

2017 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 The Forces of Change Survey continues to measure changes in LHD budgets, staff, and programs, as well as assesses the impacts of forces affecting broader change in LHDs. Beginning in 2014, NACCHO began conducting the Forces of Change Survey each year that the National Profile Study of Local Health Departments was not fielded.²

Sampling

NACCHO used a stratified random sampling design for the 2017 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: small (less than 50,000 people served), medium (50,000–499,999 people served), and large (more than 500,000 people served). Because LHDs with large population sizes represent a relatively small portion of all LHDs, these LHDs were oversampled to ensure a sufficient number of responses for the analysis. Two states (Hawaii and Rhode Island) were excluded from the study because they had no LHDs.

Additionally some states did not have any LHDs in a particular size category, resulting in a total of 122 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 according to the total number of LHDs in a state.

FIGURE 1: PERCENTAGE OF LHDs SELECTED BASED ON THE TOTAL NUMBER OF LHDs IN A STATE

Total Number of LHDs in a State	Percent 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 primary contact person listed. 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 Vermont received three 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 948 LHDs was selected.

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Survey Administration

The Forces of Change Survey instrument included some questions used in previous surveys conducted by NACCHO (including the Job Losses and Program Cuts surveys and the National Profile of Local Health Departments). Subject matter experts reviewed new questions for face validity. The instrument was piloted in January 2017.

NACCHO administered the questionnaire using Qualtrics (www.qualtrics.com), an online survey administration tool. On February 14, 2017, the designated primary contact of every LHD in the sample received an invitation via e-mail from NACCHO's president to participate in the survey. The survey link was sent via Qualtrics on February 21, 2017. After the initial invitation, the potential participants received up to five 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 associations of county and city health officials (SACCHOs) assisted by encouraging their members to take part in the survey. The survey was closed on April 21, 2017 with 615 responses, for a response rate of 65 percent. Data were downloaded from Qualtrics in Excel format and converted into Stata Version 14 for cleaning and analysis.

TABLE 2. RESPONSE RATES BY SIZE OF POPULATION SERVED

Size of Population Served	Total Number of LHDs in Sample	Number of Respondents	Response Rate
<50,000	534	315	59%
50,000– 499,999	330	238	72%
500,000+	84	62	74%

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TABLE 3. RESPONSE RATES BY STATE

State	Total Number of LHDs in Sample	Number of Respondents	Response Rate
AK	3	0	0%
AL	23	22	96%
AR	24	21	88%
AZ	9	9	100%
CA	21	16	76%
CO	18	13	72%
CT	25	11	44%
DC	1	0	0%
DE	2	2	100%
FL	23	20	87%
GA	10	6	60%
IA	33	18	55%
ID	7	7	100%
IL	32	21	66%
IN	31	19	61%
KS	35	17	49%
KY	21	12	57%
LA	10	2	20%
MA	109	40	37%
MD	10	7	70%
ME	10	9	90%
MI	15	11	73%
MN	26	18	69%
MO	39	28	72%
MS	9	7	78%
MT	17	12	71%
NC	29	20	69%
ND	11	10	91%
NE	9	5	56%
NH	3	3	100%
NJ	34	19	56%
NM	6	6	100%
NV	4	4	100%
NY	19	15	79%
OH	40	25	63%
OK	24	12	50%
OR	15	12	80%
PA	11	5	45%
SC	4	4	100%
SD	8	8	100%
TN	33	27	82%
TX	22	11	50%
UT	13	9	69%
VA	16	13	81%
VT	12	12	100%
WA	15	14	93%
WI	30	22	73%
WV	17	6	35%
WY	10	5	50%

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Data Cleaning and Analysis

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. In the event that a ratio was high without 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 (which required all participants, rather than a subgroup, to answer). This process not only allowed NACCHO to assess the data quality but also to determine whether special weights would be required for some items due to low response rates. Response rates for all items were found to be acceptable for national estimates.

Weights based on states and population categories (small, medium, large) were then generated for analysis (with exception of some analysis for staffing cuts) to account for sampling and nonresponse. In this way, national estimates could be made for all LHDs. Item-specific weights were generated for variables related to staffing cuts to account for item nonresponse and better estimate the overall number of jobs lost. The decision on whether there was sufficient data for state-level estimates was made based on the overall consideration of the following factors: (1) number of LHDs in the population for each state; (2) state's overall response rate; and (3) 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.

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References

1. For more information on NACCHO's Job Losses and Program Cuts Surveys, visit <http://nacchoprofilestudy.org/job-loss-program-cuts-surveys/>
2. For more information on NACCHO's National Profile of Local Health Department Surveys, visit <http://nacchoprofilestudy.org/reports-publications/>