NPALS™

National Post-acute and Long-term Care Study

Administrative Data Technical Notes

2022 National Post-acute and Long-term Care Study

Contents

1 Introduction

The 2022 National Post-acute and Long-Term Care Study (NPALS) includes data from the National Center for Health Statistics' (NCHS) surveys of adult day services centers and residential care communities and from multiple sources of data from the Centers for Medicare and Medicaid Services (CMS) for federally regulated settings where data already exist. These five settings include home health agencies, hospices, nursing homes, inpatient rehabilitation facilities (IRF), and long-term care hospitals (LTCH). This document describes the CMS data sources and the management of the data files to 1) harmonize with the NPALS survey data and 2) replicate the estimates disseminated by NCHS in these settings. These technical notes describe the CMS data sources used for each setting at the provider- and user-levels and the methodology to derive the estimates used for NPALS, particularly the estimates in the 2022 interactive data dashboards, .

2 NPALS Resources

See the following resources for more information on NPALS and reports and tables using 2022 NPALS survey and administrative data.

- Information about NPALS surveys of ADSCs and RCCs:
  https://www.cdc.gov/nchs/npals/questionnaires/index.html
- Reports using NPALS data:
  https://www.cdc.gov/nchs/npals/study-cycles/index.html
- Interactive data dashboards:
  https://www.cdc.gov/nchs/npals/webtables/overview.htm
- Definitions of variables:
  https://www.cdc.gov/nchs/data/npals/2022-NPALS-variable-crosswalk-survey-admin-508.pdf

3 Overview of Data Sources

Data sources for the five settings were chosen to be as comparable to the NPALS survey data on adult day services centers and residential care communities as possible. The provider-level data sources cover active providers who were Medicare or Medicaid licensed during the 2022 calendar year. Depending on the user-level data source, information is obtained about services users in 2022 who were discharged, have Medicare claims, or were current users as of the last quarter of 2022. The data files were obtained as public use files online or through data requests to CMS[1] and data use agreements through ResDAC for limited data sets and research identifiable files[2].

NPALS uses CMS administrative data to provide information about these settings that may not be reported elsewhere and are as similar to the NPALS survey data settings as

possible. However, additional information about these five settings can also be found in other resources. Estimates for similar topics can be compared to NPALS for benchmarking purposes; however, exact data sources and methodologies may differ from those used in NPALS reports. The Medicare Payment Advisory Commission (MedPAC) Medicare Payment Policy report [3] to the Congress uses data from various CMS sources such as Provider of Services files, Medicare Provider Analysis and Review, Quality, Certification and Oversight files, standard analytic files, Limited Data Sets, Consumer Assessments of Health- care Providers and Systems (CAHPS) data, Payroll Based Journal (PBJ), Medicare cost report data, IRF-Patient Assessment Instrument, and Medicare enrollment and claims data. CMS[4] offers publicly available data on providers and patients in each of these settings. Long-Term Care Focus[5] provides a variety of information about characteristics of nursing homes and residents, including US maps and state-level data.

4 Provider-level Data Sources

Provider-level data come from the Certification and Survey Provider Enhanced Reports (CASPER) system, CMS provider public use files, and PBJ data on nursing home staffing. CASPER data are collected to support the survey and certification regulatory functions of CMS. It includes every provider that is certified to provide services under Medicare, Medicaid, or both. The CASPER data used in NPALS reports include active providers during 2022. Providers are in the United States and District of Columbia, excluding American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands. The availability of variables in each file and frequency of certification data collection varies by sector because different providers are required to report different information at different time intervals. For most sectors, CASPER files provided data on the number of providers, U.S. Census regions, zip codes to derive metropolitan statistical areas (MSA), ownership type, certification status, chain status, Medicare or Medicaid certification, capacity based on beds, staffing levels, and services provision.

4.1 Home Health Agency

CMS Provider Data public use File

The home health agency CASPER data file was not available for 2022. Instead, NPALS used the home health provider data public use file, dated 10/26/2022 (HH_provider_Oct2022.csv)[6]. It included 11,544 current home health agencies as of the fourth quarter of 2022. The number of home health agencies was similar to previous years of home health in the CASPER data. This file included information about U.S. Census region derived from state codes, MSA from zip codes, ownership status, and selected services (medical social services and therapeutic services). Adverse events measures (falls, emergency department visits, hospitalizations) estimates were not included in NPALS data tables because there was a high percentage of missing data (30%-40%). Data were missing because the number of patient episodes for this measure was too small to report or the provider had been certified/recertified for less than 6 months. Estimates are similar to the 2020 estimates from CASPER data.

4.2 Hospice

The hospice CASPER file included 5,791 hospices. Information on the type of certification (Medicare-only, Medicaid-only, or both) was not available, but assumed to be Medicare certified. CMS requires certification surveys of Medicare hospices every 6 to 8 years, on average. However, a majority (67.0%) of hospices completed a certification survey during the last 3 years and about 49% during the last 2 years. This file included U.S. Census region derived from state codes, MSA from zip codes, ownership status, staffing, and selected services.

4.3 Inpatient Rehabilitation Facility

The IRF CASPER file included 1,166 facilities. About 95% were Medicare- and Medicaid-certified, 5% were Medicare-certified only, and no facilities were Medicaid-certified only. About 38% completed a certification survey during the last 3 years. This file included U.S. Census region derived from state codes, MSA from zip codes, certification, ownership status, capacity, staffing, and selected services.

4.4 Long-term Care Facility

The LTCH CASPER file included 337 hospitals. About 79% were Medicare- and Medicaid-certified, 21% were Medicare-certified only, and no hospitals were Medicaid-certified only. About 42% completed certification surveys during the last 3 years. This file included U.S. Census region derived from state codes, MSA from zip codes, certification, ownership status, capacity, staffing, and selected services.

4.5 Nursing Home

The nursing home CASPER file included 14,706 nursing homes. About 96% were Medicare- and Medicaid-certified, 4% were Medicare-certified only, and 0.5% were Medicaid-certified only. Nearly all of these nursing homes (94%) completed a certification survey during the last 18 months (including 89% during the last 12 months). This file included U.S. Census region derived from state codes, MSA from zip codes, ownership status, chain status, certification, capacity, dementia care and hospice beds, and resident census data to estimate the average number of people served daily, and number of people served categories.

Nursing Home Payroll-based Journal public use files (PBJ)

The PBJ files contained staffing information about all active nursing homes, aggregated to the "facility day" for each day of the quarter; some nursing homes may be excluded based on aberrant data[7]. The estimates come from the 2022 Quarter 4 nurse staff data[8] and non-nurse staff data[9], covering October 1 through December 31, 2022. To derive the staffing estimates, we selected a random weekday for each of the 14,698 nursing homes. This methodology closely matches previous NPALS estimates of staffing on a given day based on the 2018 CASPER Q4 data. To approximate the total number of full-time equivalent

nursing and social work staff, the number of hours of each staff type was divided by 8 hours. To estimate the hours per resident day (HPRD), the number of hours of each staff type was divided by the MDS resident census variable available in the PBJ data. These files were used to estimate staffing for registered nurses, licensed practical nurses, aides, social workers, and activity staff.

Services provision was estimated by having more than 0 hours, at any time during Quarter 4, of any employee or contract staff type that corresponded to a service (i.e. a nursing home with dietician or feeding assistant hours were considered to provide dietary services). The files included staff types corresponding to therapeutic, dietary, social work, nursing, and pharmacy services.

The 2022 estimates were similar to estimates from the 2018 and 2020 Quarter 4 PBJ files using these same methods. Estimates reported in 2022 NPALS products are different from the staffing and services estimates last reported in 2018 (https://www.cdc.gov/nchs/data/series/sr_03/sr03-047.pdf), which were estimates from measures included in the 2018 CASPER file.

5 User-level Data Sources

User-level information was obtained from different sector-specific CMS assessment and claims data sources. User-level assessment data about home health patients come from Outcome and Assessment Information Set (OASIS), about nursing home residents from Minimum Data Set Active Resident Episode Table (MARET), and about IRF patients from Inpatient Rehabilitation Facility-Patient Assessment Instrument (IRF-PAI). The Institutional Provider and Beneficiary Summary (IPBS) claims data files contain aggregated information about users for home health, hospice, IRF, and LTCH patients.

5.1 Home Health patients

Institutional Provider and Beneficiary Summary (IPBS)

The IPBS data file contained information about home health patients for whom Medicare-certified home health agencies submitted a Medicare claim at any time in calendar year 2022. The total number of patients was 3,296,889 from 9,816 agencies. This file was used to estimate the annual number of home health patients, number of people served categories, and the percentages of patients by age, sex, race and ethnicity, and selected health conditions.

Outcome and Assessment Information Set (OASIS)

OASIS data were used as the source of information on activities of daily living (ADLs) of home health patients who received home health services from CMS certified providers at any time in calendar year 2022. Previous NPALS reports (2012-2018) used the Outcome-Based Quality Improvement Agency Patient Related Characteristics Report, which aggregated episodes of care from OASIS and included patients who were discharged during the respective survey year, regardless of when the episode of care began. However, this data

extract was not available in 2020 and 2022 and the methodology to develop the OASIS file differed. NPALS selected all patients whose most recent episode had a start of care (SOC) assessment and associated discharge assessment in 2022. After identifying the discharged patients with associated SOC assessments in 2022, there were 3,436,041 unique home health patients from 10,633 home health agencies. The SOC assessments were used to estimate the percentages of home health patients needing assistance with ADLs.

5.2 Hospice patients

Institutional Provider and Beneficiary Summary (IPBS)

The IPBS hospice data file contained information about hospice patients for whom Medicare-certified hospice agencies submitted a Medicare claim at any time in calendar year 2022. The total number of hospice patients was 1,829,297 from 5,932 hospices. This file was used to estimate the annual number of hospice patients, number of people served categories, and the percentages of patients by age, sex, race and ethnicity, and selected health conditions.

5.3 Inpatient Rehabilitation Facility patients

Institutional Provider and Beneficiary Summary (IPBS)

The IPBS IRF data file contained information about IRF patients for whom Medicare-certified IRFs submitted a Medicare claim at any time in calendar year 2022. The total number of IRF patients was 365,902 from 1,132 facilities. This file was used to estimate the annual number of IRF patients, number of people served categories, and the percentages of patients by age, sex, race and ethnicity, and selected health conditions.

Inpatient Rehabilitation Facility-Patient Assessment Inventory (IRF-PAI)

IRF-PAI data contains information at admission and upon discharge for all Medicare Part A fee-for-service patients who received services under Part A from an IRF in 2022. After selecting the most recent admission assessment data, there were 407,281 unique IRF patients from 1,136 facilities. The admission assessment data was used to estimate percentages of patients needing assistance with ADLs.

5.4 Long-term Care Facility patients

Institutional Provider and Beneficiary Summary (IPBS)

The IPBS LTCH data file contained information about patients for whom Medicare-certified LTCHs submitted a Medicare claim at any time in calendar year 2022. The total number of LTCH patients was 66,422 from 340 hospitals. This file was used to estimate the annual number of patients, number of people served categories, and the percentages of patients by age, sex, race and ethnicity, and selected health conditions.

5.5 Nursing Home residents

CASPER Resident Census data

The CASPER nursing home file included census information on selected measures for 1,171,687 current residents of 14,706 nursing homes during the fourth quarter of 2022. This information was collected using Form CMS-672 (Resident Census and Conditions of Residents) and represents the facility at the time of the certification survey. Resident census data were used for the average daily number of residents, number of residents, number of people served categories, and the percentages of residents needing assistance with ADLs.

Minimum Data Set Active Resident Episode Table (MARET)

The MARET data file included assessment information about all active residents who were residing in a Medicare- or Medicaid-certified nursing home on the last day of the fourth quarter of 2022, regardless of payment source. CMS defines an active resident as "a resident whose most recent assessment transaction is not a discharge and whose most recent transaction has a target date (assessment reference date for an assessment record or entry date for an entry record) less than 150 days old. If a resident has not had a transaction for 150 days, then that resident is assumed to have been discharged." The number of nursing home residents obtained from MARET was 1,244,425 from 14,769 nursing homes. This file was used to estimate the percentages of residents by age, sex, race and ethnicity, and selected health conditions.

6 References

1 Centers for Medicare and Medicaid Services. Available from: https://www.cms.gov/

2 Research Data Assistance Center (ResDAC). Available from: https://resdac.org/

3 Medicare Payment Advisory Commission (MedPAC). March 2024 report to the Congress: Medicare payment policy. Washington, DC: MedPAC. Available from: https://www.medpac.gov/document/march-2024-report-to-the-congress-medicare-payment-policy/

4 Centers for Medicare and Medicaid Services. Medicare provider data. Available from: https://data.cms.gov/provider-data/

5 Long-term Care Focus: Facts on care in the US. Brown School of Public Health. Available from: https://ltcfocus.org/

6 CMS Provider Data Catalog: Home Health Services. 2022 archived data snapshots: October 26, 2022. File name: HH_Provide_Oct2022.csv. Available from: https://data.cms.gov/provider-data/archived-data/home-health-services

7 Payroll Based Journal Public Use Files. Methodology. October 30, 2024. Available from: https://data.cms.gov/resources/payroll-based-journal-methodology-0

8 Payroll Based Journal Daily Nurse Staffing public use file. Q4 2022. File name: PBJ_Daily_Nurse_Staffing_Q4_2022.csv. Available from: https://data.cms.gov/quality-of-care/payroll-based-journal-daily-nurse-staffing/data/q4-2022

9 Payroll Based Journal Daily Non-Nurse Staffing public use files. Q4 2022. File name: PBJ_Daily_Non_Nurse_Staffing_Q4_2022.csv. Available from: https://data.cms.gov/quality-of-care/payroll-based-journal-daily-non-nurse-staffing/data/q4-2022