

2020 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.¹⁻⁷ 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 survey⁸⁻¹⁰ 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 state⁸⁻¹⁴. 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 2019 Profile study, a total of 2,463 LHDs were included in the 2019 study population.¹⁴ The total number of LHDs have been updated to reflect new LHDs formed or LHDs no longer in operation prior to the 2020 Forces of Change study. Rhode Island was excluded from the study because the state has no sub-state public health units. In addition, Florida was also excluded from the study at the request of the Florida Department of Health. A total number of 2,392 LHDs were identified prior to the 2020 Forces of Change survey.

The 2020 Forces of Change survey included a core component, completed by all LHDs in the study population. In addition, a module was included for a sample of LHDs to complete. For this module, NACCHO used a stratified random sampling design. A representative sample was used instead of a complete census design to minimize survey burden on LHDs while enabling the calculation of state-level and national-level estimates. Given the response rate to the 2020 Forces of Change survey, ultimately only national-level estimates were generated.

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. Rhode Island was excluded from the study because their states had no agencies that meet the Profile and Forces of Change studies' definition of an LHD. In addition, Florida was also excluded from the study at the request of the Florida Department of Health.

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Additionally, some states did not have any LHDs in a population size category, resulting in a total of 119 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.

Figure 1. Approximate Percentage of LHDs included in the sample relative to the total number of LHDs in a state.

Total # LHDs in a State	% Sampled
1 - 13	100%
14 - 19	60%
20 - 44	40%
45+	33%

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, whenever possible no more than two LHDs with the same contact person were kept in the sample. When LHDs with a common contact person were dropped from the sample, or when contact information was not available, a replacement was drawn. Overall, a sample of 905 LHDs was selected.

Questionnaire development

NACCHO developed the questionnaire for the 2020 Forces of Change by first reviewing previous surveys conducted by NACCHO: Forces of Change (2014, 2015, 2017, 2018) and past Profile questionnaire (2005, 2008, 2010, 2013, 2016, 2019) 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 September to October 2020 to 33 LHDs. NACCHO administered the questionnaire using Qualtrics software (Qualtrics, Provo, UT; www.qualtrics.com), an online data collection platform. Five LHDs completed the pilot for a response rate of 15 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 October 27, 2020. After the initial invitation, the potential participants received up to eight 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 in March 2021 with 587 responses for the census portion, for a response rate of 24 percent. The module portion had 237 completions, for a response rate of 26 percent. Data were downloaded from Qualtrics in Excel format and converted into Stata Version 16 for cleaning and analysis.

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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.

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 allowed NACCHO to assess the data quality, but all questions were weighted individually to account for differing response rates.

Survey Weights and National Estimates

Unless otherwise stated, national statistics presented were computed using appropriate estimation weights via post-stratification survey weighting, to allow for individual questions to be weighted by population size served.

NACCHO developed survey weights for the items from the Core questionnaire to account for differential non-response by size of population served; survey weights used to produce statistics from modules also accounted for sampling. Post-stratification (based on seven population size categories; see Figure 2) and finite population correction were used to adjust for non-response and to account for the fact that population size by category is known and limited in size.

Figure 2. Category sizes for post-stratification were as follows, based on the population.

Population Served (Size)	N
<25,000 (1)	964
25,000 - 49,999 (2)	499
50,000-99,999 (3)	380
100,000-249,999 (4)	280
250,000-499,999 (5)	131
500,000-999,999 (6)	93
>=1,000,000 (7)	45

Data Analysis

Data were analyzed using Stata 16 (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.

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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

Comparisons with Other Studies

Statistics from other studies³⁻¹⁵ were reported along with statistics generated from other NACCHO surveys noted in the report. 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.

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