decade and US Census Region

	Decade				US Census Region			
Variables	**1970-80s, N (%)**	**1990s, N (%)**	**2000s, N (%)**	**2010s, N (%)**	**Northeast, N (%)**	**Midwest, N (%)**	**South, N (%)**	**West, N (%)**
Gender								
Male	17 (94.4)	16 (61.5)	20 (58.8)	37 (53.6)	16 (55.2)	27 (67.5)	30 (69.8)	16 (50.0)
Female[a]	1 (5.6) N = 18	10 (38.5) N = 26	14 (41.2) N = 34	32 (46.4) N = 69	13 (44.8) N = 29	13 (33.3) N = 40	13 (30.2) N = 43	16 (50.0) N = 32
Education (categories not mutually exclusive)								
MD	16 (88.9)	15 (57.7)	21 (61.8)	43 (62.3)	20 (69.0)	25 (62.5)	33 (76.7)	17 (53.1)
Public health degree[b]	11 (61.1)	12 (46.2)	16 (47.1)	31 (44.9)	14 (48.3)	11 (27.5)	25 (58.1)	17 (53.1)
Management degree	3 (16.7)	7 (26.9)	10 (29.4)	13 (18.8)	8 (27.6)	8 (20.0)	8 (18.6)	7 (21.9)
Law degree	0 N = 18	5 (19.2) N = 26	3 (8.8) N = 34	6 (8.7) N = 69	4 (13.8) N = 29	4 (10.3) N = 40	3 (7.0) N = 43	3 (9.7) N = 32
Race								
White	17 (100)	19 (79.2)	27 (87.1)	52 (78.8)	20 (80.0)	32 (86.5)	32 (80.0)	29 (90.6)
Black/African American	0	3 (12.5)	1 (3.2)	6 (9.1)	2 (8.0)	3 (8.1)	4 (10.0)	0
Asian	0	2 (8.3)	0	7 (10.6)	3 (12.0)	2 (5.4)	2 (5.0)	2 (6.3)
Other/2 or more races	0 N = 17	0 N = 24	3 (9.7) N = 31	1 (1.5) N = 66	0 N = 25	0 N = 37	2 (5.0) N = 40	1 (3.1) N = 32

[a] *Significantly different by decade at the* $P < .05$ *level.*

[b] *Significantly different by US census region at the* $P < .05$ *level.*

TABLE 3
Work Experience Before Becoming a SHO by Appointment Decade and US Census Region

Variables	Decade				US Census Region			
	1970-80s, N (%)	1990s, N (%)	2000s, N (%)	2010s, N (%)	Northeast, N (%)	Midwest, N (%)	South, N (%)	West, N (%)
Any prior position in governmental public health before becoming an SHO[a]								
Yes	14 (77.8)	14 (60.9)	23 (71.9)	47 (70.2)	16 (59.3)	17 (46.0)	35 (85.4)	27 (84.4)
No	4 (23.5) N = 18	9 (39.1) N = 23	9 (28.1) N = 32	20 (29.9) N = 67	11 (40.7) N = 27	20 (54.0) N = 37	6 (14.6) N = 41	5 (15.6) N = 32
Organization of employment immediately before becoming SHO[b]								
State health department	5 (29.4)	9 (39.1)	8 (26.7)	26 (38.2)	9 (33.3)	9 (25.0)	20 (48.8)	10 (32.3)
Hospital	4 (23.5)	5 (21.7)	10 (33.3)	17 (25.0)	10 (37.0)	12 (33.3)	8 (19.5)	4 (12.9)
Local/tribal health department	6 (35.3)	4 (17.4)	4 (13.3)	10 (14.7)	4 (14.8)	5 (13.9)	7 (17.1)	8 (25.8)
Private	0	1 (4.4)	2 (6.7)	8 (11.8)	3 (11.1)	5 (13.9)	0	3 (9.7)
Federal health department	0	1 (4.4)	4 (13.3)	3 (4.4)	0	1 (2.8)	4 (9.8)	2 (6.5)
Nonpublic health state/tribal agency	2 (11.8)	2 (8.7)	1 (3.3)	3 (4.4)	1 (3.7)	4 (11.1)	1 (2.4)	2 (6.5)
Governor office/legislative body	0 N = 17	1 (4.4) N = 23	1 (3.3) N = 30	1 (1.5) N = 68	0 N = 27	0 N = 36	1 (2.4) N = 41	2 (6.5) N = 31

Abbreviation: SHO, state health official.

[a] *Significantly different by US census region at the* $P < .05$ *level.*

[b] *Organizations were coded into categories on the basis of details provided by the respondents and organizational information available online.*

those in the Northeast or the Midwest (85.4% vs 84.4% vs 59.3% vs 46.0%, $P < .001$). Respondent locations of employment immediately before taking the SHO position did not differ by decade or US census region.

Discussion

The SHOs serve a crucial leadership role for state public health; however, relatively little evidence exists about SHO backgrounds and qualifications. Without this evidence, it is impossible to empirically inform discussions about the implications of certain SHO characteristics. The current study contributes new insight about SHO backgrounds and qualifications and lays the groundwork necessary to conduct future studies that can examine how successfully or unsuccessfully SHO characteristics align with the demands of this important job.

Part of the folklore that surrounds SHOs has suggested that individuals appointed to the SHO role often lack public health experience; however, the main finding from this study shows that more than two-thirds of SHOs have had governmental public health experience at some point in their career. Furthermore, this is not a new trend as there were no statistical differences in public health experience by decade. In addition, more than half of SHOs were appointed to the role directly from governmental public health, indicating that their public health experience is timely and likely germane to their appointment as SHO.

Findings also indicate that within recent decades, women are increasingly appointed to the SHO role. Women went from approximately 6% of SHOs in the 1970s/80s to 46% of SHOs in the 2010s. This change translates to a significant improvement in gender diversity among one of the most influential leadership roles in governmental public health, which is something that deserves notable attention. While this shift mirrors gender ratio trends seen in medical school enrollment (as of the 2016 matriculating class, women are now the majority of medical school enrollees)[12] and may be related to the fact that the majority of SHOs have medical degrees, SHO gender diversity accomplishments are outpacing diversity in health care leadership on the whole.[13-15] More specifically, not 1 Fortune 500 health care company had a woman as a CEO in 2017[14] and women held only one-fourth of CEO roles in hospitals and health systems as of 2011[15]—further highlighting the importance of the current study's finding that gender equity is improving in the SHO role. Given that state governmental public health employees are predominantly women (72%),[16] there is still room for gender equity improvements and more women represented in executive leadership roles. Furthermore, although there appears to be an increasing number of nonwhite SHOs, the increases were not large enough to denote significant change over time. This highlights another opportunity to increase diversity in this role, in particular, among racial and ethnic minorities.

Secondary findings also show that there are differences in the qualifications and backgrounds of SHOs across the US Census Bureau's 4 regions. Specifically, SHOs in the South and the West were more likely to have a public health degree and to have had previous public health experience than those in the Northeast or the Midwest.

There are a number of strengths and limitations to note. First, the SHO-CASE study generated the most comprehensive data set of information about SHOs to date. However, there may be SHOs who were not invited to participate in the SHO-CASE survey either because they are deceased, are not included in the list of members of the ASTHO Alumni Association, or did not have current contact information. An overall 56.1% response rate is generally an adequate survey response rate. It is also important to note that it represents more than half of the SHOs who remain active members of the ASTHO Alumni Association (former and current SHOs are encouraged to remain lifetime members). However, the 56.1% response rate may also mean that the findings of this work are limited by nonresponse bias. Furthermore, another limitation is that, due to the relatively small number of individuals who are members of the population of interest, some empirical methods are feasible. Ultimately, the population of living current and former SHOs is a relatively small group.

Implications for Policy & Practice

- Women are increasingly being appointed to the SHO role, indicating increasing gender diversity in this influential leadership position. Given that state governmental public health employees are predominantly women, there is still room for gender equity improvements and more women represented in executive leadership roles. Racial and ethnic diversity has also not significantly changed among SHOs over time, indicating room for further diversity improvements.
- Understanding past SHO qualifications can help appointing bodies identify future SHOs but not necessarily SHO success.
- Different types of SHO qualifications may be needed on the basis of an organization's needs. Further research examining SHO success as it relates to state health outcomes and health policies will provide valuable additional insight.

This study provides valuable new insight about the backgrounds and qualifications of SHOs. Future studies should examine the laws that govern SHO appointments and the educational requirements outlined in these laws as they may relate to SHO tenure, turnover, communication and coordination, and competencies and leadership needs.

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