

# 2020 Nursing Facilities

The State of Nursing Facilities in Oregon,  
state fiscal year 2020



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

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**Oregon State University**  
College of Public Health  
and Human Sciences

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# The state of nursing facilities in Oregon, 2020

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**Oregon State University**  
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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 and the overall health care system, serving residents who need high-level skilled care on a post-acute 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) 2020.

## Licensed capacity and occupancy

There were 11,006 licensed beds in Oregon's 130 nursing facilities in SFY 2020. 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 remained stable at approximately three million from 2002-2019, before dropping to 2.87 million in SFY 2020. Nursing facilities are concentrated in urban areas, and seven counties had no freestanding nursing facilities.

## Admissions, discharges, and reentries

There were 33,375 admissions to Oregon nursing facilities in SFY 2020, a 4.4% 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 2020, Oregon nursing facilities statewide had 33,277 discharges, an increase of 3.8% 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 26% of discharges that were to acute care hospitals, more than nine in ten returned to a nursing facility within 30 days.

## Residents

39,642 individuals resided in an Oregon nursing facility for at least one day during SFY 2020. Most nursing facility residents (57%) were female, and 83% were 65 years of age

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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.

or older. The nursing facility population is less racially and ethnically diverse than the general Oregon population.

## Length of stay

The average length of stay for residents discharged from Oregon nursing facilities in SFY 2020 was 56 days, but the median length was only 20 days. Almost seven in ten stays lasted 30 days or fewer. 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-two percent of short nursing facility stays involved dependence on five or more ADLs, as did 56% of long stays. In addition, 96.3% of all nursing facility stays involved at least one chronic medical condition, such as hypertension, hyperlipidemia, and diabetes. Sixty-eight percent of all nursing facility stays involved at least one acute medical condition, such as anemia or urinary tract infections, and 46% of all stays involved behavioral health conditions such as depression or anxiety.

## Payers

Medicaid was the primary payer for 64% of resident days in Oregon nursing facilities during SFY 2020. Traditional Medicare paid for 13% of days in 2020 while Medicare Advantage managed care plans paid for 10% of days. Private payers (including commercial insurers, long-term care insurance plans, and self-pay residents) paid for 10% of resident days. Other government payers paid for the remaining 4% of resident days in 2020.

## Quality measures

Oregon nursing facilities performed as well or better than the national average on 11 of 22 specific quality measures defined by the Centers for Medicare & Medicaid 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

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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).

for which Oregon nursing facilities did not perform as well as the national average included influenza vaccines, ability to move independently, and high-risk patients with pressure ulcers for long stay residents; and having an outpatient emergency department visit for short stay residents.

## **COVID-19**

The COVID-19 pandemic severely impacted nursing facilities in Oregon and nationwide. Starting in March 2020, Oregon nursing facilities experienced sharp decreases in admissions, occupancy rates, and resident days. These decreases were concentrated among stays financed by Medicare, as state emergency limits on elective procedures reduced hospital discharges and normal admission patterns. Admissions, occupancy rates, and resident days began to rebound by June 2020. Overall, from January through June 2020, Oregon Nursing facilities reported 351 confirmed cases of COVID-19 among residents, and 150 among staff. Forty-two deaths of residents were caused by COVID-19.

# Background

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This is the seventh 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 annual reports succeed reports 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's trend data.

The purpose of this annual report is to paint a portrait of the 130 Oregon nursing facilities that were in operation in the 2020 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 Care Compare, 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 their own home or to a home and community based service (HCBS) setting. 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

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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.

offered in nursing facilities are often comprehensive, 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 system 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 130 certified nursing facilities in Oregon’s State Fiscal Year 2020 (SFY), which covers the period of July 1, 2019, to June 30, 2020. Unless explicitly noted, all references to 2020 in this report refer to SFY 2020.

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 assist as many individuals as possible into community-based long-term care options, including assisted living, residential care, and adult foster care, or in their own home.

There were 11,006 licensed beds in Oregon nursing facilities in SFY 2020 (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 2020 39,642 individuals required services in an Oregon nursing facility for at least one day, representing a 13% decrease from SFY 2019. 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.

### Exhibit 1.0. Characteristics of Oregon nursing facilities 2020

Characteristic	
Total number of facilities	130
Total number of licensed beds	11,006
Average licensed capacity per facility	85
Minimum number of licensed beds	6
Maximum number of licensed beds	222
Average number of facilities per county	4

Sources: Cost Reports, Revenue Statements, and Care Compare

Other notable findings in this report are highlighted below.

## Facilities

- The number of facilities ranged widely across counties, with an average of four per county.
- Over two-thirds of all facilities (71%) were small- to medium-sized facilities with fewer than 100 beds, accounting for more than half (52%) 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, before increasing by 1% in 2020 to 11,006 licensed beds. 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 85, compared to the national average of 106 in 2019, the most recent national data available.
- The number of licensed beds per facility ranged from six to 222.
- The number of licensed beds per 1,000 population 75 years and older decreased by 3% from 36 in 2019 to 35 in 2020. 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.
- 86% 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 51% in Grant county to a high of 100% in Curry, Klamath, Lincoln, and Malheur Counties.

## Occupancy

- Average occupancy rates decreased from 72% in 2000 to 66% in 2020.
  - The lower occupancy rate in 2020 was due in part to the COVID-19 pandemic.
- Across counties, average occupancy rates ranged from 23% to 99%.
- Oregon nursing facilities with fewer than 50 beds had an average occupancy rate between four to twelve percentage points higher than larger facilities of any other size. Facilities with 100 to 149 beds had the lowest average occupancy rate (60%) compared to facilities of other sizes.
- Between 2010 and 2020, the number of resident days has remained relatively stable overall.
  - There was a 3% decrease in resident days from 2019 to 2020, due in part to the COVID-19 pandemic.
- Facilities with 50-99 beds accounted for the greatest share of resident days (50%) among all facilities.
- Multnomah, Lane, Washington, and Clackamas 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>5</sup>

- 95% of all admissions to Oregon nursing facilities came from acute care hospitals.
- Admissions dropped 15% from 2019 to 2020, largely due to the COVID-19 pandemic.
- Facilities with fewer than 50 beds had the lowest average numbers of admissions and discharges (63 and 61, respectively), whereas facilities with 150+ beds had the highest average numbers of admissions and discharges (373 and 376, respectively).
- 26% of all discharges were to an acute care hospital; 94% 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 the person's home, assisted living, residential care, and adult foster care.

## Residents

- The state's nursing facility population was younger than national estimates, with 83% 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 overall general nursing facility population.

## Length of stay

- 69% of Oregon nursing facility stays lasted 30 days or fewer.
- 90.6% of all nursing facility stays were less than or equal to 90 days, referred to as a "short stay."
- The median length of stay in Oregon nursing facilities was 20 days.
- After remaining stable from 2016 through 2019, average length of stay jumped by 10%, to 56 days, in 2020, largely due to the COVID-19 pandemic
- Short and mid-length stays—meaning stays of less than one full year—averaged 23 and 175 days compared to 864 days (or approximately 2.4 years) for long stays.

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<sup>5</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.

- Average lengths of stay were highest for younger residents (18 to 24 years) at 400 days.
- 59% of nursing facility stays that 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.
- For stays that linked to hospital discharges, average nursing facility length of stay was 49 days, with a median of 20 days.

## Acuity of residents

- Average ADLs of Oregon nursing facility residents decreased 6.7% from 3.7 in 2012 to 3.4 in 2020.
- 45% of stays in Oregon involved residents who were somewhat or completely dependent on five ADLs.
- 42, 57, and 59% of short, mid-length, 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 (86%), followed by toileting (71%) and bed mobility (69%).
- 69% of stays involved at least one acute medical condition, with anemia, cancer, and urinary tract infections being the most common individual diagnoses.
- 96% of stays involved at least one chronic medical condition, with seven in 10 having hypertension, almost five in 10 having hyperlipidemia, and more than three in 10 having diabetes.
- Physical therapy was provided five or more days per week for 55% of short stays, and occupational therapy five or more days per week for 51% of short stays.
  - These rates of physical and occupational therapy provision in 2020 were each more than 25 percentage points lower than in 2019. This reflects the implementation by CMS of the new Patient Driven Payment Model (PDPM) under which Medicare reimburses post-acute nursing facility residents. The COVID-19 pandemic may also have contributed to this change.

## Payers

- Medicaid was the primary payer for 64% of resident days in Oregon nursing facilities during 2020, a proportion that has remained relatively stable since 2010.
- Medicaid paid for 63, 59, and 81% 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 2020 while Medicare Advantage managed care plans paid for 10% of days.
- Private payers (including commercial insurers, long-term care insurance plans, and self-pay residents) paid for 10% of all resident days.
- The distribution of resident days among payers did not appear to have been significantly affected by the COVID-19 pandemic.

## Quality measures

- Oregon nursing facilities performed the same or better than the national average on 11 of 22 CMS-defined quality measures.
- Oregon facilities' average performance on individual quality measures in 2020 was similar to 2019 and 2018.
- Average rates of pneumococcal pneumonia vaccination increased in Oregon facilities for long stays, compared with 2019, and seasonal flu vaccination in Oregon facilities also increased compared with 2019, with pneumococcal pneumonia vaccination rates slightly surpassing the national average, while seasonal flu vaccine rates 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 2019, and pneumococcal pneumonia vaccination rates surpassed the national average, while seasonal flu vaccination rates were lower than the average for all nursing facilities nationwide.
- Like 2019, 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, 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 less likely to be re-hospitalized after entering the nursing facility.

## COVID-19

- Average occupancy rates at Oregon nursing facilities fell sharply starting in March 2020, and by May 2020 had fallen to 66.4%, compared to 74.5% in May 2019
- The total number of resident days in May 2020 was 10% lower than in May 2019.

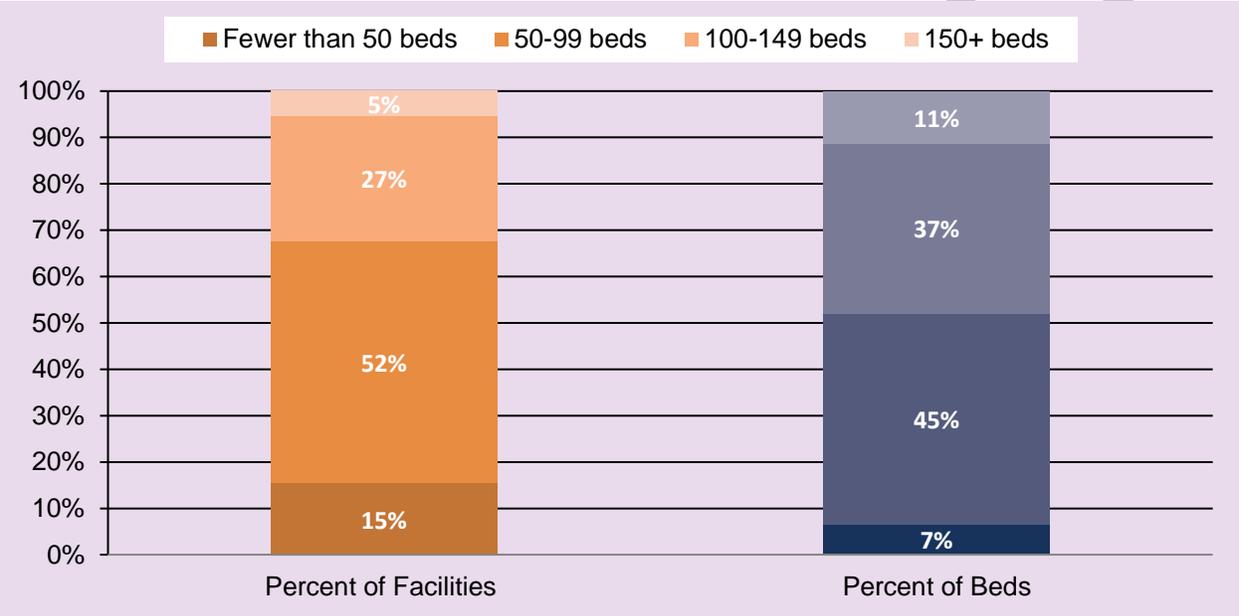
- In May 2020, the total numbers of nursing facility discharges paid by Medicare only, Medicare + Medicaid (that is, for dually eligible residents), and Medicaid only were each more than one-third lower than in May 2019.
- In April 2020, the average length of stay for residents with Medicaid only or dual Medicare + Medicaid coverage approximately doubled (compared to the pre-pandemic average), before returning to previous levels by June 2020.
- Overall, from January through June 2020, Oregon Nursing facilities reported 351 confirmed cases of COVID-19 among residents, and 150 among staff. Forty-two deaths of residents were caused by COVID-19.

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# Section 1. Licensed capacity

Oregon had 130 nursing facilities in SFY 2020, with a total of 11,006 licensed beds (Exhibit 1.1). Sixty-seven percent of all facilities had fewer than 100 beds, accounting for more than half (52%) of all beds statewide. The average number of licensed beds was 85, compared to 106 nationally in 2019 (The Kaiser Family Foundation, 2020).

**Exhibit 1.1. Licensed capacity by facility size, Oregon 2020**



Sources: Cost Reports, Revenue Statements, and Care Compare

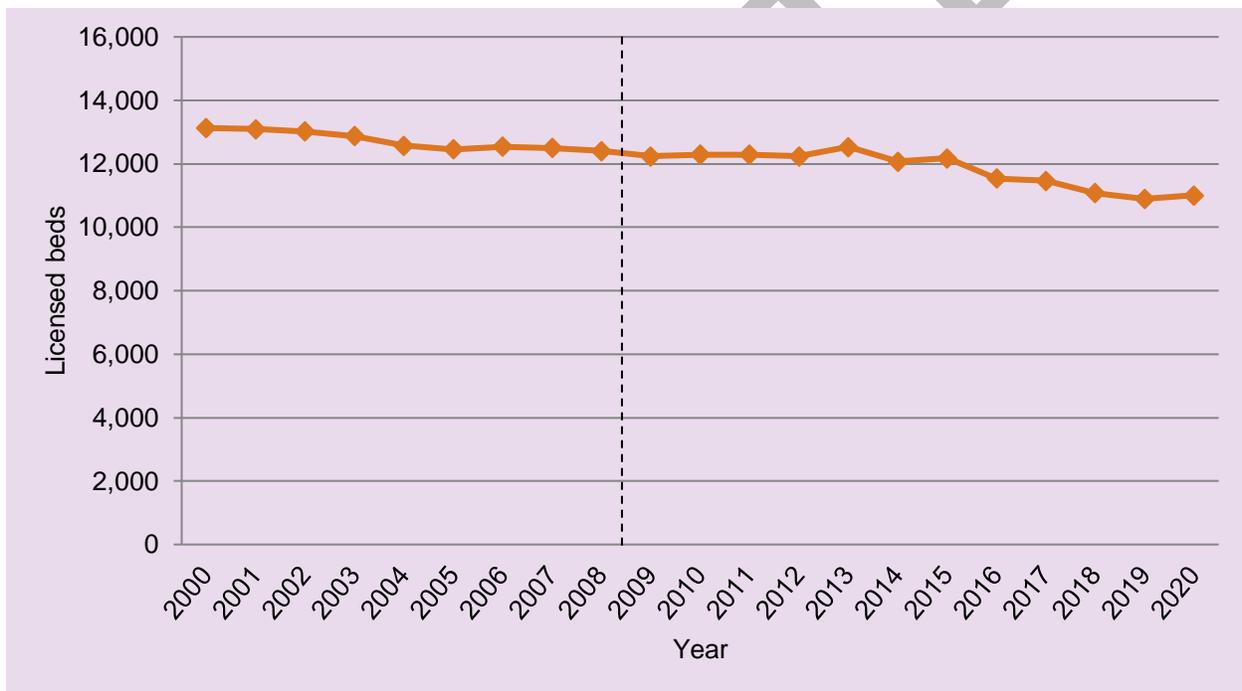
The total number of nursing facilities in Oregon (n=130) was less than the total number in 2019 (n=132). Two nursing facilities closed during or before July 2019, and no new facilities opened in SFY 2020. Two facilities closed during SFY 2020 but reopened on the next day. One facility closed in early May 2020 but is still included in this report.

The total number of licensed nursing facility beds in Oregon declined 16% over the last 20 years, from 13,127 in 2000 to 11,006 in 2020 (Exhibit 1.2). For the first time in six years, the total number of licensed beds in 2020 increased slightly (1%) compared to 2019, as three facilities increased their number of licensed beds.

Note that the dashed vertical line between 2000-08 and 2009-20 signifies a change in the methodology used to obtain the data reported in this exhibit and in Exhibit 1.3. Thus, the trends for these two time periods may not be completely comparable.<sup>6</sup>

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 among the lowest number of nursing facility residents per 1,000 population 65 years and older in the United States (Reinhard et al., 2014), which reflects the state’s commitment to non-institutionalized long-term care.

**Exhibit 1.2. Total number of licensed beds in Oregon nursing facilities, 2000–2020**



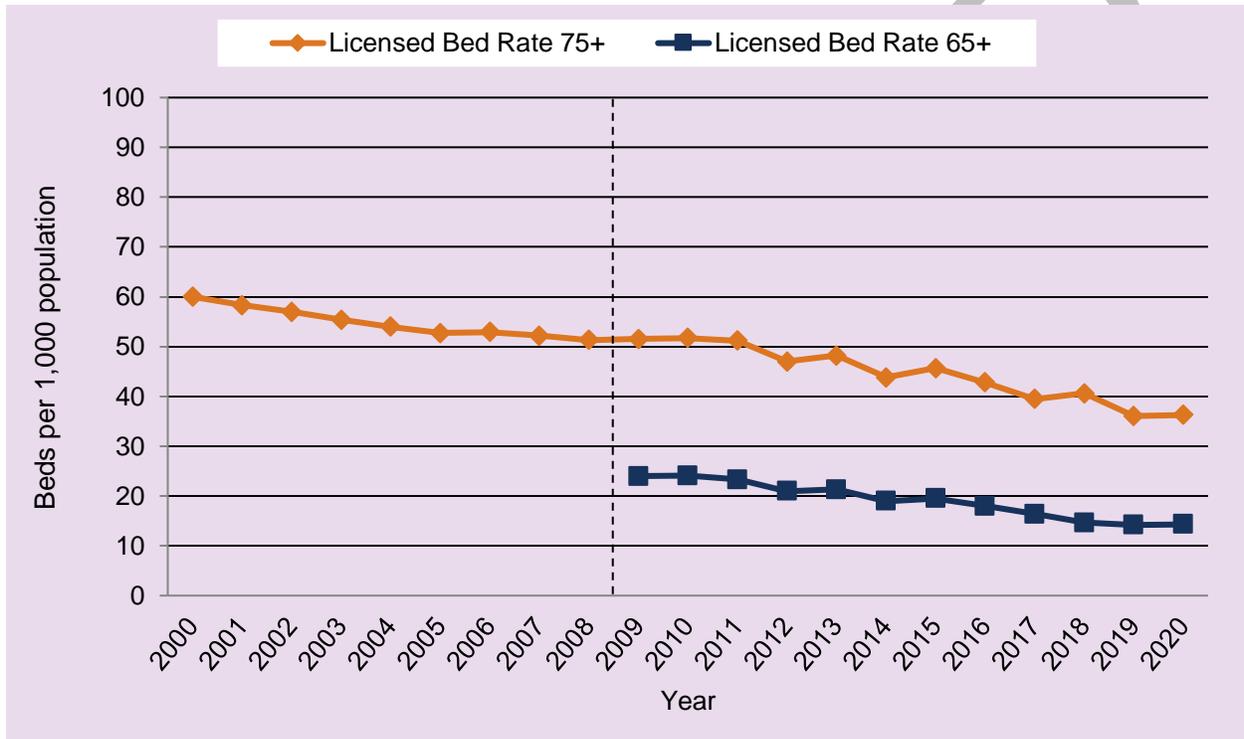
Sources: OHPR Nursing Facility Reports, 2000-08; Cost Reports, Revenue Statements, and Care Compare, 2009-20

The number of licensed beds per 1,000 persons 75 years and older in Oregon has declined steadily since 2000 (60 vs. 36; Exhibit 1.3) and since 2009 per 1,000 persons 65 years and older (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 both the overall reduction in licensed capacity and growth in the state’s older population during this same time period.

<sup>6</sup> Data for the 2000-08 period are based on information used by the state for facility licensing. The trend for 2009-20 come from state and federal data collected as part of the reporting requirements for nursing facility certification and payment.

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 (40%). This reflects rapid growth in the number of people turning 65 over the past decade, as the Baby Boomer cohort ages (US Census Bureau, 2020).

**Exhibit 1.3. Licensed bed rate per 1,000 population 75 years and older and 65 years and older, Oregon 2000-2020**



Sources: OHPN Nursing Facility Reports, 2000-08; Cost Reports, Revenue Statements, and Care Compare, 2009-20

## Section 2. Bed availability

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In 2020, 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 162 in Wasco County (Appendix, Table A).

Statewide, 82% of licensed beds were staffed and available for use in 2020, which we refer to as “set-up.” However, the proportion of licensed beds that were “set-up” varied widely across the state. For example, Grant County had the lowest percentage of licensed beds that were set-up (51%), followed by Coos County (64%). Four counties had 100% of licensed beds that were set-up: Curry, Klamath, Lincoln, and Malheur. There was a more than thirteen-fold difference in the number of set-up beds per 1,000 adults 75 and older across Oregon, from a low of nine in Jefferson County to a high of 118 in Wasco County (Appendix, Table A).

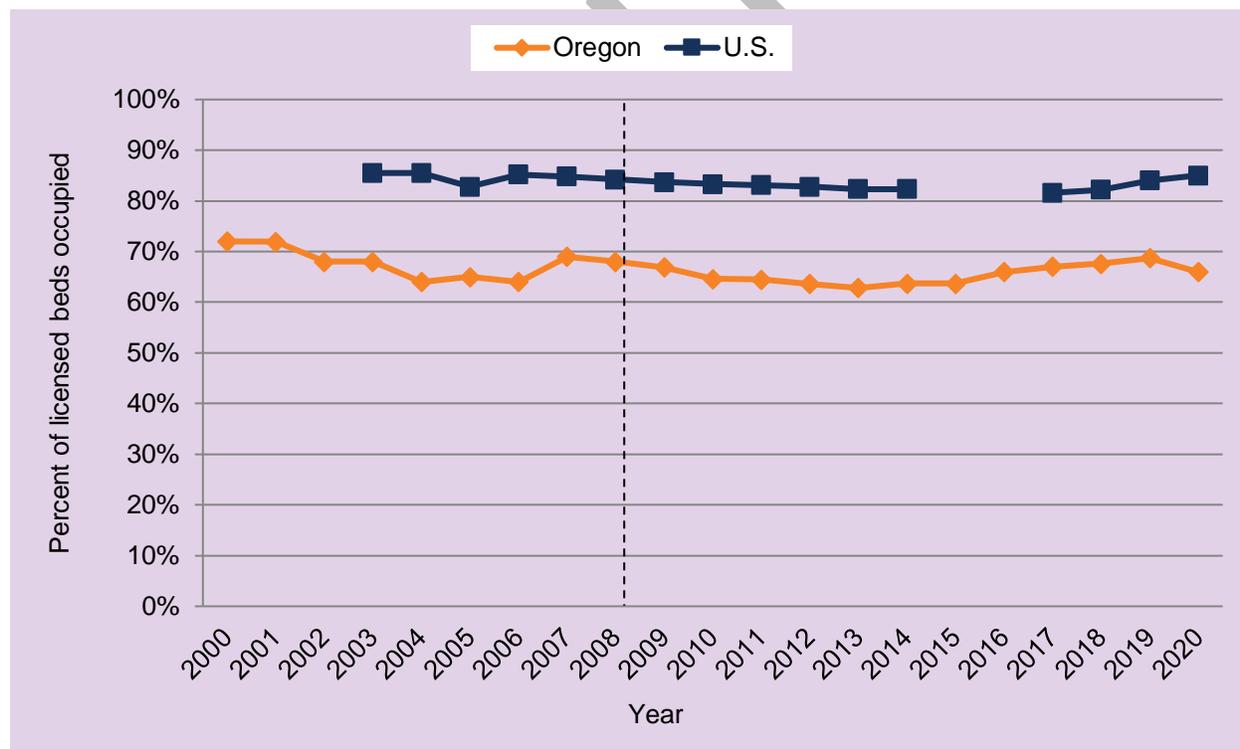
## Section 3. Occupancy

The average occupancy rate<sup>7</sup> statewide decreased overall between 2000 (72%) and 2020 (66%; Exhibit 3.1). As described in more detail in Section 10, this decrease is largely due to the impact of the COVID-19 pandemic.

The average occupancy rate had risen in 2016 through 2019, before decreasing in 2020. Nevertheless, Oregon's average nursing facility occupancy rate ranks consistently as one of the lowest in the nation (The Kaiser Family Foundation, 2019).

Note that the dashed line between the 2000-08 and 2009-20 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>8</sup>

**Exhibit 3.1. Average occupancy rate, Oregon and U.S. 2000–2020**



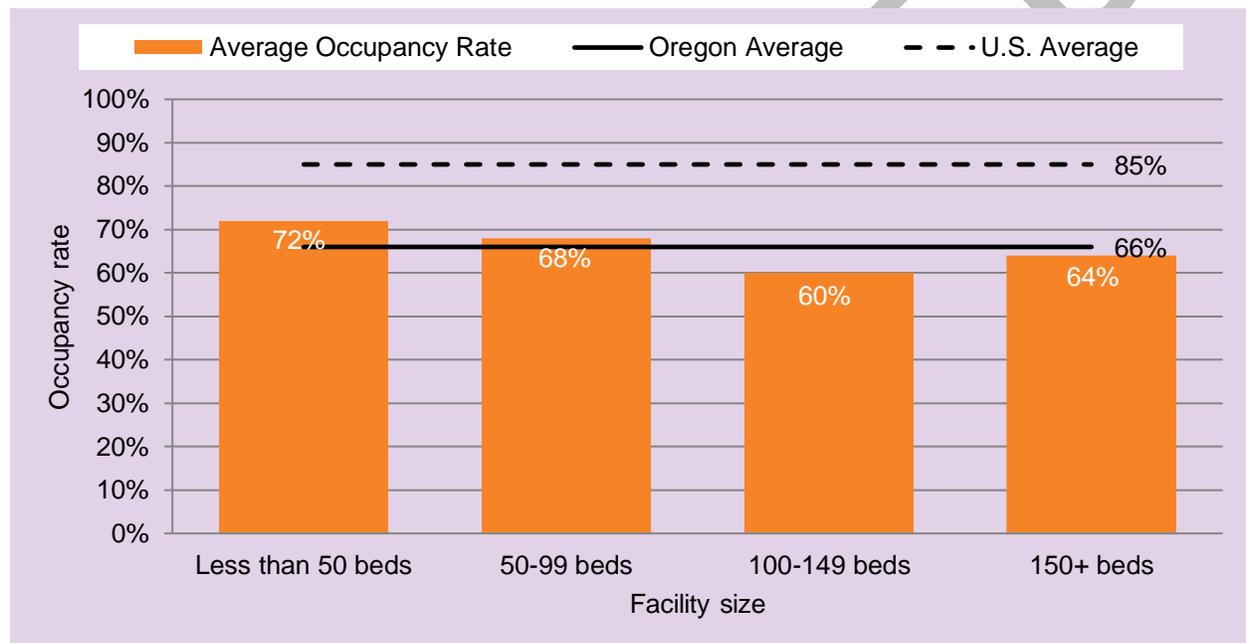
Sources: Oregon occupancy rate 2000-2008: OHPR Nursing Facility Reports; Oregon occupancy rate 2009-2020: Cost Reports, Revenue Statements,

<sup>7</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>8</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.

In SFY 2020, the average statewide occupancy rate of 66% (Exhibit 3.2) was 19 percentage points lower than the national average (85%; (NIC MAP, 2021). Nursing facilities with fewer than 50 beds had a higher average occupancy rate (72%) than facilities of any other size, whereas facilities with 100 to 149 beds had the lowest occupancy rate (60%). The occupancy rates for facilities of all sizes decreased between one and four percentage points from 2019 to 2020.

**Exhibit 3.2. Average occupancy rate by facility size, Oregon 2020**



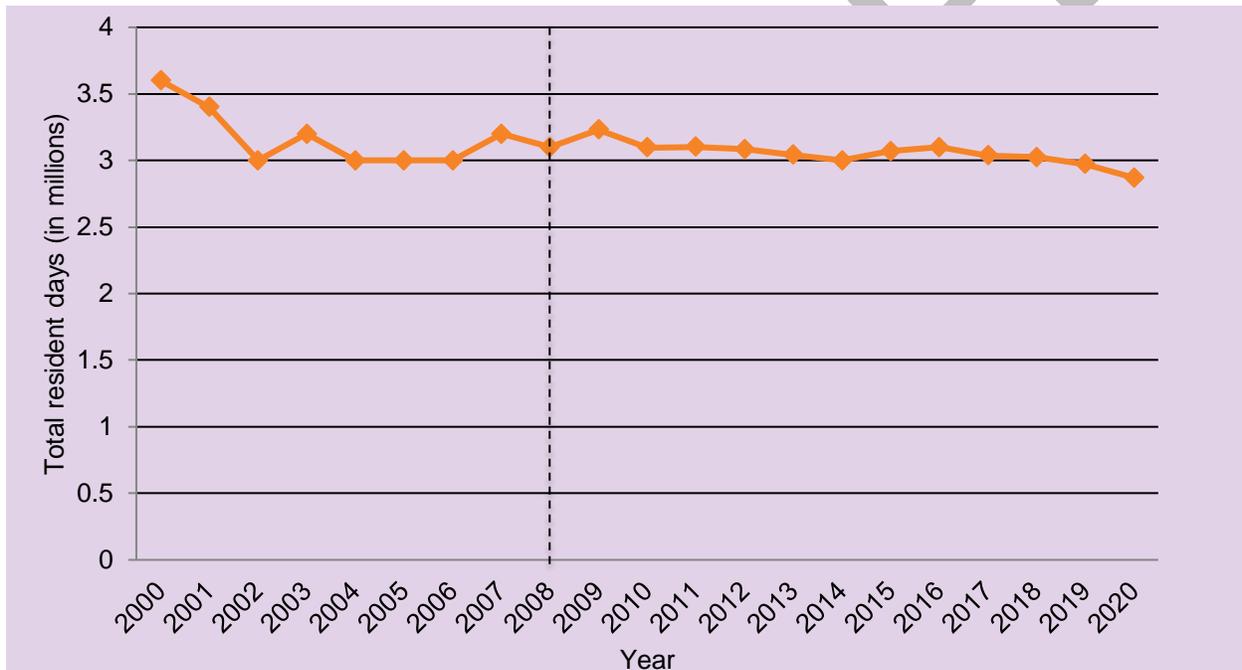
Sources: Cost Reports, Revenue Statements, and Care Compare; National Investment Center for Seniors Housing & Care (NIC), Skilled Nursing Data Report, 2020

Average occupancy rates also varied across the state's 36 counties (Appendix, Table A). Lincoln, Jefferson, and Lake counties had the highest occupancy rates at 78%, followed by Klamath (70%) and Linn (69%) counties. Twelve counties had rates under 60%, with Clatsop county having the lowest occupancy rate (39%) 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 3.2 to 2.9 million between 2009 and 2020. The change in resident days since 2009 represents a decrease of 11.2%.

As explained in more detail in Section 10, the drop in resident days during 2020 appears largely to be due to the COVID-19 pandemic. Resident days dropped sharply beginning in March 2020, particularly days paid by Medicare.

**Exhibit 3.3. Number of resident days in Oregon nursing facilities, 2000–2020**



Sources: OHPR Nursing Facility Reports, 2000-08 (adjusted for annual survey response rates)<sup>9</sup>; Cost Reports, Revenue Statements, and Care Compare, 2009-20

<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.

Facilities with 50-99 beds accounted for the greatest share of resident days (50%) among all facilities in 2020 (Exhibit 3.4). In contrast, the smallest- and largest-sized facilities had the fewest numbers of resident days, representing 8% and 11% of all resident days statewide, respectively. This overall pattern is consistent with 2018 and 2019 data, although the proportion of resident days by facility size changed somewhat since 2019. For example, resident days decreased for facilities with fewer than 50 beds, 50-99 beds, and 150+ beds, with facilities with less than 50 beds having the largest decrease from 2019 (13%). On the other hand, resident days increased for facilities with 100-149 beds, representing an 8% increase from 2019.

**Exhibit 3.4. Total number of resident days by facility size, Oregon 2020**

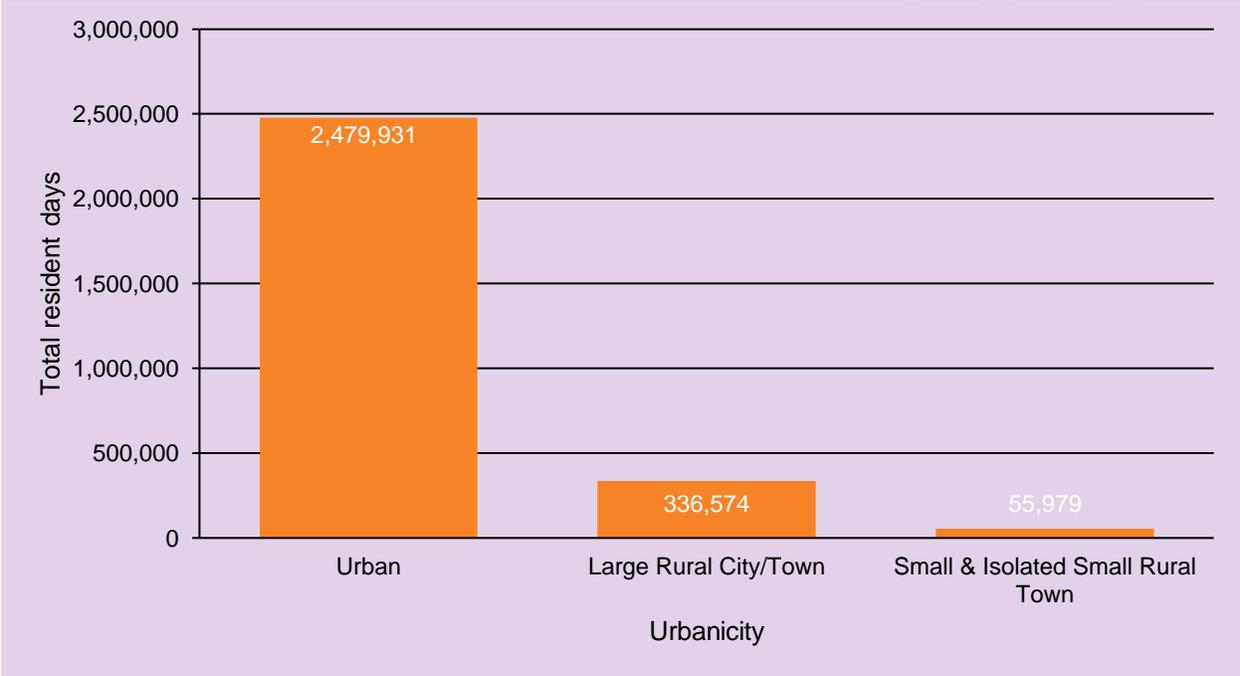


Sources: Cost Reports, Revenue Statements, and Care Compare

The total number of resident days in 2020 also varied by county (Appendix, Table A). Consistent with 2019 numbers, Multnomah, Lane, Washington, and Clackamas 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> Similar to previous years, 86% of all resident days were in urban areas (Exhibit 3.5), compared to 12% and 2% in large rural towns and small and isolated small rural towns, respectively.

**Exhibit 3.5. Total resident days by urbanicity, Oregon 2020**



Sources: Cost Reports, Revenue Statements, RUCA 2.0, and Care Compare

<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.

Before October 2019, Medicare payments to nursing facilities under the SNF Prospective Payment System (PPS) were based on Resource Utilization Groups, Version IV (RUG-IV). However, CMS determined that RUG classifications did not adequately describe nursing facility residents' unique characteristics and needs.

The Patient Driven Payment Model (PDPM) was therefore implemented effective October 1, 2019, with the goal of improving payment accuracy. Reimbursement under PDPM is based on residents' clinical and functional characteristics when they are admitted to a nursing facility. PDPM increased the focus on length of stay and was expected to incentivize shorter stays (Unruh et al., 2020) (See more details in Section 6).

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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, 2020) we constructed a stay that began on the admission date and ended on December 3, 2020. As described in the Technical Notes, we began using the current approach for identifying stays in the 2015 report.

PDPM introduced a new assessment schedule, which is significantly simpler than the assessment schedule under RUG-IV. Beginning in October 2019, the number MDS assessments per month dropped significantly. However, this change in the number of assessments did not reflect changes in the actual number of nursing facility admissions or discharges.

There were 39,642 individuals who resided in an Oregon nursing facility for at least one day during SFY 2020.

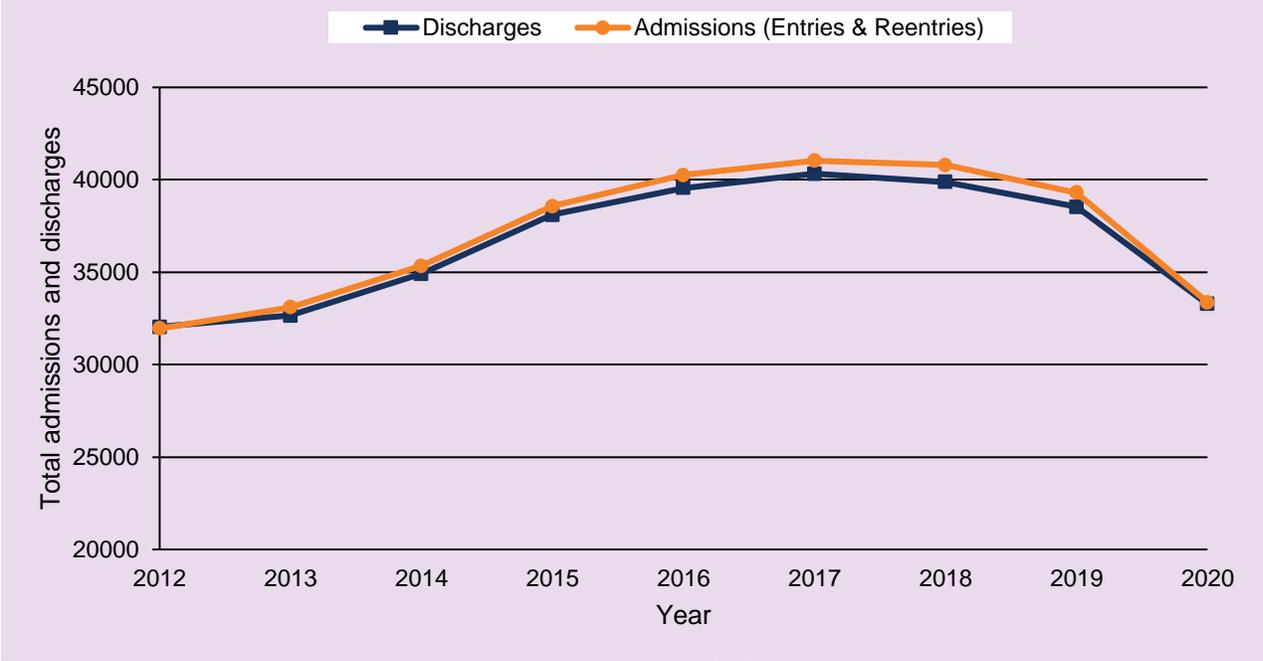
The total number of nursing facility admissions (that is, all admissions with a discharge date in MDS) in SFY 2020 included in this report is 33,375.<sup>12</sup> This is 26.1% less than the total number of Oregon nursing facility admissions derived from detailed annual cost reports submitted to the Centers of Medicare & Medicaid Services by nursing facilities (Hansen Hunter & Co., 2019). The difference between admissions in MDS and admissions derived from cost reports had been consistent within less than 10% in the previous several years. However, the data in the most recent Hansen Hunter report (2019) cover the period before the COVID-19 pandemic, yielding a much larger difference this year.

As shown in Exhibit 4.1, admissions (entries & reentries) increased steadily from 2012 to 2017, then decreased in 2018 and 2019; the trend in discharges was similar. However, admissions in 2020 fell by 15% compared to 2019, largely a result of the COVID-19 pandemic, and discharges fell by 14%. (See Section 10 for more details).

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<sup>12</sup> There were additional 1,591 admissions without a discharge date in MDS.

Exhibit 4.1. Trend in total admissions and discharges, Oregon 2012–2020



Source: CMS Minimum Data Set

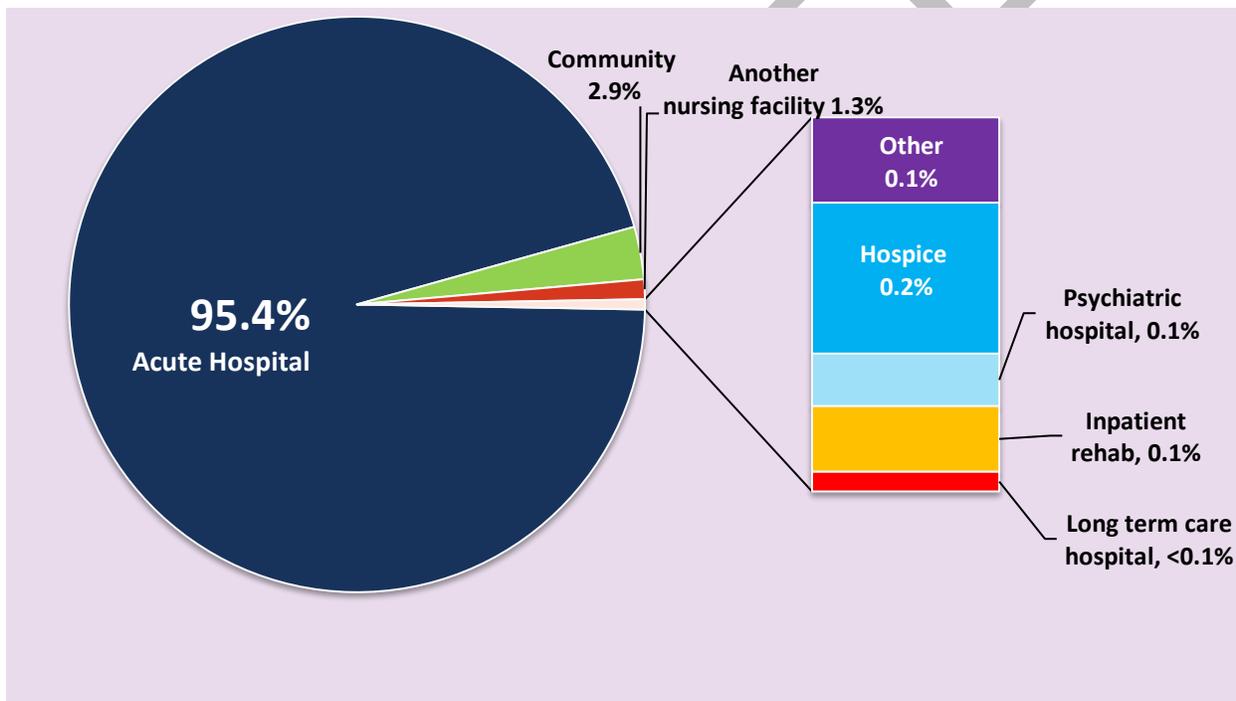
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## Admissions

In SFY 2020, nursing facilities statewide had 33,375 admissions, based on MDS data. Of these, 8,511 (25.5%) were reentries. PDPM did not appear to affect the proportion of reentries in SFY 2020 compared to 2019.

Exhibit 4.2 displays the admission source as a percentage of total admissions. Acute hospitals accounted for the highest percentage at 95.4%. Community admission sources contributed 2.9%, while 1.3% of total admissions came from another nursing facility. The COVID-19 pandemic did not have a discernable effect on this pattern, which has been consistent since 2012 (See Appendix Table B).

**Exhibit 4.2. Admission source as percentage of total admissions, Oregon 2020**

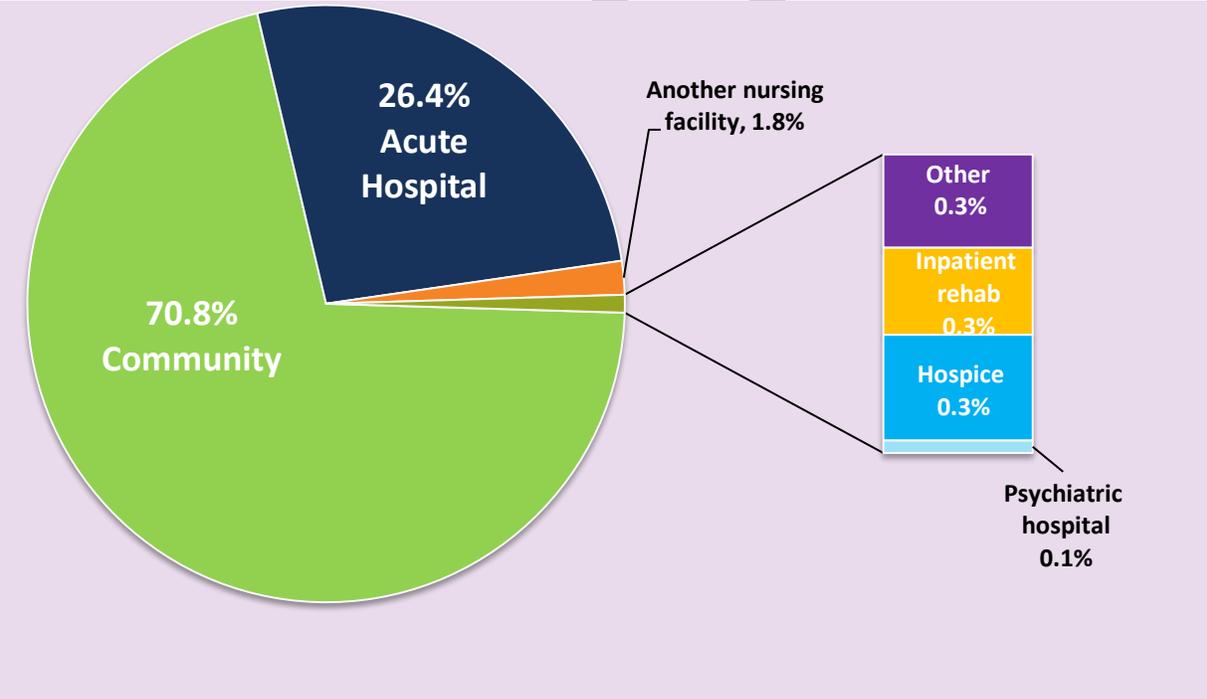


Source: CMS Minimum Data Set

# Discharges

In 2020, nursing facilities statewide had 33,277 discharges, based on MDS data. Exhibit 4.3 presents discharge destination as a percentage of total discharges. The majority (70.8%) 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 (26.4%) were to acute care hospitals. A small proportion of residents (1.8%) 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). The COVID-19 pandemic did not appear to affect the distribution of discharge destinations in SFY 2020 compared to prior years.

**Exhibit 4.3. Discharge destination as percentage of total discharges, Oregon 2020**

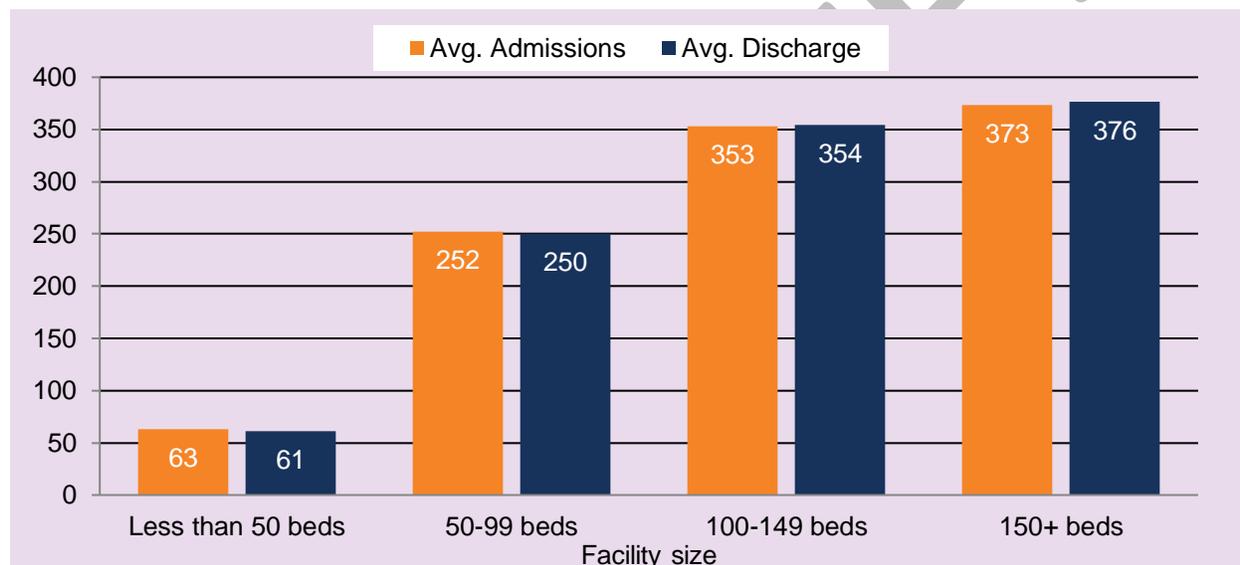


Source: CMS Minimum Data Set

## Admissions and discharges by facility

Statewide, the average number of admissions per facility was 257 in SFY 2020, and the average number of discharges was 256. 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 (63 and 61, respectively) and facilities with 150+ beds had the highest average numbers of admissions and discharges (373 and 376, respectively).

**Exhibit 4.4. Average numbers of admissions and discharges by facility size, Oregon 2020**



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 2020, approximately one in four nursing facility admissions was a reentry, for a total of 8,511 reentries statewide. Ninety-four percent of these reentries (8,024; Exhibit 4.5) were from an acute hospital. Other reentries came from the community (2.7%), and other places (3.0%; 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 8,768 nursing facility discharges to acute care hospitals, 92% 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 (94%), and facilities with <50 beds had the lowest reentry rates (80%). Some reentries in SFY 2020 were for discharges that occurred in SFY 2019.

#### Exhibit 4.5. Discharges to and reentries from acute hospitals by facility size, Oregon 2020

	Number of discharges to acute hospitals	Number of reentries from acute hospitals within 30 days	Percent reentering within 30 days
<50 Beds	401	319	80%
50 - 99 Beds	4,309	4,058	94%
100 - 149 Beds	3,261	2,934	90%
150+ Beds	797	713	89%
<b>Total</b>	<b>8,768</b>	<b>8,024</b>	<b>92%</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., 2020) and, per the most recent available data, the third lowest hospitalization rate among its Medicare-paid nursing facility residents (Levinson, 2013).

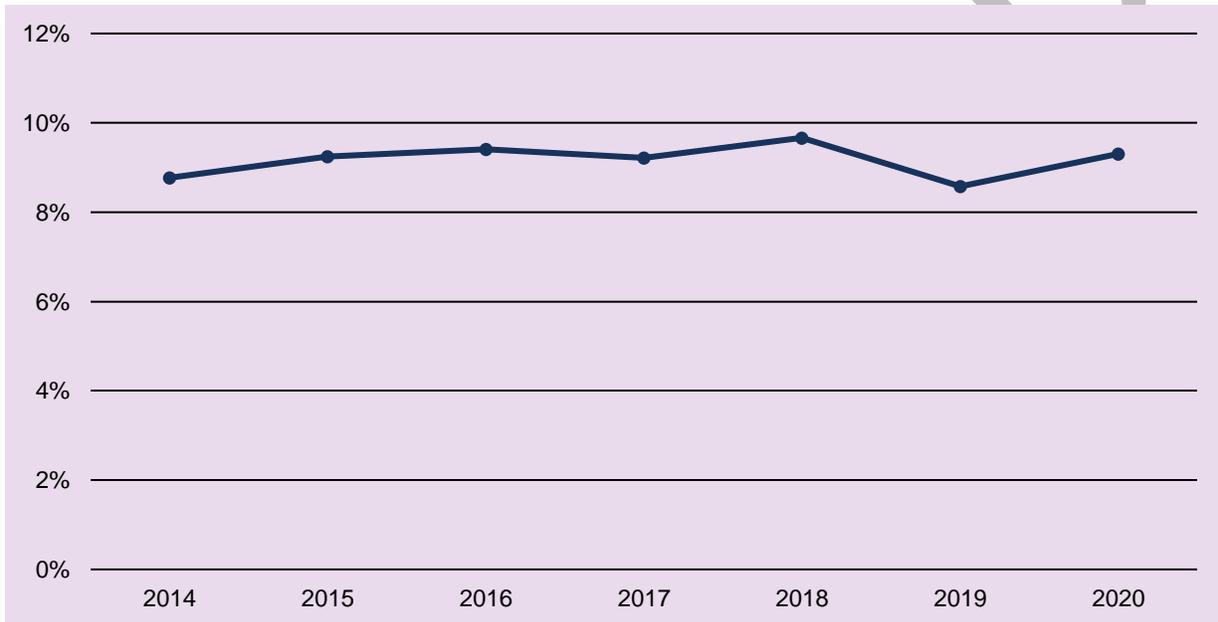
### In-Hospital mortality after discharge from nursing facilities

Some residents who are discharged from a nursing facility and admitted to a hospital do not survive to return to the nursing facility. To identify such residents, we linked MDS data on nursing facility discharges to hospital discharge records provided by the Oregon Health Authority. We identified in-hospital mortality among these linked stays and calculated the mortality rate among nursing facility residents admitted to hospitals (see Technical Notes for further details).

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

In SFY 2020, 6,852 discharges from a nursing facility (78% of discharges to hospitals) were linked to a hospital admission.<sup>15</sup> Of those linked hospital admissions, 637 residents died in the hospital, yielding a mortality rate of 9.3%. Exhibit 4.6 shows the trend in hospital mortality after nursing facility discharge, which has fluctuated within a narrow range of 8.6% to 9.7% from SFY 2014 through SFY 2020

**Exhibit 4.6 Trend in hospital mortality after nursing facility discharge, Oregon, 2014-2020**



Sources: CMS Minimum Data Set and Oregon Hospital Discharge Records  
Note: Not all nursing facility discharges for December 2018 were included in linkage.

<sup>15</sup> Linkage was based on a hospital admission on the same day, or  $\pm 1$  day, as the nursing facility discharge.

# Section 5. Residents

Exhibit 5.1 shows the composition of Oregon’s nursing facility population by age group, which remained relatively stable from SFY 2019. In 2020, the state’s nursing facility population was younger on average (75.7 years) than national estimates, with 83% of nursing facility residents being age 65 or older, compared to 85% of residents nationwide (Centers for Medicare & Medicaid Services, 2015).

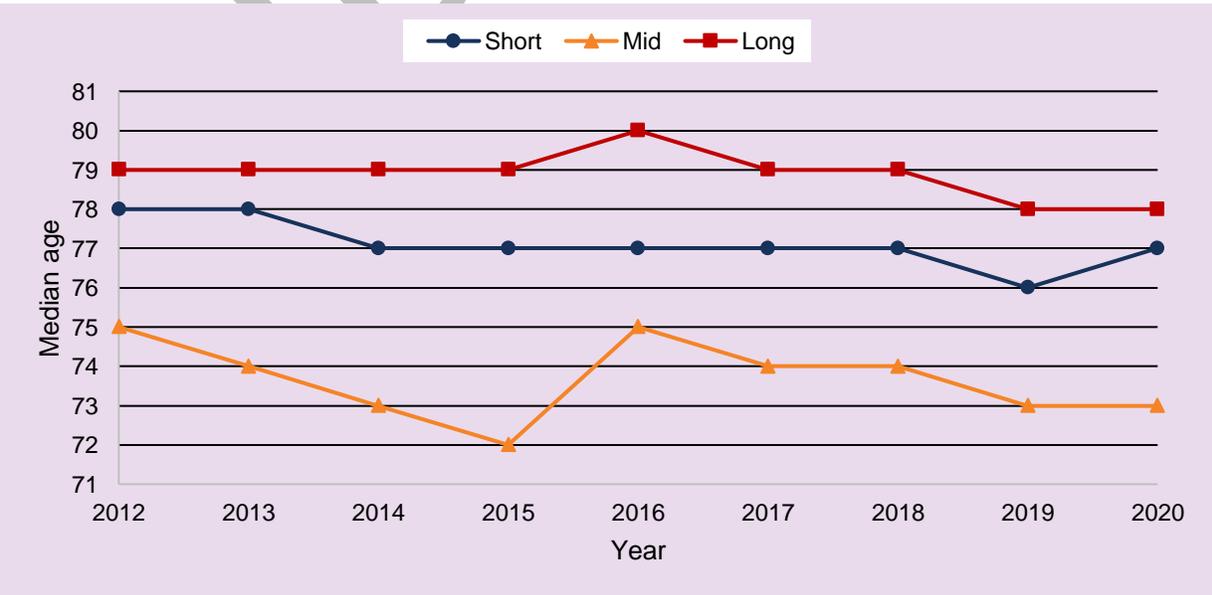
**Exhibit 5.1. Distribution of Oregon nursing facility residents by age, 2020**

Age group	Percent
Under 18	0.2
18 - 24	0.1
25 - 44	1.5
45 - 64	15.2
65 - 74	25.3
75 - 84	31.0
85 and over	26.6
<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-length and short stays. This trend has remained consistent between 2012 and 2020, with some year-to-year fluctuations occurring within each stay category.

**Exhibit 5.2. Trend in resident median age for short, mid-length, and long stays, Oregon 2012-2020**



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 (37.3%) or widowed (30.1%). The remaining residents were divorced (17.1%), never married (14.1%) or separated (1.3%).

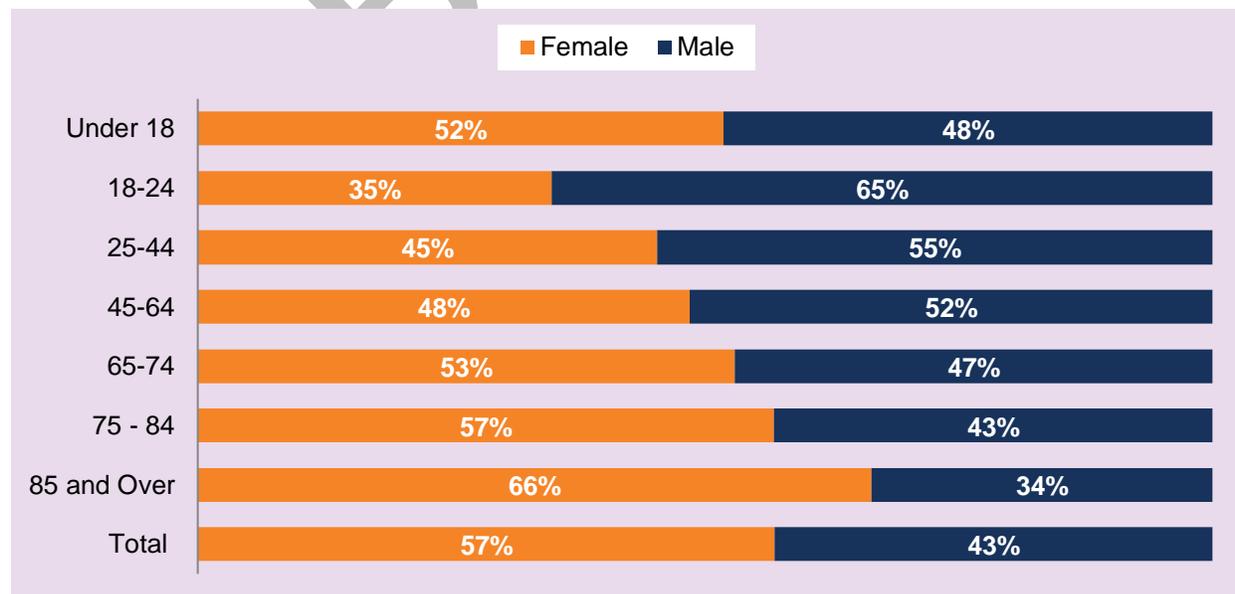
**Exhibit 5.3. Distribution of Oregon nursing facility residents by marital status, 2020**

Marital status	Percent
Never married	14.1
Married	37.3
Widowed	30.1
Separated	1.3
Divorced	17.1
<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 2020, the majority (57%) of all residents were women, which was lower than the national average of 66% (Centers for Medicare & Medicaid Services, 2015). 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, 2020**



Source: CMS Minimum Data Set

Exhibit 5.5 shows the distribution of race/ethnicity for all nursing facility residents compared to the general Oregon population (Bureau, 2019). In 2020 the majority of nursing facility residents were non-Hispanic white (82.7%), followed by African American or Black (1.8%) and Hispanic (1.5%). In comparison, the state’s general population in 2020 was 75.1% non-Hispanic white, 13.4% Hispanic, 4.7% Asian American, and 1.8% 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 2014, where 77.9%, 14.2%, and 5.3% of all U.S. nursing facility residents were non-Hispanic white, African American, and Hispanic, respectively (Centers for Medicare & Medicaid Services, 2015).

**Exhibit 5.5. Oregon nursing facility residents and general population by race and ethnicity, 2020**

Race and ethnicity	All nursing facility residents	All Oregon residents
White, Not Hispanic	82.7%	75.1%
American Indian/Alaska Native, Not Hispanic	0.5%	1.1%*
Asian American, Not Hispanic	1.2%	4.7%
African American or Black, Not Hispanic	1.8%	2.0%
Native Hawaiian/Pacific Islander, Not Hispanic	0.2%	0.4%
Hispanic of any race	1.5%	13.4%
More than 1 race, Not Hispanic	0.1%	3.3%
Unknown	11.9%	**
<b>Total</b>	<b>100.0%</b>	<b>100%</b>

Source: CMS Minimum Data Set; U.S. Census Bureau 2019

\* This category includes American Indian/Alaska Native alone or in combination with one or more races, not Hispanic.

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

Exhibit 5.6 compares the distribution of racial/ethnic groups in Oregon nursing facilities to the state’s overall population 65 years and older in 2020. The higher proportion of non-Hispanic white residents in the 65+ age category indicates that racial/ethnic minority residents were younger compared to the nursing facility population.

**Exhibit 5.6. Oregon nursing facility residents and general 65+ population by race and ethnicity, 2020**

Race and ethnicity	Nursing facility residents 65+	Oregon *** residents 65+
White, Not Hispanic	83.6%	90.2%
American Indian/Alaska Native, Not Hispanic	0.4%	1.0%*
Asian American, Not Hispanic	1.3%	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	1.2%	3.4%
More than 1 race, Not Hispanic	0.1%	1.3%
Unknown	12.0%	**
<b>Total</b>	<b>100%</b>	<b>100%</b>

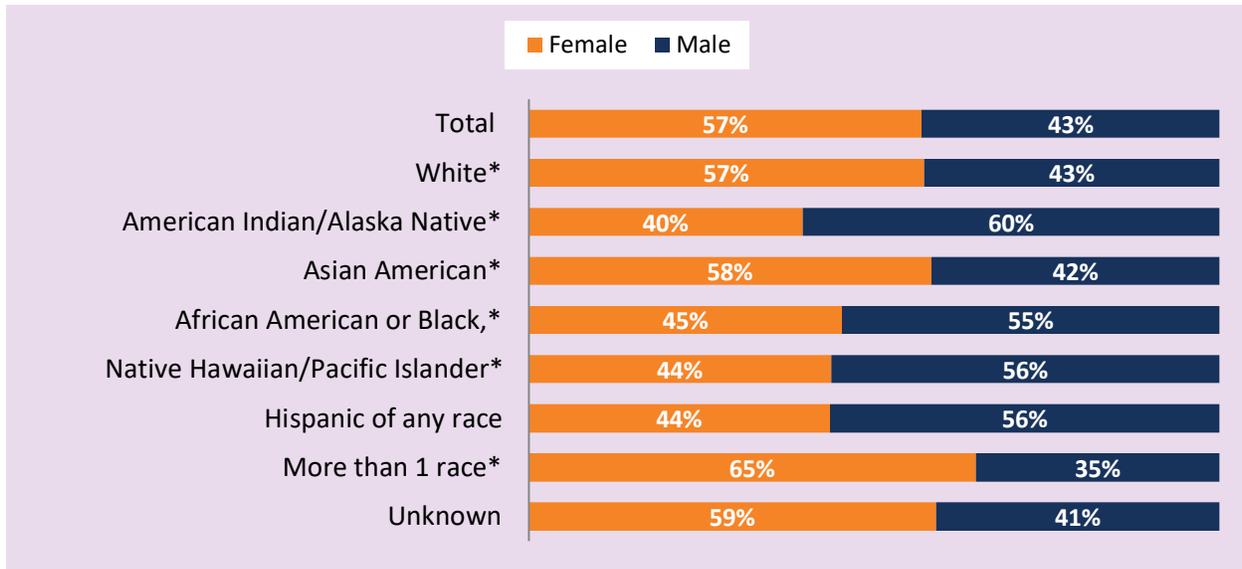
Sources: CMS Minimum Data Set; U.S. Census Bureau; \*\*\*2017 American Community Survey 1-Year Estimates

\* This category includes American Indian/Alaska Native alone or in combination with one or more races, not Hispanic.

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

The racial/ethnic distribution of all nursing facility residents by sex was similar to 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 (57% vs. 43%), non-Hispanic Asian American (58% vs. 42%), non-Hispanic multiple race residents (65% vs. 35%), and unknown ethnicity/race residents (59% vs. 41%). While the proportion of males outweighed the proportion of females in non-Hispanic Native Hawaiian/Pacific Islander (44% vs. 56%), non-Hispanic American Indian/Alaska Native (40% vs. 60%), non-Hispanic African American or Black (45% vs. 55%), Hispanic of any race (44% vs. 56%).

**Exhibit 5.7. Oregon nursing facility residents by race and ethnicity and sex, 2020**



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

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## Section 6. Length of stay

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Nursing facilities provide 24-hour skilled nursing care, rehabilitation services, 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).

Before October 2019, Medicare reimbursed nursing facilities a constant per-diem amount each day, regardless of variation in resource utilization during the stay. To account more accurately for such variation, PDPM includes a “Variable Per Diem (VPD) adjustment” that adjusts the per diem amount for physical therapy (PT) occupational therapy (OT), and non-therapy ancillary conditions and services (NTA) over the course of the stay (Acumen, LLC, 2018).

This adjustment, however, could incentivize nursing facilities to discharge residents, and then readmit them, to reset the variable per diem rate. To mitigate this possibility, PDPM also includes an “interrupted stay policy”: if a resident is discharged from a nursing facility and readmitted to the same nursing facility within 3 calendar days, the subsequent stay is considered a continuation of the previous stay (Acumen, LLC, 2018).

These changes were implemented in October 2019, three months after the beginning of Oregon SFY 2020. During SFY 2020 only 226 discharges (0.7%) were designated as having an interrupted stay.

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 is directly comparable across years, we report length of stay results only for nursing facility stays that had a discharge during the report year.<sup>16</sup> The Technical Notes at the end of this report provide further detail on how length of stay was calculated for this report.

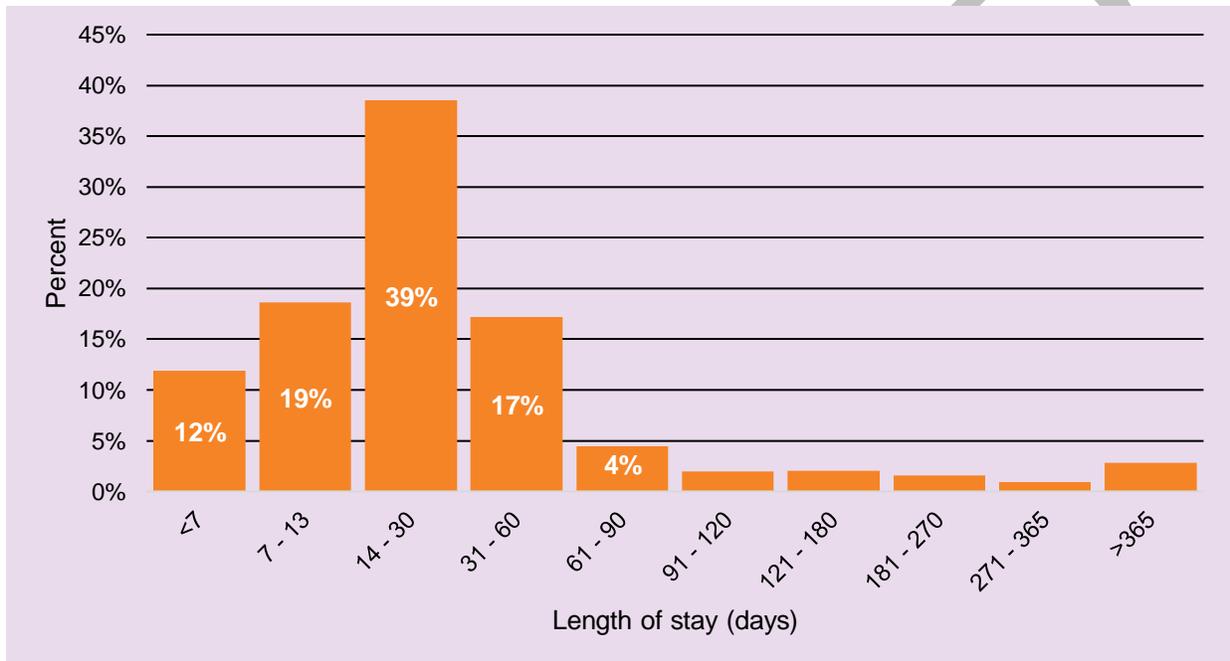
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<sup>16</sup> Persons who were residents in a nursing facility at the end of the report year (30 June 2020) are therefore not included in length of stay results. However, residents who discharged during the report year, but had been admitted in prior years, are included in the length of stay results.

In SFY 2020, long stays averaged 864 days (or approximately 2.4 years), compared to short and mid-length stays that averaged 23 and 175 days respectively.

Exhibit 6.1 shows the distribution of length of stay for Oregon’s nursing facility population. In 2020, 90.7% of all nursing facility stays were short, while 6.5% and 2.8% were mid-length and long stay, respectively. Approximately four in ten (38.6%) stays lasted between 14 and 30 days.

**Exhibit 6.1. Nursing facility length of stay, Oregon 2020**



Source: CMS Minimum Data Set

Exhibit 6.1 also shows that 70% of Oregon nursing facility stays lasted 30 days or fewer, and 91% 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). This greater utilization of nursing facilities for short stays is likely due to Oregon’s commitment to utilizing home and community-based services for ongoing long-term services and supports (American Health Care Association, 2013). PDPM and COVID-19 did not appear to affect the overall of length of stay distribution for SFY 2020.

Exhibit 6.2 shows the average and median lengths of stay in SFY 2020. 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 56 days, the median length of stay was only 20 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 20 days or less for all age groups except for the 18 to 24 age group, but the average length of stay was approximately two to 12 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 2020**

Age group	Average length of stay	Median length of stay
Under 18	61	11
18-24	400	32
25-44	57	20
45-64	66	20
65-74	58	20
75-84	51	20
85 and over	53	21
<b>Total</b>	<b>56</b>	<b>20</b>

Source: CMS Minimum Data Set

This year, MDS also provided information on the payer for individual discharges. Specifically, stays can be categorized by the resident’s health insurance status: Medicare only, Medicaid only, dual Medicare/Medicaid, or Other (including commercial health insurance and private long term care insurance).

Exhibit 6.3 shows the number of discharges and average and median lengths of stay by payer group. Six in ten nursing facility stays were by residents who had only Medicare, while another one in four stays were by residents who had dual Medicare and Medicaid coverage. Average length of stay was highest for the dual eligibility group, and approximately four times longer than for the Medicare only or other payer groups. The median length of stay was 31 days or less for all payer groups.

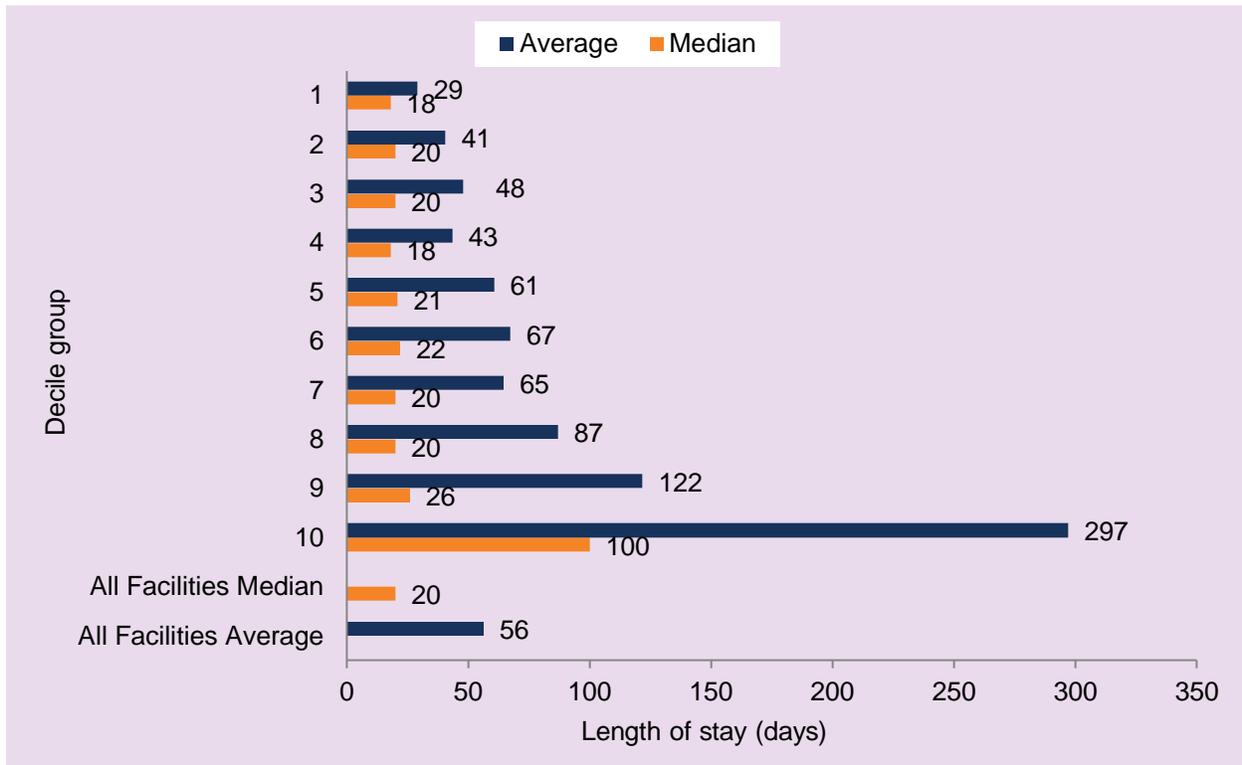
**Exhibit 6.3. Nursing facility discharges and length of stay (days) by payer, Oregon 2020**

<b>Payer group</b>	<b>Number of discharges</b>	<b>Average length of stay</b>	<b>Median length of stay</b>
Medicare only	19,741	28	19
Dual eligibility	8,423	119	31
Medicaid only	2,687	88	20
Others	2,426	30	16
<b>Total</b>	<b>33,277</b>	<b>56</b>	<b>20</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 6.4). Each group represents 13 to 14 facilities. Average length of stay increased from 29 days in group one, to 297 days in group 10. However, the median length of stay was 26 days or fewer 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.

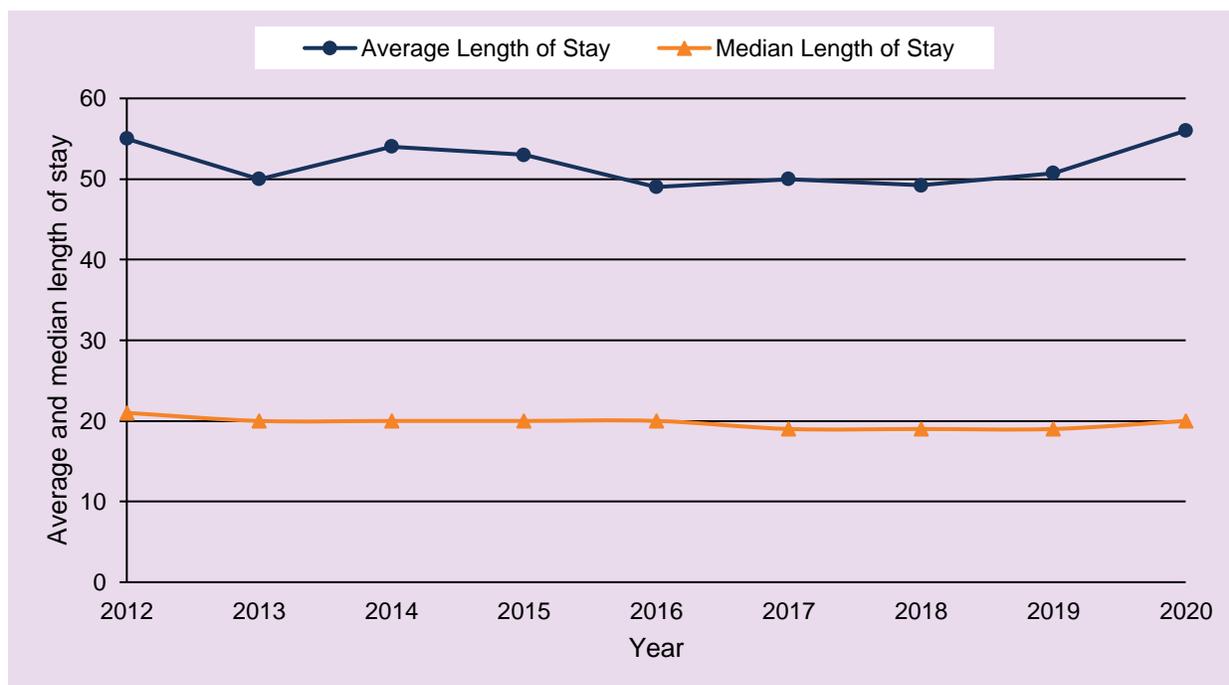
**Exhibit 6.4. Nursing facility length of stay by decile groups of facilities, Oregon 2020**



Source: CMS Minimum Data Set

Exhibit 6.5 shows the trend in average and median lengths of stay for nursing facility residents in Oregon from 2012 to 2020. The average length of stay had been stable from 2016 through 2019. Median length of stay also changed little during those years. There was a significant increase in average length of stay from 51 days in 2019 to 56 days in 2020. As described in more detail in Section 10, this increase is largely due to the COVID-19 pandemic.

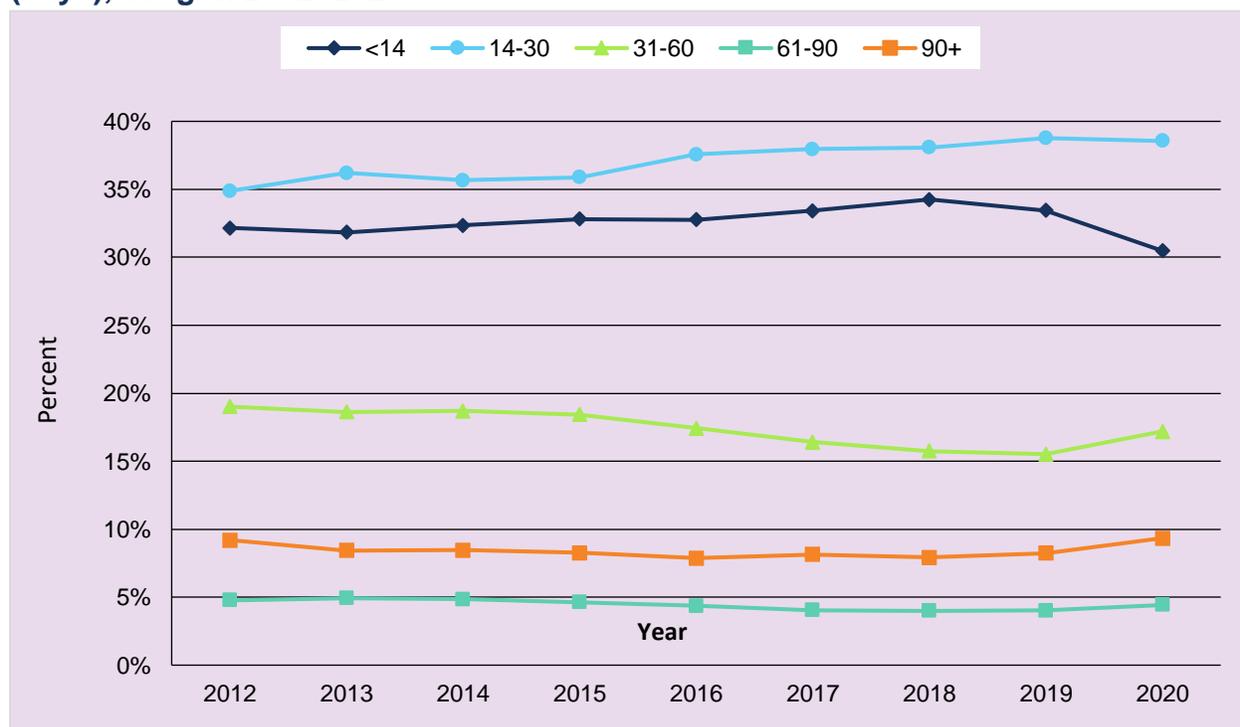
### Exhibit 6.5. Trend in average and median lengths of stay, Oregon 2012–2020



Source: CMS Minimum Data Set

Exhibit 6.6 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 had increased slightly from 2012 to 2019, then dropped noticeably in 2020 as a result of the COVID-19 pandemic. Many of these shortest stays are for individuals who need temporary post-acute care after elective surgeries, which declined during the pandemic (Baum & Schwartz, 2020). The proportion of stays that lasted 14-30 days had increased from 2012 through 2019, then plateaued in 2020. In contrast, the proportion of stays that were 31-60 days long had decreased from 2015 through 2019 (potentially reflecting efficiency improvement among short stay residents) but increased noticeably in 2020. The proportion of stays lasting 90+ also increased in 2020. The proportions of stays lasting 61-90 days have changed little over the years. Disaggregating these trends further by age group (Appendix Figures 1-4) shows that the trends through 2019 were driven by residents aged 45-64 and 75+, but the changes in 2020 were observed in all age groups.

**Exhibit 6.6. Trend in average length of stay by different length of stay categories (days), Oregon 2012–2020**



Source: CMS Minimum Data Set

The impact of PDPM on average length of stay is not yet fully clear. We disaggregated average length of stay by month for SFY 2020 and SFY 2019 (Appendix Figures 5 and 6). For the first five months of PDPM implementation in SFY 2020 (October 2019 – February 2020), the average length of stay for short stay residents (who comprised 91% of discharges in those months) was 22.5 days, compared to 21.9 days in the same months of SFY 2019. However, the average length of stay for mid-length and long stay residents discharged in those months (October-February), was the same in SFY 2020 as in SFY 2019.

## Hospitalizations linked to nursing facility stays

Although more than nine in 10 admissions to nursing facilities were from hospitals, MDS data do not provide complete information about why these residents were hospitalized. Such information is helpful in understanding the mix of clinical needs among nursing facility residents, because their care often focuses on helping them recover from conditions for which they were hospitalized.

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 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. To account for the effect of the interrupted stay policy, we expanded the aligned date margin from plus or minus two days to three days. Overall, 26,350 hospital discharges were linked to MDS stays, accounting for 82.0% 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. Six 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 49 days for stays linked to hospital discharges, with a median of 20 days.

The proportions of linked stays with hospital discharges were similar to 2018 and 2019 in the medical, surgical, trauma, and other categories. The overall average nursing facility length of stay for residents admitted from a hospital had been stable between 2016 and 2019, but jumped in 2020, probably due to the COVID-19 pandemic<sup>17</sup>.

Exhibit 6.7 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 22-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 41 days. Patients who had been hospitalized for infectious conditions accounted for 18% of nursing facility stays linked to hospitalizations and had an average nursing facility length of stay of 63 days. Sepsis accounted for more than half of these hospitalizations, with an average 70-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 38 days. Hospitalizations for pulmonary conditions (of which almost half were

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<sup>17</sup> The 2016 through 2020 reports present length of stay data for nursing facility residents discharged in the report year (even if they were admitted in prior years).

pneumonia or respiratory failure) preceded 6% of linked stays, with an average nursing facility length of stay of 66 days. Residents who had been hospitalized for a stroke or transient ischemic attack (TIA) made up 5% of linked stays, with an average 49-day nursing facility length of stay.

**Exhibit 6.7. Nursing facility length of stay (days) by hospital MS-DRG, Oregon 2020**

Category of hospital MS-DRG	Percent of hospital discharges	Average length of nursing facility stay
Orthopedic	26%	33
Infectious	18%	63
Cardiology and cardiac surgery	10%	38
Other	7%	57
Pulmonary	6%	66
Neurology and neurosurgery	5%	55
Trauma	5%	41
Stroke and transient ischemic attack	5%	49
Gastroenterology	4%	45
Vascular	3%	51
Endocrine	3%	56
General surgery	2%	42
Urology	3%	72
Renal failure	2%	59
Ventilator	1%	49
<b>All discharges</b>	<b>100%</b>	<b>49</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 2020, and MDS data can be linked to hospital discharge data. Stays include both planned and unplanned stays.

# Section 7. Acuity of residents

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## Acuity measurements

Acuity 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 2020 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 2020 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

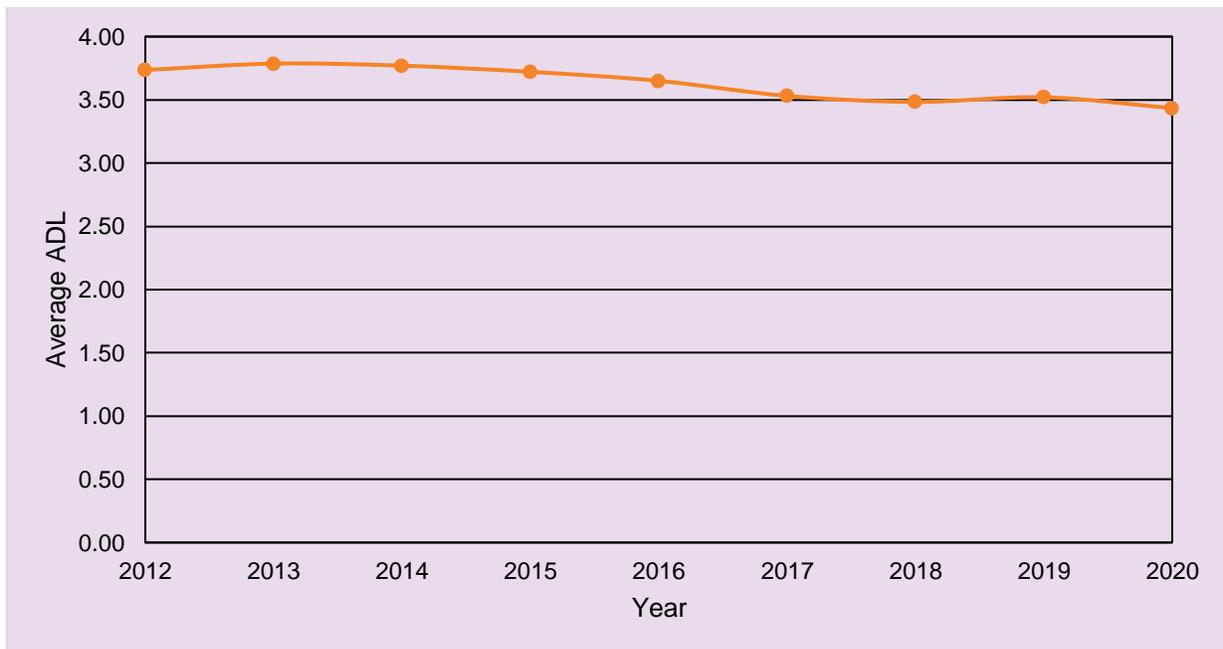
ADLs measure the extent to which care recipients cannot perform self-care tasks (Katz et al., 1963). ADLs are used to characterize individuals' levels of caregiving need (National Center for Health Statistics, 2015), whether on a temporary or indefinite basis. Once admitted to a nursing facility, residents 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>18</sup> transferring, eating, dressing, toileting, and bathing ADLs.

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<sup>18</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 2020. The average number of ADLs individuals needed help with during their stays has declined by nearly 8%, from 3.7 in 2012 to 3.4 in 2020.

**Exhibit 7.1. Trend in average number of activities of daily living for which help was needed, Oregon 2012–2020**



Source: CMS Minimum Data Set

In 2020, stays with dependence on five ADLs represented the greatest proportion of short stays (38%), mid-length stays (46%) and long stays (45%; 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). The proportion of stays that involved dependence on at least five ADLs dropped noticeably from 2019 to 2020: from 46% to 42% percent of short stays, 59% to 57% of mid-length stays, and 63% to 59% of long stays.

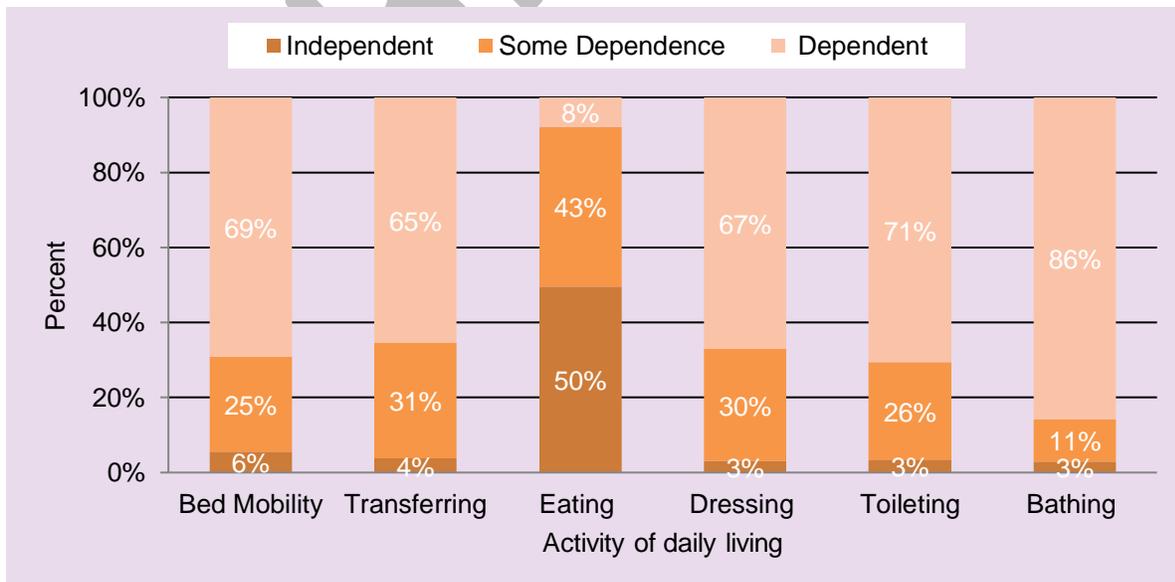
**Exhibit 7.2. Activity of daily living (ADLs) dependence by length of stay, Oregon 2020**



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 65% of all stays for all ADLs except for eating.

**Exhibit 7.3. distribution of dependence level by activity of daily living, Oregon 2020**



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 (86%) in 2020 and eating the lowest (8%). Long and mid-length stays had similar proportions of complete dependence for all six ADLs, and their level of complete dependence was significantly higher than for short stays. 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 and transferring). 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 2020**

	Bed mobility	Transferring	Eating	Dressing	Toileting	Bathing
<b>Length of stay</b>						
Short stay	67%	63%	6%	64%	68%	84%
Mid-length stay	78%	75%	15%	79%	81%	91%
Long stay	77%	75%	17%	80%	82%	92%
<b>Age group</b>						
Under 18	66%	97%	94%	96%	97%	99%
18-24	64%	82%	53%	66%	78%	86%
25-44	56%	54%	15%	56%	60%	74%
45-64	55%	52%	8%	54%	58%	76%
65-74	66%	62%	7%	64%	68%	84%
75-84	73%	68%	7%	70%	73%	88%
85 and over	78%	74%	8%	76%	79%	91%
<b>Total complete dependence</b>	<b>69%</b>	<b>65%</b>	<b>8%</b>	<b>67%</b>	<b>71%</b>	<b>86%</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. 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 2020 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 of the most common individual diagnoses. Nearly seven in ten nursing facility stays (68.7%) involved at least one acute medical condition, with anemia, cancer, and urinary tract infections being the most common individual diagnoses.

Nearly all stays (96.3%) involved at least one chronic medical condition, with seven in ten involving hypertension, nearly five in ten involving hyperlipidemia, and near four 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, while approximately one in three stays involved end stage renal disease (ESRD), and/or gastric ulcer or reflux disease, and/or asthma or chronic obstructive pulmonary disease (COPD). Approximately one in five stays involved coronary artery disease. 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 six another type of fracture. Approximately, one in six 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>19</sup> Although not directly comparable, Harris-Kojetin et al. (2019) report that the national prevalence of dementia among nursing facility residents was approximately 48%. Severely disabling conditions such as full or partial paralysis or traumatic brain injury were present in eleven percent of stays. Less than one percent of stays did not have any of these diagnoses.

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<sup>19</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 2020**

Category	Percent of stays	Category	Percent of stays
Specific MDS diagnosis		Specific MDS diagnosis	
<b>Acute medical</b>	<b>68.7</b>	<b>Chronic medical cont'd</b>	
Anemia	27.9	Cataracts, glaucoma, macular degeneration	11.2
Transient ischemic attack or stroke	13.2	Peripheral artery disease	8.4
Cancer	12.9	Orthostatic hypotension	4.9
Malnutrition	12.3	Crohn's disease	3.2
Urinary tract infection	12.1	Cirrhosis	2.7
Respiratory failure	10.6	<b>Fractures</b>	<b>25.0</b>
Septicemia	8.4	Other fracture	16.3
Hyponatremia	7.6	Hip fracture	10.2
Pneumonia	7.1	<b>Neurologic</b>	<b>16.9</b>
Deep vein thrombosis	5.1	Seizure, epilepsy	6.8
Viral hepatitis	2.6	Parkinson's disease	4.1
<b>Chronic Medical</b>	<b>96.3</b>	Neurogenic bladder	3.8
Hypertension	74.1	<b>Behavioral</b>	<b>46.1</b>
Hyperlipidemia	49.4	Depression	38.7
Diabetes	37.4	Anxiety	19.8
Atrial fibrillation	33.8	Post-traumatic stress disorder	2.9
Ulcer or reflux disease	31.1	<b>Dementia</b>	<b>19.9</b>
End-stage renal disease	30.7	Non-Alzheimer's	18.2
Asthma, COPD...*	29.3	Alzheimer's	3.9
Arthritis	28.8	<b>Paralysis</b>	<b>11.1</b>
Heart failure	28.4	Hemiplegia, paraplegia, quadriplegia	2.6
Thyroid disorder	24.7	Traumatic brain injury (TBI)	1.6
Coronary artery disease	22.2	<b>Severe and persistent mental illness (SPMI)</b>	<b>7.1</b>
Benign prostatic hyperplasia	12.8	Manic depression	3.7
Osteoporosis	12.6	Schizophrenia	2.9

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 33,277 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 slightly more common in mid-length or long stays, but the prevalence of chronic medical conditions was high regardless of length of stay. Almost all short stays involved residents with a chronic medical condition. Fractures were more common in short stays. However, the prevalence of other categories of diagnoses, including neurologic conditions, behavioral health conditions, and paralysis were similar among residents with long and mid-lengths of stay, and higher than among short length of stay residents.

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, 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 2020**

Diagnosis category	Percent of stays with one or more diagnoses in category		
	Short stay	Mid-length stay	Long stay
Acute medical	70%	70%	59%
Chronic medical	97%	96%	94%
Fractures	28%	17%	15%
Neurologic	14%	26%	26%
Behavioral	44%	55%	53%
Dementia	16%	26%	37%
Paralysis and TBI	8%	20%	19%
SPMI	5%	13%	15%
None of the above	1%	1%	1%
<b>Total stays</b>	<b>30,168</b>	<b>2,172</b>	<b>937</b>

Source: CMS Minimum Data Set. Data in this table are based on 33,277 stays that have a diagnosis-coded entry, reentry, or annual assessment.

## Treatments provided to nursing facility residents

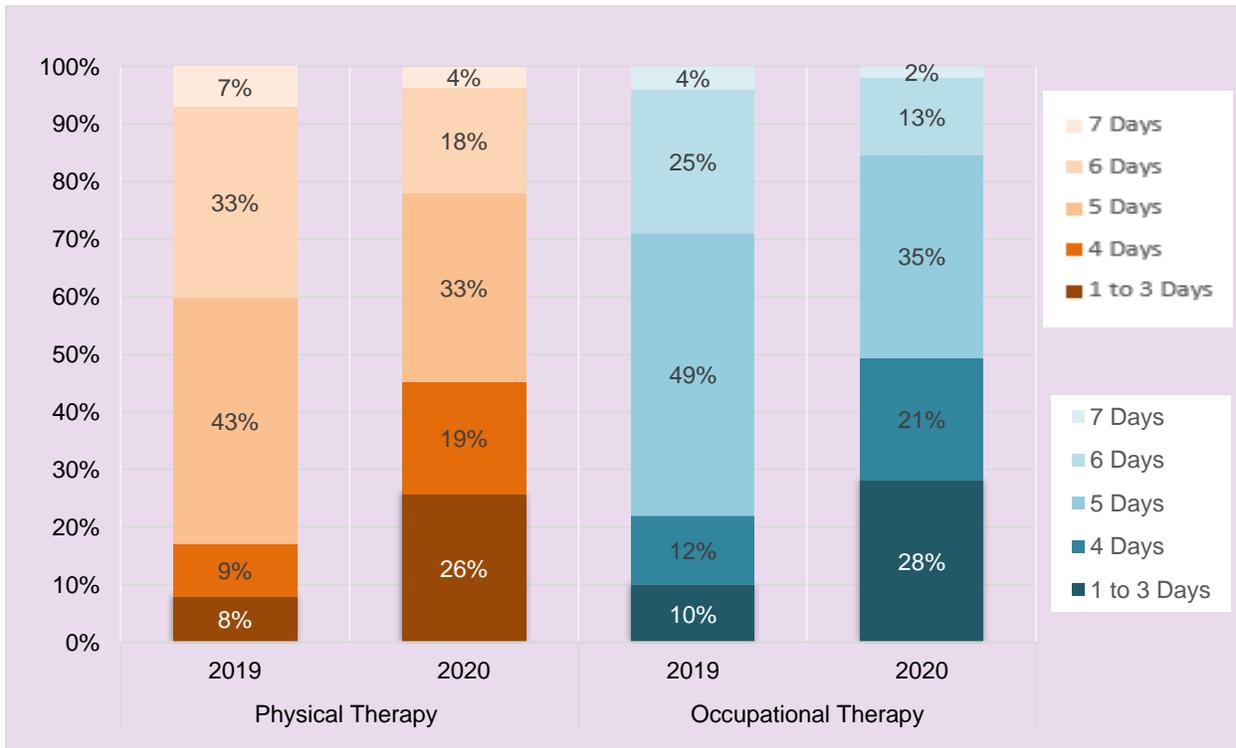
MDS captures information about selected types of treatments provided to nursing facility residents. We measured the number of stays for which specific types of treatment were provided within seven days of the assessment.

As shown in Exhibit 7.7, most short stays involved physical and occupational therapy in the period following an admission or entry to a nursing facility. Physical therapy and occupational therapy were provided five or more days per week for 55% and 51% of short stays, respectively.

The distribution of the number of days of physical and occupational therapy significantly changed in SFY 2020 compared to SFY 2019. The proportion of short stay residents with one to three days of physical therapy increased from 10% in 2019 to 26% in 2020, and the proportion with four days of physical therapy from 12% to 19%. In contrast, the proportion of short stay residents with five, six, or seven days of physical therapy dropped 10%, 15%, and 3%, respectively. Similarly, the proportion of short stay residents with one to three days of occupational therapy increased from 8% in 2019 to 28% in 2020, and the proportion with four days of occupational from 9% to 21%. The proportion of short stay residents with five, six, or seven days of occupational dropped 14%, 12%, and 2%, respectively.

The fact that these changes in physical and occupational therapy use began in October 2019 (see Appendix Figures 7 and 8) suggest that they reflect the changed reimbursement incentives of PDPM. However, MDS provides limited data to evaluate the effect of these changes in PT and OT utilization on nursing facility outcomes. The percentage of nursing facility residents who were discharged to the community did not change in SFY 2020 compared to SFY 2019. As described above in Section 6 (and shown in Appendix Figures 5 and 6), average length of stay for short stay residents (for whom PT and OT utilization dropped after PDPM implementation) increased in October through February of SFY 2020 compared to the same months in SFY 2019. In contrast, average length of stay for mid-length and long stay residents in October through February did not change in SFY 2020 compared to SFY 2019. In the last 4 months of SFY 2020 (March-June), average lengths of stay spiked as a result of COVID-19, which makes it difficult to determine the potential impact of PDPM during those months.

**Exhibit 7.7. Distribution of number of days of physical and occupational therapy within seven days of assessment, short stay residents, Oregon 2020 vs. 2019**



Source: MDS Minimum Data Set. Data in this table are based on 39,548 stays that have a therapy-coded entry, reentry, or annual assessment in MDS.

Additionally, oxygen was administered during 17.1% of nursing facility stays in SFY 2020 (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 3.2% 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

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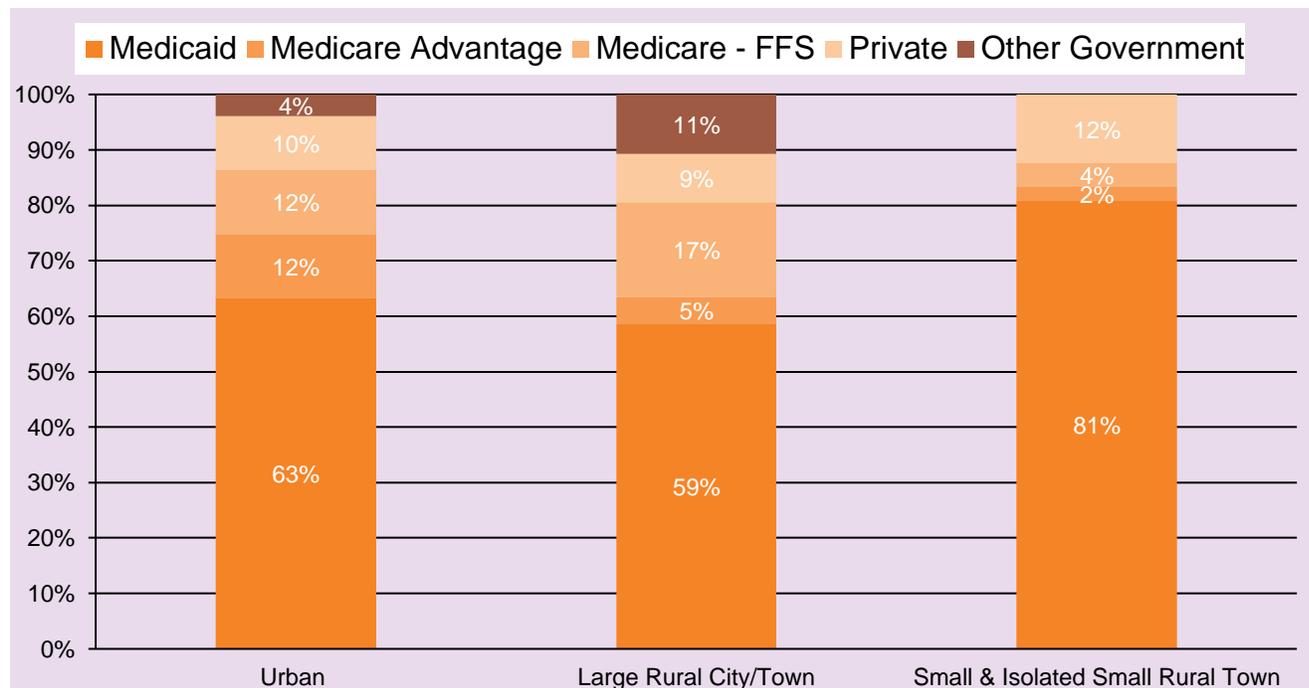
Medicaid was the primary payer for 64% of resident days in Oregon nursing facilities during 2020. Private payers (including commercial insurers, long-term care insurance plans, and self-pay residents) paid for 10% of all resident days. Medicare Fee-For-Service (FFS), which covers up to 100 days of skilled nursing facility care per year, paid for 13% of resident days, and Medicare Advantage plans<sup>20</sup> paid for 10%. Other government payers (including the Veterans Administration) paid for the remaining 4% of resident days in 2020. Despite the implementation of PDMP in October 2019 and the COVID-19 pandemic beginning in March 2020, the proportion of resident days paid by each payer changed little in 2020 compared to 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 2020, Medicaid was the predominant payer in urban as well as rural areas, paying for 63% of resident days in urban areas, 59% in large rural cities/towns and 81% in small/isolated rural towns. The proportion of days paid by Medicare FFS was highest (17%) in large rural cities/towns, and the private pay proportion was highest (12%) in small/isolated rural towns.

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<sup>20</sup> Prior to 2015, Medicare Advantage days were mostly included in the private payer category.

**Exhibit 8.1. Payer Sources for nursing facility care by rurality, Oregon 2020**



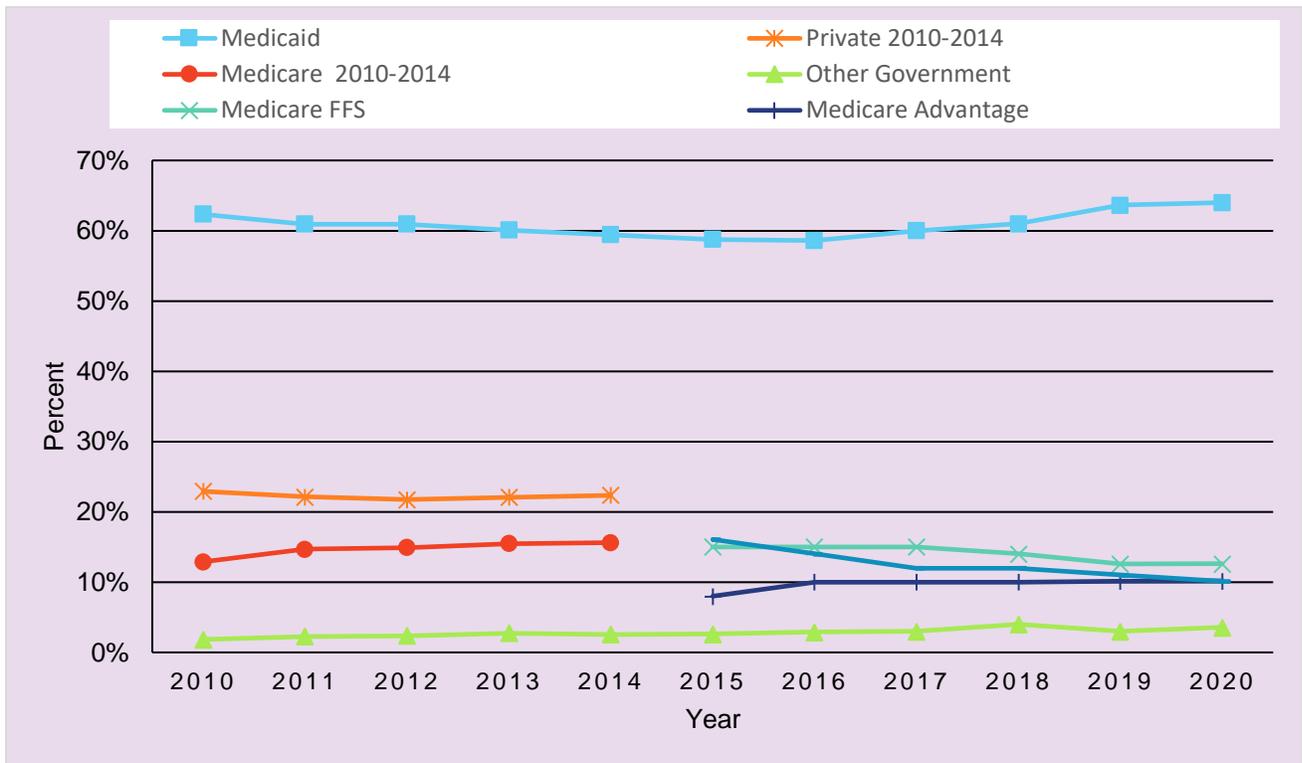
Source: Cost Reports and Revenue Statements

Medicare Advantage, the managed care option for Medicare beneficiaries, is an important payer in the Oregon health care market. At 42% of eligible beneficiaries, Oregon has the third highest rate of Medicare Advantage enrollment among states (Yoo, 2021). 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 2015-2020 are therefore not directly comparable to those of prior years.

The proportion of nursing facility resident days paid for by Medicaid was 64%; this share fell from 2010 to 2016 but has risen again in recent years. 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 FFS remained stable from 2015 to 2017, before declining slightly from 2018-2020.

**Exhibit 8.2. Payer sources for nursing facility care, Oregon 2010-2020**



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

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## 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 Care Compare.

CMS 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>21</sup> In SFY 2020, 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. 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>22</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 2019. Nevertheless, Oregon facilities' seasonal flu vaccination rates for short and long stay residents remained somewhat lower than the averages for all nursing facilities nationwide, while short and long stay rates for pneumococcal pneumonia vaccinations in Oregon facilities surpassed national averages. The proportion of short stay residents whose functional status improved was slightly higher than in 2019 and remained higher in Oregon than the national average.

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<sup>21</sup> This CMS definition is slightly different from the definition of short stay (90 days or fewer) 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>22</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. 2020**

	All Oregon facilities	Best	Second	Third	Fourth	All U.S. nursing facilities
<b>Long stay</b>						
Seasonal flu vaccine	94%	99%	97%	94%	85%	96%
Pneumococcal vaccine	95%	100%	99%	96%	85%	94%
<b>Short stay</b>						
Seasonal flu vaccine	82%	93%	88%	82%	67%	83%
Pneumococcal vaccine	85%	98%	93%	86%	65%	84%
Improved functional status	71%	82%	74%	68%	58%	69%

Source: Care 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 nine of these 17 quality measures.

Fifteen percent of long stay residents newly received an antipsychotic medication compared with two percent of short stays.<sup>23</sup> These rates are slightly higher than or the same as the national average; the rate for long stay residents is similar to 2019, however the rate for short stay residents is lower than 2019. 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 2019 and 2020.

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 2020 was similar to that in 2019 and 2018. The same pattern was observed for pressure ulcers among short stay residents.

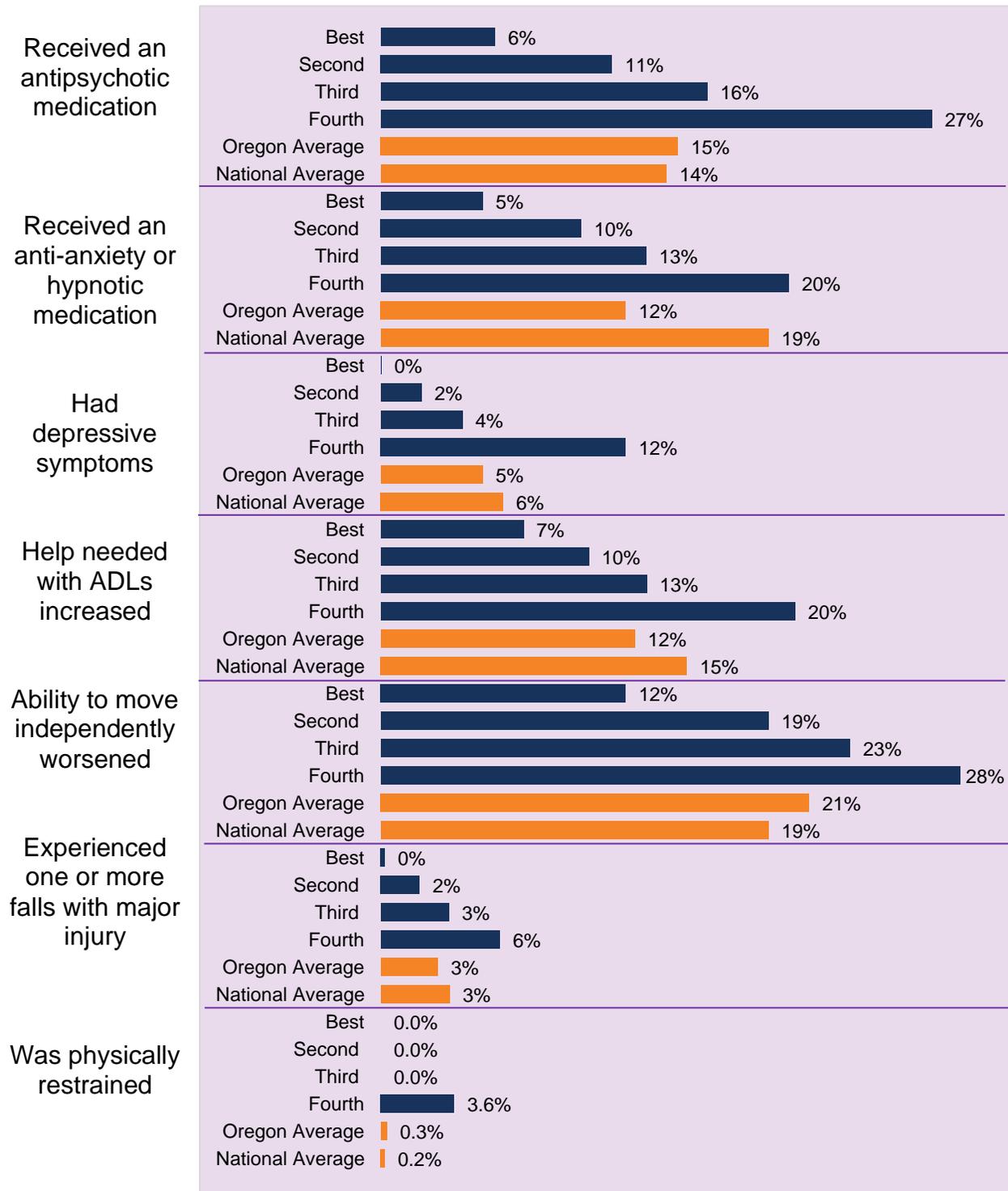
In 2020, both short and long stay residents in Oregon facilities were more likely than short and long stay residents nationwide to have an outpatient emergency department visit. However, long stay residents in Oregon facilities were less likely than long stay residents nationwide to be hospitalized (per 1000 long stay resident days). Short stay

<sup>23</sup> This measure excludes residents diagnosed with schizophrenia, Huntington's disease, or Tourette's syndrome.

residents in Oregon were less likely to be rehospitalized after entering the nursing facility than residents nationwide.

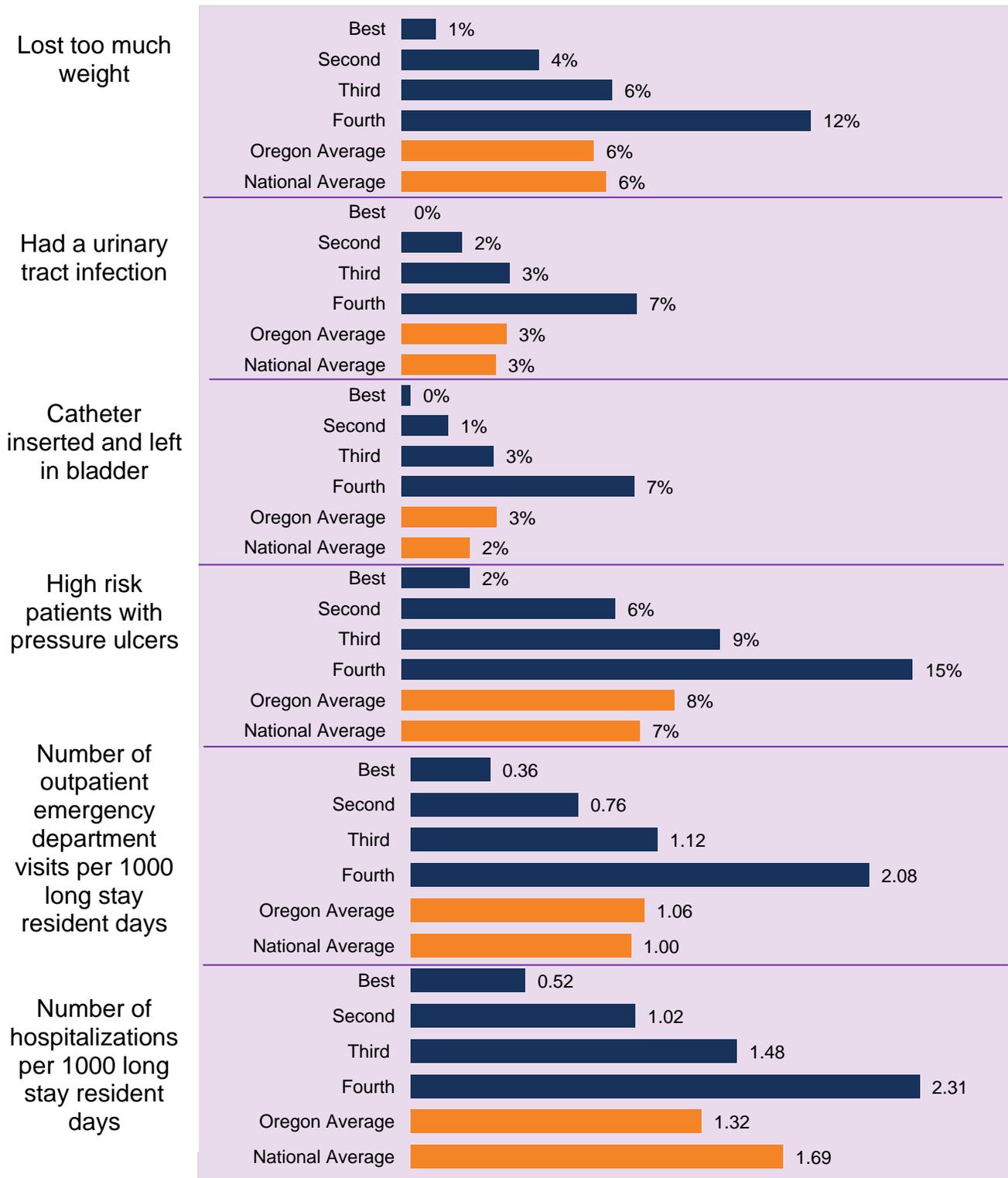
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**Exhibit 9.2. Quality measures of long stays by nursing facility groups, Oregon and U.S. 2020**



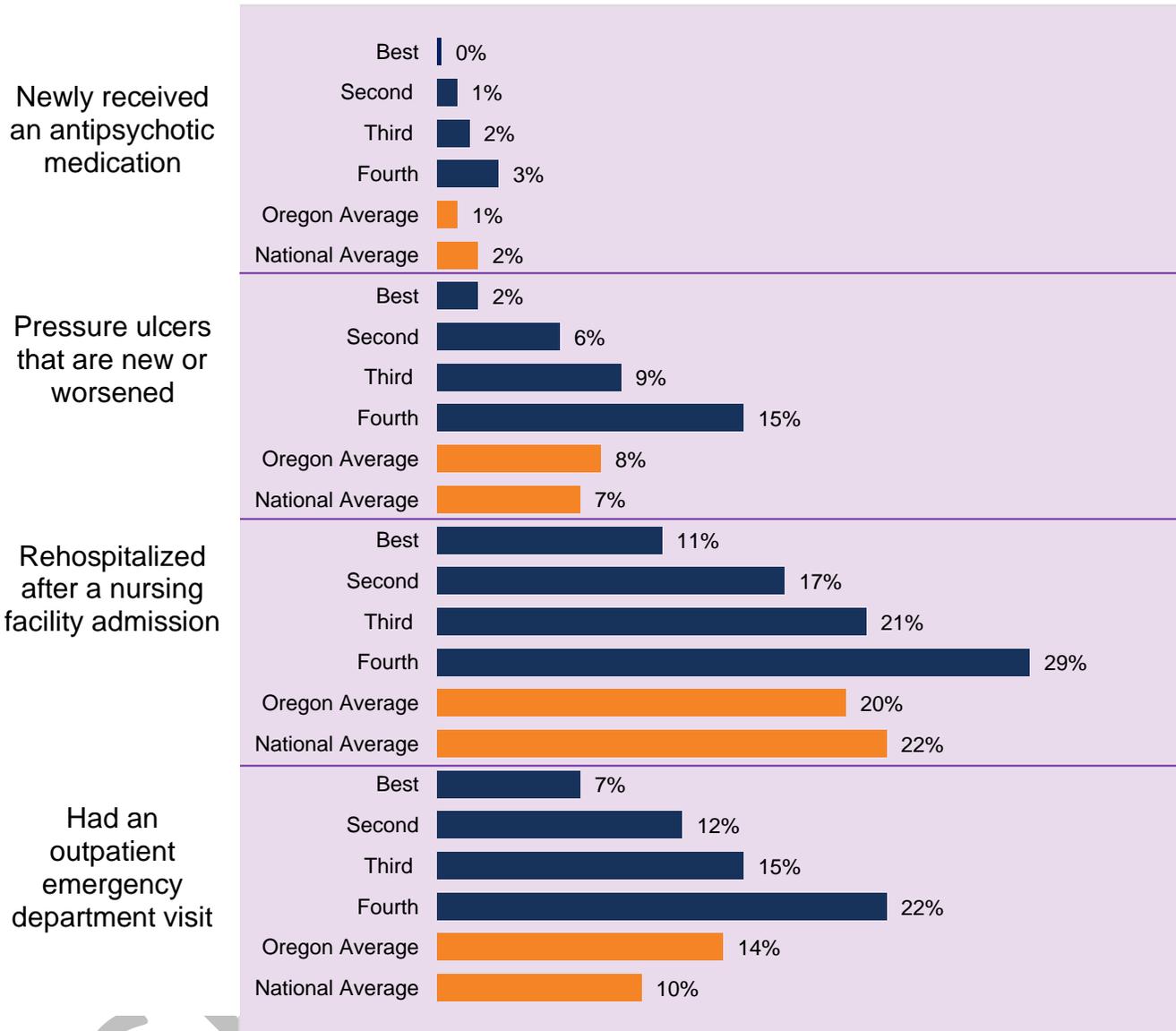
Source: Care Compare

**Exhibit 9.2. Quality measures of long stays by nursing facility groups, Oregon and U.S. 2020 (Continued)**



Source: Care Compare

**Exhibit 9.3. Quality measures of short stays by nursing facility groups, Oregon and U.S. 2020**



Source: Care Compare

# Section 10. COVID-19 in nursing facilities

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## Background

The COVID-19 pandemic began in the middle of Oregon SFY 2020, and severely impacted nursing facilities in Oregon and nationwide. This report presents data on the first few months of the pandemic, through the end of SFY 2020 June 2020.

The Centers for Disease Control and Prevention (CDC) confirmed the first US case of 2019 Novel Coronavirus (2019-nCoV)<sup>24</sup> in Washington state in January 2020, in a patient who had returned from China a few days before (CDC, 2020; AJMC, 2021). On February 29, 2020, CDC and Washington state public health officials reported the first possible coronavirus outbreak in a long-term care facility. A resident and a staff member at a Washington nursing facility were hospitalized and tested presumptive-positive for coronavirus. Community spread was also reported in Oregon and California in February 2020 (CDC, 2020).

Oregon's first community presumptive coronavirus case was identified on February 28, 2020 in Washington county. The following day, ODHS issued strict guidelines restricting visitations to care facilities including nursing facilities. By March 8, 2020 there were 14 presumptive or confirmed cases in Oregon, and Governor Brown declared a state of emergency. Her Executive Order restricted non-essential visitor entry to nursing facilities, residential care facilities and assisted living facilities, including those with memory care endorsements, requiring 100% screening of all individuals allowed to enter facilities, documenting screening procedures for all persons entering, and limiting community activities (ODHS, 2020a)(ODHS, 2020b).

Oregon reported its first COVID-19 death on March 14, 2020, at the Portland VA Medical Center. On March 16, 2020, ODHS imposed further restrictions on visitors to long-term care and other residential care facilities. To conserve personal protective equipment (PPE), another Executive Order prohibited elective and non-urgent procedures across all care settings beginning March 23, 2020, with a reschedule no earlier than June 15 (Office of the Governor, 2020).

The first presumptive case in an Oregon nursing facility was identified on March 11, 2020. By April 10, 2020, 32 Oregon long-term care facilities reported having either a resident, staff member, or both test positive for coronavirus. That day, ODHS

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<sup>24</sup> This report uses the term "coronavirus" to refer to the Novel Coronavirus (2019-nCoV), and "COVID-19" to refer to the disease caused by this virus.

contracted with Laurelhurst Village to be the first standalone emergency care center to care for COVID-19 patients. It was intended to house COVID-19 patients from other long-term care facilities that could not keep COVID-19 patients adequately isolated. On April 16, 2020, Pacific Health & Rehabilitation Center was designated as the second standalone emergency center. Both centers were operational as designated COVID-19 care centers through June 2020 (KTVZ news, 2020).

In the early months of the pandemic, nursing facilities struggled to obtain resources such as personal protective equipment and coronavirus testing. One facility, Healthcare at Foster Creek, had 120 coronavirus infections and 34 COVID-19 deaths between April 3 and May 9, it. ODHS initially provided assistance to deal with the surge of cases, but after continuing problems ordered the facility to close in early May (Monahan, 2020).

In eight states including Oregon (52%), at least half of COVID-19 deaths through April 2020 were linked to nursing facilities (National Association of Counties, 2020). Nationwide, approximately one-third of COVID-19 deaths have been linked to nursing facilities. Long-term care facilities accounted for 4% of all US coronavirus cases and 32% of US COVID-19 deaths by April 2021 (NY Times, 2021).

## Data and methods

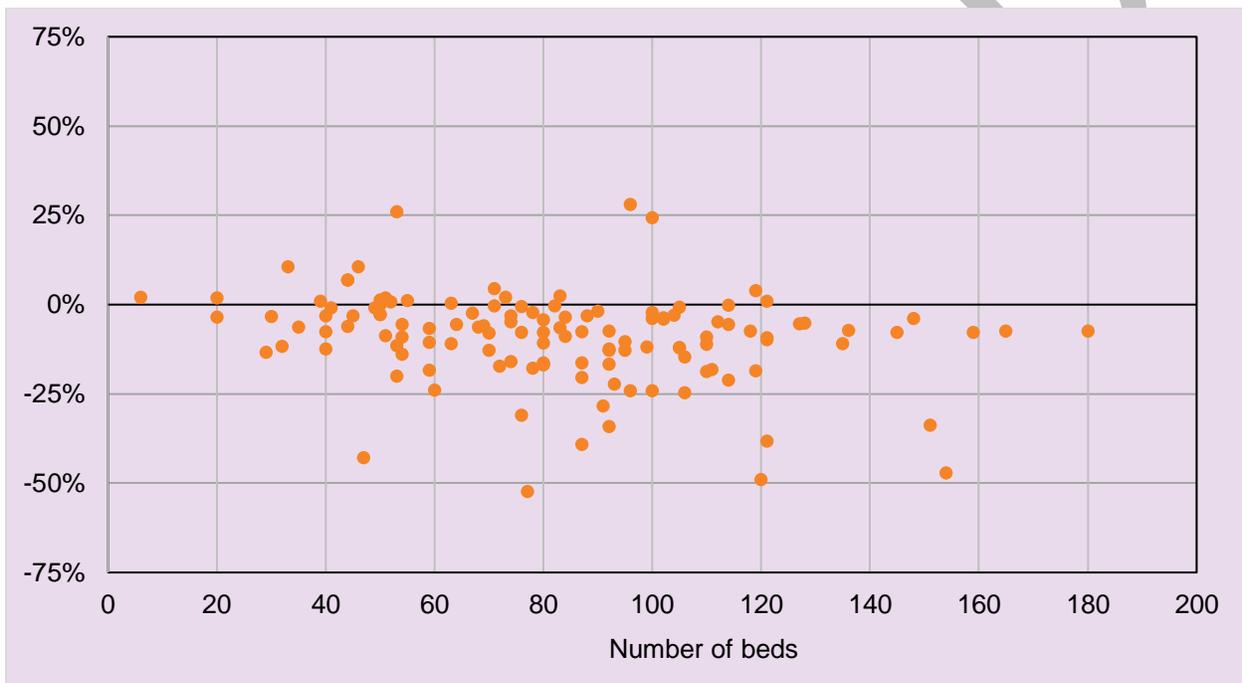
The COVID-19 began halfway into the Oregon SFY covered by this report, and so this year's report analyzed monthly (rather than just annual) trends in data derived from Cost Reports/Revenue Statements and MDS. This year's report also analyzed additional data collected by CMS on coronavirus cases and COVID-19 mortality in nursing facilities. (See Technical Notes for further details.)

CMS began requiring nursing facilities to report specified COVID-19 data on May 24, 2020. All cases and deaths since the beginning of the calendar year 2020 were supposed to be reported, but the accuracy of reporting retroactively and at the state level is unknown. Since May 2020, the Centers for Medicare & Medicaid Services (CMS) required nursing homes to self-report new coronavirus cases and COVID-19 deaths on a weekly basis (CMS, 2020). However, because weekly data are available only for the last month of SFY 2020, this year's nursing facility report cannot report monthly trends of those data.

## Results

Occupancy rates at Oregon nursing facilities began to fall sharply in March 2020. By May 2020, average occupancy rates had fallen to 66%, compared to 75% in May 2019. Exhibit 10.1 presents the change in occupancy rate for each nursing facility, arrayed by facility size in licensed beds at the beginning of SFY 2020. Over 100 of 130 facilities had reduced occupancy in 2020 compared to 2019, including large and small facilities.

**Exhibit 10.1 Change in nursing facility occupancy rate, 2020 vs. 2019, by number of beds**



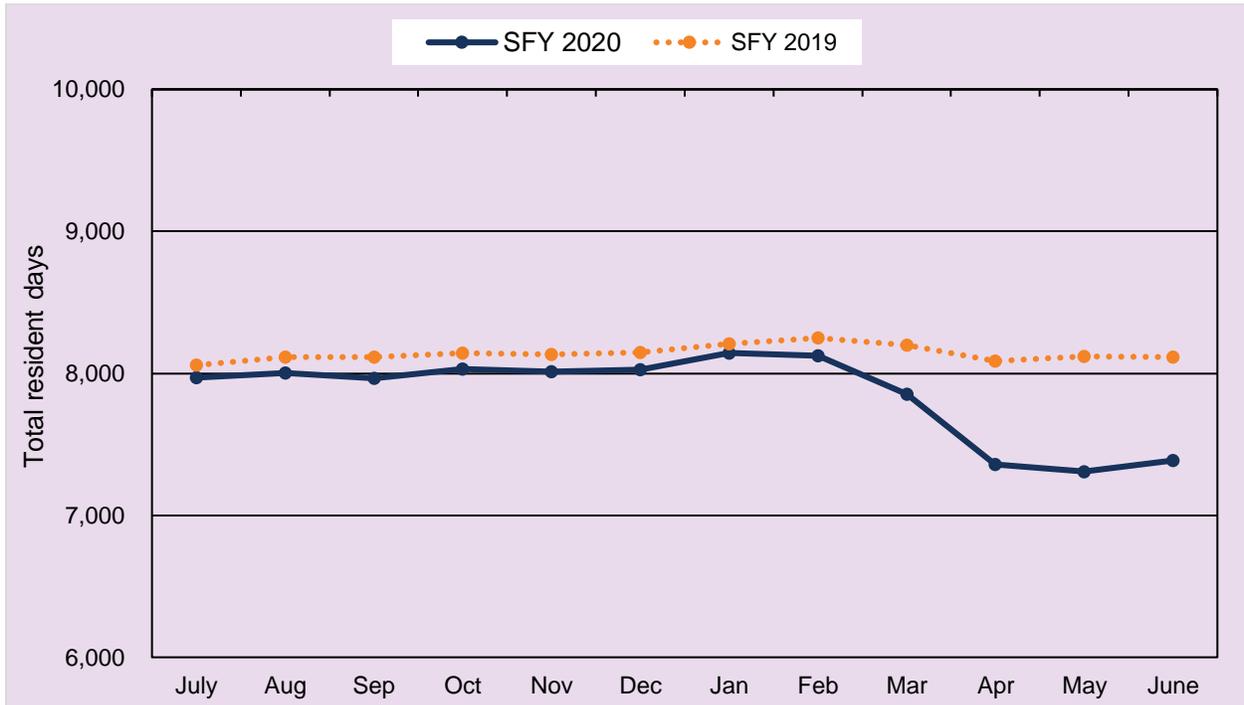
Note: Facilities with more than 200 beds or occupancy rate change  $>+75\%$  not shown  
Sources: Cost Reports and Revenue Statements

The Oregon average occupancy rate dropped from 69% in SFY 2019 to 66% in SFY2020, a drop of about 8.7%. Compared to this the national average occupancy rate increased from 84% in SFY 2019 to 85% (figure in Feb 2020) in SFY 2020 – a 1.2% increase. But the national average occupancy dropped to 78.9% by April 2020 (Spanko, 2020).

The drop in the Oregon occupancy rate began in March 2020 and continued until May 2020. This drop can be attributed to the prohibitions on elective and non-emergency surgeries and local restrictions by CMS to flatten the curve of COVID19.

Exhibit 10.2 shows the total number of resident days per day in SFY 2019 and SFY 2020; showing results by day adjusts for the varying number of days per month<sup>25</sup>. The number of resident days in May 2020 was 10.0% lower than in May 2019. Occupancy rates and total resident days began to increase by June 2020.

**Exhibit 10.2 Average daily resident days for 2020 and 2019**



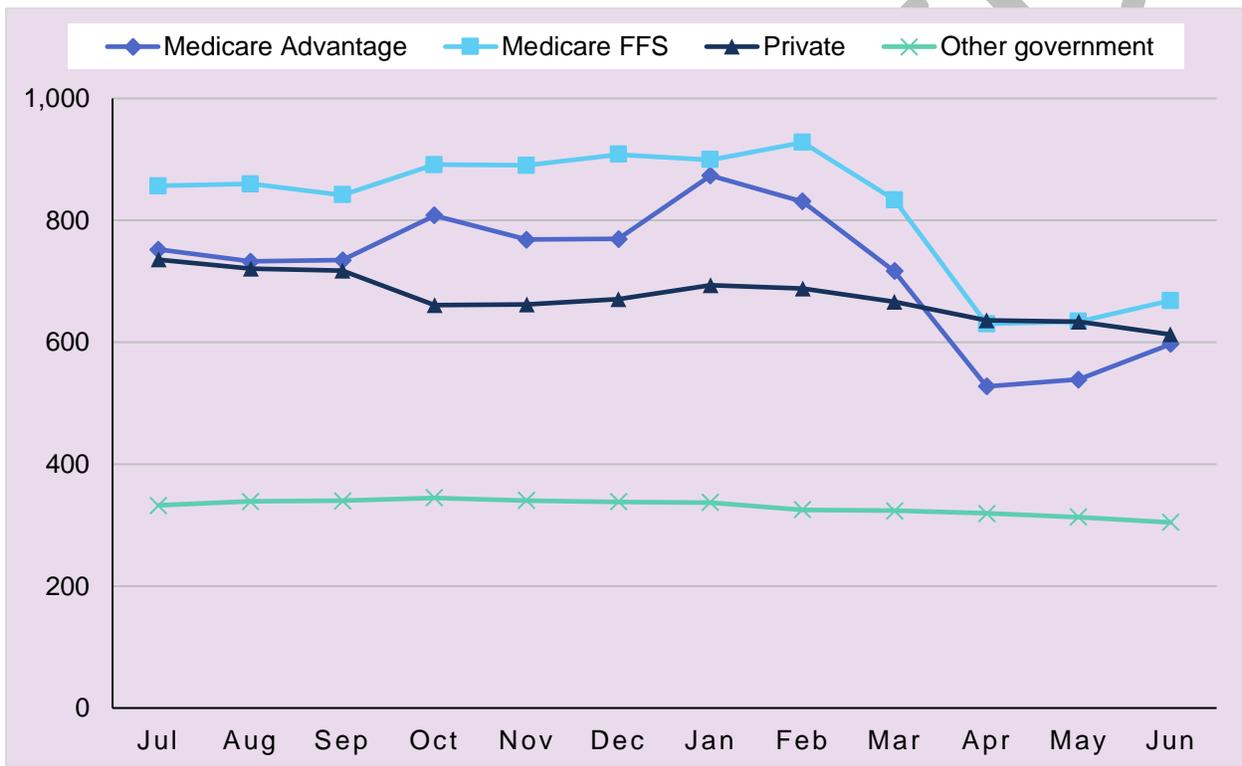
Sources: Cost Reports and Revenue Statements

Note: Resident days per day adjusted by number of days in the month (e.g.- 28 for February 31 for July)

<sup>25</sup> Including an extra leap day in February 2020.

Exhibits 10.3 and 10.4 show the total number of resident days per day in 2020, broken down by individual payer. The number of resident days funded by Medicaid (shown separately because it is the largest payer) stayed stable during the pandemic months, as did the number of private pay and other government-funded days. However, both Medicare FFS and Medicare Advantage days dropped sharply beginning in March 2020. This reflects a drop in nursing facility admissions from Oregon hospitals, which did not perform elective procedures for several weeks. Medicare resident days began to increase in May 2020.

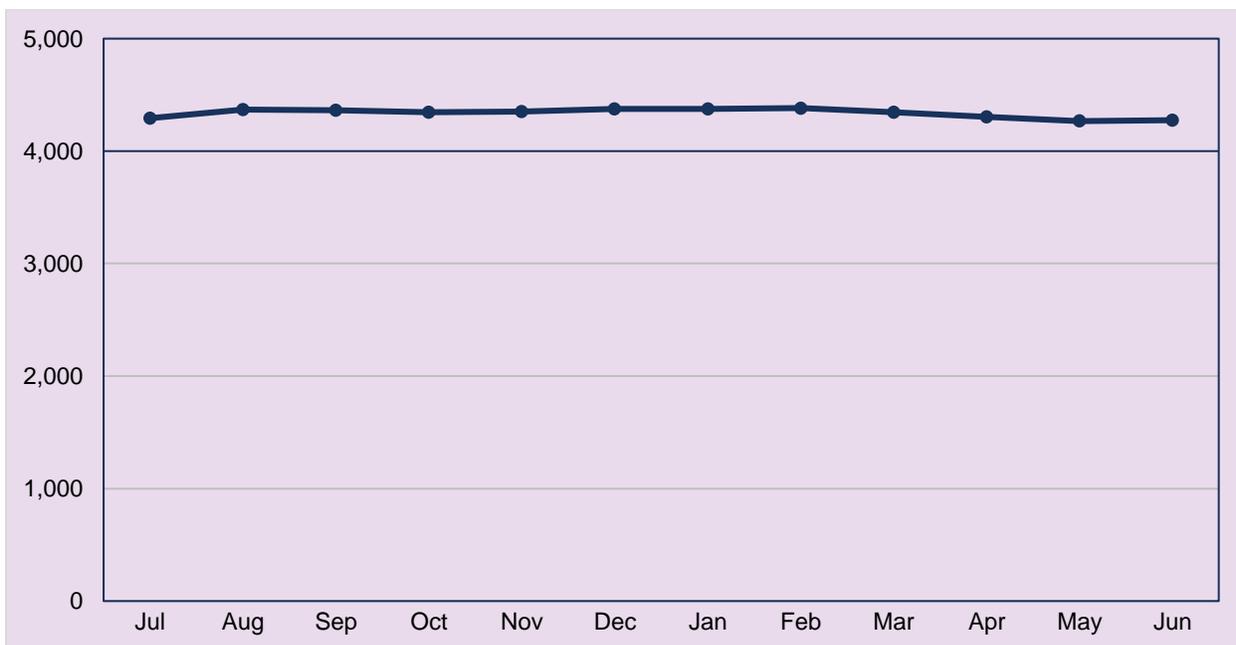
**Exhibit 10.3 Average daily resident days by payer not including Medicaid, 2020**



Sources: Cost Reports and Revenue Statements

Note: Resident days per day adjusted by number of days in the month (e.g.- 28 for February 31 for July)

**Exhibit 10.4 Average daily resident days by payer (Medicaid only), 2020**



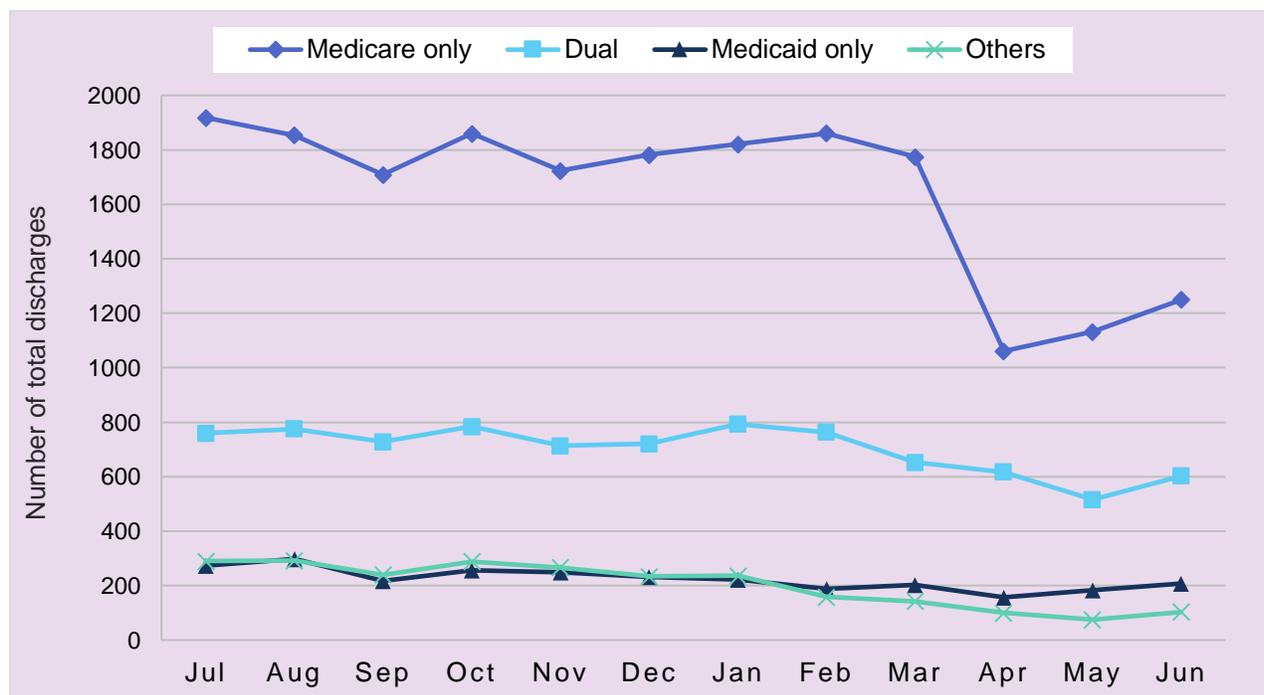
Sources: Cost Reports and Revenue Statements

Note: Resident days per day adjusted by number of days in the month (e.g., 28 for February 31 for July)

MDS provides information on the number of discharges from NFs and the payer for each discharge<sup>26</sup>. Exhibit 10.5 shows that, beginning in April 2020, discharges from nursing facilities fell sharply. Discharges covered by Medicare only, dual Medicare + Medicaid coverage, or Medicaid only were 42.2%, 34.7%, 34.3% lower, respectively, in May 2020 than in May 2019. Discharges covered by other payers were 75.3% lower. These decreases reflect the reductions in elective hospitalizations described above.

<sup>26</sup> Note that payer categories in MDS are not exactly the same as in cost reports and revenue statements.

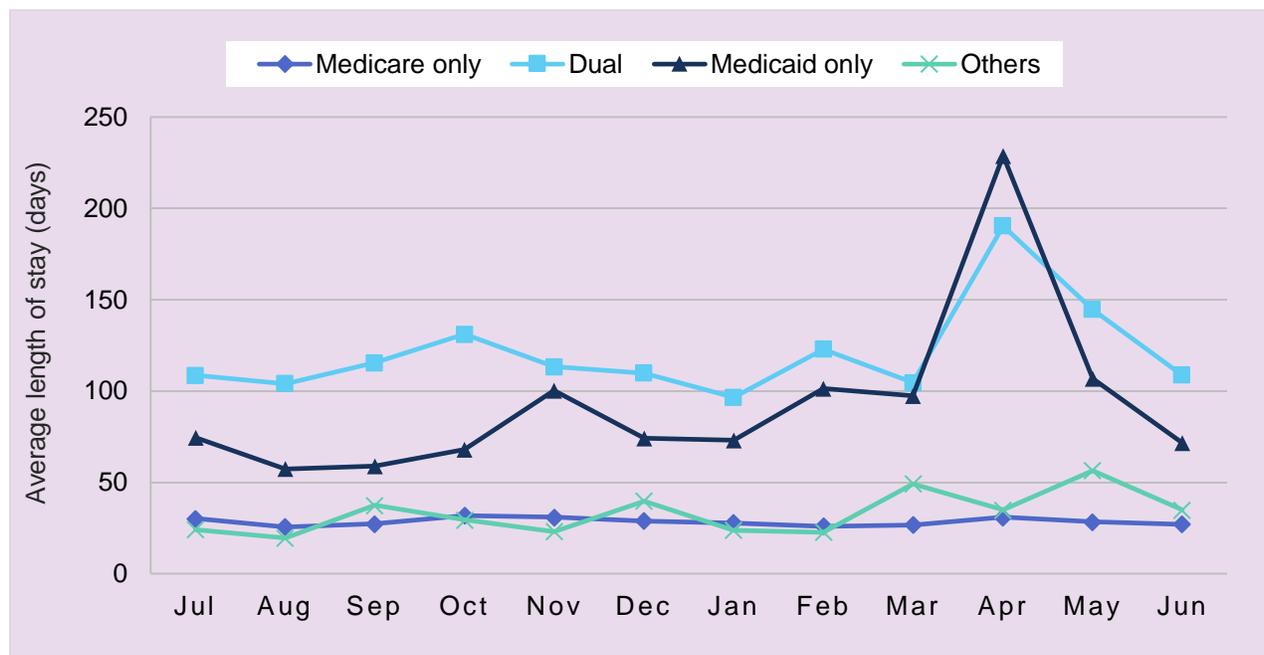
**Exhibit 10.5 Monthly trend in discharges by payer, Oregon SFY 2020**



Source: MDS Minimum Data Set.

MDS also allows calculation of length of stay for residents who are discharged from nursing facilities. Exhibit 10.6 shows the average nursing facility length of stay in each month, broken down by payer. In April 2020, the average length of stay for residents with dual Medicare + Medicaid coverage almost doubled, and length of stay for discharges covered only by Medicaid more than doubled, before returning to previous levels by June. This may be a consequence of the drop in new nursing facility admissions due to the COVID-19 pandemic, combined with the greater proportion of long stay residents among dual-eligible and Medicaid-covered residents. Average length of stay for Medicare only and other payer stays did not appear to change due to the pandemic.

## Exhibit 10.6 Monthly trend in average lengths of stay (days) by payer, Oregon SFY 2020



Source: MDS Minimum Data Set.

We also disaggregated average length of stay for short stay residents and mid-length and long stay residents in SFY 2019 and SFY 2020. For short stay residents (Appendix Figure 5), average length of stay increased sharply in April and May 2020 compared to 2019, but the number of short stay discharges in March through June 2020 was 35% lower than in the same months of 2019. For mid-length and long stay residents (Appendix Figure 6), average length of stay also jumped in April 2020 compared to 2019; the number of mid-length and long stay discharges in March through June 2020 was 10% lower than in the same months of 2019.

Nursing facilities were also required to report data on COVID-19 cases and mortality to CMS. (See Technical Notes for further information.) However, because this data collection only began in May 2020, this year's report cannot present monthly trends of those data.

From January through June 2020, data reported to CMS indicates that 179 residents were admitted to nursing facilities with COVID-19, and another 172 nursing facility residents were diagnosed with COVID-19. Among staff members, 150 cases of COVID-19 were diagnosed during this period. These data also indicate that 42 residents of Oregon nursing facilities died due to COVID-19 from January through June 2020.

# 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 2020**

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%	44%	24,122
Clackamas	26	20	77%	67%	265,506
Clatsop	22	21	96%	39%	10,166
Columbia	35	32	92%	50%	21,849
Coos	35	22	64%	50%	48,127
Crook	19	16	82%	63%	10,492
Curry	19	19	100%	44%	9,609
Deschutes	16	14	88%	62%	50,891
Douglas	22	21	97%	65%	70,467
Grant	41	21	51%	46%	6,738
Hood River	67	52	78%	37%	18,100
Jackson	19	18	92%	60%	131,211
Jefferson	11	9	81%	78%	26,470
Josephine	43	40	92%	64%	102,896
Klamath	17	17	100%	70%	27,075
Lake	56	46	82%	78%	6,850
Lane	40	32	80%	60%	282,542
Lincoln	10	10	100%	78%	15,947
Linn	50	48	97%	69%	141,907
Malheur	15	15	100%	65%	8,024
Marion	38	33	87%	68%	263,703
Multnomah	67	61	91%	67%	770,368
Polk	32	27	86%	61%	48,100
Tillamook	20	18	92%	52%	9,440
Umatilla	47	38	81%	56%	49,919
Union	33	26	78%	30%	10,455
Wasco	162	118	73%	53%	82,127
Washington	31	27	87%	68%	275,175
Yamhill	52	40	77%	59%	84,208
<b>Oregon</b>	<b>35</b>	<b>30</b>	<b>86%</b>	<b>63%</b>	<b>2,872,484</b>

Sources: Cost Reports, American Community Survey estimates for 2019

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 – 2020**

Admission Source	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Percent								
Acute hospital	93.81	93.21	93.23	93.35	94.09	94.72	95.13	95.44	95.37
Community	4.51	4.69	4.29	4.15	3.82	3.38	3.33	3.04	2.95
Another nursing facility	1.05	1.34	1.44	1.56	1.41	1.23	1.04	1.05	1.11
Other	0.18	0.22	0.41	0.43	0.19	0.17	0.10	0.10	0.13
Hospice	0.19	0.18	0.22	0.17	0.19	0.21	0.16	0.21	0.23
Psych hospital	0.14	0.15	0.19	0.14	0.09	0.11	0.11	0.05	0.08
Inpatient rehab	0.11	0.14	0.11	0.13	0.09	0.08	0.08	0.06	0.10
Long-term care hospital	0.01	0.07	0.11	0.08	0.13	0.10	0.05	0.05	0.03
Intellectual disabilities and developmental disabilities	0.01	0.00	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	0.00
<b>Total</b>	<b>100%</b>								

Source: CMS Minimum Data Set

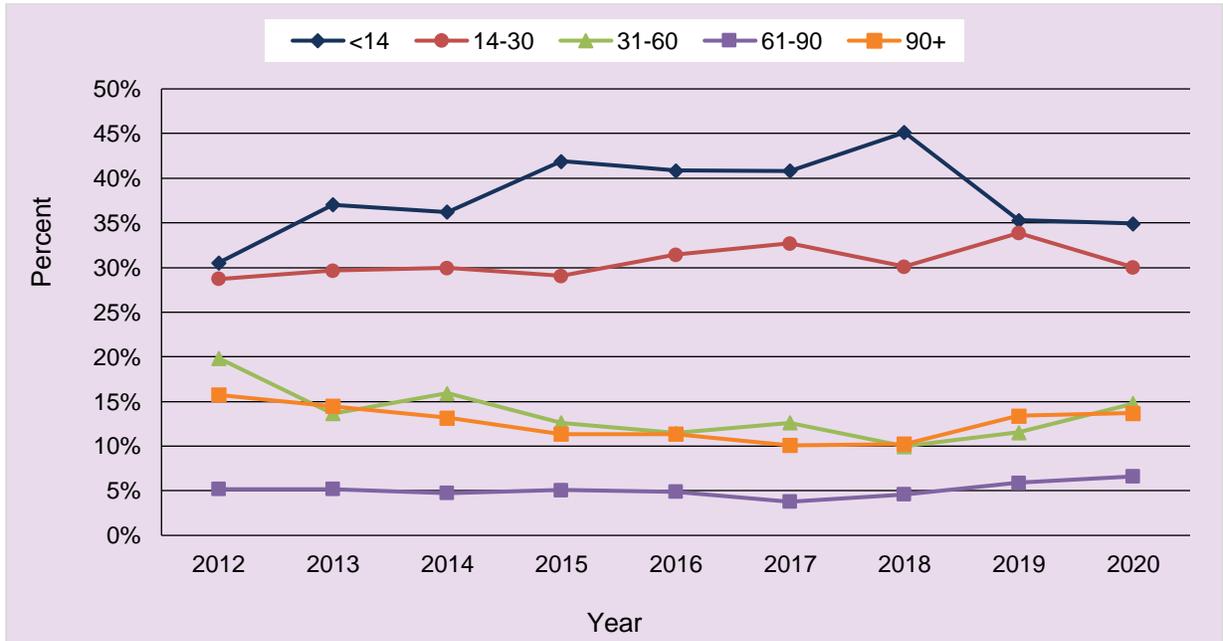
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**Table C. Discharge destination as percentage of total discharges, Oregon 2012 – 2020**

Destination	2012 Percent	2013 Percent	2014 Percent	2015 Percent	2016 Percent	2017 Percent	2018 Percent	2019 Percent	2020 Percent
Community	67.96	69.25	68.72	68.28	70.59	71.07	71.39	70.5	70.8
Acute hospital	28.50	26.47	26.50	26.74	25.19	25.47	25.59	26.89	26.40
Another nursing facility	1.88	2.13	2.37	2.48	2.12	1.91	1.72	1.61	1.82
Other	0.58	0.96	1.44	1.55	1.16	0.71	0.50	0.30	0.30
Inpatient rehab	0.48	0.60	0.53	0.49	0.49	0.40	0.38	0.28	0.30
Hospice	0.24	0.29	0.26	0.30	0.32	0.32	0.32	0.34	0.33
Psych hospital	0.14	0.13	0.11	0.09	0.07	0.08	0.07	0.04	0.03
Long-term care hospital	0.01	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.02
Intellectual disabilities and developmental disabilities	0.01	0.02	0.02	0.03	0.02	0.01	0.02	0.01	0.01
Died	0.20	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>100%</b>								

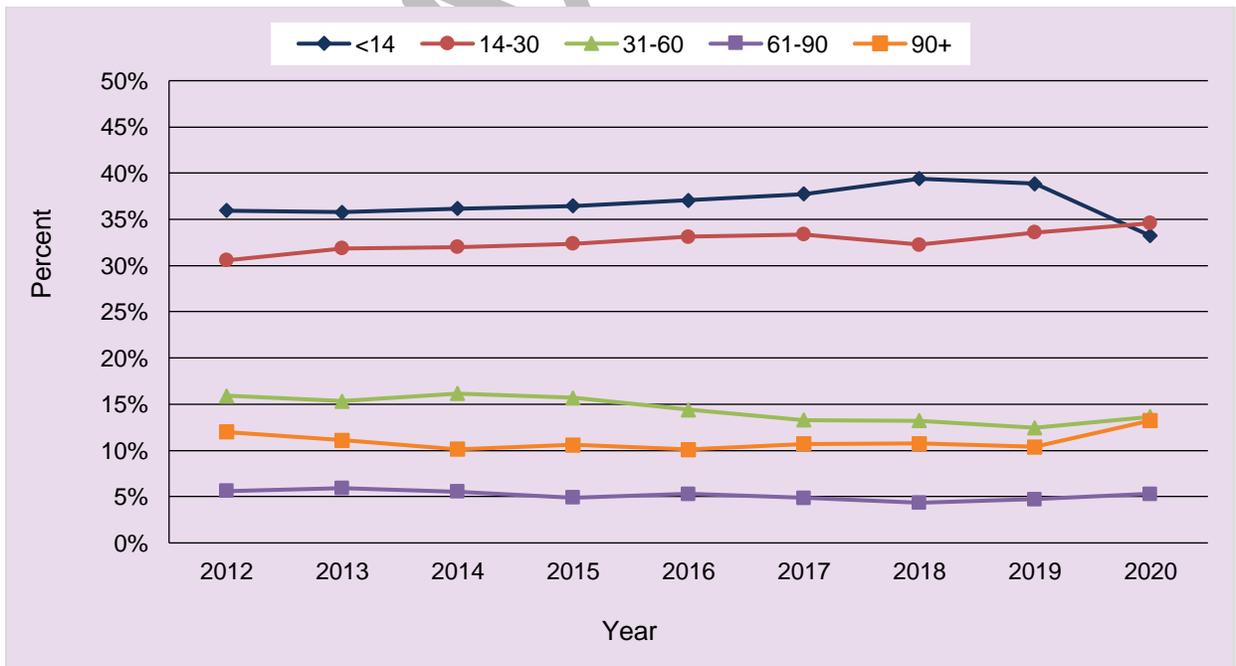
Source: CMS Minimum Data Set

**Figure 1. Trend in average lengths of stay (days) among the nonelderly population (<45), Oregon 2012–2020**



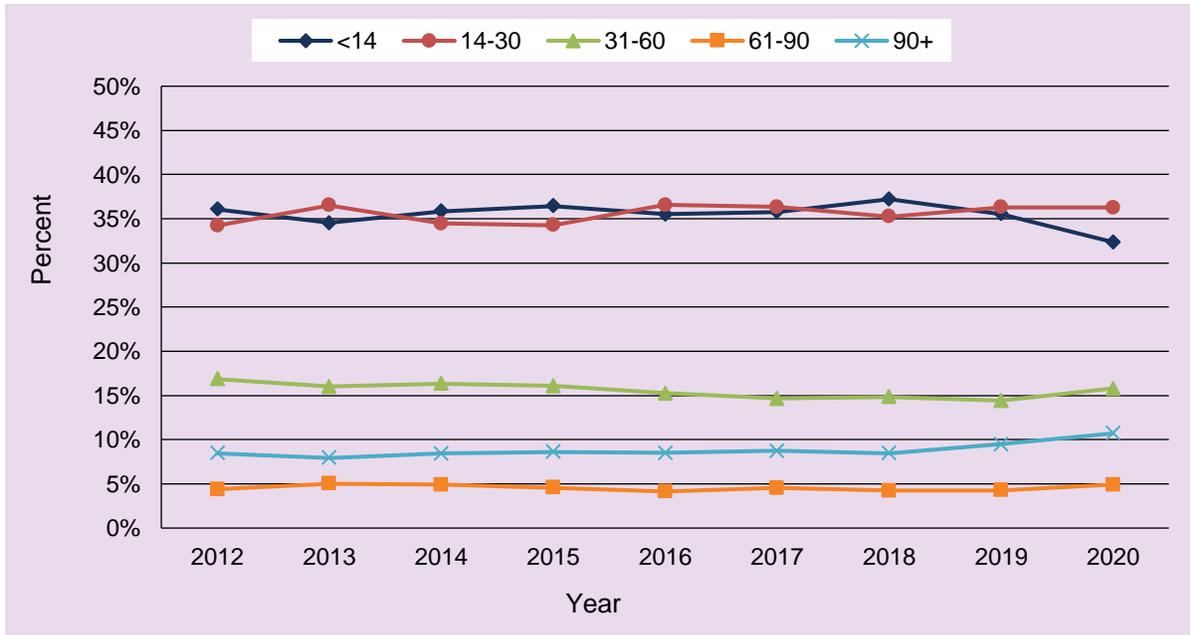
Source: CMS Minimum Data Set

**Figure 2. Trend in average lengths of stay (days) among the nonelderly population (45-64), Oregon 2012–2020**



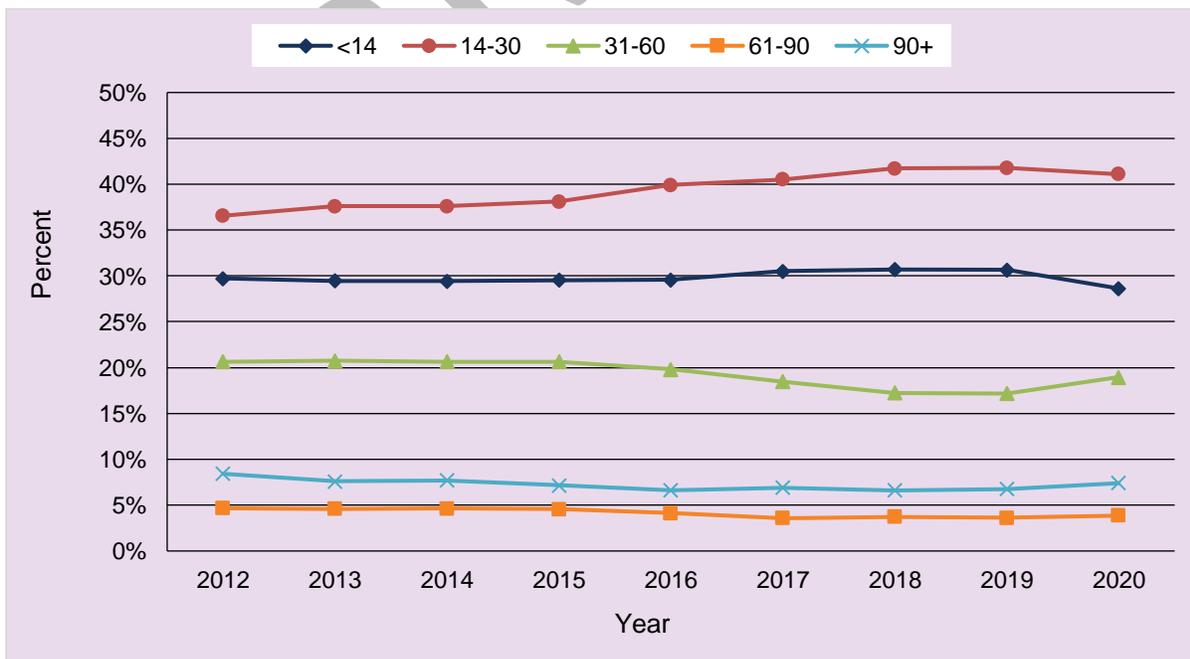
Source: CMS Minimum Data Set

**Figure 3. Trend in average lengths of stay (days) among the elderly population (65-74), Oregon 2012–2020**



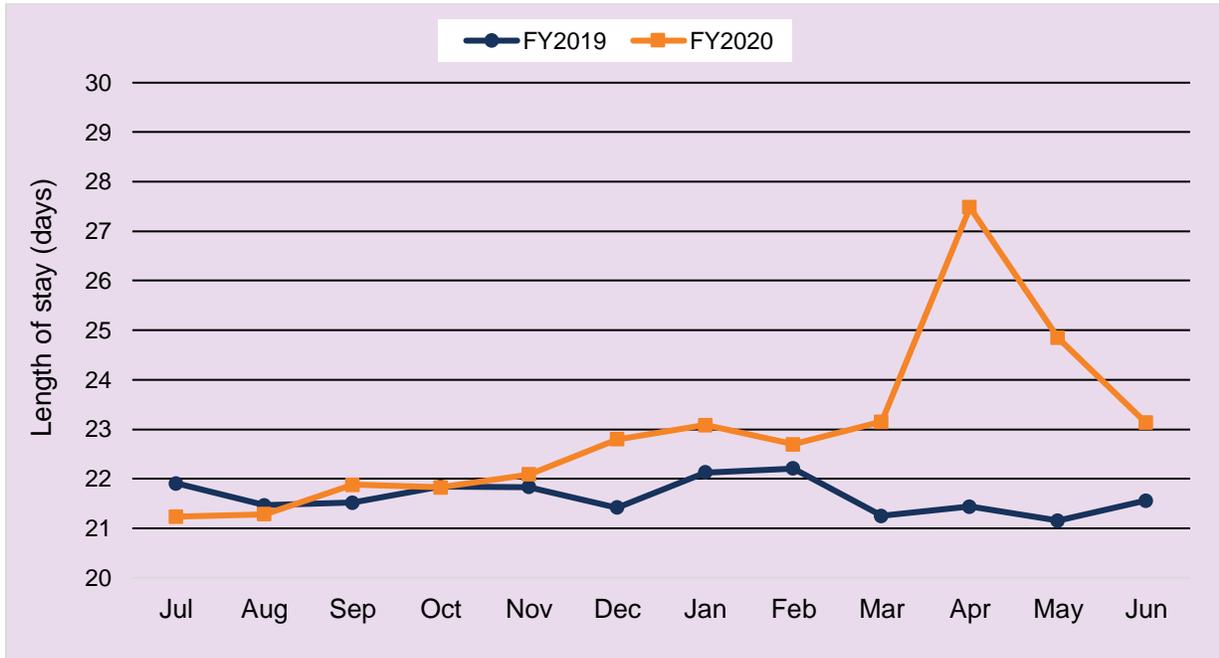
Source: CMS Minimum Data Set

**Figure 4. Trend in average lengths of stay (days) among the elderly population (75+), Oregon 2012–2020**



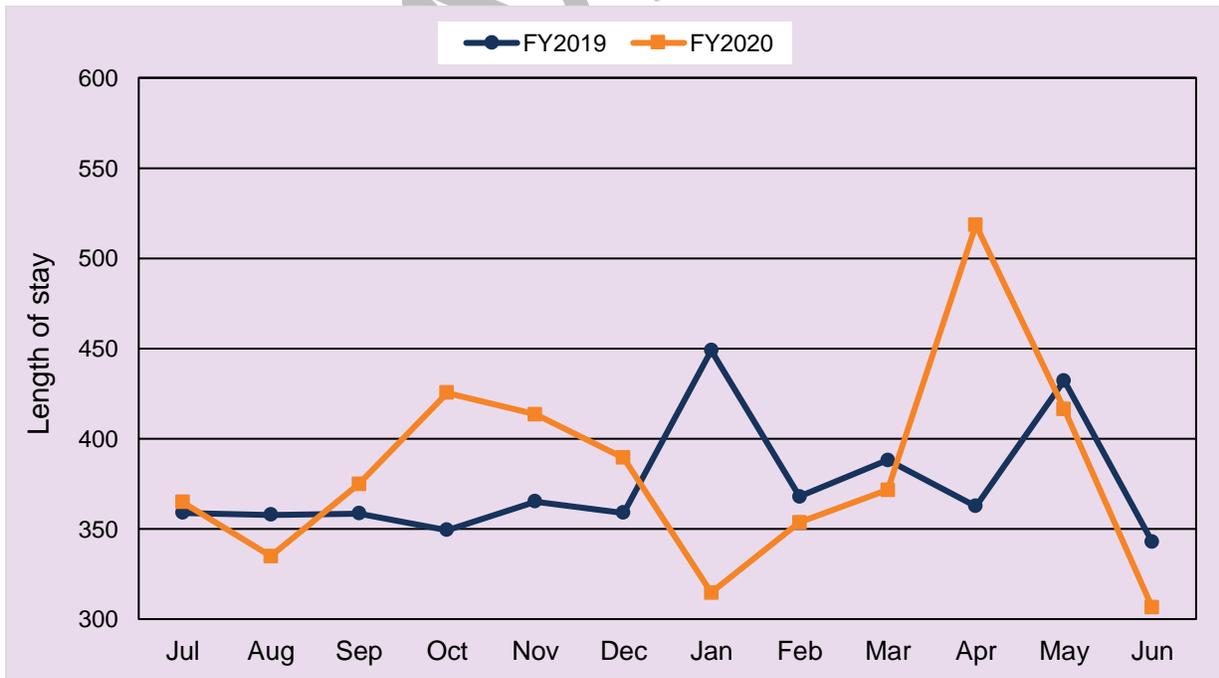
Source: CMS Minimum Data Set \*

**Figure 5. Monthly trends of average length of stay (days), short-stay residents, Oregon, SFY2020 vs. 2019**



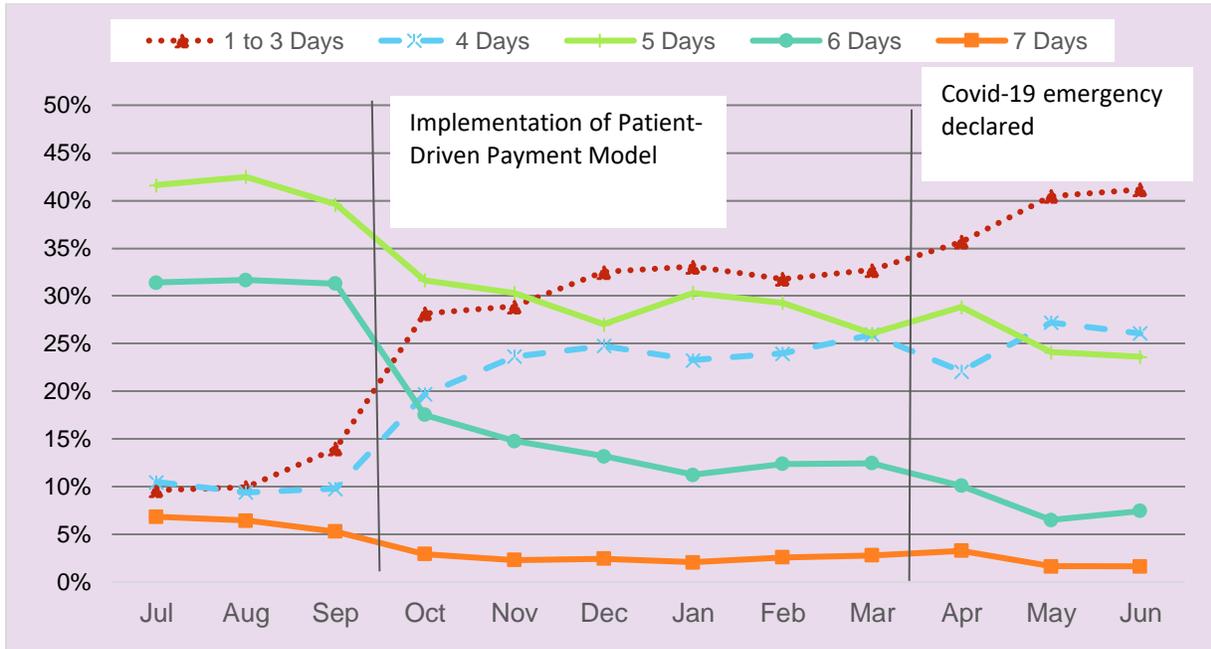
Source: CMS Minimum Data Set \*

**Figure 6. Monthly trends of average length of stay (days), mid length & long-stay residents, Oregon, SFY2020 vs. 2019**



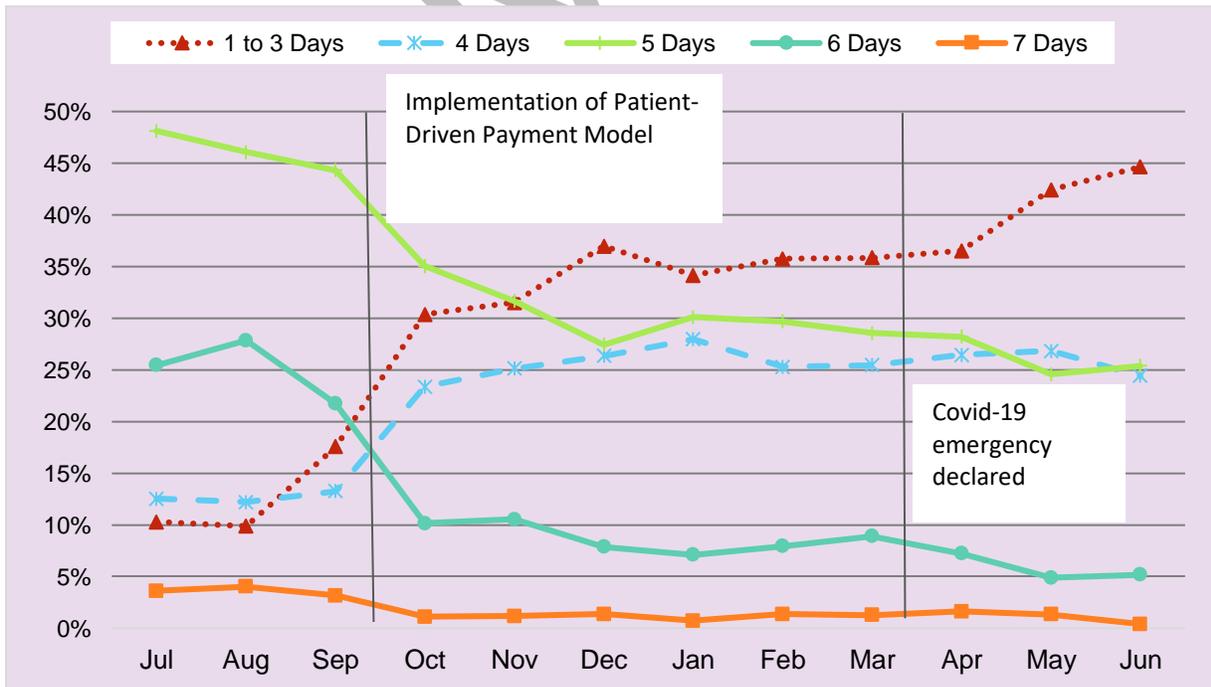
Source: CMS Minimum Data Set \*

**Figure 7. Monthly trend of number of days of physical therapy within 1 week prior to assessment, short stay residents, Oregon SFY2020**



Note: based on 22,109 short stay.  
Source: MDS Minimum Data Set.

**Figure 8. Monthly trend of number of days of occupational therapy within 1 week prior to assessment, short stay residents, Oregon SFY2020**



Note: based on 21,791 short stay  
Source: MDS 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 Oregon 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 Care Compare 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.

## ODHS 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 Care Compare (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 2020, which ended June 30<sup>th</sup>, 2020, but also includes data for SFYs 2009 through 2019. 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 Care Compare July 2019 through June 2020 (see below). Facilities in operation for less than two 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 United States Census Bureau: State Population by Characteristics: 2010-2019. 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 seven 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 three months. If the resident is discharged within seven days, only one assessment need be performed.

The Patient Driven Payment Model (PDPM) for Medicare FFS stays was implemented effective October 1, 2019, with the goal of improving payment accuracy. PDPM introduced a new and simpler assessment schedule. Beginning in October 2019, the number of MDS assessments per month dropped significantly. However, this change in the number of assessments did not reflect changes in the actual number of nursing facility admissions or discharges.

MDS data files were provided to Oregon State University (OSU) by ODHS. These data files included assessments reported to ODHS through December 3, 2020, which permitted analyses of nursing facility stays that extended past the end of SFY 2020. 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, 2020 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>27</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>28</sup> Residents still enrolled at the time the MDS dataset was created for OSU, December 3, 2020, 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>29</sup> To mitigate possible mis-incentives, PDPM includes an “interrupted stay policy”: If a person was discharged after October 2019 from a nursing facility and then reenters the same facility within three days, it is not considered a reentry.

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

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<sup>27</sup> This methodology was first implemented for the SFY 2015 report.

<sup>28</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>29</sup> The 2014 report counted as reentries only assessments coded as such in MDS.

stays.<sup>30</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>31</sup>

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 2020.<sup>32</sup> This approach allowed us to use information from all stays in SFY 2020. 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 2020 may have been counted more than once in these analyses.<sup>33</sup>

## Care Compare data

The Care Compare 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, Care Compare data on licensed beds were used instead. July 2019 Care Compare data were utilized to fill in beginning of SFY licensed bed numbers for these facilities, and June 2020 data were used to fill in end of SFY licensed bed numbers. These data are for each facility's survey date closest to the relevant SFY.

Care Compare 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 2020,<sup>34</sup> derived from the March 2021 data release from Care Compare.

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<sup>30</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>31</sup> In the 2014 and 2015 reports, LOS calculations included all residents who spent at least one 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.

<sup>32</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>33</sup> In the 2014 report, an individual could have only one ADL score.

<sup>34</sup> A three-quarter average was used in the SFY 2016 report.

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 2019 through Q2 of calendar 2020. 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 2020 rely on some data from the last quarter of SFY 2019; short stay data for this report includes quarters Q2 of calendar 2019 through Q2 of calendar 2020. We use the 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 2020 (i.e. for this report data include July 2019 through June 2020). 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 2020, 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 2020 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, the Oregon Health Authority (OHA) probabilistically matched persons who, per MDS, had entered or discharged from a nursing facility in SFY 2014 through SFY 2020 to persons who, per the HDD, were discharged from a hospital during calendar years 2008 through 2020. Matching was based on first name, last name, middle initial, date of birth, and sex. Second, we aligned these matched persons by hospital discharge dates and nursing facility admission dates. These nursing facility admissions need to have a discharge date in

SFY 2020. To account for the effect of the interrupted stay policy, an alignment margin of plus or minus two days was expanded to three days in SFY 2020. Hospitals considered in this analysis are acute care hospitals and psychiatric hospitals only. At the end of these steps, 26,350 of the eligible 33,277 nursing facility discharges in SFY 2020 were linked to hospital discharges. For 1,135 of the unlinked nursing facility discharges, MDS indicated that the resident had not entered from a hospital; these discharges were excluded from the denominator in calculating the linkage rate. Overall, therefore, we achieved an 82.0% linkage rate between HDD discharges and MDS admissions for SFY 2020. This is very similar compared to linkage rates in SFY 2018 and 2019.

To measure in-hospital mortality after discharge from nursing facilities, we performed a separate linkage of MDS and hospital discharge data using nursing facility discharge dates and hospital admission dates. Using a linkage margin of nursing facility discharge date plus or minus one day, 6,852 (78%) of 8,768 nursing facility discharges to a hospital in SFY 2020 were linked to hospital admissions. The SFY 2020 linkage rate between MDS discharges and hospital admissions is similar that in SFY 2019 (77%) but somewhat lower than the linkage rates for SFY 2014-2018 (82%-85%). To link nursing facility discharges to hospital admissions in years before SFY 2019, we concatenated data from multiple prior data years, yielding a set of hospital discharge data slightly different from that use for linking hospital discharges and nursing facility admissions

## COVID-19

On April 19, 2020, The Centers for Medicare & Medicaid Services (CMS) issued a memorandum requiring all nursing homes to notify State or Local health departments about residents and staff with suspected or confirmed COVID-19 infection. By May 17, 2020 nursing homes were to report data related to COVID-19 including retrospective data back to January 1, 2020. The facilities were allowed to submit and correct their data on the CDC's National Healthcare Safety Network (NHSN) website. Thus, numbers for week ending 05/24/2020 may include reporting for any time between 01/01/2020 through 05/24/2020 and cannot be used to perform trend analysis and longitudinal analyses. Reporting for subsequent weeks was done on a weekly basis.

## 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>35</sup> To create

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<sup>35</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.

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  $\leq 29\%$  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

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

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

# 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.

Stay: A stay occurs when an individual resides in a NF for at least one day during a period beginning with an admission and ending with a discharge.

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