Challenged by rising costs, higher registered nurse vacancy rates and declining staff morale, a Nursing Productivity Committee was formed to analyze productive and nonproductive hours and seek improvements in our staffing models and scheduling processes. The changes implemented led to lower nurse to patient ratios, better control of labor costs, elimination of agency staff, greater staff satisfaction, and introduction of new technologies. Nurse managers, nursing supervisors, and frontline staff are now more knowledgeable and empowered to use creative solutions to manage their budgets and schedules in these times of fluctuating census and varying vacancy rates. (Critical Care Nurse. 2011;31[6]:55-65)

In 2002, a Nursing Productivity Committee (NPC) was established at our 640-bed, not-for-profit, Magnet-designated, level II trauma center, community hospital. The hospital has a comprehensive range of inpatient critical care and other services including intensive care, open heart surgery, trauma/neurology, intermediate care, telemetry, medical/surgical, level IIIb neonatal intensive care, pediatrics, oncology, and women and babies units.

Part of the NPC’s original charge was to manage staffing by using the concept of nursing care hours per patient day (HPPD). Our chief nursing officer introduced HPPD as a reliable metric to establish staffing plans and manage staffing prudently. This measure, developed by the American Nurses Association for the National Database of Nursing Quality Indicators (NDNQI),1 is a valid alternative to using an acuity system to manage staffing. Nursing care HPPD refers to the number of nursing care hours needed relative to the patient workload.1 The cost to deliver nursing care has been steadily increasing. For example, the average labor cost per patient day in our intensive care unit (ICU) in fiscal year 2002 was $473; in fiscal year 2009, it was $680.

Our HPPD values are derived from hospital direct care hours and census data, individualized to each nursing unit. Workload demands and expectations vary within clinical
settings; more hours are required for a critical care unit than for a medical/surgical unit. As workload demands increase, nurse-to-patient ratios must decrease.

At the time of the committee’s inception, nursing leaders faced enormous challenges because of the diminishing number of skilled nursing staff available during a critical national nursing shortage. We were also experiencing record growth in our inpatient and outpatient census. Existing critical care units were being expanded to meet demand, and additional telemetry units were being opened. Change was constant.

Along with the need to staff to target HPPD, many initiatives were implemented to achieve improvements in throughput of patients and to address workload concerns. As recommended by the Advisory Board, these initiatives included designation of a patient flow coordinator solely to manage bed placement at all times, the establishment of a target discharge time of 1 PM, aggregation of patients by physician group/specialty, and inauguration of morning “bed” census meetings. These meetings are attended by the acute care managers to review actual and projected patient census and staffing for the next 24 hours.

At that time, staff were markedly dissatisfied with our nurse-to-patient ratios, high workload, constantly changing agency staff, and high staff vacancy rate. In 2002, the vacancy rate was close to 20% for the nursing department as a whole, peaking at 25% in 2007, and turnover was high. In fiscal year 2007, vacancy rates for critical care increased to as high as 35%. Internal turnover was also a challenge because our highly skilled nurses were transferring to the expanding procedure and perioperative areas, which offered a better work-life balance. Nurse-to-patient ratios were often 1 to 8 on the night shift in the medical/surgical and telemetry units and 1 to 3 in the critical care areas.

We were relying on expensive agency personnel for both per diem and contracted traveler support. Not only was there a dollar cost from escalating use of agency personnel, but turnover and retraining were taking a significant toll on the staff and nurse managers.

Ensuring appropriate staffing is a key element within the American Association of Critical-Care Nurses’ standards for healthy work environments. Essential to those standards is a process “to evaluate the effects of staffing decisions on patient and system outcomes” and “facilitate team members’ use of staffing and outcomes data to develop and implement effective staffing models.”

Inadequate staffing ratios can result in adverse outcomes for patients.

As an organization, we needed to stabilize our workforce, reduce our vacancy rate, and increase staff satisfaction so that we could achieve a healthier work environment for our staff and a safer environment for our patients. As a committee, we were tasked with supporting the management team in achieving those objectives. By using HPPD as our productivity measure to improve staffing, we hoped to be able to manage more effectively, address our increasing costs for agency.
personnel and staff turnover, and benchmark our data to the NDNQI.1,2

In this article, we describe the composition of our committee, its goals, calculations of HPPD, the supporting technologies necessary to achieve our goals, and the process to eliminate use of agency personnel and enhance employee satisfaction. Where applicable, examples from the ICU are used to support the discussion topics; however, we emphasize that the issues experienced in the critical care areas were common throughout the nursing department.

Committee Structure and Goals

The NPC is made up of nurse managers representing our free-standing Women and Babies Hospital, medical/surgical units, telemetry units, ICU, and the emergency department. Chaired by the assistant director of staffing, the committee also includes the nursing informatics analyst, the nursing department data analyst, and an administrative nursing supervisor. Our data analyst is skilled at data and file management and is an essential member of the NPC. She calculates nurse to patient ratios and creates spreadsheets to compare a variety of metrics that the committee is charged with monitoring (eg, HPPD). Initially, the NPC’s main goal was to educate and ensure all nurse managers had a comprehensive understanding of staffing calculations. It was also necessary to establish a common language (Table 1).

The primary focus was on our registered nurses (RNs), but support staff issues were addressed as needed. For purposes of HPPD calculation only, licensed practical nurses (LPNs) are considered equivalent to RNs. The few LPN positions remaining in noncritical care units are being converted to RNs by attrition. The role of the 1 LPN remaining on a telemetry unit is being redesigned to act as a support to the RNs on the day shift. Our RN/LPN skill mix has increased from 94% RNs and 6% LPNs in fiscal year 2007, to 96% RNs and 4% LPNs in fiscal year 2009. To facilitate transition to RN status, we have initiated an LPN-RN scholarship program.

Overall, our goals for the committee were as follows:

1. Review/revise staffing formulas for budgeted full-time equivalent (FTE) requirements
2. Understand HPPD, productive and nonproductive hours, how the standards are determined, and how variances occur
3. Establish standards for productive and nonproductive time
4. Discuss staffing strategies to reach target HPPD on all nursing units
5. Analyze computerized staffing reports to ensure accuracy and to determine opportunities for improvement
6. Collaborate with nursing councils to address staff morale relating to turnover and workload
7. Seek opportunities to make cost savings without adversely affecting patient care

As “business managers” of their respective nursing units, it is imperative that all nurse managers have an in-depth understanding of what constitutes productive vs nonproductive time and be able to defend their staffing decisions. They needed to be able to evaluate staffing metric reports and justify HPPD variances, for both professional and nonprofessional staff, and understand the steps necessary to correct those variances to bring costs back in alignment. Nurse managers needed to continually educate and reinforce these concepts and expectations at the staff level.

Administrative nursing shift supervisors (ANSs) are essential to

Table 1 Definitions and relevant terms

<table>
<thead>
<tr>
<th>Unit</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productive hours</td>
<td>Number of hours worked providing direct patient care</td>
</tr>
<tr>
<td>Nonproductive hours</td>
<td>Number of hours worked not providing direct patient care (ie, meetings, education, shared governance activities)</td>
</tr>
<tr>
<td>Hours per patient day (HPPD)</td>
<td>Number of productive hours ÷ number of patient days</td>
</tr>
<tr>
<td>Professional staff</td>
<td>Registered nurses and licensed practical nurses (no management)</td>
</tr>
<tr>
<td>Support staff</td>
<td>Patient care assistants</td>
</tr>
<tr>
<td>Supplemental staff</td>
<td>Staffing float pool that comprises registered nurses, licensed practical nurses, patient care assistants, and unit clerks (secretaries) who work where the need is</td>
</tr>
<tr>
<td>Agency</td>
<td>Contracted employees</td>
</tr>
<tr>
<td>Sitters</td>
<td>Patient care assistants who are assigned to 1 patient for direct observation</td>
</tr>
<tr>
<td>Census</td>
<td>Number of inpatients and outpatients occupying a bed</td>
</tr>
<tr>
<td>Patient days</td>
<td>Calculated by taking the average of 3 census snapshots each day at 4 AM, noon, and 8 PM</td>
</tr>
</tbody>
</table>
providing input to the committee and supporting nurse managers and unit staff nurses to make appropriate and cost-effective staffing decisions. The ANSs assist and support the nurse managers in maintaining their unit’s nurse to patient ratios, adjusting staffing on the basis of the HPPD appropriate for a given census, and distributing supplemental staff according to calculated vacancy rates. Special emphasis is placed on using our “voluntary pull” policy for professional staff to maximize the use of scheduled staff, maintain our target HPPD requirements, eliminate overtime, and maintain staff satisfaction. The NPC developed a professional nurse staffing algorithm and a critical staffing algorithm (Figures 1 and 2) to provide guidance to the ANS in ensuring consistent guidelines to meet core staffing needs.

**Figure 1** Professional nurse staffing algorithm.
Abbreviations: ANS, administrative nursing supervisor; designee, person covering in nurse manager’s absence; NM, nurse manager.
Hours Per Patient Day

In industry, productivity is a measure of how much an employee produces for each hour worked. In health care, employees work a variety of shift lengths, only some of which are spent providing direct patient care. It is those direct care hours that equate to our HPPD measure. On a yearly basis, to ensure we are correctly projecting the staff needed, we calculate the required FTEs from the annual budgeted patient days and target HPPD (Table 2). Actual productive HPPD, on the other hand, is calculated by taking the total hours spent providing direct patient care each month and dividing it by the actual patient days (see Table 3 for ICU example).

It is important to distinguish nonproductive, indirect hours from nonproductive, nonworked hours. Nonworked time includes paid time off for vacation, holidays, and sick time. Nonproductive, indirect hours refer to the hours devoted to shared governance (professional practice) activities, meetings, orientation, and education. The nonproductive factor of 20% used in Table 2 is a combination of nonproductive, indirect and nonproductive, nonworked hours. Based on 6 months of historical data, standards for monthly professional nonproductive, indirect hours were established for the inpatient units by the committee. A factor of 10% exclusively was allocated for shared governance, meetings, and education. These hours are monitored closely by the
committee for unit compliance and variances (Table 4).

HPPD targets were established after the rollout of our computerized scheduling system. It became critical that employees’ time be correctly coded in this system, either as productive or nonproductive, to support direct patient care needs, defend our requests for more staff, and ensure adequate time for shared governance activities. Initially, HPPD concepts were challenging for many committee members to understand. The education and rollout took nearly a year as we examined reports and then correlated HPPD to staffing patterns and patient days. Over the years, we have revised those standards to reflect the changing volumes and health care environment.

Tables 5 and 6 list HPPD targets for professional and nonprofessional staff within the whole nursing department and the applicable nurse to patient ratios.

Once NPC members felt comfortable articulating HPPD and productive vs nonproductive time, the information was cascaded to the rest of the nursing management team through workshops led by the chief nursing officer and committee members. A key accountability for each NPC member was to mentor and educate other inpatient nurse managers in their respective service lines to understand their HPPD and productive and nonproductive reports and achieve compliance.

Each of these nurse managers was mentored in building a staffing plan, ensuring accurate coding of nonproductive time within the payroll system, reviewing monthly

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### Table 2 Calculating budgeted registered nurse (RN) full-time-equivalent (FTE) requirement for the intensive care unit

<table>
<thead>
<tr>
<th>Annual budgeted patient days in fiscal year 2009</th>
<th>Target RN hours per patient day (HPPD)</th>
<th>Productive hours required per year (productive hours required per year × annual hours per FTE)</th>
<th>Nonproductive FTE (productive FTE × 20% nonproductive factor)</th>
<th>Annual budgeted RN FTEs (productive HPPD + nonproductive HPPD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9579</td>
<td>15</td>
<td>143685</td>
<td>69</td>
<td>13.8</td>
</tr>
</tbody>
</table>

*Total productive hours required per year are calculated by multiplying budgeted annual patient days times budgeted HPPD. To determine FTE, productive hours are divided by annual hours per FTE, that is, 2080 per year. This generates the budgeted FTE for direct productive hours.

### Table 3 Calculating monthly actual productive registered nurse (RN) hours per patient day (HPPD) for the intensive care unit

<table>
<thead>
<tr>
<th>Actual RN productive hours worked</th>
<th>Actual patient days</th>
<th>Actual productive HPPD (productive hours worked ÷ patient days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12110</td>
<td>812.2</td>
<td>14.9</td>
</tr>
</tbody>
</table>

*Actual productive HPPD are calculated by taking the total hours providing direct patient care monthly and dividing it by the actual patient days.

### Table 4 Year-end nonproductive full-time equivalents (FTEs) for the intensive care unit

<table>
<thead>
<tr>
<th>Education</th>
<th>Meeting</th>
<th>Total</th>
<th>10% Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>3.4</td>
<td>5.7</td>
<td>8.0</td>
</tr>
</tbody>
</table>

*A 10% target for indirect worked time is incorporated into the overall 20% allocation for nonproductive time for registered nurses. This table shows a significant variance between target and actual indirect FTEs (target, 8.0 FTEs; actual, 5.7 FTEs).

### Table 5 Current target for hours per patient day (HPPD) in the inpatient nursing areas

<table>
<thead>
<tr>
<th>Unit</th>
<th>HPPD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional</td>
</tr>
<tr>
<td>Medical/surgical and telemetrya</td>
<td>6</td>
</tr>
<tr>
<td>Intermediate care</td>
<td>9</td>
</tr>
<tr>
<td>Critical care</td>
<td>15</td>
</tr>
<tr>
<td>Pediatric medical/surgicalb</td>
<td>8</td>
</tr>
<tr>
<td>Neonatal intensive care</td>
<td>10.5</td>
</tr>
</tbody>
</table>

*Licensed practical nurses are counted in professional HPPD calculations for the medical/surgical and telemetry units.

*b Patient care assistants in the neonatal intensive care unit do not provide direct patient care and thus are not included in HPPD calculations for that unit.
Typically, reports for target HPPD vs actual HPPD, monitoring vacancy rates, and maintaining their average nurse to patient ratios (Tables 5 and 6). NPC mentors helped the nurse managers understand the impact of overtime on higher HPPD values and the implications of cost overruns.

The committee’s next step was to focus on engaging unit staff nurse representatives serving on our hospital-wide recruitment, retention, and staffing council. Nurses at the point of care were educated on the relationship between HPPD and staffing ratios. This strategy markedly enhanced communication and partnership between the nurse manager and council representatives. Unit shift facilitators now have a greater sense of accountability for achieving HPPD targets.

### Addressing ICU HPPD Variances

Our ICU, like many critical care areas, has several challenges with respect to HPPD. Critical care units often have fluctuating HPPD because of the changing workload and census. As a result of throughput issues resulting from our greatly increased volumes, the ICU is often caring for patients awaiting transfer to telemetry or medical/surgical units. Medical/surgical or telemetry patients require only 6 HPPD, equating to a nurse to patient ratio of 1 to 4. However, the ICU cannot routinely staff to those decreased ratios because emergency admissions routinely occur, requiring an immediate shift to lower ratios. The critical care areas also participate on code blue and rapid response teams, requiring further resources not reflected in the HPPD.

In fiscal year 2008, the ICU professional nurse HPPD target was increased from 14 to 15 hours per day. This increase was to better provide for a nurse to patient ratio of 1 to 1 when the acuity of the patient warranted. The desired nurse to patient ratio is 1 to 2 in critical care units. During this time frame, however, the ICU was facing a 33% vacancy rate and agency personnel were being eliminated. A concerted effort had to be made to ensure that retention of new hires was sufficient to meet the escalating need for ICU beds, given that the average cost to replace a professional nurse is $64,000.²

Subsequently, we hired a large number of new graduate nurses. Orientees all receive a 16-week orientation, during which time they are not included in the HPPD. When new graduates complete orientation, their “productivity” calculation is no different from that for an experienced RN. However, to ensure safe patient care, the ICU nurse managers must constantly evaluate the skill level of professional staff on each shift and adjust the staffing mix on the basis of the level of RN experience. Still, with so many new graduates coming off orientation in the ICU at the same time, the nurse manager needed to develop a strategy to support them. The nurse manager solicited ideas from the NPC. On the basis of the committee’s suggestions, the nurse manager instituted a staff nurse mentor program for the off shifts because those shifts had the heaviest percentage of new graduates. The role of the mentor was to support the new nurses’ critical thinking and assist them with becoming competent in unfamiliar procedures. Mentors’ hours were included in their HPPD calculation. In addition, the manager increased the target HPPD for patient care assistants to provide more “hands-on” care. Additional supplemental staff were allocated as much as possible. These measures have been effective in reducing the ICU staff turnover rate to about 5%, markedly enhancing staff satisfaction, limiting overtime, reducing ratios, and stabilizing the HPPD fluctuations (Figure 3).

### Supporting Technologies

Automation enhances one’s ability to manage the workforce and make more informed and cost-effective decisions.² Technology has been integral in supporting our committee’s goals to understand productive and nonproductive hours and financial data, introduce innovation and efficiencies, make effective and informed decisions, and monitor results.

The committee analyzes productivity reports from an automated

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<table>
<thead>
<tr>
<th>Target HPPD</th>
<th>Nurse to patient ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.0</td>
<td>1.1</td>
</tr>
<tr>
<td>12.0</td>
<td>1.2</td>
</tr>
<tr>
<td>8.0</td>
<td>1.3</td>
</tr>
<tr>
<td>6.0</td>
<td>1.4</td>
</tr>
<tr>
<td>4.8</td>
<td>1.5</td>
</tr>
<tr>
<td>4.0</td>
<td>1.6</td>
</tr>
<tr>
<td>3.4</td>
<td>1.7</td>
</tr>
<tr>
<td>3.0</td>
<td>1.8</td>
</tr>
<tr>
<td>2.7</td>
<td>1.9</td>
</tr>
<tr>
<td>2.4</td>
<td>1.10</td>
</tr>
<tr>
<td>2.2</td>
<td>1.11</td>
</tr>
<tr>
<td>2.0</td>
<td>1.12</td>
</tr>
</tbody>
</table>
staffing and scheduling system and counsels managers to rein in shift-overlap overtime when it occurs, because it drives up the HPPD. When we sought to change our organization’s reliance on agency personnel, we turned to an open shift management, Web-based software, accessible at work or at home, to empower nursing staff to seek additional shifts. Communication and information sharing were facilitated by electronic mail and personal productivity software. Today’s environment requires nurses at all levels to understand the workload as well as the monetary effects of their staffing decisions.9

Specific technology solutions used by the NPC included

1. McKesson’s One-Staff—Staffing, Scheduling and Productivity Reporting (McKesson, San Francisco, California)

2. Concerro’s Open Shift Management System: BidShift (Concerro, San Diego, California)

3. Microsoft Office, electronic mail, and shared network drives (Microsoft, Redmond, Washington)

OneStaff is used to report HPPD. Time and attendance data are imported into OneStaff every 2 weeks, and census snapshots taken at 4 AM, noon, and 8 PM are uploaded daily. Routine monitoring of reports by the NPC showed spikes in HPPD after a new time and attendance system was implemented. We discovered that a significant contributor was overlap between the early shift and the late shift because of implementation of new pay rules.

More recently, we have focused on a subset of overtime caused by employees who consistently do not take a lunch break. We asked the nursing management council to take ownership of this issue, in conjunction with the recruitment, retention, and staffing council, because not taking a lunch break not only increases costs but also affects work-life balance and can influence employee satisfaction and retention. We have seen a 46% decrease in “no lunch” breaks in fiscal year 2009 when compared with fiscal year 2008. This decrease equates to a savings of approximately $140 000.

Nursing care hours are expensive. A critical factor in achieving cost reduction is to flex staffing to changing volumes. Having the historical data to support these decisions is essential. Flexing of staff, however, must always be influenced by both the current census and the skill mix.25 Nonproductive time is also monitored to ensure that units do not exceed targets. Analysis by the committee revealed some dependence from the supplemental staffing pool to meet shared governance time on selected inpatient units. Managers were reeducated on procedures for coding nonproductive time accurately in the time and attendance system and were reminded to manage nonproductive staffing needs within their own department as much as possible. In reviewing productive and nonproductive time across the week, we recognized an imbalance in staffing patterns on many units. Now, managers are striving to “smooth” out their shift schedules to address this issue.

In April 2005, our hospital was the first in the state to implement the open shift bidding management software. We branded the system internally as Shift +. It is a Web-based program that allows nursing staff to view and request to work 4- or 8-hour open shifts for which they are qualified. The system offers staff flexibility, convenience, and the potential to explore new territory within the hospital. While it is designed to allow eBay-like reverse bidding and monetary shift incentives, we elected to bypass those features and simply post open shifts. For those units that require on-call, the system can also be used to post these shifts. Overall, Shift + has proven to be a real time-saver and has yielded cost savings for staff and managers.
who no longer need to spend hours trying to get shift coverage.

One of the unexpected challenges we faced late in fall 2008 was census lulls, even in critical care after the additional need to cover code blues, rapid response team calls, and unpredicted acuity levels was factored in. Supplemental staff employees were being routinely canceled. Here, the ANS played a pivotal role in the constant flexing of staff every 4 hours to meet house-wide demands. In response to this new challenge, the committee modified the sign-up process in Shift +, implementing staged shift postings as an alternative. Instead of posting 4 weeks of open shifts (corresponding to a schedule cycle), with no regard for the available supplemental pool, managers now post openings 2 weeks at a time after supplemental staff has been assigned. This made fiscal as well as operational sense and added to staff satisfaction.

In analyzing their clients’ shift-bidding characteristics, our vendor has noted an interesting trend nationwide. That trend is toward more “self-directed floating” or staff choosing to work shifts off their home unit.

Floating was not part of the goal of the study, but surfaced as a positive, unintended consequence of implementing a flexible approach to staffing supported by Web-based technology.10

Douglas et al10 report that nationwide RNs are floating off their units around 25% of the time and non-RNs around 40% of the time. At our hospital, we have seen percentages for RNs at about 12% and 65% for patient care assistants. We feel our lower RN percentage is attributable to our culture in which professional staff still prefer filling needs on their home units. Additionally, we have a supplemental pool of RNs, of whom 33% pick up additional shifts. Our high percentage of patient care assistants using self-directed floating is partly attributable to the attractiveness of sitter shifts.

Agency Elimination

In May 2007, the nursing management team made a critical decision to eliminate contracted agency staff. The NPC was charged with assisting the nurse managers in achieving their goal. We were paying premium dollars and our costs had increased to approximately $600,000 per month. The agency personnel included professionals and nonprofessionals, the latter functioning as sitters to patients at high-risk for falling, but whose contract prohibited them from providing patient care. Not only were agency personnel expensive, but many times they did not meet our standards of performance or embrace our nursing philosophy and commitment to excellence. This contributed to a high turnover of contracted personnel, and high stress levels for staff and nurse managers alike.

Our initial focus was the elimination of agency sitters throughout our organization. On average, we were contracting for 4 to 6 persons a shift, at approximately $100,000 a month, and the ANS were spending an inordinate amount of time seeking personnel from local staffing agencies. Sitter use in the ICU is limited because of the nurse to patient ratios but still averages 107 hours per month, equivalent to 0.6 FTE of patient care assistants. Upon review, the committee determined that no standard process was being used to determine the actual need for a sitter. Therefore, a sitter justification and allocation process was devised within the committee for use by the nurse managers, ANSs, and staff nurses. With elimination of agency sitters in October 2007, our patient care assistants readily embraced Shift + by picking up sitter shifts, knowing they were expected to also provide direct patient care.

The NPC heatedly debated the pros and cons of eliminating professional agency staff, including potentially increasing the nurse to patient ratios for the short term, and increasing workload and overtime, but universally agreed that the benefits outweighed the risks. The NPC had previously developed a process whereby RN agency personnel could be approved only if a requesting unit’s staff vacancy rate was 25% or greater. Calculated vacancy rates, for purposes of justifying additional staff on a given unit, include true vacancies as well as staff on orientation or leave of absence.

Elimination of agency personnel was an aggressive goal that required collaboration and cooperation among the whole nursing management team as some individual units were hovering with vacancy rates at 50% or greater. The tenure of all existing agency nursing staff was scrutinized. Some individuals had been working solely for our organization for more than 2 years. The agency personnel were then informed that they could contract
for a maximum of 26 weeks, but then needed to leave permanently. Guidelines were established by the committee to assign supplemental pool nurses to units on the basis of vacancy rates, that is, those units with the highest vacancy rates were assigned supplemental staff first, before the units with lower vacancy rates. This guideline was also followed at the daily census meeting when unexpected or long-standing staffing “holes” prevailed. By March 2009, all remaining professional agency contracts had been completed. We did hire several nurses who were willing to relocate permanently or who already lived in the area and whom we had found to be superior nurses.

Employee Satisfaction

Letvak and Buck examined factors that influence workload and productivity and the intent of staff RNs to remain in the nursing field. They found that reducing high nurse to patient ratios reduces stress and improves the quality of patient care provided. Nursing outcomes correlate directly with patients’ outcomes, whether because of low morale, turnover, or short staffing. These problems can translate into reduced satisfaction among patients and poorer outcomes for patients.

Having adequate staffing is also 1 of the key elements important to nurses in Magnet hospitals. Since 2006, when staff vacancy rates were at their peak, we have successfully improved our ratios by reducing our overall vacancy rate. Currently, our ICU and many of our other nursing units have no staff vacancies.

Employee satisfaction is measured by an annual employee opinion survey administered by MSA HR Capital (MSA HR Capital, written communication, 2009). We have seen a steady increase in staff satisfaction overall in the past few years. Specific questions from the survey were analyzed to determine staff morale in the ICU in relation to job satisfaction (Table 7). All the items exceed the national norm for comparable ICUs. The results for “leaving work satisfied” are equivalent to best practice.

“Contributing to the extraordinary experience” was a new question this year and reflects the pride all our staff have in their organization and in the awards they receive for excellence in clinical care and safety. Ours is a Top 100 Hospital (Thompson Reuters) and Top 50 Hospital (Health Grades). The hospital has received the Health Grades award for the past 5 years for patient safety excellence and has disease-specific certification from the Joint Commission for stroke, myocardial infarction, and congestive heart failure and for patients with ventricular assist devices.

Conclusion

Nurse managers in critical care units face unique challenges because of the high acuity of their patients, variety and complexity of equipment, need to respond to rapidly changing patient situations both within their departments and house-wide (code blues and rapid response team calls), and the need to ensure a continually appropriate skill mix to manage these complex patients.

Critical care nurse managers share many similarities with the rest of the in-patient management team, however, including recruiting and retaining competent and satisfied staff, adjusting staffing in response to fluctuations in census and acuity, reducing agency use, understanding target vs actual HPPD and nonproductive time and defending variances, and having to analyze and understand their data. Whether in critical care or general medical/surgical areas, ensuring that appropriate staffing levels are in place and HPPD goals are achieved to meet the needs of

<table>
<thead>
<tr>
<th>Survey question</th>
<th>Ratinga</th>
<th>Ratingb</th>
<th>National mean, 2009c</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would recommend organization as a great place to work</td>
<td>5.1</td>
<td>5.3</td>
<td>4.9</td>
</tr>
<tr>
<td>I am proud to work for this organization</td>
<td>5.0</td>
<td>5.2</td>
<td>4.0</td>
</tr>
<tr>
<td>I leave work with a feeling of satisfaction</td>
<td>4.6</td>
<td>4.9</td>
<td>4.5</td>
</tr>
<tr>
<td>I contribute to the extraordinary experience</td>
<td>—c</td>
<td>5.3</td>
<td>4.9</td>
</tr>
</tbody>
</table>

*a Rating on a scale of 1 (least satisfied) to 6 (most satisfied). (MSA HR Capital,13)
*b National mean comparison is with like intensive care units across the country.
*c The annual survey was revised in 2008; therefore, previous comparative data are unavailable.

our patients requires daily monitoring and collaboration between nursing supervisors, nurse managers, and staff.

The NPC can be a valuable and complementary support to nursing departments challenged with cost overruns, staffing imbalances, and low morale. We believe that we have been able to foster a collaborative relationship between nursing units and the nursing leadership team and introduce innovative solutions and supportive technologies. With their increased understanding of HPPD calculations, the nurses have felt empowered to make better business decisions. This collaborative environment has gone a long way to achieving our goal of providing more cost-effective care in this time of economic volatility while continuing to aspire to our vision to provide an extraordinary experience for our patients. With the stabilization in our RN vacancy rate, we are now beginning to adjust our target HPPD for patient care assistants to be within industry standards.

Financial Disclosures
None reported.

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Using a Nursing Productivity Committee to Achieve Cost Savings and Improve Staffing Levels and Staff Satisfaction
Erin McKenna, Kristina Clement, Elizabeth Thompson, Kathy Haas, William Weber, Michelle Wallace, Cindy Stauffer, Jan Frailey, Aimee Anderson, Missy Deascenti, Lisa Hershiser and Patricia Inama Roda

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