

## Local Health Department Job Losses and Program Cuts: Technical Documentation from July/August 2011 Survey



### Sampling

The National Association of County and City Health Officials (NACCHO) used a stratified random sampling design for this study. A representative sample was used instead of a complete census design in order to minimize survey burden on local health departments (LHDs) while enabling the calculation of national estimates. LHDs were stratified by two variables: the size of the population served and the state. For stratification by size of population served (LHD size), three categories were used: small (<50,000), medium (50,000–499,999), and large (500,000+). Because LHDs with the large population sizes represent a relatively small portion of all LHDs, those LHDs were oversampled to ensure a sufficient number of responses from large LHDs for the analysis. Two states (Hawaii and Rhode Island) were excluded from the study because they had no LHDs. In addition, some states did not have any LHDs in a particular size category, resulting in a total of 123 strata. The sampling plan was designed to select a minimum of 30 percent of the LHDs in a given stratum and at least two LHDs per stratum wherever possible.

Once the sampling plan was finalized, NACCHO used Stata Version 11 to draw 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. In order to minimize response burden, 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 sample, or contact information was not available, a replacement was drawn. Overall, a sample of 968 LHDs was selected.

### Survey Administration

NACCHO administered the survey using a structured questionnaire programmed in Qualtrics ([www.qualtrics.com](http://www.qualtrics.com)), an online survey administration tool. Via Qualtrics, the LHDs in the sample received a survey link and an invitation from NACCHO's president to participate in the survey on July 15, 2011. After the initial invitation, the potential participants received up to seven reminder e-mails. In addition, 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 Aug. 19, 2011, with 680 responses, for a response rate of 70 percent. Data were downloaded from Qualtrics in Excel format and converted into Stata Version 11 for cleaning.

### Data Cleaning

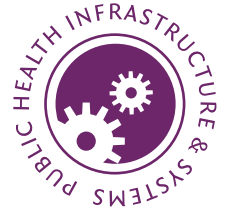
Data cleaning involved several approaches. First, in the course of converting string data to numeric data, NACCHO performed exploratory analyses to detect and address any anomalies. For example, if a respondent provided a negative value for amount of budget decrease, NACCHO

converted the response to a positive value. Second, survey responses 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 in 2010. 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 and there were not supporting data, the data were excluded from analysis. Cleaning tended to result in the exclusion of data indicating abnormally high budget or workforce losses, which may have resulted in slightly conservative estimates for these variables. Partially completed surveys were included in the dataset if more than half of the survey was completed. Thirty-eight respondents (four percent of the sample) completed less than half of the survey; these responses were discarded.

### Analysis

Data analysis was conducted using Stata Version 11.

All statistics reported were developed using appropriate scale weights to account for both sampling and non-response. To create the weights, LHDs were stratified by size of population served (LHD size), using seven size categories: (1) less than 25,000; (2) 25,000–49,999; (3) 50,000–99,999; (4) 100,000–249,999; (5) 250,000–499,999; (6) 500,000–999,999; and (7) 1,000,000 or more. Rather than developing a single set of statistical



weights based on overall survey response, NACCHO developed separate weights for each analyzed variable to account for item non-response. This was done by dividing the total number of LHDs in a given population size category by the number of valid responses for each survey item.

A sub-group analysis was conducted for questions related to workforce size. Three outliers were identified and reassigned a weight of one to prevent the workforce changes of exceptionally large LHDs from being projected onto other LHDs of similar size. These adjustments resulted in somewhat conservative national estimates of the number of LHD staff furloughed, placed on reduced hours, and rehired due to the lift of a previous hiring freeze.

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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 for local health departments in order to ensure the conditions that promote health and equity, combat disease, and improve the quality and length of all lives.

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