

ED NURSING™

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May
2001

Take steps to improve patient safety or be noncompliant with new standards

Provide evidence of your efforts to Joint Commission surveyors

In an ED recently, **Kathleen Catalano**, RN, JD, was shocked to notice pharmacists refilling five vials of potassium chloride (KCl). "I asked about the fact that concentrated potassium chloride was being put out for use," she recalls.

Catalano, director of administrative projects at Children's Medical Center of Dallas, learned ED nurses had prepared an IV with KCl without calling the pharmacy, as the hospital's policy required. To make matters worse, the IV was not prepared under the laminar airflow hood — another violation of hospital policy.

"The pharmacy technician was not the least bit alarmed about the use of concentrated KCl," she says. "There, but for the grace of God, went a medication nightmare." KCl often is mistaken for other medications such as sodium chloride, heparin, or furosemide, and direct infusion of concentrated KCl results in death, she explains.

Concentrated KCl should be removed from all medication areas, including the ED, unless specific safeguards are in place, warns Catalano, a former consultant with the Greeley Co., a firm in Marblehead, MA, specializing in health care regulatory compliance.

Dangerous situations like the above scenario have led to the development of

EXECUTIVE SUMMARY

New patient safety standards from the Joint Commission on Accreditation of Healthcare Organizations become effective July 1, 2001.

- Surveyors will expect you to answer patient safety-related questions.
- You'll need to demonstrate evidence of steps taken to reduce the safety risks to patients in the ED and involvement in hospitalwide efforts to improve patient safety.
- If you are taking steps to improve patient safety, this will be noted in the preliminary noncompliance report at the end of the survey.

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Source: Cheshire Medical Center, Keene, NH.

new patient safety standards from the Joint Commission on Accreditation of Healthcare Organizations, based in Oakbrook Terrace, IL. The standards become effective July 1, 2001. The patient safety standards are broader than the sentinel event standards that became effective in 2000, according to Catalano. "The new standards look at more than just the patient who has been subject to a catastrophic event," she says.

Recent reports from the Washington, DC-based Institute of Medicine spurred the Joint Commission to focus on patient safety, she adds. **(For ordering information, see resource box, p. 90.)**

Warning: Avoid these scenarios

Surveyors will ask what you've been doing to improve patient safety in your ED, according to **Carole Patterson**, MN, RN, consultant for Joint Commission Resources (JCR), an Oakbrook Terrace, IL-based provider of education and consulting services established by the Joint Commission, and former director of the Joint Commission's Standards Interpretation Group.

"Questions about how the hospital is improving

patient safety by doing proactive risk identification and reduction activities will be an important part of the unit visits, including the ED," she says.

Any of the following three scenarios will get you into trouble during a Joint Commission survey, says Patterson:

- Staff members fail to respond appropriately to surveyor questions about patient safety-related questions.
- There is no evidence of efforts to reduce safety risks to patients in the ED.
- The ED is not involved in hospitalwide efforts to improve patient safety.

"Special notice would be taken and written up in the preliminary noncompliance report given to the hospital at the end of the survey," Patterson warns.

Know the standards

Here are ways to comply with the patient safety standards:

- **Use alternatives to restraint.**

You'll need to be familiar with Joint Commission standards for the least restrictive use of restraints, both physical and chemical, and be able to answer surveyors' questions about those standards, says **Kathryn Perlman**, MS, RN, clinical educator for the ED at Presbyterian Hospital of Dallas. **(For more information about the new restraint standards, see *ED Nursing*, October 2000, p. 149.)**

Surveyors will ask nurses what documentation is required for a patient who is restrained, what are alternatives to restraints, and how often a patient who is restrained needs to be reassessed, she says. **(For more information on alternatives to restraints, see *ED Nursing*, December 2000, p. 23.)**

At Presbyterian, ED nurses are required to complete a form showing that alternatives are being attempted. Perlman suggests decreasing stimulation by dimming lights, turning off the TV or radio, moving the patient to a room close to the nurses' station, or using bed alarms. **(See *Alternatives to Restraints/Restraints Flowsheet*, p. 87.)**

- **Be involved in your hospitals' patient safety program.**

Patterson advises joining the hospital's patient

(Continued on page 90)

COMING IN FUTURE MONTHS

■ Protect staff from chemically contaminated patients

■ Effective ways to confirm tube placement

■ Dramatically increase your patient satisfaction scores

■ Improve care of children with new guidelines

Source: Presbyterian Hospital of Dallas.

Source: Cheshire Medical Center, Keene, NH.

safety or environment-of-care safety committee.

“Bring along one of the ED physicians, too,” she suggests. “Medical leaders are key to making patient safety efforts visible as well as viable.”

- **Order IV admixtures from pharmacy.**

Having the pharmacy mix IVs eliminates the need to keep the admixture drug on the unit, says Perlman.

“It adds another risk-control element because the pharmacist checks it before it leaves the pharmacy,” she explains.

- **Do not keep bottles of multidose drugs on the counter.**

Examples of multidose drugs include Tylenol elixir and Prelone, says Perlman. “Joint Commission hates this, and it’s dangerous,” she underscores. “Having medications lying around the room makes it easy to grab the wrong bottle, thinking that it is something else — if the bottles look alike, for example.”

- **Apply conscious sedation standards consistently throughout the hospital.**

You must apply the same protocol in any area that uses conscious sedation, says **Cheryl Pinney**, RN, BSN, MBA, director of emergency services at Cheshire Medical Center in Keene, NH, and the hospital’s Joint Commission coordinator. (See **Conscious Sedation Documentation Flowsheet enclosed in this issue and Conscious Sedation Plan of Care, p. 86.**)

“This is not a new standard, but there still continues to be a lot of focus on this area,” she says. “Along with using a consistent protocol, staff must be trained to use the protocol.”

The key is that *all* areas follow the same protocol, says Pinney. She suggests having several training sessions scheduled at various times so that all staff can attend, inservicing at staff meetings, developing self-study packets with a simple post-test, or implementing a poster campaign in a clinical area that all staff sign off on.

- **Have your hospital risk manager perform an inservice for your staff.**

At Cheshire Medical Center, the hospital risk manager provided a half-hour presentation to ED nursing staff on sentinel events and how to perform a root-cause analysis.

Pinney included information in the staff meeting minutes for staff who were unable to attend. “We will also review components of the presentation at future staff meetings,” she says.

- **Perform a visual inspection.**

Check for evidence of safety issues in your ED, recommends Pinney. Here are some examples she provides:

— Look around for mishandled items, such as a

SOURCES AND RESOURCES

For more information on the patient safety standards, contact:

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The complete *Revisions to the Joint Commission Standards in Support of Patient Safety and Medical/Health Care Error Reduction* can be accessed from the Joint Commission’s web site (www.jcaho.org). On the upper-right corner of the home page, click on “patient safety standards” under the “top spots” drop-down menu.

A 250-page resource guide, *A Practical Guide to Avoiding Medical Errors*, addresses staffing issues, sentinel events, nosocomial infections, error prevention strategies and technology, legislation, and liability. The cost is \$249 plus \$9.95 shipping and handling, and includes nine free nursing contact hours. To order, contact:

- **American Health Consultants**, P.O. Box 530161, Atlanta, GA 30352-0161. Telephone: (800) 688-2421 or (404) 262-7436. Fax: (800) 850-1232 or (404) 262-5525. E-mail: customer.service@ahcpub.com. Web: www.ahcpub.com.

syringe left in an inappropriate place.

— Make sure that supply cabinets and crash carts are locked.

— Be sure that cabinets and storage areas are clean and items are appropriately stored.

— Inspect white boards to see if there is any breach of confidentiality.

The ED uses a department checklist of items to review before surveyors arrive, says Pinney. (See **Department Checklist for Joint Commission Surveys inserted in this issue.**)

Questions the Joint Commission Will Ask

- Tell me about your policies on domestic violence. How do you identify victims? How do you make them feel comfortable and safe? If you offer services and they don't want them now, do you give them an emergency number to call?
- What's the process when you suspect abuse of elders and children? How do you identify victims and then what do you do?
- How do you manage sexual assault cases?
- What do you do if you have a patient who doesn't speak English? What language resources are available to you?
- Do you have technicians? Do they have competencies?
- Are all your nurses certified in advanced cardiac life support (ACLS)? How do they demonstrate competency in pediatrics?
- What is the procedure for educating prison guards about the hospital's priorities for emergencies such as fire?
- Do you have critiques of your disaster drills?
- What's the procedure for decontamination for biological or chemical hazards?
- How often are defibrillators checked?
- If you have a behavioral management patient and they need to use the bathroom, where do you take them?

Source: Cheryl Pinney, RN, BSN, MBA, Director of Emergency Services, Cheshire Medical Center, Keene, NH.

- **Make sure that checklists are up to date.**

There should be "no holes," says Pinney. The ED staff use crash cart and trauma room checklists once every 24 hours, and obtain replacements as needed.

"Staff are held accountable to make sure no day is missed in checking the lists," she says. (See **Emergency Care Center Critical Care Room Inventory Checklist**, pp. 88-89.) ■

Stop errors before they occur

You must take steps to spot potential errors *before* they occur, says **Cheryl Pinney**, RN, BSN, MBA, director of emergency services at Cheshire Medical Center in Keene, NH, and the hospital's Joint Commission coordinator.

"We need to eliminate the 'punitive approach' to

medication errors," she urges.

Here are some ways to prevent errors:

- **Audit use of patient identification bracelets.**

At Tallahassee (FL) Memorial Hospital's ED, a quarterly patient identification audit in all patient care areas ensures that the right task is done for the right patient, reports **Cindy Bruns**, RN, BSN, CEN, quality management coordinator for the emergency center.

Audit 10% of work

Various hospital staff members are used as auditors, with the goal of auditing "10% of a day's work," says Bruns. "We audit 10% of the average daily patient population for each department. No one audits his or her own department."

For example, Bruns is assigned to the radiology department where she answers the following four questions:

1. Does the patient have an identification bracelet on when the patient arrives in the radiology department?
2. When the patient doesn't have a patient identification bracelet, is central registration or the emergency center notified and nothing further done with the patient until an identification bracelet is on?
3. Does the staff member ask the patient to state his/her full name?
4. Does the staff member check the patient identification bracelet against the face sheet/requisition or physician's order prior to performing the procedure or medicating the patient?

In the ED, the audit is done in the triage, registration, and treatment areas, Bruns notes. "I can honestly say that ED patients without an identification bracelet are a rare breed these days," she says.

- **Review care of high-risk patients.**

Ideally, auditing of high-risk patients should be done by chart review and follow-up phone calls, says Bruns. "Unfortunately, staffing doesn't always permit this, especially in these days of patient overload and chronic staff shortages," she adds. "So most of our auditing is done by retrospective chart review."

For example, charts of patients who have received conscious sedation in the ED are reviewed monthly for appropriateness of care and monitoring during conscious sedation, Bruns explains.

"All nurses get individual feedback on their care via the completed quality assurance monitoring tool," she says.

Chart audits are helpful in showing trends in nursing care and procedures to identify staff education needs, Bruns notes.

- **Implement an anonymous reporting system.**

At Cheshire Medical Center's ED, a medication error

Checklist to Comply with New Standards

- One or more qualified individuals or an interdisciplinary group must be designated to manage the organizationwide patient safety program. It is advisable that the individuals have clinical backgrounds.
- The scope of the program activities must identify the types of occurrences to be addressed, ranging from those that cause no harm to those that are serious adverse events.
- There must be a description of the mechanisms so that all components of the organization are integrated into and participate in the organizationwide program.
- There must be procedures for immediate response to medical/health care errors, including care of the affected patient(s), containment of the risk to others, and preservation of factual information for subsequent analysis.
- There will need to be clear systems for internal and external reporting of information relating to health care errors.
- The facility will have to create defined mechanisms for responding to the various occurrences, for example, performing a root-cause analysis in response to a sentinel event.
- Defined mechanisms must be created for support of staff involved in a sentinel event.
- There must be an annual report submitted to the governing body.
- All surveyors will review your hospital policy during the document review process that occurs on the first morning of any survey. Know your policy. Surveyors might ask:
 - What are your responsibilities should a sentinel event occur on your shift?
 - Whom do you contact?
 - What evidence is preserved?
 - What type of program is in place for individuals who may have been involved in a sentinel event?
 - Is an occurrence or incident report generated?
 - What facts must be documented in the medical record?

Source: Kathleen Catalano, RN, JD, Director of Administrative Projects, Children's Medical Center of Dallas.

reporting system was implemented. A pad of forms is placed in the clinical areas for nurses to report actual or potential errors. (See **Medication Event form, inserted in this issue.**)

"There is a small box with a slot that the staff member uses to place the completed form in the box," says Pinney. The first month the system was started, four times as many potential or actual errors were reported, she notes.

Staff are encouraged to report potential for error and can remain anonymous if they wish, says Pinney. "For example, a nurse may report two similar-looking vials in the same location or similar labels on very different medications," she explains.

• Track actual errors with occurrence reports.

Tracking actual errors helps you identify problems, and you can trend the data to identify ways to improve the system, says Pinney. She recommends including the following on an occurrence report:

- name of individuals involved, both patient and employee;
- identifying factors such as medical record number and date of birth;
- time and date of occurrence;
- location of occurrence;
- clear facts of the event including the outcome.

• Take specific steps to respond to problems reported by staff.

When a "near miss" or adverse outcome occurs due to an error, but not necessarily of the magnitude of a sentinel event, an intense evaluation of the process will help to identify system problems so a similar situation does not occur, says Pinney.

She recommends following the Joint Commission's "Framework for a Root Cause Analysis." (From the Joint Commission web site [www.jcaho.org], click on "Patient Safety/Sentinel events" on the left-hand side of screen, then under "Facts About Patient Safety," scroll down to the bottom of the text and click on "Sentinel Events." Then click on "Framework for Conducting a Root Cause Analysis.")

If anyone reports a potential risk to Pinney, she first notifies the hospital's risk manager. "The risk manager and I then review the report and see what needs to be done as a next step," she says. Pinney also thanks the employee for bringing the problem to her attention and reports what the next steps will be.

• Be approachable.

ED staff at Cheshire are encouraged to come forward with information about a potentially unsafe situation, Pinney says. "They also know that they can call me and/or the risk manager anytime there is a question of a risk situation," she adds.

If a group is later organized to address the problem, be sure to include the employee who first brought it to your attention, Pinney advises. "The manager has to

SOURCE

For more information about preventing medication errors, contact:

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understand that errors are often caused by system problems, instead of assuming that errors are always somebody's fault," she notes. ■

Here are trends you must be ready for

You'll need to look outside your own ED to spot trends that will affect your department, urges **Diana Contino**, RN, MBA, CEN, CCRN, president of Emergency Management Systems, a Monarch Beach, CA-based consulting firm that specializes in staffing issues.

"It's critical for nurses to be proactive and benchmark," she says. "Treatments and technology are changing rapidly. If you don't monitor the trends, you can't

EXECUTIVE SUMMARY

By monitoring trends, you can use funds to set up appropriate programs, keep abreast of changing treatments and technology, and ensure that nurses have input into solutions.

- The nursing shortage will be one of the biggest challenges you might face. To overcome this challenge, consider sign-on bonuses, increased tuition reimbursement, flexible scheduling options, and relocation assistance.
- To be prepared for future challenges, consider obtaining advanced clinical and managerial degrees, with a focus on financial management, human resource management, or marketing.
- One new challenge that managers might face: State and federal legislation might eliminate the use of mandatory overtime.

adapt your practice and education to address these changes."

Financial margins will be tight in the foreseeable future, says Contino. "Identifying and monitoring trends will help you use funds to set up programs to counteract any negative trends," she says.

If you don't keep abreast of trends in the ED, you won't be able to come up with effective solutions, says **Kathy Robinson**, RN, CEN, ED case manager at Geisinger Medical Center in Danville, PA. "This opens the door for persons who are less informed to implement policies that nurses will have to live with," she warns.

6 trends to address

Here are short- and long-term trends and methods to address them:

• New opportunities for nurses.

Due to the nursing shortage, nurses are finding unprecedented opportunities, says Robinson. "In recruitment ads I receive, I am seeing an increase in sign-on bonuses, tuition reimbursement, flexible scheduling options, and even relocation assistance," she says. "This was formerly only available to management level positions."

Take advantage of enhanced education and skill-building opportunities that can make you more attractive to employers, she urges. More facilities are offering tuition reimbursement so nurses can pursue advanced degrees, says Contino.

"Nurses should consider obtaining advanced clinical and managerial degrees, especially managers who need advanced training in financial management, human resource management, and marketing," she advises. "These skills are critical for improving work environments."

• The use of mandatory overtime.

Using mandatory overtime as a staffing "solution" is a dangerous practice, warns Robinson. "In Michigan, the state nursing board has taken the initiative to pass a resolution protecting nurses from charges of abandonment when they refuse an additional shift because they feel unsafe from fatigue or stress," she reports.

Mandatory overtime should be the exception rather than the norm, says **Mary Jagim**, RN, BSN, CEN, manager of the emergency center and walk-in clinics at MeritCare Health System in Fargo, ND, and current president of the Emergency Nurses Association in Des Plaines, IL.

She notes that a bill was recently introduced in the House of Representatives by Tom Lanto (D-CA), James McGovern (D-MA), and Hilda Solis (D-CA) to prohibit mandatory overtime after a licensed health care employee (other than a doctor) has worked 80

How to reduce your vacancy rates

You'll need to find creative ways to staff your ED and avoid high vacancy rates, says **Diana Contino**, RN, MBA, CEN, CCRN, president of Emergency Management Systems, a Monarch Beach, CA-based consulting firm that specializes in staffing issues.

"Recognize that it's not easy, and you can only change culture, processes, and operations one person, project, and system at a time," she advises. "Be sure to surround yourself with people who will give you help and insight during difficult times."

Here are a dozen suggestions to recruit and retain nurses during the shortage:

1. Write one thank-you note a week. Send it to a staff member or hospital employee, and teach your staff to do the same, says Contino.

2. Have staff mentor other nurses. Staff nurses can be effective supervisors of licensed vocational nurses, licensed practical nurses, and technicians, says Contino.

3. Document the cost of turnover in your department. Lobby to spend that money on adequate staffing and customer service programs, says Contino.

4. Create new positions. Implement unique programs for nursing staff, advises Contino. "For example, create a position that is part-time community service, 24 hours of clinical per week, and 12 hours of promotional time at the local school or doing health screening at the senior center," she suggests.

5. Provide staff with low-cost computers. Have the hospital set up a program to purchase inexpensive computers for staff, and have the price deducted

from their paychecks over a period of one or two years, says Contino.

"Marriott [International, based in Washington, DC] does these things for their employees," she notes.

6. Send staff to educational seminars. To keep up with trends, nurses should be asked to present clinical and operational summaries at staff meetings, Contino suggests.

7. Ask physicians to provide case reviews at staff meetings for nurses and physicians. Provide continuing education units at no cost, suggests Contino.

8. Utilize medical students. Find eager medical students who want to volunteer in the ED and teach them to assist nurses, says Contino.

"In return, let them observe and interact as much as you can within your hospital's policies and procedures," she adds.

9. Ask a nurse to design your ED web page. Pay a nurse who is interested in web design to go to classes, suggests Contino.

"Have the nurse design a web page that educates the community about emergency services. Post fliers about it in the ED, and coordinate your efforts with the hospital public relations staff," she says.

10. Court local nursing students. Hire them as technicians in the ED with the promise to hire them as new graduates if they meet certain requirements, says Contino.

11. Give gifts to outstanding nurses. Give out Palm Pilots as quarterly "incentive" gifts to outstanding employees, says Contino.

12. Pay a nurse to perform patient customer service callbacks. Also, have a group of nurses suggest improvements to the ED so it is more customer service-focused, she suggests. ■

hours in a 14-day workweek.

- **Increased potential for violence.**

ED overcrowding is becoming an epidemic, resulting in significant delays, reports Robinson.

"Nurses need to be vigilant and observant of the potential for violence from frustrated patients and families," she says. (For more information on reporting of assaults in the ED, see *ED Nursing*, March 2001, p. 57; To learn how to prevent assaults, see *ED Nursing*, April 2001, p. 79.)

- **Shortage of qualified nurses.**

Congress is starting to take notice of the nursing shortage, and the U.S. Senate has formed a subcommittee to find solutions, says Robinson. "This is a

good first step in fixing the problem," she adds.

However, the nursing shortage is expected to continue for some time. "You'll need to do everything in your power to develop a positive work environment for staff," underscores Jagim. "We need to keep nurses in the profession. This requires support, caring, recognition, and attention to their issues."

Offer competitive wages and benefits, flexible scheduling, and a safe and supportive work environment, Jagim advises. (See article, above, for additional solutions.)

- **Holding ICU patients.**

An ED that never held patients now frequently holds ICU patients for one to three days, says Contino.

SOURCES

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“On average, about 10% of the ED volume is admitted to the ICU,” she says. “We can’t expect ED nurses to be experts managing ICU patients beyond the initial crisis management without additional training.”

To address this trend, Contino suggests providing additional training for staff. “Or cross-train a group of ED and ICU staff to better meet the needs of both units,” she says.

- **Continued high diversion rates.**

You must obtain support from administrators so diversion is not viewed as simply an “ED problem,” warns Robinson.

“Don’t wait until you have ‘time’ to explain the situation. Call them during times of crisis,” she advises. “Have them come down and see firsthand what you’re dealing with, especially when there are dissatisfied patients in the hall and providers waiting for an ED stretcher to open up.”

Show data to point to the reasons that you can’t get patients out of the ED, says Robinson. “See if you can identify a cause: slow consultants, complicated processes [including admitting], or lack of nurses on the floor to open beds,” she says. “Maybe you can document that unnecessary tests are ordered when patients are boarding in the ED,” she suggests.

Length-of-stay data are particularly important, says Robinson. “Use tracking programs to show exactly where the delays are,” she says. “Include logs with the frequency of diversion. Missed patients may translate to lost revenue.” ■

Should you use a 5-level triage scale?

An elderly, immunocompromised patient with cancer presents to the ED with a fever and a heart rate of 110, referred by the local doctor for a “rule-out sepsis” Going by a three-level triage scale, the woman would be a Level Two, says **Debbie Travers**, RN, MSN, CEN, an ED triage nurse at University of North Carolina Hospitals in Chapel Hill. “But in fact, she may be a potentially very sick Level 2,” she notes.

Under a new five-level system, this patient would be classified as “high-risk” and would be a Level Two, and she potentially would receive lifesaving care more quickly, says Travers. (See **simplified version of five-level triage algorithm, p. 96.**)

Nine EDs are using the scale

The Emergency Severity Index (ESI), developed by David Eitel, MD, MBA, an attending faculty in the emergency medicine residency program at York (PA) Hospital, and the late Richard Wuerz, MD, is a five-level triage scale used at nine EDs, including University of North Carolina Hospitals.

“This is a simple algorithm that helps you deal with increased volume and acuity and moving admitted patients out of the ED,” says **Nicki Gilboy**, RN, MS, CEN, ED nurse educator at Brigham & Women’s Hospital in Boston, which also is using the new scale. “Accurate, rapid triage is critical to the smooth running of the ED,” she stresses.

It’s vital to ensure the sickest patients are treated first in today’s busy EDs, says Travers. “The five-level

EXECUTIVE SUMMARY

Several EDs have switched to a five-level triage scale to ensure that the sickest patients are seen first.

- Patients who were previously categorized as Level Two are now Level Two or Three, so that care can be prioritized more accurately.
- Studies have shown the five-level scale to be more consistent and accurate in assessing which patients should be seen first.
- Because the scale is more specific, the patient’s level also indicates what resources they are expected to need.

5-Level Triage Algorithm

Source: Copyright and licensed by David R. Eitel, MD, MBA, and Richard C. Wuerz, MD. 1999-2001.

triage scale provides the ED with a better tool for sorting patients by level of acuity than the three-level scale," she argues.

Prioritizing care is easier

Here are some benefits of the five-level scale:

- **Triage is more specific.**

Previously, a large percentage of patients were grouped as Level Twos, but some were much sicker than others, says Travers. "Now, those middle patients are either Levels Two or Three, so we're better able to prioritize their care," she explains.

With the five-level scale, the patients who were grouped in the middle are now prioritized as a Two, Three, or Four.

"It's much easier to figure out who to see next," says Travers. "A Level Two patient would be somebody with the worst headache of his or her life, or a chest pain patient who has had an MI before, but who won't code in the next few minutes," she explains.

Travers says that Level Twos are patients you are "pretty darn worried about" and Level Threes are individuals who are "sick, but can wait a little while."

- **The scale is more consistent.**

Research has shown that three-level scales are not applied consistently by nurses, says Travers. "Other studies showed giving same nurses the same case studies of patients, and they didn't rate the patients the

same themselves," she says. "There is much better agreement with the five-level scale."^{1,2}

With three-level scales, most patients end up in the middle as a Level Two, says Travers. "The top level used to be only if somebody was about to die, and most other patients got lumped in the middle or lower categories," she explains. "This wasn't useful in prioritizing which patients you need to see next."

- **Urgent care patients can be easily identified.**

Level Four and Five patients are seen in the urgent care center, says Travers. "This has really helped us differentiate the less sick and more sick

patients, so it's very easy for us to get a cutoff," Travers says.

She adds that the five-level scale allows you to track the times when most Level Four and Five patients come in, so urgent care hours can be scheduled accordingly.

- **You know what resources the patient will need.**

The levels also tell you what resources the patient probably will need, says Travers. "For example, if a patient comes in with a toothache, they will get a prescription and go home, but if they have a sore throat

SOURCES

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and a productive cough, they might get a chest X-ray or throat culture,” she explains.

• **Patients are less likely to be triaged at a lower level than appropriate.**

With a three-level triage system, patients can fall through the cracks in a busy ED, notes Gilboy. She gives an example of an immunosuppressed patient with a fever.

“With a five-level scale, that patient is a Level Two, which is clearly high-risk. But with a three-level scale, they could be classified as either emergent or urgent,” says Gilboy.

The nurse might be on the fence about deciding between emergent vs. urgent and choose the lower category, says Gilboy. “As a result, that patient can then end up waiting longer for care,” she says.

References

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Confirm tube placement or risk tragedy

Failure to confirm endotracheal tube placement in children can lead to hypoxia and death, warns **Reneé Holleran**, RN, PhD, chief flight nurse and clinical nurse specialist at Cincinnati Medical Center.

The Dallas-based American Heart Association (AHA) recommends the use of exhaled carbon dioxide (CO₂) detectors with pediatric intubation to confirm endotracheal tube placement, she reports.

The exhaled CO₂ detectors are recommended when

the tube is initially inserted because of the potentially devastating consequences from unrecognized esophageal intubation and/or dislodged endotracheal tubes, stresses **Michele Wolff**, RN, MSN, CCRN, professor of nursing at Saddleback College in Mission Viejo, CA.

Here are things to consider when confirming tube placement:

• **Don’t rely on traditional assessments.**

It might be difficult to confirm correct endotracheal tube placement by relying solely on traditional assessments, such as chest wall expansion, color, and breath sounds, says Wolff.

• **Use continuous capnography or a colorimetric device.**

Exhaled CO₂ can be measured using continuous capnography or a colorimetric device, says Wolff.

“Continuous capnography provides a continuous waveform showing exhaled CO₂,” she explains. “This type of monitoring is most commonly used in intensive care units.”

The colorimetric device is a small, disposable plastic adapter available in pediatric and adult sizes, says Wolff. “It fits between the end of the tracheal tube and the bag-valve device. A color change indicates the presence of exhaled CO₂,” she explains.

Read the device after six ventilations because it takes approximately this number of ventilations to wash out the CO₂ from the esophagus, Wolff adds. “Make sure to differentiate between tracheal intubation where CO₂ *should* be detected, from esophageal intubation where CO₂ *should not* be detected,” she says.

In patients with pulseless arrest, the absence of exhaled CO₂ might indicate that the tracheal tube is not in the trachea or the child is not exhaling enough CO₂ to be measured because of decreased pulmonary blood flow, Wolff notes.

Wolff stresses that exhaled CO₂ devices will detect CO₂ when the tracheal tube is improperly placed in the right main stem bronchus.

Don’t rely on breath sounds alone

• **Assess auscultation of breath sounds.**

Depending on the child’s size, breath sounds might be transmitted in both the chest and abdomen, says Holleran. “Breath sounds alone do not indicate tube placement,” she notes.

• **Use direct visualization when necessary.**

If there is any doubt regarding tube position, use direct visualization, says Wolff.

“This method requires the use of a laryngoscope to verify that the tracheal tube is passed through the glottic opening,” she explains. “Chest radiography and

EXECUTIVE SUMMARY

Failure to confirm endotracheal tube placement in children can lead to hypoxia and death.

- Use exhaled carbon dioxide detectors to confirm tube placement when the tube is first inserted and confirm that it has not dislodged during transport.
- If there is any doubt about tube position, use direct visualization with a laryngoscope.
- A sudden change in the child’s heart rate might indicate tube dislodgement.

SOURCES AND RESOURCES

For more information about endotracheal tube placement, contact:

- **Reneé Holleran, RN, PhD**, University of Cincinnati Medical Center, P.O. Box 670736, Cincinnati, OH 45267. Telephone: (513) 584-7522. Fax: (513) 584-4533. E-mail: hollerre@Healthall.com.
- **Michele Wolff, RN, MSN, CCRN**, Saddleback College, 28000 Marguerite Parkway, Mission Viejo, CA 92692. Telephone: (949) 582-4222. Fax: (714) 536-6269. E-mail: mwolff@saddleback.cc.ca.us.

For more information about Protocol monitors, contact:

- **Welch Allyn Protocol**, 8500 S.W. Creekside Place, Beaverton, OR 97008. Telephone: (800) 289-2500 or (503) 526-8500. Fax: (503) 526-4200. E-mail: sales@protocol.com. Web: www.protocol.com.

For more information about PediCap carbon dioxide detectors for verification of endotracheal tube placement, contact:

- **Mallinckrodt**, 675 McDonnell Boulevard, St. Louis, MO 63134. Telephone: (800) 635-5267 or (314) 654-7004. Fax: (888) 222-9799. E-mail: customer.service-respiratory@mkg.com. Web: www.mallinckrodt.com/respiratory.

clinical assessment, including chest rise, color, and breath sounds, should also be used to confirm proper placement in addition to exhaled CO₂.”

• Confirm placement after transport.

The AHA guidelines also recommend use of exhaled CO₂ detectors to confirm that the tube has not been dislodged during transport, says Wolff. “This recommendation was made because of the difficulty in using only clinical signs to confirm correct endotracheal tube placement,” she explains.

• Observe for rise and fall of the child’s chest.

The smaller the child, the more likely that the chest and abdomen might rise and fall with ventilation, says Holleran. “If the child has been ventilated with a bag-valve mask before intubation, there may be air in his or her stomach,” she notes.

All intubated children need a gastric tube inserted to decompress the stomach and protect them from aspiration, Holleran adds.

• Use Pedi-Cap.

This end-tidal CO₂ detector, manufactured by St. Louis-based Mallinckrodt, contains a chemically treated indicator that reacts with CO₂ and changes color when the tube is in the trachea, says Holleran. (See **contact information for Mallinckrodt, left.**)

“When intubated, the strip should go from purple to yellow with about five breaths,” says Holleran. “If there is poor perfusion or the strip has been exposed to fluids, it may not function.”

• Attach end-tidal monitors to cardiac monitors.

These can provide both a quantitative readout as well as a waveform to monitor the CO₂, says Holleran.

For example, Protocol monitors have a module that will give a numerical CO₂ reading and a waveform that indicates CO₂ output, says Holleran. This can be correlated to ventilation and perfusion, she notes. (**Protocol monitors are manufactured by Protocol Systems. See contact information in source box, left.**)

• Assess changes in pulse and heart rate.

Depending on the age of the child, the heart rate may range from 80 to 120 or higher, says Holleran. Hypoxia in children is manifested by bradycardia, she says. “A sudden change in heart rate may indicate tube dislodgement,” she notes. ■



Weiss SJ, Takakuwa KM, Ernst AA. **Use, understanding, and beliefs about complementary and alternative medicines among ED patients.** *Acad Emerg Med* 2001; 8:41-47.

Although many ED patients use complementary and alternative medicine (CAM), a significant number of those patients would not tell their physicians about this, says this study from the University of California Davis Medical Center in Sacramento. Of 350 ED patients surveyed, 43% had used CAM, and 24% were currently using it. Only 67% of those patients said they would tell their doctor they were using CAMs. However, the researchers reviewed the charts of the patients who had stated they used CAMs and could find no indication of use.

“We suspect that the answer to this question referred to the patient’s private physician, and that even fewer believed they needed to tell an emergency physician,” they theorize.

The researchers also noted that 16% of patients surveyed believed that “all herbal medications are

safe.” The most commonly used substances were ginseng (13%) and ginkgo biloba (9%), both of which have significant potential adverse effects, including subarachnoid hemorrhages, note the researchers. Increased CAM use has led to a rise in reports of toxic side effects including neurologic symptoms and hepatitis, they add. “Because of potential side effects and drug interactions, patients should be routinely questioned about CAM use,” wrote the researchers. ▼

Brymer C, Cavanagh P, Denomy E, et al. **The effect of a geriatric education program on emergency nurses.** *J Emerg Nurs* 2001; 27:27-32.

A one-day geriatric education workshop can significantly improve the way ED nurses care for elderly patients, says this study from the University of Western Ontario in Canada.

The workshop consisted of three 90-minute sessions on physical assessment of the elderly, mental status

testing, and the difference between depression, delirium, and dementia. A total of 51 nurses were surveyed about their practice patterns before and after attending the workshop. In addition to the survey, changes in ED referral patterns for geriatric assessment and home care were monitored for two years after nurses attended the workshop to ensure the self-report data reflected their actual practice. Here are key findings from the nurses’ practice after the workshop:

- Patients were screened more frequently for depression, altered mental status, and dementia.
- Nurses asked patients about unplanned weight loss and if there was assistance in the home more often.
- There was a steady increase in the number of referrals to a home care program and a regional geriatric program.

The researchers recommend the use of targeted geriatric educational programs for ED nurses, including practical examples and case studies.

“When an elderly patient visits the emergency department, it may be one of the only opportunities to

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recognize warning signs of impending but preventable decline in that individual's health and independence," wrote the researchers. ▼

Rhodes KV, Lauderdale DS, Stocking CB, et al. **Better health while you wait: A controlled trial of a computer-based intervention for screening and health promotion in the ED.** *Ann Emerg Med* 2001; 37:284-291.

Patients who used a self-administered computer survey for health screening while waiting were more likely to remember advice on what they could do to improve their health, according to this study from the University of Chicago.

Patients with nonurgent conditions were asked to complete the survey, with a 89% participation rate. Those patients were willing to disclose behavioral risk factors, request health information and remember the advice they were given, say the study's findings.

The researchers developed a computer-based assessment of health risks that could be modified by behavioral or lifestyle changes. Each completed interview contained answers to approximately 80 questions about the patient's health and behaviors, with average response times of 15 minutes for men and 18 minutes for women, who are asked additional cancer and contraceptive-related questions.

After completing the questionnaire, patients received individualized health recommendations and were invited to request additional information. Key findings include:

- Of the 248 patients who participated, 85% disclosed at least one behavioral risk factor, including smoking, problem drinking, inconsistent use of seat belts, major depression, or use of street drugs.
- 95% of patients who completed the questionnaire asked for additional information about specific health topics.
- In follow-up phone interviews, 62% of patients recalled receiving health advice.

The completed questionnaire generated a 10-page summary for the treating physician listing the patients' major health risks and referral information. The researchers recommend that EDs consider using computer-based interactive technology during patient waiting time to educate patients and to identify individuals who might require specific interventions.

"Our data suggest that the ED setting is conducive to providing a teachable moment for preventive health messages, regardless of whether those messages are related to the reason for the visit," they conclude. ■

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After reading this issue of *ED Nursing*, the CE participant should be able to:

1. Identify clinical, regulatory, or social issues relating to ED nursing. (See *Take steps to improve patient safety or be noncompliant with new standards; Checklist to Comply with New Standards; Confirm tube placement or risk tragedy* in this issue.)
2. Describe how those issues affect nursing service delivery.
3. Cite practical solutions to problems and integrate information into the ED nurse's daily practices, according to advice from nationally recognized experts. ■

Source: Cheshire Medical Center, Keene, NH.

Source: Cheshire Medical Center, Keene, NH.

Medication Event

Date: _____

Day Evening Night

Med: _____

Route: _____

Actual Potential Comment on back

Type of Event

- Wrong drug Extra dose
- Wrong dose Omitted
- Wrong patient Equipment
- Wrong route Med not available
- Wrong time

Contributing Factor

- T — Transcription
- I — Illegible order
- P — Pharmacy dispensing factor
- S — Similar-named drug

Source: Cheshire Medical Center, Keene, NH.