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Welcome to the second annual Marcum Five-Year Nursing Home Statistical Analysis. This year’s report covers the period 2014-2018, which concluded on an especially challenging note for the long-term care industry.

Some in the industry may consider 2018 to have been a year of gloom and doom, but at Marcum, we like to consider it a year of opportunity and transition. While a declining census continues to impact the industry, it also has forced providers to better micromanage operations to achieve positive results. While these results will take some time to become visible in the data, we do believe they are transitional building blocks for the future. The impact of 2018 is still reverberating, and in practical terms, it forced the long-term care industry to confront the imperative to shape the patient-centered operating model of tomorrow.

We all lived and breathed through the passage of the Patient Driven Payment Model (PDPM) in July 2018. We planned for it, studied the potential impacts of this first major change in Medicare reimbursement in more than two decades, and made the necessary adjustments. These included changes and operational modifications to meet the new reimbursement requirements while balancing outcomes and setting appropriate expectations.

“Opportunistic” is a relative term when considering 2018. With the census beginning to level out, we’ve seen what we hope is the light at the end of the tunnel. It’s no secret that many states will continue attempting to right-size the industry, but we caution regulators. The growing aging population will present challenges for the industry as well as opportunities for the provider community to capitalize on the expanding aging demographics.

With these introductory thoughts, I’m pleased to present our 2014–2018 Nursing Home Statistical Analysis. The data we present are intended to uncover trends and provide you with numerous benchmarks as relate to the operation of close to 15,000 long-term care providers throughout the country.

We hope you will find it a helpful resource for your short- and long-term strategic planning, and invite you to share your feedback. We always welcome the opportunity to engage in thoughtful dialog about the forces at work in our industry.

Matthew Bavolack, Principal Healthcare Practice Leader
Marcum LLP utilized the 2014 through 2018 Medicare cost reports “as filed” with the Center for Medicaid and Medicare Services (CMS) to gather data for this study. The information from CMS represents both fiscal year-end and calendar year-end cost reports available at the time of download. This information is subject to change based upon compliance audits and/or provider-amended documents.

Note: We have not audited the data presented herein and are therefore unable to issue an opinion in terms of its accuracy and reasonableness. This mainly represents a snapshot of the industry across the country. Further detailed comparisons are available upon request from Marcum LLP.

This publication illustrates statistics from full-year (12 months) cost reports. Marcum LLP downloaded the database of cost reports from CMS and applied the bell-shape curve methodology, also known as normal distribution to gather the statistics illustrated in this publication. In addition, and different from last year’s analysis, we elected to remove facilities that failed to report data properly and only included providers with full-year (12 months) cost reports. We believe this methodology filtered outliers that would otherwise skew the results. With these changes, there are minor differences compared to our previous publication as the sample size for each year has changed:

### Current Years Sample Size

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<thead>
<tr>
<th>YEAR</th>
<th>FACILITIES IN SAMPLE</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
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<td>2018</td>
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### Prior Years Sample Size

<table>
<thead>
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</thead>
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</tr>
<tr>
<td>2018</td>
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</tr>
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</table>
Averages were taken from the sample size for each criterion both regionally and nationally. Regionally, the states are categorized by the following geographic areas: Midwest, Northeast, Pacific, Rocky Mountains, Southeast, and Southwest.

**MIDWEST**
Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

**NORTHEAST**
Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

**PACIFIC**
Alaska, California, Hawaii, Oregon, Washington

**ROCKY MOUNTAINS**
Colorado, Idaho, Montana, Nevada, Utah, Wyoming

**SOUTHEAST**
Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia

**SOUTHWEST**
Arizona, New Mexico, Oklahoma, Texas
In 2008, CMS created a Five-Star Quality Reporting System as a tool to assist consumers in comparing nursing facilities in their area. The system results in an overall quality rating of 1 to 5 stars (1 being the lowest and 5 being the highest) based on a nursing home’s performance of three domains: health inspections, staffing, and quality measures. The Nursing Home Compare website (https://www.medicare.gov/nursinghomecompare/search.htm) provides the overall star rating as well as a separate star rating for each of the three domains for every nursing home in the U.S.

- **Health Inspections** ratings are based on the number, scope, and severity of deficiencies identified during the three most recent annual inspection surveys, along with findings from the most recent 36 months of complaint investigations, as well as any repeat visits needed to verify corrections.

- **Staffing** ratings are based on nursing home staffing levels of RNs and also total nursing, which includes RNs, LPNs, and nurse aides. The measures are derived from quarterly data submissions through the Payroll-Based Journal (PBJ) System, along with a daily resident census obtained from the MDS assessments. The hours are case-mix adjusted. There is evidence of a correlation between a nursing home’s staffing levels and a resident’s outcomes.

- **Quality Measures** ratings are based on the performance of 17 MDS- and Medicare-claims-based quality measures. These include 10 long-stay measures and seven short-stay measures.
The Southwest region has the highest percentage of 1-star ratings, with 511 of their 1,713 homes receiving only 1 star. The Pacific region has the lowest percentage of 1-star ratings, with 175 of the 1,585 in the Pacific region having 1 star.

The Rocky Mountains region has the highest percentage of 5-star ratings. Of the 573 homes in the Rocky Mountains region, 186 were awarded 5 stars. The Southwest has the lowest percentage of 5-star ratings. Of the 1,713 homes in the Southwest, only 198 received a 5-star rating.

For the nation as a whole:

- 3,323 homes or 21.69% received a **5-star rating**
- 3,402 homes or 22.21% received a **4-star rating**
- 2,835 homes or 18.51% received a **3-star rating**
- 2,912 homes or 19.01% received a **2-star rating**
- 2,845 homes or 18.57% received a **1-star rating**

(Please note that the Nursing Home Compare website does have some facilities with no rating; therefore, the totals mentioned above do not include 100% of the facilities in the United States.)

A CMS staffing study found that there is a direct correlation between a nursing home’s staffing ratios and the quality of care in a nursing home. The 5-star ratings illustrated in the graph above do support this finding. As shown, the Southwest region has the highest number of 1- and 2-star rated facilities in the United States. The Southwest region also has the lowest amount of nursing hours per patient day (PPD) as illustrated in the nursing section of our study. On the other hand, the Pacific region has the lowest number of 1-star facility ratings and the second highest number of 5-star rated facilities. The staffing ratio and quality care correlation is consistent as they have the highest amount of nursing hours per patient day.
It is with no surprise that the population of the United States continues to grow. In 2018, the population in the United States was estimated to be 326.8 million, and in 2019 the estimate is 329.1 million. Hence, this represents a 0.71% overall population increase from 2018 to 2019. While the population continues to grow, so does the elderly population 65 years and older, as well as the enrollment into the Medicare program. Many in this age group will be looking for long-term care options in the future.

Several decades ago, the only post-acute care option was the placement of patients into nursing homes. There are many more choices for today’s aging Americans such as home- and community-based care. With these additional choices, the nursing home industry is feeling the consequences with lower occupancy rates and facility closings. In our previous year’s publication, we reported that there were 15,638 certified nursing facilities in the United States. A year later, that number has decreased to 15,520. The biggest decrease in the number of facilities was seen in Massachusetts, with 20 fewer facilities. Wisconsin also had a significant change in the number of facilities, now having 18 less than the previous year. However, some states did see an increase in the number of facilities, with Missouri adding seven additional facilities since last year’s report.
Number of Certified Nursing Homes by State (2018 and 2019)
The United States has 118 fewer homes in 2019, compared to 2018.

33 states have fewer homes in 2019, compared to 2018.

6 states have more homes in 2019, compared to 2018.

12 states had no change in the number of homes between 2018 and 2019.

Massachusetts experienced the largest decrease in the number of homes, with 20 fewer in 2019.

Missouri had the largest increase, with seven additional homes in 2019.

Every region saw a decrease in the number of homes, except for the Rocky Mountains region, which had seven additional homes in 2019.

The Northeast has 43 fewer homes in 2019 compared to 2018, which represents 1.65% of their homes (the largest percentage decrease).

The Midwest had the largest facility decrease, with 46 fewer homes in 2019, which represents a 0.89% decrease.
As the prior chart indicates, there are several types of long-term care options for today’s elderly population. Regulators are continually pushing to grow the home- and community-based model. Hence, many folks are staying in their homes longer and/or receiving care from friends and family members, or from hired home healthcare workers. Another sector of healthcare that has seen double-digit growth over the past decade is senior living. This option includes a residential care community such as an assisted living facility, congregate housing, memory care units, independent living, and continuing care retirement communities. In many instances these options are more attractive to the aging population as they can retain some of their independence. In 2011, the average daily rate in the United States for a semi-private room in a nursing home was $214 and $239 for a private room. By 2018, the U.S. average semi-private nursing home room rate was $245 per day and $275 for a private room. In 2018, Oklahoma had the lowest average daily rate at $153 per day for a semi-private room and $174 for a private room. Alaska had the highest room rates at $963 and $907 for a semi-private and private room, respectively. Compare these rates to the 2018 U.S. average daily rate in an assisted living, one-bedroom apartment of $132. It is projected that by 2028 the average daily nursing home rate for a semi-private room in the United States will be $329 and $370 for a private room. While assisted living and private duty home care may be representative of alternative options to nursing home care and may, on the surface, seem to more cost effective, there are numerous concerns and issues related to such care. Home- and community-based care are intermittent as opposed to skilled nursing home care, which is 24-hour supervised care. Additionally, both assisted living and private duty nursing care may be only partially funded by states. Hence the burden of the cost of care falls on the elderly patient and/or their adult children, which can make this option cost prohibitive.

There are several types of long-term care options for today’s elderly population.
Nursing Home and Assisted Living Room Rate Per Diem Comparison
(2011, 2018, 2028 Projected)

Source: 2011 Market Survey of Long-Term Care Costs and Genworth Cost of Care Service 2018
Alaska has the highest nursing home, semi-private, and private room rates in 2011, 2018, and projected in 2028.

Oklahoma has the lowest semi-private room rates in 2011, 2018, and projected in 2028. It also has the lowest private room rates in 2018 and 2028 projected. Louisiana had the lowest private room rate in 2011.

The private room rate for the nation as a whole is on the average 12% higher than that of a semi-private room.

In 2018, Washington, DC, had the highest assisted living rate for a private, one-bedroom apartment. Missouri had the lowest rate.
In 2018, the Southwest region had the lowest average nursing room rates (both semi-private and private). The Northeast had the highest rates.

Early in the 1990s, managed care organizations (Medicare Part C) became an option for Medicare beneficiaries. In its earlier years, 4% of Medicare payments for the 33.7 million beneficiaries enrolled were paid to a managed care organization. By 2010, that number grew to 24.5% of payments for the 47.4 million Medicare beneficiaries and reached 29.9% of payments for the 56.5 million in 2016. It is important for facilities to continue to review their contracts with the various managed care organizations to ensure that they are reasonably being reimbursed for services provided and that they are following all of the specific rules in place by each organization.
The gap between fee-for-service and managed care is narrowing.

Source: Centers for Disease Control and Prevention/ National Center for Health Statistics

According to the National Center for Health Statistics, in 2016, 83.5% of nursing home residents were over the age of 65, and 38.6% were 85 years and older. Also in 2016, 64.6% of nursing home residents were female. Medicaid was the most used payor source in nursing homes at 61.8%. A diagnosis of hypertension was found in 71.5% of nursing home residents. Alzheimer’s disease or other dementias had the highest presence in nursing homes at 47.8%, compared to other long-term care environments. The third-highest diagnosis seen in nursing home was depression with 46.3%. This also was a higher percentage than any other long-term care sector. The three highest activities of daily living that required assistance in a nursing home were bathing (96.7% of residents), dressing (92.7%), and walking or locomotion (92.0%).
Number of Skilled Nursing Facilities by State

Source: https://www.medicare.gov/nursinghomecompare

Total Facilities in U.S. 15,520

Pacific 1,603
Rocky Mountains 584
Southwest 1,743
Northeast 2,567
Southeast 3,912
Midwest 5,111

© David Burns
The national average of nursing home occupancy dipped again in 2018, slipping from 81.57% in 2017 to 80.78% in 2018. In fact, it has gone down 2.95% over the past five years over the entire country. However, not all the regions experienced a decrease. For example, in the Northeast and Pacific regions, occupancy rates stayed consistent over the prior two years, while the Southeast region went up 0.49% during the same period. Finally, the Rocky Mountains region actually experienced a 1.29% increase between 2017 and 2018 and a 3.02% increase over the five-year study period.

One region that has seen declining occupancy is the Midwest. This area has reported the largest percentage decrease in occupancy between 2014 and 2018 of 4.24% and a 1.22% drop from 2017 to 2018. According to the chart of individual state occupancy, the state of North Dakota had the highest occupancy with 93.63% and Oklahoma had the lowest at 60.69%. Interestingly, one may have thought that the state of New York, which has 618 facilities and 41.1 million available bed days as opposed to 298 nursing homes and 8.7 million available bed days for Oklahoma, would not have the second highest percentage statewide occupancy at 91.50%. But despite having 32.4 million more available bed days than Oklahoma, the nursing homes in New York were able to fill those beds at a rate of almost 91.50%. In fact, the remaining states that were in the top 10 of occupancy percentage, with one exception (Florida), were all from states with fewer than 200 nursing homes.

This decrease in average occupancy is despite the fact that there has been a large decrease in the number of nursing homes over the past number of years. According to a March 4, 2019, New York Times article, a recent study by the Cowles Research Group found that there have been 440 nursing homes that closed or merged into other nursing homes. In addition, according to the Nursing Home Compare website, there were 119 fewer homes in 2019 than in 2018. One would think with fewer beds the average occupancy would increase.

In addition, one might further think this is all a little incongruous since the demographic statistics in our study (see page 6) show that the U.S. population is aging and living longer, which would lead one to believe that more nursing homes should remain open. However, an April 4, 2019, article published by the Centers for Medicare Advocacy cites many reasons aside from low Medicaid reimbursement as the reasons that a nursing facility may close. One of these reasons is the decrease in average length of stays, while another may be due to the public policy of having potential residents receive services in their own homes rather than in a skilled nursing facility. A May 15, 2019, article from McKnight’s Long-Term Care News, written by a guest columnist, cited out-of-date facilities with few amenities that were built mostly between 1965 and 1987 as a major reason for why people were not coming to nursing homes, thereby resulting in declining occupancy.
## OCCUPANCY PERCENTAGE

<table>
<thead>
<tr>
<th>Region</th>
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<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>81.40%</td>
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<td>79.06%</td>
<td>78.38%</td>
<td>77.16%</td>
</tr>
<tr>
<td>Northeast</td>
<td>90.61%</td>
<td>89.78%</td>
<td>89.21%</td>
<td>88.48%</td>
<td>88.62%</td>
</tr>
<tr>
<td>Pacific</td>
<td>87.30%</td>
<td>87.41%</td>
<td>86.46%</td>
<td>86.17%</td>
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</tr>
<tr>
<td>Rocky Mountains</td>
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<tr>
<td>National</td>
<td>83.73%</td>
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<td>81.97%</td>
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![Occupancy Percentage Chart](chart.png)
### AVERAGE PATIENT DAYS

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<tr>
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![Bar Chart](chart.png)
## PAYOR MIX PERCENTAGE - MEDICARE

<table>
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<td>11.93%</td>
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<td>11.95%</td>
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<td>Rocky Mountains</td>
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<tr>
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<td>14.84%</td>
<td>14.06%</td>
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## Payor Mix Percentage - Medicaid

<table>
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<td>46.48%</td>
<td>47.77%</td>
<td>48.97%</td>
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<tr>
<td>Northeast</td>
<td>60.80%</td>
<td>60.95%</td>
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<td>59.07%</td>
<td>58.23%</td>
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<td>Pacific</td>
<td>55.06%</td>
<td>51.91%</td>
<td>52.44%</td>
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<tr>
<td>Rocky Mountains</td>
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<td>57.58%</td>
<td>57.88%</td>
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<tr>
<td>Southeast</td>
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<td>58.74%</td>
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<tr>
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![Chart showing payor mix percentage over years for different regions.](chart.png)
# PAYOR MIX PERCENTAGE - OTHER

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![Chart showing PAYOR MIX PERCENTAGE - OTHER](chart.png)
AVERAGE LENGTH OF STAY

The average length of stay (ALOS) of residents in a nursing home is a meaningful statistic when monitoring a facility’s patient revenue. ALOS is calculated by dividing the total census days by the total facility discharges. The result will give the average amount of days a resident was in a nursing home. This can also be calculated for the different payors to determine the average amount of days a Medicare and/or Medicaid resident was an inpatient in a facility.

As with the decrease in national average occupancy over the past five years, the national average length of stay has also significantly declined from 117.57 days in 2014 to 110.21 days in 2018. This statistic holds true whether it is for Medicare residents (36.07 to 32.84); Medicaid residents (328.28 to 309.24); or all the other types of payors (102.37 to 90.54). In none of the regions has there been any consistency with the overall ALOS. The Pacific region reflects that the average patient stay actually went up by 10 days between 2017 and 2018 while the Midwest and Northeast remained consistent between 2017 and 2018. The remaining regions experienced a decrease in ALOS anywhere from 1.30 in the Southeast to 10.48 in the Southwest region.

The five-year study does show some consistency of the ALOS for Medicare residents, although there has been a slow decrease throughout the five years. A daily coinsurance amount kicks in on day 21 of a Medicare stay; therefore, residents may be pushing to discharge as soon as possible after day 20.

The ALOS for Medicaid residents has not been so consistent. The average stay is a range anywhere from 406.85 for the Northeast region in 2014 all the way down to 234.44 for the Pacific region in 2014. While the Pacific region has actually experienced a 23.59% increase in the ALOS for Medicaid residents (from 234.44 in 2014 to 289.75); the remaining regions reported a decrease in the Rocky Mountains Southeast regions.

As mentioned in the Average Occupancy portion of this book, the decline in ALOS can be attributed to public policy and senior advocates pushing for potential nursing home residents to reside in the community and not in an institutional setting.
### AVERAGE LENGTH OF STAY - OVERALL

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![Graph showing average length of stay for different regions from 2014 to 2018.](image)
AVERAGE LENGTH OF STAY - MEDICARE

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[Bar chart showing average length of stay from 2014 to 2018 for different regions]
AVERAGE LENGTH OF STAY - MEDICAID

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![Average Length of Stay Chart](image_url)
## AVERAGE LENGTH OF STAY - OTHER

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![Bar chart showing average length of stay for different regions]
As the population increases, one pattern to monitor is the growth rate between the elderly population of 65 years and older as well as the growth rate of the labor force. For every future resident admission, the nursing facility needs to maintain adequate staffing levels. Both the nursing salary per patient day and the average nursing hourly wage rates have been increasing throughout the country; much of this increase is attributable to the federal and local governments’ movement to increase minimum wages and competition from competing industries, coupled with lower than average unemployment rates. Hence, maintaining the labor force has become an even greater challenge for the nursing home industry, especially nursing. In order to address these challenges, providers are seeking alternative solutions, some of which include the recruitment of foreign nurses and expanded use of nursing purchase services. Nationally, contracted nursing cost per patient day have risen by 12.03% from 2017 to 2018 in order to meet state and federal staffing requirements. The pattern for staffing nursing hours per patient day are split across the nation. Some regions saw a decrease (Midwest -2.60%, Northeast -2.96%, Rocky Mountains -0.93%, and Southeast -0.07%) while other regions saw increases (Pacific +1.82% and Southwest +0.75%) over the past year. The regions that saw a decrease in staff nursing hours per patient day also have the highest increase in contract cost per patient day from 2017 to 2018 (Midwest +12.96%, Northeast +19.95%, and Southeast +42.85%). As total nursing cost per patient day continues to increase nationally at 2.50%, nursing facilities are forced to continue to find a balance between labor force and contract services to address their staffing ratios so that they can provide the necessary nursing care for their residents as well as leverage government funds to manage their bottom lines.

In this section, nursing is represented by the following positions:

- Nursing administration (including the director and assistant director of nursing)
- Registered nurses (RN)
- Licensed practical nurses (LPN)
- Certified nurse aides (CNA)
- Contracted nursing services (registered nurses, licensed professional nurses, certified nurse aides)
NURSING SALARY PPD

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A Five Year Nursing Home Statistical Analysis (2014 to 2018)
# Nursing Hourly Wage

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![Graph showing nursing hourly wage trends across regions from 2014 to 2018.](chart.png)
## RN Hourly Wage

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![Bar chart showing RN hourly wage trends from 2014 to 2018 for different regions]
# LPN HOURLY WAGE

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![Graph showing LPN hourly wage trends](image-url)
## CNA Hourly Wage

### 2014 to 2018

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![Wage Chart](chart.png)
### NURSING HOURS PPD

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![Bar chart showing nursing hours PPD by region from 2014 to 2018]
## NURSING - CONTRACT COST PPD

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# TOTAL NURSING COST PPD

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![Graph depicting the total nursing cost PPD by region from 2014 to 2018.](image-url)
With the aging baby boomers comes the need to provide an upgraded dining experience at long-term care facilities. Marketing to this next generation of elderly requires a high-quality menu of choices while continuing to meet residents’ dietary restrictions and adding nutritional value. Additionally, reduced unemployment rates present recruitment challenges. Based on the below findings, the outsourcing of the dietary department might be the way facilities are meeting these both staffing and food quality challenges.

The Midwest, Southeast, and Southwest regions reflect a decrease in the dietary hours per patient day from 2017 to 2018 of 3.3%, 0.3%, and 3.3%, respectively. The Northeast, Pacific, Rocky Mountains, and Southwest regions reflect an increase in the nonwage dietary costs per patient day between 2017 and 2018 of 2.5%, 1.2%, 0.8%, and 9.5%, respectively. Both of these statistics indicate a shift to dietary outsourcing.

Similar to last year’s study, the Northeast experienced the highest dietary hourly rates of the country of $16.01 per hour. The Southwest region had the lowest hourly rate, not only in 2018 of $11.75, but in all five years of our study. The national average increase in the dietary hourly rate between 2017 ($13.00) and 2018 ($13.42) was 3.23%.
DIETARY SALARY PPD

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### DIETARY HOURLY WAGE

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![Graph showing the trend of dietary hourly wage from 2014 to 2018 for different regions.](image-url)
DIETARY HOURS PPD

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## DIETARY - NON WAGE COST PPD

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![DIETARY - NON WAGE COST PPD](image.png)
Laundry statistics for 2018 suggest we are seeing a slow shift of in-house laundry services to the outsourcing of the laundry department. Outsourcing of laundry services is very common in the hospital environment, and we are now beginning to see this shift in the long-term care arena as well, as is supported by the forthcoming statistics. Financial, operational, and environmental factors could be the cause for this outsourcing trend.

Laundry hours per patient day decreased between 2017 and 2018 in all regions, averaging a 1.37% decrease, with the exception of the Southeast, which had a 3.75% increase in the laundry hours per patient day. Many regions, and the nation as a whole, have seen this trend of decreased laundry hours per patient day in the past three to four years. On the flip side, the national laundry nonwage costs per patient day are increasing. The Pacific region reflects a 10.1% increase in the nonwage laundry costs between 2017 and 2018. Both the decrease in laundry hours per day and the increase in nonwage laundry costs are indications of a shift to the outsourcing of laundry departments. We expect to see this increasing movement to continue in the years to come.

The increase in the laundry average hourly wage is very consistent from year to year and region by region. In 2018, the national average hourly wage increased 2.86% from 2017. The Rocky Mountains region showed the greatest increase between 2017 and 2018 of 5.28%. For all five years, the Northeast reflected the highest average hourly rate ($13.66 in 2018), and the Southwest region reflected the lowest ($9.61 in 2018).
## LAUNDRY SALARY PPD

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![Graph showing laundry salary per person per day (PPD) for different regions from 2014 to 2018.](chart.png)
## LAUNDRY HOURS PPD

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![Bar chart showing laundry hours PPD for different regions from 2014 to 2018](chart.png)
## LAUNDRY - NON WAGE COST PPD

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![Chart showing LAUNDRY - NON WAGE COST PPD](chart.png)
## Laundry Hourly Wage

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Similar to laundry, we are also beginning to see long-term care facilities outsource their housekeeping functions. Providing a clean and healthy environment is important for the health and well-being of residents and the success of a facility. New infection prevention requirements for long-term care facilities have been recently put into place, and operators may find outsourcing to be a better option to meet these requirements. Six new or updated F-tags, which are associated with infection control, have been established and will be included as part of the CMS survey process. A facility must now have both an infection prevention program and an infection control program.

Every region in the United States experienced a decrease in the housekeeping hours per patient day in 2018 from 2017. Likewise, we are starting to see the nonwage costs per patient day increase as the hours per patient day decrease. Lower housekeeping hours and higher nonwage costs both suggest that facilities are beginning to shift their in-house housekeeping departments to outside service providers that have more expertise in this area.

Housekeeping hourly wages have been steadily increasing in the past five years throughout all regions of the United States. The highest hourly wages are once again seen in the Northeast and lowest in the Southwest. The national average increase in the housekeeping hourly rate between 2017 and 2018 was 2.89%.
## HOUSEKEEPING SALARY PPD

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![Housekeeping Salary PPD Chart](chart.png)
## HOUSEKEEPING HOURLY WAGE

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<td>10.91</td>
<td>11.14</td>
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</table>

![Bar chart showing the housekeeping hourly wage for different regions from 2014 to 2018](chart.png)
## HOUSEKEEPING HOURS PPD

<table>
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<th>2017</th>
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<tr>
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![Bar chart showing housekeeping hours by region and year](chart.png)
## HOUSEKEEPING - NON WAGE COST PPD

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</table>
In addition to direct care cost, it is also important for a nursing facility to focus on the day-to-day operating expenses, or general service costs. General service cost consists of the following departmental expenses:

- Administrative
- Maintenance
- Laundry
- Housekeeping
- Dietary
- Central services
- Pharmacy
- Medical records
- Social services

A nursing facility’s ability to attract potential residents and receive positive feedback can help it distinguish itself in the industry. A welcoming culture is essential in keeping current residents happy and for giving facility tours to potential residents. Facility designs, a variety of activities and entertainment, dietary options, and facility cleanliness play a role when gathering feedback about a nursing facility. It should not be surprising to see that these expenses have continued to increase, as the national increase was 11.67% over the past five years. The Pacific region saw a 16.57% increase over the past five years, which is the highest of all the regions. The lowest increase was the Southeast at 8.52%. These general service costs are necessary expenses in order to keep operations running, whether or not a resident decides to stay at a facility. It is significant to maintain reimbursement rates proportionately as nursing facilities are facing rising fixed costs, especially since patient days have declined at a rate of 3.28% nationally over the past five years.

The national 2.47% increase in general service cost per patient day from 2017 to 2018 demonstrates how important day-to-day costs are to a nursing facility. The rising trend continues as the Southwest region has the lowest general service cost per patient day at $80.51, but it saw the largest percentage increase from 2017 to 2018 at 5.13%. The Northeast region reported the smallest percentage increase at 1.48% over the past year, but the $114.88 cost per patient day is ranked third highest.
TOTAL GENERAL SERVICE COST PPD

<table>
<thead>
<tr>
<th>Region</th>
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<tr>
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<td>90.92</td>
<td>93.36</td>
<td>95.74</td>
<td>99.07</td>
<td>101.52</td>
</tr>
</tbody>
</table>

$65.00 $75.00 $85.00 $95.00 $105.00 $115.00 $125.00

$135.00

Midwest Northeast Pacific Rocky Mountains Southeast Southwest National

2014 2015 2016 2017 2018
This benchmark book has various comparisons of the costs of specific departments, such as dietary, nursing, etc. This section, however, compares the total cost of nursing homes from 2014 through 2018.

The average nursing home cost per patient day on a national level has increased by 11.33% and $27.68 between 2014 and 2018, from $244.30 to $271.98; however, the 2017 to 2018 increase was only 1.89% or $5.04 per day. For the most part, the increase in cost has come in increments on average of $5.00 to $7.00 per day, with the exception of an $8.36 increase between 2016 and 2017.

The Pacific region again leads the way with the highest average per diem cost of $327.41 in 2018 and a $45.34 per day increase between 2014 and 2018. In addition, the Pacific region’s $9.70 increase in cost between 2017 and 2018 was the largest of all the regions by $1.85. On the opposite coast, the Northeast region experienced the lowest increase in average per diem costs both from 2017 to 2018 of $1.07, and over our five-year study period of $19.64. The region with the lowest average per day costs has been the Southwest region whose per diem costs over the same five-year period were lower than the Pacific region by an average of $94.43 per day.

Nursing facilities are faced with providing the best care in an inviting environment. As the cost per patient day continues to increase, time will tell if the federal and state reimbursement systems will be able to keep up with the pace.

"As the cost per patient day continues to increase, time will tell if the federal and state reimbursement systems will be able to keep up with the pace."
## TOTAL COST PPD

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
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<th>2018</th>
</tr>
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</tr>
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<td>258.58</td>
<td>266.94</td>
<td>271.98</td>
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</table>

![Graph showing costs by region from 2014 to 2018](image-url)
Employee benefits are a significant expense of any organization. When combined with salaries, they tend to be the greatest expense category of any facility. Employee benefits include health insurance, workers compensation insurance, 401(k) expenses, payroll-related taxes, and other miscellaneous items.

Based upon the as-filed cost reports, the 2018 national average ratio of employee benefits to salaries was 17.15%. This is the third year in a row where we have seen a gradual decrease in this national percentage. The Northeast and Southeast did see an increase in the ratio of employee benefits to salary between 2017 and 2018 while the remaining four regions experienced a decrease. The Northeast region historically sees the highest percentage (22.81% in 2018) and the Southwest region experiences the lowest (12.89% in 2018). The remaining four regions of the United States have a very similar benefit-to-salary percentage, ranging from 16.39% (Southeast) to 17.73% (Pacific) in 2018. A plausible explanation for the decrease in the national average could relate to reduced benefit offerings as a result of shrinking reimbursement.

However, as everyone in the working world knows, whether business owners or individuals, we are experiencing the continued escalating costs of health insurance. Based on data from the CMS database, nursing homes appear to be passing much of the cost increase to their employees and thereby reducing their costs and the ratio of benefits to salaries. The nation as a whole saw a 1.9% increase in health insurance costs in 2015, a 2.6% increase in 2016, a 3.5% increase in 2017, but then a 1.5% decrease in health insurance expense in 2018. In 2018, the Southwest had the lowest health insurance cost per patient day of $3.88 and the Northeast had the highest with $12.93 per patient day.

As mentioned above, salaries combined with employee benefits are the greatest expense category of a long-term care facility. In 2014 and 2015, the Rocky Mountains region had the highest percentage of salaries and benefits to revenue of 46.47% and 46.41%, respectively. In 2016 through 2018, the Midwest had the highest percentages, ranging from 44.49% to 45.69%. Throughout our five-year study, the Southeast has had the lowest percentages, ranging from 38.65% in 2018 to 39.80% in 2014. The national average of salaries and benefits to revenue in 2018 was 42.16%. Overall, the fluctuations in any region from year to year are minimal, which suggests that salaries and benefits are very closely tied to the revenue of a facility.
## Benefits/Salary

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td>17.92%</td>
<td>17.83%</td>
<td>17.12%</td>
</tr>
<tr>
<td>Northeast</td>
<td>24.18%</td>
<td>23.65%</td>
<td>22.89%</td>
<td>22.61%</td>
<td>22.81%</td>
</tr>
<tr>
<td>Pacific</td>
<td>19.47%</td>
<td>19.96%</td>
<td>18.88%</td>
<td>18.18%</td>
<td>17.73%</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>18.13%</td>
<td>18.59%</td>
<td>18.40%</td>
<td>17.63%</td>
<td>17.08%</td>
</tr>
<tr>
<td>Southeast</td>
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<td>16.83%</td>
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<td>Southwest</td>
<td>14.13%</td>
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<tr>
<td>National</td>
<td>18.42%</td>
<td>18.49%</td>
<td>17.72%</td>
<td>17.44%</td>
<td>17.15%</td>
</tr>
</tbody>
</table>

![Benefits/Salary Chart](chart.png)
October 1, 2019, marked a major milestone change in the Medicare reimbursement with the full implementation of Medicare Patient Driven Payment Model (PDPM). Over the past 20 years, providers have been reimbursed for Medicare services through a Resource Utilization Group (RUGS) Prospective Payment System (PPS). For years PPS focused on restorative care at the nursing home through the performance of physical, speech, and occupational therapy services (Therapy). Going forward, it will be interesting to see the 2019 statistics and what changes in the area we will see. MedPac and CMS have long thought that therapy is over-utilized. With the implementation of the Patient Driven Payment Model, which removes therapy-minute thresholds, along with changes to the group therapy policy, it is possible that we will see decreases in therapy utilization. With the new requirement to complete discharge Minimum Data Sets, which will reflect therapy minutes by discipline for all Medicare Part A discharges, CMS will have more data available than before to monitor therapy utilization on an almost real-time basis.

Until next year, we find it important to benchmark therapy services via:

- Salaries per patient day
- Hours per patient day
- Hourly wage rates
- Contracted cost per patient day
- Minutes provided by payor

**Salaries per Patient Day** – This statistic provides a comparison of therapy costs for facilities with on-staff therapists. On the expense side, nationally, therapy salaries per patient day decreased from $16.84 in 2017 to $16.30 per patient day in 2018. In 2018, the highest cost region was the Pacific at $22.33 per day, and the lowest was the Northeast at $13.08 per day. Nationally, contract cost per day increased from $16.43 per patient day in 2017 to $17.33 per day in 2018. In 2018, the highest cost area was the Southwest at $20.98, and the lowest cost area was the Rocky Mountains at $11.58. Nationally, therapy hourly wages increased from $36.89 in 2017 to $37.49 in 2018. The highest regional hourly rate in 2018 was the Pacific area at $42.39, and the lowest was the Northeast area at $35.06.

**Hours per Patient Day** – This statistic is a high-level overview in total of how much physical, occupational, and speech therapy is provided on a per diem basis to all patients in the facility. Total therapy staff hours per patient day decreased slightly on a national basis from 0.46 hours per patient day in 2017 to 0.44 hours in 2018. On a regional basis, the Midwest, Northeast, and Pacific areas all declined while the Rocky Mountains, Southeast, and Southwest areas increased.
Hourly Wage Rates – Therapy hourly wage rates provide a good indicator of therapy expense for both in-facility staff and contracted therapy providers. Over the last five years of data, there have not been large fluctuations in hourly wage rates. The largest increase over the five-year period was in the Rocky Mountains region, from $33.37 per hour in 2014 to $36.52 per hour in 2018. The $3.15 increase represents a total of 9% over the five-year period. The smallest five-year increase of $1.04 per hour and 3% was in the Northeast region.

Contracted Cost per Patient Day – Many skilled nursing facilities use outside therapy providers. For these facilities, the contract cost per patient day provides a good comparison. The statistic divides the total contract therapy cost by the total census days. The contract cost per patient day has trended upward year over year with few exceptions. From 2017 to 2018, the cost increased in all regions with the exception of the Rocky Mountains region, which experienced a decrease from $11.94 to $11.58 per patient day. The Rocky Mountains decrease may be attributed to a combination of a decrease in hourly contract costs, a decrease in therapy utilization, or an increase in patients who are not utilizing therapy.

Minutes Provided by Payor – For most skilled nursing facilities, the majority of therapy is provided to Medicare Part A residents. After remaining constant for several years, nationally the average physical therapy minutes per Medicare A patient day increased to 52.3 minutes in 2018, up from 49.7 in 2017. In all regions, the physical therapy minutes increased. Nationally, occupational therapy minutes per Medicare A day steadily crept up from 45.7 average minutes per day in 2017 to 47.0 minutes in 2018. In all regions, occupational therapy utilization increased from 2017 to 2018. Speech therapy per Medicare A day has remained relatively constant over the years but dipped slightly to 12.9 minutes per day in 2018 from 13.3 minutes per day in 2017.

Under the Patient Driven Payment Model, we will see if therapy reimbursement changes will result in decreases to the above therapy statistics or if the necessity of maintaining high-quality measures negates the ability to decrease therapy utilization.
### THERAPY SALARY PPD

<table>
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<tr>
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![Bar chart showing therapy salary progression from 2014 to 2018 by region](chart.png)
### THERAPY HOURS PPD

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### THERAPY HOURLY WAGE

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![Graph showing therapy hourly wage over years]
**THERAPY - CONTRACT COST PPD**

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![Bar chart showing therapy contract cost PPD by region from 2014 to 2018](chart.png)
### MEDICARE PART A MINUTES PER MEDICARE DAY - PT

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![Graph showing MEDICARE PART A MINUTES PER MEDICARE DAY - PT](image-url)
## MEDICARE PART A MINUTES PER MEDICARE DAY - OT

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![Graph showing Medicare Part A minutes per Medicare Day - OT](image)
MEDICARE PART A MINUTES PER MEDICARE DAY - ST

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![Bar chart showing Medicare Part A minutes per Medicare day from 2014 to 2018 for different regions.]
One of the most useful benchmark statistics for a nursing home is the average hourly wage as compared to other homes in a particular market. These statistics will enable nursing facility owners to determine whether or not they are competitive in the amount they pay their employees, which would help with staff retention.

The average total hourly wage represents the total compensation for all staff employees divided by the total number of hours paid, which includes benefit hours. Every department of the nursing facility is included in this calculation. The average total hourly wage has been increasing across the country over the past five years. This is consistent with the growing demand for labor force and the significance of retaining quality employees, especially in an industry where resident satisfaction is a top priority.

The national average for nursing home total hourly wages increased $0.73 from $18.84 in 2017 to $19.58 in 2018 for a 3.89% increase. The Pacific region experienced the largest of the per diem and percentage increases between 2017 and 2018 at $0.85 per hour and 3.94%, and over the five-year period at $3.21 per hour and 16.73%. The Pacific region has been experiencing the greatest total hourly rate increases since 2016.

The Southwest and Southeast regions continue to be on the low end of the total hourly per diem wage cost at $18.15 and $18.18, respectively, which is more than $4.00 less than the highest (Pacific) region, with the Midwest region coming in at a slightly higher average of $18.49 per hour for 2018.

As depicted in each of the departmental sections of our study, the average hourly wages have been increasing, which also translates into an increase of the total average hourly wage of a facility. It is likely that this escalating pattern will continue as the anticipated $15 minimum wage by year 2025 approaches.

As a result of the increased hourly wage rates, we are beginning to see acknowledgments from regulators in the forms of wage enhancement add-ons and direct care add-ons to Medicaid rates. These add-ons are attempting to bridge the gap between increased costs and reimbursement. Medicaid rates are only paid on Medicaid days, which means that these add-ons provide assistance to a portion of the nursing facilities’ revenue. Overall, the gap between cost and reimbursements remains a burden in the industry due to the constant rising costs.
## TOTAL HOURLY WAGE

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![Chart showing hourly wage by region and year]
### TOTAL HOURLY WAGE

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Medicare bad debts are one of the few remaining items that result in a settlement on a skilled nursing facility’s Medicare cost report. Many states reimburse a facility for the Part A coinsurance of their dual eligible residents through their Medicaid program. For those states that do not, the facility can write-off the coinsurance as a bad debt and report it on their Medicare cost report, along with any uncollected Part A coinsurance from private pay residents. Medicare will reimburse facilities 65% of amounts claimed (subject to audit or review), less an additional 2% for sequestration. In order for reimbursement to be received, the provider must prove reasonable attempts have been made to collect these balances, and if so, the balances are written off as bad debts.

In 2018, 22.51% of Part A coinsurance was claimed as a bad debt, which is very consistent with the previous four years in our study. The Southeast consistently experiences the highest percentage of total bad debts to total coinsurance, with 38.63% in 2018, and the Pacific region consistently has the lowest, with 5.15% in 2018. Of all bad debts claimed in 2018, 77.70% were for dual eligible residents. The Midwest had the highest percentage of dual eligible bad debts of 89.08%, and the Southwest had the lowest percentage with 36.07%.

The Midwest region has the lowest percentage of Medicaid to total days in all five years of this study, yet this region has the highest percentage of dual eligible bad debts in four of the five years. This indicates that Medicaid does not pay the Part A coinsurance for dual eligible nursing home residents for the majority of states in the Midwest region. The Southwest region has an above-average percentage of Medicaid to total days, yet has the lowest percentage of dual eligible bad debts in all five years. This would suggest that the many of the Medicaid programs in the Southwest states do reimburse a facility for their dual eligible Part A coinsurance.

In 2018, skilled nursing facilities reported $894 million of bad debts on their cost reports. The Southeast region reported the greatest amount of bad debts totaling $435 million, which is $35.14 per Medicare patient day. The Pacific region reported the lowest amount of bad debts in 2018 of $28 million, which is $4.83 per Medicare patient day.

In the previous four years, the amount of bad debts reported for all regions combined averaged $1.1 billion. The lower amount in 2018 is the result of the following issues:

1. The decreasing census over the past five years, including the decreasing percentage of Medicare days.
2. There has been a shift of enrollees in traditional, fee-for-service Medicare to Medicare Managed Care (Part C plans). Only bad debts for traditional Medicare claims can be reported on a cost report.
3. The 2018 CMS data base used in this publication is not 100% complete.
# Allowable Bad Debt to Coinsurance

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<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>21.60%</td>
<td>21.81%</td>
<td>22.21%</td>
<td>21.81%</td>
<td>24.24%</td>
</tr>
<tr>
<td>Northeast</td>
<td>15.54%</td>
<td>16.02%</td>
<td>15.71%</td>
<td>14.77%</td>
<td>14.68%</td>
</tr>
<tr>
<td>Pacific</td>
<td>5.41%</td>
<td>4.75%</td>
<td>5.54%</td>
<td>5.34%</td>
<td>5.15%</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>23.40%</td>
<td>23.84%</td>
<td>24.93%</td>
<td>23.05%</td>
<td>30.41%</td>
</tr>
<tr>
<td>Southeast</td>
<td>35.70%</td>
<td>35.42%</td>
<td>37.23%</td>
<td>36.35%</td>
<td>38.63%</td>
</tr>
<tr>
<td>Southwest</td>
<td>5.54%</td>
<td>5.41%</td>
<td>8.56%</td>
<td>9.26%</td>
<td>11.91%</td>
</tr>
<tr>
<td>National</td>
<td>21.57%</td>
<td>21.67%</td>
<td>22.49%</td>
<td>21.93%</td>
<td>22.51%</td>
</tr>
</tbody>
</table>

![Chart showing allowable bad debt to coinsurance across regions from 2014 to 2018]
PERCENTAGE OF DUAL ELIGIBLE BAD DEBTS

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
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<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>91.61%</td>
<td>89.84%</td>
<td>87.91%</td>
<td>87.08%</td>
<td>89.08%</td>
</tr>
<tr>
<td>Northeast</td>
<td>69.89%</td>
<td>67.91%</td>
<td>60.55%</td>
<td>55.56%</td>
<td>49.45%</td>
</tr>
<tr>
<td>Pacific</td>
<td>80.28%</td>
<td>78.02%</td>
<td>72.34%</td>
<td>68.87%</td>
<td>63.47%</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>79.14%</td>
<td>80.03%</td>
<td>79.35%</td>
<td>77.29%</td>
<td>80.86%</td>
</tr>
<tr>
<td>Southeast</td>
<td>88.70%</td>
<td>87.30%</td>
<td>89.32%</td>
<td>86.17%</td>
<td>85.39%</td>
</tr>
<tr>
<td>Southwest</td>
<td>10.11%</td>
<td>20.65%</td>
<td>36.25%</td>
<td>46.72%</td>
<td>36.07%</td>
</tr>
<tr>
<td>National</td>
<td>84.38%</td>
<td>83.05%</td>
<td>82.32%</td>
<td>79.97%</td>
<td>77.70%</td>
</tr>
</tbody>
</table>

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### AVERAGE BAD DEBT CLAIMED PER MEDICARE DAY

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
<th>2015</th>
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<th>2017</th>
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</tr>
</thead>
<tbody>
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<td>18.55</td>
<td>18.88</td>
<td>18.49</td>
<td>20.63</td>
</tr>
<tr>
<td>Northeast</td>
<td>12.65</td>
<td>13.60</td>
<td>13.36</td>
<td>12.75</td>
<td>12.85</td>
</tr>
<tr>
<td>Pacific</td>
<td>4.71</td>
<td>4.24</td>
<td>4.97</td>
<td>4.92</td>
<td>4.83</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>18.64</td>
<td>19.31</td>
<td>20.25</td>
<td>18.21</td>
<td>23.80</td>
</tr>
<tr>
<td>Southeast</td>
<td>30.22</td>
<td>31.62</td>
<td>33.65</td>
<td>32.84</td>
<td>35.14</td>
</tr>
<tr>
<td>Southwest</td>
<td>4.90</td>
<td>4.98</td>
<td>7.91</td>
<td>8.54</td>
<td>11.01</td>
</tr>
<tr>
<td>National</td>
<td>18.16</td>
<td>18.92</td>
<td>19.75</td>
<td>19.34</td>
<td>20.01</td>
</tr>
</tbody>
</table>

![Graph showing average bad debt claimed per Medicare day by region from 2014 to 2018]
The Federal government has continued to push for lower length of stay for their Medicare patients over the past five years. The implementation of the Value-Based Purchasing Program and the growth of home and community services has caused a trend in Medicare revenues as a percentage of total revenue to decline over the past half-decade, even as the Medicare revenue per patient day continues to increase. The Pacific region saw the lowest decrease in Medicare revenue as a percentage to total, while the Rocky Mountains region, which was noted previously as having the highest increase in total revenue per patient day, actually had the largest decrease in Medicare revenue as a percentage to total revenues.

With Medicare payments switching to the Patient Driven Payment Model beginning October 1, 2019, we expect Medicare revenue as a percentage to total revenue to continue to decrease as this new payment model no longer puts the emphasis on therapy hours provided but changes it to nursing necessity instead. This should result in lower length of stay for Medicare patients, as the Medicare rates will continue to decrease the longer the patients are in the skilled nursing facilities.
## Medicare Revenue to Total Revenue Percentage

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>16.72%</td>
<td>16.22%</td>
<td>15.52%</td>
<td>14.85%</td>
<td>14.66%</td>
</tr>
<tr>
<td>Northeast</td>
<td>15.55%</td>
<td>15.44%</td>
<td>14.68%</td>
<td>13.78%</td>
<td>13.71%</td>
</tr>
<tr>
<td>Pacific</td>
<td>23.66%</td>
<td>23.82%</td>
<td>23.74%</td>
<td>23.57%</td>
<td>23.32%</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>17.81%</td>
<td>16.89%</td>
<td>16.47%</td>
<td>14.47%</td>
<td>13.93%</td>
</tr>
<tr>
<td>Southeast</td>
<td>20.50%</td>
<td>20.15%</td>
<td>18.86%</td>
<td>18.04%</td>
<td>18.07%</td>
</tr>
<tr>
<td>Southwest</td>
<td>21.67%</td>
<td>20.61%</td>
<td>20.44%</td>
<td>19.94%</td>
<td>19.38%</td>
</tr>
<tr>
<td>National</td>
<td>18.64%</td>
<td>18.28%</td>
<td>17.51%</td>
<td>16.91%</td>
<td>16.59%</td>
</tr>
</tbody>
</table>

![Graph showing Medicare Revenue to Total Revenue Percentage for different regions from 2014 to 2018]
Medicare revenue per patient day has increased steadily over the past five years for all regions, with the national average rising from $470.52 per patient day in 2014 to $515.26 per patient day in 2018. While this increase over the past five years is mostly attributable to the year-to-year market basket increases, we are cautiously optimistic that this trend will continue with the introduction of the Patient Driven Payment Model (PDPM), which was implemented on October 1, 2019. Early PDPM reports have yielded either positive or budget neutral results. While trends have pointed in a positive direction for Medicare per patient day revenue, average length of stay and the percentage of overall Medicare utilization have continued to decline.

The Pacific region saw the highest percentage increase over the past five years at about 10.3%, while the Southeast had a much lower increase of approximately 7.8%. These differences in increases correlate with the cost of living increases in these areas, with the Pacific region cost of living and nursing compensation being the highest in the country.
## MEDICARE REVENUE PPD

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>449.87</td>
<td>460.61</td>
<td>469.93</td>
<td>481.43</td>
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<tr>
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<td>518.47</td>
<td>533.03</td>
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<td>555.70</td>
<td>569.57</td>
</tr>
<tr>
<td>Pacific</td>
<td>601.94</td>
<td>616.32</td>
<td>627.78</td>
<td>645.21</td>
<td>663.79</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>476.50</td>
<td>484.08</td>
<td>494.20</td>
<td>512.38</td>
<td>520.57</td>
</tr>
<tr>
<td>Southeast</td>
<td>446.20</td>
<td>457.01</td>
<td>463.64</td>
<td>475.58</td>
<td>481.02</td>
</tr>
<tr>
<td>Southwest</td>
<td>461.62</td>
<td>473.27</td>
<td>483.40</td>
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<td>507.89</td>
</tr>
<tr>
<td>National</td>
<td>470.52</td>
<td>481.90</td>
<td>490.50</td>
<td>500.41</td>
<td>515.26</td>
</tr>
</tbody>
</table>

### Graph

- **X-axis:** Regions (Midwest, Northeast, Pacific, Rocky Mountains, Southeast, Southwest, National)
- **Y-axis:** Revenue
- **Legend:**
  - 2014
  - 2015
  - 2016
  - 2017
  - 2018

---

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Similar to cost of living and general inflation, total revenue per patient day has also increased year to year. The Northeast region saw the lowest increase at 8.3%, which may be attributable to very minimal (if any) increases in Medicaid rates over the past few years. However, even though the Northeast had the lowest percentage increase over the past five years, the average revenue per patient day remains the highest in the country at just over $406 per day.

The Rocky Mountains region saw significant increases over the past five years, going from an average of $297.73 per patient day in 2014 to over $359 per day in 2018. This 20.7% increase nearly doubled the national average over this time span, which was 11.3%.
TOTAL REVENUE PPD

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>272.73</td>
<td>280.02</td>
<td>288.92</td>
<td>293.06</td>
<td>300.26</td>
</tr>
<tr>
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<td>375.18</td>
<td>382.49</td>
<td>392.28</td>
<td>395.21</td>
<td>406.45</td>
</tr>
<tr>
<td>Pacific</td>
<td>357.97</td>
<td>372.13</td>
<td>375.53</td>
<td>386.48</td>
<td>401.27</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>297.73</td>
<td>314.97</td>
<td>346.83</td>
<td>347.63</td>
<td>359.39</td>
</tr>
<tr>
<td>Southeast</td>
<td>293.60</td>
<td>306.05</td>
<td>312.72</td>
<td>304.47</td>
<td>326.58</td>
</tr>
<tr>
<td>Southwest</td>
<td>244.85</td>
<td>257.83</td>
<td>260.69</td>
<td>271.00</td>
<td>271.33</td>
</tr>
<tr>
<td>National</td>
<td>302.33</td>
<td>312.49</td>
<td>319.56</td>
<td>326.80</td>
<td>336.50</td>
</tr>
</tbody>
</table>

![Chart showing revenue trends for different regions from 2014 to 2018](chart.png)
Based upon the review of net income/loss as reported in the Medicare cost reports, skilled nursing facilities continue to find themselves struggling. The cost of providing care continues to outpace reimbursement, and the impact on the bottom line continues to head in the wrong direction. While the industry supports a living wage for all employee, an across-the-board $15 minimum wage has a negative trickle effect. In order to compete with the likes of the big box store, management is forced to increase wage rates in some case beyond $15 per hour; this causes premiums for workers compensation, employer payroll tax, and other related benefits to also escalate. When coupled with a shrinking population of Medicare and private residents, this puts a significant strain on operations. We do, however, see a light to the end of the tunnel. The Patient Driven Payment Model has provided some enhancements for reimbursement, overall occupancy seems to be slowly trending upward, and many states are finding ways to increase Medicaid funding to bolster the industry.

In 2014, each region of the United States reported having net income at the end of the fiscal period. Fast forward to 2018, and only half the regions are showing profit at the end of the fiscal period, with the Midwest, Northeast, and Southwest regions all losing money. The national average has declined from about $4.00 per patient day in 2014 to less than $0.50 per patient day in 2018.
## NET INCOME/LOSS PPD

<table>
<thead>
<tr>
<th>Region</th>
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<th>2018</th>
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</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>3.67</td>
<td>1.28</td>
<td>(0.85)</td>
<td>(1.61)</td>
<td>(2.08)</td>
</tr>
<tr>
<td>Northeast</td>
<td>2.83</td>
<td>2.03</td>
<td>1.59</td>
<td>(1.16)</td>
<td>(2.09)</td>
</tr>
<tr>
<td>Pacific</td>
<td>10.20</td>
<td>10.75</td>
<td>9.50</td>
<td>7.47</td>
<td>5.30</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>6.06</td>
<td>6.72</td>
<td>7.22</td>
<td>5.99</td>
<td>6.39</td>
</tr>
<tr>
<td>Southeast</td>
<td>4.36</td>
<td>5.30</td>
<td>4.38</td>
<td>1.18</td>
<td>3.85</td>
</tr>
<tr>
<td>Southwest</td>
<td>0.80</td>
<td>1.13</td>
<td>(1.02)</td>
<td>(1.73)</td>
<td>(1.92)</td>
</tr>
<tr>
<td>National</td>
<td>4.13</td>
<td>3.43</td>
<td>2.05</td>
<td>0.22</td>
<td>0.42</td>
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</tbody>
</table>
Liquidity ratios are metrics that can be used to assess whether a company has cash sufficient to meet its obligations as they come due. The current ratio is calculated by taking current assets and dividing them by current liabilities. The quick ratio takes the current ratio a step further, excluding certain assets that may take some time to convert to cash. The quick ratio is derived by dividing cash, cash equivalents, and accounts receivable by current liabilities.

Unfortunately, the 2018 ratios show a continuing decline in provider liquidity. Every single region experienced a decline from 2017’s liquidity ratios, and the rate of decline from 2018 was the highest over the five years analyzed. The Southwest region is the lowest of all the regions analyzed and is coming dangerously close to breaking the 1.0 mark on its current ratio. This would signify that providers overall would be in a working capital deficiency situation whereby the current assets were not sufficient to cover current obligations. The highest overall liquidity still resides in the Rocky Mountains region; however, that region experienced the second largest rate of decline from 2017.
QUICK RATIO

<table>
<thead>
<tr>
<th>Region</th>
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<th>2017</th>
<th>2018</th>
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</thead>
<tbody>
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<td>1.62</td>
<td>1.53</td>
<td>1.41</td>
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<tr>
<td>Northeast</td>
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<td>1.44</td>
<td>1.45</td>
<td>1.42</td>
<td>1.28</td>
</tr>
<tr>
<td>Pacific</td>
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<td>1.61</td>
<td>1.73</td>
<td>1.63</td>
<td>1.37</td>
</tr>
<tr>
<td>Rocky Mountains</td>
<td>1.64</td>
<td>1.77</td>
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<td>1.81</td>
<td>1.60</td>
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<tr>
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<td>1.79</td>
<td>1.69</td>
<td>1.63</td>
<td>1.48</td>
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<td>1.31</td>
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<td>1.11</td>
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</table>

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CURRENT RATIO

<table>
<thead>
<tr>
<th>Region</th>
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<th>2015</th>
<th>2016</th>
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<th>2018</th>
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<td>1.42</td>
</tr>
<tr>
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<td>1.46</td>
<td>1.43</td>
<td>1.29</td>
</tr>
<tr>
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<td>1.62</td>
<td>1.74</td>
<td>1.64</td>
<td>1.37</td>
</tr>
<tr>
<td>Rocky Mountains</td>
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<td>1.67</td>
<td>1.82</td>
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<tr>
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<td>1.71</td>
<td>1.64</td>
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<td>Southwest</td>
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<td>1.42</td>
<td>1.27</td>
<td>1.06</td>
</tr>
<tr>
<td>National</td>
<td>1.65</td>
<td>1.63</td>
<td>1.61</td>
<td>1.53</td>
<td>1.37</td>
</tr>
</tbody>
</table>
The days in accounts receivable ratio is a measure of the average number of days it takes to collect payment after a sale has been made. Our data shows that the days in accounts receivable ratio has largely remained consistent over the five-year period for most regions and remains at 37 days nationally for the last three years analyzed. In general, a lower number for this ratio is better for providers as it indicates quicker collections on patient billings.

The Rocky Mountains region enjoys the lowest days in accounts receivable at 28, which was an improvement of approximately four days from the prior year. The Pacific and Northeast lead the pack on the unfavorable end of the spectrum, both sitting at around approximately 40 days.
## DAYS IN ACCOUNTS RECEIVABLE

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tr>
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<tr>
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<tr>
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<td>40</td>
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</tr>
<tr>
<td>National</td>
<td>36</td>
<td>36</td>
<td>37</td>
<td>37</td>
<td>37</td>
</tr>
</tbody>
</table>

![Graph showing days in accounts receivable for different regions from 2014 to 2018.](chart.png)
The days in accounts payable ratio is a measure of the average number of days it takes a provider to pay its operating expenses. This ratio continued its overall trend of increases with every region experiencing an increase for the second year in a row. The national average increased from 47 days to 50 days with the Northeast region once again leading the pack at 74 days, which is the equivalent of almost two and a half months of expenses being owed at year-end. Furthermore, the data in our study suggests that days in accounts receivable has remained relatively consistent; therefore, an increase in days in accounts payable ratio suggests providers may be experiencing liquidity issues caused by ongoing operating margin constraints.
### DAYS IN ACCOUNTS PAYABLE

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
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<tbody>
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<tr>
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![Bar chart showing days in accounts payable by region and year]
Days cash on hand is a measure of approximately how many days of operating expenses an entity has in its cash account. While this ratio can be impacted by the cash management strategies of providers, our data shows on average that providers continue to have less than a month of expenses in their operating accounts, with the national average sitting at 21 days. The Southwest region continues to be the lowest by far sitting at eight days of cash on hand while the Northeast at 38 days continues to be the only region with more than one month of cash on hand.
## DAYS CASH ON HAND

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![Chart showing days cash on hand for different regions from 2014 to 2018]
**DATA REFERENCE TABLES**

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## A Five Year Nursing Home Statistical Analysis (2014 to 2018)

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### Notes
- Details on specific values and further analysis can be found in the complete document.
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A special thank you to our Healthcare team for their countless hours and support of this publication.

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