AMERICAN HEALTH CONSULTANTS®

Critical Care MANAGEMENT™

The essential monthly resource for critical care and intensive care managers and administration

INSIDE

FEBRUARY 1999

VOL. 3, NO. 2 (pages 13-24)

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Closer look at resource management can solve your nurse staffing issues

Extra nurses alone won't help if other factors aren't working too

Most nurse managers would love to say the biggest concern in the ICU is reducing nurse overstaffing. The sad fact is most units are struggling just to find and keep good nurses, says **Kathy Arnold**, RN, MS, nurse-manager of adult critical care at Swedish American Health System in Rockford, IL. If a facility has recurrent overstaffing, management isn't scheduling correctly, or the unit has no patients, Arnold muses.

Staffing-related problems appear to be widespread in critical care. Managers find themselves wrestling daily with patient census and acuity while trying to make adequate staffing assignments. Most appear to be losing the battle.

It's a battle that can be won, says **Justine Medina**, RN, MS, a clinical practice specialist with the American Association of Critical Care Nurses (AACCN) in Aliso Viejo, CA.

"People are coming up with solutions," she says. "But they aren't using terms like staffing" to describe their problems. They're quite correctly looking at other factors that may be at issue. "The solution isn't always extra staffing," Medina says.

Yet everyone agrees staffing problems at many hospitals are quite

EXECUTIVE SUMMARY

Reorganizing your CCU to improve performance calls for more than meeting adequate staffing levels. Factors such as productivity, communication, and cooperation between nurses and physicians require management's support.

- Most nurse managers incorrectly believe additional nurse staffing alone will solve their problems.
- Staffing levels are closely linked to how CCU nurses are treated in terms of tasks, patient acuity, shift assignments, and other job-related factors.
- The best-performing hospitals have specific characteristics in common, including decentralized nurse decision-making and respect for nurses.

bad, and are likely to get worse. In the next decade, according to projections, hospitals will need many more critical care nurses. Aging baby boomers and higher inpatient acuity levels are going to strain the existing nurse supply. Both factors are a function of managed care.

Meanwhile, hospital financial departments are pressuring CCUs to cut back and meet tough financial targets with fewer resources.

Recent efforts to reorganize CCUs have centered on maximizing existing nurse resources — making do with the same amount or less. **(For a report of how one hospital restructured to maximize existing resources, see article, p. 15.)** However, a growing body of experts finds fault with the way many nursing administrators are assessing their shortage problems.

Many don't know what their problems are, yet they tend to blame staffing shortages when the underlying problems may be something else, Medina says. It may not be an actual shortage, but a problem of properly assigning staff each week or distributing patient assignments under fluctuating census and acuity.

Conventional formulas for optimum staffing such as nurse-to-patient ratios or budgeted hours are artificial measures. They fail to reflect what is actually going on with patients in the ICU at a given time, Medina adds.

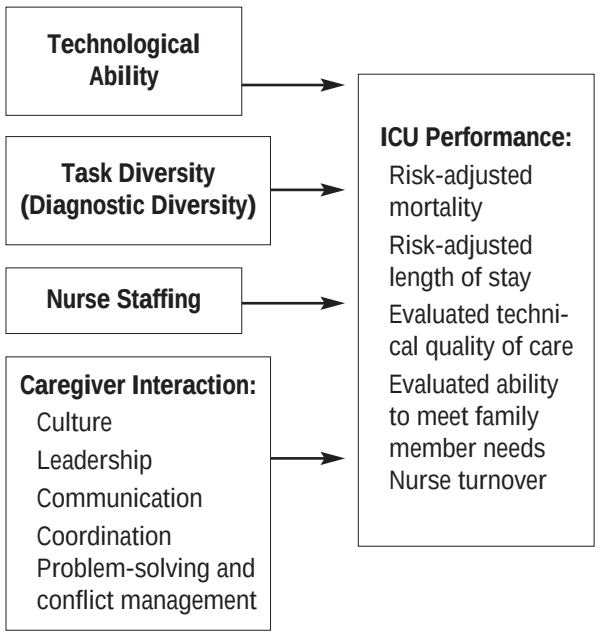
"Staffing is important, but it's only one of several factors that contribute to a well-run ICU," observes **Joanne R. Duffy**, DNSc, CCRN, president of AdviCare, a Burke, VA, health care consulting firm.

In reorganizing your unit, managers should step back and evaluate a series of factors that holistically might be hurting performance, rather than focus solely on nurse shortages. Here's what some experts suggest:

• **Evaluate the unit as a whole, not just the staffing.**

The best-performing ICUs are those operating from a set of factors that together influence overall performance, Duffy says. These factors include: Task diversity (the types and volume of different tasks required of each nurse) and nurse staffing (the usual number of nurses assigned to each patient or group of patients and their work schedules). Technological availability (the types and quality of equipment used by nurses) also plays a role, as does the level of caregiver interaction (elements such as leadership, communication with other clinicians, coordination of care, and problem-solving attributes). **(See chart, right.)**

ICU Performance and Diversity



Source: Shortell SM, Zimmerman JE, Rouseau DM, et al. The performance of intensive care units: Does good management make a difference? *Med Care* 1994; 32:511.

• **Evaluate each of these factors individually and in combination.**

For example, most nurses know the importance of patient acuity as a determinant of staffing levels. The more sick patients you have, the greater the need for additional nurses. The number of tasks given to each nurse and their complexity during an eight-hour shift also can make a difference in your coverage.

"Is the nurse expected to do bedside testing? Or is the lab work sent out? Are they expected to work the entire shift alone with the most difficult patients, or are two nurses usually assigned these tasks? These differences don't only influence the ICU's overall performance over time, they affect patient outcomes, morbidity, and lengths of stay significantly, Duffy observes.[1]

• **Do your homework.**

Evaluate your existing resource management, Medina advises. Ask yourself: What are my staffing levels standards? Have I done competency evaluations on all my nurses? Can I confidently assign appropriate people to patients based on this knowledge? Have I defined my productivity parameters? Do I know what they

(Continued on page 16)

Hospital reorganizes ICU to attract nursing talent

New ICU, care teams increase nursing strength

Last spring, officials at 379-bed Suburban Hospital in Bethesda, MD, opened a 24-bed ICU in hopes of enticing nursing talent to the community hospital. At a cost of $3.5 million, the unit was transformed from an aging, outmoded ICU to a new, state-of-the-art service. Recruiting talented nurses who were excited about working at Suburban was only part of the plan. For division director **Lynne Bill**, RN, MS, the effort played a big part.

"Our nursing complement remained unchanged. But we've focused on a truly multidisciplinary quality-approach to nursing," says Bill, an 18-year veteran of acute care nursing.

With a new facility, management hoped patient-care quality would climb, and getting skilled nurses to buy into the unit's restructuring was extremely important.

Most institutions aren't fortunate enough to rebuild their ICUs from the bottom up. In Suburban's case, it didn't hurt. The unit hasn't solved its nurse shortage problems yet, but it's confident it has taken the first steps. The effort represents a unique example of how one hospital went to extremes to restructure its ICU in the face of increasing patient demand and intense market competition.

Attracting good nurses has been a priority

What emerged wasn't just a new physical plant, but according to hospital officials, a new way to treat patients.

"Hospitals everywhere boast about care management teams and interdisciplinary approaches. We actually did something about it," says **Thomas Rainey**, MD, Suburban's director of critical care.

For the first time in the hospital's more than 50-year history, Rainey and the nursing staff introduced board-certified physician intensivists 24 hours a day. They also formed a tightly knit corps of clinicians to be directly responsible for each patient's progress while in the ICU.

The team consists of the intensivist, a bedside nurse, a respiratory technician, a patient-care technician, a pharmacologist, a nutritionist, and a member of the unit's ethics committee. All but one conduct morning rounds. (The ethics committee member is available as needed.) The group also includes an advanced practice nurse and administrative support staff.

Much of the battle in nursing has focused on attracting and retaining good talent, observes **Sharon M. Tanner**, Suburban's executive vice president and chief operating officer. "In terms of attracting good nurses, we're having the same problems as any other hospital."

To maximize nurse effectiveness and blunt the effects of nurse shortages, designers of the new ICU built a step-down unit adjacent to the ICU. This was an added innovation, Rainey says.

The geographic closeness of the step-down allows nurses to work efficiently between both units and reduces the effects of staffing shortages.

It also offers patients a "truly seamless continuum of care," which has started to improve lengths of stay, observes Rainey, who also serves as president of CriticalMed, a Bethesda-based consulting firm that advises hospitals on repositioning their CCUs. In an era of nurse scarcity, it made sense to make the work easier for staff and patients, he adds.

The reorganization appears to be working. According to initial results, unofficial data show patient weaning days on mechanical ventilators dropped by about 30% since the spring, Rainey says.

Average length of stay in the ICU also is falling (Rainey is unsure about the exact amount) thanks in part to the "contiguous level of care" between the ICU and step-down unit.

Yes, the program is working despite expected difficulties, observes Bill. A nagging problem is still keeping nurse staffing at optimum levels on all shifts.

The current ratios haven't changed, Bill says. It's still one nurse to two patients in the ICU and 1:3 in the step-down. Management is working hard to keep those numbers in each category level.

Applicants for the unit are taken on a tour of the facility. The unit is spacious and sunlit, the floor space wide with large aisles. The private patient rooms have breakaway doors and new monitoring equipment at each bedside. A large family lounge resembles a hotel lobby. Everything is designed to make the nurse's job easier.

Financially, the change hasn't produced a windfall, but that wasn't the goal, Tanner says. Revenue has risen slightly (as a result of going from 18 to 24 beds.)

The unit contributes about 4.6% of the hospital's total patient revenue. Fifty percent of patients are on Medicare, and earnings haven't risen either. Costs have eaten up potential net income from the additional beds.

"There's been no bottom-line impact in doing this, but then we didn't expect any. This has been a quality of care and customer service issue all along. Everyone is pleased with our progress so far," she concludes. ■

are? How much or little do my nurses work on a typical day?

Tools to help managers include software programs and research literature. Many managers complain these resources "don't work, or aren't right for me, or require too much paperwork," says Medina, who says she fielded dozens of similar nurse manager calls.

• **Create a growth environment for nurses.**

In the last decade, research has supported claims for giving nurses greater independence in the ICU.

"A decentralized decision-making environment that gives nurses more control over resources contributes to lower burnout and significantly affects workplace errors," says **Eileen Lake**, RN, MSN, a research associate with the Center for Health Outcomes and Policy Research at the University of Pennsylvania School of Nursing in Philadelphia.

"It always comes down to how well do your nurses know their patients, and are you doing the right thing?"

In the early 1990s, the center conducted a comparison study of hospitals designated as magnet institutions by the American Nurses Association in Washington, DC, with 200 non-magnet facilities. The following characteristics ranked high at magnet facilities:

1) decentralized nurse decision-making,

2) strong positive collaboration between nurses and physicians,

3) a high regard for nurses throughout the institution, and

4) adequacy of resources, including enough RNs to allow for consults, and strong support from non-nursing personnel. *[Editor's note: The decentralized decision-making findings came from related studies.]*

• **Separate your actual staffing needs from other priorities such as financial targets.**

With the frustration of staffing a busy ICU, nurse administrators can easily forget that staffing levels should be based on patient need and not external mandates that include reaching financial targets.

"Many managers don't have a way to systematically review their patients' acuity levels," says the AACN's Medina. One reason is they are placed in a difficult position of staffing for two conflicting purposes: To provide adequate patient coverage and meet financial objectives.

With planning, managers can strike a balance, Medina says. If, for example, a 10-bed ICU has a 70% occupancy on Wednesday and three of those patients are due for discharge on Friday, a manager who usually staffs for 100% occupancy is likely to have more flexibility in nursing assignments, Medina says.

Such ideas are known, but according to nurses they often don't work due to other unexpected occurrences such as sudden changes in census. Looking ahead in smaller time intervals can help achieve a balance between actual needs and financial targets. Dealing with smaller, more manageable time periods help, Medina concludes.

• **Choose long-range planning over short-term results.**

If a reorganization plan hopes to succeed, it must include provisions to train and credential nurses, says Arnold. Beleaguered by nurse vacancies and turnover, Arnold has tried to eliminate the hospital's dependence on registry and agency nurses, which has annually cost the unit about $90,000 per RN.

In recent years, the unit has hired fourth-year nursing students as PCTs (patient-care technicians) and created a professional student nurse associate internship for third-year students. Arnold views the effort as an in-house graduate program not to fill vacant nursing positions, but to mold future nurses according to the hospital's culture as a means of retention.

The programs haven't reduced the ongoing need for good ICU nurses, but laid a much-needed groundwork for the future, Arnold says. **(The March issue of *Critical Care Management* will profile Swedish American's nurse training programs.)**

There are no quick fixes to reorganizing for optimum performance. Situations are fluid and don't allow for easy answers, Medina says. "But in all this, it always comes down to how well do your nurses know their patients, and are you doing the right thing?" These two principles are useful as a starting point.

Reference

1. Shortell SM, Zimmerman JE, Rousseau DM, et al. The performance of intensive care units: Does good management make a difference? *Med Care* 1994; 32:508-525. ■

Nurses can play key role in burn pain assessments

Objectivity will reinforce value of pain rating scales

When working with severely burned patients, popular pain assessment tools haven't always proven adequate in helping nurses accurately gauge pain levels. Researchers are shifting the emphasis from the reliability of assessment tools to the role of the attending nurse in pain assessments.

Based on recent studies, critical care nurses are being advised to shift the focus away from the absolute reliability of conventional pain rating scales. Instead, they are using a balanced assessment involving a patient's responses to questions and the nurse's own experience base for evaluations, free of subjective assumptions.

If a patient is intubated or incoherent, nurses can still make a balanced assessment using physiological indicators such as pulse rate, blood pressure readings, and breathing patterns. The key is to rely more on the patient's responses than on the nurse's potentially biased assessments, says **Mary D. Gordon**, RN, a clinical nurse specialist at the U.S. Army Institute of Surgical Research at Fort Sam Houston near San Antonio.

Using standard rating scales such as Visual Analogue and Faces are acceptable. However, nurses can improve the assessment significantly, Gordon says, if they don't inject their own biases into the process. **(For examples of widely used rating scales, see p. 18.)**

Nurses can err in subjective pain estimates

"Clinicians tend to assess pain in patients and prescribe medications based on their own assumptions of the intensity of pain," Gordon says. "Everyone verbalizes that it's the patient who describes the pain, but do they really use that as a factor in deciding the medication levels used in relieving that pain?" *[Editor's note: Gordon's statements in this article are her own and do not necessarily reflect the official views of the Department of the Army or the Department of Defense.]*

For years, nurses intuitively have questioned the reliability of tools as the Visual Analogue and Faces rating scales. Now, they have research-based data that help. To get a better gauge of pain levels, nurses can improve their assessments by:

• **Departing from age-old beliefs.**

Most critical care nurses acknowledge they commonly under-prescribe analgesics out of concern for over-medicating patients or fear the addictive consequences of opioid analgesics. In fact, there is very little risk in the ICU of over-medicating patients, says **David Patterson**, PhD, a psychologist who specializes in treating burn patients at Harborview Medical Center in Seattle. Gordon concurs.

Even when over-dosing occurs in the burn unit, it is infrequent, and the effects can be blocked or reversed by readjusting dosages or administering such drugs as Narcan, also known as Noloxone, to reverse the opoid's effects, Patterson says.

• **Trusting the patient's responses.**

Don't assume the patient's pain level is higher or lower than the patient claims when deciding appropriate medication dosages. Make an assessment based on the patient's own pain indicators using an agreed-upon rating scale.

The key, according to Gordon, is to agree with the patient on an assessment tool that works and use it consistently. "Leave the preference up to the patient. Ask the patient. The more comfortable the patient feels with assessing the pain, the better he or she will feel with your pain management techniques."[1]

• **Establishing consistency.**

Nurses are divided on whether patients should be medicated for pain on a regular schedule or on a PRN basis. Researcher **Janet A. Marvin**, RN, MN, advocates regular medication.

Past studies with surgery patients suggest

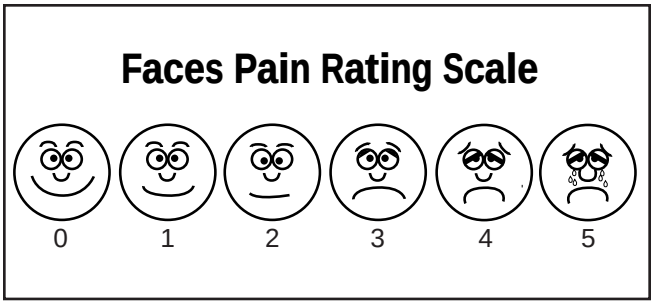
A Few Facts about Pain

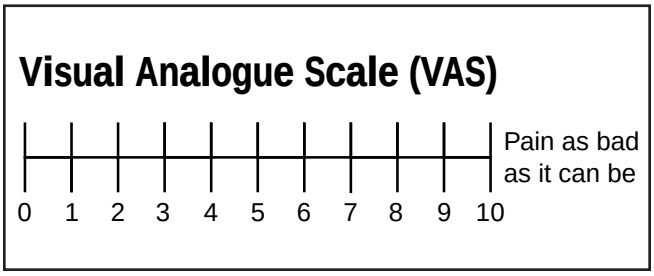
Pain tends to be cyclical in nature. In a clinical setting, it falls into two categories:

Procedural pain: This is an acute, shorter-acting source of pain but is also sharper and more intensely felt than chronic pain. This pain is often caused by wound examination, debridement, or invasive treatments such as surgery.

Background pain: This type of pain is chronic, often longer lasting, and less intensely felt than acute pain over time. It can be physically debilitating, and fluctuates in intensity over time.

Source: David Patterson, Harborview Medical Center, Seattle.





those who self-administer pain medication take less over time. This has been one of the arguments in favor of PRN, says Marvin, director of nursing at Shriner's Hospital for Children in Galveston, TX.

However, "the more consistency you apply across nursing shifts the better," Marvin says. The regimen must be adaptable to changes in the patient's condition. "The nurse always has the initial responsibility of assessing the patient's needs."

• **Adapting to the patient's reporting ability.**

Obviously heavily sedated, intubated, or incoherent patients present different assessment conditions. With these patients, nurses must rely more on their experience and judgment to gauge pain levels than on rating tools. This isn't to say that nurses are free to use subjective standards, Marvin warns.

Physiological indicators such as an elevated pulse rate are important pain gauges. Get a second opinion from more experienced nurses or physicians. In the absence of reliable assessment tools, you can safely over-estimate pain levels. In these situations, "take what you think as a nurse and raise the assumed pain level up a notch or two," Gordon advises.

• **Recognizing pain's innate inconsistency.**

Pain has a cyclical nature, according to Patterson of Haborview Medical Center. It does provide regular ratings, but the levels can "bounce all over the place." Patients will experience pain at regular intervals, but the levels can vary widely from assessment to assessment. This factor strengthens the notion that regular hourly or half-hourly assessments are a good idea because the patient may not reliably gauge changes in pain levels that require corresponding changes in medication dosages**. (See box, p. 17 for more on the nature of pain.)**

• **Recognizing pain as a subjective experience affected by age and gender.**

Patients experience pain on an individual level, Patterson says. The subjective nature of the experiences constantly works against accurate assessments. Studies also show that pain sensations and responses vary widely by age and gender.

Researchers aren't certain whether these differences are affected by cultural or social factors. They also wonder whether the differences are actually a function of the way patients prefer to report their pain. For example, some studies suggest women prefer the Visual Analog scale while men and children lean toward the Faces scale.

In general, pain assessment tools are flawed and rudimentary, according to Patterson. As a rule, "stick to the simple things. Make the scale you choose to use simple and easy for the patient, and return to it each time," advises Marvin of Shriner's.

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SOURCES

For additional information on pain assessment ratings in burn and other acute care cases, contact:

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NPs provide clinical support to bedside nurses

Nurses' roles changing to maximize benefits

Most of the clamor about health care reform has focused on patients' rights and curbing managed care abuses. Federal health officials are also taking stock of how health care providers, including critical care nurses, are redefining themselves in the changing reimbursement environment.

According to one expert, job descriptions in acute-care nursing are changing to meet new economic demands. Bedside nurses in critical care are likely to benefit from the trend, says **Paul Logan**, CRNP, MSN, an acute-care nurse practitioner at Montgomery Hospital. The 180-bed medical-surgical facility in Norristown, PA, operates two 10-bed CCUs.

How? They are likely to get strong day-to-day clinical support from highly trained members of their own profession — RNs.

Buried in the federal Balanced Budget Act of 1997, for example, is a significant provision that concerns one of the fastest-growing segments of advanced practice nursing: the acute-care nurse practitioner (NP).

The budget law mandated nurse certification programs for acute-care NPs require a minimum of a master's degree in nursing or its equivalent. In doing so, the government established specific educational criteria for acute-care NPs, in effect affirming their importance in the ICU, according to Logan. This means the educational requirement for NPs in your ICU will have to meet the federal standard.

Nurse practitioners becoming common

How will this development affect unit managers? Here are a few pointers:

• NPs will become more common in the ICU/CCU.

Already, hundreds of hospitals and clinics employ primary care NPs (they have for years). In the past decade, dozens of hospitals have also hired acute-care NPs and used them in different clinical capacities. However, staff nurses may not be familiar with the exact role of the acute-care NP. Their increased presence may better define their role and importance in the unit, Logan says.

• More NPs will narrow their job focus and speed up their integration in critical care.

Acute-care NPs are being used by hospitals in a variety of ways that may not take into account their stated purpose. NPs and nurse managers insist staff nurses usually welcome the expertise and the extra help with patients in the unit.

Rarely is there a disagreement over turf or clinical issues. More often, it's a question of what exactly the acute-care NP is supposed to do in the ICU/CCU. These issues may subside as NP become a stronger presence in the unit, says **Therese Richmond**, CRNP, PhD, director of the acute-care NP program at the University of Pennsylvania School of Nursing in Philadelphia. The school offers one of a handful of accredited graduate programs for acute-care nurse practitioners in the nation.

"The field is quite new and still evolving. Hospitals are searching for ways to use NPs effectively, and they will," Richmond says.

• NPs will expand and underscore the importance of care management teams.

As part of a multi-disciplinary care team, "the NP serves as a bridge between the attending physician and our bedside nurses," says nurse manager **Penny Shames**, RN, Montgomery Hospital's clinical coordinator. "They've got the formal education and clinical expertise to be valued tools while still being nurses like us."

Part of the problem, even for veteran managers who work closely with NPs, is their prescribed role in the unit. Acute-care NPs usually coordinate the physician's care plan for each patient. They work with nurses to monitor the progress of several patients at a time.

NPs are authorized to perform history and physicals, prescribe medications, order tests, and change treatment plans. They also play a big role in the patient's ultimate destination within the hospital. Some NPs act as case manager and do discharge planning, says Logan. **(For list of criteria, see chart, p. 20.)**

• Employment status will determine their duties.

NPs are circumscribed by their employment agreements. Unit-based NPs typically are employed by the hospital and responsible for all of the unit's patients. In contrast, practice-based NPs are employed by medical groups and chiefly responsible only for the patients under the medical group's care.

Whether these differences persist will depend

(Continued on page 21)

The World of Acute Care Nurse Practitioners

Scope of practice

Upon completion of a formal educational program (excerpted):

- Elicit a comprehensive health history and perform a physical exam.
- Prioritize and initiate pertinent diagnostic tests.
- Analyze data to determine nursing and medical diagnoses.
- Develop a prioritized comprehensive problem list.
- Collect patient data on an ongoing basis, prioritized according to the patient's immediate conditions and needs.
- Identify expected patient outcomes in collaboration with patient, family, and other professionals.
- Develop a plan of care that prescribes interventions to attain expected outcomes.
- Prescribe and implement the interventions in the multidisciplinary plan of care.
- Evaluate the patient's progress toward attainment of expected outcomes.
- Systematically evaluate the quality and effectiveness of care.
- Facilitate the use of organizational resources in caring for the patient through the analysis and modification of system enhancements and barriers.
- Evaluate clinical practice in relation to professional and ethical standards, relevant laws, statutes, and regulations.
- Acquire and maintain current knowledge in advanced practice.
- Contribute to the professional development of peers, colleagues, and others.
- Make decisions on behalf of the patient in an ethical manner.
- Critically evaluate and modify existing (clinical) practices based on current research findings.
- Participate in research activities.
- Consider factors related to safety, effectiveness, and cost in planning and delivering patient care.
- Develop and implement strategies that have a positive effect on the political and regulatory processes related to the health care systems and the acute nurse practitioner's role.

Educational preparation and eligibility requirements

Program of study (excerpted):

- A master's degree in nursing and completion of a graduate-level program for preparation of acute-care NPs required.
- An valid RN license in the United States or its territories.
- The acute-care NP program should be a minimum of nine months or one academic year of full-time study or its equivalent, as defined by the sponsoring institution.
- Approximately one-third of the program should be devoted to classroom or didactic experiences and the remaining two-thirds to clinical or preceptorship experiences.
- Didactic content should include a review and application of theories from anatomy and physiology, nursing and medical services, pathophysiology, pharmacology, and social sciences.
- Decision-making and clinical management process for acutely or critically ill adults that include health assessment data gathering techniques; management of acute and chronic health problems; management of instability and comorbidity; systematic evaluation of potential and actual outcomes; consultation and collaboration; and health promotion and risk-factor modification.
- Supervised clinical and preceptorship experiences that include skills development in diagnostic reasoning, decision-making, consultation, collaboration, appropriate use of technology, research process, and management of acute and critically care systems.

Source: Nurse Practitioner Board Certification Examination Catalog, American Nurses Credentialing Center, Washington, DC.

on how hospitals decide to use acute-care NPs. Most experts, including Richmond, aren't certain these differences will change much in the future.

How should you best use your acute-care NP?

• **Depend on them to expedite and coordinate patient care.**

Use them to get answers to specific clinical questions and provide guidance when the attending physician or house staff isn't available, Shames says. The NP should be viewed as an expert consultant on individual patient issues and team player in the daily clinical management effort. This can be done in a global (entire unit) sense or at the micro-level (with individual patients or nurses), Shames adds.

• **Give them considerable latitude.**

Unit managers should not place the NP under their direct supervision. Nor should NPs be given management authority over staff nurses. Although they are still nurses, NPs should have sufficient independence to function outside of the bedside nursing team. In cases in which they are employed by a physician practice, this becomes obvious.

The same level of independence should apply to unit-based NPs, according to **Yvonne Ruddy-Stein,** RN, MSN, an acute-care NP at Egleston Children's Hospital in Atlanta. Independence reinforces the NPs status as a clinical specialist.

• **Use them as teaching resources.**

Inservice training is a great way to use your NP, says Richmond. This way, they will underscore the NP's position as a clinical resource while improving the bedside nurses' patient management skills. The inservice sessions also can become problem-solving sessions and a chance for staff nurses to highlight particular issues that need addressing by a physician.

At many hospitals, the roles of the NP and clinical nurse specialist (CNS) sometimes overlap. However, according to Logan and others, the CNS's focus is on system issues such as how to get patients through the system faster. The acute-care NP's emphasis is more on patient-care issues such as managing medication dosages.

• **Support their bond with your nursing staff.**

"Having been nurses, we can communicate closely with patients and their families," says Ruddy-Stein. More than anyone else in the unit, NPs also can work closely with nurses "because we are nurses."

That understanding, when coupled with the advanced clinical role played by NPs and constant interaction with the attending physician, make for an improved working relationship among members of the care management team. Managers can encourage such close associations by publicly supporting their NPs, Ruddy-Stein says.

"The most important part of working with your NP is in highlighting not the differences but similarities with others in the unit. We are still nurses in every sense," Ruddy-Stein concludes. ■

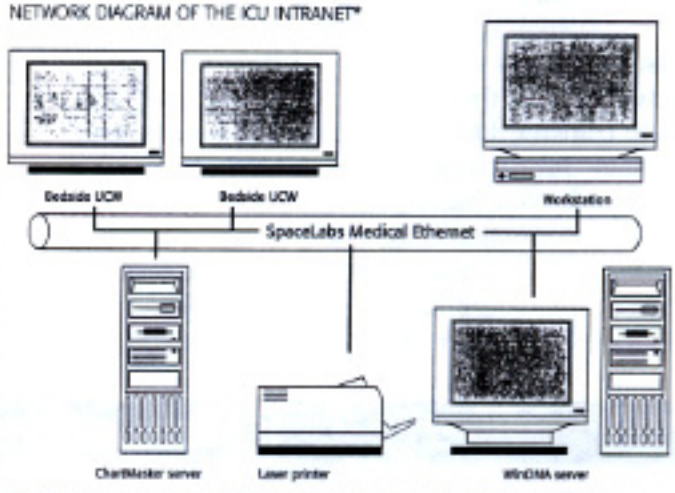
Web-based system may cut medication errors

Nurses won't need PDR to access key information

Researchers at Louisiana State University Medical Center in Shreveport are testing the effectiveness of an electronic information system that can instantly help ICU bedside nurses access clinical information about medications and related therapies without resorting to standard medical desk references or published clinical guidelines in book form.

If the system works as expected, a medical staff will be able to retrieve important non-patient specific information within seconds from other hospital departments and sources such as the health science library.

The system can be developed affordably to run on any hospital's existing information system and can be accessed on any mini-workstation by nurses at the patient's bedside, according to **Steven A.**



*The Chartmaster server provides bedside documentation of patient information. The WinDNA server provides other information management functions, including the intranet web. The bedside UCW can interface to both the ChartMaster and the WinDNA servers to perform patient charting or information retrieval from the virtual ICU, respectively. Workstations attached to the network also can access the servers.

Source: Conrad SA, Rensink Y. Using intranet technology in the ICU. *Nurs Man* 1997; 28:34-36.

SOURCES

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Conrad, MD, ICU director at Louisiana State University Medical Center.

The technology is being touted as extremely useful in helping nurses prescribe and administer formulary medications with confidence about their dosages, effectiveness, and safety. If properly used, the system can significantly reduce medication errors and adverse drug reactions, a growing concern in many ICUs.

Much is being reported about advancements in the area of computerized patient records, but comparatively, there's little being done in developing a non-patient repository of useful information that can save clinicians time in patient-care wards, says Conrad, the system's developer.

Speed and convenience in accessing clinical information from practice guidelines and medical literature is especially important in settings such as the ICU and emergency department, Conrad says.

The system is similar to the Internet, except that it operates within a closed (Intranet) user network. Like the Internet, it allows a back-and-forth transfer that enables a user to request and retrieve information from an outside source in a Microsoft Windows format called WinDNA.

The information is then delivered in a speedy, uniform, easy-to-read format that can be accessed at a bedside terminal, known as a universal clinical workstation or a central workstation. The information travels on a local area network here called the SpaceLabs Medical Ethernet. **(See chart, p. 21.)**

Sitting at the workstation, a nurse can log on to access specific Web sites for medication and other practice guidelines. (The system also can access hospital-wide drug policies and regulatory and administrative directives.) The screen will show textual, graphic, and voice-overs regarding specific medications, their prescribed levels for certain patients, and safety concerns.

Early trials of the system involved only the MICU. Conrad is currently expanding the system to network with other locations hospitalwide and expects to expand the network in phases. ■

Nurse-hospitalists may be asset to patient care team

Nurse will aid ICU staff with continuum of care

Among physicians, hospitalists are being touted as the latest player on the care management team. However, similar opportunities may be awaiting critical care nurses.

Hospitalists are physicians who specialize in hospital-based inpatient care and practice across a spectrum of hospital inpatient departments such as emergency, critical care, and geriatrics. Usually, they do not maintain an office-based practice but practice full time in a hospital.

As nursing roles expand into more complex areas of inpatient care and more highly educated RNs step up to the plate, some experts say similar opportunities will soon open up for many nurse practitioners and other advanced practice nurses.

Nurse managers are being advised to keep their eyes open as hospitals may soon begin designating qualified advanced practice nurses to hospitalist positions, according to **Anne Foster-Schuller**, RN, MSN, a manager with The Camden Group, a health care consulting firm in El Segundo, CA.

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The presence of a nurse-hospitalist would affect ICUs in the following ways:

• Because the role of nurse-hospitalist would cut across several inpatient departments, they are likely to offer ICU / CCU managers a direct link to other acute and sub-acute care units outside the ICU; therefore offering a smoother transition for daily patient management and transfers, according to Foster-Schuller.

• They also would reinforce the care management team's responsibility in the absence of attending physicians and represent the nursing viewpoint in the development of treatment plans and therapies.

• The job classification would involve broader patient management responsibilities than most bedside or senior nurses presently hold. For one, the duties would span a cross-section of acute-care units, including the ICU, trauma, and emergency departments (EDs) simultaneously.

• Furthermore, the individual would participate in key clinical decision-making with physicians, including developing treatment plans and post acute-care case management, Foster-Schuller says.

"The nurse-hospitalist would work with a defined group of patients and oversee all aspects of their care from admission to discharge," says hospitalist **Jeffrey Hay**, MD, medical director of inpatient services at HealthCare Partners Medical Group, a Los Angeles-based managed care organization (MCO). The group has 300 primary care physicians and 30 hospitalists who work at 13 local hospitals.

However, nurse-hospitalists are far from an accepted idea. Neither the American Association of Critical Care Nurses in Aliso Viejo, CA, nor the American Nurses Association in Washington, DC, recognizes the professional designation or offers a certification for the position.

Nevertheless, pressure to achieve better clinical outcomes and lower costs has expanded the role of qualified nurses. In recent years, hospitals increased the role played by experienced nurses and technicians. Many have credentialed quasi-physician extender positions such as clinical nurse specialists and nurse practitioners to improve patient management. **(For more on nurse practitioners, see article, p. 19.)** However, these credentialed nurses largely have been limited to working within specific departments in specified ways.

In contrast, nurse-hospitalists would be certified to function across a broader set of clinical disciplines, notably in pulmonology, critical care, emergency, and internal medicine, Hay says.

The focus is on the patient's continuum of care throughout the hospital stay, Foster-Schuller says. In practice, "the individual organization would really be the one that defines the nurse-hospitalist's responsibilities."

In general, the nurse-hospitalist would function in the following ways:

• Provide screening and evaluation on patients with an anticipated admission when they arrive in the ED.

• Assume overall patient-care responsibility for patients from admission to discharge and thereafter.

• Directly manage patients' daily condition during their ICU stay.

• Interact with unit nurses and coordinate care across inpatient departments, especially during patient discharge and transfer.

• Coordinate treatment plans between patients and their primary care physicians.

• Accept responsibility for patients admitted through the ED who do not have a primary care provider.

Critical Care Management (ISSN 1070-4523) is published monthly by American Health Consultants®, 3525 Piedmont Road, N.E., Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodical postage paid at Atlanta, GA 30304. POSTMASTER: Send address changes to **Critical Care Management**, P.O. Box 740059, Atlanta, GA 30374.

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Editorial Questions

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A 1995 study conducted by Hay at Huntington Memorial Hospital in Pasadena, CA, reveals the use of hospitalists in inpatient care reduced the number of physician consults by 40% over a 12-month period. It also cut the number of specialist visits to the ICU by 5% over three years, which, according to Hay, was significant.

Hospitalists also accounted for a 20% reduction in cost per inpatient case among managed care patients and 35% for Medicare cases.

[Editor's note: For more on the emerging role of hospitalists, contact: Anne Foster-Schuller, manager, The Camden Group, 100 N. Sepulveda Ave., Suite 600, El Segundo, CA 90245. Telephone: (310) 320-3990. E-mail: aschuller@thecamdengroup.com] ■

Elderly face serious bone loss during long ICU stays

Acute-care nurses should pay special attention to the potential for serious bone loss and increased risk of osteoporosis in ICU patients with prolonged lengths of stay, according to a new study that confirms long-held beliefs. Most of these patients are elderly and chronically ill, and many are admitted to ICUs and CCUs following cardiac and other major invasive surgeries.

Staff nurses need to be vigilant in identifying high-risk patients and provide them with nutritional and IV-drip support, if necessary, to help prevent bone hyper-resorption, according to **David M. Nierman**, MD, director of the medical ICU at Mount Sinai Medical Center in New York and study's lead investigator.

The IV-drip is the best source of the needed nutrient vitamin D because it comes in a molecularly active form that is easily and rapidly processed by the body, Nierman says. Not all drips contain vitamin D. When deemed appropriate, nurses should consider therapies that block bone loss, including the use of individualized dosages of panidronate, a commonly used osteoporosis drug.

Early prevention is important because these measures can effectively decrease the likelihood of post-discharge onset of serious bone disorders and prevent rehospitalization, according to Nierman.

"We know that elderly patients confined to the ICU for long periods undergo considerable difficulties, including accelerated bone loss related to their hospital stay. The problem is becoming pronounced because a substantial number of these patients are surviving their illnesses and are being discharged to other settings in these conditions," Nierman adds.

The study found an alarming prevalence in muscle weakness linked to metabolic bone loss among critically ill patients. Patients most likely to be at risk are the elderly who suffer from multiple illnesses and survived a life-threatening episode of sepsis. Included in the group are extremely debilitated patients who are ventilator-dependent due to their medical conditions.[1]

Reference

1. Nierman DM, Mechanick JI. Bone hyper-resorption is prevalent in chronically critically ill patients. *Chest* 1998; 114:1,122-1,128. ■

CE objectives

After reading this issue of *Critical Care Management*, participants in the continuing education program should be able to:

- explain key factors in judging ICU performance;
- cite the nurse's role in burn pain assessments;
- describe the duties of nurse practitioners in the ICU;
- discuss the remedy for bone loss in critically ill patients. ■