

# Local Health Department Job Losses and Program Cuts: Technical Documentation from January/February 2010 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 and state 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+). Two states (Hawaii and Rhode Island) were excluded from the sample because they have no LHDs. In addition, some states did not have any LHDs that fell into 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's research staff used SPSS Version 18 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 967 LHDs was selected.

## Survey Administration

The LHDs in the sample received a survey link and an invitation from NACCHO's president to participate in the survey on Jan. 11, 2010. After the initial invitation, the potential participants received up to four reminder e-mails. In addition, NACCHO staff made reminder calls to people who had not yet completed their survey, targeting states with low response rates. State associations of county and city health officials (SACCHOs) in some states assisted by encouraging their members to take part in the survey.

The decision regarding whether or not to develop state-level estimates depended on two criteria: the state having an adequate response rate and an appropriate number of responses in each population category. Therefore, research staff set thresholds for response rates and the number of responses for each state. In states with inadequate response, a supplementary sample was drawn to increase the counts in select strata. An additional 30 LHDs received invitations to take part in the survey on Feb. 10, 2010. Those from the supplemental sample who had not yet responded received an e-mail reminder.

The survey was closed on Feb. 19, 2010, with 721 responses, for a response rate of 72 percent.

## Data Cleaning

Data cleaning involved several approaches. First, exploratory analyses were performed and descriptive statistics were examined to detect and address any anomalies. Secondly, 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 2008. Cases with a high ratio of layoffs to total staff were examined by a team of two people; the team considered reported program and budget cuts to determine if the response was 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 cases that reported high budget or workforce loss, which may have resulted in a slightly conservative estimate for these variables. Partially completed surveys were included in the dataset if at least the third question in the survey was reached; this question represented a threshold at which a majority of partial respondents completed most of the survey.

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## Analysis

Data analysis was conducted using SPSS Version 18.

All statistics reported were developed using appropriate scale weights to account for both sampling and non-response. The research team created a primary set of weights that were used for descriptive analyses for most survey questions. Weights were calculated by dividing the total number of LHDs in a stratum by the number of valid responses.

An additional set of weights was created for Question 9 (about receipt of funding from the American Recovery and Reinvestment Act) because it had a non-response rate that exceeded five percent, so that statistical estimates appropriately accounted for non-response. The same procedure was used as with the primary weights; however, the divisor in the calculation was the number of valid responses for that question, rather than the overall number of responses for the survey.

To produce national estimates for workforce reductions, the research team converted categorical values (e.g., 1 to 5; 6 to 10; 11 to 15) to discrete values by taking the midpoint for each of the categorical responses. For example, if an LHD reported that it had to reduce the hours of "6 to 10" employees, this was re-coded as "8." A weighted sum was calculated using these continuous values.

Finally, a sub-group analysis was conducted for questions related to budget magnitude. Appropriate weights were used to account for the subset and item non-response. Additionally, a total of 21 outlier values for magnitude of budget decrease were identified. These outliers were reassigned a weight of one, and the difference between the original weight and one was added to the weight for the median value for the strata. This adjustment prevented the budgetary changes of LHDs facing unusually high cuts from being projected onto other LHDs of a similar size. Because all outliers had budget decrease values that were higher than the mean value for the strata, this adjustment resulted in conservative estimates.

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National Association of County & City Health Officials

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