

# 2019 Nursing Facilities

The State of Nursing Facilities in Oregon,  
state fiscal year 2019



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A study completed by Oregon State University.  
College of Public Health and Human Sciences

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# The state of nursing facilities in Oregon, 2019

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# Executive summary

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Nursing facilities are an integral component of Oregon's long-term services and supports continuum, serving residents who need high-level skilled care on a short term or long-term basis. This report presents the most recent federal and state data for all licensed nursing facilities that operated in Oregon during State Fiscal Year (SFY) 2019.

## Licensed capacity and occupancy

There were 10,895 licensed beds in Oregon's 132 nursing facilities in SFY 2019. The number of beds has decreased gradually since 2000, and the decline accelerated somewhat beginning in SFY 2015. Currently, Oregon has one of the lowest nursing facility occupancy rates among all 50 states and the District of Columbia, reflecting the state's ongoing commitment to community-based long-term care options, such as assisted living, adult foster care, residential care, and memory care. The total number of resident days per year in Oregon nursing facilities has remained stable at approximately three million since 2002. Nursing facilities are concentrated in urban areas, and seven counties had no freestanding nursing facilities.

## Admissions, discharges, and reentries

There were 39,300 admissions to Oregon nursing facilities in SFY 2019, a 23% increase from 2012.<sup>1</sup> Approximately one in four admissions was a reentry by a person who had been discharged from a nursing facility fewer than 30 days before. Slightly more than 95% of admissions were from acute care hospitals. During SFY 2019, Oregon nursing facilities statewide had 38,537 discharges, an increase of 20% from 2012. The large majority of discharges (71%) were to community settings, including home as well as community-based long-term care facilities. Of the 27% of discharges that were to acute care hospitals, more than nine in ten returned to a nursing facility within 30 days.

## Residents

Over 45,000 individuals resided in an Oregon nursing facility for at least one day during SFY 2019. Most nursing facility residents (57%) were female, and more than 80% were 65 years of age or older. The nursing facility population is less racially and ethnically diverse than the general Oregon population.

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<sup>1</sup> This report uses 2012 as the benchmark year because it is the first year for which Minimum Data Set (MDS) 3.0 data are complete enough to create annual totals.

## Length of stay

The average length of stay for residents discharged from Oregon nursing facilities in SFY 2019 was 51 days, but the median length was only 19 days. More than seven in ten stays lasted 30 days or less. This reflects the fact that most residents of Oregon nursing facilities are there to receive post-acute care or rehabilitation care after discharge from a hospital. Linkage to hospital discharge data showed that 59% of nursing facility stays were by residents who had been hospitalized for medical conditions, such as infections or pulmonary problems, while 33% had been hospitalized for surgical procedures such as joint replacement.

## Acuity of residents

Most Oregon nursing facility residents required a great deal of assistance with the six basic activities of daily living (ADLs), that is, bed mobility,<sup>2</sup> transferring, eating, dressing, toileting, and bathing. Forty-six percent of short nursing facility stays involved dependence on five or more ADLs, as did 63% of long stays. In addition, 95.4% of all nursing facility stays involved at least one chronic medical condition, such as hypertension, hyperlipidemia, and diabetes. Sixty-three percent of all nursing facility stays involved at least one acute medical condition, such as anemia or urinary tract infections, and 44% of all stays involved behavioral health conditions such as depression or anxiety.

## Payers

Medicaid was the primary payer for 62% of resident days in Oregon nursing facilities during SFY 2019. Traditional Medicare paid for 13% of days in 2019, while Medicare Advantage managed care plans paid for 11% of days. Private payers (including commercial insurers, long-term care insurance plans, and self-pay residents) paid for 11% of resident days. Other government payers paid for the remaining 3% of resident days in 2019.

## Quality measures

Oregon nursing facilities performed as well or better than the national average on 10 of 22 specific quality measures defined by the Centers for Medicare and Medicaid

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<sup>2</sup> Bed mobility in the MDS 3.0 refers to how a nursing facility resident moves to and from a lying position, turns side to side, and positions their body while in bed or alternate sleep furniture; this measure does not refer to the mobility measure in the Katz Index of Independence in Activities of Daily Living (Katz et al., 1963).

Services (CMS). Additionally, long-stay nursing facility residents in Oregon were less likely than the national average to receive antianxiety or hypnotic medications. Some measures for which Oregon nursing facilities did not perform as well as the national average included:

- For long stay residents:
  - Influenza and pneumonia vaccines
  - Ability to move independently
  - High risk patients with pressure ulcers
- For short stay residents:
  - Having an outpatient emergency department

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# Background

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This is the sixth 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 (ODHS), the Oregon Health Care Association, 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<sup>3</sup> 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 the 132 Oregon nursing facilities that were in operation in the 2019 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. We 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.

## Introduction

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Oregon continues to be a bellwether for reform and innovation in long-term services and supports (LTSS) in the United States. 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 focus of this report is on nursing facilities, which 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 medical condition or illness or who 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). Nursing facilities are the most clinically intensive setting in Oregon's long-term care continuum, and 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,

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<sup>3</sup> Now called the Aging and People with Disabilities Program (APD). Prior to 1998, the Office of Health Policy also conducted surveys of nursing facilities.

and include medical treatment; physical, speech and occupational therapy; assistance with Activities of Daily Living;<sup>4</sup> 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).

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<sup>4</sup> Activities of Daily Living (ADLs; Katz et al., 1963) measure the functional impairment of individuals (Katz et al., 1963). 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 132 certified nursing facilities in State Fiscal Year 2019 (SFY), which covers the period of July 1, 2018 to June 30, 2019.<sup>5</sup>

Nursing facilities serve long-term care residents with the most acute care needs, such as those receiving post-acute care after being hospitalized. Oregon’s nursing facility population reflects the state’s continued efforts to direct as many individuals as possible into community-based long-term care options, including assisted living, residential care, and adult foster care.

There were 10,895 licensed beds in Oregon nursing facilities in SFY 2019 (Exhibit 1.0). The number of facilities per county ranged widely, from zero in seven counties to 33 in Multnomah County, for an average of four facilities per county statewide.

In 2019 45,525 individuals required services in an Oregon nursing facility for at least one day, representing a 2% decrease from SFY 2018. Compared to national averages, the residents of Oregon nursing facilities were more likely to be under age 85 and non-Hispanic white, but more likely to be female.

Other notable findings in this report are highlighted below.

### Exhibit 1.0. Characteristics of Oregon nursing facilities, 2019

Characteristic	
Total number of facilities	132
Total number of licensed beds	10,895
Average licensed capacity per facility	83
Minimum number of licensed beds	5
Maximum number of licensed beds	234
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 counties, with an average of four per county.

<sup>5</sup> Unless otherwise noted, all references to 2018 refer to the State Fiscal Year.

- Over two-thirds of all facilities (71%) were small- to medium-sized facilities with fewer than 100 beds, accounting for more than half (55%) of all beds statewide.

## Licensed capacity and bed availability

- The total number of licensed beds has declined consistently (17%) over the past 20 years, to 10,895 in 2019. This decline began accelerating in 2015, which may in part be due to Oregon House Bill 2216 that reimbursed nursing facilities for voluntarily reducing bed capacity.
- The average number of licensed beds per nursing facility in Oregon was 83, compared to the national average of 108 in 2017, the most recent national data available.
- The number of licensed beds per facility ranged from five to 234.
- The number of licensed beds per 1,000 population 75 years and older decreased by 11% from 41 in 2018 to 36 in 2019. This is consistent with the overall decline (40%) in the number of licensed beds per 1,000 population 75 years and older in the last 20 years.
- 84% 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 60% in Hood River county to a high of 100% in Curry, Douglas, Grant, Klamath, Lake, Lincoln, and Malheur counties.

## Occupancy

- Average occupancy rates decreased from 72% in 2000 to 69% in 2019, a 1% increase from 2018.
- Across counties, average occupancy rates ranged from 38% to 83%.
- Oregon nursing facilities with fewer than 50 beds had an average occupancy rate between three to nine percentage points higher than larger facilities of any other size. Facilities with 100 to 149 beds had the lowest average occupancy rate (64%) compared to facilities of other sizes.
- Between 2010 and 2019, the number of resident days has remained relatively stable overall; however, there was a 1.8% decrease in resident days from 2018 to 2019.
- Facilities with 50-99 beds accounted for the greatest share of resident days (52%) among all facilities.
- Multnomah, Clackamas, Lane, and Washington counties had the highest numbers of total resident days, accounting for 27, 10, 10, and 9% of all resident days statewide, respectively.

## Admissions, discharges and reentries<sup>6</sup>

- 95% of all admissions came from acute care hospitals.
  - Facilities with fewer than 50 beds had the lowest average numbers of admissions and discharges (76 and 73, respectively), whereas facilities with 150+ beds had the highest average numbers of admissions and discharges (465 and 452, respectively).
  - 27% of all discharges were to an acute care hospital; 95% of these discharges to hospitals resulted in a re-entry to a nursing facility within a 30-day period.
- 71% of all discharges returned to the community, which included personal homes, assisted living, residential care, and adult foster care.

## Residents

- The state's nursing facility population was younger than national estimates, with 82% of Oregon nursing facility residents being age 65 or older, compared to 85% of residents nationwide, according to the latest available data.
- 43% of Oregon 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.

## Length of stay

- 72% of Oregon nursing facility stays lasted 30 days or less.
- 92% of all nursing facility stays were less than or equal to 90 days, referred to as a "short stay."
- Short- and mid-length stays—meaning stays of less than one full year—averaged 31 days compared to 887 days (or approximately 2.4 years) for long-stays.
- Average lengths of stay were highest for younger residents (18 to 24 years) at 309 days.
- The median length of stay in Oregon facilities was 19 days.
- 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 33% had been hospitalized for surgical procedures.

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<sup>6</sup> 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 fewer than 30 days before. A discharge refers to an individual being released from a nursing facility whether they re-enter or not.

- The overall average nursing facility length of stay was 44 days for stays linked to hospital discharges, with a median of 19 days.

## Acuity of residents

- Average ADLs of Oregon nursing facility residents decreased 6.7% from 3.7 in 2012 to 3.5 in 2019.
- 48% of stays in Oregon involved residents who were somewhat or completely dependent on five ADLs, compared to 23% of all nursing facility residents in the U.S.
- 46, 59, and 63% of short-, mid-, and long-stays, respectively, involved dependence on five or more ADLs.
- Stays of residents under 18 years of age had higher levels of complete dependence than stays of other age groups for all ADLs except bed mobility.
- Bathing was the most common ADL need for all stays (85%), followed by toileting (72%) and bed mobility (71%).
- 63% of stays involved at least one acute medical condition, with anemia, cancer, and urinary tract infections being the most common individual diagnoses.
- 95% of stays involved at least one chronic medical condition, with seven in 10 having hypertension, more than four in 10 having hyperlipidemia, and more than three in 10 having diabetes.
- Physical therapy was provided five or more days per week for 83% of short stays.
- Occupational therapy was provided five or more days per week for 78% of short stays.

## Payers

- Medicaid was the primary payer for 62% of resident days in Oregon nursing facilities during 2019, a proportion that has remained relatively stable since 2010.
- Medicaid paid for 62, 58, and 79% of resident days in urban areas, large rural cities/towns, and small/isolated rural towns, respectively.
- Medicare Fee-For-Service paid for 13% of Oregon nursing facility resident days in 2019 while Medicare Advantage managed care plans paid for 11% of days.
- Private payers (including commercial insurers, long-term care insurance plans, and self-pay residents) paid for 11% of all resident days.

## Quality measures

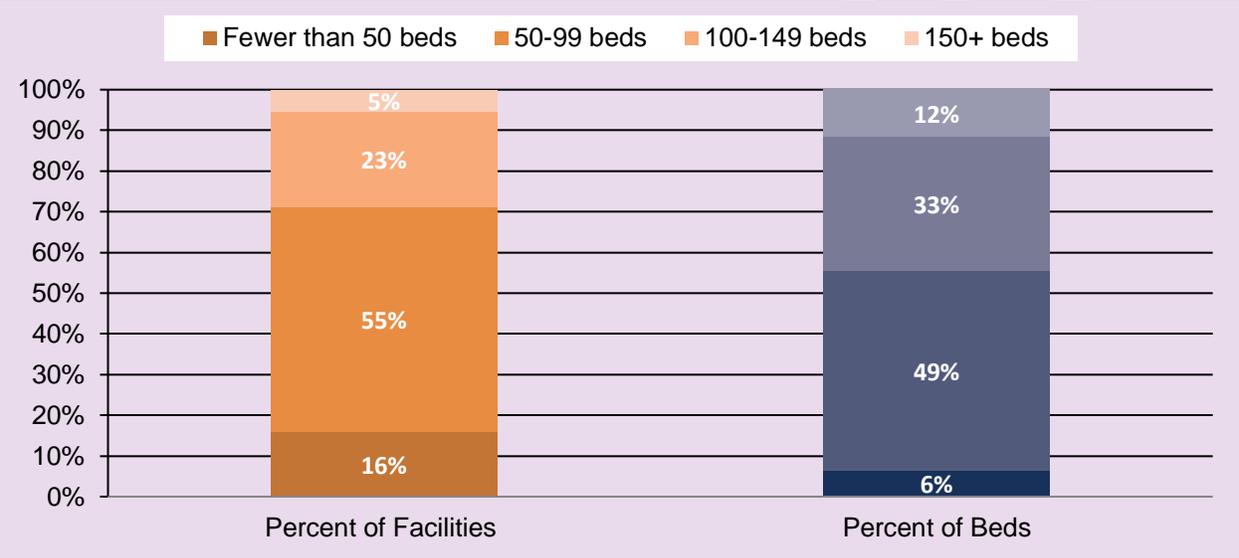
- Oregon nursing facilities performed the same or better than the national average on 10 of 22 CMS-defined quality measures.

- Oregon facilities' average performance on individual quality measures in 2019 was similar to 2018 and 2017.
- Average rates of pneumococcal pneumonia vaccination increased in Oregon facilities for long stays, compared with 2018, and seasonal flu vaccination in Oregon facilities also increased compared with 2018, with both remaining somewhat lower than the average for all nursing facilities nationwide.
- Average rates of vaccination for pneumococcal pneumonia and seasonal flu increased in Oregon facilities for short stays, compared with 2018, but were lower than the average for all nursing facilities nationwide.
- Like 2018, short- and long-stay nursing facility residents in Oregon were less likely than nursing facility residents nationwide to receive antianxiety or hypnotic medications. In addition, fewer long-stay residents reported having depressive symptoms compared with the average rates for all nursing facilities nationwide.
- Rates of several negative outcomes of long stays (for example, excessive/unsafe weight loss, development of pressure ulcers, and the ability to move independently worsening) were somewhat higher in Oregon than the national average.
- Short stay residents in Oregon nursing facilities were more likely than the national average to visit a hospital emergency department, and equally likely to be re-hospitalized after entering the nursing facility.

# Section 1. Licensed capacity

Oregon had 132 nursing facilities in SFY 2019, with a total of 10,895 licensed beds (Exhibit 1.1). Seventy-one percent of all facilities had fewer than 100 beds, accounting for more than half (55%) of all beds statewide. The average number of licensed beds was 83, compared to 108 nationally in 2016, the most recent data available (Harrington & Carrillo, 2018).

**Exhibit 1.1. Licensed capacity by facility size, Oregon 2019**



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

The total number of nursing facilities in Oregon (n=132) was less than the total number in 2018 (n=136). One nursing facility changed ownership at the beginning of or during SFY 2019. Four facilities closed, and no new facilities opened during SFY 2019.

The total number of licensed nursing facility beds in Oregon declined 17% over the last 20 years, from 13,127 in 2000 to 10,895 in 2019 (Exhibit 1.2). The total number of licensed beds in 2019 declined slightly (2%) from 2018. The dashed vertical line between 2000-08 and 2009-19 signifies a change in the methodology used to obtain the data reported in this exhibit and in Exhibit 1.3 (page 10). Thus, the trends for these two time periods may not be completely comparable.<sup>7</sup>

<sup>7</sup> Data for the 2000-08 period are based on information used by the state for facility licensing. The trend for 2009-19 come from state and federal data collected as part of the reporting requirements for nursing facility certification and payment.

One contributor to the decrease in licensed beds was reductions in licensed beds at existing facilities. During 2019, one facility increased its number of licensed beds, while no facilities reduced their number of licensed beds.

The long-term decrease in licensed bed-capacity contrasts with the national trend, which has remained relatively stable since 2004 (American Health Care Association, 2015). Oregon has the third lowest number of nursing facility residents per 1,000 population 65 years and older in the United States (Reinhard et al., 2014), providing further evidence of the state's commitment to non-institutionalized long-term care.

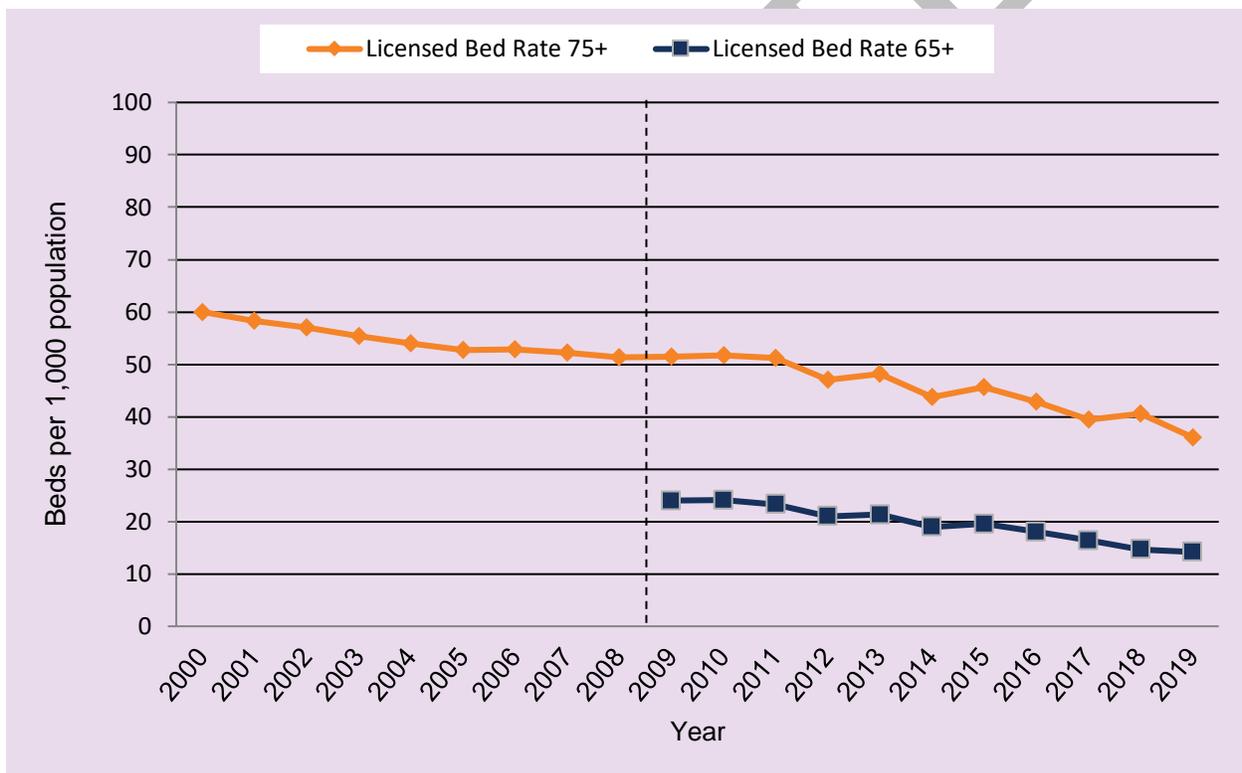
**Exhibit 1.2. Total number of licensed beds in Oregon nursing facilities, 2000–2019**



Sources: OHPR Nursing Facility Reports, 2000-08; Cost Reports, Revenue Statements, and Nursing Home Compare 3.0, 2009-19

The number of licensed beds per 1,000 population in Oregon has declined steadily since 2000 for the 75 years and older population (60 vs. 36; Exhibit 1.3) and since 2009 for the 65 years and older population (24 vs 14; Exhibit 1.3). The 40% decrease over the past 20 years in licensed beds per 1,000 population 75 years and older reflects the overall reduction in licensed capacity and the growth in the state's older population during this same time period. Over the last 10 years, the decrease in the number of licensed beds per 1,000 was smaller for the population 75 years and older (30%) than for the population 65 years and older (41%). 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 75 years and older and 65 years and older, Oregon 2000-2019**



Sources: OHPN Nursing Facility Reports, 2000-08; Cost Reports, Revenue Statements, and Nursing Home Compare 3.0, 2009-19

## Section 2. Bed availability

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In 2019, there were 36 licensed beds per 1,000 population 75 years and older in Oregon (Appendix, Table A). This rate varied widely across the state's 36 counties. Seven counties—Baker, Gilliam, Harney, Morrow, Sherman, Wallowa, and Wheeler—had no nursing facilities and thus no beds. Among counties that had nursing facilities, the number of licensed beds per 1,000 population 75 years and older ranged from a low of 10 in Lincoln county to a high of 145 in Wasco county (Appendix, Table A).

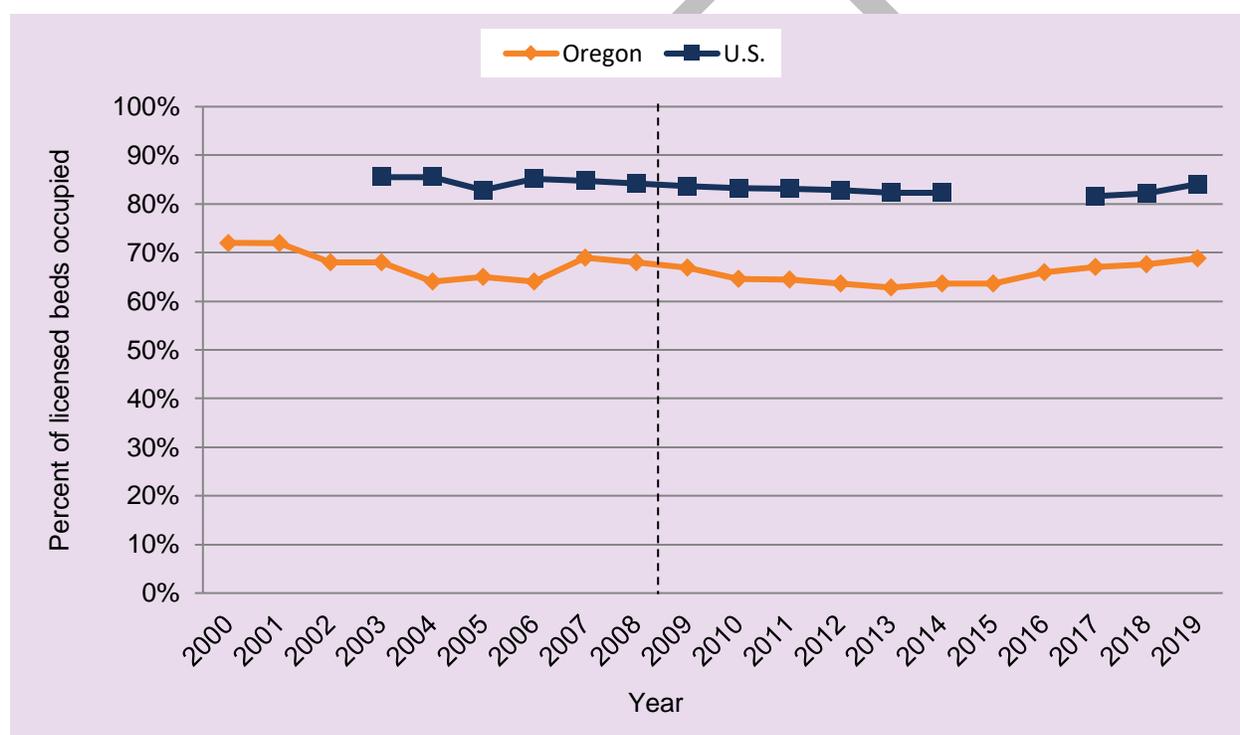
Statewide, 84% of licensed beds were staffed and available for use, what we refer to as “set-up.” However, the proportion of licensed beds that were “set-up” varied widely across the state. For example, Hood River county had the lowest percentage of licensed beds that were set-up (60%), followed by Coos county (64%). Seven counties had 100% of licensed beds that were set-up: Curry, Douglas, Grant, Klamath, Lake, Lincoln, and Malheur. There was a more than fourteen-fold difference in the number of set-up beds per 1,000 adults 75 and older across Oregon, from a low of eight in Jefferson county to a high of 118 in Wasco county (Appendix, Table A).

## Section 3. Occupancy

The average occupancy rate<sup>8</sup> statewide decreased overall between 2000 (72%) and 2019 (69%; Exhibit 3.1), although the rate has been rising slightly since 2015, when it reached a low of 64%. The dashed line between the 2000-08 and 2009-19 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.<sup>9</sup>

Oregon's average nursing facility occupancy rate ranks consistently as one of the lowest in the nation (The Henry J. Kaiser Family Foundation, 2019).

**Exhibit 3.1. Average occupancy rate, Oregon and U.S. 2000–2019**



Sources: Oregon occupancy rate 2000-2008: OHPR Nursing Facility Reports; Oregon occupancy rate 2009-2019: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0; National occupancy rate: 2003-2016: The Henry J. Kaiser Family Foundation; National occupancy rate 2017-2019: National Investment Center for Seniors Housing & Care (NIC), Skilled Nursing Data Report, 2017-2019.

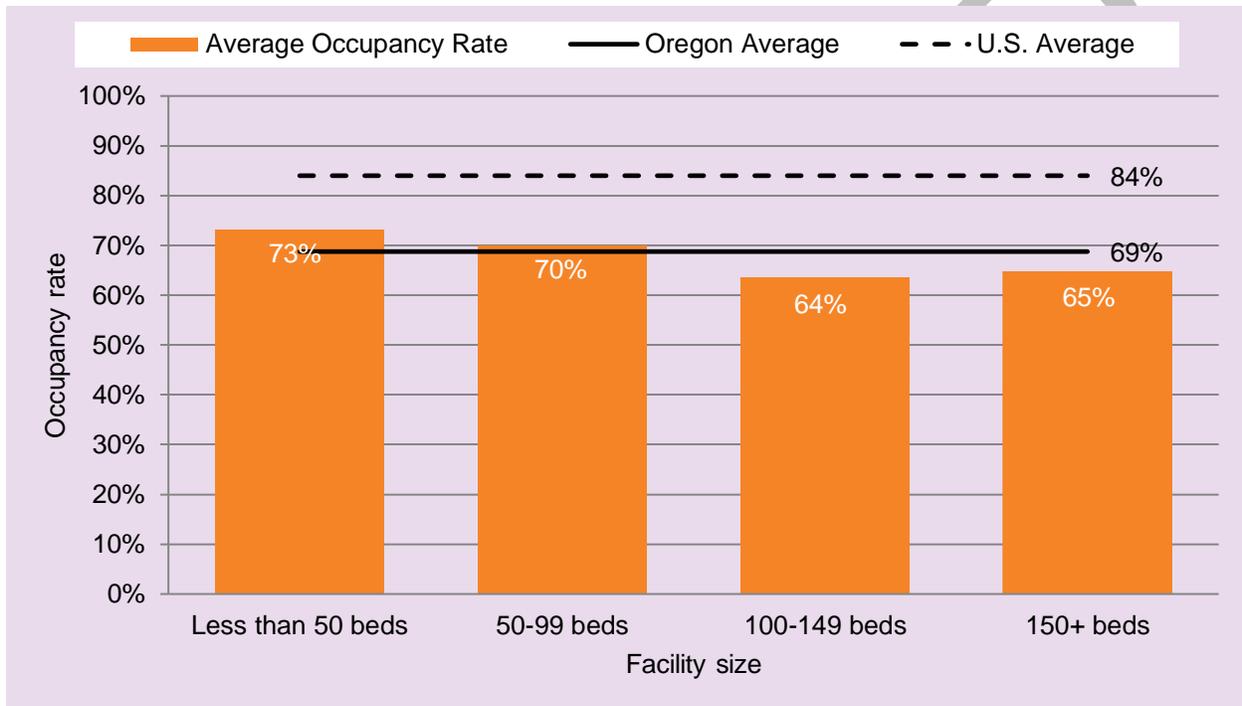
In SFY 2019, the average statewide occupancy rate of 69% (Exhibit 3.2) was 15 percentage points lower than the national average (84%; National Investment Center for

<sup>8</sup> A facility's occupancy rate is the total number of resident days reported by that facility during the state fiscal year divided by the total number of bed days available at that facility during the same fiscal year. Occupancy rates are adjusted for facility openings and closings during the state fiscal year.

<sup>9</sup> 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 2009 and later years come from state and federal reporting for nursing facility certification and payment, which are not affected by response rates.

Seniors Housing & Care, 2019). Nursing facilities with fewer than 50 beds had a higher average occupancy rate (73%) than facilities of any other size, whereas facilities with 100 to 149 beds had the lowest occupancy rate (64%). The occupancy rate from 2018 to 2019 for facilities with 150 or more beds decreased by four percentage points, whereas the rate for facilities with 50-99 beds increased by three percentage points. The rates for other-sized facilities remained the same as those in 2018.

**Exhibit 3.2. Average occupancy rate by facility size, Oregon 2019**



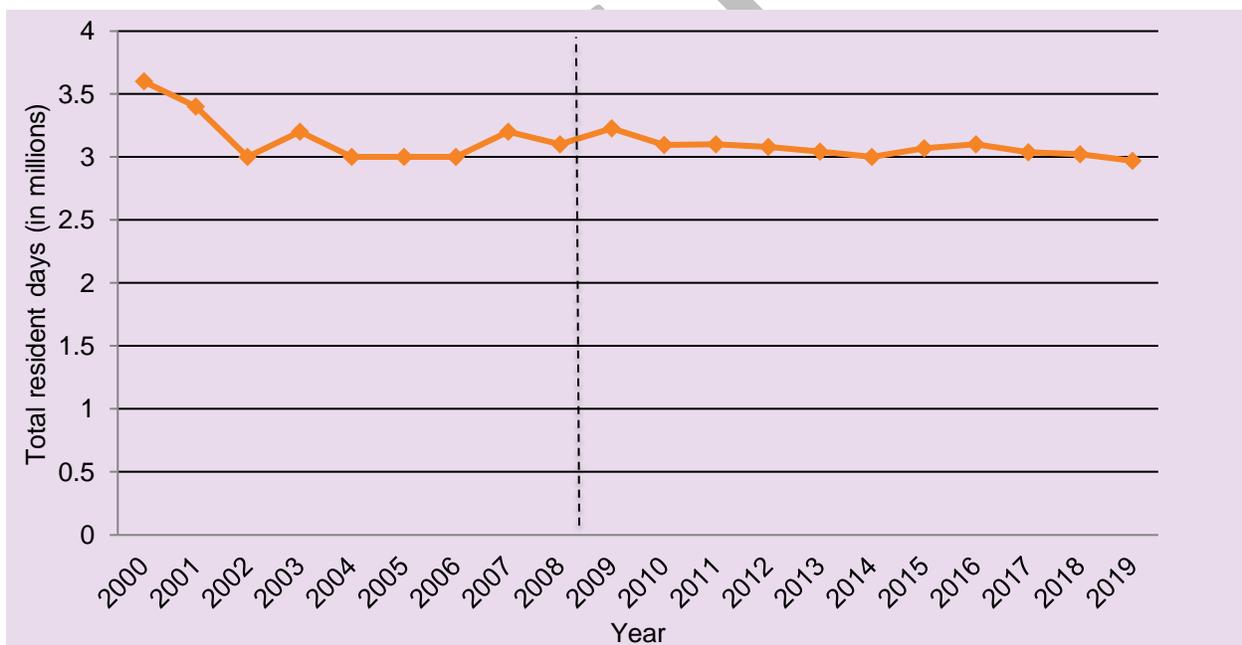
Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0; National Investment Center for Seniors Housing & Care (NIC), Skilled Nursing Data Report, 2019.

Average occupancy rates also varied across the state’s 36 counties (Appendix, Table A). Linn county had the highest occupancy rate (83%), followed by Jefferson (81%), Klamath (78%), Lincoln (77%), and Multnomah (75%) counties. Twelve counties had rates under 60%, with Clatsop County having the lowest occupancy rate (38%) of all counties statewide.

Exhibit 3.3 shows the total number of resident days for Oregon nursing facilities, which declined from 3.6 to 3.1 million between 2000 and 2008, and from 3 to 2.9 million between 2009 and 2019. The change in resident days since 2009 represents a decrease of 8.0%.

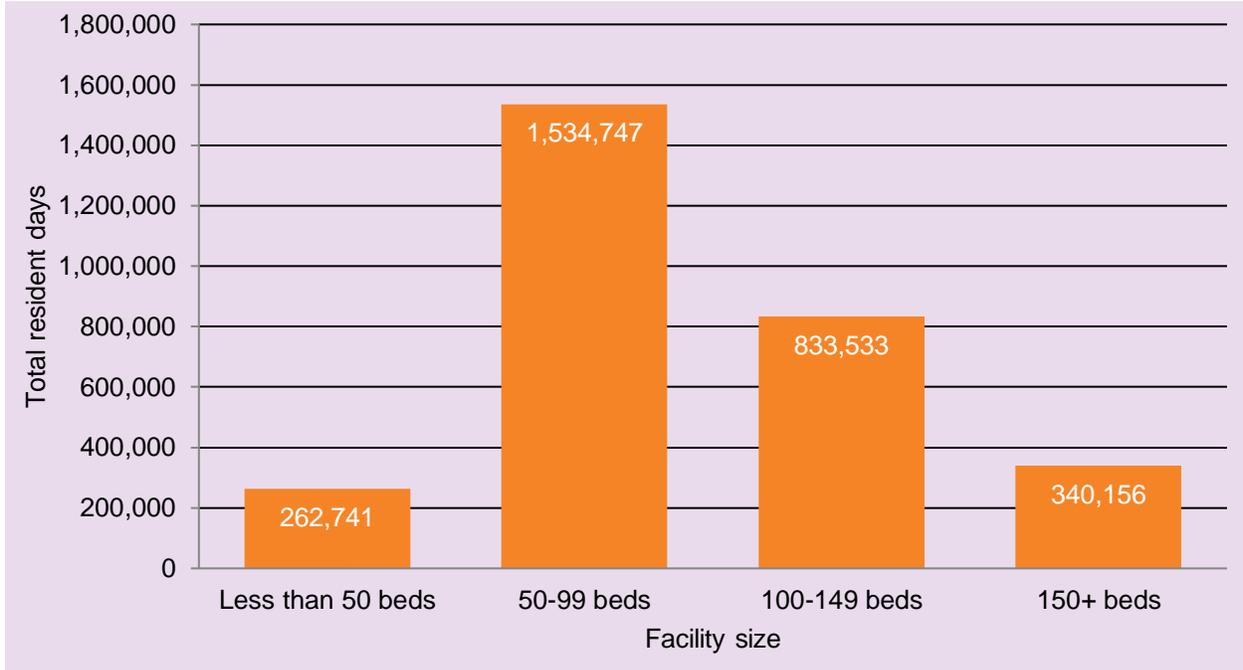
Facilities with 50-99 beds accounted for the greatest share of resident days (52%) among all facilities in 2019 (Exhibit 3.4). In contrast, the smallest- and largest-sized facilities had the fewest numbers of resident days, representing 9% and 11% of all resident days statewide, respectively. This overall pattern is consistent with 2017 and 2018 data, although the proportion of resident days by facility size changed somewhat since 2018. For example, resident days decreased for facilities with fewer than 50 beds, 50-99 beds, and 100-149 beds, with facilities with 100-149 beds having the largest decrease from 2018 (6.7%). On the other hand, resident days increased for facilities with 150+ beds, representing a 21.9% increase from 2018.

**Exhibit 3.3. Number of resident days in Oregon nursing facilities, 2000–2019**



Sources: OHPR Nursing Facility Reports, 2000-08 (adjusted for annual survey response rates); Cost Reports, Revenue Statements, and Nursing Home Compare 3.0, 2009-19

**Exhibit 3.4. Total number of resident days by facility size, Oregon 2019**

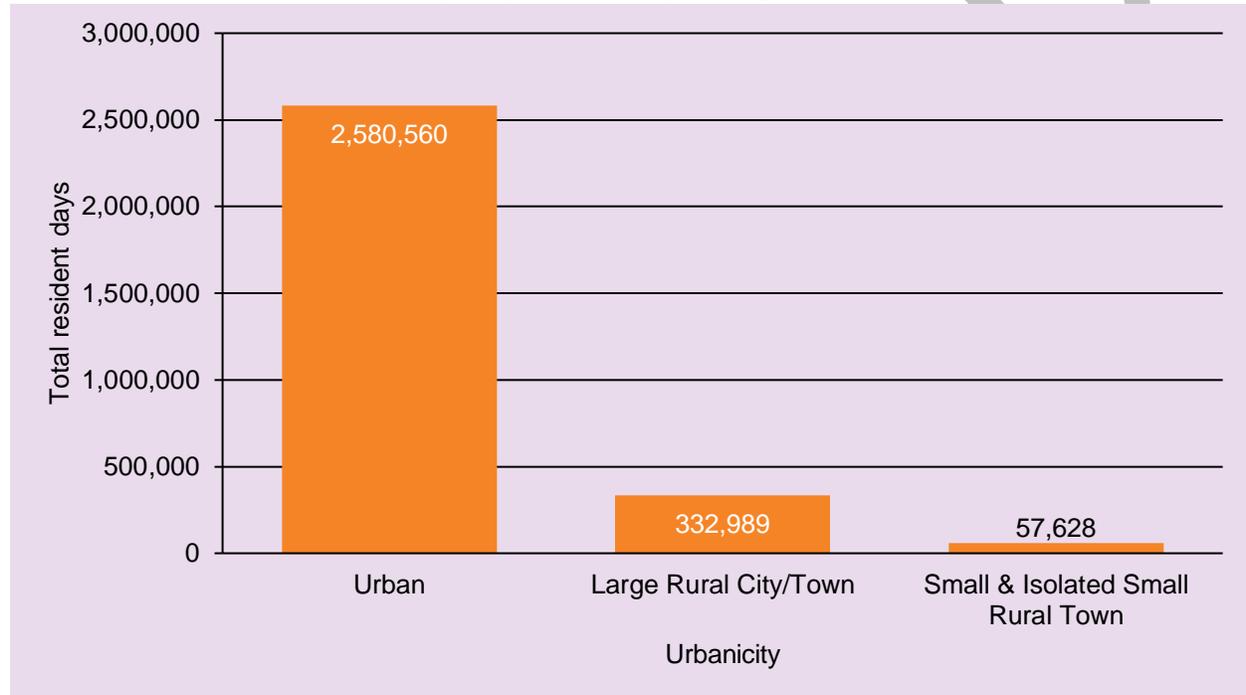


Sources: Cost Reports, Revenue Statements, and Nursing Home Compare 3.0

The total number of resident days in 2019 also varied by county (Appendix, Table A). Consistent with 2018 numbers, Multnomah, Clackamas, Lane, and Washington counties had the highest numbers of total resident days, accounting for 27, 10, 10, and 9% of all resident days statewide, respectively.

Exhibit 3.5 shows resident days by Rural-Urban Commuting Area (RUCA) categories that we refer to as “urbanicity.” RUCA categories are defined by U.S. Census tracts, where “urban” refers to an area with  $\geq 50,000$  population, “large rural city/town” refers to an area with 10,000-49,999 population, and “small and isolated small rural town” refers to 2,500-9,999 population (Rural Health Research Center, n.d).<sup>10</sup> As expected, 87% of all resident days were in urban areas (Exhibit 3.5), compared to 11% and 2% in large rural towns and small rural towns, respectively.

**Exhibit 3.5. Total resident days by urbanicity, Oregon 2019**



Sources: Cost Reports, Revenue Statements, RUCA 2.0, and Nursing Home Compare 3.0

<sup>10</sup> See Technical Notes for more detailed information on these definitions.

# Section 4. Admissions, discharges, and reentries

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## 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 when 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 when an individual returns to a facility from which he or she was discharged fewer than 30 days before.

A **discharge** refers to when a person leaves a nursing facility to return to the community, be admitted to a hospital, or go to other destinations. A nursing facility **stay** is a period of continuous residence in a nursing facility, beginning with an admission and ending with a discharge.

For this report we first identified discharges in the MDS, and then identified the admission date that corresponded to each discharge; the nursing facility stay was constructed as the period from admission to discharge.<sup>11</sup> We also identified reentries directly, using dates of discharge from and reentry to the same facility within 30 days. 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 total number of nursing facility admissions in SFY 2019 included in this report is 39,300<sup>12</sup> (all admissions with a discharge date in MDS), which is 9.6% less than the total 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., 2019). This difference between admissions in MDS and admissions derived from cost reports has been consistent for several years.

As shown in Exhibit 4.1, admissions, reentries, and discharges increased overall from 2012 to 2019 (17.2%, 44.1%, and 20.2%, respectively). The numbers of admissions and reentries increased steadily from 2012 (31,954) to 2017 (41,029), then decreased slightly in 2018 (40,786) and 2019 (39,300). Similarly, discharges increased from

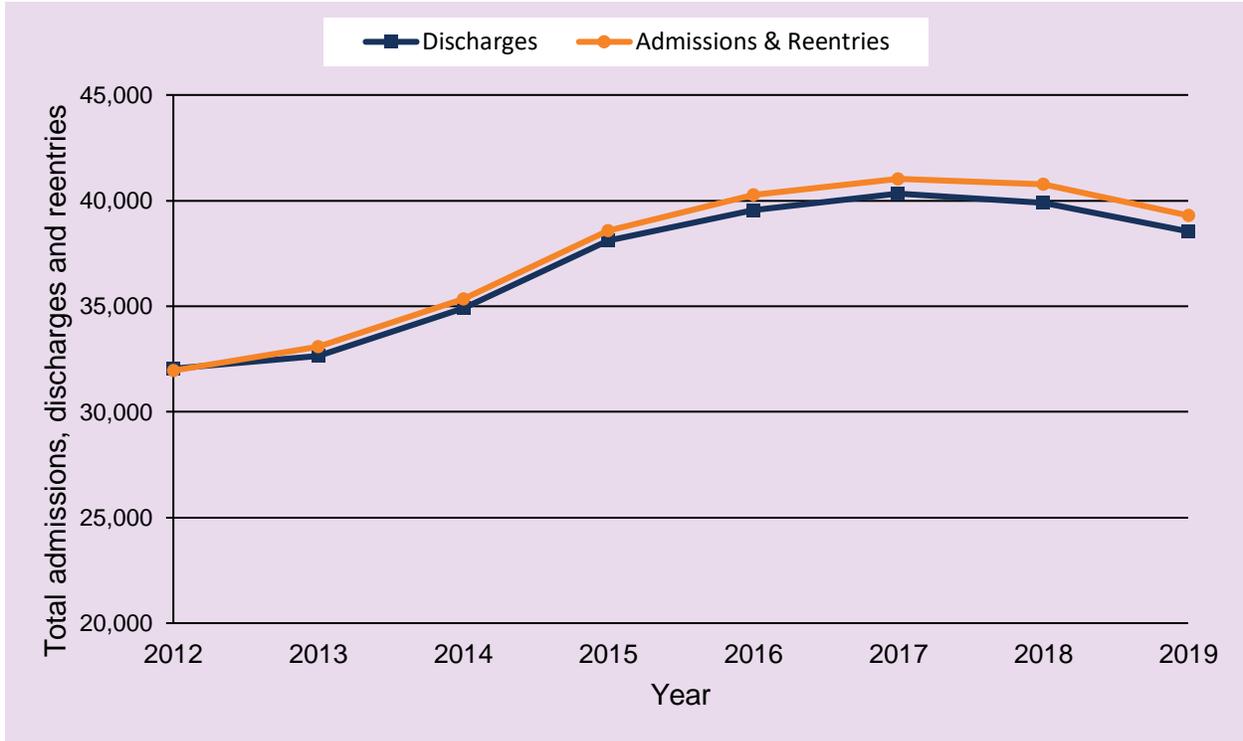
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<sup>11</sup> For persons still residing in a nursing facility on the date the MDS dataset was created for OSU (Dec 3, 2019) we constructed a stay that began on the admission date and ended on December 3, 2019. As described in the Technical Notes, we began using the current approach for identifying stays in the 2015 report.

<sup>12</sup> There were additional 1692 admissions without a discharge date in MDS.

32,048 in 2012 to 40,332 in 2017, and then began to decrease slightly to 39,888 in 2018 and 38,537 in 2019.

**Exhibit 4.1. Trend in total admissions, discharges and reentries, Oregon 2012–2019**



Source: CMS Minimum Data Set

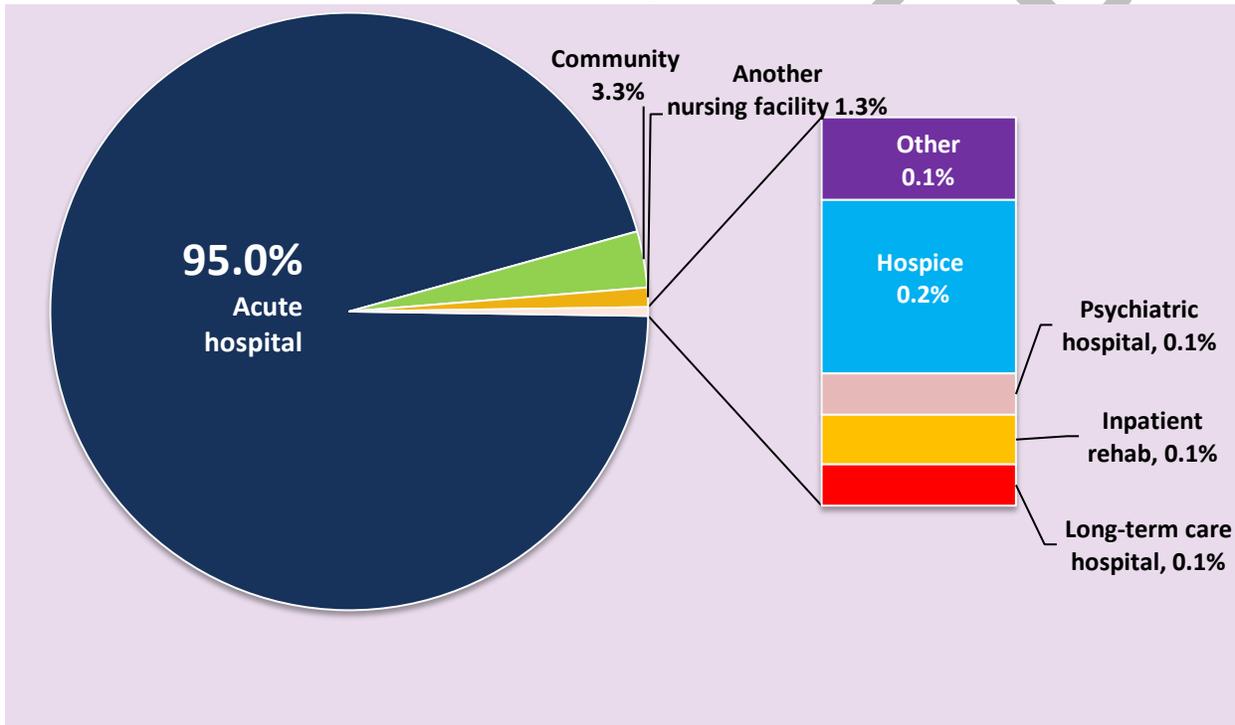
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# Admissions

In SFY 2019, nursing facilities statewide had 39,300 admissions, based on MDS data. Of these, 9,897 (25.2%) were reentries.

Exhibit 4.2 displays the admission source as a percentage of total admissions. Acute hospitals accounted for the highest percentage at 95.0%. Community admission sources contributed 3.3% while another nursing home accounted for 1.3% of total admissions. This pattern has been consistent since 2012 (See Appendix Table B).

**Exhibit 4.2. Admission source as percentage of total admissions, Oregon 2019**

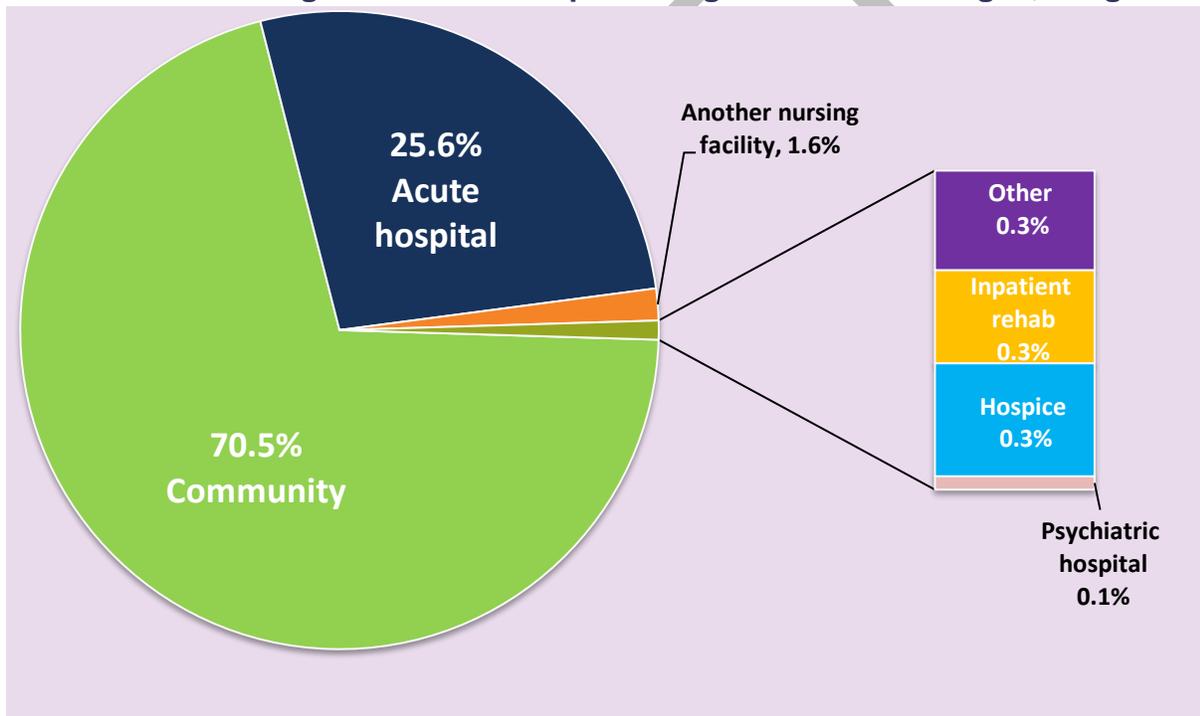


Source: CMS Minimum Data Set

## Discharges

In 2019, nursing facilities statewide had 38,537 discharges, based on MDS data. Exhibit 4.3 presents discharge destination as a percentage of total discharges. The majority (70.5%) of individuals who discharged from nursing facilities returned to the community, which includes home or other long-term care settings such as assisted living, residential care, and adult foster care. Slightly more than one in four discharges from nursing facilities (25.6%) were to acute care hospitals. A small proportion of residents (1.6%) were transferred to another nursing facility or other facility (0.3%), 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 has been consistent since 2012, except that the proportion of discharges to the community has increased slightly, and the proportion to hospital has decreased slightly (see Appendix Table C).

**Exhibit 4.3. Discharge destination as percentage of total discharges, Oregon 2019**

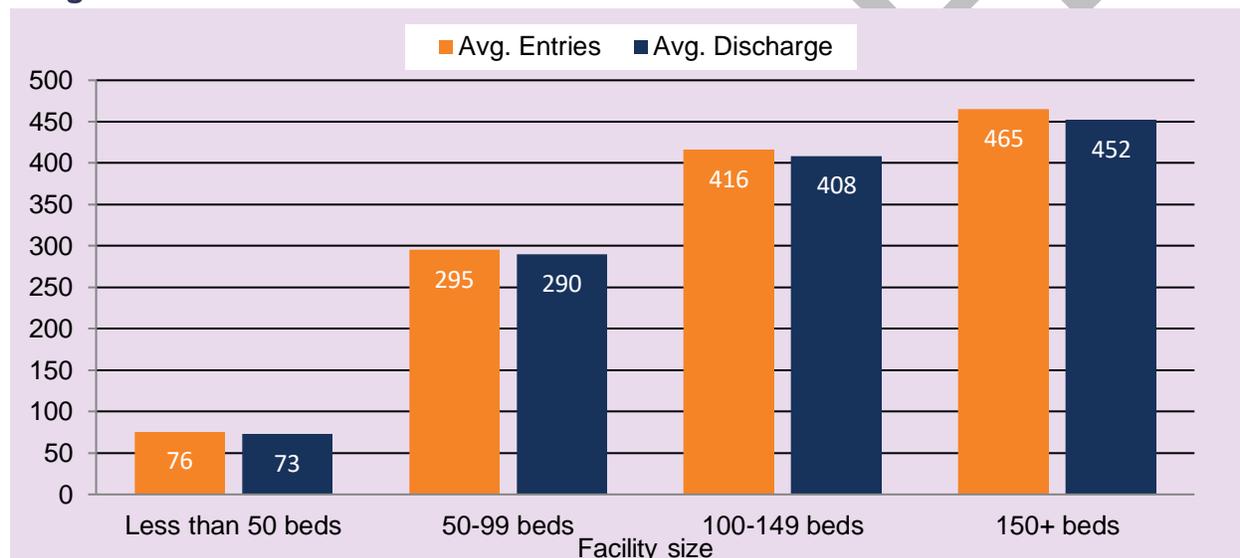


Source: CMS Minimum Data Set

## Admissions and discharges by facility

Statewide, the average number of admissions per facility was 298 in SFY 2019, and the average number of discharges was 292. Exhibit 4.4 shows that the average numbers of admissions and discharges increased with the size of facility. Facilities with fewer than 50 beds had the lowest average numbers of admissions and discharges (76 and 73, respectively) and facilities with 150+ beds had the highest average numbers of admissions and discharges (465 and 452, respectively).

**Exhibit 4.4. Average numbers of admissions and discharges by facility size, Oregon 2019**



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,<sup>13</sup> may occur as part of a treatment plan or as a result of a new or unexpected health problem. In SFY 2019, approximately one in four nursing facility admissions was a reentry, for a total of 9,897 reentries statewide. Ninety-five percent of these reentries (9,401; Exhibit 4.5) were from an acute hospital. Other reentries came from the community (3.1%), and other places (1.9%; data not shown).

Exhibit 4.5 shows the numbers of discharges to acute care hospitals, the number of those discharges followed by reentries to nursing facilities, and the percent reentering

<sup>13</sup> In this report we use the term “reentry” to a nursing facility to avoid confusion with “readmission” to an acute hospital.

within 30 days. Of the 10,334 nursing facility discharges to acute care hospitals, 91% reentered the same nursing facility within a 30-day period. Reentry rates varied only modestly by facility size. Facilities with 50-99 beds had the highest reentry rate (92%), and facilities with 150+ beds had the lowest reentry rates (89%). Some reentries in SFY 2019 were for discharges that occurred in SFY 2018.

**Exhibit 4.5. Discharges to and reentries from acute hospitals by facility size, Oregon 2019**

	Number of discharges to acute hospitals	Number of reentries from acute hospitals within 30 days	Percent reentering within 30 days
<50 Beds	433	395	91%
50 - 99 Beds	5,392	4,951	92%
100 - 149 Beds	3,549	3,203	90%
150+ Beds	960	852	89%
<b>Total</b>	<b>10,334</b>	<b>9,401</b>	<b>91%</b>

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 sixth-lowest rate of hospitalization<sup>14</sup> among its long-stay nursing facility residents (Reinhard et al., 2017) and the third lowest hospitalization rate among its Medicare-paid nursing facility residents (Levinson, 2013).

<sup>14</sup> This rate includes new hospitalizations and re-hospitalizations.

## Section 5. Residents

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Exhibit 5.1 shows the composition of Oregon’s nursing facility population by age group, which remained relatively stable from SFY 2018. In 2019, the state’s nursing facility population was younger on average (75.5 years) than national estimates, with 82% of nursing facility residents being age 65 or older, compared to 85% of residents nationwide (Centers for Medicare & Medicaid Services, 2013).

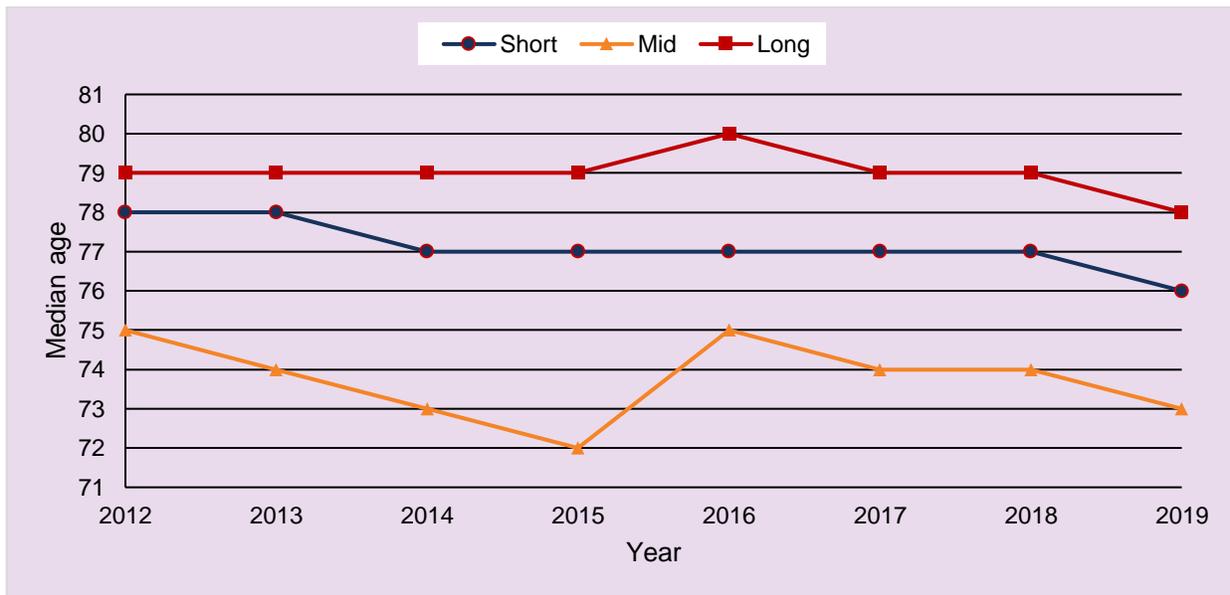
**Exhibit 5.1. Distribution of Oregon nursing facility residents by age, 2019**

Age Group	Percent
Under 18	0.2
18 - 24	0.2
25 - 44	1.7
45 - 64	16.5
65 - 74	24.9
75 - 84	29.9
85 and over	26.8
<b>Total</b>	<b>100.0</b>

Source: CMS Minimum Data Set

Exhibit 5.2 shows the trend in resident median age by length of stay. The overall trend indicates that resident median age for long-stays is older than that for mid- and short-stays. This trend has remained consistent between 2012 and 2019, with some year-to-year fluctuations occurring within each stay category.

**Exhibit 5.2. Trend in resident median age for short-, mid-, and long-stays, Oregon 2012-2019**



Source: CMS Minimum Data Set

Exhibit 5.3 displays the distribution of Oregon’s nursing facility population by marital status. Most of the residents were married (38.6%) or widowed (30.0%). The remaining residents were divorced (16.2%), never married (13.7%) or separated (1.5%).

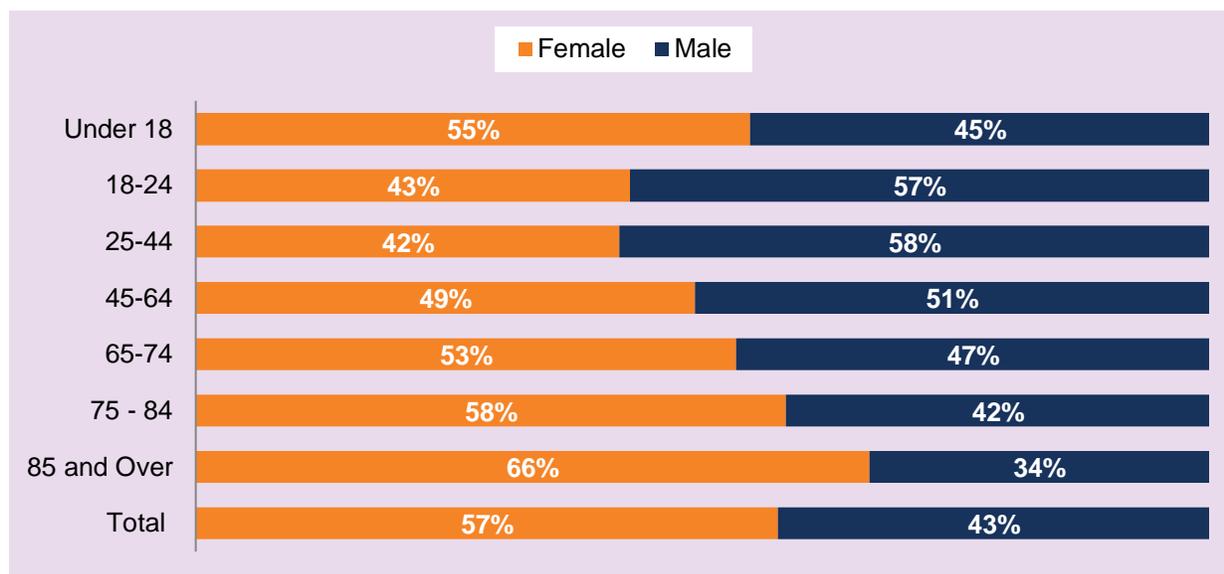
**Exhibit 5.3. Distribution of Oregon nursing facility residents by marital status, 2019**

Marital Status	Percent
Never married	13.7
Married	38.6
Widowed	30.0
Separated	1.5
Divorced	16.2
<b>Total</b>	<b>100.0</b>

Source: CMS Minimum Data Set

Exhibit 5.4 shows the composition of Oregon’s nursing facility population by age and sex. In 2019, the majority (57%) of all residents were women, which was lower than the national average of 67% (Centers for Medicare & Medicaid Services, 2013). The proportion of female residents increased with age, with 66% of residents in the oldest age category being female.

**Exhibit 5.4. Distribution of Oregon nursing facility residents by age and sex, 2019**



Source: CMS Minimum Data Set

Exhibits 5.5 and 5.6 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 2019, the majority of nursing facility residents were non-Hispanic white (82.2%), followed by African American or Black (1.8%) and Hispanic (1.5%). In comparison, the state’s general population in 2018 (the most recent data available) was 75.1% non-Hispanic white, 13.3% Hispanic, 4.5% Asian American, and 1.9% 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 in 2012, where 78%, 13.9%, and 5% of all U.S. nursing facility residents were non-Hispanic white, African American, and Hispanic, respectively (Centers for Medicare & Medicaid Services, 2013). 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 5.5. Oregon nursing facility residents and general population by race and ethnicity, 2019**

Race and ethnicity	All nursing facility residents	All Oregon residents
White, Not Hispanic	82.2%	75.4%
American Indian/Alaska Native, Not Hispanic	0.5%	1.1%
Asian American, Not Hispanic	1.2%	4.6%
African American or Black, Not Hispanic	1.8%	1.9%
Native Hawaiian/Pacific Islander, Not Hispanic	0.2%	0.4%
Hispanic of any race	1.5%	13.2%
More than 1 race, Not Hispanic	0.1%	3.2%
Unknown	12.6%	**
<b>Total</b>	<b>100.0%</b>	<b>100%</b>

Source: CMS Minimum Data Set; U.S. Census Bureau, 2018 American Community Survey 1-Year Estimates

\*\* The American Community Survey does not provide estimates for the Oregon population in these racial/ethnic groups.

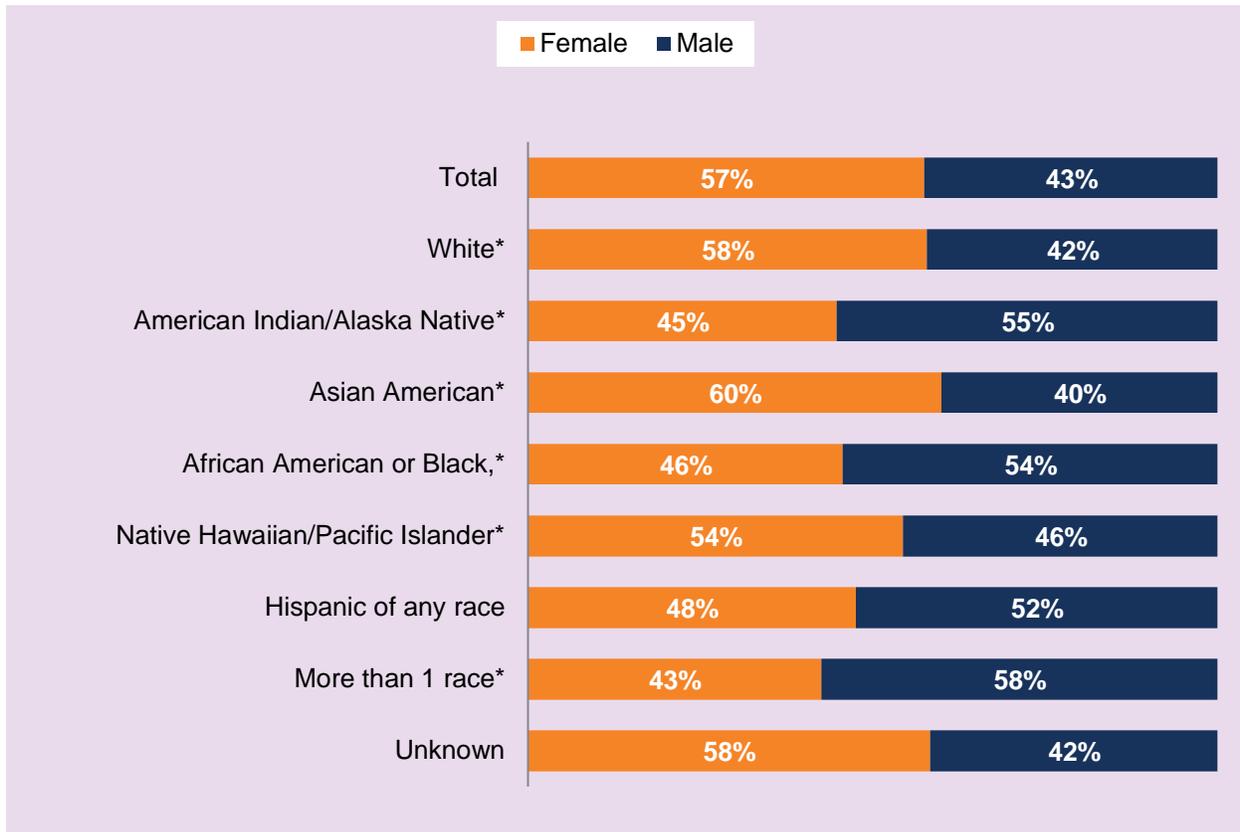
**Exhibit 5.6. Oregon nursing facility residents and general 65+ population by race and ethnicity, 2019**

Race and ethnicity	Nursing facility residents 65+	Oregon *** residents 65+
White, Not Hispanic	82.9%	90.5%
American Indian/Alaska Native, Not Hispanic	0.4%	0.9%
Asian American, Not Hispanic	1.2%	2.9%
African American or Black, Not Hispanic	1.4%	1.0%
Native Hawaiian/Pacific Islander, Not Hispanic	0.1%	0.2%
Hispanic of any race	1.3%	3.3%
More than 1 race, Not Hispanic	0.1%	1.3%
Unknown	12.7%	**
<b>Total</b>	<b>100%</b>	<b>100%</b>

Sources: CMS Minimum Data Set; U.S. Census Bureau; \*\*\*2017 American Community Survey 1-Year Estimates.

\*\* The American Community Survey does not provide estimates for the Oregon population in these racial/ethnic groups.

**Exhibit 5.7. Distribution of Oregon nursing facility residents by race and ethnicity and sex, 2019**



Source: CMS Minimum Data Set  
 Notes: \* Not Hispanic.

The distribution of race/ethnicity of all nursing facility residents by sex was similar to those shown in Exhibits 5.5 and 5.6, 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 (Exhibit 5.7). There were more females than males for non-Hispanic white (58% vs. 42%), non-Hispanic Asian American (60% vs. 40%), non-Hispanic Native Hawaiian/Pacific Islander (54% vs. 46%) and unknown ethnicity/race residents (58% vs. 42%). While the proportion of males outweighed the proportion of females in non-Hispanic American Indian/Alaska Native (55% vs. 45%), non-Hispanic African American or Black (54% vs. 46%), Hispanic of any race (52% vs. 48%), non-Hispanic more than one race residents (58% vs. 43%).

## Section 6. Length of stay

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Nursing facilities provide 24-hour medical care and monitoring for individuals who need it due to a medical condition or illness, or who have been discharged from the hospital but are not yet able to return to the community (either their own home or a licensed community based care setting). 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 (Reinhard et al., 2014).

In this report, we define short-term nursing facility stays as less than or equal to 90 days, mid-length stays as 91 to 365 days, and long stays as more than one year. An individual may have more than one nursing facility stay during the fiscal year. To ensure that length of stay data are directly comparable across years, we report length of stay results only for nursing facility stays that had a discharge during the report year.<sup>15</sup> The Technical Notes at the end of this report provide further detail on how length of stay was calculated for this report.

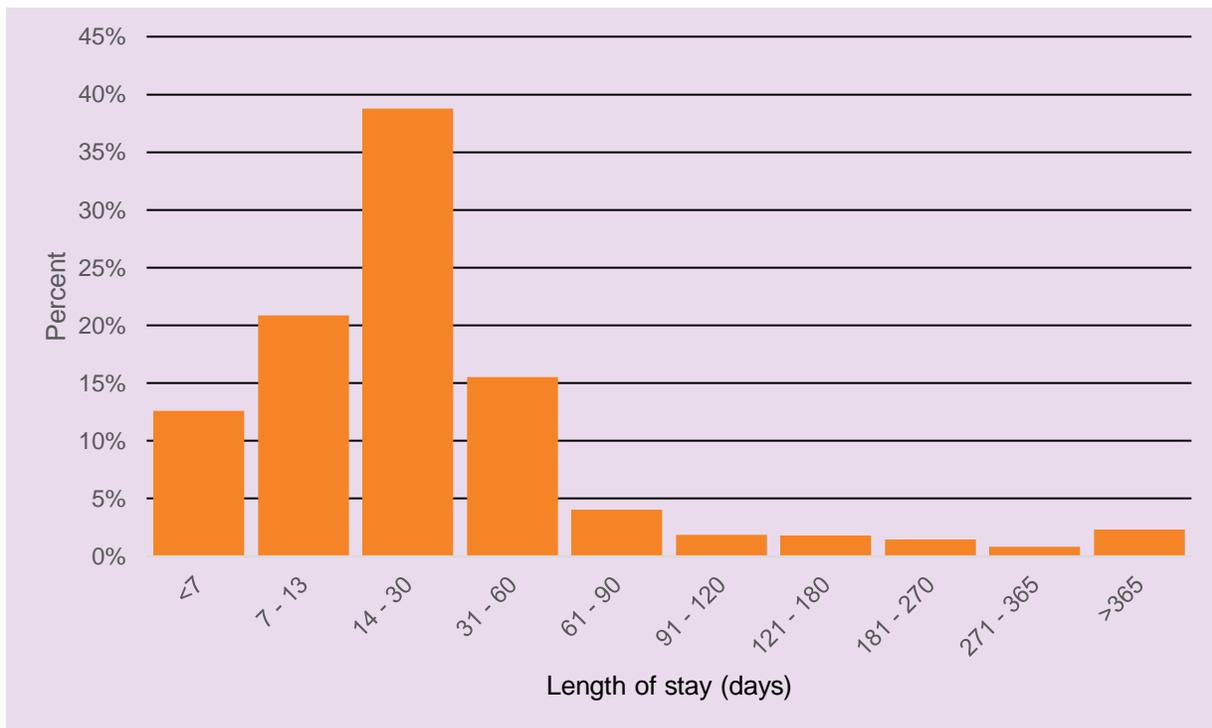
Long stays averaged 887 days (or approximately 2.4 years), compared to short- and mid-length stays that averaged 22 and 175 days respectively.

Exhibit 6.1 shows the distribution of length of stay for Oregon's nursing facility population. In 2019, 92% of all nursing facility stays were short, while 6% and 2% were mid-length and long stay, respectively. Approximately four in ten (39%) stays lasted between 14 and 30 days.

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<sup>15</sup> Persons who were residents in a nursing facility at the end of the report year (30 June 2019) are therefore not included in length of stay results. However, residents who discharged during the report year, but had been admitted in prior years, are included in the length of stay results.

### Exhibit 6.1. Nursing facility length of stay, Oregon 2019



Source: CMS Minimum Data Set

Exhibit 6.1 also shows that 72% of Oregon nursing facility stays lasted 30 days or less and 92% of stays lasted fewer than 90 days. 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 lasted 100 days or longer is lower than in any other state except Arizona (Reinhard et al., 2017). 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 SFY 2019. 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. Although the overall average length of stay was 51 days, the median length of stay was 19 days 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 length of stay was highest for the 18 to 24 age group. The median length of stay was 23 days or less for all age groups, but the average length of stay was approximately two to 13 times longer than the median length of stay within the same age category.

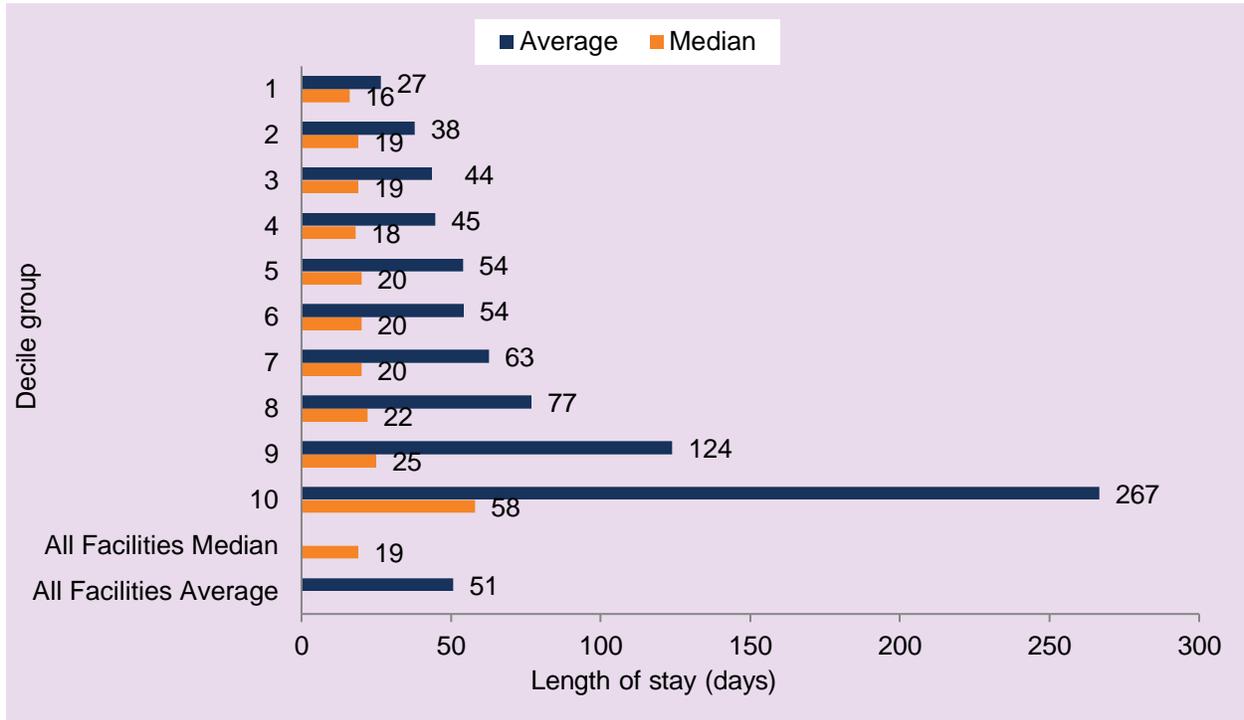
**Exhibit 6.2. Nursing facility length of stay (days) by age, Oregon 2019**

Age group	Average length of stay	Median length of stay
Under 18	44	13
18-24	309	23
25-44	86	20
45-64	52	18
65-74	52	19
75-84	48	19
85 and over	48	21
<b>Total</b>	<b>51</b>	<b>19</b>

Source: CMS Minimum Data Set

Length of stay also varied across facilities. To characterize this variation, we ranked nursing facilities in order of average length of stay, then divided the facilities into 10 equal-sized groups based on average length of stay (Exhibit 6.3). Each group represents 13 to 14 facilities. Average length of stay increased from 27 days in group one, to 267 days in group 10. However, the median length of stay was 25 days or less for facilities in all of the first nine groups, reflecting the preponderance of short stays in Oregon nursing facilities. Group 10 had much higher average and median lengths of stay compared to all other groups of nursing facilities. This is consistent with the fact that many facilities in group 10 serve residents with extensive, ongoing care needs including pediatric, enhanced care, and non-dementia behavioral health care needs.

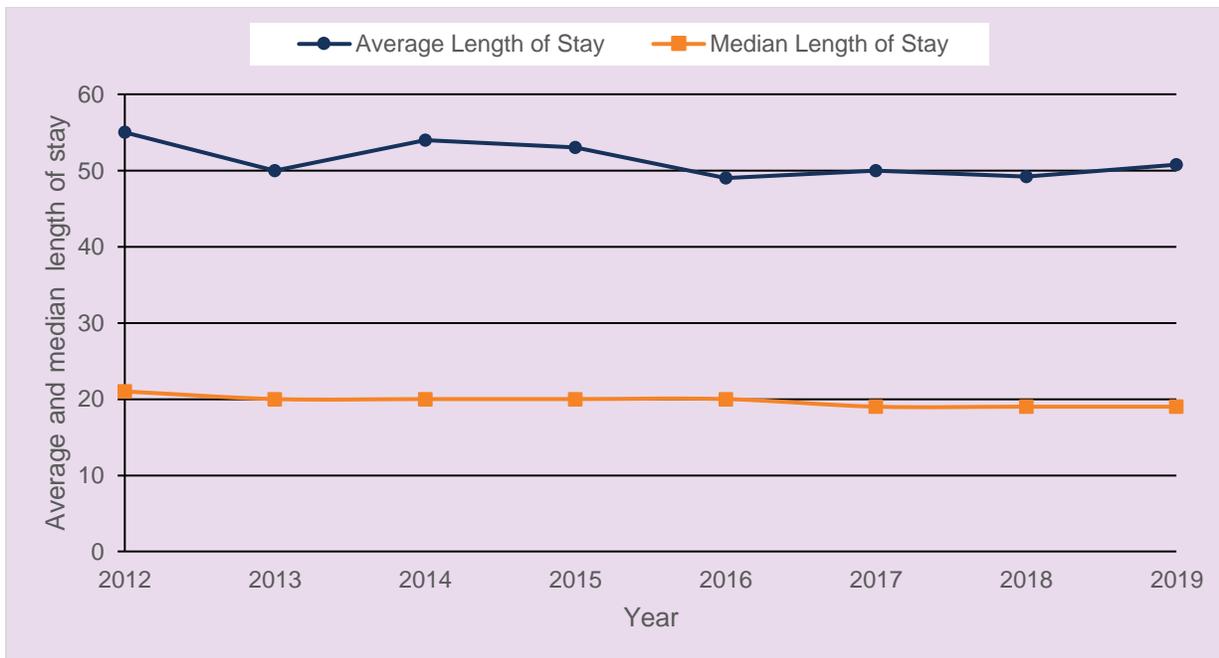
**Exhibit 6.3. Nursing facility length of stay by decile groups of facilities, Oregon 2019**



Source: CMS Minimum Data Set

Exhibit 6.4 shows the trend in average and median lengths of stay for nursing home residents in Oregon from 2012 to 2019. The average length of stay declined from 55 days in 2012 to 51 days in 2019, a 7.77% decrease. The median length of stay declined from 21 days in 2012 to 19 days in 2019, a 9.5% decrease.

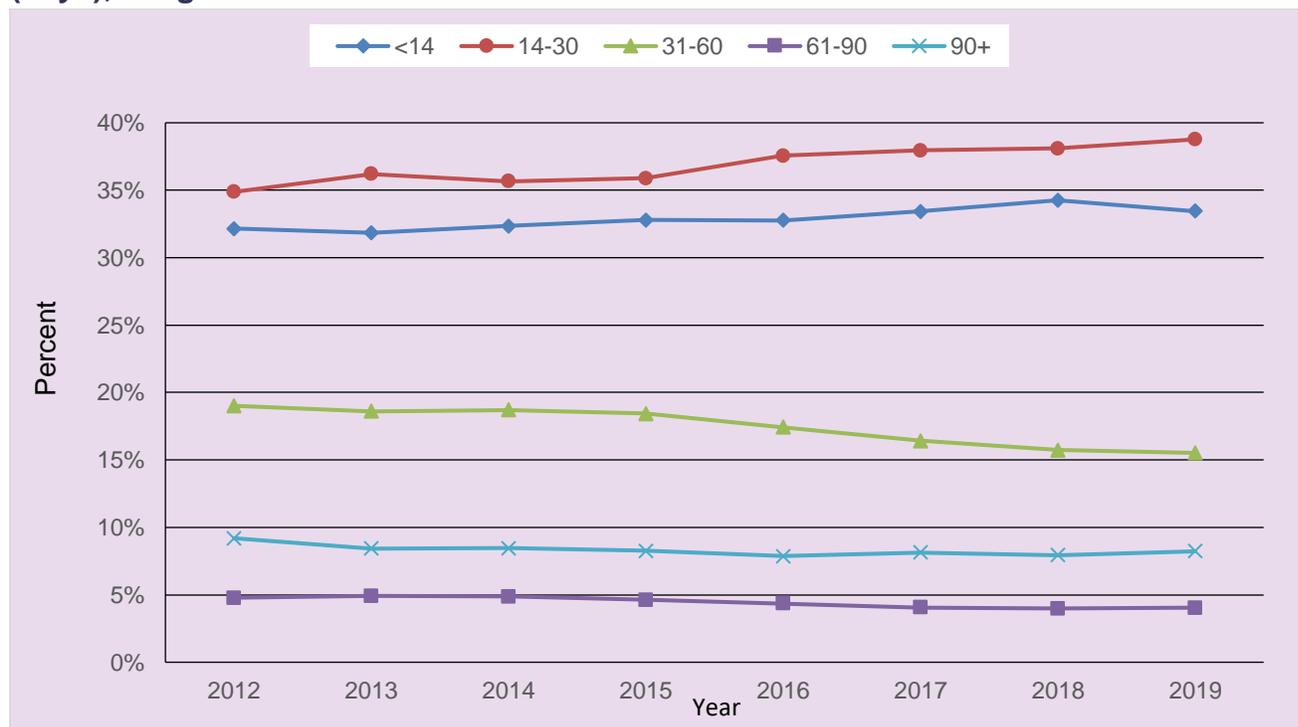
**Exhibit 6.4. Trend in average and median lengths of stay, Oregon 2012–2019**



Source: CMS Minimum Data Set

Exhibit 6.5 displays trends in the proportion of nursing facility stays within different length of stay categories. The proportion of stays that lasted fewer than 14 days increased slightly from 32% in 2012 to 33% in 2019. Over the same period, the proportion of stays that lasted 14-30 days increased by a larger amount, from 35% to 39%. In contrast, the proportion of stays that were 31-60 days long decreased from 19% to 15%. The proportions of stays lasting 61-90 days and 90+ days remained stable, at 4% and 8% respectively. The decrease in the proportion of 31-60 day stays, and corresponding increase in shorter stays, may reflect efficiency improvement among short-stay residents. Disaggregating these trends further by age group shows that the overall trends were driven by residents aged 45-64 and 75+ (see Appendix Figures 1-4).

**Exhibit 6.5. Trend in average length of stay by different length of stay categories (days), Oregon 2012–2019**



Source: CMS Minimum Data Set

## Hospitalizations linked to nursing facility stays

Although more than nine in 10 admissions to nursing facilities were from hospitals, MDS data do 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 is helpful in understanding the mix of clinical needs among nursing facility residents.

We therefore linked MDS data to Oregon hospital discharge data records in a two-step linkage process involving Oregon State University, the Oregon Department of Human Services, and the Oregon Health Authority’s Office of Health Analytics. First, hospital discharge records were matched to the MDS by name and date of birth. Second, specific hospital discharge dates were matched to nursing facility entry or reentry dates for individual nursing facility residents in the MDS. Overall, 31,001 hospital discharges were linked to MDS stays, accounting for 83.4% of eligible SFY 2020 discharges from nursing facilities. 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 33% had been hospitalized for surgical procedures. Five percent of linked stays were for residents who had been hospitalized for trauma, one percent for behavioral conditions, and one percent were uncategorized. The overall average nursing facility length of stay was 42 days for stays linked to hospital discharges, with a median of 19 days.

The proportions of linked stays with hospital discharges were similar to 2017 and 2018 in the medical, surgical, trauma, and other categories. The overall average nursing facility length of stay was stable between 2016 and 2019<sup>16</sup> for residents admitted from a hospital.

Exhibit 6.6 presents more detailed information about the clinical reasons for hospitalizations and the average length of stay for subsequent nursing facility stays. Overall, 26% of linked nursing facility stays followed hospitalizations for orthopedic conditions, and the average nursing facility length of stay was 33 days. Slightly more than three in 10 of these orthopedic hospitalizations were for joint replacement surgery and had an average nursing facility length of stay of 25 days. Fewer than one in 10 orthopedic hospitalizations were for spinal fusion and had a 23-day average nursing facility length of stay. Almost one in four 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 infectious conditions accounted for 17% of nursing facility stays linked to hospitalizations and had an average nursing facility length of stay of 58 days. Sepsis accounted for more than half of these hospitalizations, with an average 58-day nursing facility length of stay. Cardiology and cardiac surgery hospitalizations accounted for 10% of linked stays and had an average nursing facility length of stay of 33 days. Hospitalizations for pulmonary conditions (of which almost half were pneumonia or respiratory failure) preceded 7% of linked stays, with an average nursing facility length of stay of 53 days. Residents who had been hospitalized for a stroke or transient ischemic attack (TIA) made up 4% of linked stays, with an average 55-day nursing facility length of stay.

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<sup>16</sup> The 2016 through 2019 reports present length of stay data for nursing facility residents discharged in the report year (even if they were admitted in prior years).

**Exhibit 6.6. Nursing facility length of stay (days) by hospital MS-DRG, Oregon 2019**

<b>Category of hospital MS-DRG</b>	<b>Percent of hospital discharges</b>	<b>Average length of nursing facility stay</b>
Orthopedic	26%	33
Infectious	17%	58
Cardiology and cardiac surgery	10%	33
Neurology and neurosurgery	9%	64
Pulmonary	7%	53
Trauma	5%	40
Stroke and transient ischemic attack	4%	55
Gastroenterology	4%	47
Vascular	3%	38
Other	3%	45
Endocrine	3%	34
General surgery	2%	37
Urology	2%	57
Renal failure	2%	44
Ventilator	1%	50
<b>All discharges</b>	<b>100%</b>	<b>42</b>

Sources: CMS Minimum Data Set and Oregon Hospital Discharge Records

Note: Results are shown for nursing facility stays where the resident entered from a hospital, was discharged from a nursing facility within SFY 2019, and MDS data can be linked to hospital discharge data. Stays include both planned and unplanned stays.

SUB

# Section 7. Acuity of Residents

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## Acuity measurements

Acuity commonly refers to an individual's requirements for nursing care. Individuals who enter a nursing facility are assessed to identify the level of care needed during their stay. For example, many post-acute care patients are discharged from acute care hospitals after surgery or treatment for acute medical conditions, and they 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.

Nursing facilities use acuity information to plan personnel resources, manage costs, and measure quality. There are many measures of acuity. In this section, we report data about several of those indicators, including: Activities of Daily Living (ADLs), reasons for hospitalization, diagnoses among residents, and therapies received by residents.

Most data in this section are based on facilities' assessments of their residents as reported in the MDS. Beginning with the SFY 2016 report, we changed methodology to capture assessments for calculating Activities of Daily Living (ADL), diagnoses and treatments. Assessments coded as an entry, reentry or annual assessment were identified first. For any stay that did not have one of these coded assessments, the first assessment of the stay was identified and used instead. This approach allows us to use information from all enrollees in SFY 2019 and to characterize acuity among short and mid-length stays at the time residents entered the nursing facility, and among long-stays at the time of residents' annual reassessments. Residents who had more than one stay during SFY 2019 may be counted more than once in the ADL, diagnoses, or treatment measures presented in this section. See the Technical Notes for further details.

## Activities of daily living

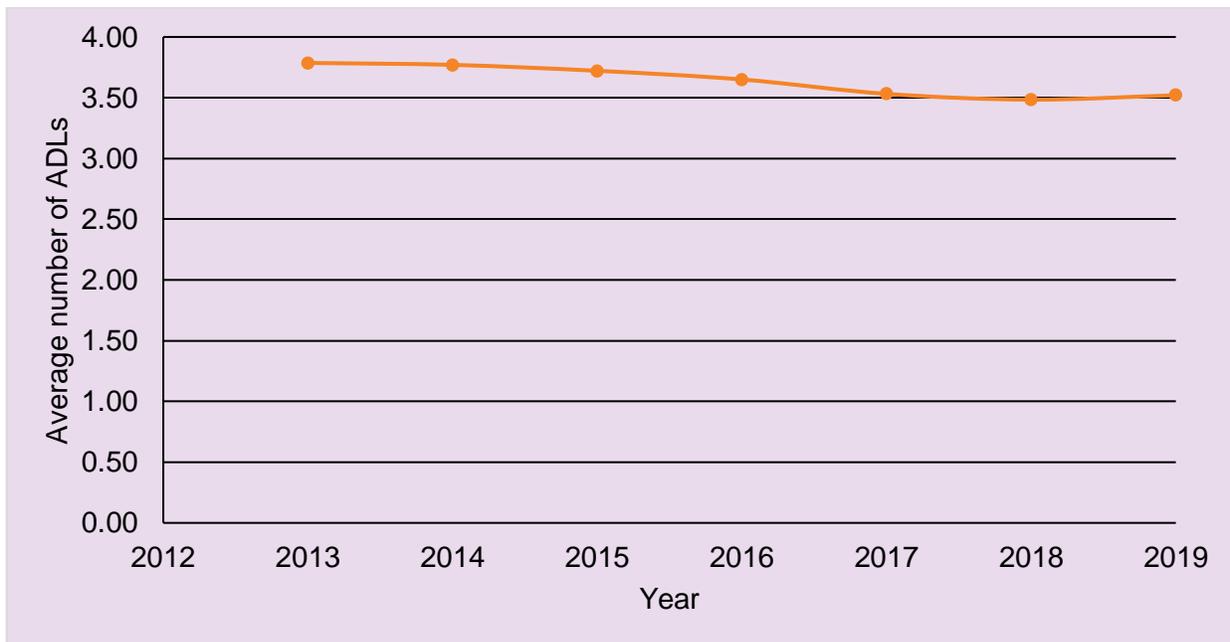
ADLs measure the extent to which care recipients cannot perform self-care tasks (Katz et al., 1963). ADLs are used to characterize individuals' levels of caregiving need (National Center for Health Statistics, 2015), whether on a temporary or indefinite basis. Once admitted to a nursing facility, residents 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,<sup>17</sup> transferring, eating, dressing, toileting, and bathing ADLs.

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<sup>17</sup> Bed mobility in the MDS 3.0 refers to how a nursing facility resident moves to and from a lying position, turns side to side, and positions their body while in bed or alternate sleep furniture; this measure does not refer to the mobility measure in the Katz Index of Independence in Activities of Daily Living (Katz et al., 1963).

Exhibit 7.1 displays the trend in average number of ADLs with which individuals needed help during their stays from 2012 to 2019. The average number of ADLs individuals needed help with during their stays has declined by nearly 6%, from 3.74 in 2012 to 3.52 in 2019.

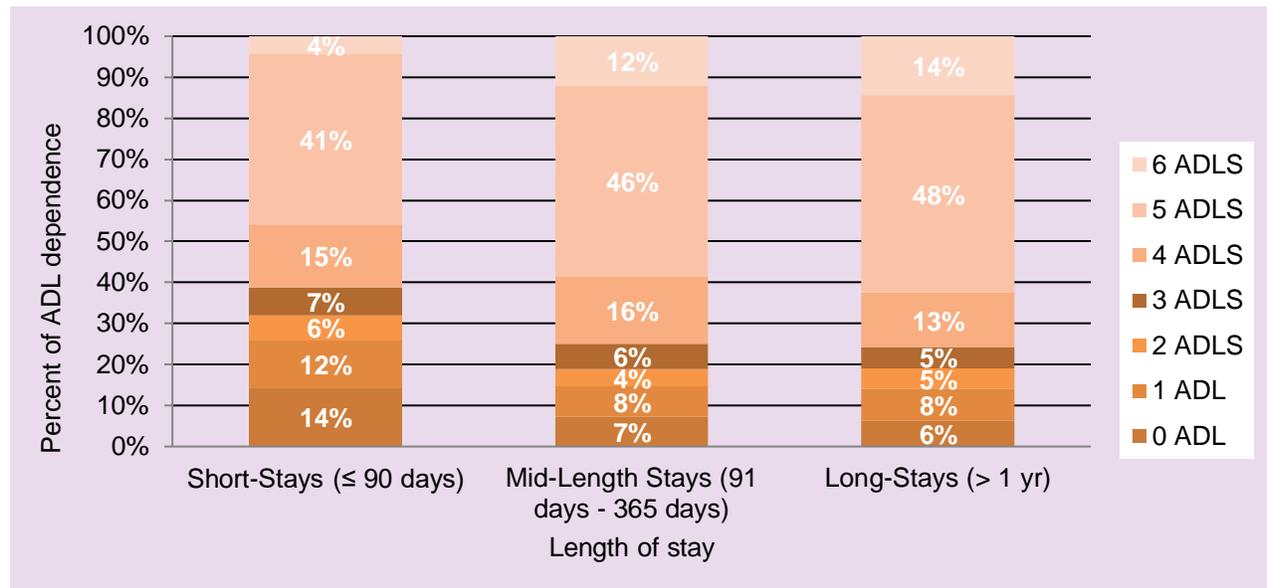
**Exhibit 7.1. Trend in average number of activities of daily living for which help was needed, Oregon 2012–2019**



Source: CMS Minimum Data Set

In 2019, stays with dependence on five ADLs represented the greatest proportion of short stays (41%), mid stays (46%) and long stays (48%; Exhibit 7.2). These percentages are approximately twice the average all nursing facility residents in the U.S (23%; Centers for Medicare & Medicaid Services, 2014). Forty-five percent of short stays, 58% mid-length stays, and 63% of long stays involved dependence on at least five ADLs.

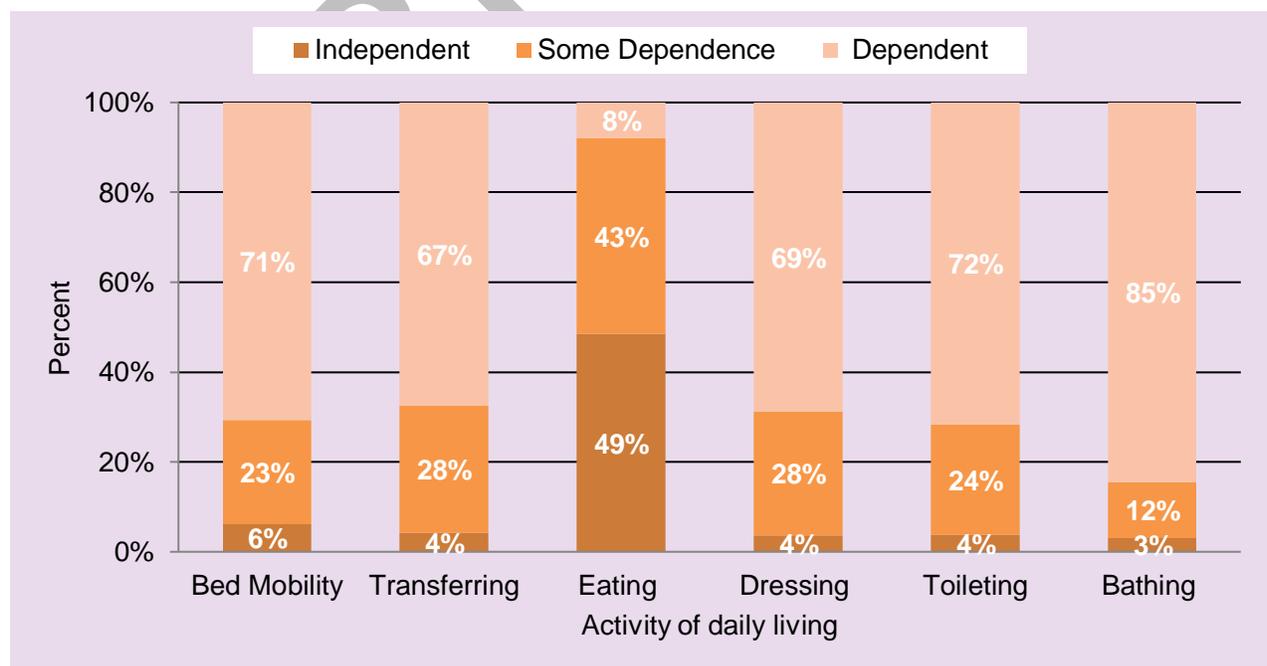
**Exhibit 7.2. Activity of daily living (ADLs) dependence by length of stay, Oregon 2019**



Source: CMS Minimum Data Set

Exhibit 7.3 presents the distribution of dependence level of six individual ADLs. Complete dependence on staff was reported for at least 67% of all stays for all ADLs except for eating.

**Exhibit 7.3. Distribution of dependence level by activity of daily living, Oregon 2019**



Source: CMS Minimum Data Set

Exhibit 7.4 provides more detail on ADL dependence. Bathing was the most common ADL need with complete dependence among all stays in 2019. Compared with other lengths of stay, long stays had the highest proportions of complete dependence in five of six ADLs. Mid-length stays had the highest proportions of complete dependence for bed mobility (78%). For all ADLs other than bed mobility, stays for individuals under 18 years of age had the highest levels of complete dependence compared with other age groups, followed by individuals 85 years and over (all ADLs except eating). The rates of complete dependence for all ADLs were similar by sex (data not shown).

**Exhibit 7.4. Complete dependence for ADLs by length of stay and age, Oregon 2019**

	Bed mobility	Transferring	Eating	Dressing	Toileting	Bathing
<b>Length of stay</b>						
Short stay	69%	66%	6%	66%	70%	83%
Mid-length stay	78%	76%	15%	80%	82%	91%
Long stay	77%	76%	18%	81%	83%	93%
<b>Age group</b>						
Under 18	69%	97%	92%	98%	99%	100%
18-24	65%	73%	53%	70%	80%	84%
25-44	52%	50%	13%	53%	55%	70%
45-64	55%	53%	7%	54%	58%	74%
65-74	67%	64%	7%	65%	68%	83%
75-84	76%	72%	7%	73%	76%	88%
85 and over	81%	77%	9%	79%	81%	90%
<b>Total complete dependence</b>	<b>71%</b>	<b>67%</b>	<b>8%</b>	<b>69%</b>	<b>72%</b>	<b>85%</b>

Note: "Activity occurred 2 or fewer times", "Activity did not occur" and "missing" categories were removed from all denominators  
Source: CMS Minimum Data Set

## Clinical conditions among nursing facility residents

The number and severity of clinical conditions impact the type and intensity of services received by a nursing facility resident. 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 2019 may be counted more than once in the diagnoses measures presented in this report.

Exhibit 7.5 presents the prevalence of each diagnosis category and the most common individual diagnoses. Six in ten nursing facility stays (63.1%) involved at least one

acute medical condition, with anemia, cancer, and urinary tract infections being the most common individual diagnoses. Nearly all stays (95.4%) involved at least one chronic medical condition, with seven in ten involving hypertension, more than four in ten involving hyperlipidemia, and over three in ten involving diabetes. Approximately three in ten stays involved a cardiac rhythm disorder and/or arthritis. Approximately one in four stays involved heart failure, end stage renal disease (ESRD), and/or ulcer or reflux disease. Approximately one in five stays involved coronary artery disease and/or asthma or chronic obstructive pulmonary disease (COPD). One in nine stays involved osteoporosis, benign prostatic hyperplasia, and/or degenerative disease of the eye.

More than one in ten stays involved a hip fracture, and nearly one in seven another type of fracture. Approximately, one in seven stays involved neurologic conditions such as seizure disorders or Parkinson's disease. Over four in ten stays involved one or more behavioral health conditions, with nearly four in ten involving depression and one in five involving anxiety. Approximately one in five stays involved any dementia, including Alzheimer's and non-Alzheimer's dementias.<sup>18</sup> Although not directly comparable, Harris-Kojetin et al. (2019) report that the national prevalence of dementia among nursing home residents was approximately 48%. Severely disabling conditions such as full or partial paralysis or traumatic brain injury were present in eight percent of stays. Less than one percent of stays did not have any of these diagnoses.

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<sup>18</sup> The MDS diagnosis category of "Alzheimer's Disease" shown in Exhibit 7.5 may underestimate the prevalence of Alzheimer's dementia in nursing facility residents. MDS assessments require that a diagnosis be confirmed by a physician within the past 60 days and have a direct relationship to the resident's current functional, cognitive, or mood or behavior status, treatment, monitoring, or mortality risk within the 7 days before the assessment. Diagnoses for which prior physician documentation is not available or that are not being specifically treated may therefore not be captured on an MDS assessment. MDS also provides another possible category of "Non-Alzheimer's Dementia" described as "e.g., Lewy-Body dementia; vascular or multi-infarct dementia; mixed dementia; frontotemporal dementia, such as Pick's disease; and dementia related to stroke, Parkinson's disease or Creutzfeldt-Jakob diseases."

**Exhibit 7.5. Percent of nursing facility stays with specific MDS diagnoses by category, Oregon 2019**

<b>Category</b>	<b>Percent of stays</b>	<b>Category</b>	<b>Percent of stays</b>
<b>Specific MDS diagnosis</b>		<b>Specific MDS diagnosis</b>	
<b>Acute medical</b>	<b>63.1</b>	<b>Chronic medical cont'd</b>	
Anemia	25.0	Benign prostatic hyperplasia	11.9
Cancer	11.3	Cataracts, glaucoma, macular degeneration	10.1
Urinary tract infection	11.2	Peripheral artery disease	6.8
Transient ischemic attack or stroke	10.3	<b>Fractures</b>	<b>23.7</b>
Respiratory failure	10.0	Other fracture	14.9
Pneumonia	7.2	Hip fracture	10.3
Septicemia	7.5	<b>Neurologic</b>	<b>14.6</b>
Malnutrition	7.3	Seizure, epilepsy	5.9
Hyponatremia	6.8	Parkinson's disease	3.8
Deep vein thrombosis	4.9	Neurogenic bladder	3.2
<b>Chronic medical</b>	<b>95.4</b>	<b>Behavioral</b>	<b>44.0</b>
Hypertension	73.0	Depression	36.8
Hyperlipidemia	46.6	Anxiety	18.3
Diabetes	36.2	Post-traumatic stress disorder	2.7
Atrial fibrillation	32.0	<b>Dementia</b>	<b>18.6</b>
Arthritis	29.0	Non-Alzheimer's	17.2
Heart failure	27.1	Alzheimer's	3.6
End-stage renal disease	26.1	<b>Paralysis</b>	<b>8.2</b>
Ulcer or reflux disease	29.5	Hemiplegia, paraplegia, quadriplegia	5.8
Thyroid disorder	24.2	Traumatic brain injury (TBI)	1.1
Coronary artery disease	20.7	<b>Severe &amp; persistent mental illness (SPMI)</b>	<b>6.5</b>
Asthma, COPD...*	27.4	Schizophrenia	2.6
Osteoporosis	12.3	Manic depression	3.5

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%. Aside from TBI, diagnoses that occur in less than 2.5% of stays are not shown individually but are included in the category. Data in this table are based on 38,537 stays that have a diagnosis-coded entry, reentry, or annual assessment.

\*"Asthma, COPD..." accounts for Asthma, Obstructive Pulmonary Disease, Chronic Lung Disease, Chronic Bronchitis, and Restrictive Lung Diseases.

As shown in Exhibit 7.6, the prevalence of some diagnoses varied by length of stay. Acute medical conditions were somewhat more common in short-length stays, but the prevalence of chronic medical conditions was high regardless of length of stay. All short stays involved residents with a chronic medical condition. Fractures were much more common in short stays. However, the prevalence of other categories of diagnoses, including neurologic conditions, behavioral health conditions, dementia, and paralysis were markedly higher among residents with longer lengths of stay compared with residents with short 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, acute and chronic medical conditions, and/or dementia, but less likely to have suffered from neurologic or behavioral conditions, paralysis, or SPMI.

**Exhibit 7.6. Distribution of MDS diagnosis categories by length of stay, Oregon 2019**

Diagnosis category	Percent of stays with one or more diagnoses in category		
	Short stay	Mid stay	Long stay
Acute medical	64%	63%	59%
Chronic medical	96%	94%	93%
Fractures	26%	17%	14%
Neurologic	12%	24%	25%
Behavioral	42%	53%	53%
Dementia	15%	27%	38%
Paralysis and TBI	6%	16%	18%
SPMI	5%	12%	15%
None of the above	1%	1%	1%
<b>Total stays</b>	<b>35,364</b>	<b>2,279</b>	<b>894</b>

Source: CMS Minimum Data Set. Data in this table are based on 38,537 stays that have a diagnosis-coded entry, reentry, or annual assessment.

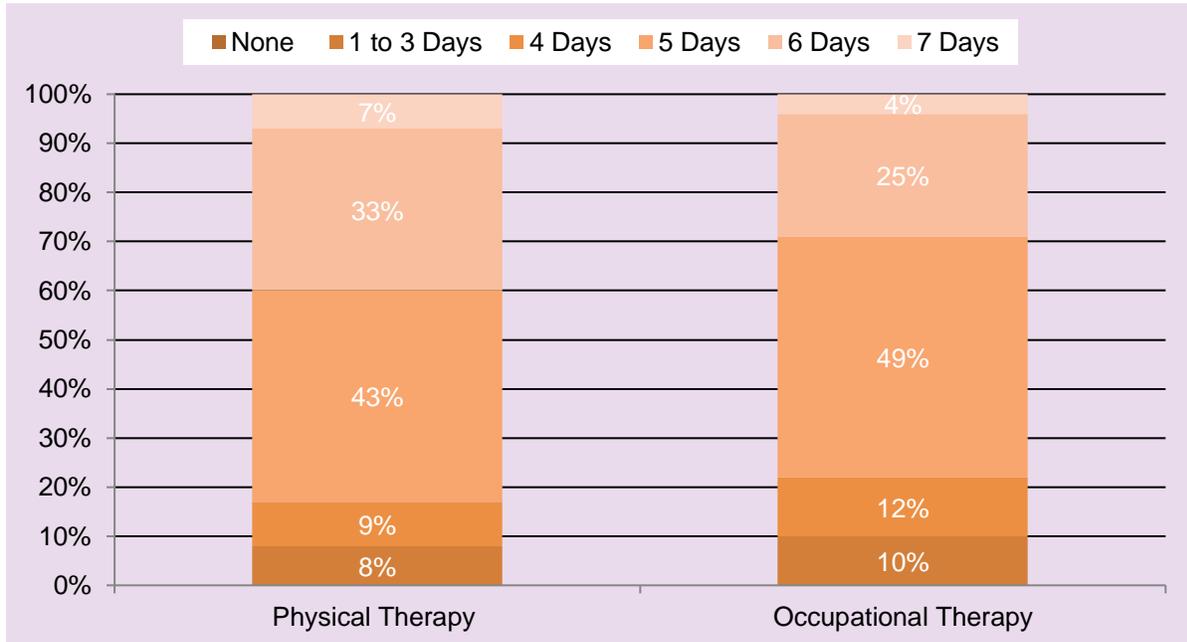
## Treatments provided to nursing facility residents

MDS captures information about select types of treatments provided to nursing facility residents. We measured the number of stays for which specific types of treatment were provided within seven days of the assessment.

As shown in Exhibit 7.7, nearly all short-stays involved physical and occupational therapy in the period following an admission or entry to a nursing facility. For more than

eight in ten short stays, physical therapy was provided five or more days per week. Occupational therapy was provided five or more days per week for nearly eight in ten short stays.

**Exhibit 7.7. Distribution of number of days of physical and occupational therapy within seven days of assessment, short stay residents, Oregon 2019**



Source: MDS Minimum Data Set. Data in this table are based on 31,926 stays that have a therapy-coded entry, reentry, or annual assessment in MDS.

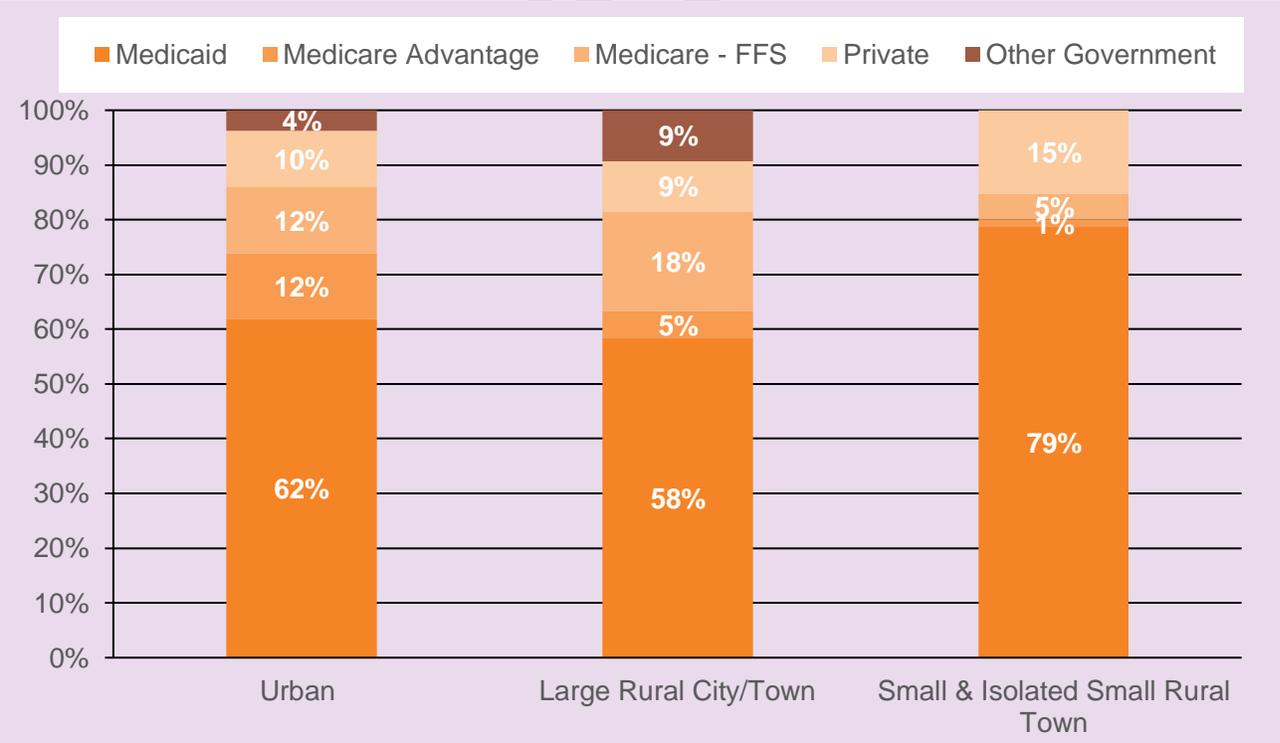
Additionally, oxygen was administered during 18.4% of nursing facility stays in SFY 2019 (data not shown). BiPAP treatment (to prevent breathing stoppages during sleep for residents with sleep apnea) was provided for 6.2% of stays (data not shown). Dialysis, which indicates the presence of renal failure, was needed for 3.1% of stays (data not shown). The rate of BiPAP and dialysis treatments was roughly twice as common among short stays compared to long stays. Oxygen treatment was administered during nearly 20% of short and mid-length stays, but only 12% of long stays.

# Section 8. Payers

Medicaid was the primary payer for 62% of resident days in Oregon nursing facilities during 2019. Private payers (including commercial insurers, long-term care insurance plans, and self-pay residents) paid for 11% of all resident days. Medicare Fee-For-Service (FFS), which covers up to 100 days of skilled nursing facility care per year, paid for 13% of resident days, and Medicare Advantage plans<sup>19</sup> paid for 11%. Other government payers (including the Veterans Administration) paid for the remaining 3% of resident days in 2019.

Exhibit 8.1 breaks down payer sources for Oregon nursing facility resident days by facility location, using the same rurality categories described for Exhibit 3.5 (p. 19). In 2019, Medicaid was the predominant payer in urban as well as rural areas, paying for 62% of resident days in urban areas, 58% in large rural cities/towns and 79% in small/isolated rural towns. The proportion of days paid by Medicare FFS was highest (18%) in large rural cities/towns, and the private pay proportion was highest (15%) in small/isolated rural towns.

**Exhibit 8.1. Payer sources for nursing facility care by urbanicity, Oregon 2019**



Source: Cost Reports and Revenue Statements

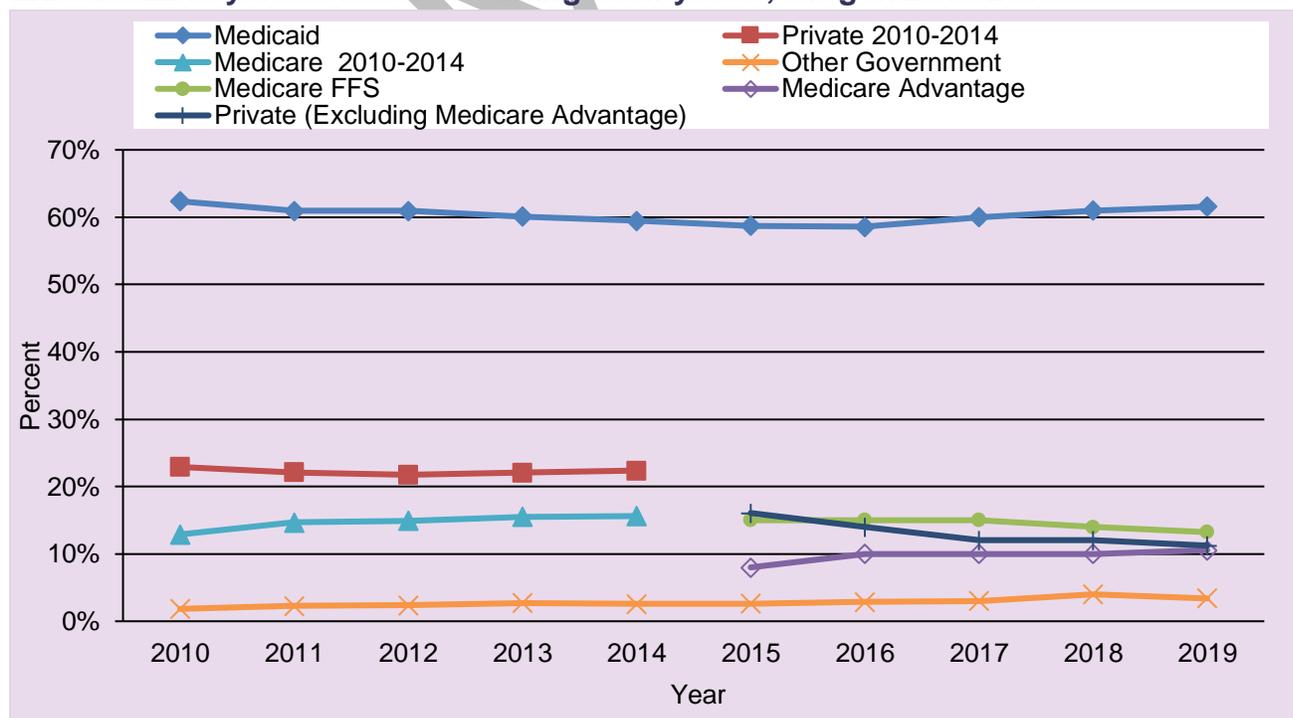
<sup>19</sup> Prior to 2015, Medicare Advantage days were mostly included in the private payer category.

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 (Jacobson et al., 2017). The lower proportion of Medicare Advantage payment in rural areas likely reflects the lower Medicare Advantage enrollment rates in Oregon’s rural areas.

Exhibit 8.2 shows the trend in payer sources in Oregon nursing facilities. Beginning in 2015, nursing facilities were required to separately report resident days paid for by Medicare Advantage, Medicare FFS, and private pay. Because of this methodological change, we show data 2015 and forward separately from pre-2015 data; data reported for Medicare and private payers for 2015-2019 are therefore not directly comparable to those of prior years.

The proportion of nursing facility resident days paid for by Medicaid was 62%, a share that has remained relatively stable since 2010. The apparent decline in the proportion of days paid by private payers after 2015 reflects both the improved measurement of Medicare Advantage payments, as well as a concurrent increase in the proportion of days paid by Medicaid. The proportion of days paid for by Medicare Fee-For-Service remained stable from 2015 to 2017, before declining slightly in 2018 and 2019.

**Exhibit 8.2. Payer sources for nursing facility care, Oregon 2010-2019**



Sources: Cost Reports and Revenue Statements  
 Note: For years 2010 through 2014, "Medicare" includes Medicare FFS only.

## Section 9. Quality measures

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CMS provides data on a wide range of nursing facility quality measures. These measures are derived from MDS 3.0 assessments and made available from Nursing Home Compare.

Quality measures are calculated separately for short-stay and long-stay residents. In this section, a short stay is defined as lasting 100 or fewer days; a long stay is one that lasts more than 100 days.<sup>20</sup> In SFY 2019, more than nine in ten stays in Oregon were short stays.

Below we present the average performance level of Oregon nursing facilities on each quality measure, as well as the national average. In order to describe the variation in performance across facilities within our state, we also divide Oregon facilities into four equal groups—or quartiles—for each measure, and present the average performance within each group.<sup>21</sup> There was wide variation between facilities in the best and lowest performing groups for almost every measure presented below.

Exhibit 9.1 presents five measures for which a higher percentage represents better performance. For short- and long-stay residents, average rates of both seasonal flu vaccination and pneumococcal pneumonia vaccination increased in Oregon facilities compared with 2018. Nevertheless, Oregon facilities' vaccination rates for short- and long-stay residents remained somewhat lower than the averages for all nursing facilities nationwide. The proportion of short stay residents whose functional status improved was slightly lower than in 2018 but remained higher in Oregon than the national average.

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<sup>20</sup> This CMS definition is slightly different from the definition of short stay (90 days or less) used in other sections of this report. Most stays reported as “mid-length” (91 to 365 days) in other sections of this report are included in the long stay category for these quality measures.

<sup>21</sup> The total number of facilities for which a given measure is reported ranged from 66 to 130 facilities, and so the number of facilities in each quartile group also varies somewhat across measures.

**Exhibit 9.1. Vaccination rates and functional status by length of stay and specific nursing facility groups, Oregon and U.S. 2019**

	All Oregon facilities	Best	Second	Third	Fourth	All U.S. nursing facilities
<b>Long stay</b>						
Seasonal flu vaccine	93%	99%	97%	94%	84%	96%
Pneumococcal vaccine	93%	100%	98%	94%	79%	94%
<b>Short stay</b>						
Seasonal flu vaccine	81%	93%	87%	81%	63%	83%
Pneumococcal vaccine	83%	97%	91%	83%	62%	84%
Improved functional status	70%	81%	74%	69%	58%	67%

Source: Nursing Home Compare

Exhibits 9.2 and 9.3 present 17 measures for which a lower percentage or number represents better performance. Long-stay measures are shown in Exhibit 9.2, and short stay measures in Exhibit 9.3. Overall, Oregon nursing facilities performed the same or better than the national average on eight of these 17 quality measures.

Fifteen percent of long stay residents newly received an antipsychotic medication compared with two percent of short stays.<sup>22</sup> These rates are slightly higher than or the same as the national average; the rate for long-stay residents is similar to 2018, however the rate for short stay residents is lower than 2018. Use of antipsychotic medications among long-stay residents has been the target of a national quality improvement initiative since 2011, and has declined in Oregon nursing facilities over that time period (Centers for Medicare & Medicaid Services, 2016). Long stay residents in Oregon were also far less likely than the national average to receive an antianxiety or hypnotic medication in both 2018 and 2019.

Rates of several negative outcomes among long stay residents (for example, losing too much weight, high-risk patients with pressure ulcers, urinary tract infections, or falls with major injury) were similar to the national average, and performance in 2019 was similar to that in 2018 and 2017. The same pattern was observed for pressure ulcers among short stay residents.

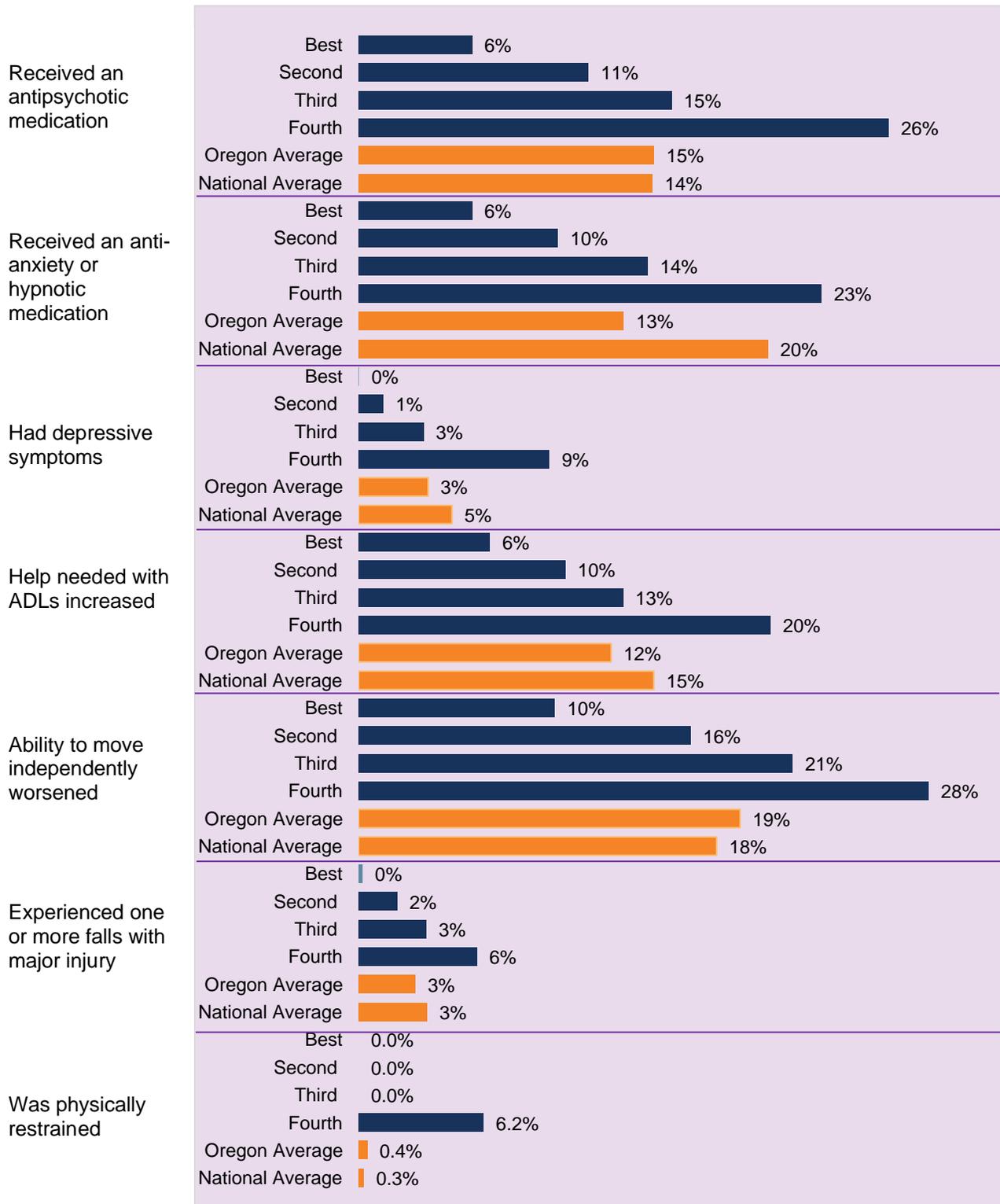
In 2019, both short and long stay residents in Oregon facilities were more likely than short and long stay residents nationwide to have an outpatient emergency department visit. However, long stay residents in Oregon facilities were less likely than long stay residents nationwide to be hospitalized (per 1000 long-stay resident days). Short stay

<sup>22</sup> This measure excludes residents diagnosed with schizophrenia, Huntington's disease, or Tourette's syndrome.

residents in Oregon and nationwide were equally likely to be rehospitalized after entering the nursing facility.

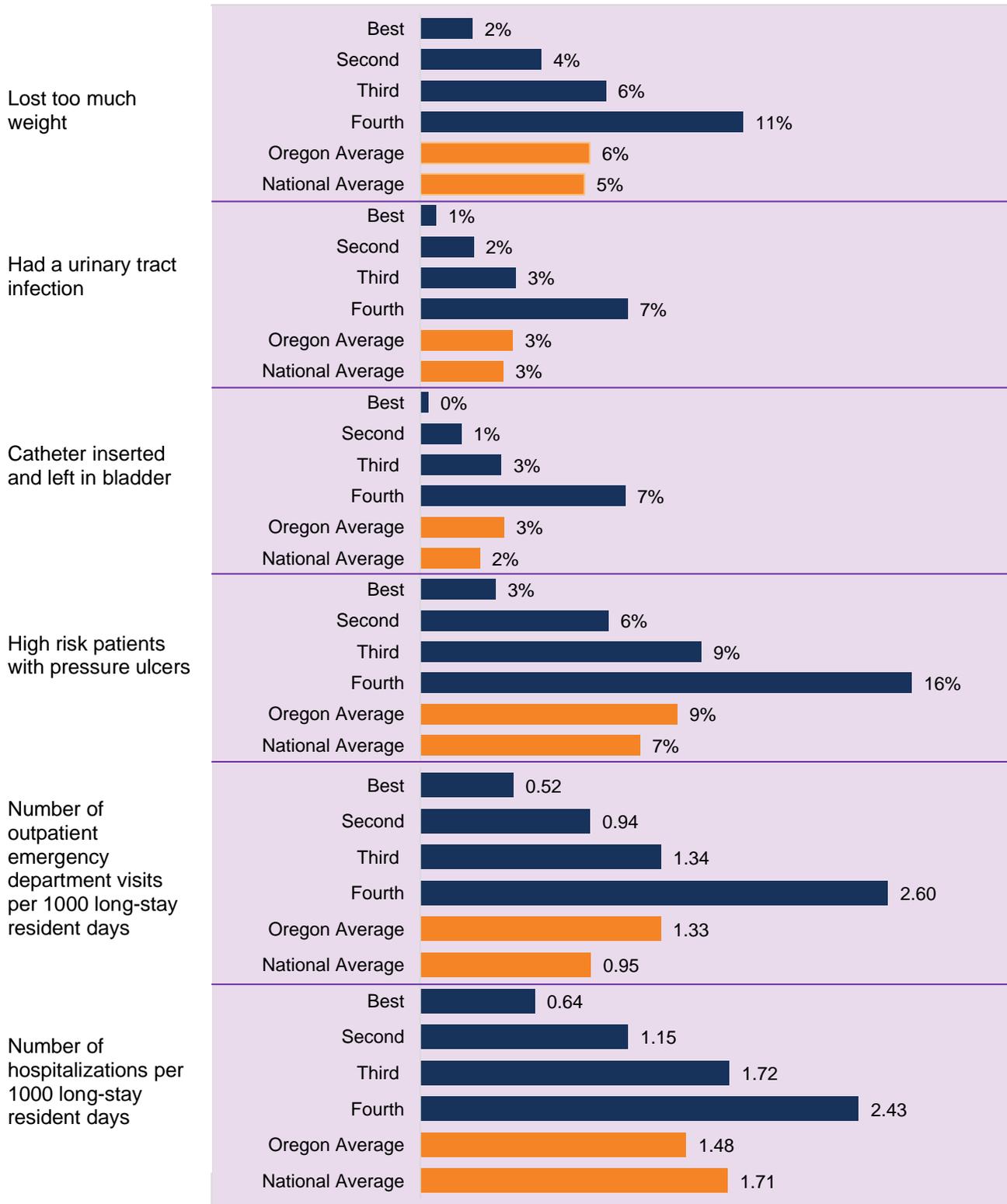
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## Exhibit 9.2. Quality measures of long stays by nursing facility groups, Oregon and U.S. 2019



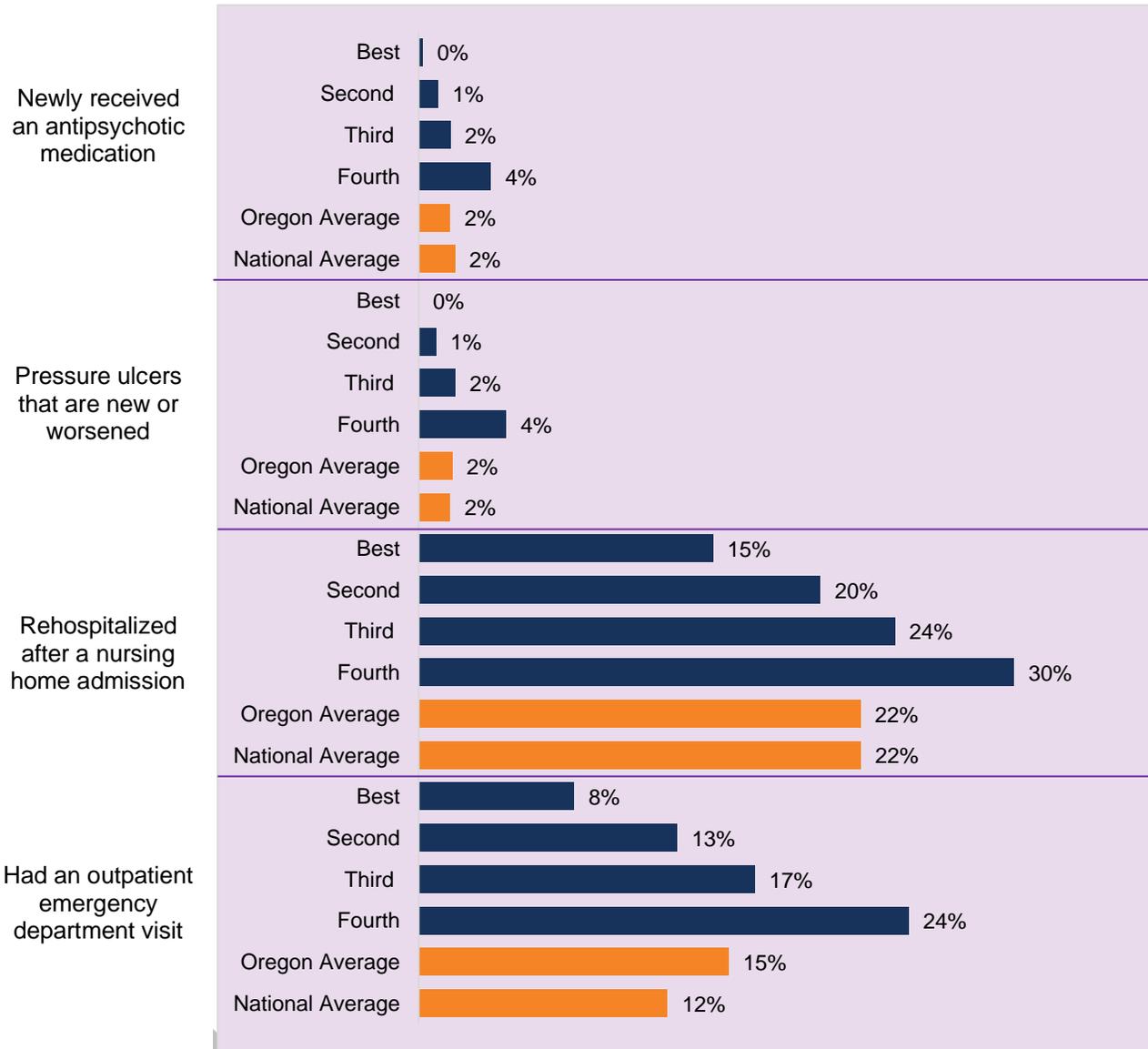
Source: Nursing Home Compare

**Exhibit 9.2. Quality measures of long stays by nursing facility groups, Oregon and U.S. 2019 (Continued)**



Source: Nursing Home Compare

### Exhibit 9.3. Quality measures of short stays by nursing facility groups, Oregon and U.S. 2019



Source: Nursing Home Compare

# Appendix

**Table A. Number of licensed beds and set-up beds per 1,000 population 75 years and older, occupancy rate, and resident days by county, Oregon 2019**

County	Licensed beds per 1000 75+	Set-up beds per 1000 75+	% Beds that are set-up	Occupancy rate	Resident days
Benton	23	18	78%	50%	24,534
Clackamas	24	20	83%	72%	308,789
Clatsop	22	21	96%	38%	9,749
Columbia	35	32	92%	53%	22,446
Coos	35	22	64%	54%	49,042
Crook	19	16	82%	59%	9,486
Curry	19	19	100%	54%	11,610
Deschutes	16	13	84%	63%	50,198
Douglas	21	21	100%	70%	66,378
Grant	41	41	100%	50%	7,230
Hood River	88	52	60%	39%	18,766
Jackson	19	16	82%	65%	148,315
Jefferson	11	8	75%	81%	27,333
Josephine	43	40	92%	64%	98,502
Klamath	17	17	100%	78%	27,098
Lake	29	29	100%	70%	6,123
Lane	39	34	85%	68%	295,837
Lincoln	10	10	100%	77%	14,697
Linn	50	48	97%	83%	148,122
Malheur	15	15	100%	59%	7,116
Marion	41	35	86%	71%	262,416
Multnomah	66	57	86%	75%	789,529
Polk	32	27	86%	64%	49,666
Tillamook	20	18	92%	52%	9,452
Umatilla	47	34	73%	59%	51,140
Union	33	26	78%	44%	12,111
Wasco	145	118	81%	64%	81,056
Washington	31	27	88%	72%	279,629
Yamhill	52	40	77%	61%	84,807
<b>Oregon</b>	<b>36</b>	<b>31</b>	<b>84%</b>	<b>69%</b>	<b>2,971,177</b>

Sources: Cost Reports, American Community Survey estimates for 2018

Note: Baker, Gilliam, Harney, Morrow, Sherman, Wallowa, and Wheeler counties not shown because they have no nursing facilities.

**Table B. Admission source as percentage of total admissions, Oregon 2012 – 2019**

Admission Source	2012 Percent	2013 Percent	2014 Percent	2015 Percent	2016 Percent	2017 Percent	2018 Percent	2019 Percent
Acute hospital	93.81	93.21	93.23	93.35	94.09	94.72	95.13	95.44
Community	4.51	4.69	4.29	4.15	3.82	3.38	3.33	3.04
Another nursing facility	1.05	1.34	1.44	1.56	1.41	1.23	1.04	1.05
Other	0.18	0.22	0.41	0.43	0.19	0.17	0.10	0.10
Hospice	0.19	0.18	0.22	0.17	0.19	0.21	0.16	0.21
Psych hospital	0.14	0.15	0.19	0.14	0.09	0.11	0.11	0.05
Inpatient rehab	0.11	0.14	0.11	0.13	0.09	0.08	0.08	0.06
Long-term care hospital	0.01	0.07	0.11	0.08	0.13	0.10	0.05	0.05
Intellectual and developmental disabilities	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Died	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>100%</b>							

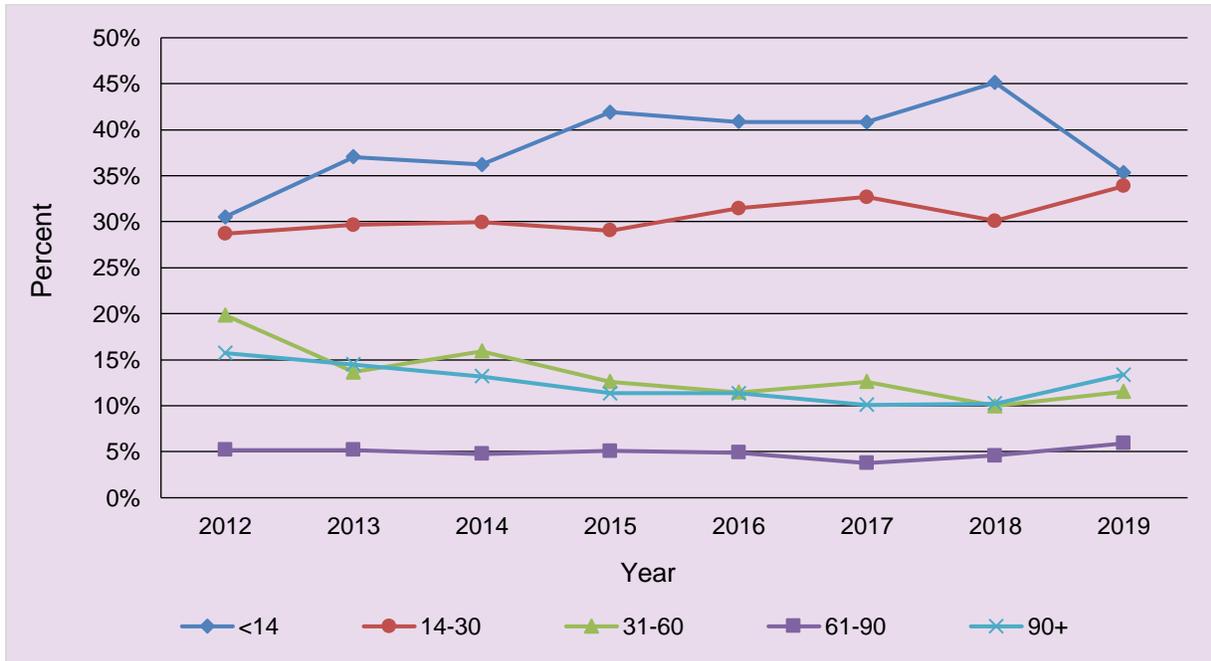
Source: CMS Minimum Data Set

**Table C. Discharge destination as percentage of total discharges, Oregon 2012 - 2019**

Destination	2012 Percent	2013 Percent	2014 Percent	2015 Percent	2016 Percent	2017 Percent	2018 Percent	2019 Percent
Community	67.96	69.25	68.72	68.28	70.59	71.07	71.39	70.5
Acute hospital	28.50	26.47	26.50	26.74	25.19	25.47	25.59	26.89
Another nursing facility	1.88	2.13	2.37	2.48	2.12	1.91	1.72	1.61
Other	0.58	0.96	1.44	1.55	1.16	0.71	0.50	0.30
Inpatient rehab	0.48	0.60	0.53	0.49	0.49	0.40	0.38	0.28
Hospice	0.24	0.29	0.26	0.30	0.32	0.32	0.32	0.34
Psych hospital	0.14	0.13	0.11	0.09	0.07	0.08	0.07	0.04
Long-term care hospital	0.01	0.03	0.03	0.04	0.04	0.03	0.03	0.03
Intellectual and developmental disabilities	0.01	0.02	0.02	0.03	0.02	0.01	0.02	0.01
Died	0.20	0.12	0.02	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>100%</b>							

Source: CMS Minimum Data Set

**Figure 1. Trend in average length of stay (days) for different length of stay categories among population less than 45 years, Oregon 2012–2019**



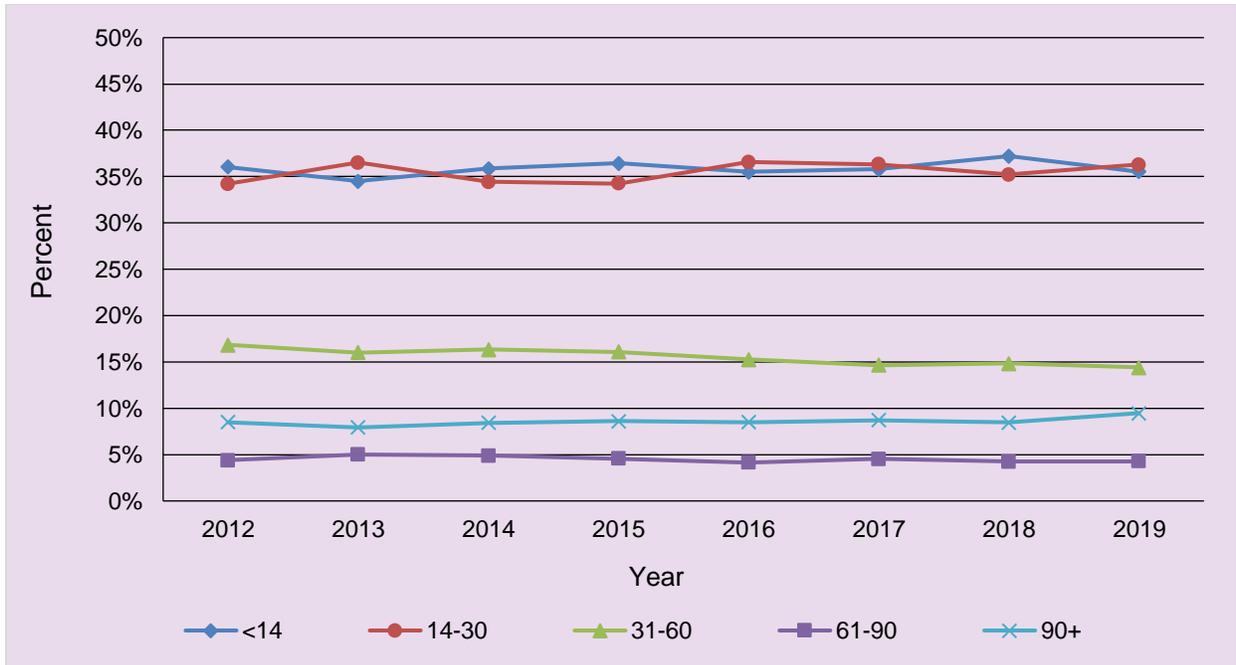
Source: CMS Minimum Data Set

**Figure 2. Trend in average length of stay (days) for different length of stay categories among population 45-64 years, Oregon 2012–2019**



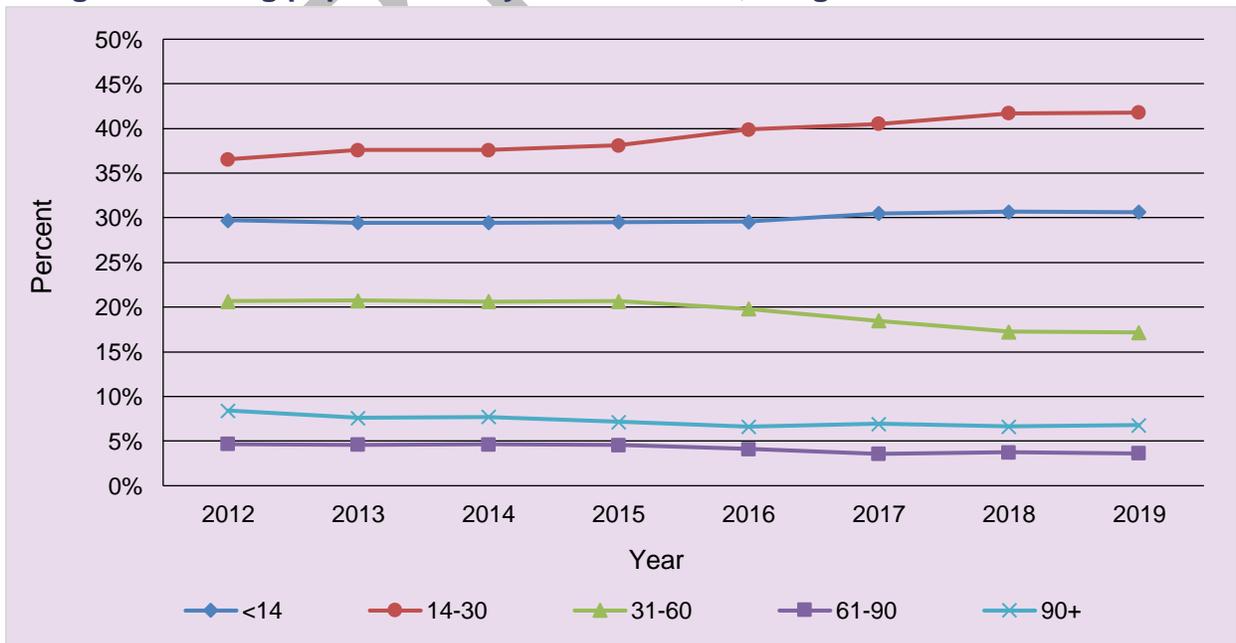
Source: CMS Minimum Data Set

**Figure 3. Trend in average length of stay (days) for different length of stay categories among population 65-74 years, Oregon 2012–2019**



Source: CMS Minimum Data Set

**Figure 4. Trend in average length of stay (days) for different length of stay categories among population 75 years and older, Oregon 2012–2019**



Source: CMS Minimum Data Set

# Technical notes

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## Data sources and analyses

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

- Annual Cost Reports and Revenue Statements provided to the Department of Human Services (ODHS) 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 ODHS to receive Medicaid reimbursement must submit an annual Cost Report that contains data including numbers of beds, resident days, costs, and revenues. ODHS uses data from these reports to establish and update Medicaid payment rates. Numbers of setup beds were estimated based on other facilities of similar size if set up beds data are missing.

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).

The reporting period for Cost Reports and Revenue Statements is the State Fiscal Year (SFY), which begins July 1<sup>st</sup> and ends June 30<sup>th</sup>. This report focuses on SFY 2019, which ended June 30<sup>th</sup>, 2019, but also includes data for SFYs 2009 through 2018. 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 2018 and June 2019 (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. If a Cost Report facility did not report set-up beds numbers, they were imputed based on the set-up bed to licensed-bed ratio of other similar-sized facilities.

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 of occupancy rates and of payer sources.

Population data used to calculate nursing facility bed availability rates were obtained from The American Community Survey 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 of 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 MDS 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 Oregon State University (OSU) by ODHS. These data files included assessments reported to DHS through December 3, 2019, which permitted analyses of nursing facility stays that extended past the end of SFY 2019. The data received by OSU were de-identified, so that resident names or other unique identifiers had been removed. ODHS 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 ODHS 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 3, 2019 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.

This report employs a systematic approach for capturing and counting entries, reentries, discharges, and stays in the MDS data. Entries and reentries into a nursing facility data are captured based on the date of discharge,<sup>23</sup> because while only the final assessment of a stay includes a discharge date, 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.<sup>24</sup> Residents still enrolled at the time the MDS dataset was created for OSU, December 3, 2019, were assigned this date as their discharge date for the purpose of counting entries and reentries.

Reentries were counted based on the MDS definition of a reentry: if a person was discharged from a nursing facility and then reenters the same facility within 30 days, it was considered a reentry.<sup>25</sup>

Nursing facility length of stay (LOS) was calculated from the resident's entry or reentry date and discharge date. 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.<sup>26</sup> To accurately present trends trend based on multiple years of MDS data, LOS in Section 6 was reported based only on stays that had a discharge in the reported SFY.<sup>27</sup>

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<sup>23</sup> This methodology was first implemented for the SFY 2015 report.

<sup>24</sup> 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 entry or reentry dates. However, this method was determined to undercount total stays because it did not capture all discharges.

<sup>25</sup> The 2014 report counted as reentries only assessments coded as such in MDS.

<sup>26</sup> 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.

<sup>27</sup> In the 2014 and 2015 reports, LOS calculations included all residents who spent at least 1 day in a nursing facility during the report year. For residents who remained in the facility through December 5, their LOS truncated as of that date. However, this method did not produce LOS results that were fully comparable across years, and was therefore replaced by the current approach.

Demographic data presented in Section 5 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.

The Activities of Daily Living (ADL), diagnoses, and treatment data presented in Section 7 were based on the first assessment of each resident who was enrolled in SFY 2019.<sup>28</sup> This approach allowed us to use information from all stays in SFY 2019. It thereby characterized acuity among short and mid-length stays at those time residents entered the nursing facility, and among long-stay residents at the time of their annual reassessment. However, a resident who had more than one entry or reentry in SFY 2019 may have been counted more than once in these analyses.<sup>29</sup>

## **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. Because Oregon facilities that only submit Revenue Statements do not include information on the number of licensed or set up beds, NHC data on licensed beds were used instead. July 2018 NHC data were utilized to fill in beginning of SFY licensed bed numbers for these facilities, and June 2019 data were used to fill in end of SFY licensed bed numbers. These NHC data are for each facility's survey date closest to the relevant SFY.

NHC also reports the percentage of each facility's residents who meet each of several quality measures for each calendar quarter. Quality measure definitions can be found at <https://leadingage.org/sites/default/files/MDS-30-QM-USERS-MANUAL-v120.pdf>

Section 9 of this report presents MDS-based quality measures for Oregon nursing facilities in SFY 2019,<sup>30</sup> derived from the December 2019 report from NHC. CMS reports long and short stay measures using differing quarter lengths. Long stay measures were reported for four three-month quarters; long-stay data for this report includes quarters Q3 of calendar 2018 through Q2 of calendar 2019. Short stay measures are reported for overlapping six-month periods; the last 3 months of each six-month period coincides with the reported calendar quarter. This short stay measurement period means that our reported short stay quality measures for SFY 2019 rely on some data from the last quarter of SFY 2018; short stay data for this report includes quarters Q2 of calendar 2018 through Q1 of calendar 2019. We use the

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<sup>28</sup> In the 2015 report, only assessments that were coded as entry, reentry or annual assessments in SFY 2015 were used to capture this information. The 2014 report captured ADLs using the last assessment of a person's first stay in that fiscal year.

<sup>29</sup> In the 2014 report, an individual could have only one ADL score.

<sup>30</sup> A three-quarter average was used in the SFY 2016 report.

weighted four-quarter average for each measure, and calculate the simple average across all Oregon nursing facilities.

Two long-stay and two short-stay measures (for hospitalizations and emergency department visits) are called “claims-based” because the measures calculated from MDS data are risk adjusted based on data reported to CMS from hospitals. . Data for these measures describe the 4 quarters that make up Oregon SFY 2019 (i.e. for this report data include July 2018 through June 2019). Definitions for the claims-based measures can be found at:

<https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandCompliance/Downloads/Nursing-Home-Compare-Claims-based-Measures-Technical-Specifications.pdf>

In SFY 2019, three measures (discharge to the community, long-stay and short stay self-reported moderate to severe pain) were removed by CMS. Two long-stay measures (hospitalizations, emergency department visits) were added by CMS.

Facilities that reported a measure for fewer than 20 short-stay residents or 30 long-stay residents during SFY 2019 are excluded from analyses for that measure. This report presents the average of values for all facilities for which NHC reports data for that measure.

## **Hospital discharge data (HDD)**

Hospital Discharge Data (HDD) collected by the Oregon Association of Hospitals and Health Systems (OAHHS) capture 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, OHA probabilistically matched persons who, per MDS, had entered or discharged from a nursing facility in SFY 2014 through SFY 2019 to persons who, per the HDD, were discharged from a hospital during calendar years 2013 through 2019. 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. Hospitals considered in this analysis are acute care hospitals and psychiatric hospitals only. At the end of these steps, 31,001 of the 38,537 nursing facility admissions in SFY 2019 were linked to hospital discharges. For 1,051 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 83.4% linkage rate

between HDD and MDS for SFY 2019. This is very similar compared to linkage rates in SFY 2017 and 2018.

## Rural Urban Commuting Areas (RUCAs)

Rurality was measured using the Rural-Urban Community Areas-B (RUCA-B) classification. RUCAs utilize distance to a city center and commuting flows to classify rurality and have been found to be very sensitive to demographic changes.<sup>31</sup> To create the analytic file that assigned a rurality to each facility, Census tracts were matched to facility ZIP codes in our data using a ZIP-Tract crosswalk file from the US Census bureau. Because some ZIP codes map onto more than one Census tract and some Census tracts map onto more than one ZIP code, ZIP codes that fell into more than one Census tract were assigned to the largest area grouping.

The Census tract-based RUCA Version 2 codes are based on: a) 2000 Census work commuting information, and b) Census Bureau-defined Urbanized Areas and Urban Clusters.

RUCA-B classifications are as follows:

*“Urban”*: An area with population  $\geq 50,000$  **or** town of any size with high primary commuting flow (30-49%) to an Urban Core (UC) and/or  $\geq 30\%$  secondary flow to an Urban Area (UA)

*“Large Rural City/Town”*: An area with population of from 10,000-49,999 with  $\geq 10\%$  primary commuting flow to an UC and/or  $< 29\%$  secondary commuting flow to an UA.

*“Small and Isolated Small Rural Town”*: A city/town core with a population size of 2,500-9,999 with  $\geq 10\%$  primary commuting flow to a small UC and/or with 10-29% secondary commuting flow to a UA **or** a town with a population core  $< 2,500$  with primary commuting flow to a tract outside a UA or UC and/or with  $\geq 10\%$  secondary commuting flow to a UC or 10-29% secondary commuting flow to a UA.

*RUCA Definitions:*

*“Urban Clusters”*: cities/towns of from 2,500 to 49,999 populations

*“Urban Area”*: cities of 50,000 and greater population

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<sup>31</sup> Larson, EH, Hart, LG, Rural Health workforces methods and analysis. In: Larson, EH, Johnson, KE, Norris, TE, Lishner, DM, Rosenblatt, RA, & Hart, LG eds. *State of the Health Workforce in Rural American: State Profiles and Comparisons*. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2003: 15-22.

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*“Primary Flow”*: the primary commuting destination; assigned by the first digit

*“Secondary Flow”*: second largest share of commuting flow; assigned by the second digit

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# Definitions used in this report

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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.

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