Adding it Up - Accounting for the Transformational Power of an Optimized Workforce

From the Bottom Line to Patient Satisfaction and Beyond
Labor is—and will remain—the largest expense for any healthcare delivery organization. Despite the size of the expenditure, it is not uncommon for labor to be viewed primarily as a P&L expense as opposed to a strategic asset. In annual surveys of hospital priorities, the workforce does not rank among the most pressing needs facing executives. Rather, issues such as financial stability, patient safety and satisfaction, mergers and acquisitions, health reform, and regulation tend to dominate the healthcare landscape.\textsuperscript{1} Compared with emerging needs, perhaps the workforce is viewed as a “known constant” hence, its failure to “rank” high.

Yet, hospitals may be missing a golden opportunity to drive actionable, transformational change through their greatest asset—the workforce. Labor’s ability to impact a hospital’s success extends far beyond the bounds of a profit and loss statement. An optimized workforce can be a force multiplier for health systems—from lowering standard, well-traveled measures such as overtime to emerging, mission-critical outcomes such as staff morale, patient satisfaction, and quality of care. Attributing optimized workforce management to staff and patient satisfaction, increased revenue and quality of care may seem aspirational for some and like common sense to others. Increasingly, estimates and opinion are giving way to fact. The aim of this analysis is to elucidate the growing body of evidence that supports the power of such claims. The analysis will have a particular focus on nurses who are on the front lines of patient care and whose efforts have been shown to impact patient safety and patient satisfaction.\textsuperscript{2}

**Overtime is the Rule**

For most hospitals, nursing overtime is the rule, not the exception. According to industry surveys, more than 50% of full-time nurses work an average of 7 hours of overtime each week, and 15% of part-time nurses work an average of 5.4 hours of overtime per week.\textsuperscript{3,4} Left unchecked, 41% of a hospital’s nurses may work overtime—an expensive proposition. Accounting for up to 7%-10% of total worked hours, nurse overtime for a 300-bed hospital can cost some $3.7 million annually.\textsuperscript{5} While sound reasons may drive an “acceptable” amount of overtime, executives should question what amount of overtime falls within acceptable bounds. For comparison, consider, from an industry perspective, that the 30th percentile performers average roughly 2.5% of overtime as a percentage of total work hours.\textsuperscript{6} A hospital that can move overtime from the 50th to the 30th percentile can reap significant rewards.
Overtime Accelerates Turnover

Similar to overtime, turnover has proven to be a consistent and costly challenge. While turnover is a multi-faceted issue, studies have identified some powerful indicators that link overtime and turnover. More specifically, nurses that work over 12 hours in a shift and 40 hours in a week are prone to increased turnover and job dissatisfaction. Additionally, nurses who work shifts longer than 12 hours are 1.45 times more likely to leave their position within the year.7 Because shifts of 12 or more hours have become part of the norm, and with nearly 50% of full-time nurses logging overtime, unmanaged overtime can accelerate costly turnover. Replacing a nurse is expensive: $82,000 per nurse which accounts for vacancy costs, orientation and training costs, newly hired nurse productivity costs, and advertising and recruiting costs.8 With nurse turnover averaging 14%, the average turnover expense for a 300-bed hospital approaches $4.4 million annually.9,10 Proactive efforts to reduce both shift length and workweek length provide best practices that can help to reduce turnover and yield positive financial returns.

Staff Injury and Overtime—An Unhealthy Combination

Employees and employers have vested interests in safe workplaces. Overtime across industries has a negative impact on injuries. Working in jobs with overtime schedules was associated with a 61% higher injury hazard rate compared to jobs without overtime.11 Working at least 12 hours per day was associated with a 37% increased injury rate – and with 50% of the full time nurses falling into overtime buckets, hospital exposure to injuries increase.12
Healthcare is an industry with higher injury rates than other settings – the work is challenging, physical, and occurs on a 24/7 365 perpetual cycle. In fact, healthcare’s injury rates are almost two times greater than the norm.\textsuperscript{13} For an average hospital, the cost of nurse injuries can climb to over $400,000 annually.\textsuperscript{14} However, data demonstrates that injuries contribute to more than just a direct financial expense. Nursing assistant injuries have been shown to be associated with lower employee satisfaction, increased desire to leave their positions, and a decreased likelihood to recommend the institution either as an employer or for medical care.\textsuperscript{15}

**Medical Errors: Overtime’s Powerful Hidden Costs**

Staffing shortages have become a way of life for hospitals and health systems. Matching supply and demand has structural, long-term challenges. For example, due to an insufficient number of nursing educators, nursing schools turn away tens of thousands of qualified applicants each year.\textsuperscript{16} As such, increasing nurse overtime has been a natural response to filling this unmet need. However, a deep body of literature establishes a significant link between overtime and patient safety.\textsuperscript{17,18}

As nursing shifts lengthen so do the chances of medical errors. An often-cited breakthrough study found that the odds of making an error are three times higher when nurses work a shift of 12.5 hours or more.\textsuperscript{19} A multi-state study confirmed the enhanced likelihood of errors once nurses push beyond a 40-hour workweek (which occurs, on average, for 50\% of full time nurses). Nurses working more than 40 hours per week were 3.71 times more likely to report medication errors and 3.39 times more likely to report nosocomial infections.\textsuperscript{20} Nurses working voluntary overtime were 3.36 times more likely to report patient falls and 3.5 times more likely to report pressure ulcers.\textsuperscript{21} The degradation of care quality associated with these incidents from a patient care perspective is self-evident. While perhaps less obvious or transparent heretofore, the expense associated with these errors is also gaining greater awareness. The associated costs for these errors, the likelihoods of which increase with overtime, are shown in the table.

<table>
<thead>
<tr>
<th>Errors and their Consequences</th>
<th>3.71X More Likely</th>
<th>Average Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported Medication Errors Due to Overtime</td>
<td></td>
<td>$2,000</td>
</tr>
<tr>
<td>Reported Patient Falls Due to Overtime</td>
<td>3.36X More Likely</td>
<td>$13,000</td>
</tr>
<tr>
<td>Reported Nosocomial Infections Due to Overtime</td>
<td>3.39X More Likely</td>
<td>Up to $50,457</td>
</tr>
<tr>
<td>Reported Pressure Ulcers Due to Overtime</td>
<td>3.50X More Likely</td>
<td>$43,180</td>
</tr>
</tbody>
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*Based on average costs and incidence rates, the financial exposure for a 300-bed hospital resulting from these medical errors runs upwards of $30 million, much of which may be unreimbursed.*
Agency Nursing—Expensive when Over Utilized

Like overtime, hospitals engage agency nurses to fill gaps. Agency nurses represent 5-10% of the entire nursing force and can be paid 50% to 75% more per hour than the average nurse's hourly pay. Annually, it is likely that a 300-bed hospital can spend some $4.5 million for agency staff. This is a persistent and growing response to filling open shifts. According to an industry survey, 55% of hospitals report agency use rising rapidly, up to 6% growth per year through 2018. While agencies fill a critical need for nursing care, many organizations have been able to dramatically reduce the use of agency.

Satisfied Staff=Satisfied Patients: Impacts on the Bottom Line

Patient satisfaction continues to escalate in importance for all healthcare constituents. Payers, purchasers, and providers continue to aim for improvement, while consumers increasingly demand better overall experiences. In many ways, the patient, with high deductibles, should be considered and treated as a “payer.” Healthcare’s largest payer, Medicare, has engaged value-based mechanisms to incentivize better care. Central to these efforts are the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) that penalizes or rewards hospitals through their Medicare reimbursement (1.5% penalty or award in 2015). Losses or gains from this program can create a multi-million dollar gain or loss for a hospital each year. With patient satisfaction scores accounting for 30% of the HCAHPS, patient satisfaction must become a core competency for hospitals.

On the frontlines of patient satisfaction lie nurses. They are often the most visible representation of a hospital
to the patient, and research has established a link between nurse satisfaction and patient satisfaction. A 2011 Health Affairs study found that the percentage of patients who would “definitely recommend” a hospital to their loved ones decreased 2 percent for every 10 percent of nurses who expressed dissatisfaction with their jobs. Additionally, nurses who are more satisfied in their jobs are more likely to have patients who report having a better experience, and hospitals where nurses work more than 13 hours per shift are more likely to have patients who rate the hospital less than 7 out of 10 on the HCAHPS survey. Drivers of this dissatisfaction, however, are not permanent and can be positively influenced. Key elements of nurse dissatisfaction, which include a high workload due to high patient acuity, inadequate staffing configurations, and inflexible schedules, can be addressed with advanced solutions.

J.D. Power and Associates, the leader in customer loyalty and retention, studied the impact of patient satisfaction and patient loyalty through the HCAHPS program. Patients who score a hospital with a 6 or 7 on HCAHPS express that they want to return only 37% of the time. Conversely, patients that score the hospital with a 9 or 10 report that they want to return 80% of the time. As healthcare becomes increasingly competitive and consumer-oriented, a satisfied workforce will return dividends.

Maximizing Nurse Manager’s Impact
Scheduling is complex for nurses and their managers. While ensuring that all shifts are staffed is vitally important, the process can be manual, time consuming, and expensive. Reports show that it is common for nurse managers to spend upwards of an hour a day or five hours a week managing schedules. While an hour a day may seem innocuous, scheduling can consume at least 10% of a manager’s time, time that competes with efforts to raise quality, manage costs, and aid in patient satisfaction endeavors. Across a typical 300-bed hospital, liberating nurse managers from an outdated scheduling process can free up to 6,000 nurse manager hours annually. This is time that nurse managers can repurpose for higher order aims such as mentoring, teaching, and interfacing with patients and their families.

Final Thought
As healthcare executives seek solutions to the myriad of strategic issues confronting them, overlooking the power of
optimizing the workforce can be a costly misstep. When automated workforce management solutions are coupled with best practices, healthcare organizations can materially drive down costs, improve employee engagement and advance patient satisfaction and safety. All told, the strategic use cases explored in this analysis can cost a 300 bed hospital more than $12 million annually. With the pace of change continuing its unfettered march, executives can look to their workforce to deliver returns.

About API Healthcare
API Healthcare (www.apihealthcare.com) is focused on workforce optimization solutions exclusively for the healthcare industry. The company’s staffing and scheduling, patient classification, human resources, talent management, payroll, time and attendance, business analytics, and staffing agency solutions are used by more than 1,600 health systems and staffing agencies. Founded in 1982, API Healthcare has been rated by KLAS in the Top 20 Best in KLAS Awards Report (www.KLASresearch.com) as the top time and attendance provider system for the last 12 years (2002-2013) and the top staffing and scheduling solution in 2012 and 2013.

About GE Healthcare
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