The State of Nursing Facilities in Oregon, 2015

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April 2016

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In collaboration with

Oregon Department of Human Services
www.oregon.gov/dhs

LeadingAge Oregon
www.leadingageoregon.org

Oregon Health Care Association
www.ohca.com

SEIU Local 503 OPEU
www.seiu503.org

We are grateful to Antonette Shockey for her assistance in preparing this report.

Suggested Citation:

CA Mendez-Luck, J Luck, AE Larson, C Alvarado. *The State of Nursing Facilities in Oregon, 2015*. Corvallis, OR: OSU College of Public Health and Human Sciences, 2016.

This report was funded by the Oregon Department of Human Services, under Intergovernmental Agreement Number 145948.

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Background

This is the second annual report on Oregon nursing facilities funded by the Oregon legislature and prepared by Oregon State University in collaboration with the Oregon Department of Human Services (DHS), LeadingAge Oregon, the Oregon Health Care Association, SEIU Local 503, and the Oregon Health Authority's Office of Health Analytics. These new annual reports replace those published between 1998 and 2009 by the Office for Oregon Health Policy and Research (OHPR), in collaboration with the Seniors and People with Disabilities Division[1] of the Department of Human Services. The data in those prior reports were based on annual surveys of the state's nursing facilities, and are included in this report as trend data.

The purpose of this annual report is to paint a portrait of Oregon's 138 nursing facilities that were in operation in the 2015 state fiscal year to assist in local and statewide planning and policy-making efforts in long-term care services.

In this report, we use data from the Centers for Medicare & Medicaid Services' (CMS) Minimum Data Set (MDS) 3.0 and Nursing Home Compare 3.0, Oregon hospital discharge data, and Oregon provider tax cost and revenue reports to examine an array of characteristics of the state's nursing facilities, including licensed capacity, bed availability, occupancy, admissions, discharges, readmissions, resident characteristics, length of stay, acuity, payer sources, and quality metrics.

This report contains several additions and improvements from the 2014 report. New data sources and refinements in our analytic methods have allowed us to provide more detailed information than ever before on the state's nursing facility residents. For the first time, we report on the medical reasons nursing facility residents were hospitalized before entering a facility, the medical diagnoses of nursing facility residents, the distribution of overweight and obesity among residents, and the receipt of physical and occupational therapy by residents.

Introduction

Oregon has been a national leader in long-term services and supports (LTSS) for over 30 years (Oregon Department of Human Services, 2015). LTSS refers to an array of medical, social, and support services for individuals who, for an extended period of time, are dependent on others for assistance. The goals of LTSS are to promote and maintain health, independent functioning, and quality of life for individuals who utilize long-term care services. Nursing facilities are an important part of LTSS in Oregon. Nursing facilities provide 24-hour medical care and monitoring for people who need it due to a disability or have been discharged from the hospital but are not yet able to return to the community. Thus, nursing facilities serve two different populations—individuals with post-acute care needs, which are characterized by short stays ($\leq$ 90 days), and individuals with ongoing and indefinite needs, which are characterized by longer or indefinite stays (>90 days). While nursing facilities are the most intensive setting in Oregon's

[1] Now called the Aging and People with Disabilities Program. Prior to 1998, the Office of Health Policy also conducted surveys of nursing facilities.

long-term care continuum, they are critical for both short-stay and long-stay individuals with a high need for skilled care. The services offered in nursing facilities are often comprehensive, and include medical treatment, physical, speech and occupational therapy, assistance with the Activities of Daily Living,[2] case management, and social services. Nursing facilities will continue to be an important part of the state's array of LTSS because of the four percent projected annual growth of the 65 and older population through 2050 (Office of Economic Analysis, 2013).

[2] The Activities of Daily Living (ADLs; Katz, 1983) measure the functional impairment of individuals (National Center for Health Statistics, 2006). ADLs commonly refer to assistance with bathing, eating, dressing, mobility, transferring, grooming, and toileting.

Research Highlights

This report provides a comprehensive and current look at the state's 138 certified nursing facilities in State Fiscal Year 2015 (SFY), which covers the period of July 1, 2014 to June 30, 2015.[3] In SFY 2015, there were 12,172 licensed beds in nursing facilities across the state (Exhibit 1.0). The number of facilities ranged widely, from none in six counties to 34 in Multnomah County, for an average of 4 facilities per county statewide. In 2015, 33,773 individuals required services in an Oregon nursing facility for at least one day, representing a 9% increase from 2014. Compared to national averages, the residents of Oregon nursing facilities were more likely to be under age 85 and non-Hispanic white, but less likely to be female. These results suggest that the oldest Oregonians (85 years and older) were more likely to reside in community settings compared to their same age counterparts in other states. Other notable findings in this report are highlighted below.

Exhibit 1.0. Characteristics of Oregon Nursing Facilities, OR Fiscal Years, 2015

Characteristic	
Total number of facilities	138
Total number of licensed beds	12,172
Average licensed capacity per facility	88
Minimum number of licensed beds	5
Maximum number of licensed beds	214
Average number of facilities per county	4

Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0

Facilities

- The number of facilities ranged widely across geographic regions, with an average of 4 per county.
- Almost two-thirds of all facilities (63%) were small- to medium-sized facilities with fewer than 100 beds, accounting for less than half (47%) of all beds statewide.

Licensed Capacity & Bed Availability

- The total number of licensed beds declined 7.3% in the last 16 years to 12,172 in 2015.
- The average number of licensed beds was 88, compared to the national average of 109 in 2014.
- The number of licensed beds by facility ranged from five to 214.
- The number of licensed beds per 1,000 population 75 years and older declined by 24% in the last 16 years to 46 in 2015.
- 75% of licensed beds statewide were staffed and ready for use (i.e., set-up), however, the percentage of set-up beds ranged widely across the state, from a low of 55% in Region 6, to highs of 78% and 79% in Regions 2 and 3 (see page 11), respectively.

[3] Unless otherwise noted, all references to 2015 refer to the State Fiscal Year.

Occupancy

- Average occupancy rates decreased from 72% in 2000 to 64% in 2015, which remained unchanged from 2014. Oregon continues to have the lowest occupancy rate in the nation.
- Average occupancy rates across eight geographic regions ranged from 41 to 71%.
- Oregon nursing facilities with less than 50 beds had an average occupancy rate between 8 to 20 percentage points higher than larger facilities of any other size. Facilities with at least 150 beds had the lowest occupancy rate (52%) compared to facilities of other sizes.
- Between 2010 and 2015, the number of resident days remained relatively stable; however, there was a 2.2% increase in resident days from 2014 to 2015
- Facilities with 50-99 beds accounted for the greatest share of resident days (44%) among all facilities.
- The most populous regions (Regions 2, 3, and 4) had the highest numbers of total resident days, accounting for 87% of all resident days statewide. The percent change in resident days from 2014, however, varied considerably by region, from a decrease of 29.8% in Region 8 to an increase of 6.4% in region 3.

Admissions, Discharges and Reentries[4]

- 93.1% of all admissions came from acute care hospitals.
- Facilities with less than 50 beds had the lowest average numbers of admissions and discharges (130 and 127, respectively), whereas facilities with 150 or more beds had the highest average numbers of admissions and discharges (461 and 443, respectively).
- 27.1% of all discharges were to an acute care hospital; 84.7% of these discharges to hospitals subsequently reentered a nursing facility within a 30-day period.
- 68% of all discharges returned to the community.

Residents

- The state's nursing facility population was younger than national estimates, with 80% of nursing facility residents being age 65 or older, compared to 85% of residents nationwide.
- 41% of residents were male compared to 33% of U.S. nursing facility residents.
- Racial/ethnic minority individuals were under-represented in Oregon nursing facilities compared to the Oregon general population and to nursing facilities nationally.
- Racial/ethnic minority residents were younger compared to the state's general nursing facility population.

[4] An admission refers to an entry into a nursing facility by an individual for the very first time or for the first time after having been discharged from the facility at least 30 days before. A reentry occurs when an individual returns to a facility from which he or she was discharged less than 30 days before. A discharge refers to an individual being released from a nursing facility whether they re-enter or not.

Length of Stay

- 82% of all nursing facility stays were less than or equal to 90 days, commonly referred to as a “short stay.”
- 32% stays lasted between 14 and 30 days.
- Short- and mid-length stays—meaning stays for less than a full year—averaged 42 days compared to 1,127 days (or approximately 3 years) for long-stays.
- Average lengths of stay were highest for the youngest (under age 25) and oldest (85 and older) age groups.
- 59% of nursing facility admissions were for residents who had been hospitalized for medical conditions, such as infections or pulmonary problems, while 34% had been hospitalized for surgical procedures.

Acuity of Residents

- 53% of stays involved residents who were somewhat or completely dependent on five ADLs, compared to 23% of all nursing facility residents in the U.S.
- 66% of short- and mid-length stays involved dependence on five or more ADLs, compared to 60% of long-stays.
- Stays of residents under 18 years of age had higher levels of complete dependence than any stays of other age groups for all ADLs except bed mobility.
- Bathing was the most common ADLS need for all stays (85%).
- 60% of stays involved at least one acute medical condition, with anemia, urinary tract infections, and transient ischemic attack (TIA) stroke being the most common individual diagnoses.
- 94% of stays involved at least one chronic medical condition, with seven in 10 having hypertension, four in 10 having hyperlipidemia, and nearly three in 10 having diabetes.
- 70% of residents under age 75 were overweight or obese, compare to 54% of residents age 75 and older.
- Physical therapy was provided five or more days per week for over 80% of short stays.
- Occupational therapy was provided five or more days per week for 70% of short stays.

Payers

- Medicaid was the primary payer for 59% of resident days in Oregon nursing facilities during 2015, representing a 5% decline over the last 6 years.
- Medicare Fee-For-Service paid for 15% of resident days and Medicare Advantage paid for 8%.

Quality Measures

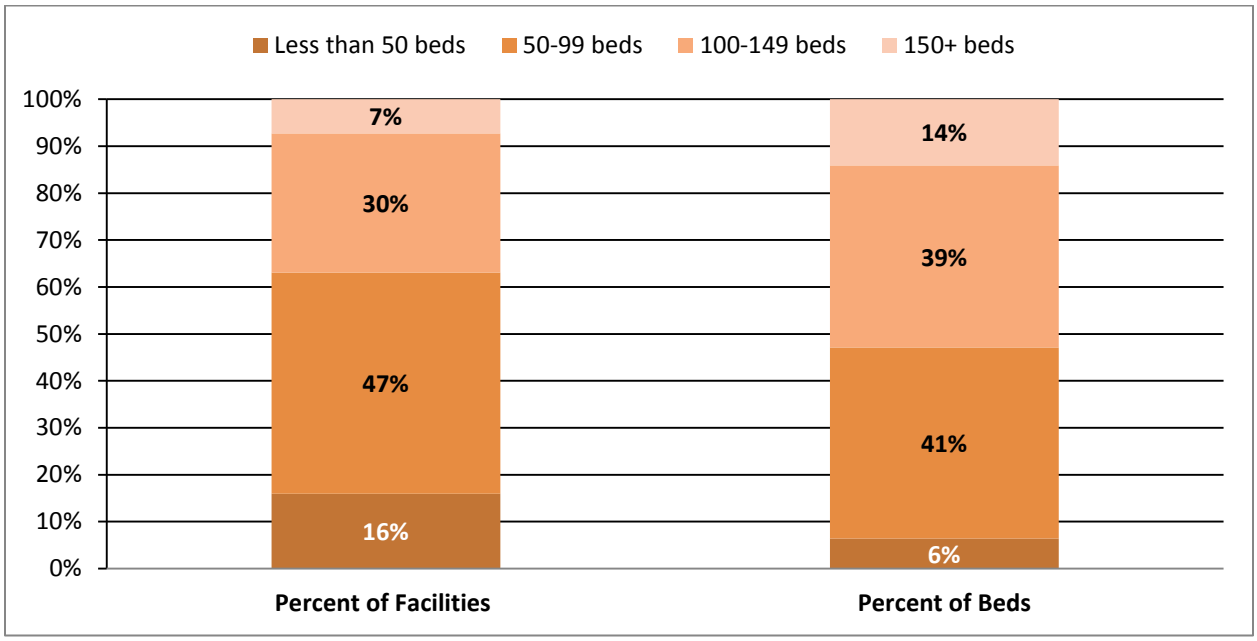
- Oregon nursing facilities performed the same or better than the national average on seven of 12 CMS-defined quality measures.
- For each quality measure, we divided nursing facilities into four equal groups to characterize the variation across facilities:

    - Facilities in the highest 25% group had vaccination rates between 96 to 100%, whereas facilities in the lowest 25% group had rates between 55 to 79%.
    - Moderate to severe pain reported in short stays was 11% in the highest 25% group and 42% in the lowest 25% group; for long stays, the rate of reported pain was 13% in the highest 25% group and 23% in the lowest 25% group.
    - For most quality measures, adverse events among long stays were two to three times more likely in the lowest 25% group than in the highest 25% group.
- The rates of seven adverse events in long stays were lower than 10%, which were consistent with national averages.

Section 1. Licensed Capacity

Oregon had 138 nursing facilities in SFY 2015, with a total of 12,172 licensed beds (Exhibit 1.1). Sixty-three percent of all facilities had fewer than 100 beds, accounting for less than half (47%) of all beds statewide. The average number of licensed beds was 88, compared to 109 nationally in 2014, the most recent data available (Harrington et al., 2015).

Exhibit 1.1. Licensed Capacity by Facility Size, Oregon 2015



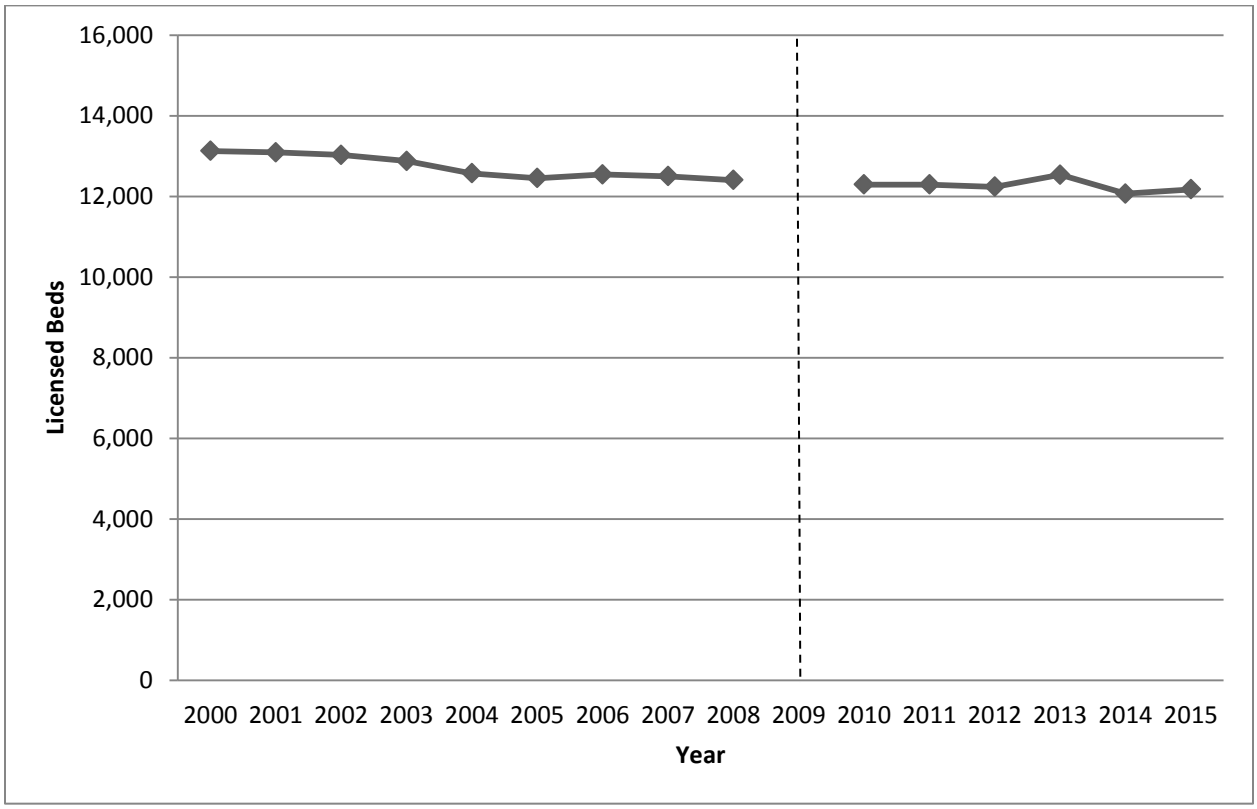
Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0

Even though the total number of nursing facilities in Oregon remained unchanged from the SFY 2014 report, some nursing facilities did close or open during SFY 2015. Two facilities each opened and closed during SFY 2015. Another facility closed soon after the beginning of the 2015 fiscal year and was not included in this report because it provided very few resident days in SFY 2015.[5] The net impact of these openings and closings was an increase in licensed capacity of 104 beds in SFY 2015 compared to SFY 2014.

[5] Because one facility closed shortly before the end of SFY 2014, there were 137 facilities in operation at the end of that year (June 30, 2014). Thus, after two openings and three closings during SFY 2015, there were 136 facilities in operation at the end of the fiscal year covered by this report (June 30, 2015). However, this report includes data for all 138 nursing facilities that operated for a substantial portion of SFY 2015. Occupancy rates reported in this report were adjusted for the number of months each opening or closing facility was in operation during SFY 2015.

The total number of licensed nursing facility beds in Oregon has declined 7.3% over the last 16 years, from 13,127 in 2000 to 12,172 in 2015 (Exhibit 1.2). The total number of licensed beds in 2015 represents a 0.9% increase from 2014. The dashed vertical line between 2000-08 and 2010-15 signifies a change in the methodology used to obtain the data reported in this exhibit and in Exhibit 1.3 (next page). Thus, the trends for these two time periods may not be completely comparable.[6] The overall decrease in licensed capacity contrasts with the national trend, which has remained relatively stable since 2004 (American Health Care Association, 2014). The decrease may reflect Oregon's ongoing efforts to direct individuals into home and community-based long-term care options. Moreover, Oregon has the third lowest number of nursing facility residents per 1,000 population 65 years and older in the United States (AARP, 2014), providing further evidence of the state's commitment to non-institutionalized long-term care.

Exhibit 1.2. Total Number of Licensed Beds in Oregon Nursing Facilities, 2000-2015

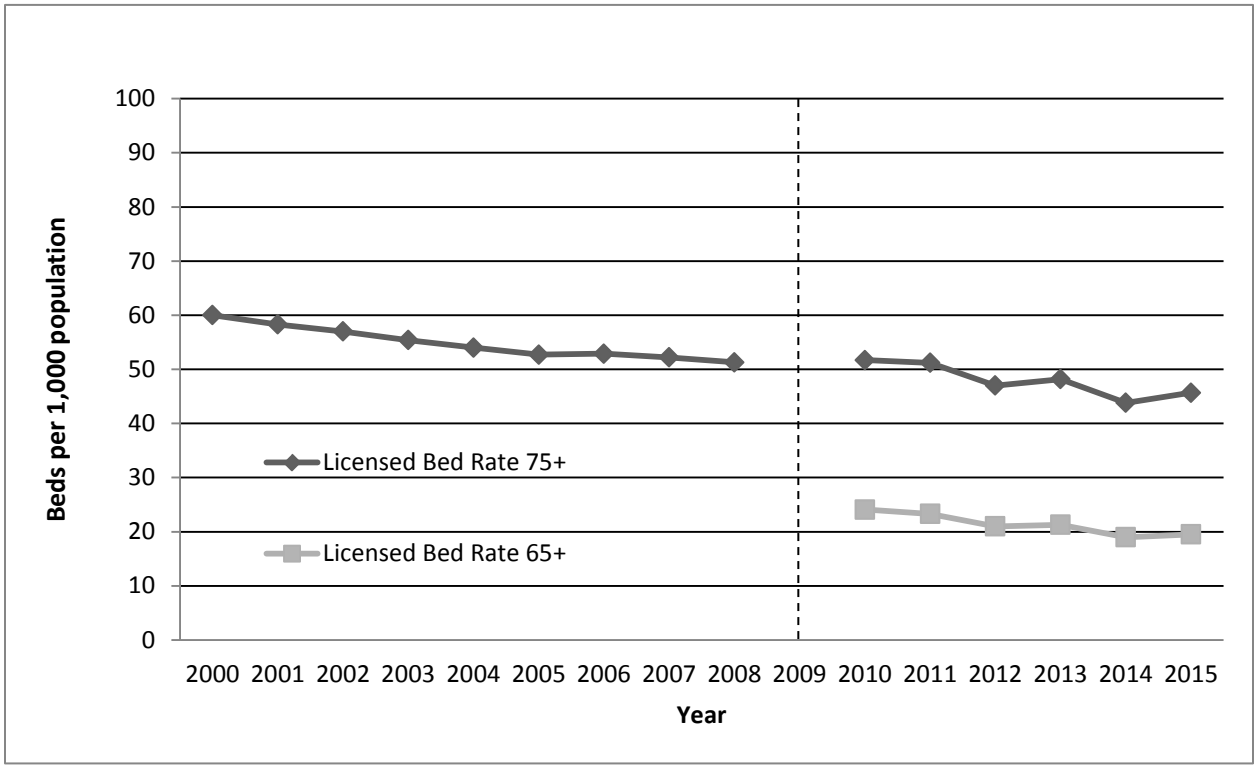


Sources: OHPR Nursing Facility Reports, 2000-08; Cost Reports, Revenue Statements, and Nursing Home Compare 3.0, 2010-15

[6] Data for the 2000-08 period are based on information used by the state for facility licensing. The trend for 2010-15 come from state and federal data collected as part of the reporting requirements for nursing facility certification and payment.

The number of licensed beds per 1,000 population 75 years and older steadily declined in the last 16 years, from 60 in 2000 to 46 in 2015 (Exhibit 1.3), although the number of licensed beds increased slightly from 2014. Nonetheless, the 24% decrease over the past 16 years reflects the overall reduction in licensed capacity and the growth in the state's older population during this same time period. Over the last six years, the decrease in the number of licensed beds per 1,000 was smaller for the population 75 years and older (12%) than for the population 65 years and older (19%). This reflects faster population growth among individuals in the oldest age categories, consistent with national demographic trends in the U.S. population.

Exhibit 1.3. Licensed Bed Rate per 1,000 Population 65 Years and Older and 75 Years and Older, Oregon 2000-2015



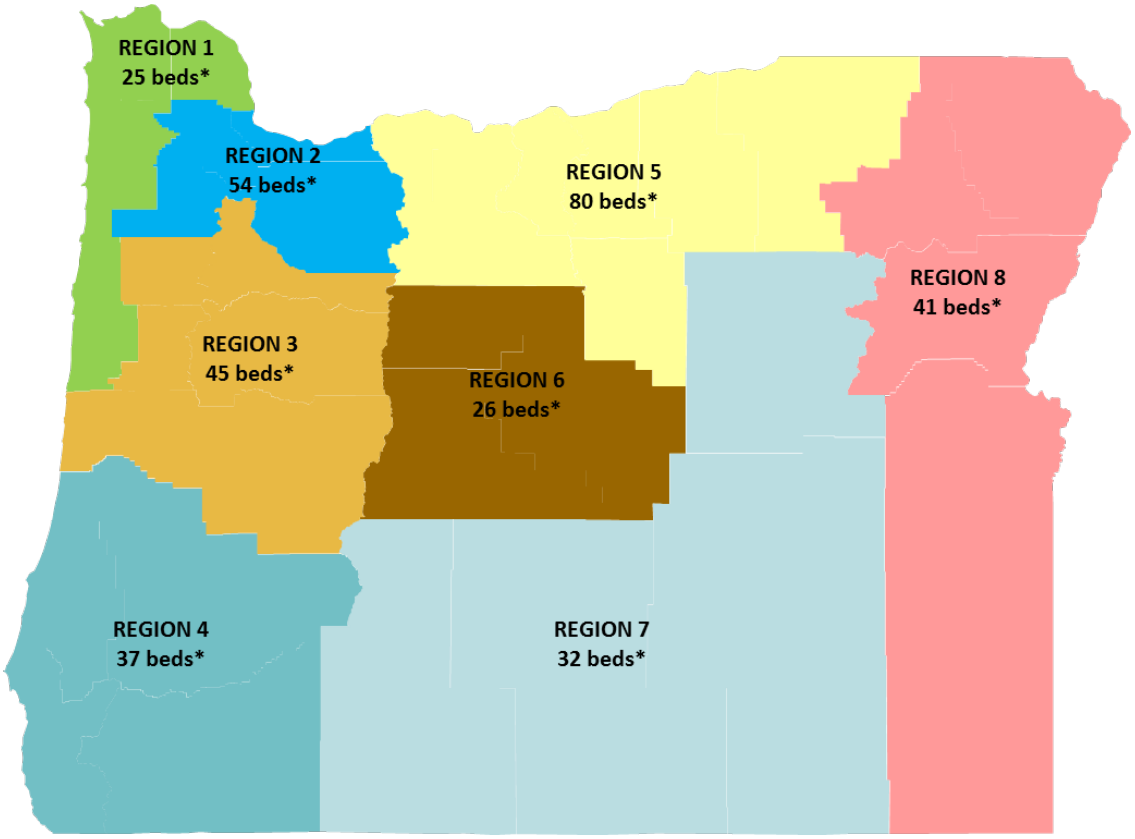
Sources: OHPR Nursing Facility Reports, 2000-08; Cost Reports, Revenue Statements, and Nursing Home Compare 3.0, 2010-15; PSU population estimates 2014

Section 2. Bed Availability

Exhibit 2.1. Map of Oregon Regions

Color Key	Population, All Ages	Population, 75+
Region 1: Clatsop, Columbia, Lincoln, Tillamook	159,940	13,078
Region 2: Clackamas, Multnomah, Washington, Yamhill	1,820,290	100,841
Region 3: Benton, Lane, Linn, Marion, Polk	971,135	68,162
Region 4: Coos, Curry, Douglas, Jackson, Josephine	486,120	48,841
Region 5: Gilliam, Hood River, Morrow, Sherman, Umatilla, Wasco, Wheeler	144,900	9,977
Region 6: Crook, Deschutes, Jefferson	209,385	14,646
Region 7: Grant, Harney, Klamath, Lake	89,590	7,816
Region 8: Baker, Malheur, Union, Wallowa	81,350	7,199
Total Estimated Population	**3,962,710**	**270,560**

Source: PSU Population Estimates for June 30, 2014

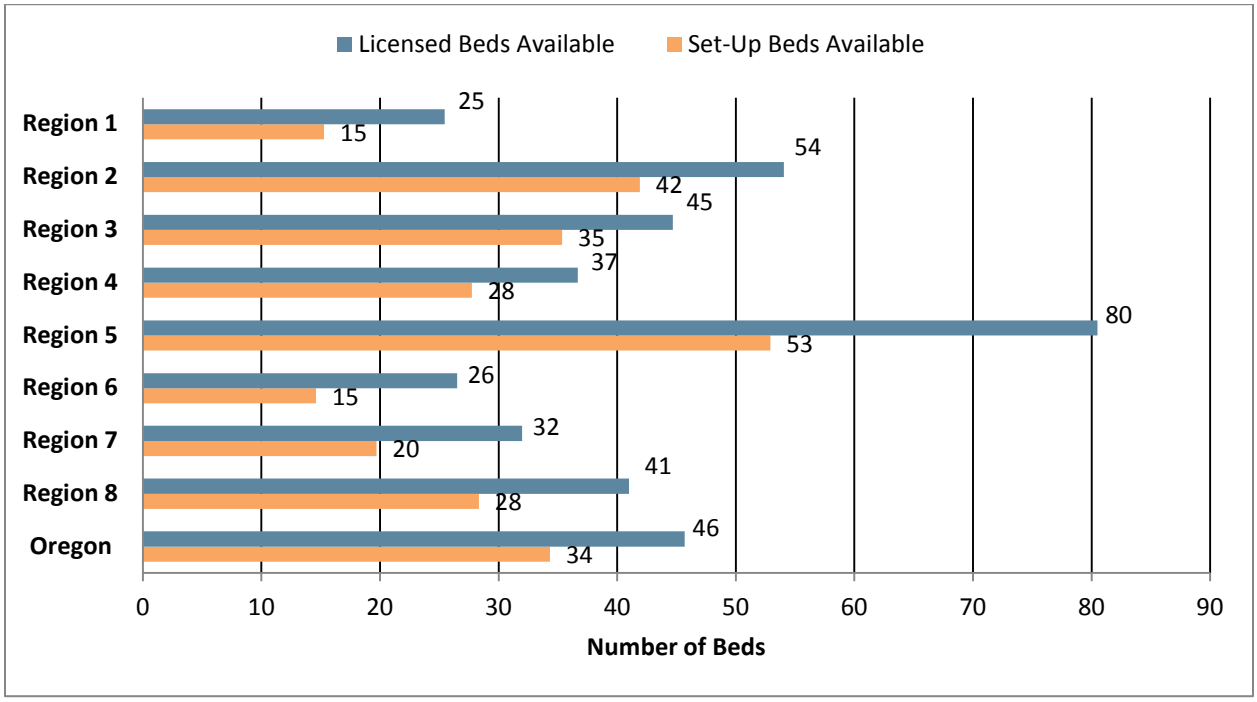


*Licensed beds per 1,000 population 75 years and older

Exhibit 2.1 shows the eight regions of Oregon and the number of licensed beds available for every 1,000 adults aged 75 or older. The number of licensed beds ranged across the state's eight geographic regions from a low of 25 in Region 1 to a high of 80 in Region 5.

In 2015, there were 46 licensed beds per 1,000 population 75 years and older in Oregon (Exhibit 2.2), an increase of four percent from 2014. Statewide, 75% of licensed beds were staffed and available for use, what we refer to as “set-up.” However, the proportion of licensed beds that were “set-up” varied widely across the state. For example, Region 6 had the lowest percentage of licensed beds that were set-up (55%), followed by Region 1 (60%). Regions 3 had the highest percentage of licensed beds that were set up (79%), followed by Region 2 (78%). There was an almost three-fold difference in the number of set-up beds per 1,000 adults 75 and older across the eight regions, from a low of 15 in Regions 1 and 6, to a high of 53 in Region 5.

Exhibit 2.2. Number of Licensed and Set-Up Beds Available by Region, per 1,000 Population 75 years and Older, Oregon 2015

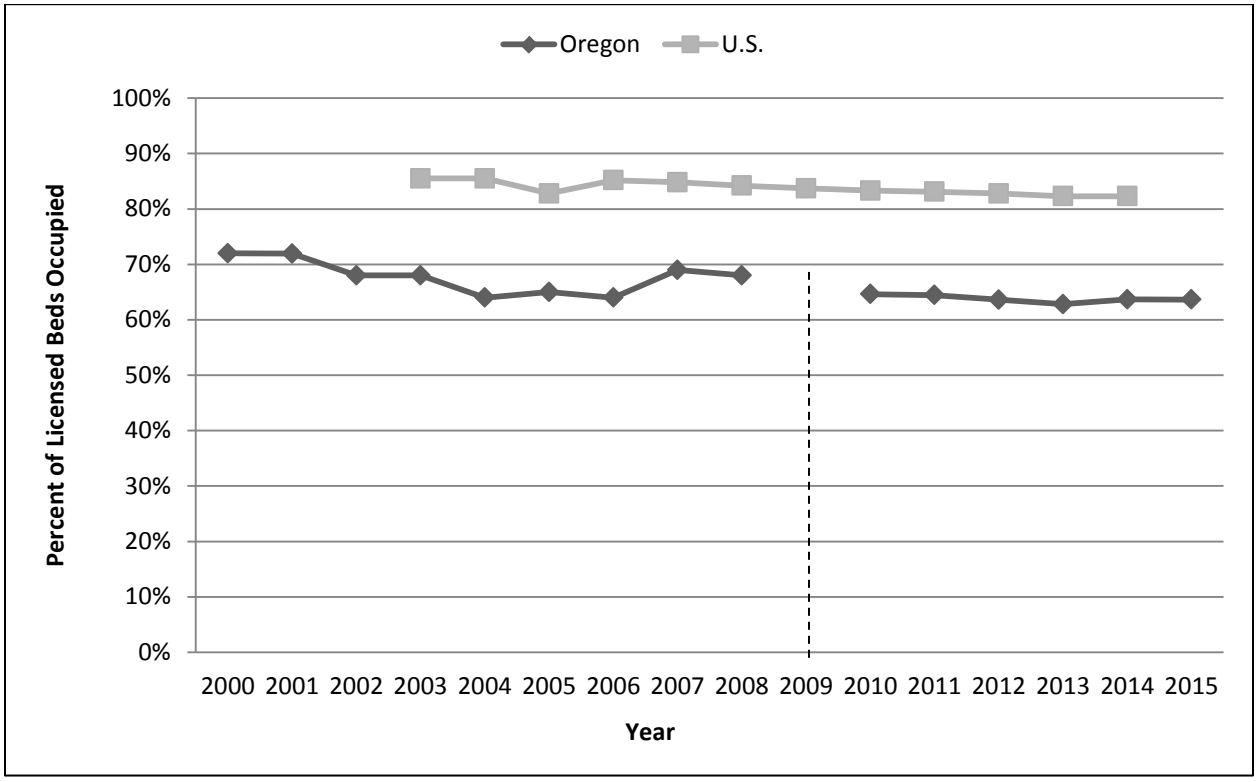


Sources: Cost Reports and PSU Population Estimates for June 30, 2014

Section 3. Occupancy

The average occupancy rate[7] statewide decreased from 72% in 2000 to 64% in 2015 (Exhibit 3.1), which remained unchanged from 2014. The dashed line between the 2000-08 and 2010-15 periods signifies a change in the methodology used to obtain the data reported in this exhibit. Thus, the trends for these two time periods may not be completely comparable.[8] Nonetheless, Oregon's occupancy rates for the last 16 years rank as the lowest in the nation. This trend may reflect the state's continuing efforts to use home and community-based long-term care services, such as assisted living facilities, adult foster care, home health care, and residential care.

Exhibit 3.1. Average Occupancy Rate, Oregon and U.S. 2000-2015



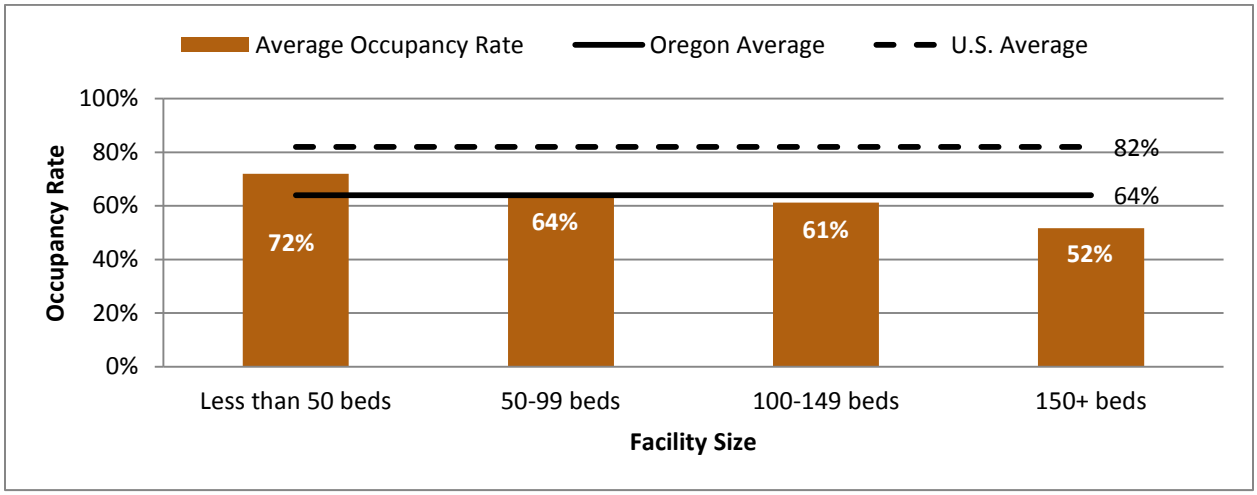
Sources: OHPR Nursing Facility Reports, 2000-08; Cost Reports, Revenue Statements, and Nursing Home Compare 3.0, 2010-15, The Henry J. Kaiser Family Foundation.

[7] A facility's occupancy rate is the total number of resident days reported by that facility during the fiscal year divided by the total number of bed days available at that facility during the fiscal year. Occupancy rates are adjusted for facility openings and closings during the fiscal year.

[8] Data for the 2000-08 period were collected from annual surveys of the state's nursing facilities, and year-by-year fluctuations reflect variation in responses rates to the survey. Data for 2010-15 come from state and federal reporting requirements for nursing facility certification and payment, which are not affected by response rates.

In SFY 2015, the average statewide occupancy rate of 64% (Exhibit 3.2) was almost 20 percentage points lower than the national average (82%) in 2014 (the most current data available), and the lowest rate of any state (Harrington et al., 2015). Smaller nursing facilities, with less than 50 beds, had a higher average occupancy rate (72%) than facilities of any other size. Larger facilities, with 150 or more beds, had the lowest occupancy rate (52%) compared to facilities of other sizes. The occupancy rate decreased by five percentage points from 2014 for facilities with 150 or more beds. This change may have reflected the opening and closing of individual nursing facilities of this size. The rates for other-sized facilities were similar to those in 2014.

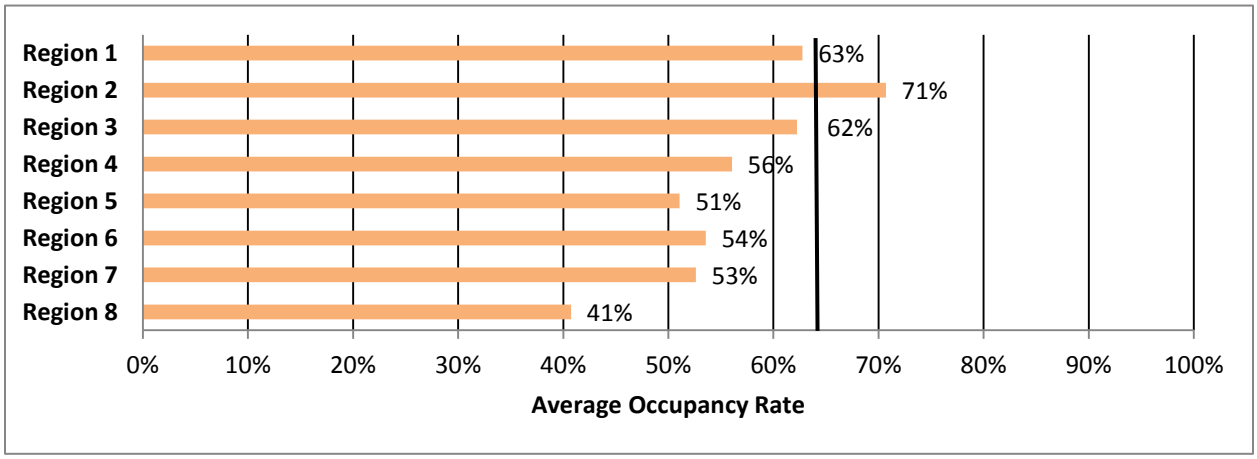
Exhibit 3.2. Average Occupancy Rate by Facility Size, Oregon 2015



Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0

Average occupancy rates also varied across the state's eight geographic regions (Exhibit 3.3). Only one region (Region 2) had an occupancy rate (71%) higher than the statewide average. All other regions were similar to or below the statewide average. Five of eight regions had rates under 60%, three of which were located in the eastern part of the state.

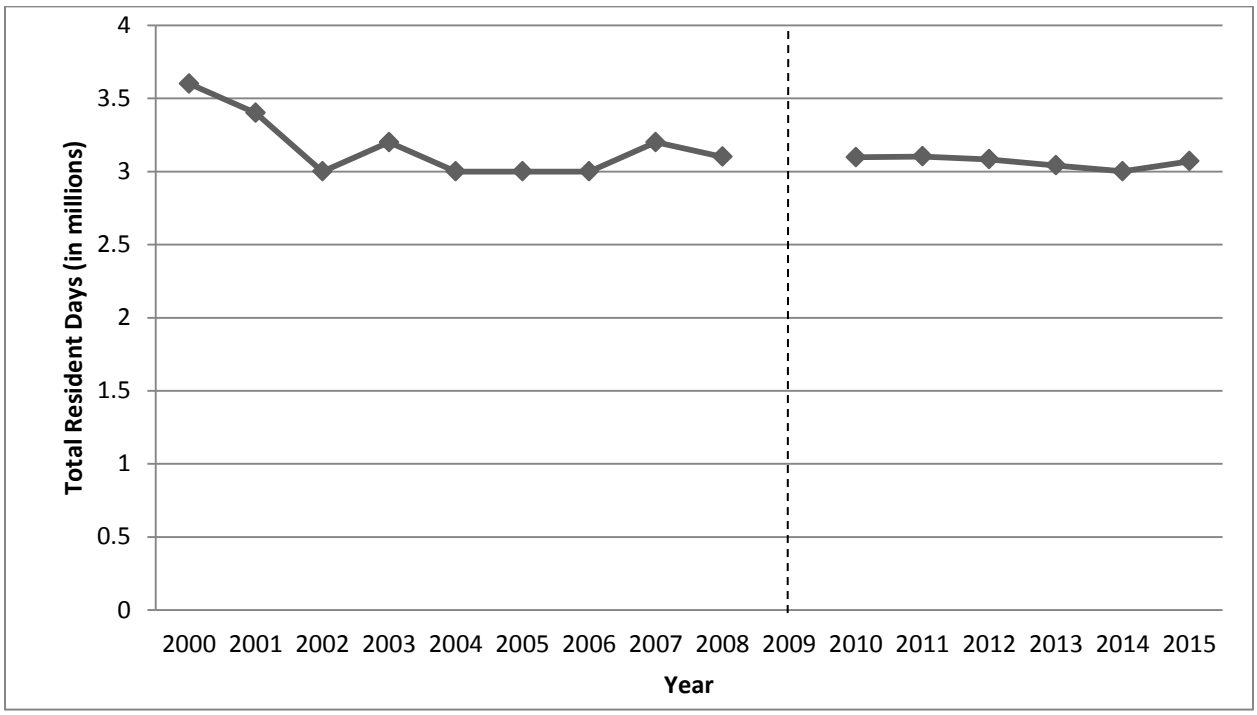
Exhibit 3.3. Average Occupancy Rate by Region, Oregon 2015



Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0

Overall, the total number of resident days declined between 2000 and 2008, from 3.6 million to 3.1 million (Exhibit 3.4). The dashed line between the 2000-08 and 2010-15 periods signifies a change in the methodology used to obtain the data reported in this exhibit. Thus, the trends for these two time periods may not be completely comparable.[9] Between 2010 and 2015, the number of resident days remained relatively stable. There was a 2.2% increase in resident days from 2014 to 2015.

Exhibit 3.4. Number of Resident Days in Oregon Nursing Facilities, 2000-2015

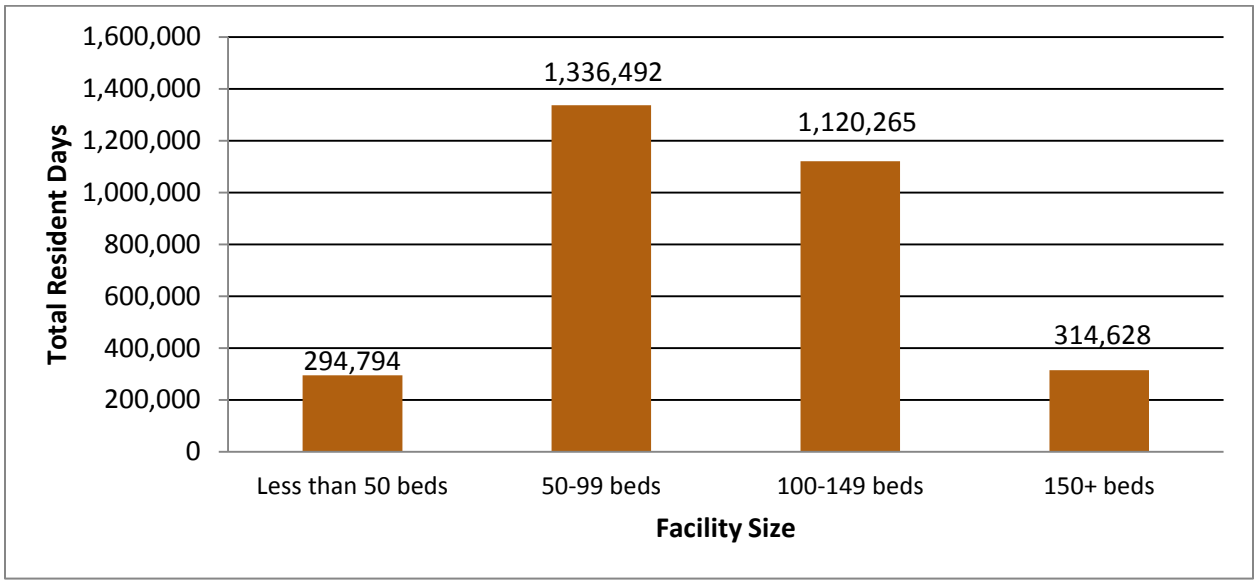


Sources: OHPR Nursing Facility Reports, 2000-08 (adjusted for annual survey response rates); Cost Reports, Revenue Statements, and Nursing Home Compare 3.0, 2010-15

Facilities with 50-99 beds accounted for the greatest share of resident days (44%) for all facilities in 2015 (Exhibit 3.5, next page). However, the smallest- and largest-sized facilities had the fewest number of resident days, each representing 10% of all resident days statewide. This pattern is consistent with 2014 data, however, the percent change in resident days from 2014 varied by facility size. Resident days increased by 4.6% from 2014 at facilities with 50 to 149 beds but decreased for the smallest- and largest-sized facilities. Facilities with 150+ beds had the largest decrease from 2014 (10%).

[9] Data for the 2000-08 period were collected from annual surveys of the state's nursing facilities; the data shown are adjusted for variation in responses rates to the survey. Data for 2010-14 come from state and federal reporting requirements for nursing facility certification and payment, which are not affected by response rates.

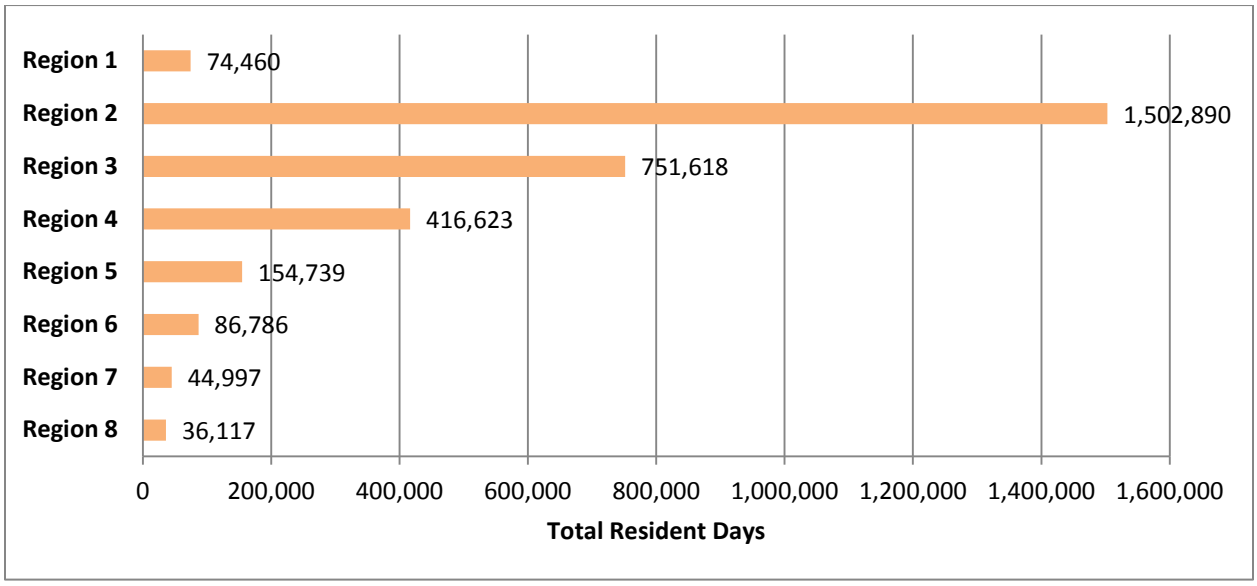
Exhibit 3.5. Total Number of Resident Days by Facility Size, Oregon 2015



Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0

The total number of resident days also varied by geographic region (Exhibit 3.6). Similar to 2014, the most populous regions (Regions 2, 3, and 4) had the highest numbers of total resident days, accounting for 87% of all resident days statewide. The percent change in resident days by region from 2014, however, varied considerably from a decrease of 29.8% in Region 8 to an increase of 6.4% in Region 3. These fluctuations may be due in part to the opening and closing of individual facilities in these regions.

Exhibit 3.6. Total Number of Resident Days by Region, Oregon 2015



Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0

Section 4. Admissions, Discharges, and Reentries

Methodology

An admission refers to an entry into a nursing facility by an individual. There are two categories of admissions, according to CMS Minimum Data Set (MDS) definitions:

- An entry is where an individual enters a facility for the very first time, or for the first time after having been discharged from the facility at least 30 days before.
- A reentry is where an individual returns to a facility from which he or she was discharged less than 30 days before.

This year's report employs a refined methodology for identifying entries, reentries, and discharges in the MDS data. For the SFY 2014 report, we had counted only entries and reentries explicitly coded as such in MDS. However, analyses performed after completion of that report determined that that approach undercounted the actual number of entries and reentries, and thus the total number of nursing facility stays. For this report we therefore first identified discharges in the MDS, and then identified the admission date that corresponded to each discharge. Residents still enrolled on the date the MDS dataset was created for Oregon State University, December 4, 2015, were assigned this as their discharge date. We also identified reentries directly, using dates of discharge from and reentry to the same facility within 30 days. For this last year's and this year's reports, we excluded from our analyses nursing facility stays for which the MDS does not include a discharge date. See the Technical Notes for further details.

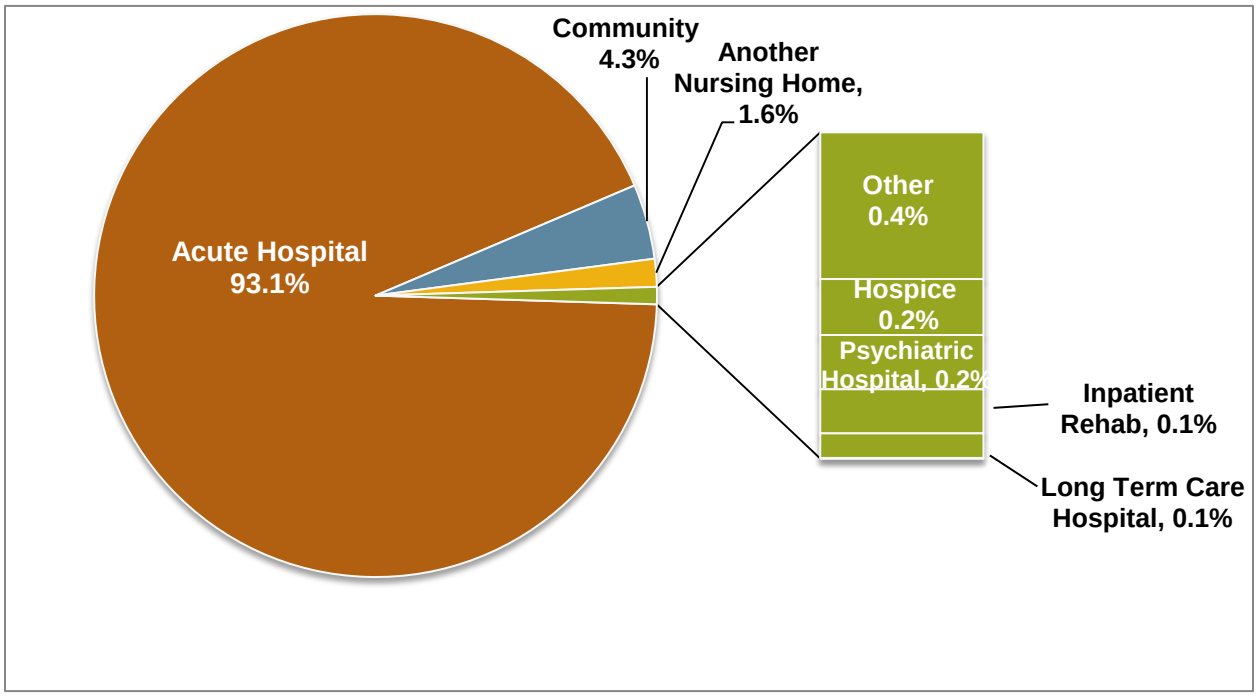
The methodological refinements described above contributed to a 17% increase in nursing facility admissions and a 20% increase in discharges in SFY 2015, compared to SFY 2014. However, as reported in Section 3, the total number of resident days increased by only 2.2%, based on cost reports and revenue statements submitted to Oregon Department of Human Services. In addition, after adjusting the total of 38,885 SFY 2015 admissions for 2,209 admissions that were not included in this report because of no discharge date in the MDS, the total number of nursing facility admissions we report is within 5% of the number of Oregon nursing facility admissions derived from detailed annual cost reports submitted to the Centers of Medicare and Medicaid Services by nursing facilities (Hansen Hunter & Co., 2016). We therefore conclude that much of the apparent increase in MDS-measured admissions and discharges from 2014 to 2015 reflects improved identification of actual entries and reentries to, and discharges from, Oregon nursing facilities.

Admissions

In SFY 2015, nursing facilities statewide had 38,885 admissions, based on MDS data. Of these, 9,371 (24%) were reentries.

As shown in Exhibit 4.1, the vast majority of nursing facility admissions came from acute care hospitals (93.1%) followed by the community at-large (4.3%), which included home, assisted living, residential care facilities, Program of All Inclusive Care for the Elderly, intellectual or developmental disability services, and adult foster care homes. Other sources represented only 2.6% of all total admissions. The distribution of admission sources remained practically unchanged from 2014.

Exhibit 4.1. Admission Source as Percentage of Total Admissions, Oregon 2015

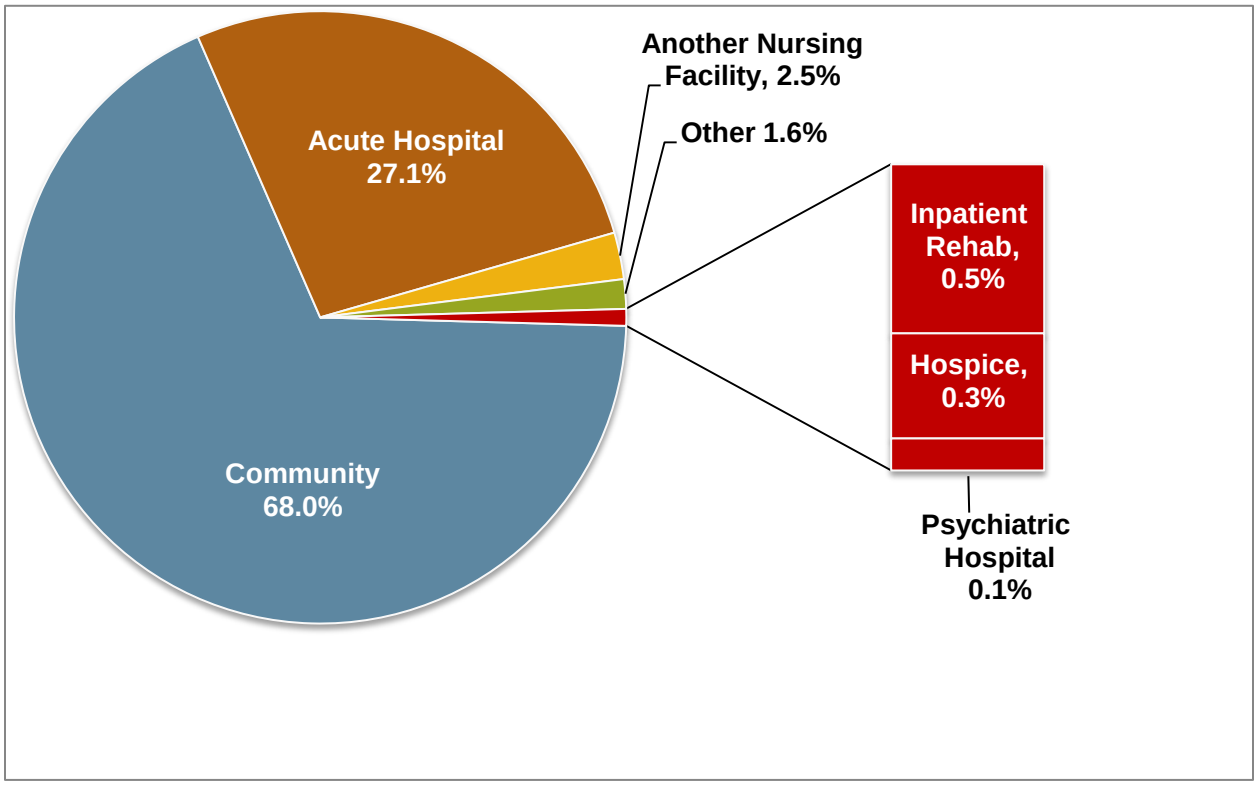


Source: CMS Minimum Data Set

Discharges

In 2015, nursing facilities statewide had 37,999 discharges, based on MDS data. Of these, 7,440 had reentered the facility within 30 days, before the end of SFY 2015. As shown in Exhibit 4.2, the majority of individuals discharged from nursing facilities returned to the community (68%) followed by acute care hospital (27.1%). A small proportion of residents (2.5%) were transferred to another nursing facility or other facility (1.6%), which included long-term care hospitals or facilities not otherwise specified. Inpatient rehabilitation, hospice, and psychiatric hospitals represented less than one percent of all discharges. The distribution of discharge destinations was very similar to 2014, except that the proportion of discharges to hospitals was slightly larger, and the proportion to the community slightly smaller, due to methodological refinements described previously in this section.

Exhibit 4.2. Discharge Destination as Percentage of Total Discharges, Oregon 2015

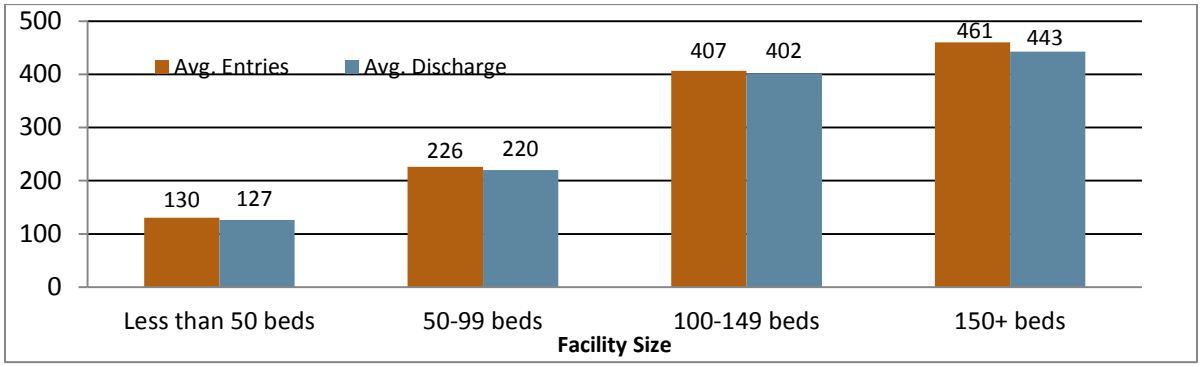


Source: CMS Minimum Data Set

Admissions and Discharges by Facility

Statewide, the average number of admissions per facility was 282 in SFY 2015, and the average number of discharges was 275. However, Exhibit 4.3 shows that the average numbers of admissions and discharges increased with the size of facility. Facilities with less than 50 beds had the lowest average numbers of admissions and discharges (130 and 127, respectively) and facilities with 150 or more beds had the highest average numbers of admissions and discharges (461 and 443, respectively).

Exhibit 4.3. Average Numbers of Admissions and Discharges by Facility Size, Oregon 2015



Source: CMS Minimum Data Set

Reentries to Nursing Facilities after Discharge to Acute Hospitals

As mentioned earlier in this section, some individuals return to nursing facilities within 30 days of being discharged. This event, defined as a reentry,[10] may occur as part of a treatment plan or as a result of a new or unexpected health problem. In State Fiscal Year 2015, one in four nursing facility admissions was a reentry, for a total of 9,371 reentries statewide. Ninety-three percent of these reentries (8,705; Exhibit 4.4) were from an acute hospital. Other reentries came from the community (4%), and other places (3%; data not shown).

Exhibit 4.4 shows the numbers of discharges to acute care hospitals, reentries to nursing facilities, and reentry rates, by geographic region. Of the 10,282 nursing facility discharges to acute care hospitals, 84.7% reentered the same nursing facility within a 30-day period. Region 7 had the highest reentry rate (107.1%) and Region 5 the lowest (69.7%). Reentry rates varied only modestly by facility size. For example, facilities with 150 or more beds had the highest reentry rate (87.8%) compared to other-sized facilities. Some reentries in SFY 2015 were for discharges that occurred in SF 2014. As a result, it is possible for discharges to exceed reentries, as in the case for Region 7.

Exhibit 4.4. Discharges to and Reentries from Acute Hospitals by Region, Oregon 2015

	Number of Discharges to Acute Hospitals	Number of Reentries from Acute Hospitals within 30 Days	Percent Reentering within 30 days
Region 1	185	144	77.8
Region 2	5,030	4,368	86.8
Region 3	2,696	2,287	84.8
Region 4	1,469	1213	82.6
Region 5	350	244	69.7
Region 6	302	222	73.5
Region 7	112	120	107.1
Region 8	138	107	77.5
Total	**10,282**	**8,705**	**84.7**

Source: CMS Minimum Data Set

Although directly comparable national data on reentries were not available at the time of this report, it is important to note that residents of Oregon nursing facilities were much less likely to be hospitalized than were nursing facility residents in other states. Compared to other states, Oregon has the second-lowest rate of hospitalization among its long-stay nursing facility residents (AARP, 2014) and the third lowest hospitalization rate among its Medicare-paid nursing facility residents (Office of the Inspector General, 2013).

[10] In this report we use the term "reentry" to a nursing facility to avoid confusion with "readmission" to an acute hospital.

Section 5. Residents

Exhibit 5.1 shows the composition of Oregon's nursing facility population by age group, which remained relatively stable from SFY 2014. In 2015, the state's nursing facility population was younger on average (75 years) than national estimates, with 80% of nursing facility residents being age 65 or older, compared to 85% of residents nationwide (Centers for Medicare & Medicaid Services, 2014). Age varied by length of stay, with long stays involving the oldest individuals on average (78 years), followed by short stays (75 years), and mid-length stays (74 years). The median age for stays, meaning the age at which half of stays involved individuals older and younger than this number, was 80 years for long stays, 77 years for short stays and 75 years for mid-length stays.

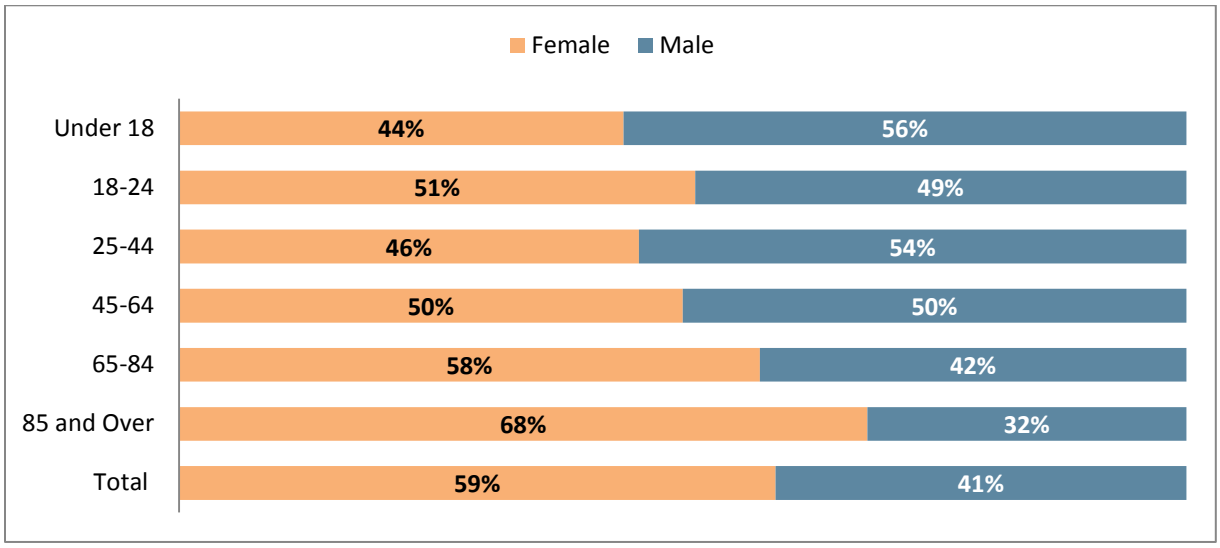
Exhibit 5.1. Distribution of Oregon Nursing Facility Residents by Age, 2015

Age Group	Percent
Under 18	0.2
18-24	0.2
25-44	2.0
45-64	17.6
65-84	50.3
85 and Over	29.8
Total	**100**

Source: CMS Minimum Data Set

Exhibit 5.2 shows the composition of Oregon's nursing facility population by age and sex. In 2015, the majority (59%) of all residents were women, which was lower than the national average of 67% (Centers for Medicare & Medicaid Services, 2014). The proportion of female residents increased with age, with 68% of residents being female in the oldest age category (85 and older).

Exhibit 5.2. Distribution of Oregon Nursing Facility Residents by Age and Sex, 2015



Source: CMS Minimum Data Set

Exhibits 5.3 and 5.4 show the distribution of race/ethnicity for all nursing facility residents and for residents 65 years and older, compared to their counterparts in the general Oregon population. In 2015, the majority of nursing facility residents was non-Hispanic white (88.6%), followed by African American (1.6%) and Hispanic (1.4%). In comparison, the state's general population in 2014 was 76.9% non-Hispanic white, 12.5% Hispanic, 4% Asian American, and 1.7% African American or Black. The racial/ethnic composition of Oregon's nursing facility population also differed from that of the U.S. nursing facility population, where 78%, 13.9%, and 5% of all U.S. nursing facility residents non-Hispanic white, African American, and Hispanic, respectively, in 2012 (Centers for Medicare & Medicaid Services, 2014). The slightly higher proportion of non-Hispanic white residents in the 65+ age category indicates that racial/ethnic minority residents were younger compared to the general nursing facility population.

Exhibit 5.3. Oregon Nursing Facility Residents and General Population by Race/Ethnicity, 2015

Race/Ethnicity	All Nursing Facility Residents	All Oregon Residents
Non-Hispanic White	88.6%	76.9%
Native American/Alaska Native	0.5%	0.9%
Asian American	0.8%	4.0%
African American or Black	1.6%	1.7%
Native Hawaiian/ Pacific Islander	0.2%	0.3%
Hispanic	1.4%	12.5%
More than 1 race	0.4%	3.6%
Unknown	6.5%	0.1%
Total	**100%**	**100%**

Source: CMS Minimum Data Set; American Community Survey, 2014

Exhibit 5.4. Oregon Nursing Facility Residents and General 65+ Population by Race/Ethnicity, 2015

Race / Ethnicity	Nursing Facility Residents 65+	Oregon Residents 65+
Non-Hispanic White	89.8%	91.3%
Native American/Alaska Native	0.4%	-*
Asian American	0.9%	2.4%
African American or Black	1.2%	1.0%
Native Hawaiian/ Pacific Islander	0.2%	–*
Hispanic	1.0%	3.0%
More than 1 race	0.4%	-*
Unknown	6.2%	N/A
Total	**100%**	N/A

Sources: CMS Minimum Data Set; American Community Survey, 2014

* The U.S. Census Bureau does not provide estimates for the 65+ population in these racial/ethnic groups.

The distribution of race/ethnicity was similar by sex, with non-Hispanic whites comprising the majority of all male and female nursing facility residents (data not shown). However, the composition of men and women varied within racial/ethnic categories. The ratio of males to females was roughly equal for non-Hispanic white and Asian American residents. However, there were more males than females for Native American/Alaska Native (1.7:1), African American or Black (1.2:1), Native Hawaiian/Pacific Islander (1.3:1), and Hispanic residents (1.7:1).

Section 6. Length of Stay

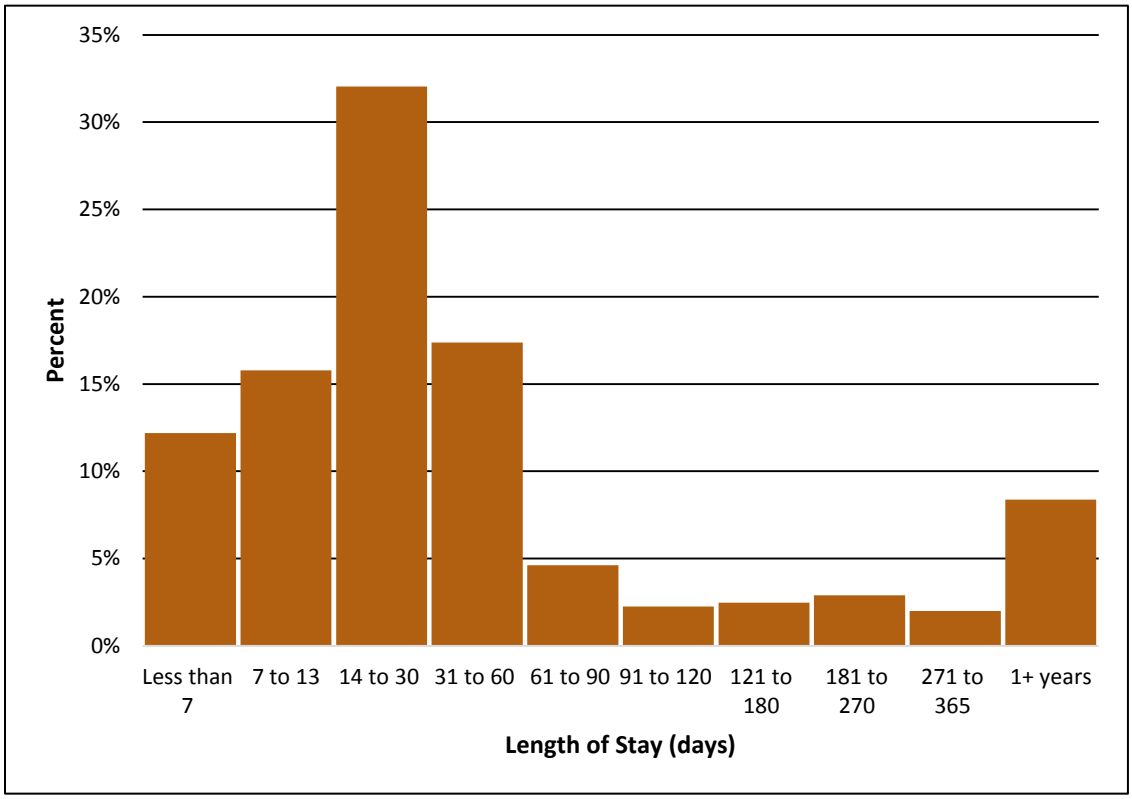
Nursing facilities provide 24-hour medical care and monitoring for individuals who need it due to a disability, or have been discharged from the hospital but are not yet able to return to the community. Nursing facilities thus serve individuals with post-acute care needs and those with ongoing needs. The length of a nursing facility stay reflects whether services are needed on a temporary or an indefinite basis. Individuals who enter nursing facilities and remain for 100 or more days are far less likely to return to the community than are those who have shorter stays (AARP, 2014).

In this report, we define short-term nursing facility stays as less than or equal to 90 (≤90) days, mid-length stays as 91 to 365 days, and long stays as more than one year. A person may have more than one nursing facility stay during the fiscal year. The Technical Notes at the end of this report provide further detail on how length of stay was calculated for this report.

Short- and mid-length stays—that is, stays for less than a full year—averaged 42 days compared to 1,127 days (or approximately 3 years) for long-stays.

Exhibit 6.1 shows the distribution of length of stay for Oregon's nursing facility population. In 2015, 82% of all nursing facility stays were short, while 10% and 8% were mid-length and long, respectively. One in three (32%) stays lasted between 14 and 30 days. The overall length of stay distribution is similar to that reported in 2014.

Exhibit 6.1. Nursing Facility Length of Stay, Oregon 2015



Source: CMS Minimum Data Set

Exhibit 6.1 also shows that 60% of Oregon nursing facility stays lasted 30 days or less. This reflects the dominant role of post-acute care in nursing facility utilization in Oregon. The percentage of new nursing facility stays in Oregon that last 100 days or longer is lower than in any other state (AARP, 2014). The greater utilization of nursing facilities for short stays is likely due to the utilization of home and community-based services and assisted living for ongoing long-term care (American Health Care Association, 2013).

Exhibit 6.2 shows the average and median lengths of stay in State Fiscal Year 2015. The median length of stay—that is, the number of days for which half of stays were longer and half were shorter—provides further detail about the utilization of nursing facility care in Oregon. Specifically, although the overall average length of stay was 133 days in SFY 2015, the median length of stay was only 23 days, suggesting that the median is a better representation of length of stay because a relatively small proportion of residents with very long lengths of stay inflated the average.

Exhibit 6.2 also presents average and median lengths of stay by age group. Average lengths of stay were highest for the youngest (under age 25) and oldest (85 and older) age groups. As discussed in Section 7, these age groups have the greatest need for assistance with Activities of Daily Living. The median length of stay is 30 days or less for all age groups, but the average length of stay ranges from 5 to 17 times greater than the median.

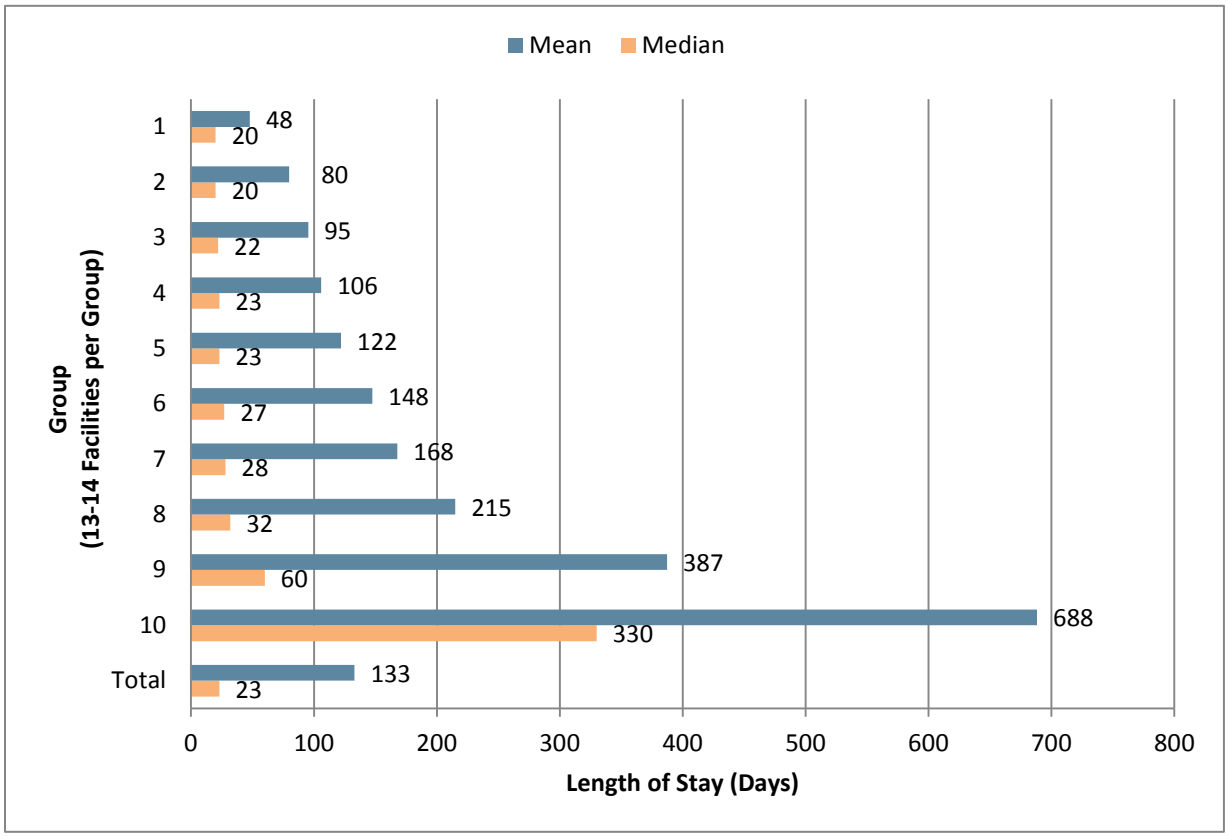
Exhibit 6.2. Nursing Facility Length of Stay (Days) by Age, Oregon 2015

Age Group	Average Length of Stay	Median Length of Stay
Under 18	187	14
18-24	506	30
25-44	128	20
45-64	115	21
65-74	119	21
75-84	121	23
85 and Over	163	27
Total	**133**	**23**

Source: CMS Minimum Data Set

Length of stay also varies across facilities. To characterize this variation, we divided nursing facilities into 10 equal-sized groups (13 or 14 facilities per group), based on their average lengths of stay (Exhibit 6.3). For each group, the average length of stay was at least twice as long as the median. The average length of stay increased from 48 days in the first group to 688 days in the tenth group. However, the median length of stay was 32 days or less for the first eight groups, reflecting the preponderance of short stays in Oregon nursing facilities, as described above. The last two groups, comprising approximately one-fifth of all nursing facilities, have much higher average and median lengths of stay. This is consistent with the fact that many of these facilities serve residents with extensive, ongoing care needs including pediatric, enhanced care, or non-dementia behavioral health care need populations.

Exhibit 6.3. Nursing Facility Length of Stay (Days) by Group, Oregon 2015



Source: CMS Minimum Data Set

The MDS data analyzed for this report do not currently allow construction of time trends in length of stay. However, analyses of detailed annual cost reports submitted to CMS by nursing facilities suggest that from 2008 to 2014,[11] average lengths of stay fell by 19% (Hansen Hunter & Co., 2016). This trend largely offsets the rising trend in admissions found in those CMS reports (Hansen Hunter & Co., 2016), yielding the relatively flat trend in resident days observed over that time period (see Exhibit 3.4).

[11] The most current data available.

Hospitalizations Linked to Nursing Facility Stays

Although more than 9 in 10 entries or reentries to nursing facilities were from hospitals, MDS does not provide information about why these residents were hospitalized. Because nursing facility care often focuses on helping residents recover from conditions for which they were hospitalized, such information would be helpful in understanding the mix of clinical needs among nursing facility residents.

We therefore linked MDS data to Oregon hospital discharge data records. A 2- step linkage process first obtained hospital discharge records whose name and date of birth matched nursing facility residents in MDS, and then aligned specific hospital discharge dates with nursing facility entry or reentry dates for individual nursing facility residents. Overall, 29,799 hospital discharges, accounting for 80.5% of SFY 2015 entries or reentries to nursing facilities from hospitals, were linked to MDS stays. The Technical Notes provide further details about the linkage process.

Overall, 59% of nursing facility stays linked to hospital discharges were for residents who had been hospitalized for medical conditions, such as infections or pulmonary problems, while 34% had been hospitalized for surgical procedures. Five percent of linked stays were for residents who had been hospitalized for trauma, 1 percent for behavioral conditions, and 1 percent were uncategorized. The overall average nursing facility length of stay for stays linked to hospital discharges was 39.7 days, with a median of 20 days.

Exhibit 6.4 presents more detailed information about the clinical reasons for hospitalizations and the average length of stay for subsequent nursing facility stays. Overall, 26% of these nursing facility stays followed hospitalizations for orthopedic conditions, and the average nursing facility length of stay was 30 days. Four in 10 of these orthopedic hospitalizations were for joint replacement surgery, and had an average nursing facility length of stay of 22 days. Somewhat fewer than 1 in 10 orthopedic hospitalizations were for spinal fusion, and also had a 22 day average nursing facility length of stay. Almost 1 in 4 orthopedic hospitalizations were for hip fracture repair, and were followed by a nursing facility length of stay averaging 40 days. Patients who had been hospitalized for infections conditions accounted for 17.5% of nursing facility stays linked to hospitalizations, and had an average nursing facility length of stay of 50.5 days. Sepsis accounted for half of these hospitalizations, with an average 55 day nursing facility length of stay. Cardiology and cardiac surgery hospitalizations accounted for 9.4% of linked stays, and had an average nursing facility length of stay of 32.5 days. Hospitalizations for pulmonary conditions (of which half were pneumonia or respiratory failure) preceded 7.9% of linked stays, with an average nursing facility length of stay of 44.3 days. Residents who had been hospitalized for a stroke or transient ischemic attack (TIA) made up 4.6% of linked stays, with an average 45.5-day nursing facility length of stay. Stays following hospitalizations for general surgery had the lowest average nursing facility length of stay, at 27.7 days.

Exhibit 6.4. Nursing Facility Length of Stay (Days) by Hospital MS-DRG, Oregon 2015

Category of Hospital MS-DRG	Percent of Hospital Discharges	Average Length of Nursing Facility Stay
Orthopedic	26	30
Infectious	18	51
Cardiology & Cardiac Surgery	9	33
Pulmonary	8	44
Other	8	44
Trauma	5	38
Neurology & Neurosurgery	5	51
Stroke & TIA	5	46
Gastroenterology	4	44
General Surgery	3	28
Endocrine	3	39
Vascular	3	33
Renal Failure	2	37
Urology	2	61
Ventilator	1	36
All Discharges	**100**	**40**

Sources: CMS Minimum Data Set and Oregon Hospital Discharge Records
Note: Results are shown for nursing facility stays where resident entered from a hospital within SFY 2015 and where MDS data can be linked to hospital discharge data.

Section 7. Acuity of Residents

Acuity Measurements

Acuity commonly refers to an individual's requirements for nursing care. Individuals that enter a nursing facility are assessed to identify the level of care needed during their stay. Nursing facilities use acuity information to plan personnel resources, manage costs, and measure quality. For example, many post-acute care patients are discharged from acute care hospitals after surgery or treatment for acute medical conditions, and temporarily require skilled rehabilitation or nursing care that cannot be provided effectively at home or in community-based facilities. Such individuals comprise a significant portion of short-stay nursing facility residents.

There are many measures of acuity. In this section, we report data about several of those indicators: Activities of Daily Living (ADLs), reasons for hospitalization, diagnoses among residents, overweight and obesity, and therapies received by residents.

Most data in this section are based on facilities' assessments of their residents as reported in the MDS. Because not all MDS assessments have complete information on ADLs, diagnoses, and treatments, only assessments that were coded as an entry, reentry, or annual assessment in SFY 2015 were used for acuity analyses. This allows us to characterize acuity among short and mid-length stays at the time residents entered the nursing facility, and among long-stay residents at the time of their annual reassessment. Although this method does not capture all nursing facility stays, it allows us to analyze complete acuity data for stays that have coded entry, reentry or annual assessments.

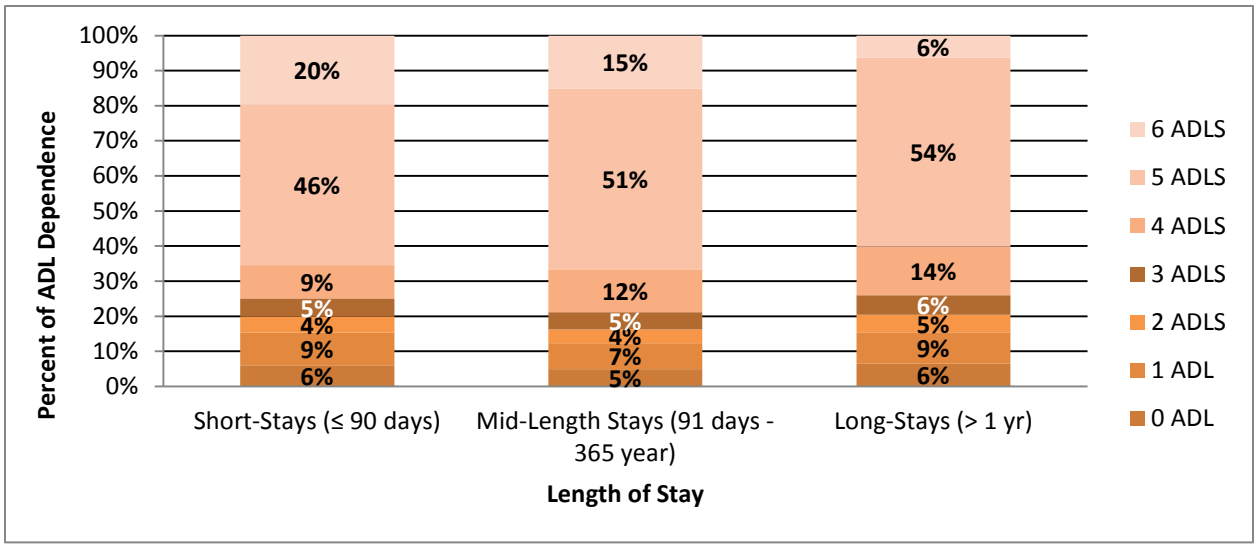
Activities of Daily Living

ADLs (Katz, 1983) measure the extent to which care recipients cannot perform self-care tasks. ADLs are used to characterize levels of caregiving need (National Center for Health Statistics, 2006) of individuals, whether on a temporary or indefinite basis. Once admitted to a nursing facility, residents are assessed for their level of dependence for each ADL, ranging from independence in performing the activity to complete dependence on staff. In this report, we focus on bed mobility, transfer, eating, dressing, toileting, and bathing ADLs.

The use of entry, reentry, and annual assessments to measure ADLs is a methodological refinement from the SFY 2014 report, where ADLs were based on the last assessment of a resident's first stay in that fiscal year. Because the revised method measures ADLs soon after entry, rather than shortly before discharge, acuity appears to be higher in 2015 than in 2014. However, this apparent increase primarily reflects the change in MDS assessment analyzed within a particular nursing facility stay.

In 2015, only six percent of stays in Oregon nursing facilities did not involve assistance for any ADL (Exhibit 7.1). About half (53%) of stays involved residents who were somewhat or completely dependent on staff for five ADLs, compared to 23% of all nursing facility residents in the U.S. (Centers for Medicare & Medicaid Services, 2014). Sixty-six percent of short and mid-length stays involved dependence on five or more ADLs, compared to 60% of long stays. Due to the methodological changes described above, these results cannot be directly compared to those reported for SFY 2014.

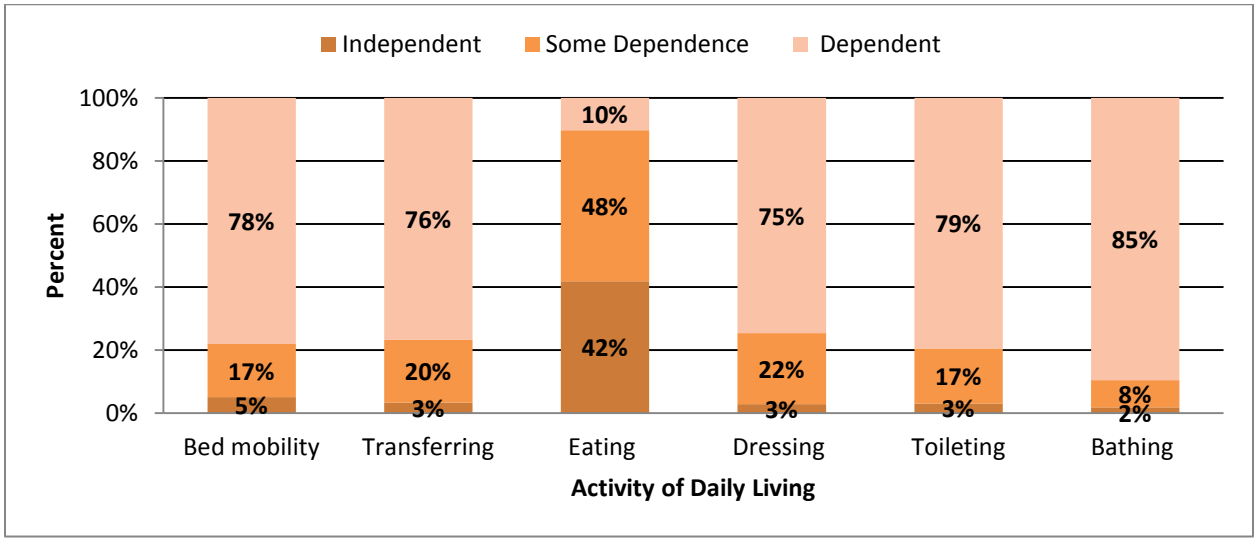
Exhibit 7.1. Activity of Daily Living (ADLs) Scores by Length of Stay, Oregon 2015



Source: CMS Minimum Data Set

Exhibit 7.2 presents the distribution of dependence on staff for six ADLs. For all ADLs except eating, complete dependence on staff was reported for at least 75% of all stays.

Exhibit 7.2. Distribution of Dependence Level by Activity of Daily Living, Oregon 2015



Source: CMS Minimum Data Set

Exhibit 7.3 provides more detail on ADL dependence by among groups of nursing facility residents. In 2015, mid-length stays had the highest proportions of complete dependence in four of six ADLs, compared to other lengths of stay. Long stays had the highest proportions of complete dependence for bathing (90%) and eating (23%). Stays of individuals under 18 years of age had higher levels of complete dependence than any stays of other age groups for all ADLs except bed mobility. Stays of individuals age 85 and over had the next highest rates of dependence for all ADLs except eating. Bathing was the most common ADL need for all stays (85%). For all ADLs, the rates of complete dependence were similar by sex (data not shown).

Exhibit 7.3. Complete Dependence for ADLs by Length of Stay and Age, Oregon 2015

	Bed	Transfer	Eating	Dressing	Toilet	Bathing
Length of Stay						
Short stay	78%	76%	8%	73%	79%	84%
Mid-length stay	80%	78%	18%	82%	84%	85%
Long stay	74%	72%	23%	80%	79%	90%
Age Group						
Under 18	70%	96%	89%	98%	100%	98%
18-24	70%	83%	51%	81%	87%	85%
25-44	59%	56%	14%	55%	59%	68%
45-64	64%	62%	9%	60%	66%	75%
65-74	75%	73%	9%	71%	76%	83%
75-84	82%	79%	9%	77%	82%	87%
85 and Over	85%	83%	11%	83%	86%	89%
Total Complete Dependence	78%	76%	10%	75%	79%	85%

Source: CMS Minimum Data Set

Clinical Conditions Among Nursing Facility Residents

The number and severity of clinical conditions that a nursing facility resident has can impact the type and intensity of services received. The MDS provides information about whether a resident had each of 56 specific diagnoses within seven days prior to his or her assessment. We grouped these diagnoses into several major categories, and tabulated whether each stay had one or more diagnoses in each category. Residents who had more than one stay during SFY 2015 may be counted more than once in the ADL measures presented in this report.

Exhibit 7.4 presents the prevalence of each diagnosis category and the most common individual diagnoses. Six in 10 nursing facility stays (59.8%) had at least one acute medical condition, with anemia, urinary tract infections, and TIA or stroke being the most common individual diagnoses. Nearly all stays (94.1%) had at least one chronic medical condition, with seven in 10 having hypertension, four in 10 having hyperlipidemia, and nearly three in 10 having diabetes. Approximately one in four stays had a cardiac rhythm disorder, gastric ulcer or reflux, and/or chronic lung disease such as asthma or COPD. One in five stays had heart failure and/or coronary artery disease. More than one in seven stays had kidney problems, including renal failure. One in four stays had arthritis, and one in eight had osteoporosis.

One in 10 stays had had a hip fracture, and nearly one in seven another type of fracture. One in eight stays suffered from neurologic conditions such as seizure disorders or Parkinson's disease. Four in 10 stays had one or more behavioral health conditions, with one in three suffering from depression and one in six from anxiety. One in five stays suffered from dementia. Severely disabling conditions such as full or partial paralysis or traumatic brain injury were present in 7.5% of stays.

Exhibit 7.4. Percent of Nursing Facility Stays with Specific MDS Diagnoses by Category, Oregon 2015

Category Specific MDS Diagnosis	Percent of Stays	Category Specific MDS Diagnosis	Percent of Stays
Acute Medical	**59.8**	**Chronic Medical Cont'd**	
Anemia	22.6	Cataracts, Glaucoma, Macular Degeneration	10.3
UTI	13.60	Benign Prostatic Hyperplasia	9.1
TIA or Stroke	13.4	PAD	6.8
Cancer	8.7	**Fractures**	**23.4**
Pneumonia	7.7	Other Fracture	15.2
Hyponatremia	5.3	Hip Fracture	9.9
Respiratory Failure	4.9	**Neurologic**	**12.7**
Malnutrition	4.2	Seizure/Epilepsy	5.5
DVT	3.6	Parkinson's Disease	3.6
Septicemia	2.6	**Behavioral**	**41.6**
Chronic Medical	**94.1**	Depression	34.9
Hypertension	70.3	Anxiety	16.6
Hyperlipidemia	41.0	**Dementia**	**20.2**
Diabetes	31.6	Non-Alzheimer's	17.8
Atrial Fibrillation	28.1	Alzheimer's	3.3
Ulcer or Reflux Disease	26.3	**Paralysis & TBI**	**7.5**
Arthritis	24.9	Hemi/Para/Quadriplegia	6.0
Asthma, COPD	23.8	Traumatic Brain Injury (TBI)	1.2
Thyroid Disorder	22.2	**Severe & Persistent Mental Illness (SPMI)**	**6.6**
Heart Failure	20.6	Manic Depression	3.1
Coronary Artery Disease	20.1	Schizophrenia	2.6
ESRD	15.8	**None of the Above**	**0.8**
Osteoporosis	12.5		

Source: CMS Minimum Data Set

Notes Percent indicates stays with one or more specific MDS diagnoses in that category. Because diagnoses are not mutually exclusive, percentages add up to more than 100%. Diagnoses that occur in less than 2.5% of stays are not shown individually, but are included in the category. See Technical Notes for a list of all diagnoses.

As shown in Exhibit 7.5, the prevalence of some diagnoses varied by nursing facility length of stay. Acute medical conditions were somewhat less common among long-stay residents, but the prevalence of chronic medical conditions was high regardless of length of stay. Fractures were much more common among short-stay residents. However, the prevalence of other categories of diagnoses, including neurologic conditions, behavioral health conditions, dementia, paralysis, and SPMI, was markedly higher among residents with longer lengths of stay. The prevalence of some diagnoses also varied by resident age (data not shown). Residents age 75 and older were more likely than younger residents to have had fractures or dementia, but less likely to have suffered from neurologic or behavioral conditions, paralysis, or SPMI.

Exhibit 7.5. Distribution of MDS Diagnosis Categories by Length of Stay, Oregon 2015

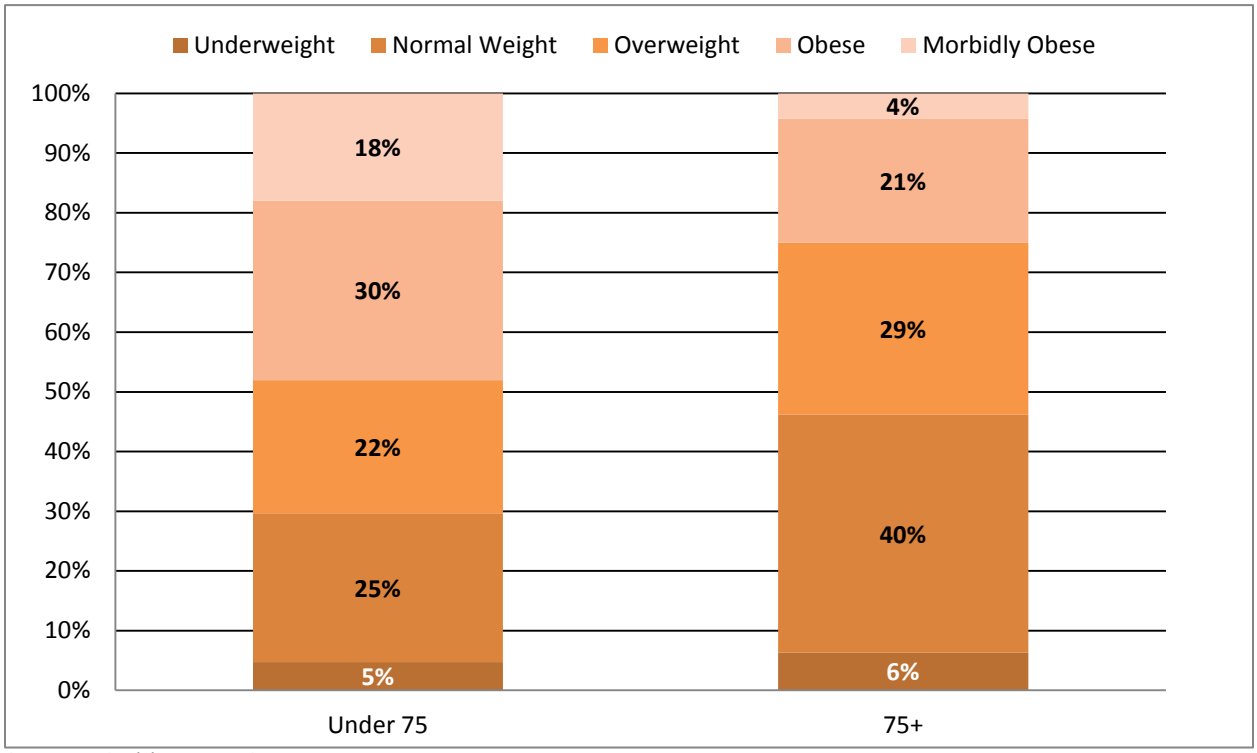
Diagnosis Category	Percent of Stays with One or More Diagnoses in Category		
	Short Stay	**Mid Stay**	**Long Stay**
Acute Medical	60%	63%	53%
Chronic Medical	95%	93%	92%
Fractures	26%	19%	7%
Neurologic	10%	17%	27%
Behavioral	38%	46%	62%
Dementia	16%	30%	47%
Paralysis & TBI	6%	12%	19%
SPMI	5%	11%	17%
None of the Above	1%	1%	1%
Total Stays	**21,531**	**1,971**	**2,941**

Source: CMS Minimum Data Set

The MDS also captures some ICD-9 diagnosis code information for conditions not included in the 56 specific diagnoses. The most common set of ICD-9 diagnosis codes was V57.xx, which designates the need for physical therapy, occupational therapy, or other rehabilitation procedures. One or more of these diagnosis codes was recorded for 42.8% of short stays, 25.4% of mid-length stays, and 5.9% of short stays (data not shown).

Obesity is not explicitly recorded in the MDS, but can be calculated from resident height and weight data, which are assessed during a stay. To measure the prevalence and severity of obesity, we calculated each resident's body mass index (BMI) and categorized obesity status as described in the Technical Notes. As shown in Exhibit 7.6, 53.8% of residents age 75 and older were overweight or obese, compared to 70.3% of those under age 75. Although older residents were somewhat more likely to be overweight, obesity and morbid obesity were much more common among residents under age 75.

Exhibit 7.6. Weight among Nursing Facility Residents, Under 75 and 75+, Oregon 2015



Source: MDS Minimum Data Set

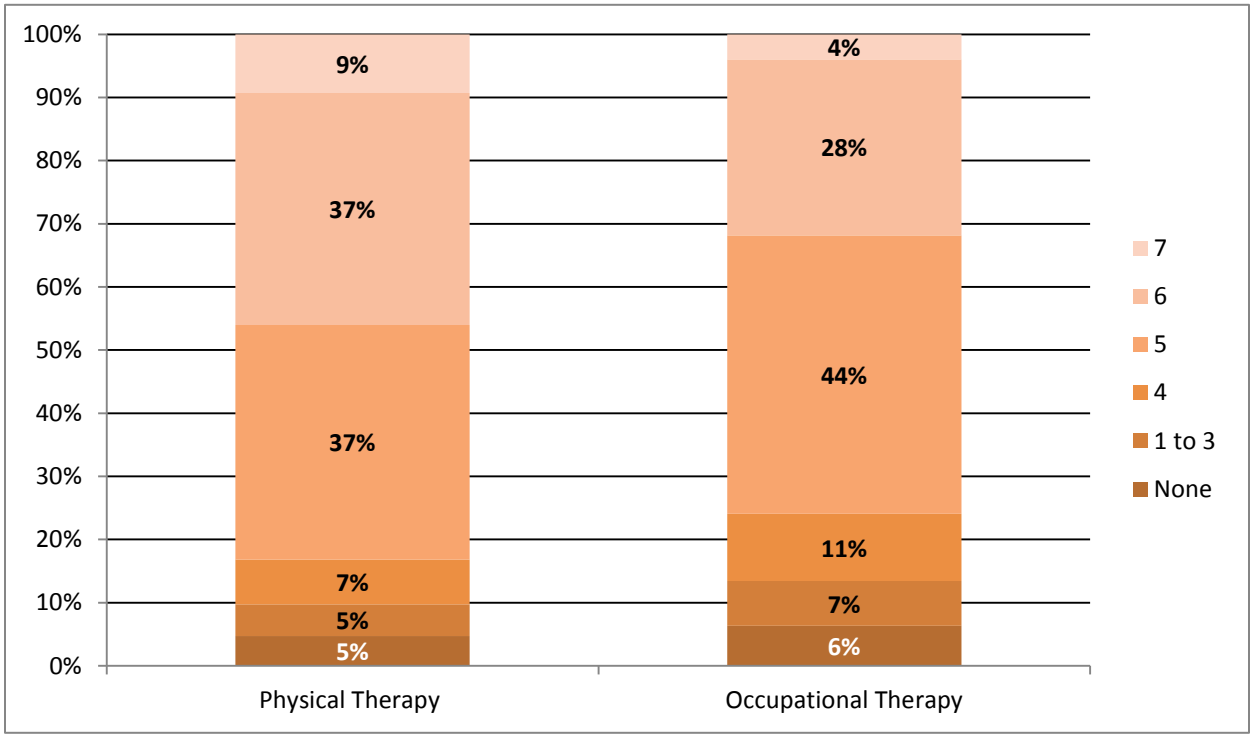
Treatments Provided to Nursing Facility Residents

MDS captures information about selected types of treatment provided to nursing facility residents. Using coded entry, reentry, or annual assessments as for the ADL and diagnosis analyses, we measured the number of stays for which specific types of treatment were provided within 7 days prior to the assessment.

Oxygen was administered during 18.6 % of nursing facility stays in SFY 2015 (data not shown). BiPAP treatment (to prevent breath stoppages during sleep for residents with sleep apnea) was provided for 4.5% of stays (data not shown). Dialysis, which indicates the presence of renal failure, was needed for 2.3% of stays (data not shown). The rate of each of these treatments was roughly twice as common among short stays compared to long stays.

As shown in Exhibit 7.7, almost all short-stay residents received physical and occupational therapy in the period after they entered a nursing facility. For more than eight in 10 short stays, physical therapy was provided five or more days per week. Occupational therapy was provided five or more days per week during seven of 10 short stays.

Exhibit 7.7. Number of Days of Physical and Occupational Therapy within 1 Week Prior to Assessment, Short Stay Residents, Oregon 2015



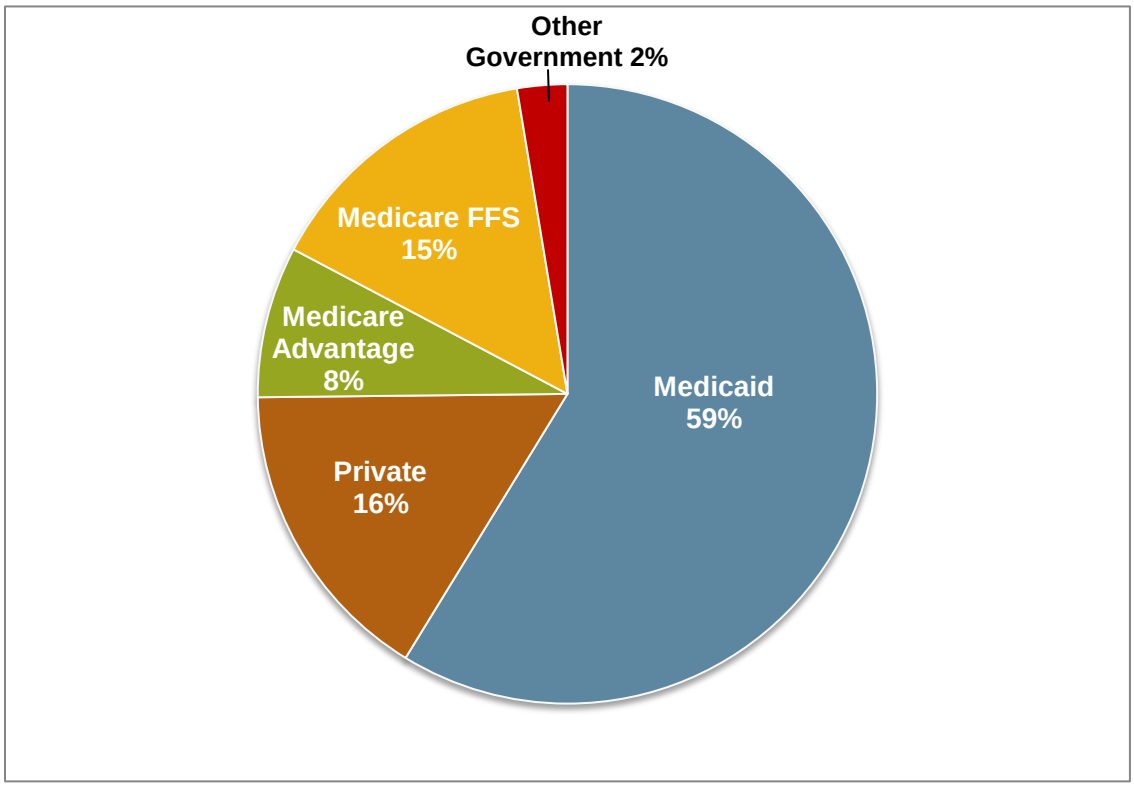
Source: MDS Minimum Data Set

Section 8. Payers

Medicaid was the primary payer for more than half (59%) of resident days in Oregon nursing facilities during 2015 (Exhibit 8.1). Private payers (including commercial insurers, long-term care insurance plans, and self-pay residents) paid for 16% of all resident days. Medicare Fee-For-Service (FFS), which covers up to 100 days of skilled nursing facility care per year, paid for 15% of resident days, and Medicare Advantage plans paid for 8%. Other government payers (including the Veterans Administration) paid for the remaining 2% of resident days in 2015.

Medicare Advantage, the managed care option for Medicare beneficiaries, is an important payer in the Oregon health care market. At 44% of eligible beneficiaries, Oregon has the third highest rate of Medicare Advantage enrollment among states (Harrington et. al 2016). For the first time, we are able to report the percentage of resident days paid for by Medicare Advantage because of enhanced DHS data collection. In previous years, Medicare Advantage was mostly included in the private payer category. Because of this methodological change, the 2015 data reported here for Medicare and private payers are not directly comparable to those of prior years. Additionally, there is a possibility of under-reporting of resident days paid for by Medicare Advantage in 2015. As nursing facilities gain more experience with the new reporting categories, it is likely that the proportion of Medicare Advantage versus private payer days will change in subsequent years.

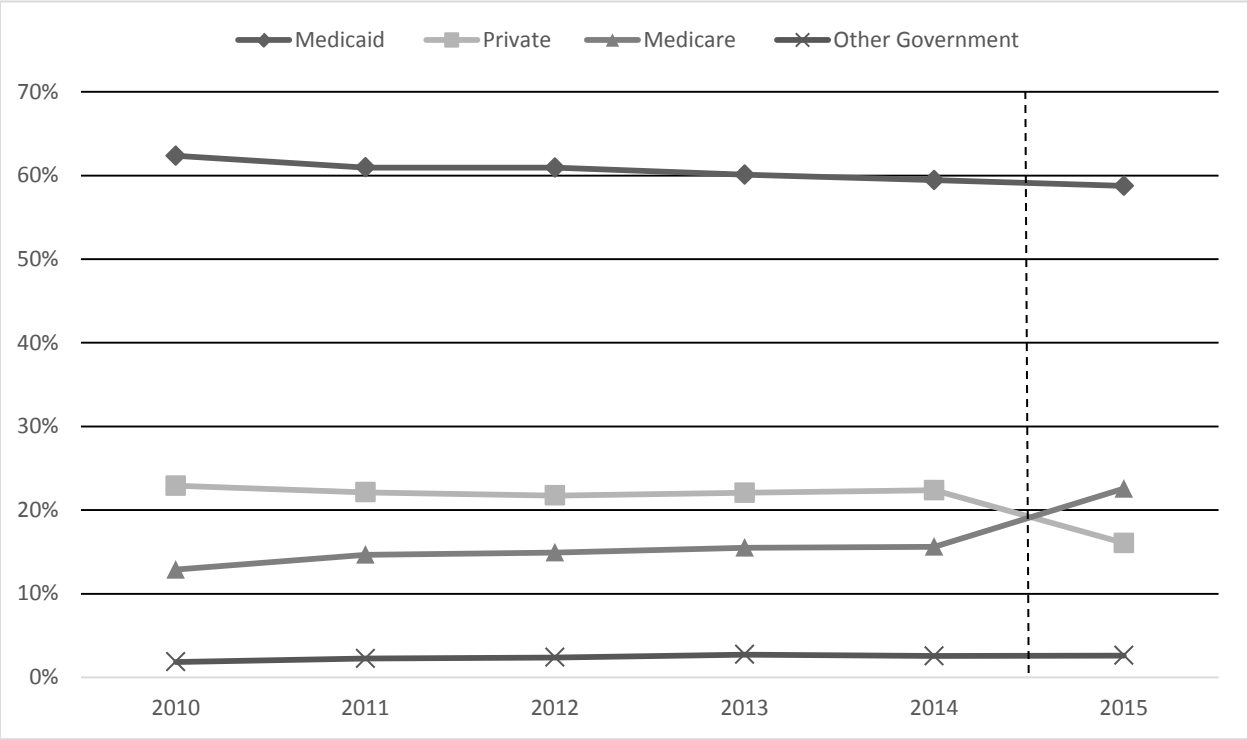
Exhibit 8.1. Payer Sources for Nursing Facility Care, Oregon 2015



Source: Cost Reports and Revenue Statements

As shown in Exhibit 8.2, the share of nursing facility resident days paid for by Medicaid declined slightly between 2010 and 2015 (62 vs. 59%), and the proportion of days paid for by other government sources remained relatively stable over those years. The dashed line signifies the 2015 change in methodology to require separate reporting of resident days paid for by Medicare Advantage. As a result, the percentage of days appears higher for Medicare and lower for private payers than in prior years. These changes from 2014 to 2015 reflect improved measurement of payer sources rather than real shifts in payment sources.

Exhibit 8.2. Payer Sources for Nursing Facility Care, Oregon 2010-2015



Sources: Cost Reports and Revenue Statements
Note: For years 2010 through 2014, “Medicare” includes Medicare FFS only. For 2015, “Medicare” includes Medicare FFS plus Medicare Advantage.

Section 9. Quality Measures

In Nursing Home Compare, CMS summarizes information on specific nursing facility quality measures based on MDS 3.0 assessments. We report the average performance level for Oregon nursing facilities on each of these quality measures. To characterize the variation across facilities, we divided the facilities into four equal groups for each measure. The number of facilities in each group depended on the total number of facilities for which a given measure is reported, which ranged from 122 to 133 facilities. In the exhibits in this section, we present the average performance level for all facilities, the rates for the highest and lowest 25% of facilities, and the national averages for each measure.

Exhibit 9.1 shows the rates of appropriate administration of seasonal flu and pneumococcal pneumonia vaccinations, with higher rates indicating better quality of care. Over 80% of short-stay residents, and over 90% of long-stay residents, were assessed for, and when appropriate, given each vaccine. These rates are similar to those of all nursing facilities nationwide. Average performance for flu vaccine was slightly lower than in 2014, and the same or slightly improved for pneumococcal vaccine. For each vaccine measure, there was substantial variation between facilities in the highest and lowest 25% groups in 2015.

Exhibit 9.1. Vaccination Rates by Length of Stay and Specific Nursing Facility Groups, Oregon and U.S. 2015

Vaccination	All Oregon Nursing Facilities	Facilities in the Top 25% Group	Facilities in the Bottom 25% Group	All U.S. Nursing Facilities
Short stay				
Seasonal flu vaccine	82%	96%	60%	83%
Pneumococcal vaccine	81%	97%	55%	82%
Long stay				
Seasonal flu vaccine	90%	99%	76%	93%
Pneumococcal vaccine	93%	100%	79%	94%

Source: Nursing Home Compare 3.0

Exhibit 9.2 shows the rates of specific events among short-stay and long-stay residents, with lower rates indicating better quality of care. Overall, Oregon nursing facilities performed the same or better than the national average on seven of 12 quality measures. Moderate to severe pain was reported by 25% of short-stay residents, but only 13% of long-stay residents; this may reflect the higher proportion of post-surgical patients among short-stay residents. There was substantial variation in reported rates of pain across facilities, which may also reflect variations in the mix of residents across facilities. Higher rates of reported pain in Oregon facilities than nationwide may reflect the higher acuity of nursing facility residents in Oregon compared to other states. Approximately two percent of short-stay residents newly received an antipsychotic medication, but 17% of long-stay residents received such a medication during the year.[12] Use of antipsychotic medications among long-stay residents has been the target of a national quality improvement initiative since 2011, and has declined steadily in Oregon nursing facilities over that time period (Centers for Medicare & Medicaid, 2014).

[12] This measure excludes residents diagnosed with schizophrenia, Huntington's disease, or Tourette's syndrome.

Thirteen percent of long-stay residents needed increased help with ADLs, and eight percent lost too much weight. Urinary tract infections were present among seven percent of long-stay residents, and pressure ulcers among six percent of high-risk long-stay residents. Ongoing catheter use, depressive symptoms, falls with injury, and physical restraint use were each reported for five percent or less of long-stay residents.

Performance in 2015 on the quality measures in Exhibit 9.2 was very similar to 2014, with average levels of each measure remaining the same or increasing or decreasing by no more than one percentage point. For each measure, there was substantial variation between facilities in the highest and lowest 25% groups in 2015.

Exhibit 9.2. Quality Measures by Length of Stay and Specific Nursing Facility Groups, Oregon and U.S. 2015

Quality Measure	All Oregon Nursing Facilities	Facilities in the Top 25% Group	Facilities in the Bottom 25% Group	All U.S. Nursing Facilities
	Percent	Percent	Percent	Percent
Short Stay				
Self-reported moderate to severe pain	25	11	42	18
Newly received an antipsychotic medication	2	0	4	2
Long Stay				
Self-reported moderate to severe pain	13	5	23	7
Received an antipsychotic medication	17	7	33	19
Help needed with ADLs increased	13	5	21	16
Lost too much weight	8	3	13	7
Had a urinary tract infection	7	1	14	6
High risk with pressure ulcers	6	2	12	6
Catheter inserted and left in bladder	5	1	11	3
Had depressive symptoms	4	0	11	6
Experienced one or more falls with major injury	3	0	6	3
Was physically restrained	1	0	3	1

Source: Nursing Home Compare 3.0

Technical Notes

Data Sources and Analyses

This report is based on analyses of data from multiple sources, including:

- Annual Cost Reports and Revenue Statements provided to DHS by all Oregon nursing facilities
- Assessments of nursing facility residents as reported in the Centers for Medicare & Medicaid Services (CMS) Minimum Data Set (MDS)
- Facility-specific data on nursing facility characteristics and performance from the CMS Nursing Home Compare (NHC) datasets
- Hospital Discharge Data (HDD) for persons discharging from a hospital to an Oregon nursing facility or persons entering a hospital from an Oregon nursing facility

Each of these data sources is described briefly below. Also described are important assumptions or methods used in data analyses whose results are presented in this report.

DHS Cost Reports and Revenue Statements

Each Oregon nursing facility that contracts with DHS to receive Medicaid reimbursement must submit an annual Cost Report that contains data including numbers of beds, resident days, costs, and revenues. DHS uses data from these reports to establish and update Medicaid payment rates.

Each facility that does not contract with Medicaid must submit an annual Revenue Statement, which contains similar information but not data on licensed or setup beds or costs. For these facilities, numbers of licensed beds were obtained from Nursing Home Compare data (see below); numbers of setup beds were estimated based on other facilities of similar size.

The reporting period for Cost Reports and Revenue Statements is the State Fiscal Year (SFY), which begins July 1st and ends June 30th. This report focuses on SFY 2015, which ended June 30th, 2015, but also includes data for SFYs 2010 through 2014. If a facility changed ownership during a year, resident days from partial-year cost reports from the different owners were combined for that facility.

Occupancy rates for each facility were calculated using resident days and number of available bed days from Cost Reports and Revenue Statements. Occupancy rates were adjusted for facilities that increased or decreased the number of licensed beds available during the SFY or were only open for part of the year. If information about when the change in licensed beds occurred was not available, the average of beginning and end of year bed numbers was used. As Revenue Statements do not contain information about the number of licensed beds in a facility, this was obtained from Nursing Home Compare July 2014 and June 2015 (see below). Facilities in operation for less than 2 months of a SFY were excluded from that year. If a data

element, such as number of beds or resident days was missing for a facility for one year, we estimated it based on data from prior and/or subsequent years' reports.

Many sections of the Cost Reports and Revenue Statements provide details by payer and by payment category within payer. We used these detailed data to exclude Assisted Living and Residential Care resident days from our analyses.

Population data used to calculate nursing facility bed availability rates were obtained from Portland State University's annual population estimates. The numbers of licensed and set-up beds at the beginning of each fiscal year were divided by population estimates for the beginning that year.

MDS Assessments

CMS mandates that the Minimum Data Set (MDS) assessment questionnaire be completed for all nursing facility residents within 7 days of entry (admission). This assessment includes a wide range of data, including admission source, discharge destination, demographics, ADLs, diagnoses, treatments received, and quality measures. This report is based on Version 3.0 of the questionnaire

Nursing facility residents are assessed at entry and at discharge. Reassessments are to be performed if there is a significant change in a resident's health status, or quarterly if a resident's stay exceeds 3 months. If the resident is discharged within 7 days, only one assessment need be performed.

MDS data files were provided to OSU by DHS. These data files included assessments reported to DHS through December 4, 2015, which permitted analyses of nursing facility stays that extended past the end of SFY 2015. The data received by OSU were de-identified, so that resident names or other unique identifiers were removed. DHS provided a unique random ID number for each person, so that multiple assessments per person could be linked together. Duplicate assessments were removed from the de-identified dataset prior to analyses. OSU created a crosswalk between MDS facility identifiers and DHS report identifiers so that MDS results could be disaggregated by county or facility size.

This report is based only on assessments of residents for whom discharge dates were available in the MDS data. Residents with an uncertain discharge status (that is, no assessment within 150 days of the December 4, 2015 date when the dataset was created) were excluded from analyses. Residents of facilities with unknown or missing facility identification numbers were also excluded from analyses.

The 2015 report employed a refined methodology for capturing and counting entries, reentries, discharges, and stays in the MDS data. Entries and reentries into a nursing facility data are now captured based on the date of discharge. This was done because only the final assessment of a stay includes a discharge date, but all assessments include the date of entry. Therefore, for any discharge assessment, the entrance date associated with that assessment is also used to

define the beginning and end of that stay.[13] Residents still enrolled at the time the MDS dataset was created for OSU, December 4, 2015, were assigned this as their discharge date.

Reentries are now counted based on the MDS definition of a reentry: if a person is discharged from a nursing facility and then reenters the same facility within 30 days, it is a reentry. This is a change from the 2014 report, which counted as reentries only assessments coded as such in MDS.

Nursing facility length of stay (LOS) was calculated from the resident's entry date and discharge date. If an individual was still resident in a facility as of December 4, 2015, LOS was truncated as of that date; this yields a conservative underestimate of actual LOS for those residents. For the 2015 report, a separate LOS was calculated for each new stay, whether an entry or reentry. If a resident was discharged from a nursing facility and subsequently re-entered that facility within 30 days, this was treated as two separate stays.[14]

Because not all MDS assessments have complete information on ADLs, diagnoses and treatments, only assessments that were coded as entry, reentry or annual assessments in SFY 2015 were used to capture this information. Although this approach does not capture all stays or residents, the resulting data are more complete. This approach is a change from the 2014 report, which captured ADLs using the last assessment of a person's first stay in that fiscal year.

LOS, ADLs, diagnoses, and treatments were calculated for any person who spent at least one day in an Oregon nursing facility during SFY 2015. A resident who had more than one stay may therefore have been counted more than once in these analyses. This is a change from the 2014 report where an individual could have only one ADL score.

Demographic data were derived from the discharge assessment. Individuals who had more than one stay during the fiscal were counted only once in exhibits that present demographic data.

Nursing Home Compare (NHC) data

The NHC system reports data collected by CMS during periodic surveys of nursing facilities, which must happen at least every 15 months. This report uses NHC data for each facility's survey date closest to the relevant SFY.

NHC reports the percentage of each facility's residents who meet each MDS-based quality measure for each calendar quarter. Quality measure definitions can be found at http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/Downloads/MDS-30-QM-User's-Manual-V80.pdf

[13] For the 2014 report, any entry or reentry that was coded in MDS as being an entry assessment, or the very first assessment for a resident if no coded entry assessment existed for that resident, was counted as the beginning of a stay. Discharge dates were then filled in to align with those selected entry or reentry dates. Because it did not capture all discharges, this prior method was determined to undercount total stays.

[14] For the 2014 report, if a resident was discharged from and subsequently re-entered a nursing facility within 30 days, this was counted as one stay. However, the LOS in the 2014 report was calculated from the last entry date (even if it was a re-entry) to the final discharge date.

This report analyzed data for the 3 quarters (9 months) of SFY 2015 that were available from the June 2015 NHC system to coincide with the SFY reporting period. Facilities that reported a measure for less than 20 short-stay residents or 30 long-stay residents during that 9-month period are excluded from analyses for that measure. For each measure, this report presents the average of values for all facilities for which NHC reports data for that measure.

Facilities that only submit Revenue Statements do not include information on the number of licensed or set up beds. Because NHC files include information on the number of licensed beds, July 2014 NHC files were utilized to fill in beginning of the SFY licensed bed numbers and June 2015 were used to fill in end of the SFY licensed bed numbers for these facilities.

Hospital Discharge Data (HDD)

Hospital Discharge Data (HDD) captures diagnosis, payer, and demographic information on individuals who spend time in an inpatient hospital in Oregon. HDD data were linked to MDS in a 2-step process. First, using LinkKing software, we probabilistically matched persons who, per MDS, had entered a nursing facility in SFY 2015 to persons who, per the HDD, were discharged from a hospital during calendar years 2013 through 2015. Matching was based on first name, last name, middle initial, date of birth, and sex. Second, we aligned these matched hospital discharges and nursing facility admissions by date; an alignment margin of plus or minus two days was used. At the end of these 2 steps, 29,799 of the 38,887 nursing facility admissions in SFY 2015 were linked to hospital discharges. For 2,176 of the unlinked nursing facility admissions, MDS indicated that the resident had not entered from a hospital; these admissions were excluded from the denominator in calculating the linkage rate. Overall, therefore, we achieved an 80.5% linkage rate between HDD and MDS for SFY 2015.

Definitions Used in This Report

Admission: This occurs when a person enters a NF and is admitted as a resident. An admission may be:

- An entry into a nursing facility (if the resident has never been admitted to the specified facility before, or if the resident was in the specified facility previously and was discharged and not did not return within 30 days of the discharge); or
- A reentry, which occurs when an individual is discharged from a nursing facility and then returns to the same facility within 30 days of that discharge.

Discharge*: A discharge occurs when an individual is released from a nursing facility whether they re-enter or not. This does not include a leave of absence or hospital observational stays of less than 24 hours unless the individual was admitted to the hospital.

Final discharge: A final discharge occurs when an individual is released from the nursing facility and does not return to the same facility within 30 days of that discharge date

Discharge followed by a reentry within 30 days: This occurs when an individual is released from a nursing facility and returns to the same facility within 30 days of the discharge date.

*As defined by the CMS MDS v3 Manual Section A

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