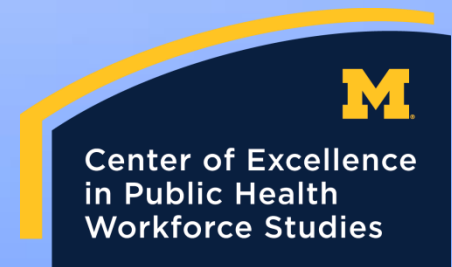


# Trends and Characteristics of the State and Local Public Health Workforce

Research-in-Progress Webinar

November 12, 2014

Angela J. Beck, PhD, MPH  
Research Assistant Professor  
Associate Director,  
Center of Excellence in  
Public Health Workforce Studies  
University of Michigan School of Public Health



UNIVERSITY OF MICHIGAN  
SCHOOL OF PUBLIC HEALTH

# Center of Excellence in Public Health Workforce Studies

- Established in 2009
- Primarily funded by CDC
- Interested in studies that assess and characterize public health workforce size, composition, and capacity to deliver services
- Findings of Center studies available at [www.phworkforce.org](http://www.phworkforce.org)

# Acknowledgments

- This study was funded by the University of Kentucky National Coordinating Center for Public Health Services and Systems Research
- Thanks to: Matthew Boulton, Rivka Liss-Levinson, Carolyn Leep
- An article detailing this study is currently in press at the *American Journal of Public Health*

# The Public Health Workforce

- Highly-trained, competent workforce is essential for effective public health service delivery
- Modest investments have been made nationally to systematically monitor workforce size, composition, demographics, and training/education background
- Interest in workforce due to: budget cuts, health care reform, impending retirements

# Public Health Workforce Assessment

- No national system for monitoring the public health workforce
- Enumeration estimates are derived from:
  - Data from professional association studies
  - Studies conducted by universities/PBRNs, etc.
  - National data sets

# Governmental Public Health Workforce Enumeration, 2014

Occupational category	Worker job setting			Total	%
	Local <sup>a</sup>	State <sup>b</sup>	Federal <sup>c</sup>		
Administrative or clerical personnel	35,000	14,559	6,085	55,644	19
Behavioral health professional	4,000	1,839	895	6,734	2
Emergency preparedness staff	2,900	810	—	3,710	1
Environmental health worker	13,300	4,618	5,920	23,838	8
Epidemiologist	1,800	2,476	—	4,276	2
Health educator	5,100	1,572	43	6,715	2
Laboratory worker	2,000	5,699	5,685	13,384	5
Nutritionist	5,000	1,276	223	6,499	2
Public health dental worker	2,600	356	443	3,399	1
Public health informatics specialist	2,100	729	—	2,829	1
Public health manager	10,100	3,296	4,998	18,394	6
Public health nurse	29,191	12,286	5,793	47,270	16
Public health physician	2,100	791	6,700	9,591	3
Public information specialist	2,100	174	—	2,274	1
Other public health professional or uncategorized worker	30,200	35,960	20,271	86,431	30
<b>Total</b>	<b>147,491</b>	<b>86,411</b>	<b>57,056</b>	<b>290,988</b>	
<b>Range</b>	<b>125,367– 169,615</b>	<b>61,070– 105,335</b>	<b>45,027– 66,103</b>	<b>231,464– 341,053</b>	
<b>%</b>	<b>50</b>	<b>30</b>	<b>20</b>		<b>100</b>

Beck AJ, Boulton ML, Coronado F. Enumeration of the governmental public health workforce, 2014. Am J Prev Med 2014;47(5S3):S306-S313.

# Study Purpose

- To assess occupational characteristics of the state and local public health workforce from 2010 to 2013
- Determine whether workforce occupations vary by health department:
  - Size of population served
  - Geographic region
  - Governance structure
- Analyze whether the workforce “profile” changed over time
- Profile: the occupational composition of the public health workforce

# Methods

- Data sources
  - ASTHO Profile of State Public Health: 2010, 2012
  - NACCHO Profile of Local Health Departments: 2010, 2013
- Sample
  - State level: same 47 states in 2010 and 2012
  - Local level: 2,005 LHDs in 2010; 1,953 LHDs in 2013
- Occupational category designation based on 14 categories recommended in previous enumeration studies<sup>1</sup>

<sup>1</sup>UM & UK Centers of Excellence. Strategies for Enumerating the Governmental Public Health Workforce, 2012.



# Methods

## ■ Measures

- Governance structure: based on ASTHO designation of centralized/largely centralized; shared or mixed; decentralized/largely decentralized
- Geographic region: ASTHO groupings of New England, South, Mid-Atlantic/Great Lakes, Mountain and Midwest, West
- Population size: small, medium, large
  - ASTHO:  $\leq 2.75\text{M}$ ; 2,750,001-6.25M;  $> 6.25\text{M}$
  - NACCHO:  $< 50,000$ ; 50,000-499,999;  $\geq 500,000$

# Methods

- Statistical Analysis
  - State-level data: direct comparison of 2010 data to 2012 (same 47 state health agencies)
    - Trends analyzed through percentage change
  - Local-level data: No direct comparison due to varying response rate of LHDs across the two surveys
    - Trends analyzed through percentage point differences between 2010 respondents and 2013 respondents
  - Data were adjusted to account for missingness and duplication between state/local respondents<sup>2</sup>

<sup>2</sup>Full study methods available in: Beck AJ, Boulton ML. Trends and characteristics of the state and local public health workforce, 2010-2013. Am J Public Health 2015; in press.

# STATE-LEVEL RESULTS

# State-Level Results

- From 2010 to 2012, the number of public health workers declined from 104,522 to 100,064 FTEs (-4%)
- Occupations with biggest decreases
  - Public information specialist (-33%)
  - Public health informatics specialist (-29%)
  - Behavioral health professional (-20%)
- Occupations with biggest increases
  - Public health manager (11%)
  - Nutritionist (7%)
  - Environmental health worker (3%)

# State-Level Results by Population Size

- Small states: -9%
  - Increases: nutritionists (92%), admin/clerical (64%), public health nurses (46%)
  - Decreases: public information specialists (-78%), informatics(-56%)
- Medium states: -5%
  - Increases: public health managers (29%), public health nurses (13%), environmental health workers (13%)
  - Decreases: health educators (-50%)
- Large states: -3%
  - Increases: public health physicians (21%)
  - Decreases: behavioral health (-48%), informatics (-38%), public health nurses (-37%)

# State-Level Results by Region

- New England: -13%
  - Increases: behavioral health (89%)
  - Decreases: health educators (-83%), epidemiologists (-45%), public health nurses (-41%)
- West: -8%
  - Increases: information specialists (3%)
  - Decreases: informatics (-94%), public health nurses (-68%), public health managers (-52%)
- South: -4%
  - Increases: public health managers (46%), informatics (30%), lab workers (23%)
  - Decreases: behavioral health (-33%), public health nurses (-16%)
- Mid-Atlantic/Great Lakes: -1%
  - Increases: public health nurses (24%)
  - Decreases: public information specialists (-71%), informatics (-24%)
- Mountain/Midwest: -1%
  - Increases: public health managers (46%), public health nurses (29%)
  - Decreases: health educators (-34%), public information specialists (-25%)

# State-Level Results by Region

- New England: -13%
  - Increases: behavioral health (89%)
  - Decreases: health educators (-83%), epidemiologists (-45%), **public health nurses (-41%)**
- West: -8%
  - Increases: information specialists (3%)
  - Decreases: informatics (-94%), **public health nurses (-68%)**, public health managers (-52%)
- South: -4%
  - Increases: public health managers (46%), informatics (30%), lab workers (23%)
  - Decreases: behavioral health (-33%), **public health nurses (-16%)**
- Mid-Atlantic/Great Lakes: -1%
  - Increases: **public health nurses (24%)**
  - Decreases: public information specialists (-71%), informatics (-24%)
- Mountain/Midwest: -1%
  - Increases: public health managers (46%), **public health nurses (29%)**
  - Decreases: health educators (-34%), public information specialists (-25%)

# State-Level Results by Region

- New England: -13%
  - Increases: behavioral health (89%)
  - Decreases: health educators (-83%), epidemiologists (-45%), public health nurses (-41%)
- West: -8%
  - Increases: information specialists (3%)
  - Decreases: informatics (-94%), public health nurses (-68%), public health managers (-52%)
- South: -4%
  - Increases: public health managers (46%), informatics (30%), lab workers (23%)
  - Decreases: behavioral health (-33%), public health nurses (-16%)
- Mid-Atlantic/Great Lakes: -1%
  - Increases: public health nurses (24%)
  - Decreases: public information specialists (-71%), informatics (-24%)
- Mountain/Midwest: -1%
  - Increases: public health managers (46%), public health nurses (29%)
  - Decreases: health educators (-34%), public information specialists (-25%)



# State-Level Results by Governance Structure

- Centralized: -7%
  - Increases: epidemiologist (64%), nutritionist (35%)
  - Decreases: informatics (-14%)
- Decentralized: -4%
  - Increases: informatics (51%)
  - Decreases: public health nurse (-63%), behavioral health (-45%), public information specialist (-43%)
- Mixed/shared: -3%
  - Increases: informatics (56%), public health manager (24%)
  - Decreases: health educator (-17%), public information specialist (-17%)

# LOCAL-LEVEL RESULTS

# Local-Level Results

- In 2010, 2,005 LHDs reported 140,822 FTEs
- In 2013, 1,953 LHDs reported 125,688 FTEs
  - Overall proportion of workers was relatively stable for most occupational categories

# Local-Level Results by Population Size

- Small: ~13% of workforce in 2010 and 2013
  - No percentage point changes for any occupation
- Medium: proportional increase from 38% to 40%
  - Percentage point decreases: admin/clerical (-3%), public health nurse (-2%)
- Large: 49% of workforce in 2010; 48% in 2013
  - Percentage point differences: admin/clerical (-3%), behavioral health (-2%), public health nurses (2%)

# Local-Level Results by Region

- South: 35% of workforce in 2010; 31% in 2013 (-4%)
  - Percentage point differences: public health nurse (-4%), admin/clerical (-3%), behavioral health (-2%)
- Mid-Atlantic/Great Lakes: 22% to 25% (3%)
  - Percentage point differences: admin/clerical (-3%), behavioral health (-2)
- West: 24% to 20% (-4%)
  - Percentage point differences: public health nurses (5%), environmental health workers (2%)
- New England: stable at 12%
  - Percentage point differences: admin/clerical (-4%), informatics (2%)
- Mountain/Midwest: 7% to 11% (4%)
  - Percentage point differences: admin/clerical (-2%)

# Local-Level Results by Governance Structure

- Centralized: 11% of workforce in 2010; 10% in 2013 (-1%)
  - Percentage point differences: admin/clerical (-4%)
- Shared or mixed: 24% to 26% (2%)
  - Percentage point differences: admin/clerical (-2%), public health nurses (-2%)
- Decentralized: 65% to 64% (-1%)
  - Percentage point differences: admin/clerical (-2%)

# What Did We Find?

- Variability in workforce trends in state vs. local
  - Workforce profile changed more at state level than local
- Changes in workforce profiles by population size
- Changes in workforce profiles by geographic region
- Changes in workforce profiles by governance structure

# Notable Findings

- Some health departments reported a decrease in occupations associated with clinical services/patient care (e.g. public health nurses, behavioral health)
  - Possible effect of health care reform?
- Some health departments reported a decrease in occupations not specific to public health (e.g. admin/clerical, informatics, information specialists)
  - Possible result of centralization of personnel as cost saving measure?
- Some trends showed an increase in occupations related to program management



# Unanswered Questions for Future Research

- What explains the variability across population size, region, and governance structure?
- What explains the shifting of the workforce profile?
  - Budget reductions?
  - Different personnel needs to account for a change in service delivery?
- Are workforce changes a result of financial or other restrictions/limitations, retirement, or are they planned changes/adaptations?

# Contact Information

## **Center of Excellence in Public Health Workforce Studies**

Department of Health Management and Policy

University of Michigan School of Public Health

[phworkforce@umich.edu](mailto:phworkforce@umich.edu)

[www.phworkforce.org](http://www.phworkforce.org)