

2018 Forces of Change Survey: Technical Documentation

Purpose

The National Association of County and City Health Officials' (NACCHO's) Forces of Change Survey was developed as an evolution to NACCHO's Job Losses and Program Cuts surveys, which measured the impact of the economic recession on local health departments' (LHDs) budgets, staff, and programs.¹⁻⁵ The Forces of Change Survey continues to measure changes in LHD budgets, staff, and programs and assess more broadly the impact of forces affecting change in LHDs. Beginning in 2014, NACCHO began conducting the Forces of Change survey⁶⁻⁸ yearly in years that the National Profile Study of Local Health Departments (Profile) was not fielded.⁹⁻¹¹

Study population and Sampling

The Forces of Change and the Profile studies define an LHD as an administrative or service unit of local or state government, concerned with health, and carrying some responsibility for the health of a jurisdiction smaller than the state⁶⁻¹¹. There are approximately 2,800 agencies or units that meet this definition of an LHD. Some states have a public health system structure that includes both regional and local offices of the state health agency. In those states, the state health agency chooses to respond to the Profile survey at either the regional or local level, but not at both levels.

NACCHO uses a database of LHDs based on previous Profile studies and consults with state health agencies and state associations of local health officials (SACCHOs) to identify LHDs for inclusion in the study population. For the 2016 Profile study, a total of 2,533 LHDs were included in the 2016 study population.¹¹ The total number of LHDs have been updated to reflect new LHDs formed or LHDs no longer in operation prior to the 2017⁸ and 2018 Forces of Change studies. A total number of 2,526 LHDs were identified prior to the 2018 Forces of Change survey.

NACCHO used a stratified random sampling design for the 2018 Forces of Change survey. A representative sample was used instead of a complete census design to minimize survey burden on LHDs while enabling the calculation of both national- and state-level estimates. LHDs were stratified by two variables: size of the population served and state. For stratification by size of population served, three categories were used: LHDs serving less than 50,000 people, LHDs serving population of 50,000–499,999 people, and LHDs serving population of 500,000 or more people. Because LHDs serving 500,000 or more people represent a relatively small portion of all LHDs, these LHDs were oversampled to ensure enough responses for the analysis. Two states (Hawaii and Rhode Island) were excluded from the study because their states had no agencies that meet the Profile and Forces of Change studies' definition of an LHD.

Additionally, some states did not have any LHDs in a population size category, resulting in a total of 121 strata. The sampling plan was designed to select a minimum of 33 percent of the LHDs in a given stratum and at least two LHDs per stratum whenever possible. Figure 1 presents the percentage of LHDs included in the sample relative to the total number of LHDs in a state.

Once the sampling plan was finalized, NACCHO drew a random sample of the specified size from within each stratum. In some centralized states, two or more LHDs had the same person listed as the contact person. To minimize response burden, no more than two LHDs with the same contact person were kept in the sample. However, contacts in Alabama, Oklahoma, and

2018 Forces of Change Survey: Technical Documentation

Vermont received three or more surveys each because additional contacts in their state were not available. When LHDs with a common contact person were dropped from sample, or when contact information was not available, a replacement was drawn. Overall, a sample of 966 LHDs was selected.

Questionnaire development

NACCHO developed the questionnaire for the 2018 Forces of Change by first reviewing previous surveys conducted by NACCHO: Forces of Change (2014, 2015, 2017) and past Profile questionnaire (2005, 2008, 2010, 2013, 2016) to identify whether any topic areas should be repeated. Then subject matter experts within NACCHO determined which current public health topics should be included in the current questionnaire. Subject matter experts reviewed new questions for face validity, and NACCHO piloted the questionnaire from January to February 2018 to 27 LHDs. NACCHO administered the questionnaire using Qualtrics software (Qualtrics, Provo, UT; www.qualtrics.com), an online data collection platform. Fourteen LHDs completed the pilot for a response rate of 52 percent. NACCHO interviewed select LHDs to assess whether certain sections and questions performed as expected.

The designated primary contact of every LHD in the sample received an invitation via e-mail to participate in the survey and the survey link was sent via Qualtrics on March 21, 2018. After the initial invitation, the potential participants received up to eleven reminder e-mails.

Additionally, NACCHO made reminder calls to people who had yet to complete the survey, targeting states with low response rates. Some state health agencies SACCHOs assisted by encouraging their members to take part in the survey.

The survey was closed on May 18, 2018, with 591 responses, for a response rate of 61 percent. Data were downloaded from Qualtrics in Excel format and converted into Stata Version 15 for cleaning and analysis.

Data Cleaning

NACCHO first performed exploratory analyses to detect and address any anomalies. Ten randomly selected completed questionnaires were compared with the dataset to ensure responses matched variables within the dataset.

Responses to some questions were compared internally and with existing data to ensure their accuracy. For example, the reported number of people laid off was compared to existing data about the total number of employees at the LHD reported in the 2016 Profile study. Cases with a high ratio of layoffs to total staff were examined to determine if the responses were supported by auxiliary data. If a ratio was high and there were not supporting data, the data were excluded from analysis.

Next, overall and item nonresponse was examined. The response rates and the number of missing values were computed for each of the primary questions (i.e., questions that required all participants, rather than a subgroup, to answer). This process not only allowed NACCHO to assess the data quality but also helped to determine whether special weights would be required for some items due to low response rates.

2018 Forces of Change Survey: Technical Documentation

Survey Weights and National Estimates

Unless otherwise stated, national statistics presented were computed using appropriate estimation weights. NACCHO developed estimation weights for the items to account for dissimilar non-response by size of population served and state.

Two weights were generated for the analysis: proportional weights and scale weights. Proportional weights for each stratum were calculated by dividing the proportion of LHDs in that stratum among the full study sample by the proportion of LHDs in that stratum among all survey respondents. Scale weights were generated by dividing the number of LHDs in a stratum in the full study sample by the number of LHDs in that stratum that responded to the survey. Scale weights are used for estimating population totals. Either proportional weights or scale weights can be used for generating descriptive statistics such as proportion, mean, and median.

Item-specific weights were generated for variables related to staffing reduction, staffing gains, and staff working on opioid activities to account for item nonresponse to better estimate their overall numbers.

Data Analysis

Data were analyzed using Stata 15 (StataCorp)¹ and descriptive statistics were generated and reported for all LHDs and by various LHD characteristics.

Size of Population Served

Statistics are compared across LHDs serving different population sizes in the LHD jurisdiction. LHDs are classified as small if they serve fewer than 50,000 people, medium if they serve populations between 50,000 and 500,000 people, and large if they serve 500,000 or more people.

Type of governance

Statistics are compared across LHDs' relationship to their state health department. Some LHDs are agencies of local government and are referred to as locally governed; others are local or regional units of the state health department and are referred to as state-governed. Some LHDs are governed by both state and local authorities and are called shared governance.

Census region

Statistics are also compared across United States census region. All LHDs in each state are classified being in the North, South, Midwest, or West, per the U.S. Census Bureau.²

State

The decision on whether there was sufficient data for state-level estimates was made based on the overall consideration of the following factors: (a) number of LHDs in the population for each state; (b) state's overall response rate; and (c) state's response rate in each population size stratum. For example, the overall state response rate may be acceptable, but if the response rate for a certain population size stratum of that state was zero, one cannot confidently make a state-level estimate for that state.

2018 Forces of Change Survey: Technical Documentation

Testing for statistical significance

NACCHO conducted cross-tabulations on select variables and used the Chi-Square(χ^2) tests for examining difference across groups and subgroup populations (e.g. size of population served, type of governance, U.S. Census region, provision of opioid services) or t-test for examining difference across years.

Comparisons with Other Studies

Statistics from other studies³⁻¹⁴ were reported along with statistics generated from the 2018 Forces of Change data. Statistics included in this report were also weighted for nonresponse at the time of their survey's administration.

Study Limitations

Several limitations should be considered when using the results of this study.

First, all data are self-reported by LHD staff and are not independently verified. LHDs may have provided incomplete or inconsistent information for various reasons. For example, while the questionnaire includes definitions for some items, not every item or term is defined.

Consequently, respondents may have interpreted questions and items differently.

Second, because the questionnaire includes a large number of topics, it may not provide in-depth information on these topic areas.

Third, some comparisons with data from other studies are provided for some statistics, but these comparisons should be viewed with caution because both the study population and the respondents are different for each study.

2018 Forces of Change Survey: Technical Documentation

Acknowledgments

This document was supported by the Centers for Disease Control and Prevention (under Cooperative Agreement #1U38OT000172-01) and by the Robert Wood Johnson Foundation in Princeton, NJ. Its contents are solely the responsibility of NACCHO and do not necessarily represent the official views of the sponsors. NACCHO is grateful for this support. For more information, please contact the Research & Evaluation Team at research@naccho.org.

References

1. StataCorp. 2017. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC.
2. U.S. Department of Commerce Economics and Statistics Administration U.S. Census Bureau. Census Regions and Divisions of the United States. Retrieved from https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf
3. National Association of County and City Health Officials – NACCHO (January 2009). NACCHO Survey of Local Health Departments' Budget Cuts and Workforce Reductions. Retrieved from <http://nacchoprofilestudy.org/wp-content/uploads/2017/10/2008-LHD-budget-cut-report.pdf>
4. National Association of County and City Health Officials – NACCHO (November 2009). Local Health Department Job Losses and Program Cuts. Retrieved from http://nacchoprofilestudy.org/wp-content/uploads/2017/10/JobLossProgramCuts_ResearchBrief_final.pdf
5. National Association of County and City Health Officials – NACCHO (May 2010). Local Health Department Job Losses and Program Cuts: Findings from the January/February 2010 Survey. Retrieved from http://nacchoprofilestudy.org/wp-content/uploads/2017/10/JobLossSurvey_ResearchBrief_5-10.pdf
6. National Association of County and City Health Officials – NACCHO (December 2011). Local Health Department Job Losses and Program Cuts: Findings from the July 2011 Survey. Retrieved from <http://nacchoprofilestudy.org/wp-content/uploads/2017/10/Research-Brief-Jul-11-Final.pdf>
7. National Association of County and City Health Officials – NACCHO (May 2012). Local Health Department Job Losses and Program Cuts: Findings from the January 2012 Survey. Retrieved from <http://nacchoprofilestudy.org/wp-content/uploads/2017/10/Research-Brief-Final.pdf>
8. National Association of County and City Health Officials – NACCHO (April 2014). Local Health Department Budget Cuts and Job Losses: Findings from the 2014 Forces of Change Survey. Retrieved from <http://nacchoprofilestudy.org/wp-content/uploads/2015/06/Budget-Cuts.pdf>
9. National Association of County and City Health Officials (NACCHO). (June 2015). The Changing Public Health Landscape: Findings from the 2015 Forces of Change Survey. Washington, DC. Retrieved from <http://nacchoprofilestudy.org/wp-content/uploads/2017/10/2015-Forces-of-Change-Slidedoc-Final1.pdf>
10. National Association of County and City Health Officials (NACCHO). (November 2017). The Changing Public Health Landscape: Findings from the 2017 Forces of Change Survey. Washington, DC. Retrieved from <http://nacchoprofilestudy.org/wp-content/uploads/2017/10/2017>

2018 Forces of Change Survey: Technical Documentation

11. National Association of County and City Health Officials (NACCHO). (2011). 2010 National Profile of Local Health Departments. Washington, DC. Retrieved from http://nacchoprofilestudy.org/wp-content/uploads/2014/01/2010_Profile_main_report-web.pdf
12. National Association of County and City Health Officials (NACCHO). (2014). 2013 National Profile of Local Health Departments. Washington, DC. Retrieved from http://nacchoprofilestudy.org/wp-content/uploads/2014/02/2013_National_Profile021014.pdf
13. National Association of County and City Health Officials (NACCHO). (2017). 2016 National Profile of Local Health Departments. Washington, DC. Retrieved from http://nacchoprofilestudy.org/wp-content/uploads/2017/10/ProfileReport_Aug2017_f
14. National Association of County and City Health Officials (NACCHO). (2012). Are We Ready? Report 2: Preparing for the Public Health Challenges of Climate Change. Washington, DC. Retrieved from <http://toolbox.naccho.org/pages/tool-view.html?id=2772>.