Evidence-Based Nursing

10 ways to practice evidence-based staffing and scheduling

By Susan M. Reese, MBA, RN, CPHIMS

As we move from a volume-driven to a value- and outcome-driven approach to patient-care, the need to identify and retool those processes and practices that were designed for speed and efficiency, but don’t optimize value and positive outcomes in patient care, is critical. It’s time to reevaluate and redesign the “whys” and “hows” of staffing and scheduling in healthcare, with a focus on what the evidence now tells us provides the safest practices to support positive outcomes for both our patients and nursing staff.

Acute care staffing and scheduling practices
No one familiar with the acute care work environment can deny that this is a fast-moving and physically, mentally, and psychologically demanding and dynamic place. It’s a 24/7/365 environment that never stops, and nursing is at the epicenter—the patient’s bedside.

Making sure that nursing is there requires orchestration of work schedules with myriad details: shift start times, shift lengths, scheduled hours per week or pay period, spacing of shifts, duration of shift breaks, expected and unexpected absenteeism, skill mix, and experience levels of staff members. The list goes on. With each decision comes an impact on the nurse and patient, either positive or negative. We need to maximize the positive and minimize the negative while keeping an eye on our financial responsibilities.

It’s important to recognize that how we staff and schedule nurses can create an environment that’s potentially harmful to both the nurse and the patient. Consider the pervasive practice of 12-hour shifts, often closely spaced to shorten the work week, which presents risks of fatigue in the nursing workforce. And the sometimes relentless calls to fill “holes” created by unexpected events—absenteeism or increased workload—contribute to an unhealthy environment for the nurse.

Further complicating the staffing and scheduling process is the need to manage the skill mix at any given time. The nursing workforce consists of more than nurses. Depending on the specific unit and nursing practice model being used, the nursing workforce may consist of unlicensed assistive personnel, technicians, unit coordinators, and transporters. The mix of appropriately skilled staff must be optimized.

The evidence is in
What do increased levels of fatigue mean in the delivery of nursing care? Fatigue in the workforce has been linked to “performance decrements.” Performance decrements may include diminished capacity to manage a specific level of workload, which certainly has an adverse impact on the organization and overall productivity. More significant is that performance decrements lead to errors in the delivery of nursing care. It’s here that the impact of performance has its most damaging potential, affecting the safety and positive outcomes for both nurses and patients.

The length of shifts, working overtime hours, and overall hours worked per week have been shown to have a significant relationship to errors. The prevalence of 12-hour shift lengths in nursing today and the common practice of not getting out...
on time make this a troubling finding. Even if shift lengths are shortened, working more than 40 hours per week “significantly increased the risk of making an error.”4

The types of errors associated with fatigue-generating work schedules are of concern. They aren’t just an incorrect dietary order, failure to ambulate, or slight delays in care. Two studies reported epidemics of Staphylococcus aureus that pointed to nurse fatigue as the reason for making frequent mistakes and procedural errors.5,6 Another study reported that patients cared for by nurses working high hours of overtime had “greater odds of ED visits” postdischarge.7 This raises the question of the quality of the discharge planning/teaching that occurred in this patient population.

And if working excessive overtime creates risks in the environment, the reason that overtime hours are required becomes important. The fatigue associated with 12-hour shifts was found to be responsible for an absenteeism rate approaching 12% in a random sample of Canadian nurses.8 This cycle is self-perpetuating. Long shifts cause fatigue, which causes absenteeism, which results in the need to fill unexpected absences with overtime hours, which increases shift length.

Patients can suffer as a result of nurse staffing and scheduling practices. But what about the nurses themselves? Do nurses suffer beyond the fatigue reported? The evidence says they do. A population-based longitudinal study reported the odds of needle-stick injury significantly increased when nurses worked 12 or more hours versus 8 hours a day.9 And yet another study reported that working 12 hours or more a day increased the odds of musculoskeletal disorders in nurses by between 19% and 22%.10 There’s also the likelihood of “drowsy driving.” One study reported that an increased likelihood of drowsy driving and motor vehicle collision is seen in nurses working more than 12 hours, and the risk is quadrupled for night shift and sleep-deprived workers.11 Clearly the risks to the nurses themselves are also significant and shouldn’t be overlooked.

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And what about the composition of the nursing team? What impact on safety and positive outcomes is related to their skill mix and level of experience? One study reported that having a “greater proportion of RNs relative to unlicensed assistive personnel was significantly associated with fewer (patient) falls and medication administration errors in medical-surgical and critical care units.” Changes to skill mix led to a finding that “each 10% decrease in RN skill mix was associated with a 36% increase in the likelihood of (patient) falls with injury in critical care units and with a 30% increase on medical-surgical units.” Skill mix does matter.

Lastly, the experience level of the nursing team needs to be considered. Does experience make a difference in providing for a safe and positive outcome-driven approach to staffing and scheduling? The answer is yes. Two studies showed that units with more experienced nurses had lower medication error rates in both studies and lower patient fall rates in one study.

10 ways to put it into practice

• Decrease the use of 12-hour shifts. The move away from 12-hour shifts will be challenging considering their popularity among nurses, but the evidence is clear that they present a significant risk to patients and nurses. Wherever possible, engage staff in discussions about alternatives in scheduling that support a safe and positive outcome-driven environment.

• Investigate ways to ensure nurses leave on time at the end of a shift. First assess what the causes of staying late are and then formulate an action plan to address those issues.

• Decrease the use of overtime hours. Whenever possible, hours that increase the overall work week, such as overtime hours, should be avoided. This can be accomplished by abandoning staff scheduling based on average daily census and more accurately scheduling based on predictive workload volumes, which decreases the need to adjust staffing on short notice.
• Spread the wealth in distributing overtime. When overtime is the only answer, make sure no one person is getting it all. There may be one staff member always willing to do the overtime, but the evidence tells us there’s a risk associated with that decision.

• Know the staff members you’re scheduling. Make sure nurses who are at increased risk for harm, such as those with chronic medical conditions, older workers, pregnant nurses, and those with long commutes, aren’t scheduled in a way that will tax their abilities.

• Define a skill mix for each shift and stick to it. There’s no one right mix of skills that we all should follow. Realistically analyze your environment and resources to define what’s possible and acceptable for your situation. And then stick to it!

• Vary the experience levels scheduled on each shift. The benefit here is increasing the likelihood that fewer errors will occur. The value-add is the mentoring that will benefit the less experienced members of the team.

• Evaluate the adequacy of rest periods between shifts when approving schedule changes. There’s more to be concerned with than just covering the shift when approving schedule changes. Consider the impact on the individual’s overall schedule and potential for fatigue.

• Develop practice guidelines. Based on the research, practice guidelines appear to support safety shifts, and deviations between scheduled and actual worked hours.

**What’s at stake?**

One of our greatest challenges in nursing today is to steadily move away from time-honored and anecdote-based practices to a practice of nursing-care delivery that’s evidence-based. There’s much to learn, but there’s also much newly known. As what’s known is put into practice, it remains essential that the impact on both the patient and the nurse be continually evaluated and opportunities to identify potential new improvements in staffing and scheduling practices aren’t overlooked because of complacency. The safety and positive outcomes for our patients and nurses are at stake.

**REFERENCES**


Susan M. Reese has disclosed that she is the chief nurse executive for Kronos, a global organization focused on workforce management in healthcare.

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