

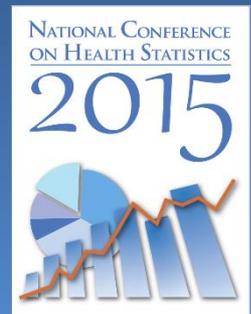
# Residential Care Communities and Adult Day Services Centers: New Survey Data from the 2014 National Study of Long-Term Care Providers

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# Session Agenda

- Introduction to NSLTCP
- Accessing NSLTCP documentation and publications
- Using the Research Data Center
- Variables in the File
- Provider-Level Analyses
- Next steps
- Questions & Answers

Introduction

**National Study of Long-Term Care Providers**

# National Center for Health Statistics— Long-Term Care Statistics Program

## National Health Care Surveys' Mission

- To collect, analyze, and disseminate data on...
  - use, access, quality, and cost of health care provided in the United States and
  - health care organizations and professionals who deliver that care

## Long-Term Care Services Providers Surveyed

- National Nursing Home Survey (NNHS)
  - National Nursing Assistant Survey (NNAS) supplement
- National Home and Hospice Care Survey (NHHCS)
  - National Home Health Aide Survey (NHHAS) supplement
- National Survey of Residential Care Facilities (NSRCF)
- National Study of Long-Term Care Providers (NSLTCP)

# Overview

## National Study of Long-Term Care Providers

National Health Care Surveys



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Center for Health Statistics

- Sponsored by CDC's National Center for Health Statistics
- Integrated initiative to monitor trends in paid, regulated long-term care
- Five sectors
  - adult day services centers and participants
  - home health agencies and patients
  - hospices and patients
  - nursing homes and residents
  - residential care communities and residents

# Primary Goals

1. Estimate supply and use of paid, regulated long-term care services
2. Estimate key policy-relevant characteristics of providers and service users, and practices of providers
3. Produce national and state-level estimates, where possible
4. Compare within and between sectors
5. Examine trends over time

# Provider Sectors and Data Sources



# Survey Data Collection

- 1<sup>st</sup> wave: September 2012 – February 2013
- 2<sup>nd</sup> wave: June 2014 – January 2015
- Comparable data items collected in adult day services center and residential care community questionnaires
- Mail, web, and computer-assisted telephone follow-up for nonresponse
- Target respondents: Directors

# Residential Care Community Definition

- 4 or more beds;
- Primarily an adult population;
- At least 1 resident at time of interview;
- Licensed, registered, listed, certified, or otherwise regulated by the state to...
  - provide room and board with at least 2 meals a day;
  - provide around-the-clock on-site supervision; and
  - offer help with personal care OR health care-related services.
- Exclusions: Nursing homes and providers exclusively serving adults with severe mental illness or ID/DD.

# Scope of Survey

- 40,583 RCCs in the sampling frame
  - Sampling frame constructed from lists of licensed RCCs acquired from the licensing agencies in each of the 50 states and the District of Columbia
  - 11,618 sampled
  - 9,232 in-scope and presumed in-scope RCCs
  - 5,035 completed the survey
- Response rate: 49.6% (weighted)
- 30,200 RCCs serving 835,200 residents on a given day

# Adult Day Services Centers (ADSCs)- Eligibility criteria

- Included in the National Adult Day Services Association's data base and in operation as of March 2014;
- Licensed or certified by State specifically to provide adult day services or authorized or otherwise set up to participate in Medicaid;
- One or more average daily attendance of participants based on a typical week; and
- One or more participants enrolled at the center at the location at the time of the survey.

# Scope of Survey

- All 5,443 ADSCs in the final frame included in the study.
  - 4,751 in-scope and presumed in-scope ADSCs
  - 2,763 completed the survey
- Response rate: 58.0%
- 4,800 ADSCs serving 282,200 participants on a given day

# Topics about Providers

**Bolded topics are available for all five sectors.**

- Basic operating characteristics—**Ownership**, chain status, **capacity, number served, Medicaid participation**, part of a CCRC, years in operation, dementia special care unit
- Services offered and how—Dental, **hospice, social work**, case management, medication management, **mental health, therapeutic, pharmacy**, podiatry, **skilled nursing**, transportation
- Staffing—**Nursing, social workers**, activities staff
- Practices—Depression screening, disease management programming, EHR, person-centered practices

# Topics about Users (Aggregate distributions)

## **Bolded topics are available for all five sectors**

- Demographics—**Age, Race, Ethnicity, Sex**, Medicaid use
- Selected medical conditions—**Alzheimer's disease or other dementias**, developmental disability, severe mental illness, **depression**
- Physical and Cognitive Functioning—**Need any ADL assistance** (transferring, **eating, dressing, bathing, toileting**, locomotion), wheelchair/scooter use
- Health care use—Overnight hospitalizations, re-hospitalizations, ED use
- Other characteristics—Move-ins, move-outs and where went, left because of cost

Accessing documentation, data, and pubs  
**National Study of Long-Term Care Providers**

# NSLTCP Main Page

The screenshot shows a web browser window displaying the NSLTCP main page. The browser's address bar shows the URL <http://www.cdc.gov/nchs/nsltcp.htm>. The page header includes the CDC logo and the text "Centers for Disease Control and Prevention" with the tagline "CDC 24/7: Saving Lives. Protecting People.™". A search bar is located in the top right corner. Below the header is a navigation menu with an "A-Z Index" and letters from A to Z. The main heading is "National Study of Long-Term Care Providers". A left sidebar contains a "National Study of Long-Term Care Providers" section with links for "About NSLTCP", "Questionnaires, Datasets, and Related Documentation", "Study Results and Publications", "Residential Care Community Participants", "Residential Care Community FAQs", "Adult Day Services Center Participants", "Adult Day Services Center FAQs", "Feedback", and "Listserv". Below this is a "Related Sites" section with links to "Surveys and Data Collection Systems", "National Nursing Home Survey", and "National Home and...". The main content area features a breadcrumb trail: "NCHS Home > Surveys and Data Collection Systems > National Health Care Surveys". There are social media icons for Facebook, Twitter, and a plus sign. A paragraph describes the biennial NSLTCP as a groundbreaking initiative to monitor trends in long-term care services providers. It mentions data from surveys of residential care communities and adult day services centers, along with administrative data on home health agencies, nursing homes, and hospices. The vision is to provide reliable, accurate, relevant, and timely statistical information to support policy, research, and practice. A "What's New" section lists updates: 2014 survey data, a 2012 title change to "Long-Term Care Services in the United States: 2013 State Web Tables and Maps", a 2013 overview, and a 2015 correction to coding for metropolitan statistical area variables. A "Contact Us" section provides the address of the Long-Term Care Statistics Branch, phone number 1-800-232-4636, TTY 1 (888) 232-6348, and a link to "Contact CDC-INFO". A "Print page" button is also visible.

http://www.cdc.gov/nchs/nsltcp.htm

# Questionnaires, datasets, and related publications

The screenshot shows a web browser window displaying the CDC website. The address bar shows the URL: [http://www.cdc.gov/nchs/nsltcp/nsltcp\\_questionnaires.htm](http://www.cdc.gov/nchs/nsltcp/nsltcp_questionnaires.htm). The page title is "NSLTCP - Survey Methodol...". The main content area is titled "National Study of Long-Term Care Providers" and features a navigation menu on the left with options like "Questionnaires, Datasets, and Related Documentation". The main content area lists resources for 2014 and 2012, including "Survey Methodology and Documentation" (PDF - 207 KB), "Readme Documents", "Questionnaires", and "Data Files". A "Contact Us" section provides contact information for the Long-Term Care Statistics Branch, including a phone number (1-800-232-4636) and a website link (Contact CDC-INFO).

**Navigation Menu:**

- National Study of Long-Term Care Providers
- About NSLTCP
- Questionnaires, Datasets, and Related Documentation
- Study Results and Publications
- Residential Care Community Participants
- Residential Care Community FAQs
- Adult Day Services Center Participants
- Adult Day Services Center FAQs
- Feedback
- Listserv

**2014 Resources:**

- Survey Methodology and Documentation [PDF - 207 KB]
- Readme Documents
  - Adult Day Services Center (ADSC) [PDF - 424 KB]
  - Residential Care Community (RCC) [PDF - 393 KB]
- Questionnaires
  - Adult Day Services Centers [PDF - 152 KB]
  - Residential Care Communities [PDF - 168 KB]
- Data Files

**2012 Resources:**

- National Home and ...

**Contact Us:**

- Long-Term Care Statistics Branch  
National Center for Health Statistics  
3311 Toledo Road  
Hyattsville, MD 20782-2064
- 1-800-232-4636  
TTY: 1 (888) 232-6348  
(301) 458-4747
- [Contact CDC-INFO](#)

# Survey Methodology and Documentation

The screenshot shows a web browser window with the address bar containing the URL [http://www.cdc.gov/nchs/data/nsitcp/NSLTCP\\_2014\\_](http://www.cdc.gov/nchs/data/nsitcp/NSLTCP_2014_) and the domain [cdc.gov](http://cdc.gov). The browser menu includes File, Edit, Go to, Favorites, and Help. The main content area displays the title "2014 National Study of Long-Term Care Providers" and a "Table of Contents" section. The table of contents lists the following items and their corresponding page numbers:

|                                 |   |
|---------------------------------|---|
| Description.....                | 1 |
| Sample Design.....              | 2 |
| Sampling Frames.....            | 3 |
| Scope of Surveys.....           | 3 |
| Data Collection Procedures..... | 4 |
| Estimation Procedures.....      | 5 |
| Reliability of Estimates.....   | 7 |

At the bottom of the page, there is a navigation bar with icons for save, print, and navigation, along with a page indicator showing "1 / 9". The Windows taskbar at the bottom of the screen shows the Start button, several application icons, and the system tray with the date and time "2:16 AM 8/12/2015".

# Readme Documents

## Table of Contents

Data File .....

Documentation .....

    Brief description of survey .....

    Questionnaire .....

    Data dictionary .....

Data Processing Activities to Create the Restricted File .....

    Consistency checks .....

    Derived variables .....

    Item nonresponse .....

    Imputed data .....

Reliability of Estimates .....

Appendix: The Restricted Data File

# Questionnaires



## National Study of Long-Term Care Providers

### 2014 Residential Care Community Questionnaire

Dear Administrator or Executive Director,

The Centers for Disease Control and Prevention conducts the National Study of Long-Term Care Providers. Please complete this questionnaire about the residential care community at the location listed below.

- **If this residential care community is part of a multi-facility campus or has more than one residential care license, answer only for the place listed below.**
- Please consult records and other staff as needed to answer questions.
- If you need assistance or have questions, go to <http://www.cdc.gov/nchs/nsitcp.htm> or call 1-877-225-4434.

Label here



Residential care places are known by different names in different states. We refer to all of these places and others like them as residential care communities.

Just a few terms used to refer to these places are assisted living, personal care, and adult care homes, facilities, and communities; adult family and board and care homes; adult foster care; homes for the aged; and housing with services establishments.

## National Study of Long-Term Care Providers

### National Study of Long-Term Care Providers

- About NSLTCP
- Questionnaires, Datasets, and Related Documentation
- Study Results and Publications
- Residential Care Community Participants
- Residential Care Community FAQs
- Adult Day Services Center Participants
- Adult Day Services Center FAQs
- Feedback
- Listserv

### Related Sites

- Surveys and Data Collection Systems
- National Nursing Home Survey
- National Home and

[NCHS Home](#) > [Surveys and Data Collection Systems](#) > [National Health Care Surveys](#)



The biennial National Study of Long-Term Care Providers (NSLTCP) is a groundbreaking initiative to monitor trends in the major sectors of paid, regulated long-term care services providers. NSLTCP uses data from surveys of [residential care communities](#) [PDF - 168 KB] and [adult day services centers](#) [PDF - 152 KB] and administrative data on home health agencies, nursing homes and hospices. The vision for NSLTCP is to offer reliable, accurate, relevant and timely statistical information to support and inform long-term care services policy, research and practice.

 Print page

### What's New

- 2014 National Study of Long-Term Care Providers (NSLTCP) Survey Data
- In July 2015, NCHS retitled the **National Study of Long-Term Care Providers: 2012 State Web Tables** as the Long-Term Care Services in the United States: 2013 State Web Tables and Maps [PDF - 3.4 MB]. This title change was made to clearly indicate to readers that these web tables and maps complement the Long-Term Care Services in the United States: 2013 Overview [PDF - 4.3 MB]. All contents of the document remain unchanged.
- Long-Term Care Services in the United States: 2013 Overview [PDF - 2.9 MB] In June 2015, NCHS corrected coding of the metropolitan statistical area variable for adult day services centers; the corrected results and text are in Figure 2 on page 10, page 39, and Appendix B Table 1 on page 38.
- National Study of Long-Term Care



### Contact Us:

 Long-Term Care Statistics Branch  
National Center for Health Statistics  
3311 Toledo Road  
Hyattsville, MD 20782-2064  
 1-800-232-4636  
TTY: 1 (888) 232-6348  
(301) 458-4747  
[Contact CDC-INFO](#)

# Study Results and Publications

- Sector-specific data briefs
- QuickStats
- Overview report
- Web Tables
  - Supplemental state web tables
  - Electronic health records and health information exchange (national, state estimates)
- Weighted Survey Estimates

Using the Research Data Center (RDC)  
**National Study of Long-Term Care Providers**

# Why use RDC

- No public-use files available for ADSC and RCC survey data from NSLTCP
  - To access ADSC or RCC survey data file
  - To link non-NCHS data to ADSC or RCC survey data file

# NCHS Research Data Center

The screenshot shows a web browser window with the address bar displaying <http://www.cdc.gov/rdc/>. The page title is "RDC - Research Data Center". The browser's menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help".

The website content features a blue header with "Research Data Center" and a "CDC A-Z INDEX" dropdown. A left sidebar contains a navigation menu with items: "RDC Home", "What's New", "Restricted Data +", "Access Modes +", "Proposal Process +", "Confidentiality", "Using Restricted Data +", "Providing the Public Use Data", "Publishing Guidelines +", "Reference Materials", "Directions", "RDC Staff", and "FAQs". Below the menu is a "Related Sites" button.

The main content area has social media icons for Facebook, Twitter, and a plus sign. The heading is "NCHS Research Data Center (RDC)". The text explains that the RDC allows researchers access to restricted data from NCHS and other groups within HHS. It states the RDC's role in protecting confidentiality and the requirement for researchers to submit proposals. A logo for the "RESEARCH DATA CENTER" with the tagline "Confidential and Secure Access" is shown.

The text continues: "The RDC is responsible for protecting the confidentiality of survey respondents, study subjects, or institutions from which data were collected. In order to do this, we request all researchers submit a research proposal outlining the need for this more sensitive data. The proposal provides a framework for us to identify potential disclosure risk. Once approved, we work with you to create a data file specific to your research question. We cannot send you the dataset, but we offer several modes of access."

The content is organized into two main sections:

- 1. [Preparing for Proposal Submission](#)**
  - [1. Restricted Data](#)
  - [2. Access Modes](#)
  - [3. The Proposal Process](#)
- 2. [Using Restricted Data](#)**
  - [1. Confidentiality](#)
  - [2. Approved Projects: Next Steps](#)
  - [3. Publishing Guidelines](#)

The Windows taskbar at the bottom shows the system tray with the time "2:30 AM" and date "8/12/2015".

<http://www.cdc.gov/rdc/>

# RDC: Approved Projects – Next Steps

http://wwwdev.cdc.gov/rdc/b5aprovproj/ap500.htm RDC - Approved Projects - ...

File Edit View Favorites Tools Help

CDC A-Z INDEX

## Research Data Center

RDC Home

What's New

Restricted Data +

Access Modes +

Proposal Process +

Confidentiality

Using Restricted Data

Providing the Public Use Data +

Publishing Guidelines +

Reference Materials

Directions

RDC Staff

FAQs

Related Sites

CDC > [Creating Your Analytic Data Set](#) > [Approved Projects](#) > [RDC Home](#) > [NCHS Home](#) > [RDC Home](#)

### Approved Projects - Next Steps

[f](#) [t](#) [+](#)

- 1. Proposal** - you have an approved proposal notification from your RDC Analyst
- 2. Paperwork** - Submit the [Confidentiality Orientation Certificate](#) and Designated Agent paperwork for everyone on your Research Team.
- 3. Dataset** - Create a public-use/non-NCHS data file and email to your RDC Analyst
  - Dataset(s) include only the variables specified in your proposal
  - The original NCHS variables retain the name they are given in the public dataset(s)
  - Your RDC Analyst is deriving variables from the restricted data and these have been discussed in advance. Provide code to create derived variables from the restricted data.
- 4. Software** - Discuss software requirements with your RDC Analyst and have confirmation that the software you need is available. (Note: Census users must contact Census Administrator) SAS or STATA are available for most modes of access.
- 5. Payment** - Discuss [management fees](#) with RDC Analyst. Send payment.
- 6. Complete all your Access Mode requirements**  
**NCHS RDC:**
  - Logistics** - you know how to get there, where to park, who to call, to bring an id, and have completed the VMS process if you are not a US citizen.
  - Scheduling** - Make arrangements with your RDC Analyst to reserve a computer on the days of your visit.
    - Only publishable output will be reviewed, you will be required to pare down large output files. This may require you to add an additional day

6:53 AM  
8/12/2015

# RDC: Restricted NCHS Variables

The screenshot shows a web browser window with the URL <http://wwwdev.cdc.gov/rdc/b1/datatype/dt122.htm>. The page title is "RDC - Restricted Data". The main content area is titled "Research Data Center" and "Restricted NCHS Variables".

**Research Data Center**

**RDC Home** | [CDC](#) > [NCHS Home](#) > [RDC Home](#) > [Restricted Data](#) > [NCHS Restricted](#)

**Restricted NCHS Variables**

[f](#) [t](#) [+](#)

Restricted data is information that could compromise the confidentiality of survey respondents or institutions, or is sensitive by nature. To access these variables, a proposal must be approved by the Research Data Center. The following links take you to information about the specific data system. We recognize that these lists are not exhaustive, so if after reviewing this documentation you cannot find the information you are looking for, please email [rdca@cdc.gov](mailto:rdca@cdc.gov). Please refer to these lists when preparing the data dictionary for your RDC proposal.

We encourage researchers to review all of the methodological information (i.e. analytic guidelines and sample design documentation) available about the data before submitting a proposal.

- [Geographic Codes for all NCHS Surveys](#)
- [National Health and Nutrition Examination Survey \(NHANES\)](#)
- **National Health Care Surveys**
  - [National Ambulatory Medical Care Survey \(NAMCS\) and National Hospital Ambulatory Medical Care Survey \(NHAMCS\)](#)
  - [National Hospital Discharge Survey \(NHDS\)](#)
  - [National Nursing Home Survey \(NNHS\) and National Nursing Assistant Survey \(NNAS\)](#)
  - [National Home and Hospice Care Survey \(NHHCS\) and National Home Health Aide Survey \(NHHAS\)](#)
  - [National Survey of Residential Care Facilities \(NSRCF\)](#)
  - [National Study of Long-Term Care Providers \(NSLTCP\)](#)
- [National Health Interview Survey \(NHIS\)](#)

**Left Sidebar:**

- RDC Home
- What's New
- Restricted Data
- NCHS Public Use
- NCHS Restricted**
- NHANES Restricted Variables
- NAMCS and NHAMCS Restricted Variables
- NHDS Restricted Variables
- NNHS and NNAS Restricted Variables
- NHCS and NHHAS Restricted Variables
- NSRCF Restricted Variables
- NSLTCP Restricted Variables
- NHIS Restricted Variables

**Taskbar:** 6:46 AM, 8/12/2015

Variables in the File

**National Study of Long-Term Care Providers**

# -9= Not Ascertained

|          |  |   |
|----------|--|---|
| OWNERSHP | What is the type of ownership of this adult day services center? | 1 = Private, nonprofit                                    |
|          |  | 2 = Private, for profit                                   |
|          |  | 3 = Publicly traded company or limited                    |
|          |  | 4 = Government—federal, state, county or local government |
|          |  | -9 = Not ascertained                                      |

# -1 = Legitimate Skip

|         |   |                      |
|---------|---|----------------------|
| MEDPAID | During the last 30 days, for how many of the residents currently living in this residential care community, did Medicaid pay for some or all of their services received at this community?<br>If none, enter "0." | (0 - 160)            |
|         |   | -9 = Not ascertained |
|         |   | -1 = Legitimate skip |

# Mark All That Apply

## 2 Services Offered

**15.** For each row, mark if this residential care community provides the service by . . .

- Paid residential care community employees
- Arranging for and paying outside vendors
- Arranging for outside vendors paid by others
- Referral
- **NONE OF THESE APPLY / NOT PROVIDED**

| Type of Service  | This residential care community provides the service by . . .<br>(MARK ALL THAT APPLY) |  |  |                          | NONE OF THESE APPLY/<br>NOT PROVIDED |
|--|--|--|--|--------------------------|--------------------------------------|
|  | Paid residential care community employees  | Arranging for and paying outside vendors | Arranging for outside vendors paid by others | Referral                 |                                      |
| a. Routine and emergency dental services by a licensed dentist | <input type="checkbox"/>   | <input type="checkbox"/>                 | <input type="checkbox"/>                     | <input type="checkbox"/> | <input type="checkbox"/>             |
| b. Hospice services  | <input type="checkbox"/>   | <input type="checkbox"/>                 | <input type="checkbox"/>                     | <input type="checkbox"/> | <input type="checkbox"/>             |

# Derived Variable Example (1)

|           |   |  |
|-----------|---|--|
| SERVDENT1 | <p>For each row, mark if this adult day services center provides the service by...</p> <p>* Paid center employees</p> <p>a.Routine and emergency dental services by a licensed dentist</p>                        | <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Not ascertained</p> |
| SERVDENT2 | <p>For each row, mark if this adult day services center provides the service by...</p> <p>* Arranging for and paying outside vendors</p> <p>a.Routine and emergency dental services by a licensed dentist</p>     | <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Not ascertained</p> |
| SERVDENT3 | <p>For each row, mark if this adult day services center provides the service by...</p> <p>* Arranging for outside vendors paid by others</p> <p>a.Routine and emergency dental services by a licensed dentist</p> | <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Not ascertained</p> |
| SERVDENT4 | <p>For each row, mark if this adult day services center provides the service by...</p> <p>* Referral</p> <p>a.Routine and emergency dental services by a licensed dentist</p>                                     | <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Not ascertained</p> |

# Derived Variables (2)

|          |   |                                      |
|----------|---|--------------------------------------|
| SERVDENT | For each row, mark if this adult day services center provides the service by... | 1= Provided                          |
|          |   | 2= Referral only                     |
|          |   | 3= Not provided/ None of these apply |
|          |   | -9 = Not ascertained                 |
|          | a.Routine and emergency dental services by a licensed dentist                   |                                      |

# Imputed Variables (1)

- Revenue sources (ADSC)
- Select aggregate resident/participant characteristics
  - Age distribution
  - Race-ethnicity distribution
  - Sex distribution
  - Needing assistance with eating
  - Needing assistance with bathing
  - Diagnosed with dementia
  - Diagnosed with depression

# Imputed Variables (2)

- Five different sets of imputed variables
  - Indicated by "imp" as the prefix and a numeral as the suffix (e.g., impbathhelp\_1, impbathhelp\_5).
  - Flagging variable to indicate cases imputed for the variable (e.g., BATHHELP\_FL)

# Imputed Variables (3)

|        |  |                                   |
|--------|--|-----------------------------------|
| MALE   | Of the participants currently enrolled at this center, how many are in each of the following categories? Enter "0" for any categories with no participants.<br>a. Male | (0 - 406)<br>-9 = Not ascertained |
| MALERC | Number of participants who are: Male   | (0 - 406)                         |

# Derived resident/participant variables (1)

Of the residents currently living in this residential care community, about how many have been diagnosed with each of the following conditions? **Enter “0” for any categories with no residents.**

|  | NUMBER OF RESIDENTS  |
|--|----------------------|
| a. Alzheimer’s disease or other dementias                                    | <input type="text"/> |
| b. Intellectual/ developmental disability                                    | <input type="text"/> |
| c. Severe mental illness   | <input type="text"/> |
| d. Depression  | <input type="text"/> |
| e. Cardiovascular disease (e.g., heart disease, stroke, high blood pressure) | <input type="text"/> |
| f. Diabetes  | <input type="text"/> |

# Derived resident/participant variables (2)

Assistance refers to **needing any help or supervision from another person, or use of special equipment**. Of the residents currently living in this residential care community, about how many now need **any assistance** in each of the following activities? Enter **“0”** for any categories with no residents.

## NUMBER OF RESIDENTS

- a. With transferring in and out of a bed or chair
- b. With eating, like cutting up food
- c. With dressing
- d. With bathing or showering
- e. In using the bathroom (toileting)
- f. With locomotion or walking

# Derived resident/participant variables (3)

Coded missing as "0" unless responses to all response boxes were blank

- Responses provided only when specific diagnosed conditions/ ADL limitation categories were applicable

Data file includes original and derived variables:

- Diagnosed conditions:
  - **DXALZ**, **DXDEP**, DXDD, DXCADIO, DXDIAB
  - DXALZ2, DXDEP2, DXSMI2, DXDD2, DXCADIO2, DXDIAB2
- Activities of daily living
  - TRANSHELP, **BATHHELP**, **EATHELP**, DRESHELP, BEDHELP, WALKHELP
  - TRANSHELP2, BATHHELP2, EATHELP2, DRESHELP2, BEDHELP2, WALKHELP2

# Derived staffing variables (1)

Coded missing as "0" unless responses to all response boxes were blank

- Responses provided only when specific categories of staff type were applicable

# Derived staffing variables (2)

- Number of full-time equivalents (FTE), by staff type
  - Number of full-time and part-time staff converted to FTEs (e.g., RNFTE1, RNFTE2)
    - Outliers identified and edited
- Hours per resident/participant day, by staff type (e.g., RNHPPD1, RNHPPD2)
  - Derived using FTEs and current residents/participants
- Any employee/any contract staff, by staff type (e.g., ANYRN\_EMP, ANYRN\_CON)

# Aggregate resident/participant variables

Count of residents/participants with a given characteristic collected to:

- Compute weighted total across all RCCs/ ADSCs
- Compute weighted percent of residents/participants with a given characteristics across all RCCs/ ADSCs;
- Derive individual provider-level percent of residents/ participants with a given characteristics
  - To control for resident/participant case mix in multivariate analyses

# Complex sample design variables

- **Design variables**
  - Sampling without replacement
  - Strata variable: STRATA
  - Weight variable: FACFNWT
    - RCC – Product of sampling weight and unknown eligibility due to nonresponse
    - ADSC – Unknown eligibility due to nonresponse
  - Finite population correction: POPFAC
- **Need to account for complex sample design to:**
  - 1) Obtain correct national and state estimates
  - 2) Obtain correct standard errors

Provider-Level Analyses: Examples

**National Study of Long-Term Care Providers**

# Example: Overnight Hospital Stay

**20.** Of the participants currently enrolled at this center, about how many were discharged from an overnight hospital stay in the last 90 days? Exclude trips to the hospital emergency department that did not result in an overnight hospital stay. **If none, enter "0."**

Number of participants

# OVRNITE

- Before computing estimates, recode '-9=Not ascertained' to missing ('.').
  - If OVRNITE=-9 then OVRNITE2=.;
  - Else OVRNITE2=OVRNITE;

# Total number of ADSC participants discharged from overnight hospital stay across all ADSCs

## SAS-callable SUDAAN codes:

```
PROC DESCRIPT DESIGN=
WOR;
NEST STRATA;
WEIGHT FACFNWT;
TOTCNT POPFAC;
VAR OVRNITE2;
PRINT TOTAL SETOTAL;
run;
```

## STATA codes:

```
SVYSET CASEID
[PWEIGHT=FACFNWT],
STRATA(STRATA) FPC
(POPFAC) VCE(LINEARIZED)
SINGLEUNIT(CENTERED)

SVY:TOTAL
OVRNITE2
```

# Percent of ADSC participants discharged from overnight hospital stay across all ADSCs

## SAS-callable SUDAAN codes:

```
PROC RATIO  
DESIGN=WOR;  
NEST STARTA;  
WEIGHT FACFNWT;  
TOTCNT POPFAC;  
NUMER OVRNITE2;  
DENOM TOTPART;  
PRINT RHAT SERHAT; run;
```

## STATA codes:

```
SVYSET CASEID  
[PWEIGHT=FACFNWT],  
STRATA(STRATA) FPC  
(POPFAC) VCE(LINEARIZED)  
SINGLEUNIT(CENTERED)  
  
SVY:RATIO  
OVRNITE2/TOTPART
```

Derive individual provider-level percent variable:

$$\text{PEROVRNITE} = (\text{OVRNITE2}/\text{TOTPART}) * 100\%$$

Distribution of PEROVRNITE:

| PEROVRNITE | Weighted % |
|------------|------------|
| 0%         | 35.6%      |
| <= 25%     | 62.6%      |
| > 25%      | 1.8%       |

# Subgroup Analyses (1)

## Assessing differences by subgroups

- Examples:
  - RCC: size, ownership, chain...
  - ADSC: Ownership, chain...

## Assessing differences by resident/ participant subgroups

- Aggregate resident/ participant characteristics
- Cross-tabulation of resident/ participant characteristics not possible (e.g., sex by age)

## Subgroup Analyses (2)

“Using a SUBPOPN statement in SUDAAN is not equivalent to using a subset of the data file [with observations to exclude deleted]. Differences (usually slight) will be evident in estimates of standard errors...These differences arise from differences in counts within the strata (of PSUs)...”

Source: SUDAAN Language Manual, Release 9, Research Triangle Institute (2004), Research Triangle Park, NC: Research Triangle Institute.

# OVRNITE2 among ADSCs using electronic health records

## SAS-callable SUDAAN codes:

```
PROC RATIO DESIGN=WOR;  
NEST STARTA;  
WEIGHT FACFNWT;  
TOTCNT POPFAC;  
SUBPOPN EHRS=1;  
NUMER OVRNITE2;  
DENOM TOTPART;  
PRINT RHAT SERHAT; run;
```

## STATA codes:

```
SVYSET CASEID  
[PWEIGHT=FACFNWT],  
STRATA(STRATA) FPC  
(POPFAC) VCE(LINEARIZED)  
SINGLEUNIT(CENTERED)  
  
SVY, SUBPOP (if  
EHRS==1):RATIO  
OVRNITE2/TOTPART
```

# Next Steps (1)

## 2<sup>nd</sup> Wave

- Develop core products using 2013-2014 data to start publishing in late 2015

## 3<sup>rd</sup> Wave

- Preparing to conduct 3<sup>rd</sup> survey wave May-November 2016
- Questionnaire content development now
- Conduct project starting in late 2015 to determine feasibility of person-level sampling and data collection → Inform design for national data collection planned for 2018 (4<sup>th</sup> wave)

# Next Steps (2)

## Beyond...

- Infrastructure in place to collect data every 2 years from adult day services centers and assisted living and similar residential care communities
- Potential to add new sectors → Gaps project to identify under-covered or non-covered sectors—home care, RCCs that exclusively serve persons with IDD

# Wednesday, (August 26, 2015)

## *Poster Session III --8:00a.m.-1:00pm*

- Hospital Readmissions within Residential Care Communities: Findings from the 2012 National Study of Long-Term Care Providers (NSLTCP)

## *Concurrent Scientific Session V –SS06 1:30pm-3:00pm*

- The National Study of Long-Term Care Providers (NSLTCP): A New Resource for Researchers, Providers, and Policymakers [SS-01] White Oak A-B
- State Variations in the Provision and Use of Health and Long-Term Care Services [SS-07] Brookside A-B

**Thank you!**

**Questions?**

# Administrative Data Sources (1)

*Reference period is 3<sup>rd</sup> quarter 2014* Nursing homes, home health agencies, hospices

- CMS' Certification and Survey Provider Enhanced Reporting (CASPER, formerly known as Online Survey Certification and Reporting) data files

## Nursing home residents

- Minimum Data Set Active Resident Episode Table (MARET) data
- CASPER-nursing home file

# Administrative Data Sources (2)

*Reference period is calendar year 2013*

- Home health patients
  - Outcome-Based Quality Improvement (OBQI) Case Mix Roll Up data (also known as Agency Patient-Related Characteristics Report data) from the Outcome and Assessment Information Set (OASIS)
  - Institutional Provider and Beneficiary Summary (IPBS)-Home health data
- Hospice patients
  - IPBS-Hospice data file

# Domain Analysis

## **SAS survey procedures (e.g., SURVEYFREQ, SURVEYPHREG)**

“*Domain analysis* refers to the computation of statistics for domains (subpopulations). Formation of subpopulations can be unrelated to the sample design, and so the domain sample sizes can actually be random variables. Domain analysis takes this variability into account to compute variance estimates for estimated model parameters. Domain analysis is also known as subgroup analysis, subpopulation analysis, and subdomain analysis. For more information about domain analysis, see Lohr ([2010](#)); Särndal, Swensson, and Wretman ([1992](#)); Cochran ([1977](#)).”