



Estimating the Cost of Minimum Staffing Ratios in Connecticut Nursing Homes

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Executive Summary

Minimum staffing levels are proposed as a means to improve nursing home quality. Connecticut is currently considering creating minimum nurse staffing to resident thresholds in nursing homes (RN HPRD = 0.75, LPN HPRD = 0.54, and CNA HPRD = 2.81) for a Total Nursing Staffing HPRD of 4.1. In this report we characterized the facilities currently below this threshold and calculated the number of additional staff and labor costs needed to achieve the proposed minimum staffing. We used staffing levels collected by the Center for Medicare and Medicaid Census (CMS) from nursing home payroll data. To estimate total labor costs, we used average state labor costs, fringe benefits, and payroll tax rates.

Based on Q3 2020 staffing data, 181 (88.7%) of nursing homes in Connecticut are below the proposed minimum staffing threshold. The analysis was repeated using pre-COVID Q4 2019 staffing census data. Under pre-COVID conditions, the number of nursing homes below the minimum staffing threshold rose to 199 (97.5%). A big driver for this increase was a higher census pre-COVID. The average Connecticut nursing home census in Q4 2019 was 104 compared to 86 in Q3 2020. This is a 17% decline, which exceeds the national average decline of 14%.

On average, Connecticut nursing homes below the staffing threshold are larger and have more Medicaid residents than the others. Their November 2020 Five-Star ratings were on average lower.

For Connecticut to implement minimum staffing ratios, we estimate it will require between 1,793-3,364 FTEs and cost \$140.9-\$273.9 million dollars. The exact figure will depend on resident census.

To get the current 181 nursing homes above the proposed minimum staffing threshold, 1,793 FTEs would be needed statewide at a total annual cost of \$140.9 million, including fringe benefits and payroll taxes. CNAs make up most of the needed FTEs (1,426) and cost (\$95.0 million). This assumes census stays the same as it is now, which is much lower than before the COVID pandemic.

To estimate the costs when census increases, our simulation was repeated using pre-COVID-19 Q4 2019 PBJ staffing census data. In this analysis, the number of nursing homes below the minimum threshold rose to 199 (97.5%). Also increasing were the number of needed FTEs (3,364) and costs (\$273.9 million) to meet the minimum staffing.

Finding individuals to fill the positions will be the most challenging aspect of implementing a minimum staffing threshold. Nursing homes must compete with hospitals and others for a workforce that was in shortage before COVID and has been dwindling since.

Background

The relationship between nursing home staffing and resident quality is multifaceted. For staffing to have an impact on resident quality it requires both having the staff and ensuring they are trained properly and work well together to provide coordinated patient-centered care.

Policymakers and regulators have a challenging responsibility to incentivize and ensure both quantity and quality of staff through various means at various levels. This can range from investing in local nurse training programs to revoking individual nurse licenses when deliberate acts of patient abuse and neglect occur.

Among nursing homes, more attention has been paid to quantity, rather than quality, of staff in large part because it is easier to measure and monitor quantity. Measurements for staff quantity, such as hours per resident day or ratio of staff to residents, are gathered through employment data and publicly reported by the federal government. Measuring staff quality is more difficult. The most often used proxy for staff quality is staff retention and turnover. High retention and low turnover are theorized to reflect staff capable of performing their responsibilities and working well with each other because otherwise they would either be fired or seek employment elsewhere.

Both quantity and low turnover of nursing home staff have been found to be associated with higher resident quality. Castle, et al. found reducing nursing home turnover was associated with better performance on publicly reported quality metrics.¹ Castle estimates the rate of turnover for nursing home nurses to be around 40%.² There is no public reporting of nurse turnover, like there is for quantity of nurse staffing through Payroll-Based Journal (PBJ) required federally by the Centers for Medicaid and Medicare Services (CMS).³

With the current COVID pandemic, quantity of staffing has been a focus as COVID has had a devastating impact with over 100,000 deaths and approximately 40% of COVID deaths associated with long-term care facilities, which is a broader category than nursing homes alone and includes assisted living, independent living, among others.⁴

Several studies have found cases of COVID in the community to be the biggest driver of COVID cases from occurring in a nursing home, regardless of Five-Star Ratings or prior survey compliance.^{5, 6} Some of these studies have found an association between quantity of staffing and limiting spread.^{5, 7} It has been theorized that with higher staffing, nursing homes can better adhere to consistent assignments and reduce the risk of spreading cases between patients. Currently, there have been no studies on the quality of staffing and the relationship to preventing or minimizing COVID.

In an effort to mitigate COVID in nursing homes, some state policymakers and U.S. Congress are considering requiring minimum staffing levels. Minimum staffing levels currently vary by state across the country. Studies looking at the impact of minimum staffing on quality in general have shown mixed results with quality improving slightly

but also substitution of staffing occurring.⁸⁻¹⁰ Substitution examples include more CNAs in lieu of RNs or decreases in ancillary staff (e.g. housekeeping and dietary) when clinical staff levels are increased.

At both the state and federal level, efforts to increase minimum staffing levels face two implementation challenges. The first is having enough people to fill the positions. The second is the financial cost of employing more people.

The COVID pandemic has exacerbated a pre-existing health care workforce shortage. Health care staff from all sectors, including hospitals, nursing homes, and home health, are burnt out and worried about contracting COVID and spreading it to their families and loved ones.^{11, 12} Regardless of how much a provider can pay them, some qualified people will turn down the job.

The costs associated to recruit and retain additional staff may be challenging for nursing homes. According to the latest data from MedPAC, the average total margin for nursing homes in the nation dropped to -0.3% in 2018.¹³ Because Medicare reimburses at a higher rate than Medicaid, many nursing homes struggle to find a mix of Medicare and Medicaid patients to make financial ends meet.

As policymakers continue to consider establishing or raising minimum staffing levels for nursing homes, it will be important for them to fully understand the two potential barriers of available staff and cost.

In 2021, the Connecticut General Assembly is considering requiring minimum nurse staffing ratios for nursing homes (See Table 1). To provide a model for what policy makers should consider, this analysis looks to quantify what such a policy would mean in terms of staff needed, as well as the financial cost, for Connecticut.

Table 1: Proposed Minimum Nurse Staffing and Hours Per Resident Day for Connecticut Nursing Homes

Nursing Type	HPRD
RN	0.75
LPN	0.54
CNA	2.81
Total (RN + LPN + CNA)	4.1

Method

On a quarterly basis, nursing homes are required to submit daily payroll data on staffing data to the Centers for Medicaid and Medicare Services (CMS), the federal regulatory agency of nursing homes. CMS uses this Payroll-Based Journal (PBJ) staffing data to calculate Registered Nurse (RN), Licensed Practical Nurse (LPN), Certified Nursing Assistants (CNA), and total nurse (RN + LPN + CNA) staffing hours per resident day (HPRD) and Five-Star Staffing Ratings.

For this report, we categorized nursing homes in Connecticut using PBJ staffing data from Q3 2020 as below the RN, LPN, or CNA threshold or above them. Facility characteristics, such as bed size and ownership, and Five-Star Ratings were compared between the two groups.

For nursing homes below either minimum HPRD threshold, simulations were created to get them above both minimum staffing thresholds. In other words, if a nursing home was above the RN and LPN threshold but below the CNA threshold, only CNA staffing was increased in the simulation. For nursing homes below the RN and LPN HPRD threshold, both RN and LPN staffing were increased to maintain the same ratio in the simulation till the minimum threshold was met.

To determine annual salary costs, the average Connecticut per hour wages from CMS's 2019 wage index were used. For CNAs this was \$20.07/hour, LPNs was \$29.89/hour, and RNs was \$44.72. To provide a more complete picture of labor costs, we calculated fringe benefits and payroll tax. We applied an average 20% fringe benefit costs to the annual salary costs for each additional staff. Payroll tax assumed 1.45% for Medicare, 6.2% for Social Security, 0.96% for federal unemployment insurance, and state unemployment insurance 0.72%.

During the pandemic, census has dropped nationally over 14%. Fewer admissions to nursing homes has been driven by fewer elderly receiving hospital care that needs post-acute care (e.g. cancelling of elective surgeries), family's reluctance to use nursing homes while they have been at home out of work or teleworking, or facilities have been closed to admissions because of COVID-19 outbreaks.

The cost to meet a minimum staffing will vary depending on the census of a facility. We calculated the costs based on the current census but also for the census prior to the COVID-19 pandemic, since census will increase once the COVID vaccine rollout has helped curb the pandemic. Thus, as a sensitivity analysis, the analysis was repeated using PBJ staffing data from Q4 2019, before the COVID pandemic.

Results

Based on Q3 2020 PBJ staffing data, 181 (88.7%) of nursing homes in Connecticut are below either RN = 0.75, LPN = 0.54, or CNA = 2.81 hours per resident day (HPRD). On average, these facilities are larger and have more Medicaid residents than the other 23 (11.3%) nursing homes in Connecticut. A higher proportion of them are also For-Profit and rural (See Table 2).

As for November 2020 Five-Star ratings, the nursing homes below either HPRD threshold have on average lower overall, survey, quality, and staffing ratings, but the difference is smallest among quality ratings (See Table 2).

Table 2: Characteristics and Five-Star Ratings of Connecticut Nursing Homes Above and Below Proposed Minimum Staffing Ratios (Q3 2020)

	Below RN = 0.75, LPN = 0.54, AND CNA = 2.81 HPRD	Above RN = 0.75, LPN = 0.54, AND CNA = 2.81 HPRD
Number of SNFs	181 (89%)	23 (11%)
Bed Size (Average)	123	97
Ownership		
Non-Profit	25 (74%)	9 (26%)
For-Profit	155 (92%)	13 (7%)
Government	1 (50%)	1 (50%)
Rural	11 (92%)	1 (8%)
Percent Medicaid (Average)	69%	44%
Five-Star Ratings (Nov 2020 Average)		
Overall	3.44	4.64
Survey	2.76	3.73
Quality	4.13	4.41
Staffing	3.57	4.70

To get the 135 nursing homes above the RN, LPN, and CNA thresholds, 1,793 FTEs would be needed statewide at a total annual cost of \$140.1 million, including fringe benefits and payroll taxes. CNAs make up most of the needed FTEs (1,426) and cost (\$95.0 million). (See Table 3). This assumes census stays the same as it is now, which is much lower than pre-COVID-19.

Table 3: Staff and Cost Estimates for Achieving Minimum Staffing Ratios Using Q3 2020 PBJ Staffing Data

Nurse Type	Daily Hours Needed	FTE Needed	Annual Salary Cost Increase	Annual Fringe Benefit Cost Increase	Annual Payroll Tax Cost Increase	Total Annual Cost Increase
RN	2,064	334	\$33,684,415.45	\$6,736,883.09	\$3,142,755.96	\$43,564,054.50
LPN	167	33	\$1,818,133.16	\$363,626.63	\$169,631.82	\$2,351,391.62
CNA	10,032	1,426	\$73,485,055.08	\$14,697,011.02	\$6,856,155.64	\$95,038,221.74
Total	12,263	1,793	\$108,987,603.69	\$21,797,520.74	\$10,168,543.42	\$140,953,667.86

Note: Hourly wages used \$44.72 for RN, \$29.89 for LPN, and \$20.07 for CNA. This table reflects getting 181 nursing homes to RN = 0.75, LPN = 0.54, and CNA = 2.81 HPRD. FTE = Full Time Equivalent.

To understand the cost to Connecticut when census returns to pre-COVID-19 levels, we conducted a sensitivity analysis to understand the possible range in costs of setting minimum staffing ratios that translate the above staffing hours per resident day. Our simulation was repeated using pre-COVID-19 Q4 2019 PBJ staffing data. Using this pre-COVID pandemic data, the number of nursing homes below either HPRD threshold rose to 176 (86%).

A big driver for this increase was a higher census. The average Connecticut nursing home census in Q4 2019 104 compared to 86 in Q3 2020. This is a 17% decline.

In pre-COVID times and using Q4 2019 PBJ staffing data, it is more costly to get the Connecticut’s nursing homes above RN, LPN, and CNA thresholds. A total of 3,364 FTEs would be needed at a total annual cost of \$273.9 million, including fringe benefits and payroll taxes. Similar to the analysis using Q3 2020 staffing data, CNAs are the majority of the FTEs needed (2,694) and costs (\$184.3 million). (See Table 4).

Table 4: Staff and Cost Estimates for Achieving Minimum Staffing Ratios Using Q4 2019 (Pre-COVID) PBJ Staffing Data

Nurse Type	Daily Hours Needed	FTE Needed	Annual Salary Cost Increase	Annual Fringe Benefit Cost Increase	Annual Payroll Tax Cost Increase	Total Annual Cost Increase
RN	4,023	608	\$65,664,703.70	\$13,132,940.74	\$6,126,516.86	\$84,924,161.30
LPN	332	62	\$3,617,129.22	\$723,425.84	\$337,478.16	\$4,678,033.22
CNA	19,454	2,694	\$142,503,987.45	\$28,500,779.49	\$13,295,613.63	\$184,300,290.58
Total	23,809	3,364	\$211,785,730.37	\$42,357,146.07	\$19,759,608.64	\$273,902,485.09

Note: Hourly wages used \$44.72 for RN, \$29.89 for LPN, and \$20.07 for CNA. This table reflects getting 199 nursing homes to RN = 0.75, LPN = 0.54, and CNA = 2.81 HPRD. FTE = Full Time Equivalent.

Discussion

For Connecticut to implement shift-level minimum nursing home staffing ratios, we estimate it will require between 1,793-3,364 FTEs and cost \$140.9-\$273.9 million dollars. The exact figure will depend on resident census.

This is a good time to mention that in order to monitor and enforce shift-level minimum staffing ratios, nursing homes and state regulators may have to invest in additional reporting systems above what has already been setup at the federal level through CMS’s Payroll-Based Journal (PBJ). For nursing homes, that could involve using staff’s time to track and report hours as opposed to providing care to residents.

Finding individuals to fill the positions will be the most challenging aspect of implementing a minimum staffing threshold. Nursing homes must compete with hospitals and others for a workforce that was in shortage before COVID and has been dwindling since.

To alleviate the staff shortage, policy makers should consider efforts to increase the supply. Such actions could include investing in more training programs or reducing barriers for such training programs to exist. CNA training programs often are limited by the federal policy on what facilities can and cannot provide onsite training. Local community colleges could be incentivized to expand their CNA training.

Another option for increasing supply is to incentivize workers to switch jobs and enter the industry. Often this involves providing higher wages. For example, hospitality and gig economy workers could be trained fairly quickly to become CNAs, but if the CNA pay is worse than their current source of income, they have little incentive to pursue it.

States may also have to look to attract workforce from other states. State authorities could review and revise state licensure requirements to allow easier transfer of licenses from other states. For example, COMPACT states for RN licensure make it easier to attract RNs from other states.

By themselves, Connecticut nursing homes are highly unlikely to be able to cover the costs associated with minimum staffing ratios. The average nursing home in the nation operates at a negative total margin. Nursing homes often need the higher Medicare reimbursement rates to offset low Medicaid reimbursement rates. Our analysis found the Connecticut nursing homes below the minimum staffing threshold to be caring for a larger proportion of Medicaid residents. Thus, it could be challenging for them to find additional Medicare revenue to cover the costs of higher staffing without sacrificing care to vulnerable residents on Medicaid.

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