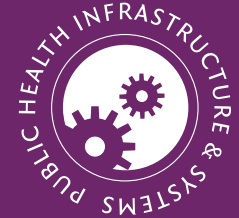


## 2015 Forces of Change Survey: Technical Documentation



### 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. The Forces of Change Survey continues to measure changes in LHD budgets, staff, and programs and assesses more broadly the impact of forces affecting change in LHDs (such as health reform). Beginning in 2014, NACCHO began conducting the Forces of Change survey yearly in years that the National Profile Study of Local Health Departments was not fielded.

### Sampling

NACCHO used a stratified random sampling design for the 2015 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 have no LHDs. In addition, 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% of the LHDs in a given stratum and at least two LHDs per stratum whenever possible. Table 1 presents the percentage of LHDs included in the sample according to the total number of LHDs in a state.

**TABLE 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 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 (when possible). 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.

### Survey Administration

The Forces of Change Survey instrument included some questions used in previous surveys conducted by NACCHO (including the 2014 Forces of Change survey, 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 December 2014.

NACCHO administered the questionnaire using Qualtrics (<http://www.qualtrics.com>), an online survey administration tool. On Jan. 5, 2015, the designated primary contact of every LHD in the sample received an invitation via e-mail from NACCHO's executive director to participate in the survey. The survey link was sent via Qualtrics on Jan. 13, 2015. After the initial invitation, the potential participants received up to five reminder e-mails.

In addition, NACCHO made reminder calls to LHDs that had yet to complete the survey, targeting states with low response rates. Some state associations of county and city health officials and state health departments assisted by encouraging their LHDs to take part in the survey.

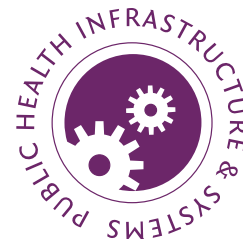
The survey was closed on Feb. 27, 2015, with 690 responses, for a response rate of 73%. Data were downloaded from Qualtrics in Excel format and converted into Stata Version 13 for cleaning and analysis.

**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	353	532	66%
50,000–499,999	271	336	81%
500,000+	66	80	83%

**TABLE 3. RESPONSE RATES BY STATE**

State	Total Number of LHDs in Sample	Number of Respondents	Response Rate
AK	3	2	67%
AL	23	19	83%
AR	25	22	88%
AZ	9	7	78%
CA	20	11	55%
CO	19	17	89%
CT	27	15	56%
DC	1	0	0%
DE	2	2	100%
FL	22	20	91%
GA	10	8	80%
IA	36	25	69%
ID	7	7	100%
IL	31	22	71%
IN	31	19	61%
KS	35	28	80%
KY	19	17	89%
LA	10	8	80%
MA	109	38	35%
MD	10	10	100%
ME	10	10	100%
MI	15	14	93%
MN	25	19	76%
MO	38	31	82%
MS	9	8	89%
MT	16	11	69%
NC	29	21	72%
ND	12	12	100%
NE	9	8	89%
NH	4	2	50%
NJ	33	18	55%
NM	6	6	100%
NV	4	4	100%
NY	20	19	95%
OH	42	30	71%
OK	24	17	71%
OR	15	12	80%
PA	11	9	82%
SC	4	4	100%
SD	8	5	63%
TN	32	31	97%
TX	22	17	77%
UT	12	6	50%
VA	15	10	67%
VT	12	8	67%
WA	15	12	80%
WI	30	26	87%
WV	17	15	88%
WY	10	8	80%



## 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.

Next, overall and item non-response was examined. The response rates and the number of missing values were computed for each primary question (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. Response rates for all items were found to be acceptable.

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 non-response. 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 non-response to better estimate the overall number of jobs lost.

The decision on whether sufficient data existed 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 have been acceptable, but if the response rate for a certain population size stratum of that state was zero, one could not confidently make a state-level estimate for that state.

## Acknowledgments

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### FOR MORE INFORMATION

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# NACCHO

National Association of County & City Health Officials

*The National Connection for Local Public Health*



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The mission of the National Association of County and City Health Officials (NACCHO) is to be a leader, partner, catalyst, and voice with local health departments.

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