Impact of Adding Payroll Based Journal (PBJ) Turnover Measures to Five-Star (July 2022)

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Key Takeaways

- On July 27, 2022, the Centers for Medicare and Medicaid Services (CMS) updated public nursing home Five-Star ratings to reflect a modified scoring methodology that includes staff turnover measures for the first time. Prior to this update, Five-Star reflected only the amount of staff time spent with residents as measured in hours per resident day (HPRD).
- The addition of these staff turnover measures comes at a time when then nursing home sector workforce is at a 29-year low. Nationally, the sector is still 14.4% below pre-COVID pandemic employment levels.
- Nationwide, 4,824 (32%) of nursing homes had a decrease in their Staffing rating. The Overall rating for 3,780 (25%) nursing homes decreased. A portion of the decrease in Overall ratings can be attributed to a methodological change made by CMS in how the Overall rating is calculated.

Description of Five-Star Changes

In January 2022, the Centers for Medicare and Medicaid Services (CMS) began calculating and posting publicly on Care Compare three turnover and two weekend staffing measures based on quarterly Payroll-Based Journal (PBJ) data. (1) The three turnover measures are for Registered Nurses (RN), total nurses (RN, LPN/LVN, and Aides/CNA), and administrators. Individuals who do not report any hours for at least 60 consecutive days during the measurement window of 12 months are counted as staff turnover. The two weekend staffing measures are hours per resident day (HPRD) for RN and total nurses.

On July 27, 2022, CMS modified the Five-Star ratings on Care Compare to include four of the new measures released in January 2022. (2) The following six staffing measures now determine Five-Star Staffing ratings:

- Hours per Resident Day Measures (HPRD)
    1. Total nursing (RN, LPN/LVN, CAN/aide) HPRD
    2. RN nursing HPRD
    3. Total nursing (RN, LPN/LVN, CAN/aide) HPRD on the weekend ***New***
- Turnover Measures
    4. Total nursing turnover ***New***
    5. RN Turnover ***New***
    6. Administrator Turnover ***New***

The addition of these measures required CMS to radically change how it assigned stars for Staffing. Now, nursing homes earn points for performance on each of the six measures. The sum total of these points then determines the Staffing star rating. The staffing HPRD measures are weighted more with a possible maximum sum of 250 points, while the turnover measures max sum is 130 points. Nursing homes that fail to

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submit PBJ data or have four or more days with no RN staffing hours are assigned a one-star Staffing rating.

With this latest ratings release, CMS also modified how the Staffing rating contributes to the Overall rating. A nursing home now needs a five-star Staffing rating to gain a star in their Overall rating. Previously, a four- or five-star Staffing rating would allow for an additional Overall star. It remains that a one-star Staffing rating reduces the Overall rating by a star.

There are two aims of this brief. The first is to show the impact of these changes to Five-Star ratings. The second is to show the industry labor trends occurring alongside these Five-Star changes.

Historic Nursing Home Employment Decline During COVID Pandemic

The start of the COVID pandemic in March 2020 coincided with a historic decrease in nursing home employment from which recovery has been slow compared to other healthcare settings.

According to data from the U.S. Bureau of Labor Statistics (BLS), 228,800 employees have left the nursing home industry since February 2020 (See Figure 1). While other health care industries, such as physician offices and home health, have seen total employment levels bounce back, the nursing home industry still has a 14.4% deficit (See Figure 2). The latest estimate from June 2022 has 1,356,000 total nursing home employees. Prior to the COVID pandemic, the last time the industry had fewer employees than today was December 1993 or 29 years ago. [(3)]

The nursing home staffing data used in Five-Star has a time lag. Staffing hours per resident day (HPRD) can be four to seven months behind depending on the current month and represent three months or a quarter. Staff turnover measures have a longer lag and represent a full 12 months or a year.

The new Staffing ratings released on July 27 reflects staffing HPRD from Jan-Mar 2022 (2022q1) and staff turnover from Jan-Dec 2021 (2021q1-q4). Figure 1 shows these measurement windows relative to nursing home employment trend at the same time.

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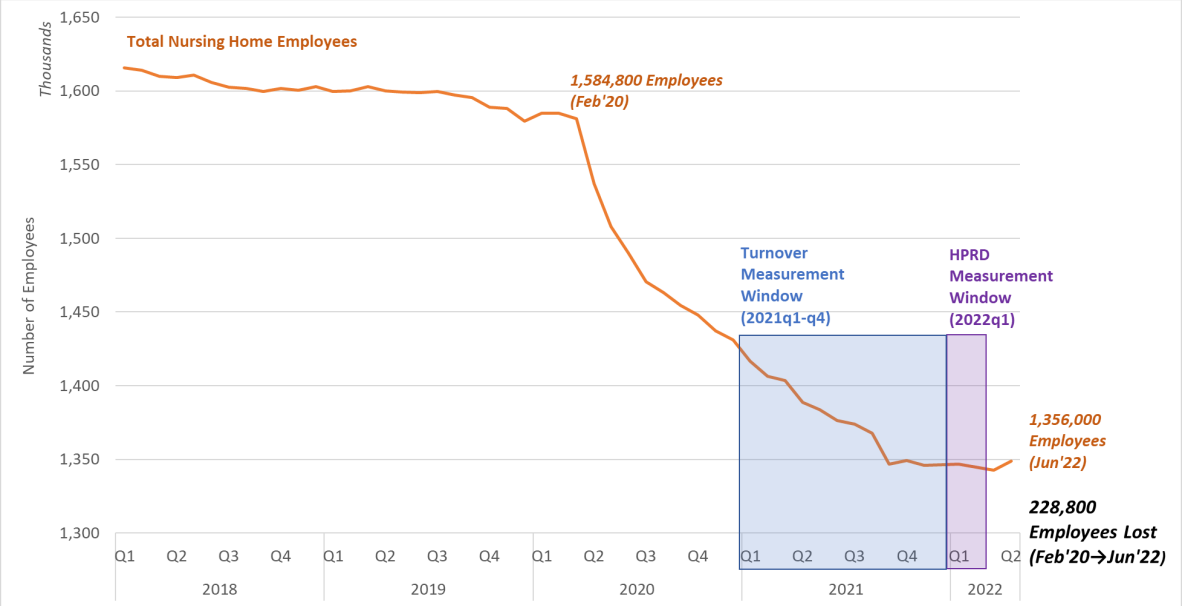
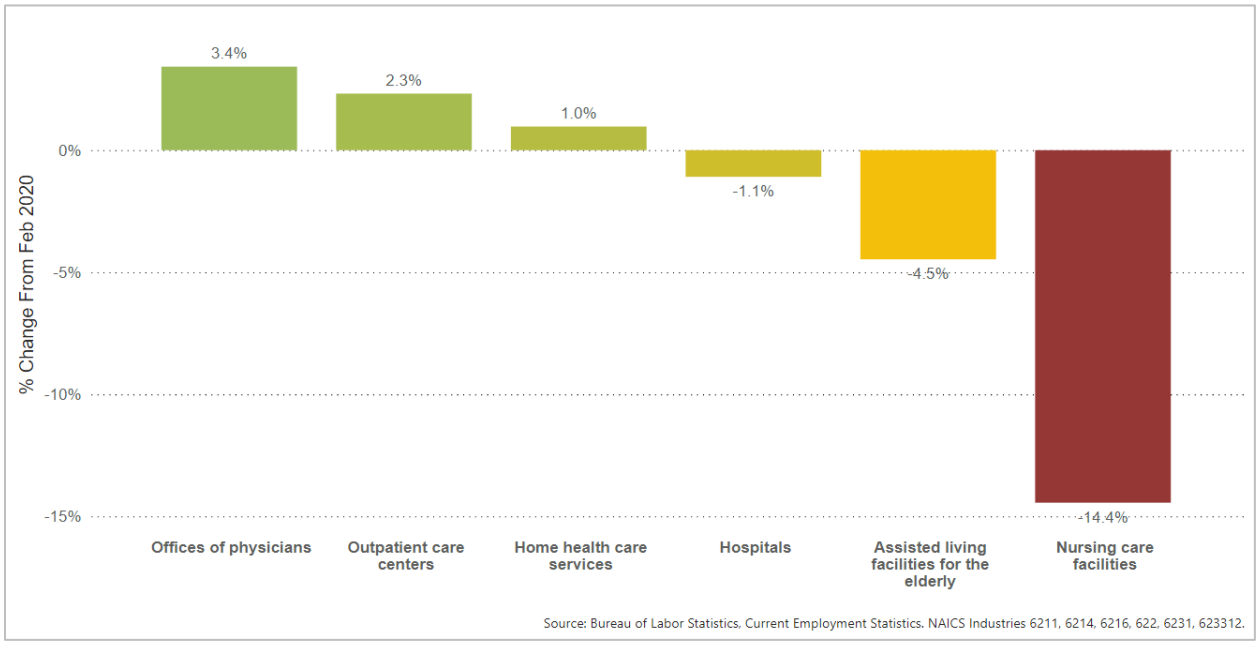
Figure 1: Staffing Measurement Windows Relative to Employment Trend



Sources: U.S. Bureau of Labor Statistics, Current Employment Statistics & CMS Care Compare
Notes: HPRD = Hours Per Resident Day

Figure 2: Percent Change in Health Care Sector Employment Since February 2020



Sources: U.S. Bureau of Labor Statistics, Current Employment Statistics & CMS Care Compare

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Impact of Five-Star Rating Changes

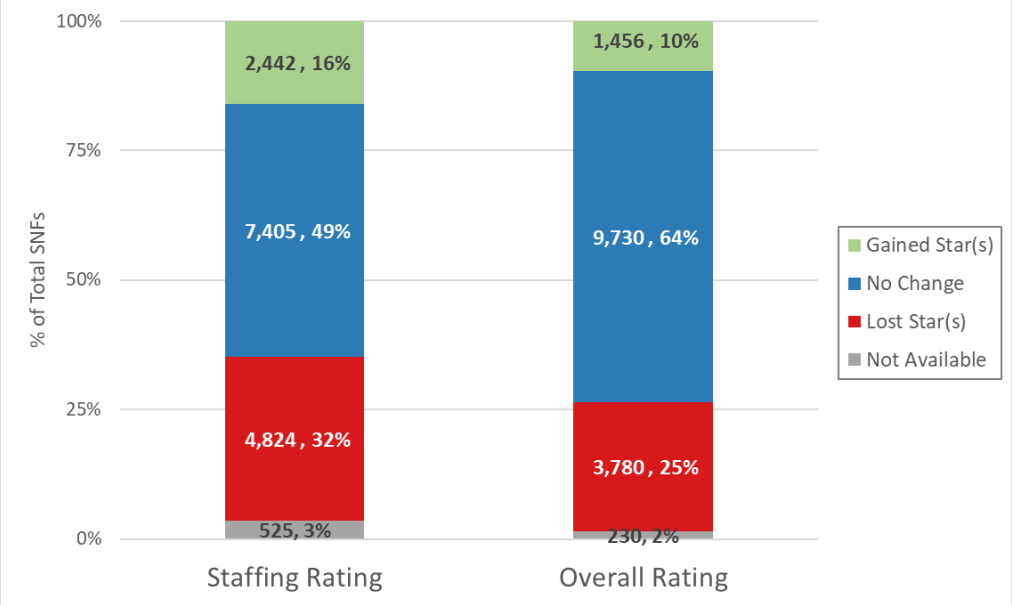
Nearly a third of nursing homes (32%) in the nation had a decrease in their Five-Star Staffing rating when new ratings were released with the new measures and scoring methodology. Only 16 percent of nursing homes had an increase in their Staffing rating, despite 50 percent having an increase in their total adjusted staffing hours per resident day from 2021q4 to 2022q1. Almost half of nursing homes (49%) had no change in their staffing rating. [4] (See Figure 3)

Similarly, most nursing homes (64%) had no change to their Overall rating. A quarter of nursing homes (25%) had a decrease and ten percent had an increase. (See Figure 3) Five-Star Quality ratings improved with 222 more nursing homes earning five-stars in Quality in July 2022 than June 2022. The national Quality rating average improved from 3.68 to 3.71 stars. The improvement in Quality ratings reduced the impact of the changes in the Staffing rating methodology on Overall ratings.

Figure 4 shows the distribution of star ratings for both Staffing and Overall previously and now. Most noticeably there was a 13 percentage point increase in one-star Staffing buildings and a five percentage point increase in one-star Overall buildings.

State-level distributions of Staffing and Overall ratings can be found in the Appendix.

Figure 3: Changes in Staffing and Overall Rating From June 2022 to July 2022



Source: CMS Care Compare
Note: Percentages might not total 100% due to rounding

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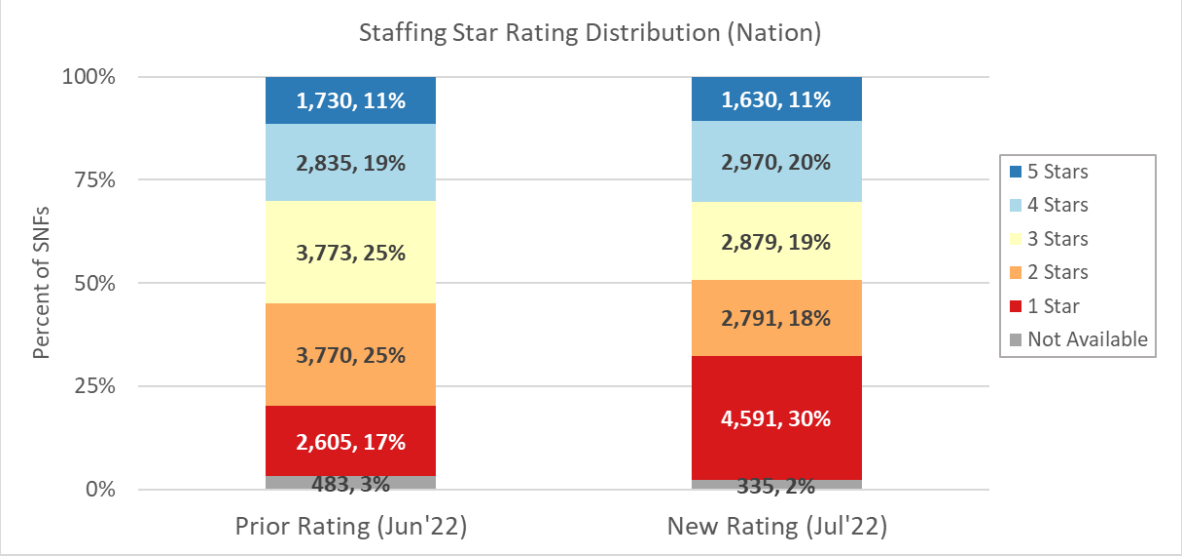
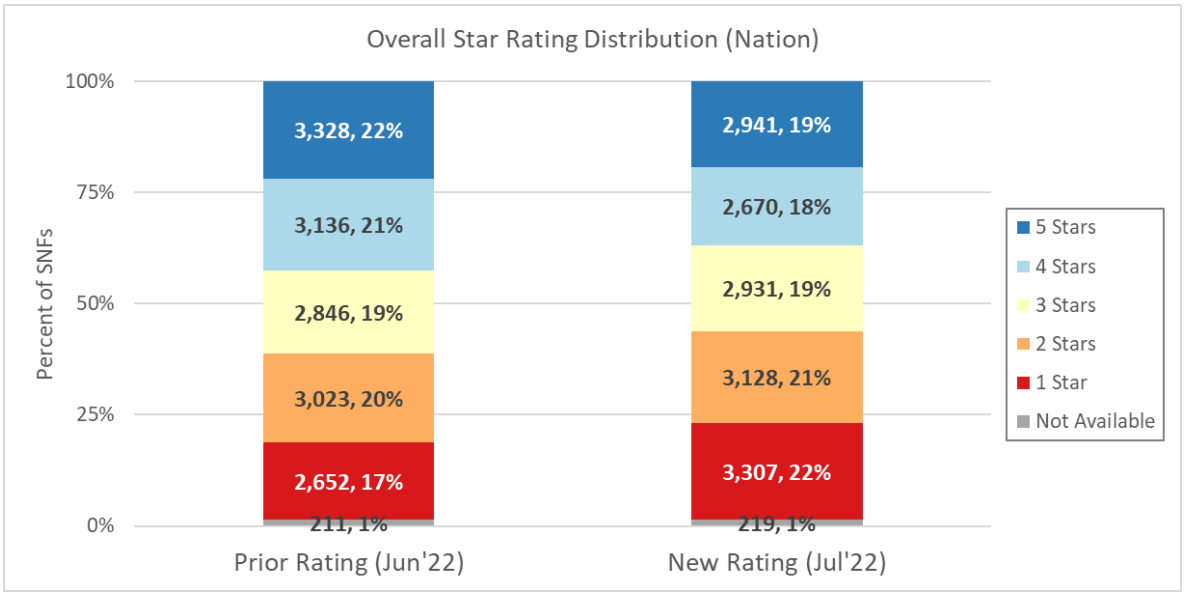
Figure 4: Distributions of Staffing and Overall Ratings in June 2022 and July 2022





Source: CMS Care Compare
Note: Percentages might not total 100% due rounding. Nursing homes may not have a rating due to being too new or a Specifical Focus Facility.

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Discussion

CMS made two substantial changes in how Five-Star ratings are calculated in July 2022. First, they added three turnover measures and one weekend staffing measure to the Staffing component. Second, they altered the calculation of the Overall rating to only allow five-star Staffing nursing homes to gain a star in their Overall rating. Previously, four- and five-star Staffing homes could gain an Overall star.

These two changes during the worst workforce shortage in the past 29 years for the nursing home industry resulted in substantial decreases in Staffing and Overall ratings. Nearly a third of nursing homes had a lower Staffing rating and a quarter had a lower Overall rating in July 2022 compared to June 2022. This change in ratings occurred despite no material change in care provided. Half of nursing homes increased their staffing hours per resident day and average Quality ratings improved from 3.68 to 3.71 stars with the latest data made available.

Public health officials and legislators need to address the nursing home industry's historic workforce shortage in order to improve Five-Star ratings under this new methodology. Through funding and policy solutions that help the industry attract and retain the caregivers so desperately needed, policymakers can ensure nursing home residents are well supported.

References

1. Wright, David R. *Nursing Home Staff Turnover and Weekend Staffing Levels.* QSO-22-08-NH Memo: Jan 07, 2022. Center for Clinical Standards and Quality/Quality, Safety and Oversight Group. https://www.cms.gov/files/document/qso-22-08-nh.pdf

2. Centers for Medicare and Medicaid Services (CMS)**.** *Design for Care Compare Nursing Home*
Five-Star Quality Rating System: Technical Users' Guide. Baltimore, MD : July 2022. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandComplianc/Downloads/usersguide.pdf

3. U.S. Bureau of Labor Statistics**.** Current Employment Statistics. NAICS Industry 6231 Nursing Care Facilities Accessed July 25, 2022. https://www.bls.gov/ces/

4. CMS Care Compare**.** *Nursing Homes Including Rehab Services*. Accessed July 27, 2022. https://data.cms.gov/provider-data/topics/nursing-homes

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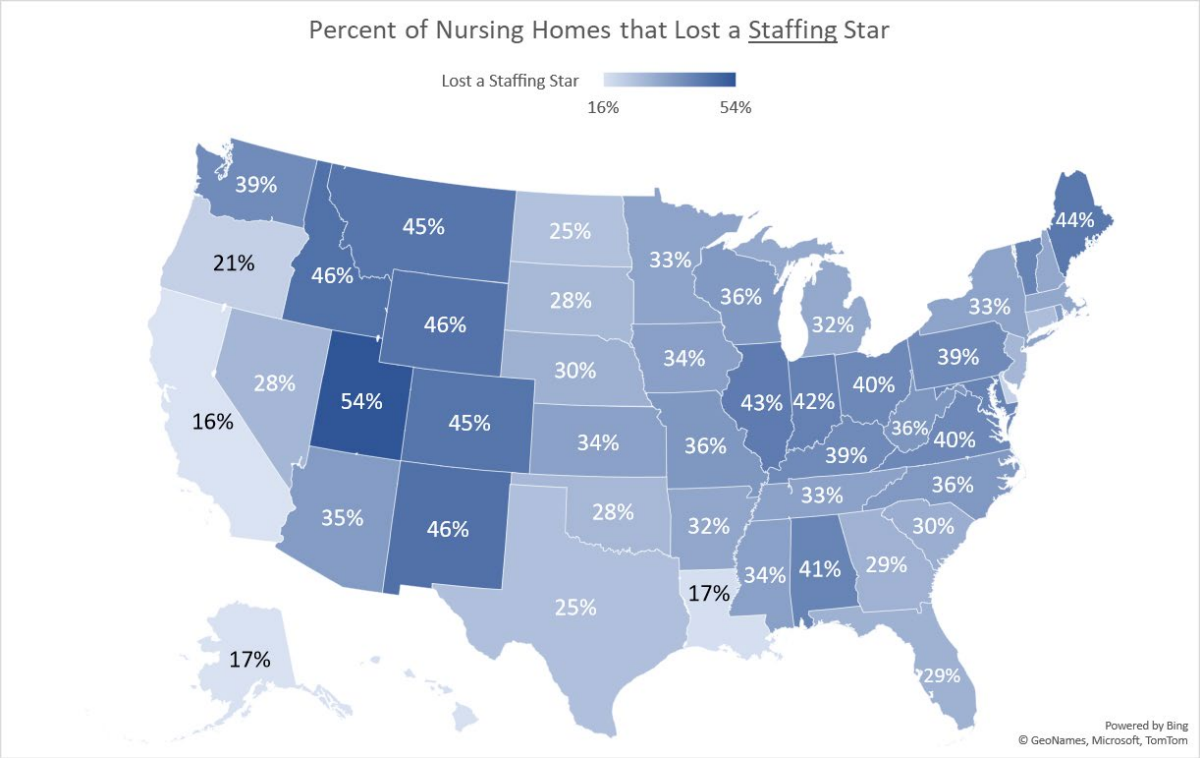
Appendix A: State Level Staffing Impact



State	Workforce Change During COVID*	Nursing Homes	Staffing Star Rating						
				5	4	3	2	1	Not Rated^
AK	39.5%	20	Prior	85%	5%	0%	0%	5%	5%
			Now	80%	15%	0%	0%	0%	5%
AL	-16.8%	226	Prior	8%	35%	34%	13%	8%	2%
			Now	12%	28%	15%	15%	28%	2%
AR	-18.0%	220	Prior	0%	19%	41%	30%	8%	2%
			Now	5%	19%	25%	33%	17%	1%
AZ	-12.5%	142	Prior	10%	22%	29%	27%	8%	4%
			Now	13%	17%	20%	23%	23%	3%
CA	-10.1%	1176	Prior	7%	19%	34%	23%	13%	3%
			Now	14%	28%	27%	14%	16%	2%
CO	-13.9%	221	Prior	21%	38%	25%	5%	10%	1%
			Now	12%	28%	27%	16%	14%	2%
CT	-15.8%	208	Prior	16%	25%	32%	15%	10%	2%
			Now	15%	29%	21%	19%	14%	1%
DC	-12.7%	17	Prior	47%	24%	24%	0%	6%	0%
			Now	35%	12%	24%	6%	24%	0%

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State	Workforce Change During COVID*	Nursing Homes	Staffing Star Rating						
				5	4	3	2	1	Not Rated^
DE	-15.7%	45	Prior	40%	40%	16%	0%	0%	4%
			Now	36%	40%	18%	0%	2%	4%
FL	-15.5%	698	Prior	13%	38%	31%	12%	4%	2%
			Now	12%	35%	29%	13%	10%	1%
GA	-17.9%	360	Prior	3%	7%	22%	35%	31%	3%
			Now	3%	9%	18%	22%	46%	2%
HI	-11.1%	43	Prior	74%	16%	5%	0%	0%	5%
			Now	70%	23%	5%	0%	0%	2%
IA	-11.1%	435	Prior	16%	29%	28%	11%	8%	9%
			Now	14%	31%	22%	13%	16%	4%
ID	-17.1%	80	Prior	25%	38%	21%	10%	5%	1%
			Now	15%	29%	29%	9%	16%	3%
IL	-15.8%	703	Prior	11%	11%	18%	33%	23%	4%
			Now	8%	12%	12%	17%	48%	4%
IN	-17.2%	524	Prior	3%	10%	28%	36%	22%	1%
			Now	4%	8%	19%	23%	45%	1%
KS	-13.1%	321	Prior	17%	29%	28%	10%	13%	3%
			Now	16%	26%	20%	12%	24%	2%
KY	-16.1%	280	Prior	8%	11%	30%	37%	11%	2%
			Now	7%	11%	24%	27%	30%	1%
LA	-17.3%	268	Prior	2%	3%	13%	31%	47%	6%
			Now	3%	4%	10%	25%	53%	4%
MA	-19.6%	364	Prior	10%	27%	38%	14%	9%	2%
			Now	7%	31%	26%	17%	16%	2%
MD	-22.9%	224	Prior	11%	21%	37%	25%	4%	1%
			Now	13%	20%	21%	23%	22%	1%
ME	-16.4%	90	Prior	44%	34%	12%	0%	7%	2%
			Now	21%	38%	24%	6%	10%	1%
MI	-19.9%	435	Prior	21%	29%	22%	12%	9%	6%
			Now	19%	27%	20%	15%	17%	2%
MN	-11.2%	359	Prior	51%	28%	8%	1%	7%	6%
			Now	36%	40%	14%	4%	5%	1%
MO	-16.8%	514	Prior	4%	11%	22%	30%	26%	7%
			Now	4%	11%	15%	19%	44%	7%
MS	-17.1%	204	Prior	3%	27%	39%	22%	4%	4%
			Now	5%	28%	31%	18%	15%	3%
MT	-19.1%	71	Prior	27%	20%	23%	8%	20%	3%
			Now	20%	21%	18%	14%	24%	3%
NC	-17.9%	426	Prior	6%	6%	20%	43%	21%	4%
			Now	6%	10%	13%	27%	40%	3%

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State	Workforce Change During COVID*	Nursing Homes	Staffing Star Rating						
				5	4	3	2	1	Not Rated^
ND	-13.1%	77	Prior	38%	45%	5%	1%	8%	3%
			Now	34%	47%	12%	3%	3%	3%
NE	-11.7%	190	Prior	16%	38%	23%	11%	11%	2%
			Now	18%	29%	21%	16%	14%	2%
NH	-10.8%	73	Prior	21%	26%	30%	14%	8%	1%
			Now	18%	27%	19%	19%	15%	1%
NJ	-14.6%	353	Prior	16%	23%	34%	19%	7%	1%
			Now	18%	23%	26%	16%	15%	2%
NM	-12.1%	68	Prior	10%	26%	29%	19%	13%	1%
			Now	9%	19%	9%	43%	19%	1%
NV	-15.4%	66	Prior	20%	14%	21%	24%	14%	8%
			Now	15%	21%	17%	15%	27%	5%
NY	-16.9%	611	Prior	6%	8%	18%	50%	17%	2%
			Now	6%	10%	15%	30%	38%	1%
OH	-15.5%	952	Prior	3%	11%	22%	36%	25%	3%
			Now	3%	9%	14%	20%	51%	3%
OK	-7.2%	297	Prior	2%	14%	30%	26%	24%	4%
			Now	4%	16%	25%	18%	35%	3%
OR	-8.5%	130	Prior	19%	41%	17%	4%	17%	2%
			Now	18%	47%	15%	3%	15%	2%
PA	-19.2%	684	Prior	11%	16%	33%	33%	5%	2%
			Now	12%	15%	21%	27%	23%	1%
RI	-20.4%	76	Prior	9%	42%	39%	8%	0%	1%
			Now	12%	34%	34%	9%	9%	1%
SC	-13.1%	188	Prior	13%	18%	35%	19%	12%	3%
			Now	10%	26%	23%	22%	19%	1%
SD	-13.8%	104	Prior	25%	24%	27%	8%	12%	5%
			Now	20%	33%	19%	9%	17%	2%
TN	-9.8%	313	Prior	5%	12%	28%	39%	14%	2%
			Now	6%	14%	24%	24%	31%	1%
TX	-9.4%	1207	Prior	1%	5%	9%	32%	50%	3%
			Now	1%	5%	8%	19%	64%	2%
UT	-9.8%	98	Prior	30%	26%	22%	14%	5%	3%
			Now	16%	20%	27%	15%	18%	3%
VA	-17.4%	288	Prior	8%	13%	16%	36%	22%	5%
			Now	10%	12%	8%	17%	49%	3%
VT	-15.2%	35	Prior	17%	14%	43%	20%	3%	3%
			Now	11%	31%	26%	9%	20%	3%
WA	-19.1%	200	Prior	17%	36%	26%	12%	7%	4%
			Now	15%	31%	23%	12%	17%	4%

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State	Workforce Change During COVID*	Nursing Homes	Staffing Star Rating						
				5	4	3	2	1	Not Rated^
WI	-14.8%	344	Prior	32%	25%	22%	11%	8%	2%
			Now	24%	30%	15%	10%	19%	2%
WV	-5.5%	123	Prior	7%	14%	33%	33%	10%	4%
			Now	9%	16%	17%	30%	25%	2%
WY	-11.2%	36	Prior	28%	31%	17%	14%	8%	3%
			Now	22%	22%	22%	17%	14%	3%

Source: U.S Bureau of Labor Statistics, Quarterly Census of Employment and Wages & CMS Care Compare

Note: *- Workforce Change is for Feb 2020 to December 2021.

^- Nursing homes may not have a rating due to being too new or a Special Focus Facility. “Prior” refers to June 2022 ratings and “Now” refers to July 2022 ratings.

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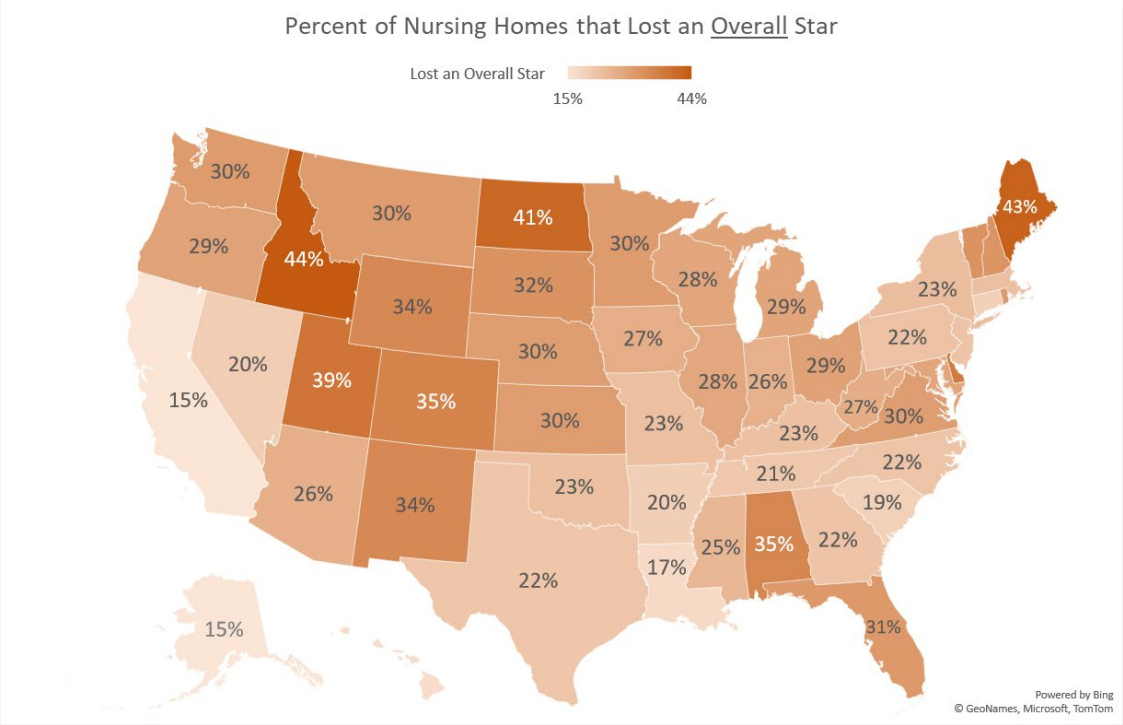
Appendix B: State Level Overall Rating Impact



State	Nursing Homes	Overall Star Rating						
			5	4	3	2	1	Not Rated^
AK	20	Prior	55%	5%	10%	25%	5%	0%
		Now	55%	5%	10%	20%	10%	0%
AL	226	Prior	25%	24%	20%	14%	15%	1%
		Now	19%	19%	21%	17%	23%	1%
AR	220	Prior	20%	24%	18%	18%	20%	1%
		Now	19%	21%	21%	16%	22%	1%
AZ	142	Prior	24%	21%	22%	22%	8%	3%
		Now	21%	14%	27%	23%	12%	3%
CA	1176	Prior	29%	20%	20%	20%	9%	1%
		Now	28%	19%	21%	22%	9%	1%
CO	221	Prior	30%	24%	16%	19%	11%	1%
		Now	24%	20%	15%	20%	19%	2%
CT	208	Prior	24%	24%	17%	18%	16%	1%
		Now	25%	17%	16%	24%	16%	1%
DC	17	Prior	53%	6%	24%	12%	6%	0%
		Now	41%	6%	18%	24%	12%	0%
DE	45	Prior	44%	13%	18%	16%	4%	4%
		Now	29%	22%	18%	16%	11%	4%

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State	Nursing Homes		Overall Star Rating					
			5	4	3	2	1	Not Rated^
FL	698	Prior	28%	24%	17%	21%	9%	1%
		Now	24%	20%	19%	20%	16%	1%
GA	360	Prior	12%	19%	20%	21%	26%	2%
		Now	12%	16%	19%	19%	32%	2%
HI	43	Prior	51%	28%	0%	19%	0%	2%
		Now	51%	21%	5%	19%	2%	2%
IA	435	Prior	26%	19%	18%	18%	16%	3%
		Now	20%	20%	17%	19%	22%	3%
ID	80	Prior	40%	21%	14%	18%	6%	1%
		Now	25%	26%	16%	16%	15%	1%
IL	703	Prior	19%	18%	19%	19%	25%	1%
		Now	16%	15%	16%	22%	31%	1%
IN	524	Prior	17%	23%	21%	20%	18%	1%
		Now	17%	19%	22%	20%	23%	1%
KS	321	Prior	18%	26%	17%	21%	18%	1%
		Now	18%	17%	20%	19%	26%	1%
KY	280	Prior	16%	19%	19%	23%	22%	1%
		Now	16%	17%	19%	19%	29%	1%
LA	268	Prior	7%	15%	21%	20%	36%	1%
		Now	8%	15%	15%	24%	37%	1%
MA	364	Prior	22%	22%	21%	17%	18%	1%
		Now	21%	17%	22%	19%	21%	1%
MD	224	Prior	22%	27%	17%	20%	13%	0%
		Now	21%	18%	22%	18%	21%	0%
ME	90	Prior	31%	27%	13%	18%	10%	1%
		Now	22%	18%	20%	20%	19%	1%
MI	435	Prior	29%	22%	17%	18%	13%	1%
		Now	25%	19%	17%	21%	17%	2%
MN	359	Prior	33%	23%	18%	16%	9%	1%
		Now	30%	17%	19%	16%	16%	1%
MO	514	Prior	14%	19%	21%	19%	25%	2%
		Now	12%	16%	22%	20%	28%	2%
MS	204	Prior	9%	22%	19%	24%	24%	2%
		Now	10%	14%	22%	22%	30%	2%
MT	71	Prior	25%	17%	23%	14%	18%	3%
		Now	21%	15%	18%	20%	23%	3%
NC	426	Prior	17%	16%	23%	17%	26%	1%
		Now	15%	17%	22%	17%	29%	1%
ND	77	Prior	36%	18%	14%	23%	5%	3%
		Now	26%	22%	17%	19%	13%	3%

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State	Nursing Homes		Overall Star Rating					
			5	4	3	2	1	Not Rated^
NE	190	Prior	25%	23%	19%	19%	13%	1%
		Now	22%	19%	18%	21%	18%	2%
NH	73	Prior	23%	21%	19%	19%	16%	1%
		Now	16%	15%	22%	26%	19%	1%
NJ	353	Prior	34%	20%	16%	23%	8%	1%
		Now	29%	19%	20%	22%	10%	1%
NM	68	Prior	19%	18%	22%	25%	15%	1%
		Now	22%	10%	16%	25%	25%	1%
NV	66	Prior	27%	17%	21%	17%	17%	2%
		Now	24%	14%	23%	18%	20%	2%
NY	611	Prior	23%	19%	22%	19%	16%	0%
		Now	19%	18%	22%	21%	19%	0%
OH	952	Prior	18%	21%	16%	24%	19%	3%
		Now	14%	18%	18%	23%	24%	3%
OK	297	Prior	14%	19%	19%	22%	23%	3%
		Now	14%	14%	20%	23%	27%	3%
OR	130	Prior	24%	23%	22%	19%	11%	2%
		Now	23%	20%	19%	21%	16%	1%
PA	684	Prior	23%	22%	20%	19%	16%	1%
		Now	22%	19%	19%	19%	20%	1%
RI	76	Prior	24%	20%	20%	24%	12%	1%
		Now	22%	13%	22%	21%	20%	1%
SC	188	Prior	22%	19%	17%	18%	23%	1%
		Now	22%	13%	22%	19%	24%	1%
SD	104	Prior	20%	23%	23%	17%	14%	2%
		Now	18%	19%	20%	19%	22%	1%
TN	313	Prior	16%	20%	21%	21%	21%	1%
		Now	15%	16%	20%	24%	24%	1%
TX	1207	Prior	12%	19%	18%	23%	27%	2%
		Now	11%	17%	19%	23%	29%	2%
UT	98	Prior	44%	19%	13%	13%	8%	2%
		Now	24%	29%	16%	19%	9%	2%
VA	288	Prior	23%	17%	18%	18%	21%	2%
		Now	19%	13%	18%	22%	26%	2%
VT	35	Prior	23%	23%	9%	26%	17%	3%
		Now	14%	26%	11%	26%	20%	3%
WA	200	Prior	29%	26%	18%	20%	7%	2%
		Now	25%	19%	21%	20%	14%	2%
WI	344	Prior	28%	24%	16%	16%	16%	1%
		Now	26%	20%	15%	15%	23%	1%

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State	Nursing Homes	Overall Star Rating						
			5	4	3	2	1	Not Rated^
WV	123	Prior	18%	14%	18%	29%	19%	2%
		Now	13%	14%	21%	22%	28%	2%
WY	36	Prior	31%	14%	28%	17%	8%	3%
		Now	28%	19%	19%	14%	17%	3%

Source: Care Compare
Note: ^- Nursing homes may not have a rating due to being too new or a Special Focus Facility. “Prior” refers to June 2022 ratings and “Now” refers to July 2022 ratings.

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