Despite the fact that hours per patient day (HPPD) is a metric that has been used for decades to budget nursing departments and examine nursing productivity, there is growing criticism HPPD is inadequate in determining or evaluating appropriate nurse staffing (Douglas, 2014; Jenkins & Welton, 2014). In a recent presentation by Dr. Linda Aiken (2014), she wisely stated HPPD is not a metric you would want to use with patients. If you tell patients they are receiving 8 hours of nursing care per day, they may wonder what is happening the other 16 hours of their hospital day. Patients are more likely to understand that a nurse is taking care of three patients at a time.

While this makes sense for patients, there are other considerations for internal and external comparisons and budgeting. Some believe staffing ratios are the answer to determining appropriate staffing and others recommend using patient assignments (Jenkins & Welton, 2014), but in reality it all boils down to hours per patient day, whether it is registered nurse (RN) hours per patient day, worked hours per patient day, direct hours per patient day, or paid hours per patient day. Hours per patient day is a metric that is easy to use in determining budgeted full-time equivalents (FTE) and in comparing staffing across organizations. It is a metric we can relate to and quickly translate into how many patients are assigned to one staff member. It can also be used to translate the nursing costs per day by multiplying it by the average salary expense for a particular patient population. Granted, there is significant variation in nursing time and costs per individual patient, and that is important information to have, but it has to be averaged to develop a budget for a nursing unit or cost center.

Ratios can be easily translated into nursing HPPD (NHPPD). A 1:2 ratio of nurses to patients is 12 NHPPD, a 1:3 ratio is 8 NHPPD, a 1:4 NHPPD is 6 NHPPD, a 1:5 ratio is 4.8 NHPPD, and a 1:6 ratio is 4 NHPPD. All you need to do is divide the number of patients by 24 hours in a day. Similarly, we can calculate the total direct worked hours per patient day by taking both RN and non-RN worked hours per patient day, or we can calculate the total worked hours per patient day by taking the total hours (direct and indirect) divided by the patient days.

Comparing Apples to Apples

We need a common metric for benchmarking and HPPD information has been collected for years by the National Database of Nursing Quality Indicators (NDNQI®), the Labor Management Institute, and others. The key is being clear about how the metric is determined and what it includes (RN, total, worked, or paid HPPD) so that we are comparing “apples to apples.”

The work that Welton and colleagues are doing to show the variation in costs per patient assignment is very important and useful (Jenkins & Welton, 2014; Welton, Zone-Smith, & Bandyopadhyay, 2009; Welton, 2008; Welton & Harris, 2007). We all know that patients with the same diagnosis or diagnosis-related group (DRG) can have vastly different needs and consume different amounts of nursing time. The same is true of case mix index (CMI), which is based on the complexity of the DRGs treated at different hospitals. A hospital with a large number of open heart procedures or transplants is going to have a higher CMI than a hospital that treats predominately medical patients with chronic obstructive pulmonary disease (COPD) or similar problems. But we also know from experience that a 50-year-old patient undergoing coronary artery bypass grafting who is otherwise fit, takes less nursing time than a dependent 80 year old with COPD and complications. We know that intuitively but we need the kind of research that Welton and others are doing to quantify and prove it.
While cost per patient assignment provides important research data and ultimately important information for understanding and controlling nursing costs, it would be difficult to use cost per patient assignment to develop a budget or to benchmark against other organizations. For a budget, these data would be very helpful in determining the appropriate budgeted HPPD if the data are linked to patient and staff outcomes, such as patient and staff satisfaction and re-admission rates. Showing that higher HPPD actually saves money in the current value-based purchasing environment would be a tremendous help to any nurse executive. Ultimately, however, the staffing level that provides the best outcomes needs to be averaged for an individual nursing unit to set a budget target. For benchmarking, the cost per patient assignment adds an additional element of complexity in comparing nurse staffing across hospitals. It is already complicated when we use HPPD because we have to make sure we are talking about direct hours, total hours, worked hours, or paid hours. Adding the average salary rate to those hours would make comparisons difficult due to differences in salary levels, overtime policies, use of agency staff, etc.

Developing a nursing budget is easy if you know the target HPPD and the targeted volume; it is a simple process of HPPD x volume divided by 2,080 to get the budgeted FTE. The hard part is determining the appropriate HPPD and developing staffing plans and monitoring mechanisms to achieve the budget. There are many considerations in determining the appropriate HPPD, including the acuity and dependency of patients, the work environment and support services, physician practice and ordering patterns, staff mix (RN vs. unlicensed staff), education and skill level of staff, length of stay, new technology or patient procedures, and changes in patient mix, just to name a few. Today, more than ever, we have technology that can help this process tremendously. The combination of automated patient acuity, staffing, and human resource systems provide a wealth of information for determining the budgeted HPPD and in making defensible requests for adjustments in HPPD.

What isn’t acceptable is using budgeted HPPD to develop staffing tables for how many nurses and assistive personnel should be working each shift based on the number of patients at the beginning of the shift without allowing adjustments. These types of tools are helpful as guidelines for achieving budget, and that is increasingly important given financial constraints, but judgment and forecasting are also required. Some units can have twice as many patients throughout the shift as they do at the beginning of the shift due to admissions, transfers, and discharges. Adjustments are also needed when acuity is particularly high or there are less-experienced nurses working. Linking patient acuity, ADT (admission, discharge and transfer) data, staffing, and employee information can be a tremendous asset to getting staffing right, and there are systems out there that can do that.

What About Outcomes?

No matter how much data we have about staffing levels, nurse education and skill levels, the environment of care, or patient acuity, the real key is determining the outcomes we need to compare staffing against. Aiken and others have done excellent work in linking nurse staffing and educational levels to mortality and failure to rescue (Aiken et al., 2010; Aiken et al., 2011). NDNQI links staffing, skill mix, and nursing education to patient falls/injury rates, hospital-acquired pressure ulcers, intravenous infiltration, ventilator-associated pneumonia rates, etc. (NDNQI, 2014), but we need more. We must quantify the savings associated with positive outcomes. We also need to get this information in the hands of the public so they can make informed decisions. NDNQI reports it is the only national nursing quality measurement program that enables organizations to compare measures of their nursing quality against national, regional, and state norms for hospitals of the same type down to the unit level (NDNQI, 2014). With over 2,000 hospitals nationwide participating in NDNQI, it is the largest provider of unit-level performance data to hospitals, but who is looking at it beyond nurses?

In an interview published in the November/December 2013 issue of Nursing Economic$ (Kerfoot & Douglas, 2013b), Dr. Linda Aiken said that if there were unlimited resources, one of her first priorities over the next 5 years would be longitudinal studies to examine the causal links between nursing and patient outcomes. Dr. Aiken went on to explain that business people don’t necessarily accept the conclusion that 20 years of research shows a strong association between better staffing and better outcomes, or whether better staffing and outcomes really contributes to the bottom line. For this reason, Dr. Aiken believes we need to move up from mostly cross-sectional studies into more rigorous longitudinal panel studies in hospitals and other institutions. One of the limiting factors, however, is that these types of studies are costly and we are in a difficult research funding climate.

The second factor Dr. Aiken believes is important is comparative effectiveness research on nursing delivery strategies (Kerfoot & Douglas, 2013b). That would allow organizations to better determine the biggest return on their investment, whether it is staffing, nursing education, improvements in the work environment, or investing in technology. But funding is an issue for this research as well. As Dr. Aiken indicated in another interview (Kerfoot & Douglas, 2013a), beyond the research there are other ways to get administrators and the public to pay attention to
the relationship between nurse staffing and outcomes. That is when it hits the bottom line, such as hospital penalties for excessive re-admissions or low patient satisfaction. The other is transparency for staffing levels and outcomes so that patients and staff can make more informed decisions on where they want to be treated or work.

REFERENCES