Wage and Cost Study of Oregon Assisted Living and Residential Care Providers, 2022

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A study completed by the Institute on Aging at Portland State University with funding from and in partnership with Oregon Department of Human Services

About the Institute on Aging at Portland State University

IOA/PSU strives to enhance understanding of aging and facilitates opportunities for elders, families, and communities to thrive.

Oregon Department of Human Services

ODHS is Oregon's principal agency for helping Oregonians achieve well-being and independence through opportunities that protect, empower, respect choice, and preserve dignity, especially for those who are least able to help themselves.

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Acronyms

ADLs – Activities of daily living

ADRD – Alzheimer's disease and related dementias

AFH – Adult foster home

ALF – Assisted living facility

APD – Aging and people with disabilities

BOLI – Bureau of Oregon Labor and Industries

CBC – Community-based care

CMS – Centers for Medicare and Medicaid

CPI – Consumer price index

HCBS – Home or community-based services

IADLs – Instrumental activities of daily living

IOA – Institute on Aging

LTSS – Long-term services and supports

MC – Memory care

NF – Skilled nursing facility

ODHS – Oregon's Department of Human Services

OHCA – Oregon Health Care Association

PSU – Portland State University

RCF – Residential care facility

SB – Senate bill

SFY – State fiscal year

WAO – Enhanced wage add on program

Executive Summary

Senate Bill 703[1] directed Oregon Department of Human Services (ODHS) to conduct a study of licensed residential care (RCF) and assisted living (ALF) facilities, including those with a memory care (MC) endorsement, to evaluate:

⇒ Total cost to provide care to residents,

⇒ The sufficiency of the Medicaid reimbursement paid to facilities to meet the total cost of care, and

⇒ The average compensation paid to direct care workers by the facilities by geographic region.

ODHS contracted with the Institute on Aging (IOA) at Portland State University (PSU) to conduct a study to achieve these three objectives. In the fall of 2022, IOA developed and conducted the study in collaboration with ODHS staff, with multiple opportunities for input from community partners, including consumer advocates and direct care worker partners, long term care trade associations, and attendees of the Long-Term Care Facility Provider Workforce Recovery Workgroup.

This report describes the findings of the resulting study, which uses multiple data sources, including data collected by IOA from over 150 ALF/RCF providers and Medicaid reimbursement data provided to IOA by ODHS. Some of the highlights from the report include:

Total cost to provide care to residents

- Between July 2021 and June 2022, the average total cost of care per resident per month reported by responding facilities ranged from less than **$2,000** to over **$20,000**, with an average of **$6,698** and a median of **$5,621**.
    - Ten percent reported total cost of care per resident per month lower than **$3,606**.
    - Ten percent reported total cost of care per resident per month higher than **$11,409**.
- Whether facilities have a Medicaid contract, and the type of Medicaid contract they have, explains some of the variation in the average total cost of care per resident per month.
    - Facilities with a Medicaid specific needs contract reported an average total cost of **$14,006** per resident per month.

[1] Senate Bill 703, 81st Oregon Legislative Assembly. (2021). https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/SB703/Enrolled

    - Among facilities with a regular (that is, excluding specific needs) Medicaid contract, the average total costs per resident per month were,
        - **$5,438** among single RCF without MC,
        - **$4,611** among single ALF without MC, and
        - **$6,192** among single MC (ALF or RCF).
- Among facilities with a regular Medicaid contract, the average total cost per resident per month differed slightly by geographic region:
    - **$5,138** in the Southern Oregon and South Coast region,
    - **$5,193** in the Portland Metro area,
    - **$5,563** in the Willamette Valley and North Coast region, and,
    - **$5,608** in the East of the Cascades region.
- The average total cost of care per resident per month ($6,698) was distributed across various cost categories.
    - **The largest expense category was payroll expenses (57 percent)**, which included care-related (36 percent) and non-care-related (21 percent) salaries, wages, taxes, and fringe benefits.
    - The next largest expense category was **property expenses, accounting for 16 percent.**
    - Third-party staffing agency care related staff accounted for about 2 percent.
    - **Non-labor administrative and general expenses (6 percent)** and **management fees (4 percent)** accounted for 10 percent.

Sufficiency of Medicaid reimbursement paid to facilities to meet total cost of care

- Between January 2020 and July 2022, there was a **27 percent** increase in Medicaid reimbursement rates among facilities not participating in the Enhanced Wage Add On (WAO) program and a **40 percent** increase among facilities that participate in the WAO program.
    - Some of the increases in reimbursement rates are due to temporary programs that are currently set to expire by June 30, 2023 unless extended by the Oregon Legislature.

- Average total payments per resident per month provided to facilities by ODHS and Medicaid residents were **$3,285** among RCFs, **$3,670** among ALFs, **$5,742** among MC, and **$12,339** among facilities with specific needs contracts.
- Based on median ratios, for a typical ALF/RCF, the **total Medicaid reimbursement covers between 75–88 percent of total operating costs per resident per month**.
    - However, there was variation across facilities within each type of setting. For instance, one-third of RCF reported payments-to-cost ratios lower than 60 percent. On the other hand, about one-third of MC and specific needs contracted facilities reported more favorable ratios over 110 percent.

Compensation paid to direct care workers by facilities

- Facilities were asked to report their minimum, average, and maximum hourly wages or salaries as of October–November 2022 for various direct care staff categories.
    - Personal care staff who are not licensed or certified constitute about 80 percent of all staff in this sector.[2] **The average hourly wage for this group of resident assistants (also known as direct care workers, personal care aides, resident services, caregivers) was $17.4** with a minimum and maximum of **$16.3** and **$19.4**, respectively.
    - Over 80 percent of ALF/RCF employ a full-time or part-time registered nurse (RN).[2] **Facilities reported paying an average of $46.6 in hourly wages for RNs.**
    - The average hourly wages for other staff categories included: licensed practical nurses ($35.2), resident care coordinators ($23.6), certified medication aides ($23.0), certified nursing assistants ($20.7), enrichment staff ($19.7), and non-certified medication aides or technicians ($18.7).
    - The average annual salaries for administrators and directors of health services were $87,505 and $92,634, respectively.
- Average hourly wages differed notably across minimum wage regions set by the Oregon Bureau of Labor & Industries (BOLI).

[2] Tunalilar, O., Carder, P., Winfree, J., Elliott, S., Kim, M., Jacoby, D., & Albalawi, W. (2022). *2022 Community-Based Care: Resident and Community Characteristics Report on Assisted Living, Residential Care, and Memory Care Communities.* Institute on Aging, Portland State University. https://archives.pdx.edu/ds/psu/38748

- Average hourly wages for resident assistants were **$17.9** in the Portland Metro region, followed by **$17.4** in the Standard region, and **$16.2** in the Non-Urban region.
- In all regions and across all staff categories, average hourly wages were higher than the minimum wages thresholds set by Oregon BOLI.

Cost to private pay assisted living, residential care, and memory care consumers

- The overall estimated average total monthly private pay charge was **$5,852**.
  - The bottom and top 10 percent of private pay residents paid an average of $3,797 and $8,607 per month, respectively.
- Certain facility and resident characteristics were associated with higher or lower private pay charges.
  - **MC residents paid $1,252 *more*** per month than ALF/RCF only residents.
  - Residents in ALF/RCF that **accept Medicaid paid $523 *less*** per month than private pay residents in settings that do not accept Medicaid.
  - Residents of the **smallest ALF/RCF paid less** per month compared to private pay residents in larger settings.
  - Residents in **rural ALF/RCF pay $636 *less*** per month than private pay residents in urban settings.
  - Facilities provided private pay residents regular and ongoing assistance with an average of two activities of daily living (ADLs), which may include eating, bathing, using the bathroom, dressing, and mobility/walking.
    - Private pay residents paid an **additional $293 for each** of these five ADLs for which they received assistance.

Conclusion

This study addressed each of the three objectives set by SB 703, including total cost to provide care to residents, the sufficiency of the Medicaid reimbursement paid to facilities to meet the total cost of care, and the average compensation paid to direct care workers by the facilities.

In conclusion, we note that there were multiple unique circumstances that may have affected the operating expenses reported by the participating ALF/RCF as well as Medicaid reimbursement rates reported by ODHS during data collection period for this study:

⇒ **The COVID-19 pandemic has impacted the operations and finances of all participants in the healthcare industry, including assisted living and residential care facilities.** New and numerous policy changes were enacted to protect residents and staff, such as physical distancing, restrictions of move-ins, routine staff and resident testing, changes to communal activities and dining practices, and visitation guidelines. Each of these changes may have impacted the costs reported in this report in predictable and unexpected ways.

⇒ **There were two important changes to Medicaid reimbursement in response to the COVID-19 pandemic.** First, there was a 5 percent temporary increase in reimbursement to facilities, which continues to date. Second, in fall 2021, ODHS implemented the WAO program, whereby facilities were provided additional compensation if they paid a pre-set starting wage for all caregivers (initially $15 per hour).

⇒ **The staffing crisis hit assisted living and residential care settings especially hard.** Analysis by the Oregon Office of Economic Analysis[3] indicates that residential care facilities employed about 20 percent of the health care staff yet experienced slightly more than half of the job losses.

⇒ **The tight labor market and inflation trends[4] may have affected wages and labor supply for direct care work.** Evidence from our interviews with industry organizations and ALF/RCF providers suggests greater utilization of contract or third-party staffing to fill in empty positions.

We thank Oregon assisted living, residential care, and memory care providers for participating in this study. We also thank all our community partners for their valuable comments, feedback, and contributions.

[3] https://oregoneconomicanalysis.com/2022/02/03/oregon-health-care-employment/

[4] https://oregoneconomicanalysis.com/2022/03/30/shifting-labor-market-dynamics/

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Introduction

Background and purpose

Assisted living (ALF) and residential care (RCF) facilities are community-based care settings licensed by the Oregon Department of Human Services (ODHS) Office of Aging and People with Disabilities (APD). These facilities serve people who need assistance with personal care (or activities and instrumental activities of daily living), health and social services, and supervision and monitoring on a scheduled and unscheduled basis. ALF/RCF settings are licensed according to the Oregon Administrative Rules (OAR 411-054)[5] of ODHS/APD.

An ALF/RCF may be approved by ODHS to operate as a Memory Care (MC) community (OAR 411-057)[6] designated for adults with a diagnosis of Alzheimer's disease or related dementia (ADRD). MC communities must meet ALF/RCF rules and additional requirements such as training staff in dementia care practices, building design standards such as controlled exits, and programming for people with health and behavioral symptoms associated with ADRD. RCFs may serve two unrelated individuals in a room, while ALFs typically serve one individual in a room unless the individual chooses to have a partner share their room.

ALF/RCF provide individualized personal care (e.g., activities of daily living, or ADLs), daily meals and snacks, medication and treatment administration, social services, and social/recreational activities for residents. They are staffed for 24-hours daily to respond to resident's care and service needs. ALF/RCF must provide access to a licensed nurse who is regularly scheduled for on-site duties and available to assess and monitor resident health-related needs.

Oregon had 570 ALF/RCF settings, with a total licensed capacity (i.e., number of individuals they can serve at any time) of 29,563 in 2021. Of these, 224 (39 percent) were endorsed MC communities. The availability of ALF/RCF and MC varies across Oregon. All 36 counties except Sherman had at least one ALF/RCF, and 30 counties (except Harney, Lake, Morrow, Sherman, Tillamook, and Wheeler) had at least one MC.

[5] Residential Care and Assisted Living Facilities, Ore. Administrative Rule § 411-054 (eff. 2022). https://www.oregon.gov/dhs/SENIORS-DISABILITIES/SPPD/APDRules/411-054.pdf

[6] Endorsed Memory Care Communities, Ore. Administrative Rule § 411-057 (eff. 2020). https://www.oregon.gov/dhs/SENIORS-DISABILITIES/SPPD/APDRules/411-057.pdf

Three counties with the largest number of ALF/RCF beds were Multnomah, Washington, and Clackamas, together accounting for 41 percent of the overall licensed capacity (number of beds).

The COVID-19 pandemic presented significant challenges for residents, residents' families, care staff, and ALF/RCF providers, including those endorsed for memory care. Alongside the disproportionate mortality and morbidity associated with the pandemic, labor market and other economic and social disruptions continue to undermine the industry's ability to provide high-quality care to residents. Providers have responded to these challenges in various ways, such as increasing wages to direct care workers, providing additional benefits, hiring contract staff from outside agencies, and advocating for policy changes that might increase the attractiveness of these jobs.

In response to these ongoing challenges, the licensing agency, ODHS, enacted temporary relief actions such as increased reimbursement rates, modified survey processes, and implementation of new policies to protect the health and well-being of ALF/RCF residents and employees. For example, a 5 percent COVID temporary rate increase was implemented on January 1, 2021 and is extended to June 30, 2023.[7] In October 2021, ODHS/APD implemented an Enhanced Wage Add-On (WAO) program (OAR 411-027-0160),[8] providing an additional 10 percent increase of the Medicaid rate to providers who paid a starting wage of at least $15 per hour to caregivers. The required wage was increased to $15.50 per hour on July 1, 2022.[9]

In 2021, the Oregon legislature passed Senate Bill 703, requiring ODHS to conduct a study of ALF/RCF communities to evaluate:

(a) The total cost to provide care to residents by facility- and resident-level characteristics (e.g., geographic area, resident acuity);

(b) The sufficiency of the reimbursement paid to facilities to meet the total cost of care for medical assistance recipients in the facilities, for each type and category of facility; and

(c) The average compensation paid to direct care workers by the facilities located in specific geographic areas.

In August 2022, ODHS/APD contracted with the Institute on Aging (IOA) at Portland State University (PSU) to conduct the study described by SB 703. Because data points necessary to answer these questions are not routinely collected and were not readily

[7] https://www.dhs.state.or.us/policy/spd/transmit/pt/2020/pt20118.pdf

[8] Payment Limitations in Home and Community-Based Services, Ore. Administrative Rule § 411-027 (eff. 2022). https://www.oregon.gov/dhs/SENIORS-DISABILITIES/SPPD/APDRules/411-027.pdf

[9] https://www.dhs.state.or.us/policy/spd/transmit/pt/2020/pt20118.pdf

available, IOA opted to design a study to directly collect information from licensed ALF/RCFs. To inform the study design, in September 2022, IOA held a series of meetings and conducted interviews with ODHS staff, community partners (such as long-term care trade associations, consumer and worker partners, and members of the ODHS long-term care facilities workforce recovery group), and ALF/RCF providers. This collaborative work resulted in the following:

- A study design that included collecting data from ALF/RCFs using cost and wage categories reviewed by the collaborators listed above,
    - Data collected from a survey sent to all licensed ALF/RCFs requesting information about bed utilization (e.g., average occupancy), operating expenses, and wages for care workers,
- Analysis of 153 questionnaires representing 199 ALF/RCFs,
- Analysis of Medicaid reimbursement data provided to IOA by ODHS, and
- Analysis of secondary data on total monthly charges paid by private pay ALF/RCF residents, collected by IOA as part of an annual study funded by ODHS.

Details about the methods can be found in the Appendix A of this report. The rest of the report describes the findings of the study, separated into four subsections:

⇒ **Section I** describes the operating expenses reported by responding facilities, separately by cost categories, license type, and Medicaid contact, and across geographic regions.

⇒ **Section II** describes the Oregon Medicaid LTSS program, examines the distribution of Medicaid reimbursement paid to facilities, and discusses the sufficiency of the Medicaid reimbursement paid to facilities to meet the total cost of care.

⇒ **Section III** describes the wages and salaries paid by facilities to direct care staff, separately for staff categories and across minimum wage regions.

⇒ **Section IV** describes the total monthly charges paid by private pay consumers and presents facility-and resident-level characteristics associated with higher private pay charges.

We conclude the report by summarizing the main limitations of this study and offering some suggestions for future directions.

Section I. Cost to Provide Care

The findings reported in this section address the first aim of SB 703: to evaluate the total cost to provide care to residents by facilities.

Responding facility characteristics

The IOA research team received 153 questionnaires that represent 199 ALF/RCF licenses in Oregon. This participation rate far exceeded that of the pilot study conducted by ODHS in 2018 and is sufficient for understanding costs across a variety of ALF/RCF settings in Oregon.

Table 1 describes the average licensed capacity, occupancy rate, percentage of Medicaid residents and percentage of MC residents for study participants. ALF/RCF with Medicaid contracts were more likely than communities without Medicaid contracts to participate in the study. About 9 percent of the questionnaires were received from nonprofit ALF/RCF communities. These characteristics are comparable to estimates shown in the annual Community-Based Care study.[10] More information on response rates and data collection can be found in Appendix A.

Table 1. Characteristics of responding assisted living/residential care settings.

Characteristic	Average	Number of Questionnaires*
Licensed capacity (number of beds)	64	153
Occupancy rate	76.4%	146
Percent of Medicaid beneficiaries	47.5%	143
Percent of memory care residents	27.7%	147

*Data from questionnaires that reported combined data for multiple facilities was summed.

[10] Tunalilar, O., Carder, P., Winfree, J., Elliott, S., Kim, M., Jacoby, D., & Albalawi, W. (2022). *2022 Community-Based Care: Resident and Community Characteristics Report on Assisted Living, Residential Care, and Memory Care Communities.* Institute on Aging, Portland State University. https://archives.pdx.edu/ds/psu/38748

Total cost of care per resident per month

We used ALF/RCFs' total operating expenses for the 2022 state fiscal year (July 2021—June 2022) to measure the total cost to provide care. The total cost of care per resident per month was calculated using the following formula:

$$\frac{Total\ operating\ expenses}{12\ months\ x\ average\ number\ of\ all\ residents}$$

This calculation includes all residents (e.g., those who pay privately and with Medicaid) because we learned from ALF/RCF providers that they do not separate costs by payer type.

The average total cost of care per resident per month reported by 104 ALF/RCF settings with valid data was heavily skewed, ranging from less than $2,000 to over $20,000. We identified ten outliers using the interquartile method (see Appendix A). All identified outliers were at the upper bounds of the distribution. Quartiles are presented because they reflect the range of costs reported. The middle 50th column represents the middle value (or median), with half of communities reporting costs above that value, and half reporting costs below that value. The average figure, while useful, does not account well for variation that exists across ALF/RCFs.

Table 2 shows the distribution of the cost of care per resident per month across responding facilities. Overall, the average cost of care per resident per month was $6,698 including ten outliers and $5,719 excluding the ten outliers. Facilities differed widely in terms of the average total cost of care per resident per month. Ten percent of facilities reported a total cost of care per resident per month lower than $3,606 and 10 percent of facilities reported a total cost of care per resident per month higher than $11,409.

Table 2. Distribution of total cost of care per resident per month and monthly Medicaid reimbursement, overall.

Total cost of care per resident per month	Percentile					
	Bottom 10th	Bottom 25th	Middle 50th	Average	Top 25th	Top 10th
Including outliers	$3,606	$4,320	$5,621	$6,698	$7,302	$11,409
Excluding outliers	$3,600	$4,195	$5,261	$5,719	$6,814	$9,212

By Medicaid contract and license type

Facilities may choose to accept Medicaid residents and have a contract with ODHS to accept Medicaid reimbursement for eligible residents. Among facilities with a Medicaid contract, ODHS provides specific needs contracts to some ALF/RCF communities for specific services reimbursed at a higher rate for residents whose service needs exceed those accounted for in the Medicaid rate schedule, such as for hospice, behavioral health, or bariatric care (OAR 411-027-0075).[11]

Table 3 compares median and average total cost of care per resident per month based on the type of Medicaid contract and license type among responding ALF/RCFs. As shown, the 11 communities with a Medicaid specific needs rate have a significantly higher cost compared to all other types of facilities. Focusing only on facilities with regular Medicaid contracts, the median cost of care per resident per month ranged from $4,195 for single AL up to $6,673 for single MC with an ALF or RCF base license.

Table 3. Median and average total cost of care per resident per month by Medicaid contract and license type among responding ALF/RCF.

Medicaid & License Type	n	Median	Average
Oregon	104	$5,621	$6,698
Medicaid – specific needs	11	$14,749	$14,006
Medicaid – regular	81	$4,976	$5,380
Single RCF (non-MC)	9	$4,365	$5,438
Single ALF (non-MC)	33	$4,195	$4,611
Single MC (ALF or RCF)	17	$6,673	$6,192
Mixed (ALF/RCF+MC)	22	$5,426	$5,882
No Medicaid contract	12	$8,776	$8,893

[11] Payment Limitations in Home and Community-Based Services, Ore. Administrative Rule § 411-027 (eff. 2022). https://www.oregon.gov/dhs/SENIORS-DISABILITIES/SPPD/APDRules/411-027.pdf

By geographic region

Oregon's diverse geography, ranging from frontier regions to highly metropolitan areas, is a contributing factor to the variation observed in overall expenses reported by responding facilities. Table 4 compares the distribution of the estimated monthly cost of care per resident by four geographic regions: Portland Metro, Willamette Valley/North Coast, Southern Oregon/South Coast, and East of the Cascades. The average and median monthly cost of care per resident was lowest in communities operating in counties East of the Cascades, and highest in those operating in Southern Oregon. Differences by region were not well explained by selected community characteristics (Table B1).

Table 4. Total cost of care per resident per month by geographic region, overall.

Region	Bottom 10th	Bottom 25th	Middle 50th	Average	Top 25th	Top 10th
Oregon	$3,606	$4,320	$5,621	$6,698	$7,302	$11,409
Portland Metro	$3,560	$4,302	$5,616	$6,952	$7,260	$13,709
Willamette Valley/ North Coast	$3,890	$4,500	$5,810	$6,342	$7,281	$9,212
Southern Oregon/ South Coast	$3,442	$4,148	$5,966	$7,686	$10,356	$15,658
East of the Cascades	$3,789	$4,550	$4,847	$5,660	$6,345	$6,938

Note. *Portland Metro* (n=41; N=55): Counties of Clackamas, Columbia, Multnomah, Washington, *Willamette Valley*(n=33; N=43): Counties of Benton, Clatsop, Lane, Lincoln, Linn, Marion, Polk, Tillamook, Yamhill, *Southern Oregon* (n=16; N=21): Counties of Coos, Curry, Douglas, Jackson, Josephine, *East of the Cascades* (n=14; N=22): Counties of Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler. (n= # questionnaires; N= # licenses represented)

Table 5 shows the same comparison by geographic region, excluding the identified outliers at the top of the distribution. Excluding outliers reduced the spread across the median monthly cost of care per resident across geographic regions, ranging from $4,719 in Eastern Oregon to $5,568 in Southern Oregon.

Table 5. Total cost of care per resident per month by geographic region, excludes outliers.

Region	Bottom 10th	Bottom 25th	Middle 50th	Average	Top 25th	Top 10th
Oregon	$3,600	$4,195	$5,261	$5,719	$6,814	$9,212
Portland Metro	$3,480	$4,021	$5,426	$5,647	$6,594	$9,560
Willamette Valley/ North Coast	$3,890	$4,442	$5,319	$4,846	$7,109	$7,841
Southern Oregon/ South Coast	$3,442	$4,032	$5,568	$6,198	$7,711	$11,132
East of the Cascades	$3,789	$4,550	$4,719	$5,102	$5,800	$6,583

Note. *Portland Metro* (n=36; N=48): Counties of Clackamas, Columbia, Multnomah, Washington, *Willamette Valley* (n=31; N=41): Counties of Benton, Clatsop, Lane, Lincoln, Linn, Marion, Polk, Tillamook, Yamhill, *Southern Oregon* (n=14; N=19): Counties of Coos, Curry, Douglas, Jackson, Josephine, *East of the Cascades* (n=13; N=20): Counties of Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler. (n= # questionnaires; N= # licenses represented)

Table 6 compares the cost of care per resident per month by geographic region among responding communities that had a regular Medicaid contract. Among these communities, the highest average monthly cost of care per resident per month was reported in Eastern Oregon and the highest median cost of care per resident per month was reported in the Portland Metro area.

Table 6. Total cost of care per resident per month by geographic region, regular Medicaid contracts.

Region	Bottom 10th	Bottom 25th	Middle 50th	Average	Top 25th	Top 10th
Oregon	$3,571	$4,032	$4,976	$5,380	$6,583	$7,322
Portland Metro	$3,451	$4,018	$5,070	$5,193	$6,456	$7,260
Willamette Valley/ North Coast	$3,757	$4,318	$5,059	$5,563	$6,887	$7,817
Southern Oregon/ South Coast	$3,442	$3,606	$4,502	$5,138	$6,000	$7,406
East of the Cascades	$3,789	$4,550	$4,719	$5,608	$5,800	$6,938

Note. *Portland Metro* (n=29; N=38): Counties of Clackamas, Columbia, Multnomah, Washington, *Willamette Valley/North Coast* (n=28; N=36): Counties of Benton, Clatsop, Lane, Lincoln, Linn, Marion, Polk, Tillamook, Yamhill, *Southern Oregon/ South Coast* (n=11; N=16): Counties of Coos, Curry, Douglas, Jackson, Josephine, *East of the Cascades* (n=13; N=20): Counties of Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler. (n= # questionnaires; N= # licenses represented)

By profit status

The majority of licensed ALF/RCF settings (87 percent) in Oregon operate as for-profit.[12] Table 7 shows the overall distribution in the estimated monthly cost of care per resident among communities operating for-profit and nonprofit. The median (middle 50th) percentile provides a useful way of comparing because it is less affected by the inclusion of outliers. These costs vary somewhat by profit status but vary by only $200 per resident per month overall and for communities with regular Medicaid contracts.

Responding nonprofit communities' average costs of care per resident per month was about $1,500 higher compared to for-profit communities (Table 7). However, this difference did not hold when outliers were excluded and for communities with regular

[12] 2022 Community-Based Care: Resident and Community Characteristics Report on Assisted Living, Residential Care, and Memory Care Communities. Retrieved from: https://pdxscholar.library.pdx.edu/aging_pub/115/

Medicaid contracts. Excluding outliers identified at the top of the distribution results in comparable average cost of care per resident per month between for-profit and nonprofit ALF/RCF communities. The median cost of care per resident per month is slightly higher in nonprofit communities compared to for-profit communities, for a difference of $119.

Table 7. Total cost of care per resident per month by ALF/RCF profit status.

Sample	Profit Status	Bottom 10th	Bottom 25th	Middle 50th	Average	Top 25th	Top 10th
Overall	For-profit	$3,600	$4,264	$5,699	$6,510	$7,281	$11,132
	Nonprofit	$4,318	$4,545	$5,580	$8,023	$9,064	$19,693
Excludes outliers	For-profit	$3,572	$4,032	$5,137	$5,723	$6,825	$9,457
	Nonprofit	$4,135	$4,523	$5,528	$5,689	$6,220	$9,064
Regular Medicaid Contracts	For-profit	$3,560	$4,025	$5,754	$5,393	$6,583	$7,323
	Nonprofit	$4,135	$4,523	$5,528	$5,689	$6,220	$9,064

Note. *Overall*: For-profit (n=94, N=129); Nonprofit (n=10, N=12); *Excludes outliers:* For-profit (n=86, N=118); Nonprofit (n=8, N=10); *Regular Medicaid Contracts:* For-profit (n=81, N=100); Nonprofit (n=8, N=10). (n= # questionnaires; N= # licenses represented)

For ALF/RCF with regular Medicaid contracts, the average cost of care per resident among nonprofits is greater than for-profit communities, while the median cost is lower in nonprofits. The bottom 10 percent and top 10 percent of nonprofit communities report higher costs compared to the bottom 10 percent and top 10 percent of for-profit communities with regular Medicaid contracts.

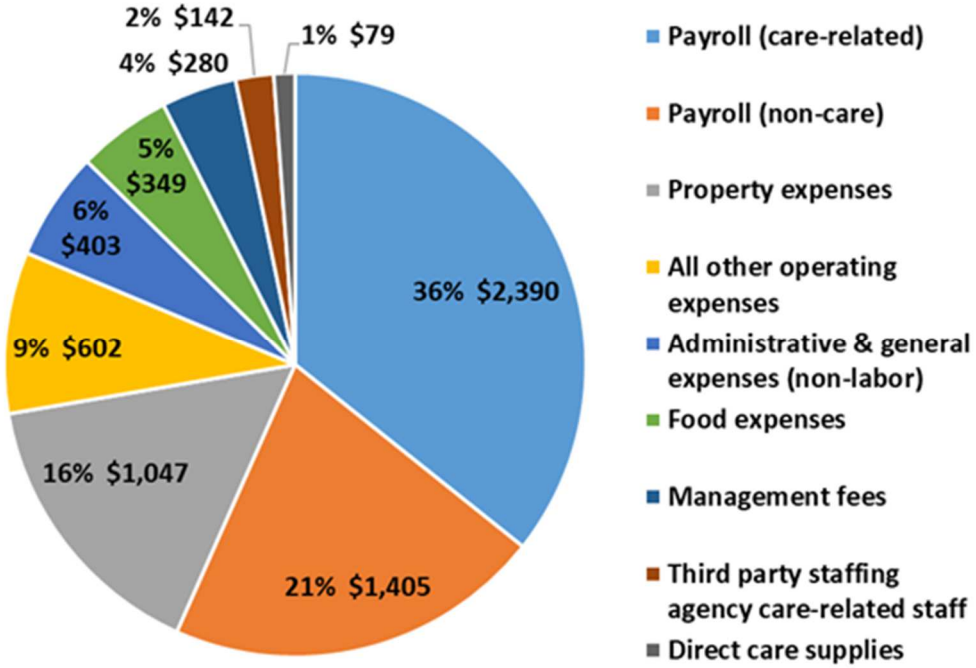
Total cost of care by cost categories

Participants were asked to allocate total operating expenses to several subcategories: property expenses, administrative and general expenses (not including labor), management fees, food expenses, direct care supplies, total payroll expenses, third party staffing agency care-related staff, and all other operating expenses. These cost

categories were selected in consultation with ODHS staff, long-term care trade associations, ALF/RCF management companies (e.g., chief financial officers), and an academic consultant. Detailed definitions for these categories are in Appendix A.

The average total cost of care per resident per month ($6,698) was distributed across cost categories (Figure 1). The largest expense category was payroll expenses (57 percent). This included salaries, wages, taxes, and fringe benefits attributable to care-related staff (36 percent) and non-care-related staff (21 percent). Property expenses accounted for 16 percent of total cost of care. Administrative and general expenses, not inclusive of labor, and management fees accounted for 6 percent and 4 percent, respectively.

Figure 1. Distribution of total cost of care per resident per month by cost category, overall



The distribution of total operating expenses across cost categories varied widely (Table 8). For instance, the share of the average total cost per resident per month spent on care-related payroll expenses ranged from 25.4 percent at the bottom 25 percentile up to 45 percent at the top 25 percentile. Similar variance is observed in other cost categories. This large variation in cost structure is likely attributable to the heterogeneity in this industry, from the type of building occupied (e.g., owned, leased) to the type of services offered by the facility.

Table 8. Distribution of cost categories across all facilities compared to Oregon average.

Cost Category	Bottom 25th	Oregon Average	Top 25th
Payroll (care-related)	25.4%	35.7%	45.0%
Payroll (non-care)	14.4%	21.0%	27.6%
Property expenses	4.7%	15.6%	21.8%
All other operating expenses	5.1%	9.0%	13.0%
Administrative & general expenses (non-labor)	3.1%	6.0%	7.7%
Food expenses	3.6%	5.2%	6.4%
Management fees	0%	4.2%	6.3%
Third party staffing agency care-related staff	<1%	2.2%	2.2%
Direct care supplies	<1%	1.2%	1.4%

Note. Within each cost category; bottom and top 25th columns need not add up to 100%.

A comparison of the share of cost categories by Medicaid contract and license type shows variation in the share of expenses by cost categories (Table 9). Communities with Medicaid specific needs contracts reported the highest share of expenses allocated to care-related payroll, property expenses, and direct care supplies, compared to communities with regular Medicaid or no Medicaid contracts. Given that Medicaid beneficiaries who qualify for the specific needs service have a high service priority level, these findings make sense. Possible reasons for the higher property expenses for the Medicaid specific needs contracts include more reliance on maintenance needed for older buildings and special equipment needs (e.g., safety, bariatric). Finally, communities that did not have any type of Medicaid contract reported the highest share of expenses allocated to administrative and general costs, food, and management fees.

Compared to for-profit settings, nonprofit ALF/RCF communities allocated a larger share of costs to care-related payroll and lower share of costs to property expenses, administrative and general expenses, and management fees (Table 10).

Table 9. Distribution of average total cost of care across cost categories by Medicaid contract.

Cost Category	Medicaid Specific Needs	Medicaid Regular	No Medicaid	Oregon Average
Payroll (care-related)	41.8%	35.2%	33.7%	35.7%
Payroll (non-care)	12.0%	21.5%	25.9%	21.0%
Property expenses	23.6%	16.2%	4.9%	15.6%
All other operating expenses	6.2%	9.5%	8.3%	9.0%
Administrative & general expenses (non-labor)	5.1%	5.7%	8.7%	6.0%
Food expenses	2.3%	5.2%	8.3%	5.2%
Management fees	5.2%	3.5%	7.7%	4.2%
Third party staffing agency care-related staff	1.8%	2.4%	<1%	2.2%
Direct care supplies	2.1%	<1%	1.7%	1.2%
Total	100%	100%	100%	100%

Note. Medicaid – specific needs (n=11); Medicaid – regular (n=81); No Medicaid contract (n=12)

Table 10. Distribution of cost categories across all responding facilities compared to Oregon average by profit status.

Cost Category	For-profit	Nonprofit	Oregon Average
Payroll (care-related)	34.5%	46.8%	35.7%
Payroll (non-care)	20.9%	21.0%	21.0%
Property expenses	16.4%	8.2%	15.6%
All other operating expenses	9.0%	8.5%	9.0%
Administrative & general expenses (non-labor)	6.2%	4.0%	6.0%
Food expenses	5.2%	4.9%	5.2%
Management fees	4.4%	2.2%	4.2%
Third party staffing agency care-related staff	2.0%	2.8%	2.2%
Direct care supplies	1.1%	1.5%	1.2%
Total	100%	100%	100%

Note. For-profit (n= 94), Nonprofit (n= 10)

Section II. Oregon LTC Medicaid Program and Sufficiency of Reimbursement

The findings in this section address the second objective of SB 703: to evaluate the sufficiency of the Medicaid reimbursement paid to facilities.

Medicaid and community-based care services in Oregon

Oregon was the first state to implement a home and community-based care Medicaid waiver program through the Centers for Medicare and Medicaid Services (CMS). ODHS reimburses CBC settings to care for people who meet the state's NF Level of Care eligibility criteria, providing individuals a choice between institutional and home- or community-based care.

The Centers for Medicare and Medicaid Services (CMS) allows states to use Medicaid funds to pay for home and community-based services on behalf of clients who meet nursing home level of care and financial criteria. The former is determined by a comprehensive assessment that is conducted by a state agency employee or representative. Individuals must meet one of the 13 service priority levels (SPLs) as defined in OAR 411-015-0010[13] and have countable income below approximately 225 percent of the federal poverty level.

In Oregon, Medicaid is a significant payer source for residents in ALF/RCF settings. In 2021, 44 percent of ALF/RCF residents and 52 percent of MC residents were paying primarily using Medicaid.[14] ALF/RCF residents who pay with private resources may also become eligible for Medicaid coverage after they have spent down their assets and if they meet eligibility criteria (OAR 411-27-0025).[15]

Medicaid reimbursement rates during the COVID-19 pandemic

Table 11 shows the changes in Medicaid reimbursement rates by type of setting and level of care, between 2020 and 2022, right before the COVID-19 pandemic started in January through the end of the study period for cost estimates presented in Section I in July 2022. The reimbursement rates reported here cover the portion of the payment to

[13] Long-Term Care Service Priorities for Individuals Served, Ore. Administrative Rule § 411-015 (eff. 2022). https://www.oregon.gov/dhs/SENIORS-DISABILITIES/SPPD/APDRules/411-015.pdf

[14] Tunalilar, O., Carder, P., Winfree, J., Elliott, S., Kim, M., Jacoby, D., & Albalawi, W. (2022). *2022 Community-Based Care: Resident and Community Characteristics Report on Assisted Living, Residential Care, and Memory Care Communities.* Institute on Aging, Portland State University. https://archives.pdx.edu/ds/psu/38748

[15] Payment Limitations in Home and Community-Based Services, Ore. Administrative Rule § 411-027 (eff. 2022). https://www.oregon.gov/dhs/SENIORS-DISABILITIES/SPPD/APDRules/411-027.pdf

facilities for care, it does not include Room and Board. Residents must pay Room and Board payments directly to the provider. If the resident's income is high enough, they pay for a portion of their care, called client liability. This client liability reduces the amount ODHS pays to the facility. Some residents' incomes are under the room and board amount and qualifies for assistance from ODHS. Add-ons for RCF residents (up to three add-ons) and levels for ALF residents (Levels 1 to 5) are determined by an assessment made individually based on needs documented in the Client Assessment and Planning System (CA/PS) described in OAR 411-027-0025. Lowest and highest possible regular reimbursement rates for RCF and ALF are provided in the table for illustrative purposes.

Table 11. Medicaid reimbursement rates by type of setting and level of care, before and during the COVID-19 pandemic.

Type of Setting Level of Care	Jan 1, 2020	Apr 1, 2020	Jul 1, 2020	Jan 1, 2021	July 1, 2021	Oct 1, 2021	Jul 1, 2022
Room & Board	$608	$608	$608	$617	$617	$654	$654
Residential Care							
Base	$1,626	$1,789	$1,707	$1,792	$1,882	$1,882	$2,071
Base (WAO)	N/A	N/A	N/A	N/A	N/A	$2,071	$2,279
Base + 3 add-ons	$2,571	$2,830	$2,700	$2,836	$2,977	$2,977	$3,277
Base + 3 add-ons (WAO)	N/A	N/A	N/A	N/A	N/A	$3,277	$3,608
Assisted Living							
Level 1	$1,305	$1,436	$1,370	$1,439	$1,511	$1,511	$1,663
Level 1 (WAO)	N/A	N/A	N/A	N/A	N/A	$1,663	$1,830
Level 5	$3,068	$3,375	$3,221	$3,382	$3,551	$3,551	$3,907
Level 5 (WAO)	N/A	N/A	N/A	N/A	N/A	$3,907	$4,298
Memory Care	$4,267	$4,694	$4,480	$4,704	$4,939	$4,939	$5,433
Memory Care (WAO)	N/A	N/A	N/A	N/A	N/A	$5,433	$5,977

Note. WAO refers to the Enhanced Wage Add-on program. N/A means not applicable. All rates were retrieved from the ODHS website.[16]

[16] https://www.dhs.state.or.us/spd/tools/cm/rates.htm

In response to the COVID-19 crisis, ODHS increased rates for ALF/RCF by 10 percent effective April 1, 2020. This temporary increase lasted through June 30, 2020. Effective July 1, 2020, there was a permanent 5 percent increase from the baseline of the pre-pandemic rates (i.e., rates in place on Jan 1, 2020). As a result of legislative action, the rates increased by another temporary 5 percent starting on January 1, 2021 (scheduled to end June 30, 2023), followed by an additional permanent 5 percent increase effective July 1, 2021. In October 2021, in response to the Oregon Legislature's approval of the Enhanced Wage Add-on Program (WAO), a new rate was introduced for facilities voluntarily participating in the WAO program. Almost 80 percent of ALF/RCFs are currently participating in the program, which provides a temporary 10 percent enhanced rate to providers who pay wages at a specific threshold. Effective July 1, 2022, there was another permanent 10 percent increase to all rates.

As a result of these changes, between January 2020 and July 2022, there was a 27 percent increase in reimbursement rates among facilities not participating in the WAO program. For example, the base rate for residential care covered by ODHS increased from $1,626 to $2,071. For facilities that are participating in the WAO program, the increase in reimbursement rate was higher, at 40 percent during this period.

Some of these increases in reimbursement rates are due to programs that are temporary and may expire soon, reducing the rates from current levels. For instance, the 5 percent COVID temporary rate increase is set to expire by June 30, 2023, unless extended. Similarly, the WAO program, which supplements reimbursement rates for most providers by 10 percent, is currently scheduled to expire as of June 30, 2023 unless extended by the Oregon Legislature.

While Medicaid reimbursement rates are informative to understand the general level of payments made to facilities on behalf of Medicaid residents, they do not correspond to the full amount that facilities receive to cover cost of care. There are three main reasons behind this discrepancy. First, resident acuity affects overall reimbursement rates as well as operating costs. For instance, the average monthly reimbursement rates for an ALF with residents at Level 1 will be much lower compared to an RCF most of whose residents have three add-ons. Second, rate schedules published by ODHS do not include payments made by Medicaid residents directly to facilities (known as room and board) or additional payments that a facility may receive from ODHS ("exceptions"). These rates represent the gross amount and the client liability reduces the state's share of the rate. Room and board is not included in these rates. Finally, a sizable share of RCFs and some ALFs have specific needs contracts, which provide a much higher reimbursement rate, as discussed in Section I. As of December 2022, there were 30 ALF/RCFs with various specific needs contracts, including medical, traumatic brain injury, behavioral, hospice, or dementia, among others. According to ODHS, these contracted programs serve individuals with much higher needs and have higher staffing,

training, and expectations than other providers. The contracted rate for these facilities ranged from $6,963 up to $24,090, for a total contracted capacity of 847 beds (ranging from 4 to 108).

To understand the total Medicaid rates due to facilities, the IOA study team analyzed facility-level aggregate Medicaid reimbursement data covering the study period, provided by ODHS. The Medicaid reimbursement owed to facilities comprises the amount paid by ODHS (as base rate and as part of exceptions) as well as the amount Medicaid residents' client liability.

Table 12 shows the actual payments made by ODHS as well as those owed to facilities by Medicaid residents, during the cost study period (Section I), between July 1, 2021 and June 30, 2022, separately by type of setting (RCF, ALF, and MC). The rates shown are not restricted to the facilities in the sample and use reimbursement data from all Medicaid residents living in ALF/RCF.

Table 12. Average total payments per resident per month to facilities by ODHS and Medicaid residents, July 2021 through June 2022.

Type of Setting	n	Bottom 10th	Bottom 25th	Middle 50th	Average	Top 25th	Top 10th
Residential Care	98	$2,227	$2,362	$2,595	$3,285	$3,466	$5,539
Assisted Living	218	$3,119	$3,318	$3,569	$3,670	$3,846	$4,442
Memory Care	159	$5,186	$5,384	$5,554	$5,563	$5,742	$5,897
Specific Needs	33	$9,215	$10,825	$12,228	$12,339	$13,513	$16,760

Among RCF, the average total reimbursement per resident per month, including payments by ODHS and residents, was $3,285, and the reimbursement ranged from $2,227 at the bottom 10th up to $5,539 at the top. While the average total reimbursement was higher in ALF ($3,670) and MC ($5,563) compared to RCF, a similar variation was observed, although the bands were much narrower, especially for MC ($5,186 at the bottom 10th and $5,897 at the top 10th). As expected, the average total payments per resident per month to facilities with specific needs contracts were much higher at $12,339.

Sufficiency of Medicaid reimbursement rates to cover cost of care

To examine the sufficiency of actual Medicaid reimbursement rates to cover cost of care, we estimated the share of reporting facilities with average total payments to cost

ratios at specified levels. We used the average total payments per resident per month shown in Table 12 and the average total cost of care per resident per month calculated in Section I. To illustrate, if an RCF reported an average total cost of $3,000 per resident per month, their payments-to-cost ratio would be 110 percent ($3,285 from Table 12 divided by $3,000 multiplied by 100). A value above 100 percent indicates that payments cover the full cost of care. This method has been used by others such as the Medicaid and CHIP Payment and Access Commission (MACPAC) to compare reimbursements to facility costs.[17]

Table 13 shows the distribution of responding facilities across different payments-to-cost ratio levels. These ratios indicate that for a typical ALF/RCF, the total Medicaid reimbursement covers between 75–88 percent of total operating costs per resident per month. However, there was variation across facilities within each type of setting. For instance, one-third of RCF reported payments-to-cost ratios lower than 60 percent. On the other hand, about one-third of MC and specific needs contracted facilities reported more favorable ratios over 110 percent. The median of ratios were 75 percent, 88 percent, 83 percent, and 84 percent for RCF, ALF, MC, and facilities with specific needs contracts, respectively (not shown in table).

Table 13. Payments-to-cost ratios, July 2021 through June 2022.

Type of Setting	n	<60%	60-74%	75-89%	90-99%	100-109%	>110%
Residential Care	9	33%	11%	33%	11%	0%	11%
Assisted Living	33	15%	15%	24%	21%	24%	0%
Memory Care	17	6%	12%	41%	12%	0%	29%
Specific Needs	11	0%	27%	27%	18%	0%	27%

Note. Only single RCF, ALF, and MC were included in these calculations. Payments do not include incentives paid due to the WAO participation.

While these are the best estimates for actual payments received by facilities to cover resident care, payments-to-cost ratios we report are likely undercounts. ODHS confirmed that the data we have received do not include the 10 percent wage add-on that a facility might have received between October 2021 and June 2022 of the study period. If a facility participated in the WAO program through the whole period (9 months), their overall reimbursement rate might have been about 7.5 percent higher.

[17] MACPAC, 2023. Estimates of Medicaid Nursing Facility Payments Relative to Costs. Retrieved from https://www.macpac.gov/publication/estimates-of-medicaid-nursing-facility-payments-relative-to-costs/

Another important caveat to note is that the average total cost per resident per month reported by facilities include some expense categories that might not regularly be included in other cost-setting methods (e.g., nursing facility reimbursements). Moreover, there are few responding facilities in some types of settings (e.g., only 9 in single RCF).

Section III. Wages & Salaries in Assisted Living/Residential Care

The findings in this section address the third aim of SB 703: to evaluate the average compensation paid to direct care workers by the facilities located in specific geographic areas.

We collected wage and salary information for care-related staff based on previous studies conducted by the Oregon Health Care Association (OHCA)[18] and the National Post-Acute and Long-Term Care study.[19] Care-related staff include administrators, directors of health services, resident care coordinators, resident care assistants, medication aides/technicians, enrichment staff, registered nurses, licensed professional nurses, certified nursing assistants and certified medication aides. Responding ALF/RCF settings reported minimum, average, and maximum wages and/or salaries for each of the positions for whom they had employees in October 2022.

Salaries

Table 14 reports the average values of minimum, average, and maximum salaries reported for administrator and director of health services positions. Note that while all ALF/RCFs are required to employ an administrator, they are not required to employ a director of health services. Of the responding ALF/RCFs, 66 percent reported having a Director of Health Services employed in October 2022.

Hourly wages

Table 15 reports the average values of minimum, average, and maximum hourly wages reported for care staff employed in October 2022. The average hourly wages for resident assistants reported across responding communities in Oregon was $17.4, and the hourly wage for registered nurses was $46.6.

[18] https://www.ohca.com/salary-surveys/

[19] Sengupta, M., London, J. P., Caffrey, C., Melekin, A., & Singh, P. (2022). Post-acute and Long-term Care Providers and Services Users in the United States, 2017–2018. Vital Health Statistics, 3(47). https://www.cdc.gov/nchs/data/series/sr_03/sr03-047.pdf

Table 14. Assisted living/residential care administrator and director of health services salaries, October 2022.

Title	Minimum	Average	Maximum
Administrator	$81,924	$87,505	$97,809
Director of Health Services	$90,445	$92,634	$97,078

Note. Minimum=the average of minimum salaries reported; Average=the average of average salaries reported; Maximum=the average of maximum salaries reported. Assuming a 40-hour week and 52 weeks a year for hourly-salary conversion [2,080 hours].

Table 15. Assisted living/residential care staff hourly wages, October 2022.

Title	Minimum ($)	Average ($)	Maximum ($)
Resident Care Coordinator	22.0	23.6	24.5
Resident Assistant*	16.3	17.4	19.4
Medication Aide/Tech (Not Certified)	17.5	18.7	20.6
Enrichment Staff	18.1	19.7	22.0
Registered Nurse	43.1	46.6	46.8
Licensed Practical Nurse (LPN)	34.5	35.2	37.2
Certified Nurse Assistant (CNA)	19.1	20.7	23.4
Certified Medication Aide (CMA)	20.1	23.0	25.9

*e.g., direct care worker, personal care aide, resident services, caregiver.
Note. Minimum=the average of minimum wages reported; Average=the average of average wages reported; Maximum=the average of maximum wages reported. Assuming a 40-hour week and 52 weeks a year for hourly-salary conversion.

Geographic locations determine minimum wage criteria. There are three zones outlined by the Oregon Bureau of Labor & Industries (BOLI): Portland Metro, Standard, and Non-Urban.[20]

⇒ Portland Metro: Within the urban growth boundary, including parts of Clackamas, Multnomah, and Washington counties.

[20] Oregon Bureau of Labor and Industries. (2022). *Oregon Minimum Wage*. Oregon.Gov. https://www.oregon.gov/boli/workers/pages/minimum-wage.aspx

⇒ Standard: Benton, Clatsop, Deschutes, Hood River, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, Tillamook, Wasco, and Yamhill counties, and parts of Clackamas, Multnomah, and Washington Counties outside the urban growth boundary.

⇒ Non-Urban: Baker, Coos, Crook, Curry, Douglas, Gilliam, Grant, Harney, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, and Wheeler counties.

Table 16 compares the average hourly wages reported in this study to the BOLI minimum wage thresholds in Oregon. ALF/RCFs reported average hourly wages that were much higher than the minimum wages thresholds set by Oregon BOLI. Resident assistants in non-urban regions earned $16.20 per hour compared to their urban counterparts who earned $17.90 per hour, a difference of $1.70 per hour. Registered nurses in urban areas earned $11.50 more per hour compared to RNs employed in non-urban ALF/RCF.

Table 16. Average hourly wages of ALF/RCF care staff by minimum wage region, 2022.

Title	Metro ($)	Standard ($)	Non-Urban ($)	Oregon ($)
BOLI Minimum Wage Thresholds	14.8	13.5	12.5	-
Resident Care Coordinator	26.1	22.6	20.0	23.6
Resident Assistant*	17.9	17.4	16.2	17.4
Medication Aide/Tech (Not Certified)	19.3	18.8	16.8	18.7
Enrichment Staff	20.2	19.7	18.1	19.7
Registered Nurse	53.1	43.8	41.6	46.6
Licensed Practical Nurse (LPN)	36.3	34.5	30.3	35.2
Certified Nurse Assistant (CNA)	22.0	20.2	18.8	20.7
Certified Medication Aide (CMA)	22.5	23.9	n/a	23.0

*e.g., direct care worker, personal care aide, resident services, caregiver.
Note. Assuming a 40-hour week and 52 weeks a year for hourly-salary conversion. As of October-November 2022.

It is important to note that beginning in October 2021, ODHS/APD implemented an Enhanced Wage Add-On program (OAR 411-027-0160), providing a 10% increase of

the Medicaid rate if HCBS providers paid a starting wage of at least $15 per hour to caregivers. Just under two-thirds of all ALF/RCF communities in Oregon (n= 364) participated in the Wage Add-On program.

On average, communities operating as nonprofit paid higher average hourly wages for resident care coordinators, resident assistants, and non-certified medication aides/technicians while paying lower average hourly wages for licensed nursing staff (Table 17). For most resident assistants, the staff position that accounts for the largest percentage of ALF/RCF employees, the differences in wages for those employed in nonprofit facilities was 80 cents. The largest difference was for RNs, with for-profit communities paying an average of $5 more compared to their nonprofit counterparts.

Table 17. Average hourly wages of care staff by ownership status, 2022.

Title	For-profit	Nonprofit	Oregon
Resident Care Coordinator	23.3	25.5	23.6
Resident Assistant*	17.4	18.2	17.4
Medication Aide/Tech (Not Certified)	18.5	20.5	18.7
Enrichment Staff	19.7	19.6	19.7
Registered Nurse	47.1	42.1	46.6
Licensed Practical Nurse (LPN)	36.2	33.8	35.2
Certified Nurse Assistant (CNA)	20.8	20.6	20.7
Certified Medication Aide (CMA)	22.3	23.9	23.0

*e.g., direct care worker, personal care aide, resident services, caregiver.
Note. Assuming a 40-hour week and 52 weeks a year for hourly-salary conversion. As of October-November 2022.

Section IV. Costs to Private Pay Assisted Living/Residential Care Consumers in Oregon, 2019-2022

This section describes the cost of care to private pay consumers. We use resident-level data from three years (2019-2022) of the annual Community-Based Care Assisted Living, Residential Care, and Memory Care Resident (CBC-ARMR) study to describe the average base and total monthly charges to private pay residents. We present facility-and resident-level characteristics associated with higher charges.

The CBC study is an annual study of currently licensed ALF/RCF settings in the state of Oregon. The IOA is contracted by ODHS/APD to conduct this study. Beginning in 2019, IOA began collecting resident-level information, where demographic, health, services, and payment information are provided about three randomly selected residents within a setting. More details on this survey implementation and methods can be found at: https://www.pdx.edu/institute-on-aging/oregon-community-based-care-project-cbc

Eligible and Participating ALF/RCFs

Table 18 shows the number of eligible communities by year, accounting for "mixed" settings that are licensed for both ALF/RCF and MC residents. The IOA received a total of 3,181 questionnaires with available data for residents in all three study years.

Table 18. Oregon assisted living, residential care, and memory care residents (ARM-R) sample summary, 2019-2022

Study Cycle	2019-20	2020-21	2021-22
Number of eligible communities/cases	550/587	559/594	570/607
Responding communities	388	338	330
Number of residents with available data	1,162	1,006	1,013

Note. Sample sizes may vary depending on the question due to missing values.

Data analysis

Descriptive statistics (e.g., means, proportions, percentiles) are reported by facility and resident characteristics. Estimates were calculated using Stata 17 statistical analysis software after applying survey design weights to account for differences between facilities that responded or did not respond to the CBC study and missing data was

imputed to reduce loss of cases. Regression analysis was used to examine the association between facility and resident characteristics. Please see Appendix A for additional details on sample weighting, handling of missing data, and descriptions of statistical procedures.

Monthly charges for private pay residents

The CBC-ARMR study collects monthly charge information for private-pay residents. The questionnaire asks for the total monthly charge paid by three randomly selected residents. Of the 3,181 residents in this sample, 56 percent represented residents who privately paid for services as opposed to residents who primarily use Medicaid. Our analysis of cost to consumers focuses on this sub-sample of private pay residents (n= 1,770). Charge data has been adjusted for inflation using the Consumer Price Index and presented in 2022 dollars. Adjusted for inflation, total monthly private pay charges did not change significantly across study cycles (Table 19).

Table 19. Average total monthly private pay charges over time, 2019-2022.

Study Cycles	2019-20	2020-21	2021-22	Overall
Average Total Monthly Private Charge (2022 $)	$5,910	$5,650	$5,942	$5,852

The overall estimated average total monthly private pay charge is $5,852, though there is wide variation (Table 20). The bottom 10% of private pay residents paid $3,797 per month on average compared to private pay residents in the top 10 percent who paid an average of $8,607 per month.

Table 20. Distribution of average total monthly private pay charges over time, 2022 USD.

Percentile	Bottom 10th	Bottom 25th	Median	Top 25th	Top 10th
Total Charge	$3,797	$4,250	$5,850	$7,094	$8,607

The following presents average total monthly private pay charges by facility and resident characteristics.

Facility characteristics

Table 21 shows the average total monthly private pay charges by facility characteristics, comparing differences controlling for facility and resident characteristics. On average:

- Memory care residents pay $1,252 *more* per month than non-memory care residents ($p < .001$).
- Residents in ALF/RCF that accept Medicaid pay $523 *less* per month than private pay residents in settings that do not accept Medicaid.
- Residents of small ALF/RCF pay $383 ($p<.01$), $361 ($p<.05$), and $353 ($p<.05$) *less* per month compared to private pay residents in medium, large, and very large settings, respectively.
- Residents in rural ALF/RCF pay $636 *less* per month than private pay residents in urban settings ($p<.001$).

Resident characteristics

Table 22 shows the average total monthly private pay charges by resident characteristics, comparing differences controlling for facility and resident characteristics. When accounting for all facility and resident characteristics, assistance with activities of daily living is the resident characteristic associated with higher total monthly charges for private pay residents.

OAR 411-54 outlines five ADLs residents receive assistance with in ALF/RCF settings: eating, bathing, using the bathroom, dressing, and mobility/walking. Private pay residents receive regular and ongoing assistance with an average of two ADLs. On average, private pay residents pay an additional $293 for each of these five ADLs for which they receive assistance. Supplement Table B2 describes the difference in total monthly charges for private pay residents who do and do not receive assistance with each ADL individually.

Table 21. Proportions of private pay residents and average total monthly private pay charges by facility characteristics (n=1,770).

Characteristics		%	Average Total Monthly Charge (2022 $)	
			Unadjusted❖	Fully Adjusted❖❖
Facility Type	Assisted Living/Residential Care only	74	$5,366	$5,522
	Memory Care Endorsement	26	$7,209***	$6,774***
Region	Portland Metro	43	$6,418	$6,369
	Willamette Valley / North Coast	30	$5,381[a]	$5,373[a]
	Southern Oregon / South Coast	13	$5,622[a]	$5,607[a]
	East of the Cascades	14	$5,342[a]	$5,532[a,b]
Geographic Designation	Rural	32	$5,236***	$5,418***
	Urban	68	$6,137	$6,053
Medicaid Contract	Yes	68	$5,663***	$5,687***
	No	32	$6,262	$6,210
Ownership Status	For-profit	90	$5,828	$5,816
	Nonprofit	10	$6,068	$6,173
Capacity (number of licensed beds)	Less than 25 (small)	11	$6,456	$5,260
	25-49 (medium)	25	$6,389	$5,913[f]
	50 to 74 (large)	29	$5,731[c,d]	$5,891[g]
	More than 75 (very large)	35	$5,374[c,d,e]	$5,883[g]

❖ Unadjusted estimates do not account for other facility- or resident-level characteristics, ❖❖Fully adjusted estimates account for license type, geographic designation, ownership status, Medicaid contract, and licensed capacity, and resident age, sex, race/ethnicity, health service utilization in past 90 days, number of diagnosed health conditions, assistance with activities of daily living, number of behaviors, night shift and multiple staff assistance, mobility aid use, and number of prescriptions. * p < .05, ** p < .01, *** p <.001; [a] Statistically different from Portland Metro area at p< .001; [b] Statistically different from Willamette Valley/North Coast at p<.001; [c] Statistically different from small settings at p<.001; [d] Statistically different from medium settings at p< .001; [e] Statistically different from large settings at p<.05; [f] Statistically different from small settings at p <.01; [g] Statistically different from small settings at p < .05.

Table 22. Proportions of private pay residents and average total monthly private pay charges by resident characteristics (n=1,770), 2022 dollars.

Characteristics		%	Average Total Monthly Charge (2022 $)	
			Unadjusted❖	Fully Adjusted❖❖
Sex	Female	72	$5,922	$5,898
	Male	28	$5,669	$5,732
Race/Ethnicity	Persons of Color[a]	2	$7,118	$5,821
	Non-Hispanic, White	98	$6,836	$5,828
Age	Under 65 years	1	$7,674	$7,619
	65 to 74 years	11	$6,027	$5,931
	75 to 84 years	26	$5,972	$5,932
	85 or more years	62	$5,932	$5,769
Emergency Department (last 90 days)	Yes	18	$6,014	$5,827
	No	82	$5,816	$5,858
Hospital Admission (last 90 days)	Yes	10	$5,953	$5,857
	No	90	$5,841	$5,851
Hospice Use (last 90 days)	Yes	8	$6,556***	$5,707
	No	92	$5,790	$5,865
Night Shift Staff Assistance	Yes	41	$6,643***	$5,917
	No	59	$5,308	$5,808
Assistance from Two Staff	Yes	21	$6,774	$5,991
	No	79	$5,612	$5,816
Uses a Mobility Aid	Yes	74	$5,890	$6,025
	No	26	$5,741	$6,041
Assistance with Behaviors	No behaviors	62	$5,336	$5,921
	1 behavior	25	$6,459[d]	$6,083
	2 behaviors	11	$7,091[d,e]	$6,251
	3 behaviors	2	$7,328[d,e]	$6,276
Prescription Medications	No medications	2	$4,902	$5,681
	1-8 medications	53	$5,764[f]	$5,989
	9+ medications	45	$5,998[g]	$6,087
Assistance with Activities of Daily Living (ADLs) (mean)[b]		2	$467***	$293***
Diagnosed Health Conditions (mean)[c]		3	$137**	$27

❖ Unadjusted estimates do not account for other facility- or resident-level characteristics, ❖❖ Fully adjusted estimates account for license type, geographic designation, ownership status, Medicaid contract, and licensed capacity, and resident age, sex, race/ethnicity, health service utilization in past 90 days, number of diagnosed health conditions, assistance with activities of daily living, number of behaviors, night shift and multiple staff assistance, mobility aid use, and number of prescriptions. [a] Includes Black/African American, American Indian/Alaska Native, Native Hawaiian, Pacific Islander, Asian, Hispanic/Latino, multiracial [b] Based on five ADLs outline in OAR: eating, bathing, dressing, using the bathroom, mobility/walking; [c] Based on reported diagnoses of: heart disease, stroke, Alzheimer's disease or related dementias, hypertension, depression, serious mental illness, diabetes, cancer, osteoporosis, chronic obstructive pulmonary disorder, substance use disorder, arthritis, traumatic brain injury; [d] Statistically different from residents with no behavioral assistance at p<.001; [e] Statistically different from residents with assistance with one behavior at p<.001; [f] Statistically different from residents with no medications at p<.01; [g] Statistically different from residents with no medications at p<.001

Summary and Conclusion

This study addressed the three objectives set by SB 703, regarding costs of providing and buying care, sufficiency of Medicaid reimbursements to cover the cost of care, and wages and salaries for direct care workers. Overall, these three objectives underscore an acute need to better understand the health of the long-term care industry, from its operations and financing to labor dynamics, in a demographic environment that portends increasing demand for residential care. Each of these parts have implications for the well-being of older residents and residents with physical disabilities.

To meet the legislative deadline, this study was conducted in a narrow timeline (< 3 months), leading to some trade-offs in terms of data collection and analysis. A longer study period may have increased the participation rate among providers, allowing a more detailed analysis for some subgroups (such as region *and* nonprofit). In our interviews and workshop meetings, there were data points (such as revenues) that were deemed important by some participants, which we were not able to collect to prioritize the main objectives of SB 703. Similarly, while we focused on currently employed staff to reduce response burden, there was great interest in separating out wages paid to third party or agency staff (we were only able to get aggregate expenses).

The overall message of this report is one of variation - across setting types and geographic regions in Oregon. The distribution of all indicators of interest (such as cost to provide care, sufficiency ratios, and hourly wages) shows a wide range of experiences in this industry across Oregon. This type of heterogeneity cautions against a one-size-fits-all approach to operations, financing, and issues related to the labor market, in this industry.

To our knowledge, this is the first study of its kind with its explicit focus on the match between Medicaid reimbursement and operating costs in assisted living and residential care facilities in Oregon. Along the way, we learned some lessons that may hopefully benefit others in future studies of similar kind:

- ⇒ **We recommend connecting with and identifying contacts within management companies** since administrators may only have access to a budget but not all financial data.
- ⇒ **Partnership and collaboration with provider organizations**, such as Oregon Health Care Association (OHCA) and LeadingAge, were critical to success. We thank them once again for all their effort on behalf of this study and older adults in Oregon.
- ⇒ **We noted differences between regulatory definitions and what one might call "business reality"** during questionnaire development. For instance, while

the study was designed to capture information at the license level as the unit of analysis, providers do not track financial information at the level of individual licenses or sometimes even buildings. Furthermore, unlike nursing facilities, financial bookkeeping and practices are not uniform across ALF/RCF.

⇒ **We cannot emphasize enough the importance of flexibility in data collection, such as offering multiple options for providers to submit necessary information** (e.g., paper surveys, online questionnaires, and uniform Excel spreadsheets). Future efforts of data collection would likely benefit from validated and protected Excel sheets, similar to NF cost reporting.

The narrow study timeline, the uniqueness of the study content, and dearth of available data around these topics in ALF/RCF leave many opportunities for further research in this area. Some we have identified include:

⇒ The impact of participation in the Enhanced Wage Add-on program on direct care worker wages,

⇒ The trends in total cost of care across cost categories over time, and

⇒ Improvements to processes of data collection from ALF/RCFs.

Finally, we would like to end by thanking Oregon assisted living, residential care, and memory care providers for participating in this study and making it happen, and for all they do for older adults in Oregon.

Appendix A: Methods

Cost to providers and direct care wages

Study population

All 569 ALF/RCF settings licensed in Oregon as of September 2022 were eligible to participate in this study. Of these, 532 licenses were for a single type of setting: 343 ALF/RCF (no memory care) and 189 memory care. There were 37 licenses that included a combination of setting types (i.e., ALF or RCF and MC-endorsed beds). All communities were asked to submit separate questionnaires for ALF/RCF and MC costs, resulting in a total of 606 possible cases [532 + (37x2)].

Response rates

A total of 153 questionnaires were submitted to the IOA-PSU team that represented cost and wage information for a total of 199 cases out of a maximum of 606, for a response rate of 32.8 percent. Some communities were not able to separately report cost and wage information by ALF/RCF or MC setting type, resulting in information for multiple licenses represented in a single questionnaire.

Table A1. Questionnaire response rates by facility characteristics.

Characteristics		Response Rate (%)	Licenses (N)
Medicaid Contract	Yes	35.5*	151
	No	24.1	48
Memory Care Endorsement	Yes	32.0	114
	No	33.3	85
Licensed Capacity	Less than 50 beds	31.5	67
	50 or more beds	34.6	132
Profit Status	For-profit	33.1	183
	Nonprofit	30.2	16
BOLI Minimum Wage Region	Portland Metro	33.5	75
	Standard	33.2	96
	Non-Urban	30.1	28

Table A1 shows response rates by facility characteristics, indicating there were no significant differences in response rates by MC endorsement, size, and the BOLI minimum wage region. ALF/RCFs with a Medicaid contract were more likely to submit a questionnaire than settings without a Medicaid contract.

Questionnaire development

Informational interviews

In collaboration with the Oregon Health Care Association and LeadingAge, key informants were identified to provide feedback and insight on the development of a survey tool to collect information on operating expenses, wages, and benefits. Key informants consisted of chief executive officers, chief finance officers, chief legal officers, executive directors, payroll/benefits administrators, operations executives, owners, and administrators of assisted living/residential care providers in Oregon. PSU IOA researchers invited 35 key informants from 29 unique ALF/RCF companies, including principals from large companies that own and operate multiple licensed communities, to independently owned and operated rural communities.

We interviewed 17 stakeholders from 14 unique companies that worked in the assisted living market, including ALF/RCF owners, CEOs, COOs, CLOs and CFOs of management companies, administrators, industry group leadership, and other related parties.

Our interviews revealed the following five lessons related to designing a study to collect information about cost of providing care in the ALF/RCF market:

- Cost categories vary from provider to provider, although there were commonly used line items that we identified (i.e., property expenses, food expenses, and direct care supplies).
- Reaching out to the “right person” for information was utmost important; however, the responses varied in terms of who constituted the “right person” in each company.
- Include clear definitions for the cost categories to assist providers in determining where to place specific expenses.
- Bookkeeping varies depending on the location (rural vs. urban), size of the community and ownership type. Holding multiple licenses at the same address may have employees who “float” between settings and combine fixed expenses such as utility bills that may be difficult to accurately reflect.
- Consider the look-back period and the influence of wage increases, inflation and interest rates that may unrealistically inflate or dilute costs.

Definitions

Table A2 presents definitions of key terms by report section. These terms include reporting periods for each of the studies included in this report, how expense categories

were defined for providers, and definitions specific to Medicaid-reimbursement in Oregon's CBC facilities.

Table A2. Terms and definitions used in the cost and wage study.

Section I	Definitions
Care-Related Staff	Includes staff who provide assistance with activities of daily living, medication administration, resident-focused activities, supervision, and support (e.g., resident assistants, medication aides, licensed nurses).
Cost Data Reporting Period	State Fiscal Year 2022 (July 1, 2021 to June 30, 2022)
Total Cost of Care per Resident per Month	Total operating expenses / (12 months x average number of residents in SFY)
Cost Categories	
Property Expenses	Building rent/lease, interest, building depreciation/amortization, real and personal property taxes, property insurance.
Administrative & General Expenses (non-labor)	Non-labor costs such as vending, office supplies, travel, advertising, licenses, legal fees, liability insurance, sales and marketing expenses, education/training.
Management Fees	Fees paid by community for a third party to professionally manage the operations of the community-based care community for the owners of the community.
Food Expenses	Raw food, food related supplies.
Direct Care Supplies	Supplies related to activities programs, clinical care, medication logs, incontinence care, barber/beauty shop, equipment rentals.
Total Payroll Expenses	Payroll taxes, benefits, and wages for all employees who have a W-2 on file.
Third Party Staffing Agency Care-Related Staff	Costs associated with hiring agency/third party care-related staff.
All Other Operating Expenses	All other operating costs not included above (e.g., utilities, laundry, housekeeping, vehicles, maintenance, equipment and supplies, external fixed costs).

Total Operating Expenses	Sum of all cost categories = (Property Expenses + Administrative & General Expenses (non-labor) + Management Fees + Food Expenses + Direct Care Supplies + Total Payroll Expenses + Third Party Staffing Agency Care-Related Staff + All Other Operating Expenses)
Section II	
Medicaid Liability Rate	Amount owed to facilities by clients receiving services.
Medicaid Service Rate	Amount owed to facilities paid by ODHS, does not include liability.
Medicaid Data Reporting Period	State Fiscal Year 2022 (July 1, 2021 to June 30, 2022)
Rate Schedule	Maximum Medicaid payments by type of care setting maintained by ODHS/APD posted at http://www.dhs.state.or.us/spd/tools/program/osip/rateschedule.pdf.
Service Priority Level	The order in which ODHS/APD and Area Agency on Aging staff identify individuals eligible for a nursing facility level of care, Oregon Project Independence, or home and community-based services ranging from 1-18. A lower SPL number indicates greater or more severe functional impairment.
Specific Needs Contract	A type of special payment contract that pays a rate in excess rate schedule to providers who care for a group of individuals all of whose service needs exceed the service needs encompassed in the base payment and all add-ons.
Section III	
Enhanced Wage Add-On Program	The Program is designed to support Home and Community Based Services (HCBS) providers with retention of caregivers by paying a starting wage of $15 per hour for all caregivers, with an increase to $15.50 per hour by the second year of the 2021-2023 biennium (July 1, 2022). ODHS will provide additional compensation, an add-on of 10% of the Medicaid rate,

	to those who meet eligibility criteria.
Resident Assistant	OAR 411-54 defines “caregivers” as “a facility employee who is either direct care staff or a universal worker, who is trained in accordance with OAR 411-054-0070 (Staffing) to provide personal care services to residents. These caregivers might also be referred to as resident care assistants, direct care workers, personal care staff, and care aides, among other terms used by ALF/RCF communities.
Salary	Annualized payment based on 40-hour work week and 52 weeks per year
Wage	Hourly rate paid to employees
Wage/Salary Data Reporting Period	October to November 2022
Section IV	
CBC-ARMR Reporting Periods	Fall 2019-Winter 2020; Fall 2020-Winter 2021; Winter 2022

Data collection

Medicaid reimbursement data

ODHS/APD provided the IOA with de-identified quarterly Medicaid reimbursement data from July 2021 through June 2022 in January 2023. For consumers who use Medicaid to pay for services in home-and community-based care settings, ODHS/APD tracks the total amount owed to facilities. Medicaid reimbursement includes three values: services, exceptions, and liabilities. Services refer to the amount owed to a facility for a consumer that is paid by ODHS/APD through Medicaid via waiver programs. Exceptions are additional payments that are granted if ODHS/APD determines that the Medicaid resident has service needs, documented in their service plan, that warrant a service payment exception and the provider actually provides the exceptional service. Client liabilities describe the amount owed to facilities by the individual client. Rate schedules only reflect the service amounts owed to facilities by ODHS/APD and do not include client liability and exception amounts, as they are determined on an individual basis. Total Medicaid reimbursement to facilities comprise payments made by ODHS/APD (service and exception payments) and amounts owed by individual clients.

Primary data collection from communities

Questionnaires were mailed at the beginning of October 2022 and due back in November 2022. There were multiple options for response, where ALF/RCF communities could either fill out the mailed questionnaire and mail/email/fax it back to the study team; use an online, secure, and unique link provided in the mailed documents; or send requested data to the study team in another preferred format (e.g., Excel). The questionnaire included questions that asked about:

- Average residents per day,
- Percent Medicaid and memory care beneficiaries,
- Total operating expenses and separate expense categories, and
- Average, lowest, and highest hourly wages or salaries for care-related staff employed by the facility, separately for 10 care-related staff categories.

Please see Appendix C for a copy of the mailed questionnaire.

The PSU-IOA study team partnered with ODHS/APD, Oregon Health Care Association, and LeadingAge to communicate the study purpose and encourage participation from communities. To achieve an adequate response from ALF/RCFs, the following communication strategies were used:

- ODHS/APD ALF/RCF Provider Alert on 10/07/22
- USPS mailing from PSU/IOA to all licensed ALF/RCF communities on 10/14/22
- Email from ODHS to ALF/RCF Management Company Representatives 10/28/22
- Email from OHCA to providers on 10/31/22
- Newsletter from professional organizations (OHCA, LeadingAge)
- Targeted phone calls from professional organizations to large providers

Data analysis

Data cleaning

Data was entered into Excel and cross-checked for discrepancies or errors in reporting (e.g., addition errors, missing digits). Calls and emails were made to responding communities to clarify any missing information and ensure the average number of residents, percent of Medicaid, and percent of memory care residents were correctly allocated to the appropriate license. If a data point could not be clarified by mail or email, it was left blank. There were 104 questionnaires with valid cost data, and of these six questionnaires only reported total operating expenses, and did not allocate to the cost subcategories on the questionnaire. All 153 questionnaires had valid wage data.

Identifying outliers

Outliers in cost reporting were identified using the interquartile range (IQR) method. The IQR is defined as the difference between the 75th (top 25th) and 25th (bottom 25th) percentiles of a data distribution. The IQR method of identifying outliers consists of creating lower and upper bounds by multiplying the IQR by 1.5 and subtracting this value from the 25th percentile (lower bound) and adding it to the 75th percentile (upper bound). Any estimates that are less than the lower bound or greater than the upper bound are considered outliers.

Cost to Assisted Living/Residential Care Consumers, 2019-2022

Data analysis

Weighting procedures

Weighting procedures are used to account for potential differences in response to the CBC studies across all cycles. Two sets of weights are used to account for the probability of residents being selected at random and to account for any facility characteristics that may be associated with nonresponse to the study overall. We calculated the average probability of selection for each resident into the study sample by dividing the number of randomly selected residents (1-3, based on the number of returned surveys) by the number of residents on the census as reported by the facility. As settings range in size and occupancy, we then used the inverse of this average probability as design weights to account for the fact that residents have unequal probabilities of being selected randomly.

We then calculated non-response weights based on the association of facility-level characteristics (facility type, region, size, Medicaid contract, and profit status) and survey response. We estimated a logistic regression model that included facility type (ALF/RCF/MC), region (Portland Metro, Willamette Valley/North Coast, Southern Oregon/South Coast, East of the Cascades), size (6-24 beds, 25-49 beds, 50-74 beds, and 75 or more beds), Medicaid contract, and ownership status (for-profit or nonprofit. Based on this model, we estimated the predicted probability of responding for each facility. We used the inverse of predicted probabilities as nonresponse weights. We then multiplied the design weights with the nonresponse weights to account for differential probability in being randomly selected and nonresponse.

Handling missing data

Missing data ranged from 1–11 percent across all measures included in this analysis. Specifically, payment source (private pay or Medicaid) and total monthly charge (for private pay residents) had 2 percent and 7 percent missingness, respectively. To

minimize bias in estimates, we performed a multiple imputation procedure through predictive mean matching, where missing values were inferred based on cases with complete data.

There were 60 cases where data was missing for payment source, base monthly charge, and total monthly charge. These cases were removed prior to the multiple imputation procedure reducing the overall sample from 3,181 to 3,121 cases. Predictive mean matching using the five nearest data points to impute missing values was performed across 30 iterations.

Inflation adjustment

We used the Consumer Price Index (CPI) provided by the U.S. Bureau of Labor Statistics to adjust monthly private pay charge amounts to 2022 dollars.[21] Between January 1, 2019 and January 1, 2022 there was a 12 percent increase and between January 1, 2020 and January 1, 2022 there was a 4 percent increase. 2019 charge estimates were multiplied by 12 percent and 2020 charge estimates were multiplied by 4 percent in order to compare residents' base and total monthly charges in 2022 dollars.

[21] U.S. Bureau of Labor Statistics. (n.d.). *CPI Inflation Calculator*. Retrieved September 1, 2022, from https://www.bls.gov/data/inflation_calculator.htm

Appendix B: Supplemental Tables and Figures

Table B1. Total cost of care per resident per month and facility characteristics by geographic region.

Region	Middle 50th	Average	Medicaid	Memory Care	Licensed Capacity
Oregon	$5,621	$6,698	50.6%	27.9%	67.2
Portland Metro	$5,616	$6,952	44.2%	19.1%	71.3
Willamette Valley / North Coast	$5,810	$6,342	56.2%	39.7%	65.4
Southern Oregon / South Coast	$5,966	$7,686	52.5%	21.9%	59.3
East of the Cascades	$4,847	$5,660	53.2%	32.2%	68.3

Note. *Portland Metro* (n=41; N=55): Counties of Clackamas, Columbia, Multnomah, Washington, *Willamette Valley* (n=33; N=43): Counties of Benton, Clatsop, Lane, Lincoln, Linn, Marion, Polk, Tillamook, Yamhill, *Southern Oregon* (n=16; N=21): Counties of Coos, Curry, Douglas, Jackson, Josephine, *Eastern Oregon* (n=14; N=22): Counties of Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, Wheeler. (n= # questionnaires; N= # licenses represented)

Table B2. Average total monthly charges by activities of daily living, 2022 dollars.

Receives Assistance with:		%	Average Total Monthly Charge (2022 $)	
			Unadjusted❖	Fully Adjusted❖❖
Eating	Yes	12	$6,926***	$5,820
	No	88	$5,707	$5,857
Bathing	Yes	65	$6,377***	$6,090***
	No	35	$4,885	$5,426
Dressing	Yes	51	$6,589***	$6,208***
	No	49	$5,093	$5,493
Using the bathroom	Yes	41	$6,745***	$6,266***
	No	59	$5,225	$5,565
Mobility/Walking	Yes	30	$6,702***	$6,228***
	No	70	$5,493	$5,694

❖ Unadjusted estimates do not account for other facility- or resident-level characteristics, ❖❖ Fully adjusted estimates account for license type, geographic designation, ownership status, Medicaid contract, and licensed capacity, and resident age, sex, race/ethnicity, health service utilization in past 90 days, number of diagnosed health conditions, assistance with activities of daily living, number of behaviors, night shift and multiple staff assistance, mobility aid use, and number of prescriptions.

Appendix C: Questionnaire

Wages & Costs in Oregon Assisted Living/Residential Care Study

All currently licensed assisted living/residential care communities in Oregon are asked to provide information about average staff wages and benefits and total expenses for major cost categories. **To protect privacy and confidentiality, no individual facility information will be reported, only aggregated information.**

Please choose **ONE** of the following to return your questionnaire:

Complete online at:	[redacted]
Scan and email to:	
Fax to:	
Please use the self-addressed, stamped envelope and mail to:	

This questionnaire is due by November 4th, 2022.

If you are not the correct person to fill out any or all portions of this questionnaire, please forward to the appropriate person/department in your organization.

[redacted]

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1. What was the **average residents per day** who lived in this community **between July 1, 2021 and June 30, 2022**.

2. What percentage (%) of your residents were **Medicaid beneficiaries between July 1, 2021 and June 30, 2022**? Please enter 0 if you had no Medicaid beneficiaries or N/A if your community does not have a Medicaid contract.

3. What percentage (%) of your residents were **living in a unit endorsed for memory care between July 1, 2021 and June 30, 2022**? Please enter 0 if you have no memory care residents or N/A if your community does not have a memory care endorsement.

[CONTINUE TO NEXT PAGE]

4. **Between July 1, 2021 and June 30, 2022,** what were the following costs for this community? *Please use your best estimate.*

TOTAL OPERATING EXPENSES (1 + 2 + 3 + 4 + 5 + 6 + 7 + 8)	$_____	
1. Property expenses	$_____	Building rent/lease, interest, building depreciation/amortization, real and personal property taxes, property insurance
2. Administrative & general expenses (non-labor)	$_____	Non-labor costs such as vending, office supplies, travel, advertising, licenses, legal fees, liability insurance, sales and marketing expenses, education/training
3. Management fees	$_____	Fees paid by community for a third party to professionally manage the operations of the community-based care community for the owners of the community.
4. Food expenses	$_____	Raw food, food related supplies
5. Direct care supplies	$_____	Supplies related to activities programs, clinical care, medication logs, incontinence care, barber/beauty shop, equipment rentals.
6. Total payroll expenses (6a+6b)	$_____	Payroll taxes, benefits, and wages for all employees who have a W-2 on file.
6a. Total salaries & wages (6a.1+6a.2)	$_____	Total salaries and wages for all employees who have a W-2 on file.
6a.1. Care-related employee salaries & wages	$_____	Care-related employees include staff who provide assistance with activities of daily living, medication administration, resident-focused activities, supervision, and support (e.g., resident assistants, medication aides, licensed nurses).
6a.2. Other (non-care-related) employee salaries & wages	$_____	Includes salaries and wages for all non-care-related employees.
6b. Total payroll taxes & fringe benefits (6b.1 + 6b.2)	$_____	Payroll taxes, health insurance, paid time off, overtime, bonuses, educational assistance, life insurance or other benefits
6b.1. Care-related payroll taxes & fringe benefits	$_____	Care-related employees include staff who provide assistance with activities of daily living, medication administration, resident-focused activities, supervision, and support (e.g., resident assistants, medication aides, licensed nurses).
6b.2. Other (non-care-related) payroll taxes & fringe benefits	$_____	Includes payroll taxes and fringe benefits for all non-care-related employees.
7. Third party staffing agency care-related staff	$_____	Costs associated with hiring agency/third party care-related staff.
8. All other operating expenses	$_____	All other operating costs not included above, (e.g., utilities, laundry, housekeeping, vehicles, maintenance, equipment and supplies, external fixed costs)

5. Please indicate the **current** wage payment method and hourly wage or salary for these care related staff.

Staff employed as of October 1, 2022:	**Wage payment method** (please select one by marking X)			**Hourly wage or annual salary**		
	Hourly	**Salary**	**N/A**	**Average**	**Lowest**	**Highest**
Administrator				$	$	$
Director of Health Services				$	$	$
Resident Care Coordinator				$	$	$
Care-related staff employed as:						
Resident assistant (e.g., direct care worker, personal care aide, resident services, caregiver)				$	$	$
Medication aide/tech (not certified)				$	$	$
Enrichment staff (e.g., activities)				$	$	$
Registered Nurse (RN)				$	$	$
Licensed Practical Nurse (LPN)				$	$	$
Certified Nurse Assistant (CNA)				$	$	$
Certified Medication Aide (CMA)				$	$	$

THANK YOU FOR YOUR PARTICIPATION!