2016 National Study of Long-Term Care Providers

Survey Methodology for the Adult Day Services Center and Residential Care Community Components

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Description

The 2016 National Study of Long-Term Care Providers (NSLTCP) is designed to provide national and state representative statistical information about the supply and use of long-term care services providers in the United States. NSLTCP includes five provider sectors: residential care communities, adult day services centers, nursing homes, home health agencies, and hospices. The main goals of NSLTCP are as follows: (1) Estimate the supply of paid, regulated long-term care services providers; (2) Estimate key policy-relevant characteristics and practices of these providers; (3) Estimate the number of long-term care services users; (4) Estimate key policy-relevant characteristics of these users; (5) Produce national and state estimates where feasible within confidentiality and reliability standards; (6) Compare across provider sectors; and (7) Monitor trends over time.

NSLTCP comprises two components: (1) primary data collected by the National Center for Health Statistics (NCHS) through surveys of residential care communities and adult day services centers, and (2) administrative data on nursing homes, home health agencies, and hospices obtained from the Centers for Medicare & Medicaid Services. With the first wave in 2012, NCHS plans to conduct NSLTCP every two years; the 2016 NSLTCP is the third wave. This documentation focuses on the primary data collection component of the 2016 wave of NSLTCP.

The residential care community and adult day services center surveys were conducted between August 2016 and February 2017. All residential care communities that participated in the survey were licensed, registered, listed, certified, or otherwise regulated by the state; had four or more licensed, registered, or certified beds; provided room and board with at least two meals a day, around-the-clock on-site supervision, and help with personal care, such as bathing and dressing or health related services such as medication management. These communities served a predominantly adult population. Residential care communities licensed to exclusively serve the mentally ill or the intellectually disabled/developmentally disabled populations were excluded from NSLTCP. In 2012, all adult day services centers that participated in the survey self-identified as adult day care, adult day services, or adult day health services centers and were in operation on or before May 31, 2012; and were included in the National Adult Day Services Association's database. Unlike 2012, the 2014 and 2016 waves had a set of additional eligibility

criteria for study participation. In addition to being included in the National Adult Day Services Association's database, adult day services centers had to: 1) be licensed or certified by the state specifically to provide adult day services, or accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF); or authorized or otherwise set up to participate in Medicaid (Medicaid state plan, Medicaid waiver, or Medicaid managed care) or part of a Program of All-Inclusive Center for the Elderly (PACE); 2) have one or more average daily attendance of participants based on a typical week; and 3) have one or more participants enrolled at the center at the location at the time of the survey. When applying the eligibility criteria established for the 2014 wave and continued in the 2016 wave, about 96.5% of 4,800 adult day services centers in 2012 were eligible to participate in the study.

NSLTCP uses a multi-mode survey protocol with mail, web, and computer-assisted telephone follow-up for non-response. The questionnaires included survey items on provider characteristics such as ownership, size, number of years in operation, services offered, selected practices, and staffing in addition to aggregate user characteristics, such as age, sex, race, and the number of residents/participants needing assistance with activities of daily living. The 2016 mail questionnaires are available at: http://www.cdc.gov/nchs/nsltcp/nsltcp_questionnaires.htm. In total 4,578 residential care communities and 2,836 adult day services centers participated in the 2016 NSLTCP survey. Data on these providers are available for use in the NCHS Research Data Center.

Sampling Design

The residential care community component of the 2016 NSLTCP survey used a sample of residential care communities in some states and a census of residential care communities in other states. The adult day services center component of the survey used a census of adult day services centers in all states and the District of Columbia. In the residential care community component, a state was sampled if it had enough communities to enable state-level estimation, i.e., if it had a sufficient number of communities to attain at least 81 completions after inflating the sample size for the estimated ineligibility and nonresponse. In states with an insufficient number of residential care communities on the sampling frame, NCHS took a census of communities.

Among the states where a sample was selected, the primary sampling strata were defined by state and community bed size. For each primary stratum defined by state and bed size, NCHS selected residential care communities by systematic random sampling from lists of communities first sorted by metropolitan statistical area (MSA) status and then randomly ordered within each MSA status. A total of 11,688 residential care communities were sampled with probability proportional to size. All 5,348 adult day services centers in the final sampling frame were included in the study.

Sampling Frame

The residential care community sampling frame was constructed from lists of licensed residential care communities acquired from the licensing agencies in each of the 50 states and the District of Columbia. The state lists were checked for duplicate residential care communities and concatenated to form a list of all communities, resulting in a sampling frame of 42,149. For the census of adult day services centers, NCHS used a frame obtained from the National Adult Day Services Association. Adult day services providers that operated multiple centers at the same address were identified as separate centers. The master list incorporating all sources was checked for duplicate centers; these duplicates were deleted, resulting in a final sampling frame of 5,348 adult day services centers.

Scope of Survey

For the 2016 NSLTCP, a sample of 11,688 residential care communities was selected from the sampling frame of 42,149 communities. Of the 11,688 communities in the sample, 5,485 communities (49%, weighted) could not be contacted and, therefore, the eligibility status of these communities was unknown. Using the eligibility rate, a proportion of these communities of unknown eligibility was estimated to be eligible. This estimated number along with the total number of eligible communities resulting from the screening process was used to estimate the total number of eligible residential care communities. Of the 8,626 in-scope and presumed in-scope residential care communities, 4,578 of them completed the survey questionnaire, for a weighted response rate (for differential probabilities of selection) of 50.7% (this is calculated by using AAPOR's Response Rate 4), resulting in an estimated national total of 28,900 residential

care communities and 811,500 residents. Response rates (weighted) by state ranged from 33.3% to 86.7%.

The frame obtained from the National Adult Day Services Association had 5,349 adult day services centers that self-identified as adult day care, adult day services, or adult day health services centers. After removing duplicates, the final frame consisted of 5,348 adult day services centers, which were all included in the data collection efforts. Of the 4,586 in-scope and presumed in-scope ADSCs, 2,836 of them completed the survey questionnaire, for a response rate of 61.8% (this is calculated by using AAPOR's Response Rate 4), resulting in an estimated national total of 4,600 adult day services centers and 286,300 participants. Response rates by state ranged from 45.5% to 93.8%.

Weighted and unweighted response rates are reported per Office of Management and Budget's (OMB) September 2006 Standards and Guidelines for Federal Statistics. Weighted rates measure the proportion of the total population that is represented by respondents, while unweighted rates reflect only the proportion of the sample that responded.

Data Collection Procedures

The 2016 NSLTCP, which was conducted between August 2016 and February 2017, included mail, web, and telephone administered questionnaires. The survey instruments were designed to assess study eligibility and to collect data on services offered, the staffing profile, resident and center participant characteristics, and record keeping at the residential care communities and adult day services centers. Two sets of questionnaires were used to collect data designed at the state and national level: (1.) survey items that were included on both questionnaires and asked of all respondents (designed to provide state-level estimates), and (2.) a few selected items included on one version of the questionnaires and designed to provide national-level estimates.

Most cases received an advance notification letter. However, as part of a methods experiment, sampled residential care communities and all adult day services centers were divided into 3 groups: (1.) received a technical advance notification letter, (2.) received a less technical advance notification letter, and (3.) did not receive an advance notification letter.

The first questionnaire packet, which followed about 5-7 days after the advance notification letter, included a cover letter from the NCHS director that included web survey login information, a provider-specific insert with selected results from the 2014 wave of NSLTCP, national provider association letters of support, a CDC confidentiality brochure, the provider-specific questionnaire, and a pre-addressed, postage-paid, business reply envelope.

To increase participation, NCHS sent thank you/reminder letters to all residential care communities and adult day services centers about a week after the second questionnaire packets, encouraging them to complete and submit their questionnaires (and to thank those who submitted their questionnaires). Two additional follow-up questionnaire packets and reminder letters/email were mailed to residential care communities and adult day services centers that did not respond to previous mailings. Starting a little over a month after the 2nd follow-up questionnaires were sent, telephone interviewers called residential care communities and adult day services centers that did not complete the web or mail survey by mid-September 2016 and selected for full computer-assisted telephone interview to administer the entire questionnaire over the phone.

After the NSLTCP data were collected, they were edited to ensure that responses were accurate, consistent, logical, and complete. More information on how the data were processed to prepare the restricted adult day services center file and the residential care community file, which is currently available only through NCHS' Research Data Center (RDC), is available in the readme files also available through the RDC and at:
https://www.cdc.gov/nchs/nsltcp/nsltcp_questionnaires.htm

Estimation Procedures

The residential care community sample was a mix of sampled communities from states that had enough residential care communities to produce reliable state estimates and a census of residential care communities in states that did not have enough communities to produce a reliable sample. As a result, the residential care communities' estimates were subject to sampling variability and variability due to non-response. For the data on residential care communities in states where these communities were sampled, as well as for national estimates of residential care communities, the probability design of NSLTCP's residential care community component permits the calculation of sampling errors. The standard error of a statistic is primarily a

measure of sampling variability that occurs by chance because only a sample, rather than the entire population, is surveyed. The standard error also reflects part of the variation that arises in the measurement process and non-response leading to unknown eligibility, but does not include any systematic bias that may be in the data or any other non-sampling error. The chances are about 95 in 100 that an estimate from the sample differs from the value that would be obtained from a complete census by less than twice the standard error. Point estimates and standard errors can be calculated using appropriate design and weight variables in order to account for complex sampling, when applicable. Although a census of all adult day services centers was attempted, the adult day services center estimates were subject to variability due to the amount of non-response, and permits the calculation of standard errors. Software products such as SAS, STATA, and SPSS all have these capabilities. The data files (i.e., adult day services centers and residential care communities) include design variables that can be used to calculate the standard errors.

In the residential care community and adult day services center data files, statistical analysis weights were computed as the product of two components—the sampling weight (only for residential care communities in states where they were sampled) and adjustment for unknown eligibility due to non-response. For sampled states in the residential care community component, the sampling weights reflected the probability of selection for each selected facility. The sampling weight for each sample facility was the reciprocal of its probability of selection. For all the records in the adult day services center component and for all states for which we selected a census for the residential care community component, the probability of selection was equal to 1. To account for residential care communities and adult day services centers of unknown eligibility status, the weights of the facilities with known eligibility were adjusted upward based on the proportion of facilities that were actually known to be eligible, respectively. The adjustment for unknown eligibility was done in SUDAAN, using a constrained logistic model to predict known eligibility and to compute the unknown eligibility adjustment factors for the weights. In both the residential care community data file and the adult day services center data file, the variable FACSTRAT indicates the sampling stratum (bed size and state for residential care communities and state for adult day services centers), and the facility/center indicated by the CASEID, the primary sampling unit. POPFAC represents the total number of residential care

communities for calculating the finite population correction in a stratum. There are 3 survey weights: (1.) FACFNWT to be used for questions included in both versions of the questionnaires and designed to provide state-level estimates, (FACFNWT_A to be used for questions that were only on Version A of the questionnaires, and designed to provide national-level estimates, and (3.) FACFNWT_B to be used for questions that were only on Version B of the questionnaires, and designed to provide national-level estimates. Although the records that make up the adult day services centers file were not sampled, the variability associated with the non-response was treated as if it were from a stratified (by state) sample without replacement. POPFAC represents the total number of adult day services centers for calculating the finite population correction in a stratum. The survey weights in the adult day services center data file are indicated similar to the RCC file. The readme files available on the NSLTCP website (http://www.cdc.gov/nchs/nsltcp/nsltcp_questionnaires.htm) provide an example of the syntax for using these design variables to describe the sampling design in SUDAAN and STATA.

Reliability of Estimates

Estimates from sample surveys published by NCHS must meet reliability criteria based on the relative standard error (RSE or coefficient of variation) of the estimate and on the number of sampled records on which the estimate is based. The RSE is a measure of variability and is calculated by dividing the standard error of an estimate by the estimate itself. The result is then converted to a percentage by multiplying by 100. Guidelines used by NCHS authors to determine whether estimates should be presented in tables of NCHS published data reports include the following:

- If the estimate is based on 60 or more sampled cases and the RSE is less than 30%, the estimate is reported and is considered reliable.
- If the estimate is based on fewer than 30 sampled cases, the value of the estimate is not reported. This is usually indicated with an asterisk (*).
- All other reported estimates should not be assumed to be reliable. These include estimates with an RSE of 30% or more and estimates based on 30–59 cases, regardless of RSE.

NCHS also follows data confidentiality standards in published reports to ensure non-disclosure of respondents. Users are strongly recommended to read the readme text and follow the instructions provided for the individual data sets. To contact RDC for further information, please visit www.cdc.gov/nchs/rdc to learn more about the process for obtaining the readme files and the data sets.