

Whitepaper

THE TRUE COST OF POST-ACUTE CARE LABOR



March 2022

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1. INTRODUCTION AND EXECUTIVE SUMMARY

1.1 INTRODUCTION

For the purposes of this research, Oliver Wyman has partnered with IntelyCare, a leading provider of contingent labor in the post-acute care space, to provide healthcare executives a true comparative assessment of the shifting labor dynamics and costs in the post-acute space. Oliver Wyman maintained an independent, 3rd party perspective, while leveraging IntelyCare expert insights in conjunction with other market experts and proprietary data sources to determine this paper's findings.

The macro trends affecting the healthcare workforce

Across the United States, a broad spectrum of factors, exacerbated by the COVID-19 pandemic, has depleted the workforce. At least 50-60% of nursing and allied health professionals express a desire to change their career plans, with over a quarter of the current workforce considering leaving the profession altogether. Concerns over health and safety and appropriate work-life balance accelerated retirement timelines, with 20-33% of nurses planning to retire early. In addition, lower skilled providers (e.g., nursing assistants) are increasingly targeted by non-healthcare employers, with entry-level roles at Amazon or in customer service centers paying upwards of \$20 per hour across the country.

As more and more nurses and nursing assistants leave the workforce, a feedback loop has evolved whereby depleted staffing levels incentivize remaining nurses to look elsewhere for employment. Hours worked have increased by up to 15% across the nursing workforce, with insufficient staffing levels identified by nurses as the single greatest reason for this change. Nurses are now consistently working more than the typical 36 hour per week pre-pandemic norm, with nursing assistants working nearly 52 hours per week on average. Estimated turnover in 2021 ranged from 22-36% for RNs and 33-52% for CNAs, with 59% of nurses who left their jobs identifying insufficient staffing as an important factor in that decision (the number one reason identified). Time-to-fill is now at 90 days for a bedside nurse vacancy. These pain points will be further exacerbated by the planned comprehensive CMS revision to nursing home regulations. Even currently, CMS's minimal staffing requirements still strain some facilities.

However, many nurses aren't leaving to pursue full-time employment elsewhere; rather, the flexibility and compensation offered by a contingent labor model has proven extremely attractive. The overall size of the travel and contract workforce spiked by 30% from 2020-2021, with 25% of post-acute care nursing and allied health professionals switching from a full-time to part-time working arrangement. This increase isn't restricted to traditional travel nursing; as the gig economy (embodied by flexible, "work-when-you-want" models like Uber) has grown, the adoption of per diem working models has ballooned among nurses, with a 53% CAGR from 2015-2020 in the volume of nurses identifying as per diem.

Healthcare executives, in an effort to stymie workforce losses, are aggressively trying to address COVID-related burnout. Oliver Wyman's research suggests that traditional and more transactional levers such as pay increases and retention bonuses do not get at the root cause and for some workers, it may be too late. Healthcare workers responding to a recent Oliver Wyman survey ranked attention to their mental health and a focus on work-life balance as their top concern for working in healthcare.

These macro shifts in the labor supply have significant downstream impacts; while contingent labor has long been used by organizations across the healthcare continuum, significant supply constraints have forced an increased reliance on contingent labor. The volume of hospitals using contingent labor rose by 30% from 2020-2021, to nearly 90% of all facilities (an all-time high), while the total volume of shifts allocated to agency staff in nursing homes rose 155% from 2019-2020.

Implications for healthcare organizations

As labor demand has skyrocketed, so too have wages; contingent nurses and nursing assistants regularly command upwards of two times their pre-pandemic rates. This has had significant effects on income statements nation-wide; the producer price index for healthcare facilities rose nearly 23% from 2020-2021. Even with an increased reliance on "premium" (contingent) labor, organizations are still unable to field full-sized workforces; Staffing shortages have resulted in a persistent ~5%-10% decline of occupancy in skilled nursing facilities as the nation emerges from the COVID-19 pandemic.

It is apparent that while contingent labor currently occupies a position of heightened importance in the healthcare market, it will continue to do so — there are national shortages of ~82,000 RNs, ~34,000 LPN/LVNs, and ~280,000 CNAs projected by 2030 in skilled nursing settings alone, and the flexibility, control, and financial compensation offered to contingent labor will ensure the proportion of the total workforce that operates in a contingent model will remain elevated over pre-pandemic norms. While contingent labor is colloquially known as "premium labor" within the healthcare industry for a reason — significantly higher wage rates for contingent labor relative to staffed, employed labor — simply comparing hourly wages across contingent and staffed labor is misleading. Contingent labor vendors (including both traditional agencies and newer, tech-enabled "marketplace" providers) assume a host of ancillary costs normally borne by an employer organization.

Additionally, while contingent labor can sometimes be regarded as a “necessary evil” by facilities and organizations, the reality of the current state of the US market is that it truly appears necessary. With organizational funding and reimbursement tied to patient volumes, every unoccupied bed or untreated episode represents a loss of revenue for a healthcare organization, and with it a lowered ability to effectively invest and grow for the future. If the cost of a contingent employee is lower than the potential incremental revenue a facility could generate with that employee, perhaps contingent labor is more necessary than evil. With an aging population and the ongoing health pressures from COVID-19, there is a clear and ever-present need to staff facilities, and contingent labor offers one pathway to enabling facilities to fill this demand.

Thus, the truth of the financial costs and benefits of a contingent vs. a staffed employee are murkier than they may first appear. There is a clear need, then, for a true apples-to-apples comparison of the cost of these employees, as well as a robust analysis of any near-term revenue benefits from staffing contingent labor. The purpose of this paper is to address both.

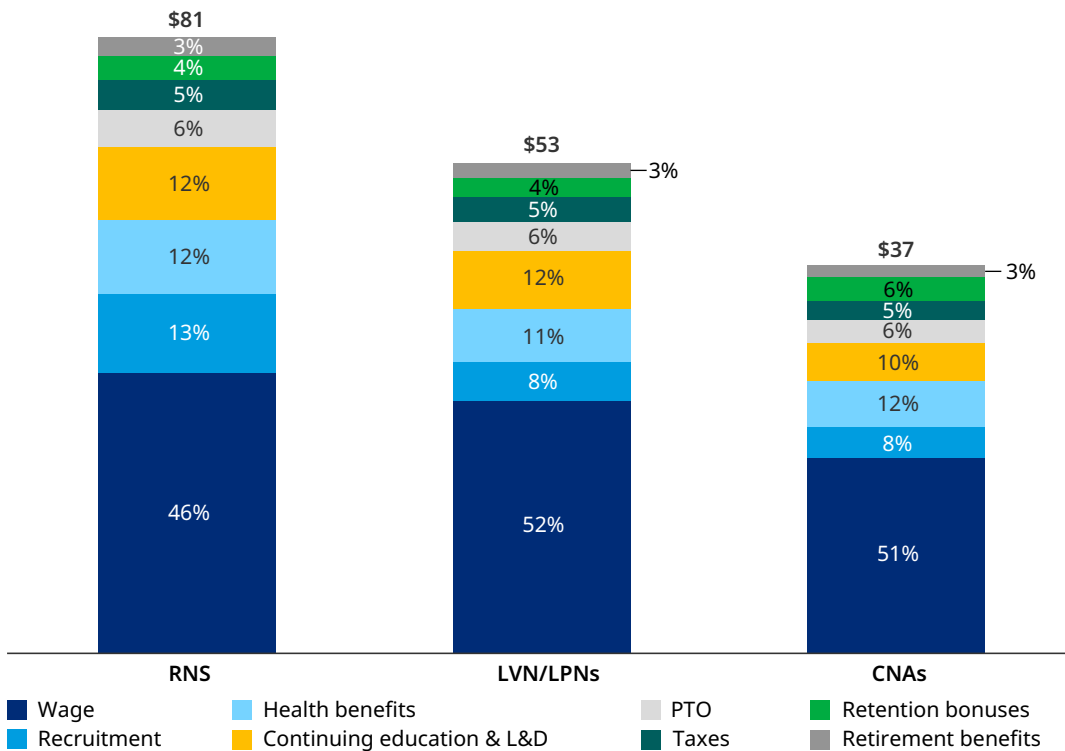
Oliver Wyman has developed a methodology for comparing “fully loaded” costs across fully staffed and contingent labor and analyzed the sum of these costs across the United States. In addition, Oliver Wyman has developed a methodology for sizing the total volume of missed revenue due to staffing shortages since the onset of the COVID-19 pandemic. The goal of both is to create a common language which agencies, vendors, and facilities can use to discuss contingent labor, and to better enable smart, efficient staffing across the United States post-acute care system. Contingent labor is expected to have a persistent, core role within facilities across the healthcare continuum, and it’s imperative that both sides of the labor market have a clear understanding of the value and benefits offered.

1.2 EXECUTIVE SUMMARY

Results — “Fully loaded costs”

Overall, the fully loaded cost of a net new employee is between 1.9-2.2 times the wage rate paid. Wages are the single largest line item and typically represent a majority of total costs across provider types, but are relatively more important for lower-skilled providers (e.g., LPN/LVNs and CNAs). The relative cost breakdown varies slightly by provider type (see Exhibit 1), but payroll taxes, recruitment, continuing education, and health benefits are key drivers across providers, representing 36-43% of total, fully loaded costs. In particular, health benefits are extremely costly to employers, reaching up to the equivalent of 3 additional months of wages each year. Continuing education is also highly expensive (10-12% of total costs), though this burden is more pronounced at higher skill levels (e.g., RNs).

Exhibit 1: Cost drivers by provider type, per-hour basis (national average, all PAC sites of care)



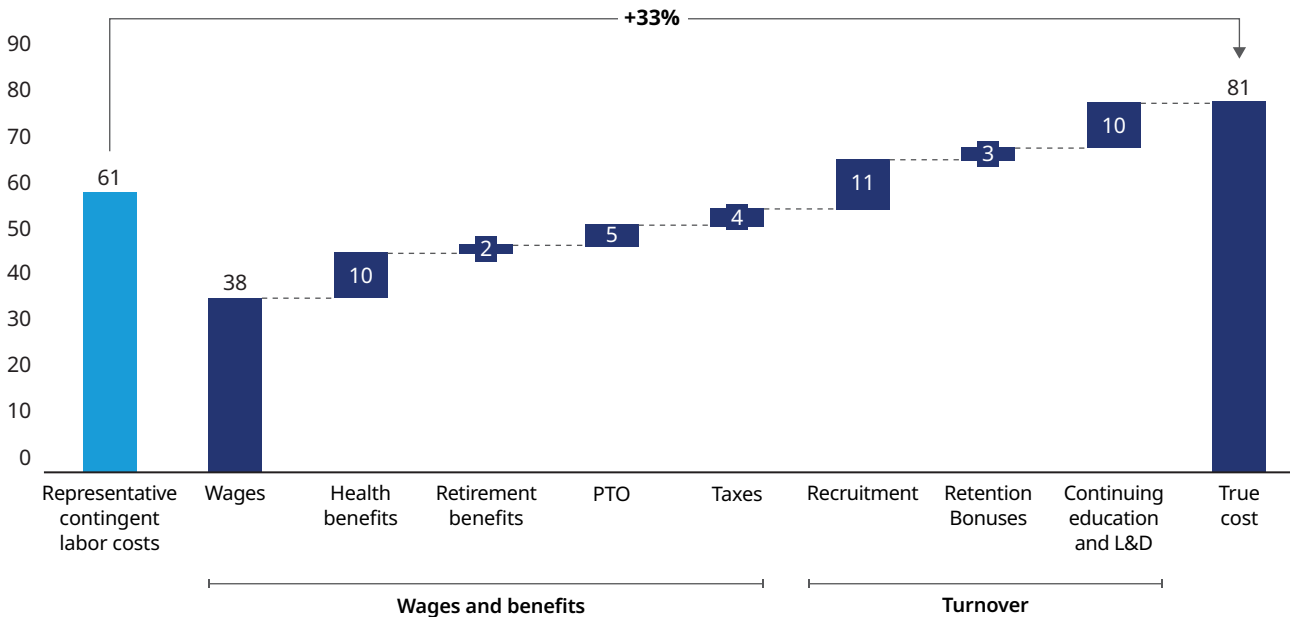
Source: Oliver Wyman, Mercer, IntelyCare Research Group

Ancillary, non-wage costs are greater across the board for RNs (~1.2x wages vs. ~1.0x wages for LPN/LVNs and CNAs), as their benefits are much more expensive on an absolute dollar basis, and, as mentioned above, their continuing education is relatively more costly than lower-level providers. Additionally, recruitment costs are much more pronounced for RNs, given the extremely heightened demand for skilled labor in the current market. In fact, recruitment costs are the second highest cost driver for RNs, representing 13% of total cost, while coming in 3rd for both LPN/LVNs and CNAs (8% of total cost for both).

Relative costs of LPN/LVNs and CNAs are similar, though LPN/LVNs have a higher burden associated with continuing education as there are less stringent requirements for nursing assistants, and nursing assistants require a greater proportion of spend on retention bonuses. While retention bonuses were uncommon pre-COVID, they have assumed a heightened level of importance in the wake of severe labor shortages, and the absolute dollar amount awarded to both CNAs and LPN/LVNs are similar (\$1,000-\$6,000 per year, with pronounced variance from facility to facility).

When comparing these fully loaded costs to recruit and retain a net new employee against the costs to staff contingent labor, a stark picture emerges — across regions, provider types, and sites of care, contingent labor is consistently more cost-effective labor than a full-time employee in current market conditions. Between the non-wage components of compensation and the ongoing resources needed to maintain a suitable workforce, full-time employees can cost up to 33% more on an hourly basis than an equivalent contingent worker (see Exhibit 2 for a representative cost comparison of RNs in skilled nursing facilities). At a national level, this cost differential is stronger for RNs (33% greater than full-time employee) than for CNAs (26%) or LPN/LVNs (14%), though contingent labor is more cost-effective on an hourly basis for all providers.

Exhibit 2: “Fully loaded” cost of skilled nursing facility RN by component, per-hour basis (US average)



Source: Oliver Wyman, Mercer, IntelyCare Research Group

Across the US, fully loaded costs were consistently higher in relatively dense, high cost of living areas, particularly the West Coast. Moreover, non-wage costs for nurses (RNs and LPN/LVNs) represented a greater proportion of total costs in the West Coast than in any other region. Regional differences were primarily due to compensation and taxes, as the calculated cost of recruiting and retaining nurses and nursing assistants was relatively flat across the country. The lowest absolute cost for a full-time employee is consistently found in the South, regardless of provider type, due to the low cost of living and relatively lower benefit and tax burden on an employer.

This comparison above compares direct contingent costs relative to base employee costs. However, overtime is common within the nursing workforce, with registered nurses averaging roughly 4 hours a week. With wages paid out at time-and-a-half, plus associated tax burdens, a fully staffed nurse costs roughly the same as contingent labor on a wage basis (see Exhibit 3). Given the similar baseline cost, and the increased turnover this industry is facing, there is an opportunity to utilize strategically contingent labor as a “relief valve” for existing employees; as turnover and burnout mount across the United States, strategically partnering with contingent labor vendors to relieve shift burdens off full time employees will drive towards a longer tenured and healthier full time workforce.

Exhibit 3: Hourly skilled nursing facility overtime costs vs. contingent labor (US average)

Provider type	Fully staffed: Hourly overtime rate plus taxes ¹	Contingent labor: Hourly rate
RN	\$61	\$61
LPN/LVN	\$45	\$47
CNA	\$31	\$29

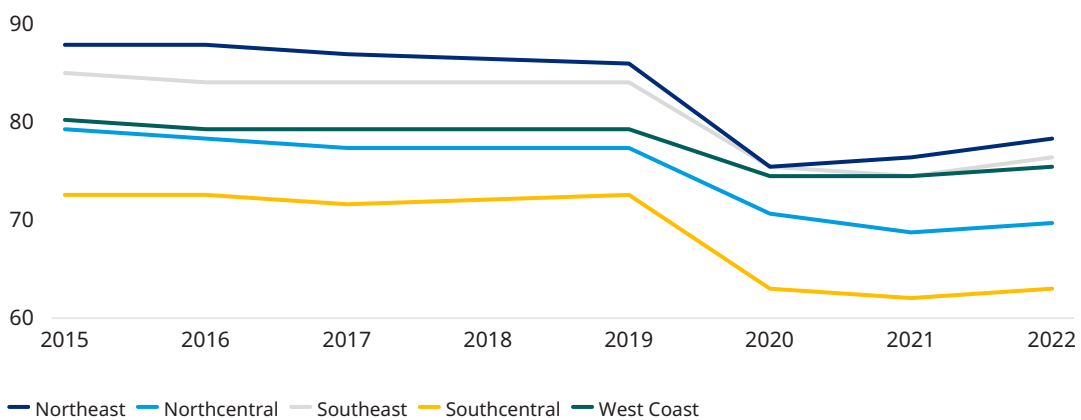
1. Assumes overtime paid out at 1.5x typical wage rates, plus 7.65% FICA tax burden.

Source: Oliver Wyman, Mercer, IntelyCare Research Group

Results — Lost revenue due to staffing shortages

Average occupancy rates dropped precipitously in 2020 as COVID-19 swept the United States, with a greater than 10% drop in all regions other than the West Coast (see Exhibit 4). In 2022, that has manifested in anywhere from a 6%-14% gap between current state and optimal (pre-COVID) occupancy rates (West Coast and Southcentral, respectively).

Exhibit 4: Average skilled nursing facility occupancy rates by region, 2015-2022



Source: Oliver Wyman, Mercer, IntelyCare Research Group

Despite slight rebounds towards pre-pandemic norms in 2022, there is still a significant gap from baseline occupancy. More facilities are being forced to turn away referrals due to the lack of staffed beds and are unable to capture this potential revenue. As a whole, the skilled nursing industry is estimated to have nearly \$19.5BN in unrealized, potential revenue in 2022, most notably concentrated in the Northeast and Northcentral regions (see Exhibit 5). In 2020, the \$22.2BN estimated loss represented 15% of total potential industry expenditure, indicating a severe problem that must be addressed by facilities and staff alike.

Exhibit 5: Total annual lost revenue by region, 2020-2022

Region	2020	2021	2022 (Projections)
Northeast	\$7,884,976,329	\$7,054,481,374	\$5,861,554,864
Northcentral	\$5,003,734,023	\$6,039,997,364	\$5,160,849,537
Southeast	\$4,475,003,952	\$4,692,986,215	\$3,979,286,958
Southcentral	\$3,334,734,136	\$3,763,424,069	\$3,083,836,285
West Coast	\$1,547,986,370	\$1,562,195,625	\$1,341,846,284
Total revenue loss	\$22,246,434,810	\$23,113,084,646	\$19,427,373,928

Source: Oliver Wyman, Mercer, IntelyCare Research Group

On a per facility basis, an average facility is expected to lose anywhere from \$2,300 to nearly \$5,900 per day due to staffing shortages (see Exhibit 6). This represents up to \$2.1MN a year in lost revenue for the most affected region (the Northeast). Of course, a core limitation of this research is the assumption that optimal occupancy is baselined to pre-pandemic norms. As the United States population continues to age and the baby boomer cohort increasingly requires skilled nursing, demand for staffed beds will only increase — every bed left unstaffed is not only a source of revenue unrealized for facility providers, but also a patient left untreated. Given the lower friction and time-to-fill of a contingent employee relative to one who is brought on full-time, it is imperative that both the contingent labor and skilled nursing industries work together to solve the current staffing crisis efficiently and intelligently.

Exhibit 6: Total annual and daily loss revenue by region, 2022

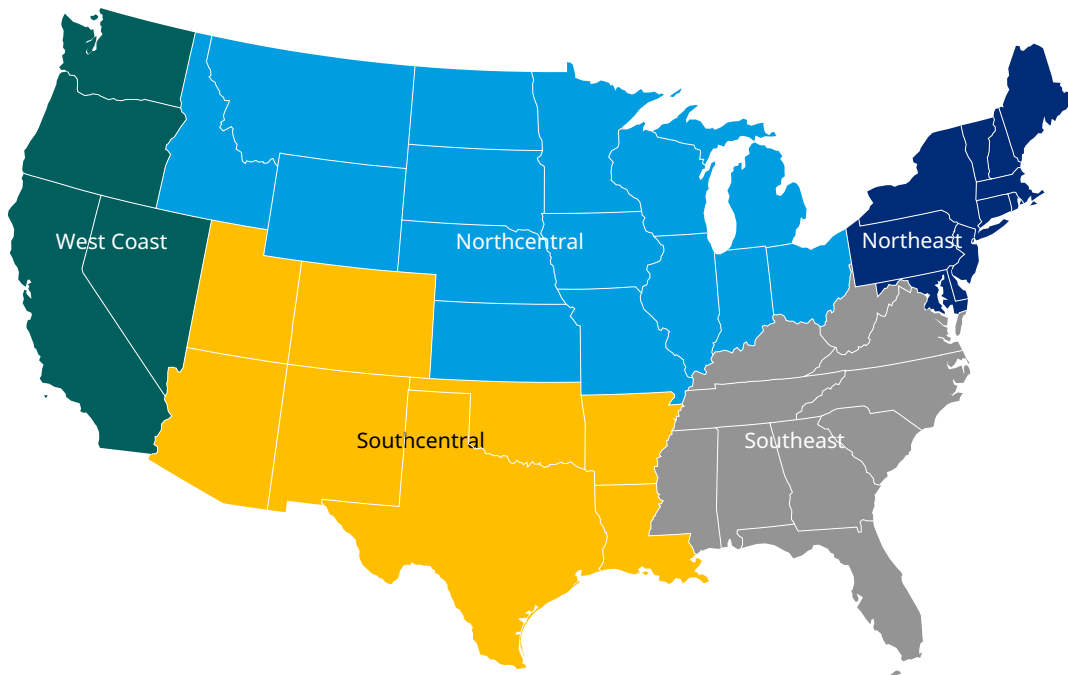
Region	Unoccupied beds (daily)	Revenue loss (daily)	Revenue loss (yearly)
Northeast	13	\$5,882	\$2,147,090
Northcentral	8	\$2,858	\$1,043,228
Southeast	10	\$3,606	\$1,316,337
Southcentral	10	\$3,437	\$1,254,612
West Coast	4	\$2,330	\$850,346

Source: Oliver Wyman, Mercer, IntelyCare Research Group

High-level approach — “Fully loaded” costs

The scope of this research was limited to the post-acute care market (SNFs, Home Health, and Vocational Rehabilitation Facilities) within the contiguous United States. To capture regional nuances within the continental US without introducing false precision, five regional segments were selected for study — Northeast, Northcentral, Southeast, Southcentral, and West Coast. The scope was also limited to the most common provider types staffed via contingent labor in a post-acute care setting: RNs, LPN/LVNs, and CNAs.

Exhibit 7: Regional segmentation



Source: Oliver Wyman, Mercer, IntelyCare Research Group

A bottoms-up approach was used in determining the “fully loaded” cost of an employee. Eight exhaustive and mutually exclusive categories were determined. Costs were evaluated by region and provider type for each of these categories, and then aggregated to understand total cost. See Exhibit 8 below for full set of categories and definitions. Each category utilized a bespoke methodology to determine costs; these methodologies and assumptions are detailed in Section 2. Ultimately, all costs were translated to an hourly equivalent to better enable comparisons against contingent labor (typically priced on an hourly or shift-length basis).

Exhibit 8: “Fully loaded” cost drivers

Fully loaded cost drivers	Description	Cost drivers range \$ average hourly wage
Wages	Hourly rate paid to employee	\$17-\$43
Health benefits	Total cost of all benefits paid for by employer to subsidize or support employee healthcare expenses	\$4-\$12
Retirement benefits	Total cost of all benefits paid for by employer to support employee retirement	\$1-\$4
Paid time off	Total cost of wages paid to employee at any point where employee is not actively working	\$2-\$6
Taxes	Total cost of both federal and state payroll taxes (e.g., FICA, FUTA, etc.)	\$2-\$4
Recruitment costs	Total costs associated with recruiting and onboarding a net new employee	\$2-\$11
Retention bonuses	Total costs associated with retaining employee for at least one additional year of employment	\$2-\$3
Continuing education and L&D	Total costs associated with continuing education (both regulatorily-mandated and optional) for employee	\$3-\$10
Total fully loaded costs ranges		~\$33-\$90

■ Wages and benefits ■ Turnover

Note: Ranges in chart above are due to provider type differences (e.g., \$33 total cost for CNAs, \$90 for RNs). See Sections 3.2-3.4 for detail cost breakdown by provider type and region.

Source: Oliver Wyman, Mercer, IntelyCare Research Group

High-level approach — Lost revenue due to staffing shortages and increased minimum staffing ratios

“Lost revenue” refers to the potential, unrealized revenue by a facility that went unrealized due to operating at a non-optimal occupancy rate due to both staffing shortages and increasing CMS scrutiny on minimum staffing ratios. While the analysis discussed above (e.g., “fully loaded costs”) considered various distinct sites of care within the post-acute care market, this analysis is limited to skilled nursing facilities. Revenue loss was conceived as a function of A) the number of unoccupied beds in a facility relative to optimal occupancy, and B) the revenue a facility can expect to receive from a single incremental occupied bed. “Optimal occupancy” was assumed to be the pre-COVID baseline average of occupancy rates from 2015-2019, to account for the fact that most facilities do not prefer to operate at true maximum occupancy (e.g., 100% of beds filled). Thus, if a facility had 100 beds, typically operated at 90% utilization pre-COVID, and was currently operating at 70% occupancy, unoccupied beds were assumed to be 20. This was then aggregated at the regional level and multiplied against the average revenue per occupied bed in a given region to arrive at total lost revenue.

Next, this lost revenue was attributed to the core provider types in scope, in order to provide context on the relative impact from each of the RN, LVN/LPN, and CNA staffing shortages and increased staffing ratio requirements. A “contribution to care” percentage was determined for each provider type as a function of their typical staff:patient ratios. As higher-skilled providers (e.g., RNs) typically provide direct care for fewer patients on a shift than do lower-skilled providers (e.g., CNAs), a RN is assumed to have a greater “contribution to care” for a single patient than a CNA. These “contribution to care” percentages were multiplied against total lost revenue in a given region to fully attribute lost revenue by provider type.

2. UNDERSTANDING FULLY LOADED EMPLOYEE COSTS

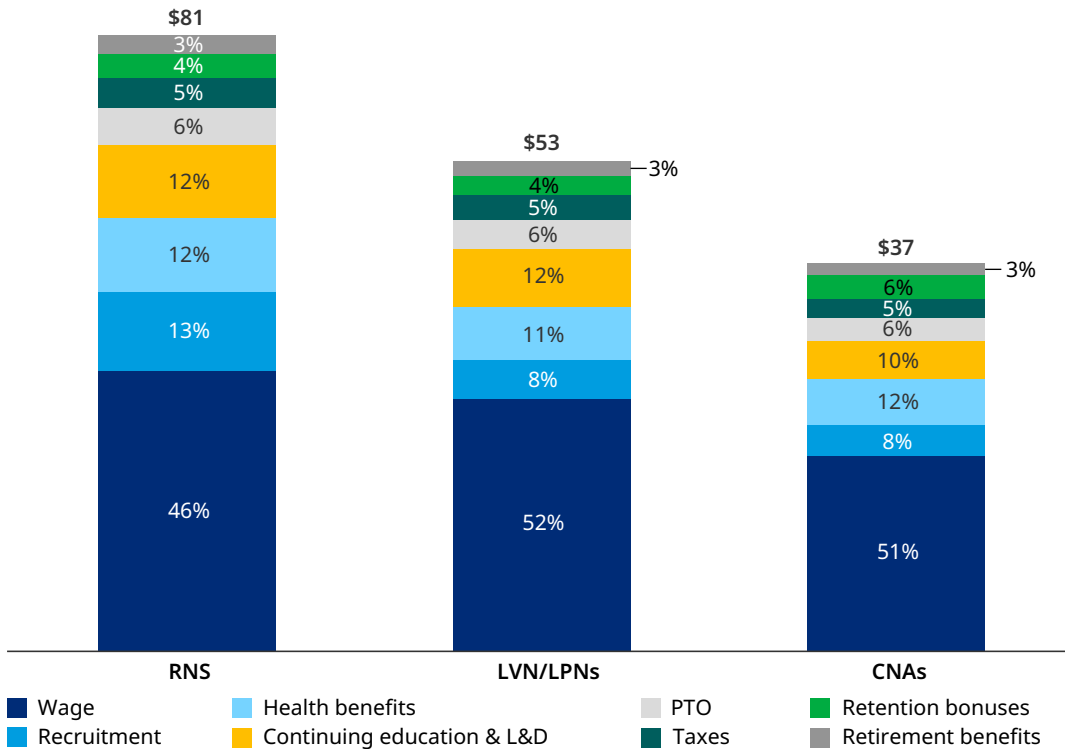
RESULTS, DISCUSSION, AND IMPLICATIONS FOR HEALTHCARE EXECUTIVES

2.1 HIGH-LEVEL OVERVIEW

The fully loaded cost of an employee varies greatly based on skill-level and/or licensure. At a national level, registered nurses (RN) have an estimated total cost of \$81 per hour, whereas licensed practical/vocational nurses (LPN/LVN) and certified nursing assistants (CNA) have total costs of \$53 per hour and \$37 per hour, respectively. While there are some overall differences by region, these differences are primarily wage-driven, with minimal regional differentiation within recruitment and retention costs.

Wages are always the most material portion of total costs across regions, provider types, and sites of care, typically representing the majority of overall costs (with the exception of RNs, on average). Cost drivers that are relatively more important for a certain provider type include recruitment and continuing education for RNs, wages and recruitment for LPN/LVNs, and wages and retention bonuses for CNAs. Health benefits represent a similar percentage of total costs across all three provider types, as lower-skilled workers typically are offered fewer and less comprehensive plans than higher-skilled workers.

Exhibit 9: Cost drivers by provider type, per-hour basis (national average, all PAC sites of care)



Note: Duplicative of Exhibit 1.

Source: Oliver Wyman, Mercer, IntelyCare Research Group

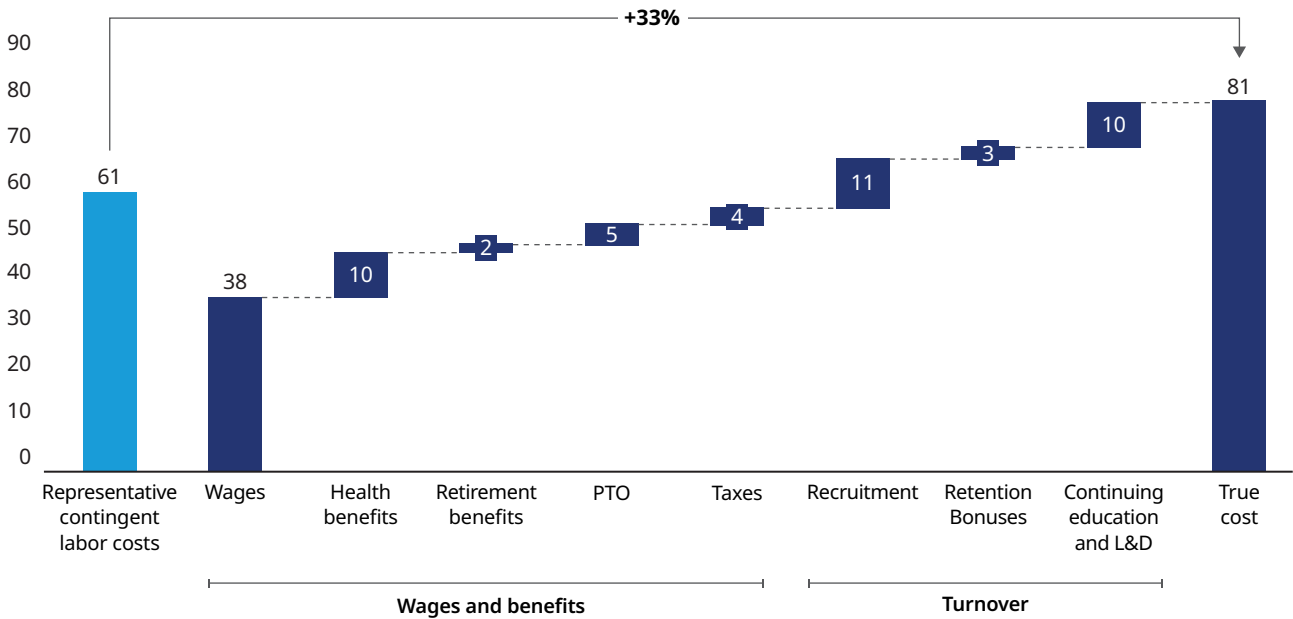
Overall costs have grown substantially since the onset of COVID-19, particularly with regards to wages, recruitment and retention. Increased turnover and diminished labor pools have forced employers to compete for talent via traditional, monetary levers (e.g., pay raises and bonuses). While this has resulted in total costs far above pre-pandemic norms, Oliver Wyman largely expects these costs to persist through 2030, driven by a long-term projected workforce shortage.

2.2 REGISTERED NURSES

Cost drivers

Overall, the sum of benefits, recruitment, and retention costs slightly outweigh wages when evaluating the total cost of employing an incremental RN. However, wages are still the largest line item, accounting for roughly 46% of the fully loaded cost. Across other benefits, healthcare comprises a sizable proportion of the total cost (12%), outweighing retirement benefits and paid time off combined (9%). These non-wage benefits may help to deter turnover, as RNs have the highest absolute and relative recruitment costs (~\$10,500 per year, 13% of total cost) and substantial continuing education costs (12%), driving significantly higher costs when compared to lower-skilled providers. While sign-on bonuses are fairly common and material (~\$10,000-\$15,000, national average), retention bonuses are not a core driver of total cost despite an increased prevalence since the onset of COVID-19.

Exhibit 10: RN cost drivers, per-hour basis (2022 national average, all PAC sites of care)



Note: Duplicative of Exhibit 2.

Source: Oliver Wyman, Mercer, IntelyCare Research Group

However, retention costs have jumped considerably since the start of COVID-19 and the “Great Resignation”, with an estimated cost increase of ~\$2,500 from 2019-2020. Recruitment costs have also seen a significant spike, with an estimated increase from \$11,960 to \$18,720 from 2019 to 2020. Lastly, wage rates have experienced significant gains in recent years with ongoing labor shortages creating a more competitive market for talent. Between 2019 and 2020, wage rates increased from \$26.59 to \$31.04 per hour, a 17% increase.

Regional differences

Regional differences among RNs are primarily driven by wages, followed by health benefits, recruitment, and continuing education/L&D costs. While recruitment and continuing education/L&D costs are fairly consistent across all regions, wages are highest in regions with dense city centers and high cost-of-living such as New York and California (Northeast and West Coast regions, respectively). On a per hour basis, average wages in the Northeast and West Coast are 14% higher than the other lower-cost regions (all at approximately \$36 per hour), with the total cost 20% higher in the West Coast than in Southcentral and Southeast.

Exhibit 11: RN cost drivers by region, per-hour basis (2022, all PAC sites of care)

	Northcentral	Northeast	West Coast	Southcentral	Southeast
Wages	36	40	42	36	36
Health benefits	9	11	12	9	8
Retirement benefits	2	2	4	2	2
PTO	4	6	6	4	4
Taxes	4	4	4	3	3
Recruitment	10	11	11	10	10
Retention bonuses	3	3	3	3	3
Continuing education and L&D	10	10	10	10	10
Total cost	78	87	92	77	76
<i>Representative contingent labor bill rate</i>	<i>60</i>	<i>61</i>	<i>77</i>	<i>62</i>	<i>60</i>

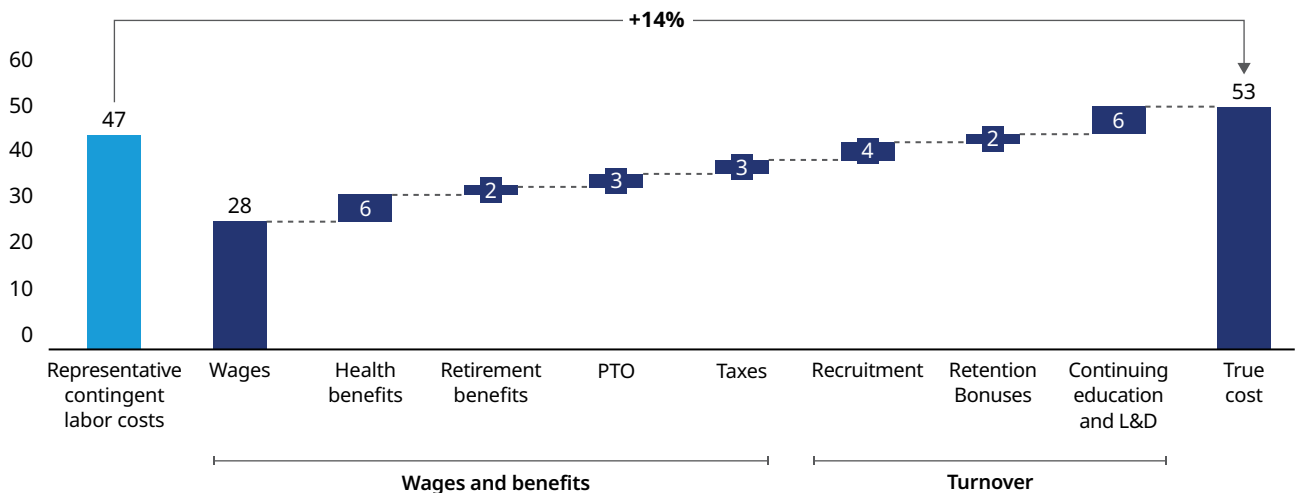
Source: Oliver Wyman, Mercer, IntelyCare Research Group

2.3 LICENSED PRACTICAL/VOCATIONAL NURSES

Cost drivers

Ultimately, the fully loaded cost of LPN/LVNs is estimated to be anywhere from 1.86-1.97x larger than the baseline wages paid to these providers. This discrepancy is highest in the West Coast, and lowest in the Northcentral region. As with RNs, much of total cost is concentrated in wages (52%), but there are significant cost drivers within the broader benefits and turnover categories. Recruitment accounts for a much smaller proportion of the overall LVN/LPN cost than for RNs, but still represents nearly 8% of total cost. Continuing education/L&D and health benefits are the other key non-wage cost drivers, representing 12% and 11% of total cost, respectively. While the relative importance of continuing education is in line with RNs, total health benefits are slightly less important, as LVN/LPNs may have access to fewer or less robust health plans. PTO and retirement benefits are significantly less costly than healthcare, with both combining for a sum (~\$6,000 per year in the West Coast) roughly 17% smaller than health benefits alone (~\$7,000). Finally, as with other provider types, retention bonuses are not necessarily core drivers of cost, despite their increased visibility since the onset of the COVID-19 pandemic.

Exhibit 12: LPN/LVN cost drivers, per-hour basis (2022 national average, all PAC sites of care)



Source: Oliver Wyman, Mercer, IntelyCare Research Group

As with other provider types, retention costs have spiked significantly in the wake of COVID-19 and the “Great Resignation”, with an estimated cost increase from ~\$1,000 to \$3,540 from 2019 to 2020 alone. Owing in large part to ongoing labor shortages creating an extremely labor-friendly market, wage rates have skyrocketed from \$16.21 in 2019 to \$24.45 in 2022, an increase of over 50%.

Regional differences

Regional differences are primarily driven by wages and benefits for LPN/LVNs. While recruitment, retention, and continuing education are broadly similar across regions, wages are higher in population centers with high cost-of-living (e.g., Northeast & West Coast). On an hourly basis, wages are 12% higher in these regions than in the lowest-cost Southcentral region, with the overall total fully loaded cost 14% higher in the West Coast than in Southcentral.

Exhibit 13: LPN/LVN cost drivers by region, per-hour basis (2022, all PAC sites of care)

	Northcentral	Northeast	West Coast	Southcentral	Southeast
Wages	28	29	29	26	27
Health benefits	5	6	7	5	5
Retirement benefits	1	1	2	1	1
PTO	3	4	4	3	3
Taxes	3	3	3	3	3
Recruitment	4	4	4	4	4
Retention bonuses	2	2	2	2	2
Continuing education and L&D	6	6	6	6	6
Total Cost	52	55	57	50	51
<i>Representative contingent labor bill rate</i>	<i>47</i>	<i>51</i>	<i>47</i>	<i>46</i>	<i>45</i>

Source: Oliver Wyman, Mercer, IntelyCare Research Group

2.4 CERTIFIED NURSING ASSISTANTS

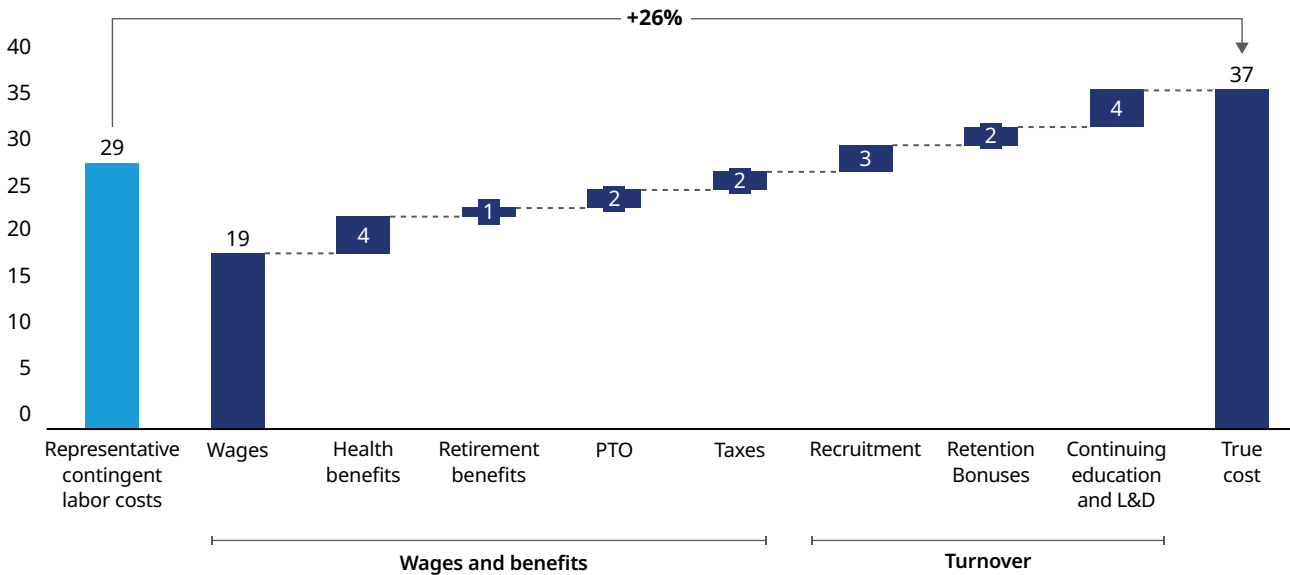
Cost drivers

Overall, CNA fully loaded cost ranges from 1.89-2.00x the cost of wages, differing slightly by region (Northeast-Northcentral, respectively). This is not materially different than the range for LPN/LVNs or RNs, implying a relatively common cost structure across provider types. As with LVN/LPNs, wages account for the majority of total cost (~51%). Turnover costs (defined as recruitment, retention, and continuing education) are relatively less important than for RNs (25% of total cost vs. 29%). However, retention bonuses, specifically, are a relatively larger cost driver for CNAs than other provider types. This is due to similar absolute retention bonus figures across both CNAs and LPN/LVNs (\$1,000-\$6,000) despite lower costs for CNAs across all other categories.

As expected, continuing education and L&D costs are lower for CNAs on both a relative and absolute basis when compared to other provider types, as they represent only 10% of total cost. This is likely due to the less complex and time-intensive requirements for CNAs vs. higher-skilled providers.

Relative contribution to total cost from benefits cost is in line with other providers, with a national average of ~25% of total cost for CNAs. Recruitment cost (8% of total cost) is in line with LPNs (8%), and materially smaller than RNs (13%) — this is to be expected, given the more stringent credentialing, training, and onboarding requirements for RNs relative to lower-skilled providers.

Exhibit 14: CNA cost drivers, per-hour basis (2022 national average, all PAC sites of care)



Source: Oliver Wyman, Mercer, IntelyCare Research Group

CNAs have had some of the fastest growing costs since 2019 due to substantial labor supply pressures, especially in post-acute care (skilled nursing, specifically). While retention costs were essentially nil in 2019, the COVID-19 pandemic drove these costs in line with LPN/LVNs (~\$3,500 average). Wage rates have more than doubled since 2019, with a \$15.66 hour rate in early 2022.

Regional differences

Regional differences are primarily driven by wages, followed by health benefits and continuing education/L&D costs for CNAs. While continuing education/L&D costs are very similar among all regions, wages and health benefits are highest in areas with the highest cost of living (i.e., West Coast and Northeast). On a per hour basis, average wages in the West Coast are 11% higher than Southcentral and Southeast, the lowest-cost regions, and the fully loaded cost for a CNA is 11% higher in the West Coast than in Southcentral.

Exhibit 15: CNA cost drivers by region, per-hour basis (2022, all PAC sites of care)

	Northcentral	Northeast	West Coast	Southcentral	Southeast
Wages	19	19	20	18	18
Health benefits	5	4	5	4	4
Retirement benefits	1	1	1	1	1
PTO	2	2	2	2	2
Taxes	2	2	2	2	2
Recruitment	3	3	3	3	3
Retention bonuses	2	2	2	2	2
Continuing education and L&D	4	3	4	3	4
Total cost	38	36	39	35	36
<i>Representative contingent labor bill rate</i>	29	29	28	28	28

Source: Oliver Wyman, Mercer, IntelyCare Research Group

3. LOST REVENUE DUE TO STAFFING SHORTAGES AND INCREASED MINIMUM STAFFING RATIOS

RESULTS, DISCUSSION, AND IMPLICATIONS FOR HEALTHCARE EXECUTIVES

3.1 RESULTS

Optimal occupancy rates

Occupancy rates pre-COVID were relatively stable across regions, with 2015-2019 averages ranging from 72% to 87% by region. During COVID, however, there was a sharp drop in occupancy rates across the board, with occupancy dropping to nearly 60% in the most affected region of Southcentral. The West Coast was the least affected, with a decrease of only 4%, while all other regions had declines of at least 9%.

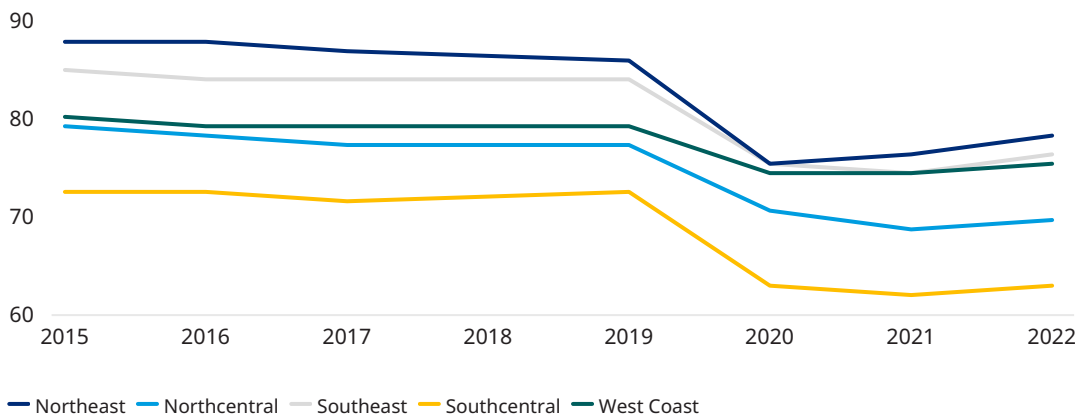
Exhibit 16: Skilled nursing facility occupancy rates by region

Region	Pre-COVID average 2015-2019	COVID average 2020-2022	% Change
Northeast	87%	76%	-11%
Northcentral	78%	69%	-9%
Southeast	84%	75%	-9%
Southcentral	72%	62%	-10%
West Coast	79%	75%	-4%

Source: Oliver Wyman, Mercer, IntelyCare Research Group

Occupancy has rebounded since 2020 across the United States, but not to the extent of pre-COVID norms, suggesting a significant lack of resources available to maintain optimal occupancy. While a portion of this utilization drop may be attributed to lowered confidence in skilled nursing facilities in the wake of negative COVID-driven media coverage, primary research indicated an inability to fully accept referrals due to staffing constraints across facilities.

Exhibit 17: Skilled nursing facility occupancy rates over time (2015-2022)



Note: Duplicative of Exhibit 4.

Source: Oliver Wyman, Mercer, IntelyCare Research Group

Total revenue loss

See Exhibit 18 for full estimated revenue loss in skilled nursing facilities from 2020-2022. SNFs in the Northeast and Northcentral regions saw the most revenue loss (\$21BN over three years in NE, and \$16BN in NC). This was driven by a mix of steeper declines in occupancy rates (especially in the Northeast) and a higher volume of facilities in those regions (especially in Northcentral). Revenue loss in the West Coast region was and still is significantly lower than other regions due to substantially fewer beds and a less severe occupancy decline.

Total lost revenue increased slightly in 2021 before declining sharply in 2022; 2022's improvement can be attributed to both the increase in overall occupancy as well as a decrease in the total volume of operating facilities (see Exhibit 19).

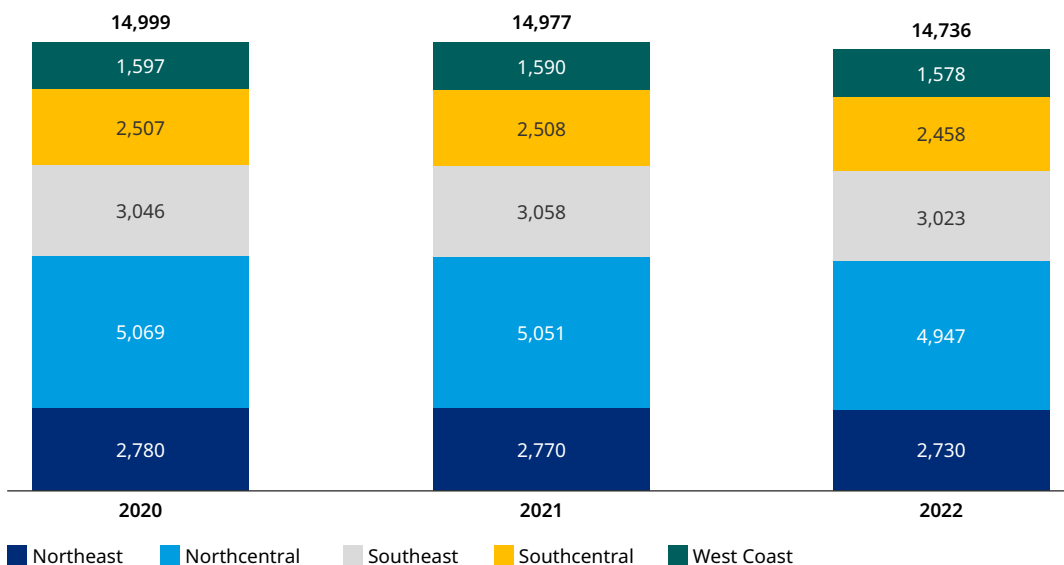
Exhibit 18: Total annual revenue loss by region (2020-2022)

Region	2020	2021	2022 (Projections)
Northeast	\$7,884,976,329	\$7,054,481,374	\$5,861,554,864
Northcentral	\$5,003,734,023	\$6,039,997,364	\$5,160,849,537
Southeast	\$4,475,003,952	\$4,692,986,215	\$3,979,286,958
Southcentral	\$3,334,734,136	\$3,763,424,069	\$3,083,836,285
West Coast	\$1,547,986,370	\$1,562,195,625	\$1,341,846,284
Total revenue loss	\$22,246,434,810	\$23,113,084,646	\$19,427,373,928

Note: Duplicative of Exhibit 5.

Source: Oliver Wyman, Mercer, IntelyCare Research Group

Exhibit 19: Total volume of nursing facilities by region (2020-2022)



Source: Oliver Wyman, Mercer, IntelyCare Research Group

Daily average revenue loss

Daily, facilities lost anywhere from \$2,656 to \$7,771 in 2020 and 2021, with loss projections for 2022 ranging from \$2,330 to \$5,882 (see Exhibit 20). This represents anywhere from \$850,000 to over \$2,100,000 per year per facility, with costs compounding for any organization with multiple facilities. Given average staff:patient ratios, the average volume of unoccupied beds (ranging from 4 to 13 per facility in 2022) could be filled with relatively few incremental employees, significantly improving financial performance.

Exhibit 20: Annual revenue loss by region for single skilled nursing facility

	Occupied beds (daily)	Revenue loss (daily)	Revenue loss (yearly)
Year 2020			
Northeast	17	\$7,771	\$2,836,322
Northcentral	8	\$2,704	\$987,124
Southeast	11	\$4,025	\$1,469,141
Southcentral	11	\$3,644	\$1,330,169
West Coast	5	\$2,656	\$969,309
Year 2021			
Northeast	15	\$6,977	\$2,546,744
Northcentral	9	\$3,276	\$1,195,802
Southeast	11	\$4,205	\$1,534,659
Southcentral	12	\$4,111	\$1,500,568
West Coast	5	\$2,692	\$982,513
Year 2022			
Northeast	13	\$5,882	\$2,147,090
Northcentral	8	\$2,858	\$1,043,228
Southeast	10	\$3,606	\$1,316,337
Southcentral	10	\$3,437	\$1,254,612
West Coast	4	\$2,330	\$850,346

Source: Oliver Wyman, Mercer, IntelyCare Research Group

On a per-provider basis, the lack of sufficient RNs is projected to contribute anywhere from \$800 to over \$2,000 per day in a single facility, with smaller but still material losses of \$500 to \$1,400 for LPN/LVNs, and \$400 to just under \$1,000 for CNAs (see Exhibit 21). Assuming a standard 12-hour shift and current contingent labor prices (detailed in Section 3), facilities could hire up to 1.3 incremental contingent RNs, 2.5 LPN/LVNs, and 5.9 CNAs before the total contingent labor cost outstrips the lost revenue.

Exhibit 21: Daily average revenue loss for single skilled nursing facility

	RN	LVN/LPN	CNA
Year 2020			
Northeast	\$2,711	\$1,898	\$1,265
Northcentral	\$943	\$660	\$440
Southeast	\$1,404	\$983	\$655
Southcentral	\$1,271	\$890	\$593
West Coast	\$926	\$648	\$432
Year 2021			
Northeast	\$2,434	\$1,704	\$1,136
Northcentral	\$1,143	\$800	\$533
Southeast	\$1,467	\$1,027	\$685
Southcentral	\$1,434	\$1,004	\$669
West Coast	\$939	\$657	\$438
Year 2022			
Northeast	\$2,052	\$1,436	\$958
Northcentral	\$997	\$698	\$465
Southeast	\$1,258	\$881	\$587
Southcentral	\$1,199	\$839	\$560
West Coast	\$813	\$569	\$379

Source: Oliver Wyman, Mercer, IntelyCare Research Group

4. CONCLUSION

At the time of this paper's publishing, the United States post-acute care market is undeniably in crisis. The ongoing COVID-19 pandemic has made healthcare jobs more difficult and less safe. Nurses have accelerated retirement plans, nursing student enrollment continues to drop, and more healthcare workers are leaving healthcare than ever before. The remaining labor supply is courted not only by healthcare organizations across the healthcare continuum, but also by non-healthcare jobs touting highly increased wages and benefits, and more flexible staffing arrangements offered by contingent labor vendors. As wages have risen, payers have not yet fully adjusted reimbursement to account for these increased costs. Additionality, regulatory changes have mandated SNFs to increase their nursing staffing ratios, increasing the burden of SNFs and employed staff. Through it all, the demand for post-acute care continues to rise as the US population increases in age and acuity. There are simply not enough nurses and nursing assistants available to fully staff post-acute settings to the needed level.

Throughout this situation, contingent labor has been perceived as a band-aid, a temporary solution far less preferable than staffing a facility with full-time employees. However, this paper's research demonstrates that this perception may be harmful. In many cases, contingent labor is less expensive, more flexible, and less resource intensive to an organization than identifying, recruiting, and retaining net new talent. Moreover, contingent labor is responsive; providers come to the facility fully credentialed and trained, able to fill shifts on a far shorter timeline than recruiting a new employee. That time-to-fill is a key consideration: With some facilities losing up to \$6,000 a day in revenue due to reduced occupancy rates, rapidly recognizing staffing shortages and filling them is paramount to the near-term financial health of the post-acute care market.

Contingent labor vendors and agencies have the experience and organizational capabilities to respond to these staffing shortages efficiently and rapidly. Vendors and agencies have responded to this demand by focusing on staff quality and availability as key differentiators for their clients, offering training and various quality control mechanisms to ensure that the staff they provide is high quality. There is a world in which agencies and vendors are brought into the post-acute ecosystem as partners rather than simply vendors, one in which the use of contingent labor is a financial benefit for both sides of the relationship, and one where contingent labor truly enables and supports the care of the full breadth of patient demand.

While the heavy use of "premium" labor may be a significant change from pre-pandemic norms, it would be a misconception to only think of premium labor as that which comes from an agency — all labor is premium, in this extremely labor-friendly market, and contingent labor should be thought of as another tool and key partner for healthcare organizations to fill demand and ease the burden on their staff. Facilities should think of per diem agencies as strategic partners that can be used to maximize revenue and ease the increasing burden on their staff; those who do are more likely to grow and succeed in these rapidly changing times.



Ultimately, in the wake of the past two years of labor market developments, contingent labor is no longer a “necessary evil”; rather, it should simply be considered necessary.

APPENDIX

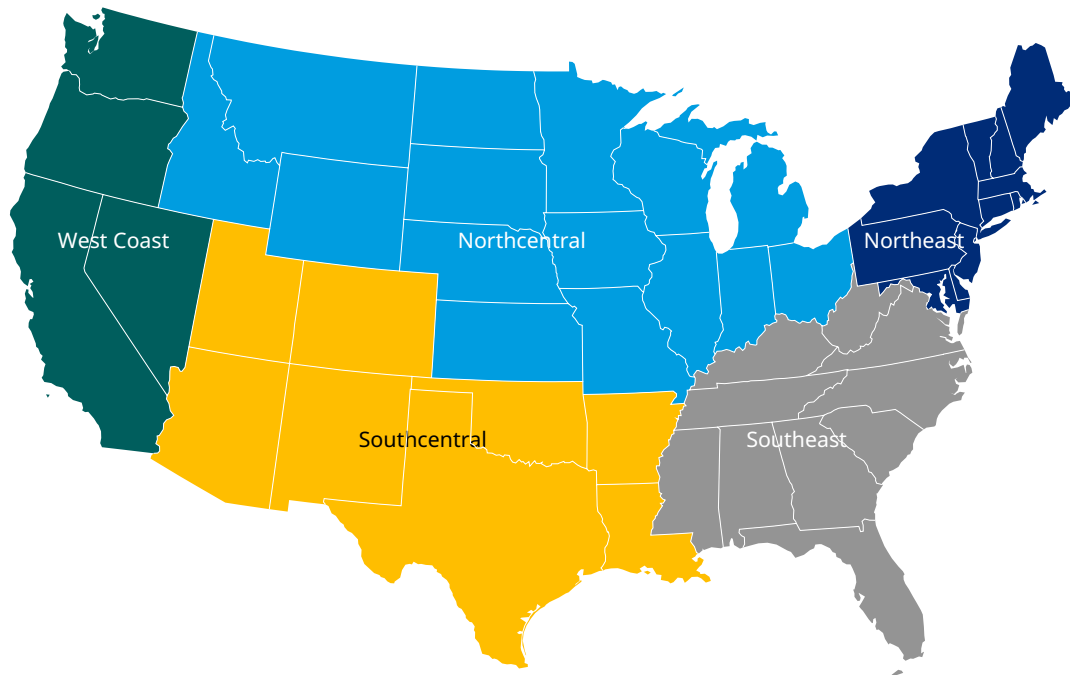
5. UNDERSTANDING FULLY LOADED EMPLOYEE COSTS

METHODOLOGY

5.1 SCOPE OF RESEARCH AND HIGH-LEVEL APPROACH

The scope of this study was limited to post-acute care settings within the contiguous United States. In order to capture regional nuances within the continental US without introducing false precision, five regional segments were selected for study — Northeast, Northcentral, Southeast, Southcentral, and West Coast (see Exhibit 22).

Exhibit 22: Map of regions



Note: Duplicative of Exhibit 7.

Source: Oliver Wyman, Mercer, IntelyCare Research Group

Post-acute care was defined as any care occurring in one of the following care settings: Home Health Care Services, Skilled Nursing Facilities, and Vocational Rehabilitation Facilities. Definitions of these care settings are aligned with the 2022 North American Industry Classification System (NAICS) utilized by US Federal entities.

Scope was also limited to the most common provider types staffed via contingent labor in post-acute care: RNs, LPN/LVNs, and CNAs. Other provider types considered were ultimately deemed either less relevant to a post-acute setting (e.g., physicians) or less likely to be staffed via contingent labor (e.g., physical and occupational therapists) than nurses and nursing assistants.

Determining total cost of a staffed employee utilized a bottom-up approach, where discrete costs in eight exhaustive and mutually exclusive categories were determined, then aggregated. See Exhibit 23 below for full set of categories. Each category utilized a bespoke methodology to determine costs (by region and by provider type); these methodologies and assumptions are detailed in Sections 2.2-2.9.

All costs were determined on an hourly basis to be easily comparable against contingent labor rates. E.g., an annual retention bonus was assumed to be \$2,500 for RNs, then divided by the total assumed working hours of an RN (1,900) to arrive at the cost of retention bonus per hour worked (\$1.32).

Exhibit 23: “Fully loaded” cost drivers methodology (costs amortized over a 1-year period for a new employee)

Cost Driver	High-level methodology
Wages	Wages by site of care and region obtained through proprietary Mercer database and projected forward via several growth factors (e.g., inflation, site of care growth)
Health benefits	Health benefits by provider type and region segmented into core components (e.g., medical, dental); Median benefit cost per component identified via proprietary Mercer benchmarking database and aggregated into overall cost assumption
Retirement benefits	Retirement benefits by provider type and region segmented into core components (e.g., 401K, pension); Median benefit cost per component identified via proprietary Mercer benchmarking database and aggregated into overall cost assumption
PTO	PTO benefits by provider type and region segmented into core components (e.g., vacation, sick leave); Median benefit cost per component identified via proprietary Mercer benchmarking database and aggregated into overall cost assumption
Federal and state tax rates	Average payroll tax rates identified across several component taxes (e.g. FICA, FUTA); tax rates applied to assumed wage rates to determine overall cost
Recruitment costs	Recruitment costs segmented into core components by provider type and region (e.g., job posting fees, advertisement spend) and aggregated into overall cost; assumptions sourced from primary research
Retention bonuses	Average size of retention bonuses by provider type and region determined via primary research; assumed each incremental employee will be given a retention bonus
Continuing education and L&D	Costs segmented into system fees and wages paid to employees during training hours, with average system fee cost and total training hour assumptions determined via primary research

Source: Oliver Wyman, Mercer, IntelyCare Research Group

5.2 METHODOLOGY — WAGES

Wages are defined as the actual hourly rate paid by a facility to a given provider, exclusive of benefits or one-time bonuses. However, average wages did consider variable pricing (e.g., incremental pay for overtime, weekends, or nights).

Average wages were first sourced from a proprietary Mercer database and segmented by provider type, region, and site of care. 2020 was utilized as a baseline year as it was the latest year of available data from the Bureau of Labor Statistics. From 2020, future state wages were projected by applying a set of coefficients (meant to capture the range of wage growth drivers) to 2020 baseline rates (see Exhibit 24).

$$\text{Wage rate} = \text{Prior year wages} \times \text{Provider-specific growth} \times \text{Site of care growth} \times \text{COVID impact} \times \text{Inflation}$$

Exhibit 24: Wage rate drivers

Cost Driver	Definition	Assumption
Provider-specific wage growth	CAGR growth rates derived from wage growth p.a. from pre-2020 wage data to estimate 2020-2030 wage projections	CAGR growth rates between 2015-2019 (BLS) will continue to increase rates from 2020-2030
Site of care growth	Site-of-care specific adjustment reflecting expected changes in labor demand in a given site of care	Home health, skilled nursing, and vocational rehab. will have annual compound growth of 4%, 3%, and 0.1% p.a. respectively (through 2030), driven by expected utilization demand
COVID-19 impact	Adjustment to capture COVID-driven changes in wages (e.g., due to lower perceived safety of post-acute care, labor shortages, etc.)	COVID-19 will cause a 5% increase in wages from 2020-2022, but will not impact wages post-2022
Inflation impact	Adjustment to reflect wage growth keeping pace with inflation (i.e., maintain real value of wages)	Inflation will increase at 2% p.a. through 2030

Source: Oliver Wyman, Mercer, IntelyCare Research Group

5.3 METHODOLOGY — HEALTH BENEFITS

Health Benefits are defined as any employer-subsidized benefits which support the cost of healthcare for employees and/or their families, including life insurance and disability benefits. The estimated cost of PTO benefits was determined via a proprietary Mercer benchmarking exercise. Mercer evaluated 167 healthcare systems nationwide, recording granular benefit valuations into a benchmarking database. Costs were segmented by region and by the four components listed below. The median value for a given region and given benefit category was assumed to be representative of all healthcare employers in the region. Each incremental provider was assumed to participate in each of the below benefits.

Medical benefits

Any benefits which directly subsidize the cost of a medical expenditure for an employee or family member. Covered areas are assumed to include office visits, hospital facilities, hospital physicians, emergency rooms, mental health, substance abuse, and prescription drugs.

Medical benefits were valued utilizing actual claims experience from a sample distribution. Valuation is based on proprietary Mercer analysis, which determines utilization rates and mean prices per utilization from a sample claims distribution.

Dental benefits

Dental Benefits defined as any benefits which directly subsidize the cost of a dental expenditure for an employee or family member. Dental benefits were valued using a standard insurance organization manual rating technique, then normalized to market rates.

Post-retirement medical benefits

Post-retirement medical benefits defined as any benefits which accrue with service and are utilized by employees to subsidize post-retirement medical costs. Current premium rates were projected and an increasing annuity (reflecting the plan's coordination with Medicare) was added.

Life & disability benefits

Life & disability benefits defined as any benefit which provides a direct payment or series of payments to any employee/employee's beneficiary upon the event of death or disability. Valuation was based on expected coverage in the year following the valuation date less any employee contributions.

5.4 METHODOLOGY — RETIREMENT BENEFITS

As with healthcare benefits, estimated cost of retirement benefits was determined via a proprietary Mercer benchmarking exercise. Mercer evaluated 167 healthcare systems nationwide, recording granular benefit valuations into a benchmarking database. Costs were segmented by region and by the three components listed below. The median value for a given region and given benefit category was assumed to be representative of all healthcare employers in the region. Each incremental provider was assumed to participate in each of the below benefits.

Defined Benefit Plans

Defined Benefit Plans defined as any plan which provides a fixed, pre-established benefit for employees at retirement (e.g., a pension). Valuation approach determines present value of target retirement pension based on total expected service and allowing for projected salary increases to retirement date. Value of future benefit accruals is determined by multiplying by the ratio of future service to total service.

Defined Contribution Plans

Defined Contribution Plans defined as any retirement plans where a specific monetary amount is not guaranteed at retirement (e.g., 401k). Employer contributions are often on a “matching” basis (i.e., 50% of all employee contributions up to 6%).

Stock Purchase Plans

Stock Purchase Plans defined as any plan allowing to employees to buy company stock at an agreed-upon rate, often favorable (e.g., at the lowest possible stock price during the offering period). Value is assumed to be the delta between the purchase price and sale price (assumed to be the price on the day the employee receives the stock).

5.5 METHODOLOGY — PTO BENEFITS

As with healthcare and retirement benefits, estimated cost of PTO benefits was determined via a proprietary Mercer benchmarking exercise. Mercer evaluated 167 healthcare systems nationwide, recording granular benefit valuations into a benchmarking database. Costs were segmented by region and by the five components listed below. The median value for a given region and given benefit category was assumed to be representative of all healthcare employers in the region. Each incremental provider was assumed to participate in each of the below benefits. Valuation for each was assumed to be daily wages (or salary equivalent) multiplied by the total amount of days covered.

Components of PTO:

- Paid time off
- Vacation
- Holidays
- Personal leave
- Sick leave

5.6 METHODOLOGY — RECRUITMENT COSTS

Recruitment costs are defined as any costs involved in sourcing, recruiting, and onboarding a given employee — i.e., all costs associated with a net new employee before their first day fully participating in the labor force. These costs were segmented into seven core categories, for each of which a discrete methodology was developed to determine cost by provider type, by region, and by site of care.

Recruitment costs are assumed to increase by 2% per year through 2030, primarily driven by inflation. While due to the increase in demand for healthcare providers during the COVID-19 pandemic, preceptorship costs were not assumed for the period of 2020-2022, it is assumed that they will be included in the years from 2022-2030. Furthermore, provider-specific growth rates derived from CAGR wage growth p.a. from pre-2020 wage data is assumed to increase recruitment costs from 2020-2030. Lastly, given the massive increase in demand during the COVID-19 pandemic and the amount of churn within healthcare facilities, a one-time increase in sign-on bonuses were included in 2020 that will also be impacted by other cost drivers were valued at \$11,900 for RNs, \$3100 for LVN/LPNs, and \$1663 for CNAs on average throughout all sites of care and regions.

Finding position costs

Finding position costs defined as any labor costs associated with filling one incremental open position. Costs were determined by multiplying average HR hourly wage by average hours required to fill a given position. CNA positions were assumed to require 80 HR hours, LVN/LPN positions assumed to require 100, and RN positions to require 120 across regions and sites of care, determined via Oliver Wyman primary research. HR hourly wages were assumed to be ~\$30 per hour across regions and sites of care. These assumptions were sourced from market participations and directly reflect market conditions as of February 2022 (e.g., significantly constrained labor supply).

Job posting fees

Job posting fees defined as any fees required to post job listings/openings on 3rd party websites or applications. Job posting fees are fairly small relative to other recruitment costs. As cost per posting is not driven by site of care, provider type, or region, a single average figure (\$550 per open position) was utilized across all model calculations, determined via Oliver Wyman primary research.

Advertisement spend

Advertisement spend defined as the total cost in non-job board advertisement to fill one open position of a given provider type. This total cost was assumed to be \$130 for CNAs, \$160 for LPN/LVNS, and \$180 for RNs. These costs were assumed to be flat across all sites of care and regions. These figures were sourced from contingent labor staffing vendors' internal data.

Sign-on bonuses

Sign-on bonuses defined as any payment given to net new employees in recognition of them joining the employer. These bonuses were not typically offered prior to the pandemic, but material staffing shortages have significantly increased their prevalence in the current environment. All new hires were assumed to receive a sign-on bonus, valued at \$11,900 for RNs, \$3,100 for LVN/LPNs, and \$1,663 for CNAs on average throughout all sites of care and regions in 2020, sourced via Oliver Wyman primary research.

Initial credentialing

Initial credentialing defined as the cost to credential one net new provider for work in the post-acute care space. This cost was assumed to be a flat \$100 across all provider types, sites of care, and regions, determined via Oliver Wyman primary research.

Self-training

Self-training defined as the wages paid to a net new provider in the period where he or she is actively driving his or her own training before providing incremental value to the employer organization. E.g., if a new RN is expected to spend a full shift training on facility systems before assuming the full breadth of his or her responsibilities, the wages paid for that shift would comprise the “self-training” costs for this nurse. Wages were segmented by site of care, provider type, and region, as defined in Section 2.2. Total training hours were assumed to be 72 hours for RNs and 24 hours for LVN/LPNS and CNAs, determined via Oliver Wyman primary research.

Preceptorship

Preceptorship defined as the wages paid to both a net new provider and an experienced staff member for the full period said experienced provider is providing active supervision for the net new employee. Wages were segmented by site of care, provider type, and region, as defined in Section 2.2. Total training hours were assumed to be 48 hours for all provider types, regions, and sites of care, determined via Oliver Wyman primary research. Wages are assumed to be constant across both participating members of the preceptorship. Given the high demand for both nurses and nursing assistants, preceptorship was not assumed to occur during COVID-19 period of impact (2020-2022).

5.7 METHODOLOGY — RETENTION BONUSES

Retention bonuses are defined as any payments paid to an existing employee with the express purpose of encouraging ongoing retention. These bonuses are inclusive of both cash and non-cash payouts (e.g., gift cards, housing stipends, office gifts, etc.). Three separate categories of retention bonuses were considered for inclusion; however, only one bonus type (core Retention bonus) was included in final results.

Retention bonus

Any bonus awarded to an existing employee in recognition of service milestones (e.g., hours worked, months or years with organization, shifts worked). Pre-COVID bonuses were calculated to be \$2,500, \$1,000, and \$0 for RNs, LPN/LVNs, and CNAs, respectively. 2020 baseline bonuses were calculated to increase to \$5,000, \$3,500, and \$3,500, respectively, given strong increase in labor demand. Post-2020, bonuses are assumed to grow at the same rate as inflation + the underlying job category wage growth, segmented by provider type and region. It is assumed that each incremental employee will be paid one retention bonus during their first year of employment (Sources: Primary research, Mercer database).

Other bonuses

Two other bonus categories were considered — “Hero bonuses”, given to healthcare workers involved in taking care of patients during the COVID-19 pandemic, and “Combat bonuses”, given to health care workers who are on active military duty. These bonuses were ultimately excluded from the fully loaded cost estimation, given the low volume of these bonuses distributed to post-acute healthcare providers relative to general retention bonuses.

5.8 METHODOLOGY — CONTINUING EDUCATION AND LEARNING & DEVELOPMENT

Continuing education/L&D defined as any costs borne by an employer to support an employee in continuing education, ongoing training, or any other upskilling/development processes. Continuing education costs can largely be represented as a function of hours worked — i.e., for each full week of work a nurse or nursing assistant completes, this analysis calculated that an average of 0.3 hours are specifically dedicated to continuing education and paid for by the employer, amortized over a 1 year period. However, there is an incremental “System fee” associated with the costs to provide training and development to the nurse (e.g., in the form of education reimbursement, or the cost to license 3rd party or develop in-house training resources). The full calculation for continuing education costs for a given employee is as follows:

$$(0.3 \text{ hrs/week} \times \text{wage}) + \text{system fee}$$

Hourly wages were determined by provider type, site of care, and region, as defined in Section 2.2. On an annual basis, system fees are estimated to be \$17,000, \$11,000, and \$6,000 for RNs, LPNs, and CNAs, respectively. Total cost is benchmarked against industry data to 2019 and expected to increase annually at a rate commensurate with inflation + the underlying provider type wage growth, segmented by provider type and region.

5.9 METHODOLOGY — TAXES

Taxes are defined as any payroll taxes paid by an employer as a direct function of employee wages. Five core components of payroll taxes were identified for inclusion.

Federal Insurance Contributions Act (FICA)

FICA is a United States federal payroll tax which provides funding for both Social Security and Medicare programs. The current Social Security component is taxed at 6.2% of employee wages, while the Medicare component is taxed at 1.45%. Thus, assumed FICA taxes for this research total 7.65%.

Federal Unemployment Tax Act (FUTA)

FUTA is an additional federal payroll tax which provides funding for unemployment benefits. Employers are taxed at 6% of the first \$7,000 of an employee's wages, with no taxes on wages beyond \$7,000. However, there is a commonly utilized tax credit worth 5.4% which reduces the effective tax rate to 0.6%. Thus, this research assumes an 0.6% payroll tax on the first \$7,000 of each incremental employee's wages.

State Unemployment Tax Act (SUTA)

State Unemployment Insurance is a collection of state-level payroll taxes, incremental to FUTA, which funds state-level unemployment benefits. The tax is typically structured as X% on the first \$Y of an employee's wages, with exact values varying state to state. For the purpose of this research, state-level rates and taxable limits were aggregated by region, with the average rate and limit assumed to apply for each state in the region.

Workers Compensation Insurance

Workers Compensation Insurance is a collection of state-level payroll taxes which funds workers comp payouts. Like SUTA, exact rates differ from state to state, with certain states having no mandated insurance. However, given the high-liability environment of healthcare, our research assumes 100% of employers are either mandated or opt-in to workers comp. Unlike SUTA, there is no upper limit to taxable wages. This research uses the same regional aggregation process as with SUTA for workers comp purposes, with the average rate in each region assumed to apply for each state in the region.

Thus, the full calculation for taxes costs for a given employer is as follows:

$$(Wages \times [7.65\% + \text{Assumed Regional Workers Comp Rate}]) + (FUTA \text{ Taxable Wages} \times 0.6\%) + (SUTA \text{ Taxable Wages} \times \text{Assumed Regional SUTA Rate})$$

6. LOST REVENUE DUE TO STAFFING SHORTAGES AND INCREASED MINIMUM STAFFING RATIOS

METHODOLOGY

6.1 METHODOLOGY

Until now, this paper has discussed costs in terms of the monetary amount paid by an employer to various parties in order to recruit and retain a net new employee. This is in service of developing a thorough and objective process to compare the costs borne by employers for fully employed labor vs. contingent labor. However, there is an additional cost that must be understood when determining the value of contingent labor: The unrealized revenue for any facility that is lost due to a non-optimal patient census (often driven by staffing shortages and minimum staffing ratios mandated by CMS or an individual state). To that end, this section will lay out an approach to measure this lost revenue and discuss the results from applying this approach to the US skilled nursing facility market.

“Lost revenue” is hereafter used to refer to the potential revenue not realized by a facility due to operating at a non-optimal occupancy rate. This revenue loss is a function of A) the number of unoccupied beds in a facility, and B) the revenue a SNF can expect to receive from a single incremental occupied bed. These values are segmented by region.

This lost revenue is then broken down and attributed to individual provider types (RNs, LPN/LVNs, and CNAs). For each occupied bed, a “contribution of care” is determined for each provider type, based on expected staff:patient ratios. This contribution of care is represented as a percentage, summing to 100% across provider types.

Thus, the total lost revenue by provider type in a given region is determined via the following formula:

$$\text{Number of unoccupied beds} \times \text{Revenue per patient} \times \text{Contribution of care for a patient per provider type}$$

Detailed assumptions and methodology for each component of this calculation are below.

Number of unoccupied beds

The number of unoccupied beds in a SNF was defined as the baseline number of beds available less the number of beds occupied. It is important to note that the “baseline number of beds” is not the full set of beds available in a given facility, as SNFs do not typically operate at 100% utilization. Instead, the baseline occupancy rate of a region was defined as the average of 2015-2019 (pre-COVID) occupancy rates across that region. This baseline occupancy rate was applied to the total number of beds in that region to understand the baseline total volume of potential occupied beds. At any given point in time from 2020 onwards, unoccupied beds are thus defined as the total number of occupied beds at that point in time subtracted from the total potential occupied beds:

$$\text{Number of unoccupied beds} = (\text{Baseline pre-COVID occupancy rate} \times \text{total number of beds}) - \text{beds occupied}$$

Historical occupancy rates were determined via an average of each daily rate in a given year. 2022 occupancy rate was assumed to be the average daily rate through the end of February 2022.

Total lost revenue

Daily revenue per occupied bed was segmented on a regional level and determined by dividing gross patient revenue by total patient days from all skilled nursing facilities in a given region in 2022. See Exhibit 25 for detailed revenue assumptions for the baseline year, 2022. Daily revenue per occupied bed was assumed to stay constant through 2030.

Exhibit 25: Revenue per occupied bed per day by region, 2022

Region	Revenue loss (yearly)
Northeast	\$460
Northcentral	\$358
Southeast	\$372
Southcentral	\$341
West Coast	\$562

Source: Oliver Wyman, Mercer, IntelyCare Research Group

Total lost revenue was determined by multiplying the number of unoccupied beds in a given region against the revenue per occupied bed in that region.

Contribution to care by provider type

Finally, the relative contribution to a single patient’s care across the three provider types (RN, LPN/LVN, CNA) was determined. National average provider type-to-patient ratios were determined via state-mandated provider-to-patient ratios and validated via Oliver Wyman primary research. Higher-skilled professionals (e.g., RNs) typically provide direct care to fewer patients, given the heightened complexity of their roles relative to lower-skilled providers (e.g., CNAs). A catch-all category of “Other roles” was also established, to capture the contribution to direct care of non-core staff types that have ancillary contributions to the patient’s overall care continuum (e.g., speech therapy, occupational therapy, advanced practice RNs, assisted daily living, etc.). A ratio of 1:10 was assumed via Oliver Wyman primary research. These ratios were then utilized to determine the percentage of time spent on a single patient by provider type. This percentage acts as an indicator for contribution to care: E.g., if RNs spend 14% of their time on a single patient, and LPNs spend 10% of their time, it can be reasoned that any given patient receives more direct care from the RN. Total contribution of care percentages (i.e., the rightmost column in Exhibit 26) were determined by rebalancing the “time spent on single patient” percentages so that all provider types summed to 100%. See Exhibit 26 for final assumptions on contribution to care by provider type. These percentages were then multiplied against total lost revenue to determine the financial impact of staffing shortages for each of the three provider types studied.

Exhibit 26: Relative contribution to care by provider type assumptions

Provider	Provider:Patient ratio	Total contribution of care
RNs	1:7	35%
LVN/LPNS	1:10	24%
CNAs	1:15	16%
Other roles	1:10	24%
Total		100%

Source: Oliver Wyman, Mercer, IntelyCare Research Group

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Supplementary materials

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For more information, please contact the marketing department by phone at one of the following locations:

Americas

+1 212 541 8100

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Asia Pacific

+65 6510 9700

AUTHORS

Deirdre Baggot, PHD, Partner, Oliver Wyman

Adrian Gibb, Partner, Oliver Wyman

Philip Impellizzeri, Senior Associate, Mercer

Kevin Wistehuff, Engagement Manager, Oliver Wyman

John Rizzo, Engagement Manager, Oliver Wyman

Noah Piwonka, Associate, Oliver Wyman

Henock Asaye, Consultant, Oliver Wyman

Bryce Johnson, Consultant, Oliver Wyman

Justin Nguyen, Consultant, Oliver Wyman

IntelyCare Research Group

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