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September
2001

Acute cardiac ischemia protocols: Update or risk poor outcomes

New approaches will identify more patients with myocardial infarction

A patient comes to the emergency department (ED) with moderate chest pain and is discharged with a diagnosis of indigestion. Hours later, the patient dies of an undiscovered acute myocardial infarction (AMI).

Does this sound like your worst nightmare? Between 2% and 4% of ED patients who actually have an AMI are mistakenly sent home, warns **Katherine A. Littrell, PhD, RN**, project manager for the National Registry of Myocardial Infarction at Genentech, based in South San Francisco, CA.¹

A new report from the Bethesda, MD-based National Heart Attack Alert Program (NHAAP), *Evaluation of Technologies for Identifying Acute Cardiac Ischemia [ACI] in Emergency Departments*, will help to ensure that patients don't fall through the cracks, says Littrell.

There is a danger of misdiagnosis because ACI patients often have confusing and misleading symptoms, such as a normal or nondiagnostic 12-lead electrocardiogram (ECG), no chest pain or shortness of breath, and initially normal cardiac marker profiles, adds Littrell.

Even though typical symptoms are often absent, these patients may actually have unstable angina, non-ST-segment elevation myocardial infarction, or ST-segment elevation myocardial infarction, she explains.

EXECUTIVE SUMMARY

A report from the National Heart Attack Alert Program gives new recommendations for care of acute cardiac ischemia (ACI) patients in the ED, so you should update your protocols.

- Patients with symptoms of ACI should receive serial electrocardiograms after arriving at the hospital.
- Echocardiograms should be used for low- to moderate-risk groups.
- Biomarkers are effective in diagnosing myocardial infarction, but only if they are done serially.

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“These new recommendations will help you identify more patients with [ACI],” she says.

Update your protocols

Use the report to update your protocols immediately, urges **Julie Bracken**, RN, MS, CEN, director of nursing education for the ED at Cook County Hospital in Chicago and the Des Plaines, IL-based Emergency Nurses Association representative to the NHAAP. (See **algorithm for Symptoms Indicative of Myocardial Ischemia/Infarction, p. 143.**)

“ED nurses need to adapt their clinical approach to diagnostic technologies based on the updated technology report,” Bracken insists. (See **Chest Pain Center Physician’s Orders for Acute Myocardial Infarction, Unstable Angina/Non Q-Wave MI, Acute Coronary Syndrome, Chest Pain of Probable Cardiac Origin, and Chest Pain of Probable Non-Cardiac Origin inserted in this issue.**)

You play an important role in influencing which diagnostic technologies are given to each specific patient presenting with actual or potential acute cardiac ischemia (ACI), says Bracken.

“In this cost-conscious health care environment, guides to help direct proven technologies to diagnose difficult patients and expedite appropriate care are valued,” she says.

Collaborate with physicians constantly to determine the best clinical approach for care, based on an individual patient’s response to technology, she advises.

Here are key recommendations of the report:

- **Administer serial ECGs to patients with nondiagnostic 12-lead ECGs and symptoms of ACI.**

A single ECG is not enough to rule in or rule out ACI, says Littrell. Instead, patients with symptoms of ACI should receive serial ECGs or continuous ST-segment monitoring after arriving at the hospital, she advises.

Research shows that 6.7% of these patients developed ST-segment elevation after their arrival, in a median time of 63 minutes, she notes. “It appears that ST-segments are unstable in those early hours,” says Littrell. “So serial ECGs are essential for patients with evolving ST-segment elevations,” she emphasizes.²

- **Use specific diagnostic tests only after general**

SOURCES AND RESOURCE

For more information about treating acute cardiac ischemia in the ED, contact:

- **Julie Bracken**, RN, MS, CEN, Cook County Hospital, 1835 W. Harrison St., Chicago, IL 60612. Telephone: (312) 633-7683. Fax: (312) 633-8539. E-mail: juliebracken@msn.com.
- **Mary M. Hand**, MSPH, RN, National Heart Attack Alert Program, National Heart, Lung, and Blood Institute, 31 Center Drive, MSC 2480, Bethesda, MD 20892-2480. Telephone: (301) 594-2726. E-mail: HandM@NHLBI.NIH.gov.
- **Katherine A. Littrell**, PhD, RN, Genentech, Medical Affairs, One DNA Way, MS No. 59, South San Francisco, CA 94080. Telephone: (650) 225-8610. Fax: (650) 225-4720. E-mail: littrell@gene.com.

The complete report *Evaluation of Technologies for Identifying Acute Cardiac Ischemia in Emergency Departments* is available on the Agency for Healthcare Research and Quality web site (www.ahrq.gov). Click on “Evidence-based Practice.” Under “Evidence Reports,” click on “Acute Cardiac Ischemia in Emergency Departments.” The full report and an executive summary can be downloaded at no charge. One free copy of the report (01-E006) is available from:

- **AHRQ Publications Clearinghouse**, P.O. Box 8547, Silver Spring, MD 20907-8547. Telephone: (800) 358-9295. E-mail: ahrqpubs@ahrq.gov.

tests fail to diagnose ACI.

Broad use of such technologies as ECG and the Acute Ischemia Time-Insensitive Predictive Instrument (ACI-TIPI) for initial evaluation of all patients presenting with signs and symptoms of ACI is indicated, says Bracken. “The results of these tests rule in the more high-risk cases for care,” she adds.

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COMING IN FUTURE MONTHS

■ Reduce cardiac monitor false alarms

■ Update on treatment of Ecstasy overdoses

■ Effective strategies for domestic violence screening

■ New treatments for acute myocardial infarction

ACS Algorithm

1. Troponin I/T levels have both been useful in identification of patients at increased risk of early mortality and infarction/reinfarction.
 2. ST-segment depression, T-wave inversion, transient ST-segment elevation, and other high-risk characteristics (i.e. ongoing ischemia, PCI, etc.) have been used as a criteria for determining eligibility for the GP IIb/IIIa inhibitors. GP IIb/IIIa inhibitors are given in conjunction with heparin and ASA.
 3. If ST-segment elevation of 1 mm in 2 or more contiguous leads develops during evaluation, consider eligibility for reperfusion strategy and move to the ST-segment elevation/New/Presumably new BBB algorithm.
 4. LMWH may be useful for patients at high risk for early cardiovascular events when presenting with UA or NSTEMI.
 5. All patients should receive immediate assessment of vital signs, oxygen saturation, cardiac marker levels, electrolyte and coagulation studies, and a brief targeted history and physical examination. A 12-lead ECG and IV access should be rapidly obtained.
 6. See Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care in *Circulation* (2000; 102:1178-179) and the ACC/AHA Guidelines for the Management of Patients with Unstable Angina and NSTEMI in *JACC* (2000; 36: 970-1062) for further detailed discussions.
- * For patients in this arm of the algorithm, monitor serial cardiac markers, serial ECG, or continuous 12-lead ECG monitoring.

Source: Katherine A. Littrell, PhD, RN, South San Francisco, CA.

For more challenging cases, you may need to use other testing to further evaluate ACI, says Bracken.

To stay current with the report's recommendations, change your protocols to include additional testing only after initial history, physical examination, and resting ECG fail to diagnose ACI, says Bracken.

These tests may include echocardiography, a diagnostic ultrasound examination of the heart; sestamibi perfusion imaging, a scan to trace cardiac blood flow, and stress ECG, says **Mary M. Hand**, MSPH, RN, coordinator of the NHAAP. For example, after the ECG and ACI-TIPI, high-risk patients may need no further testing before you decide to admit them, says Hand.

"For those in the middle range of risk, serial ECG monitoring, serial cardiac enzyme measurements, or both might be appropriate for triage," she adds.

For low-risk patients, use nuclide perfusion scans to confirm that it's safe to send the patient home, says Hand. Tests such as cardiac ultrasonography or radionuclide myocardial perfusion imaging are recommended only for patients whose diagnoses are not apparent after the initial history, physical examination, and resting ECG, she notes.

Update your protocols

- **Use echocardiograms or nuclear imaging to assess low- to moderate-risk groups of patients for ACI.**

The report concluded that echocardiography and sestamibi perfusion imaging were useful in diagnosing ACI, says Littrell.

"The echocardiogram or the sestamibi scan may be part of your protocols for patients in low- to moderate-risk groups for ACI," she adds. "This includes patients with a normal or nonspecific ECG whose cardiac markers are not abnormal, and patients without a previous history of AMI," she adds.

- **Use out-of-hospital ECGs.**

The report recommends the use of prehospital ECGs, says Littrell. "These are excellent for early diagnosis of AMI," she explains. "This can save time and improve short-term mortality."

This recommendation mirrors the new guidelines from the Dallas-based American Heart Association, she adds.³ **(For more information on the those guidelines, see *ED Nursing*, November 2000, p. 1, and February 2001, p. 45.)**

Hand points to research showing that prehospital 12-lead ECGs have been shown to reduce the mean time to thrombolysis by 33 minutes and reduce short-term overall mortality.⁴

Your protocols should include rapid interpretation

of prehospital ECGs, says Littrell. "Ideally, ECGs should be transmitted to the ED so the diagnosis is confirmed prior to patient arrival," she adds.

- **Do biomarkers serially.**

A single measurement of biomarkers at presentation to the ED is not accurate for diagnosing MI, although most biomarkers have high specificity, says Hand. "Serial measurements can greatly increase the sensitivity for AMI while maintaining their excellent specificity," she says.

Biomarkers are effective in diagnosing AMI if done serially, says Littrell. "The use of biomarkers to diagnose [ACI] in the ED is an area of frustration for many people," she notes.

Biomarkers such as troponin will identify cell death, but they do not identify patients with ACI without myocardial cell death, she explains. "They also do not provide us with knowledge of the mechanism of myocardial cell death, such as pulmonary embolism or congestive heart failure," adds Littrell.

When you look at a biomarker, you need to take into consideration the timing of the event, says Littrell. "You need to have an idea of when the ischemia actually began to know the sensitivity and specificity of these markers," she explains.

Always look at markers within the time frame of the patient's event, says Littrell. "Myoglobin elevates within one to three hours, whereas CK-MB and troponin may take four to seven hours to become abnormally elevated," she explains.

Instead of doing just one biomarker, you should do follow-ups, she stresses. "If you have a patient with an AMI who arrives in the ED one to two hours after onset of symptoms, their troponin level probably still will be normal," she notes. "So if you depend on that alone, you could actually miss an AMI diagnosis."

Don't use cardiac markers for patients with unstable angina, says Littrell. "In this group, markers alone will significantly underdiagnose the patient," she adds.

References

1. Pope JH, Ruthazar R, Beshansky JR, et al. Clinical features of emergency department patients presenting with symptoms suggestive of acute cardiac ischemia, a multicenter study. *J Thromb Thrombolysis* 1998; 6:63-74.
2. Littrell KA, Skovron ML, Zalenski RJ, et al. Characteristics and outcomes in AMI patients who subsequently develop ST-segment elevation after hospital arrival. *J Am Coll Cardio* (Supplement A). 2001; 37(2):372A.
3. The American Heart Association in collaboration with the International Liaison Committee on Resuscitation (ILCOR) Guidelines 2000 for cardiopulmonary resuscitation and emergency cardiovascular care: An international consensus on science. *Circulation* 2000; 102(Suppl 1):172-203.

Don't put latex-allergic patients in danger

When a young woman came to the ED at Bellingham, WA-based St. Joseph's Hospital with abdominal pain, she was asked about allergies.

"She said she had some problems with latex in the dentist's office," recalls **Janice C. Taylor**, RN, BSN, CEN, CFRN, the ED nurse who cared for the patient.

The patient was given a pelvic exam with the physician using latex gloves, and a vaginal ultrasound that used a latex condom over the probe. The following day, she returned to the ED with swelling in her perineal area and difficulty urinating.

"I gave her a more comprehensive screening, and found that she had multiple risk factors for latex allergy," says Taylor. "For this exam, nitrile gloves were used."

The patient improved after taking antihistamines and was given specific instructions to tell all medical staff about her problem, says Taylor.

"Since then, she has come in several other times," she says. "We used latex precautions and have not had any problems."

The above scenario underscores the need to identify patients with latex allergy, emphasizes **Kristi K. Miller**, RN, C, MS, president of Solutions for Healthcare, an Edina, MN-based consulting firm that provides education about latex allergy, and former project manager for Latex Initiatives at Allina Health System in Minneapolis.

"Before we touch someone with a latex product, we need to know if there is a potential for an allergic reaction in that person," she says.

EXECUTIVE SUMMARY

Always ask patients about latex allergy before any procedures are done that involve latex, such as vaginal ultrasounds.

- Consider switching to all latex-free products to avoid potential reactions.
- Patients with chronic illness may develop symptoms with continued exposure to latex.
- Dipped products like gloves, catheters, and condoms are particularly dangerous to latex-allergic patients.

Here are ways to ensure that these patients are quickly identified:

- **Educate patients about the importance of informing staff.**

When a patient is first identified as latex-allergic, urge the patient to tell all medical personnel *before* any interventions are done, says Taylor.

"The best way to identify latex allergic patients in the ED is to have them tell you," she stresses.

- **Remove as many latex products as possible from the environment.**

When a patient has been identified as latex-allergic, you should immediately remove latex gloves from the room and replace them with latex-free alternatives such as vinyl or nitrile, says Taylor. "Then place the box or cart of latex-free supplies at the bedside for easy use," she says.

Apply allergy bands to the patient and place a sign at the bedside or the patient tracking board to alert all care givers that the patient is allergic to latex, says Taylor.

For any procedure that might expose the patient to latex, like a vaginal ultrasound, ensure that nonlatex products are used, Taylor adds.

- **Consider switching to all nonlatex equipment.**

Do you ask patients about latex allergy first, then switch to nonlatex equipment as needed? If so, you may be putting patients at risk, warns Miller.

Many EDs have decided to stop using a separate cart for latex-free supplies and switch to all nonlatex equipment, including IV tubing, blood pressure cuffs, catheters, and gloves of all kinds, so there is no chance of harming any patient, she reports.

"This action parallels the idea of 'universal precautions for bloodborne pathogens,'" says Miller. "This is 'universal precautions to prevent latex allergy.'"

The cost of a latex-free examination glove is getting very close to its latex equivalent, she reports. "If your hospital decides on a particular brand and purchases in large volumes, the cost diminishes further," notes Miller.

When switching to other types of latex-free products, the cost may be much less than you expect, says Miller. "I have seen it be almost 'a wash,' because so many manufacturers have already changed their products to nonlatex and at no difference in cost," she says.

She points out that avoiding a double inventory for patients with latex allergies may reduce costs. This can amount to 20-50,000 products within a hospital, if you are stocking two brands chest tubes, IV tubing, and blood tubing, says Miller. "There is also a risk of using the wrong product with a person in an emergency if there is double inventory," she notes.

- **Use a tool to ask patients about latex allergy.**

Continued on page 147

Source: United Hospital, St. Paul, MN. Originally developed by Allina Health System, Minneapolis. Use is limited for illustration purposes, and the tool should be individualized to a facility's own use.

Recommended Reading

Below is a partial listing of resources pertaining to latex-allergic patients:

- American College of Asthma, Allergy, and Immunology and American Academy of Allergy, Asthma, and Immunology. AAAAI and ACAAI Joint Statement Concerning the Use of Powdered and Non Powdered Natural Rubber Latex Gloves, Organizational Position Statement. *Ann Allergy Asthma Immunol* 1997; 79:487.
- Position Statement, American College of Allergy, Asthma, and Immunology. Latex allergy: An emerging health care problem. *Ann Allergy Asthma Immunol* 1995; 75:19-21.
- Kelly KJ, Walsh-Kelly CM. Latex allergy: A patient and health care system emergency. *J Emerg Nurs* 1998; 24:539-545.
- Kelly KJ. Natural rubber latex-induced anaphylaxis. American Academy of Allergy, Asthma, and Immunology conference paper presentation. New Orleans; March 20, 2001.
- Miller KK. Research-based prevention strategies: Management of latex allergy in the workplace. *American Association of Occupational Health Nurses* 2000; 48:278-290.
- Miller KK, Weed P. The latex allergy triage or admission tool: An algorithm to identify which patients would benefit from "latex-safe" precautions. *J Emerg Nurs* 1998; 24:145-152.
- U.S. Department of Labor, Occupational Safety and Health Administration. *Technical Information Bulletin: Potential for Allergy to Natural Rubber Latex Gloves and other Natural Rubber Latex Products*. Washington, DC:1999. ■

SOURCES

For more information about treating patients with latex allergy, contact:

- **Kristi K. Miller**, RN, C, MS, Solutions for Healthcare, 5153 Tifton Drive, Edina, MN 55439. Telephone: (612) 743-9970. Fax: (952) 944-1109. E-mail: kristi.k.miller@gte.net.
- **Janice C. Taylor**, RN, BSN, CEN, CFRN, St. Joseph Hospital, 2901 Squalicum Parkway, Bellingham, WA 98225. Telephone: (360) 734-5400. E-mail: JTaylor@peacehealth.org.

Miller recommends using a screening form to determine if patients have a diagnosed latex allergy or if they have had reactions to latex in the past. (See form, p. 146.)

"It also determines if they fall into a very high category of potential to develop a latex allergy," she adds. "This patient would benefit from us not using any latex products in their care."

• Consider the risks before using latex.

Think about the potential for an allergic reaction before you use a latex product "on or in" a patient, says Miller. The severity of a reaction depends on the individual's level of sensitization from mild to severe, the route of exposure (cutaneous, mucous membrane, IV, peritoneal, or respiratory) and the amount of allergen load in the product, she explains.

"All products are *not* equal," says Miller. "Dipped products like gloves, some catheters, and condoms have more allergen in them than molded products like blood pressure cuffs or bevels of syringes," she notes.

Any patient has the potential to develop symptoms with continued exposure, warns Miller. "In certain populations with chronic illness, we may be contributing to exposure over time so that the person may become clinically symptomatic down the road," she says. "This is another important factor for you to consider."

• Know risks of aerosolized latex.

If powdered latex gloves are used in the ED, aerosolized latex can stay airborne for hours, says Miller. "This may land on drapes, curtains, or clothing of the personnel," she adds.

To avoid this, she recommends switching to nonlatex, nonpowdered examination gloves; low-allergen, nonpowdered sterile gloves; or all nonlatex gloves. "This prevents inadvertent exposure of a client with latex allergy that is being treated at the same time others are receiving care," she says. ■

Use algorithm to treat abdominal pain

When a 52-year-old woman came to the ED at University of California at Irvine Medical Center in Orange with severe abdominal pain, nausea, and a low-grade fever, staff were able to use a new abdominal pain pathway to streamline her care.

"The ED and waiting area were completely full, but her labs were returned before she ever reached the treatment area for further care," reports **Darlene Bradley**, RN, MSN, MAOM, CCRN, CEN, director of emergency/trauma services.

EXECUTIVE SUMMARY

Using an algorithm for abdominal pain ensures that patients are treated consistently and quickly.

- Use of the algorithm is tracked to make sure that care is consistent.
- Length of stay is reduced by 16% because patients receive treatment and evaluation procedures at triage, and there is an 11% decrease in cost per patient.
- The algorithm is an effective learning tool for physicians and nurses.

Based on those results, the woman was quickly diagnosed with pyelonephritis. “She received her fluids, pain control, and antibiotics, and was discharged from the ED soon after,” says Bradley.

If the patient had remained in the waiting room, she would have experienced progressive illness and pain, says Bradley. “The pathway allowed her to receive treatment much earlier than she would have otherwise,” she adds. **(See algorithm for Acute Abdominal Pain Adult — Male or Female, pp. 149-150.)**

Here are some of the benefits of the abdominal pain algorithm:

- **Care is more consistent.**

Nurses are given a quarterly report on the use of the algorithm, including cost per discharge, resource utilization, and clinical indicators, says **Tania Bridgeman**, PhD, RN, the hospital’s product line development manager. These data are used as a quality improvement (QI) tool for nursing, notes Bradley.

“The nurses enjoy hearing how many patients were identified in the abdominal pain program, how many had the pathway utilized, and what the outcomes of the usage were,” she says.

The process ensures that care is consistent, says Bridgeman. “We look for patterns or trends in practice we need to address. If none are detected, we know that an established standard of care is being followed,” she says.

Quarterly reports determine the level of compliance, says Bradley. “The reports also maintain the high level of interest necessary for new methods of managing health care delivery,” she adds.

- **There is a collaborative approach between nursing and medicine.**

Since the program was jointly developed, nurses and physicians have a mutual interest in the outcomes and the success of the program, says Bradley.

The pathway is a good learning tool, she notes.

SOURCES

For more information about the abdominal pain algorithm, contact:

- **Darlene Bradley**, RN, MSN, MAOM, CCRN, CEN, Emergency/Trauma Services, UCI Medical Center, 101 The City Drive, Route 128, Orange, CA 92868-3298. Telephone: (714) 456-5248. Fax: (714) 456-5390. E-mail: dbradley@uci.edu.
- **Tania Bridgeman**, PhD, RN, UCI Medical Center, Product Line Development, 200 S. Manchester, Suite 835, Route 163, Orange, CA 92868-3298. Telephone: (714) 456-3697. Fax: (714) 456-8968. E-mail: tbridgem@uci.edu.

“Physicians and nurses develop an understanding of how to make a differential diagnosis, as well as the various indications for treatment,” she says.

The algorithm was developed using best-practice standards and evidence-based practice, particularly with prescribing practices, says Bradley. “Physicians and nurses use the pathway to learn the value of order sets and the appropriate antibiotic orders and dosages for infectious diseases.”

- **Length of stay is reduced.**

With the pathway, patients receive treatment and evaluation procedures beginning at triage, says Bridgeman. “If the patient cannot be moved immediately to the treatment area, at least the labs are already being processed so the physician can make a determination as to what’s going on with the patient,” she explains.

Bridgeman adds that this process has cut the patient’s total length of stay from an average of 4.1 hours to 3.46 hours, a 16% decrease.

Because there is an associated physician order set, nurses can initiate the triage labs and tests as soon as the patient is admitted, says Bridgeman. “They can remind physicians to utilize the order set,” she says. The algorithm is enlarged and posted on the wall of the ED, she adds.

- **Costs are lower.**

Bradley reports an average cost reduction of \$100 per patient, an 11% average decrease in cost per case. The pathway ensures that antibiotics selected are low cost and that the labs and X-rays ordered are essential for the diagnosis of the patient, she explains.

“Without such a detailed pathway, providers often may order more labs or X-rays than is needed to make

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Source: UCI Medical Center, Orange, CA.

the diagnosis," she adds.

• **Return visits are reduced.**

Bradley notes that the pathway includes a listing of antibiotics for primary pathogens: gram negatives, *E. coli*, *Klebsiella*, and anaerobes.

"Each drug has the associated costs per day, along with the preferred choices and alerts to renal problems and nosocomial infections," she says.

The goal is to prescribe the antibiotic that most likely would affect the infectious organism, she adds.

"Patients often return to the ED because their complaints or symptoms have not resolved. In some cases, this may be attributed to the ineffectiveness of the prescribed antibiotic," she says. "With the pathway, return visits are less likely to occur."

• **Patients express more satisfaction with their ED visit.**

Earlier interventions are more satisfying to patients, says Bradley.

"The patient receives immediate education about the process and what will happen in their course of stay," she explains.

In the ED's customer satisfaction survey, patients often express a positive opinion about the process, says Bradley.

"Patients comment about the rapid intervention they received, such as the labs being done much earlier in the process than would have been expected," she says. ■

Prepare for late-night Joint Commission surveys

Are you ready for a "sneak attack" from the Joint Commission on Accreditation of Healthcare Organizations? Surveyors often enter the hospital for night surveys through the ED since the doors are always open, warns **Kathleen Catalano**, RN, JD, director of administrative projects at Children's Medical Center of Dallas.

In one hospital, the surveyors arrived at 3 a.m. on the third night of a four-day survey, she notes. "However, in most cases, they arrive in the evening of day two for a four-day survey, day one of a three-day survey, etc.," she adds.

Usually if a survey is taking place, management is present and can lead the visitors through the areas, notes Catalano.

"Staff on nights and evenings are generally not accustomed to outsiders inspecting," she says. "Also,

EXECUTIVE SUMMARY

Accreditation surveyors often enter the hospital for night surveys through the ED, when staff may be busier with patient care and less prepared.

- Surveyors want to see that policies are consistent for day and night shifts and are looking for consistent responses to questions.
- You need to follow the same procedures during day and night shifts for contacting patients' private physicians and obtaining specialty consultations.
- If the way you practice differs at all from hospital policy, respond to surveyor's questions according to what the policy says.

the ED is usually hectic at that point in time. If staff are not prepared for the visit or how to approach and talk with a surveyor, problems can arise."

Here are ways to prepare for a night survey:

• **Make sure night shift's answers to questions are the same as the day shift.**

When surveyors ask questions on the evening or night shifts, the answers should be the same, says **Patrice L. Spath**, RHIT, a health care quality specialist with Brown-Spath and Associates, a Forest Grove, OR-based firm that provides performance improvement training for health care organizations. (See **checklist of surveyor questions, p. 152.**)

Answer according to what your policy/procedure is, stresses Spath. "Don't answer according to the way you usually do it, if what you usually do is a bit different from what is written down in the policies/procedures," she explains.

• **Provide staff with consistent training.**

Staff nurses who work evening or night shift should receive the same pre-survey training as day shift staff, says Spath.

"Nurses may be reluctant to come in during the days for training," Spath adds. "That's why innovative training techniques must be used, such as poster presentations and puzzles or brain teasers."

Surveyors want to see consistency between the answers given by day shift staff and the answers provided by staff on other shifts, Spath says. "For example, [they may ask] 'How do you exchange clinical information with providers when patients are transferred out of the ED to another hospital?' The process should be the same regardless of the time of day," she explains.

Continued on page 153

Here are sample surveyor questions

Accreditation surveyors who come to the ED at night may ask you the following questions, according to **Kathleen Catalano**, RN, JD, director of administrative projects at Children's Medical Center of Dallas.

"These were actual questions asked during an after-hours survey by a physician surveyor," she adds.

- Is this the triage for both fast track and the ED?
- Do you have triage guidelines? Where are they?
- Do patients receive any medications here? Are there criteria or guidelines you follow for that?
- If a child arrives without his/her parents, when do you see them? Can you treat them? Under what conditions? What about those who say, "I think I'm pregnant?"
- Do you perform developmental assessments on patients?
- Where do you keep your medications in this area?
- What if you have an HMO patient, and the physician says to send the patient over to his/her office?
- How many monitors do you have here?
- Can we go to one of your trauma rooms?
- How many physicians do you usually have on duty?
- Do you have all the equipment and supplies you need here?
- Is that camera used to video your codes?
- Do you have narcotics here? Who can get into them?
- How often does housekeeping come?
- How many rooms do you have altogether?
- Do you shift staff between the fast track and the ED? What about medical staff?
- How many attendings are there?
- How many residents?

The surveyor then gave a potential case scenario and questioned about that situation:

- What orders probably would be given?
- What fluids?
- What dose?

Back to regular questioning:

- Do you have any plugs that are not red?
- Are you aware of any performance improvement studies done in the ED? Do you have the results of those studies?
- What is your typical age range?
- Do you have an OB pack here? (Surveyor mentioned that there should be two OB packs — one for backup.)
- What would you do if a patient's father came in and pulled a gun?
- There are tornados on the rise, what do you do?

Do you evacuate? Where do you evacuate to?

- What happens if someone calls and says there are computer problems? Are you so dependent on computers that you have no other ways to run the ED?
- Do you allow home medications to be given? Under what circumstances? What about inhalers?
- Do you ask the patient about herbal and oral medications he/she is on?
- When patients are in the ED, where do the parents stay?
- Do you do any procedures here in the ED? What procedures can you do here?
- When setting broken bones, what medications do you use?
- Who reads the X-rays? Which physicians? ED or radiology?
- What about child abuse? How is the patient handled?
- Where is the chain of evidence kept?
- When you have a child abuse situation and it's after hours, what do you do?
- Do you have an obligation to report suspected child abuse? How do you do that?
- What about violent patients? How do you handle that?
- Do you have to use restraints? When was the last time? Who assesses the patient to see if the patient's needs are met? When the patient is in restraints, who checks the patient? Do you remain with that patient? Orders for restraint are written for how long? Restraints are released when? Do you educate the patient about restraints? What if the patient is a child — do you educate the parents as well?
- If you have a trauma case here, how is the blood provided?
- How do you get the blood?
- Do you require consents for blood?
- Do you require consents for anesthesia (sedation)?
- Do you require consents for procedures?
- Do you do any clinical research here? Do patients have to sign a consent for research?
- If a patient does not have a physician, how are they followed?
- How are second-degree burns handled if on a patient's hand?
- If a patient has had a seizure, where and when is follow-up done?
- If a patient comes in and has no money to pay for medications, what do you do?
- What splinting materials do you use?
- What tests do you perform in this soiled linen room?
- Do you have competency reviews?
- Is every staff member performing that type of test colorblind tested?
- What happens if a patient needs chemotherapy in the middle of the night? ■

SOURCES

For more information on evening and night accreditation surveys, contact:

- **Kathleen Catalano**, Children's Medical Center of Dallas, 1935 Motor St., Dallas, TX 75235. Telephone: (214) 456-8722. Fax (214) 456-6081. E-mail: kcatal@childmed.dallas.tx.us.
- **Patrice L. Spath**, RHIT, Brown-Spath & Associates, P.O. Box 721, Forest Grove, OR 97116-0721. Telephone: (503) 357-9185. Fax: (503) 357-9267. E-mail: patrice@brownspath.com. Web: www.brownspath.com.

The surveyors don't want management present, says Catalano. "They feel that a hospital should be able to handle operations without the management team, since that is the normal practice on evenings and nights," she explains.

There should be consistent teaching hospitalwide for age-specific competency, sedation, performance improvement, safety, medical equipment, utilities management, security, hazardous materials and waste, infection control, pain management, restraint, and seclusion, says Catalano.

"The entire staff must be able to answer housewide questions," she adds.

- **Ensure consistency of care.**

When observing, surveyors will be looking for differences in practices from the day shift, says Spath.

"For example, are infection control practices the same at night as they are during the day? Are leftover food trays sitting out on the nurses' desk from supper? Are dirty linens handled in the same manner?" she asks.

Surveyors will look for evidence of typical problems that occur in the ED on evening and night shifts, says Spath. "For example, it is common for ED staff to have trouble getting in touch with patients' private physicians or obtaining a specialty consultation in the late evening or at night," she says.

Patients must be provided the same level of care 24 hours a day, says Spath. She suggests asking evening and night shift nurses if there are any areas where patient care might differ significantly from the practices during the day.

"Focus on access to services and continuity of care, such as admissions and transfers," she advises. "If evening and night shift practices are not consistent with the written policies and procedures of the organization, you need to fix this problem before your next survey."

Spath provides this example of a common

continuity-of-care issue in the evening: An elderly woman is ready to leave the ED after having been treated for acute gastroenteritis and dehydration. During the day, there is someone at her assisted living center that can come and pick her up. At night, no one is on duty who can transport her back.

Staff in the evening and nights should follow clearly defined policies/procedures for those problematic scenarios, says Spath.

- **Ensure adequate staffing.**

Surveyors will want to see that the ED is adequately staffed during off-hours, says Catalano.

"They tend to split up," she explains. "One may go to the staffing office and have the coordinator pull the staffing for recent holidays and compare that with present staffing. They will also want to see the master staffing plan." ■



Blank FS, Mader TJ, Wolfe J, et al. **Adequacy of pain assessment and pain relief and correlation of patient satisfaction in 68 ED fast-track patients.**

J Emerg Nurs 2001; 27:327-334.

Acute pain is underevaluated and undertreated in the fast-track setting, says this study from Baystate Medical Center in Springfield, MA. A total of 68 patients with minor nonemergent pain were surveyed upon arrival and again before discharge. Patients rated their pain with a Visual Analog Scale and also gave pain ratings they were willing to accept before leaving the ED. Here are key findings:

- Almost all patients (93%) were willing to go home with a certain amount of pain.
- Of these patients, 60% went home with more pain than they were willing to accept.
- Half of the patients were given pain medication, and only half of those patients said the pain relief was adequate.
- The median time from arrival to administration of pain medication was one hour and 44 minutes.
- The median patient satisfaction rating for overall care was "very good."

The researchers were surprised to find no correlation between patient satisfaction and timeliness of pain relief or whether the patients received pain medication. They note that there is a tendency to rely on patient satisfaction scores to determine whether pain management strategies are effective. However, this study showed that patient satisfaction may be high, even if

patients experience only minimal reduction in pain.

“It may be that other important factors such as the expertise of staff, correct diagnoses, and/or kindness shown overall outweigh the one parameter of pain control,” they conclude.

To more accurately assess your pain management, the researchers suggest asking patients directly if they had sufficient analgesia before discharge and asking whether they were satisfied with the pain management they received. ▼

Hungerford DW, Pollock DA, Knox TH. **Acceptability of emergency department-based screening and brief intervention for alcohol problems.** *Acad Emerg Med* 2000; 7:1,383-1,392.

Patients with mild to moderate alcohol problems can be helped through brief screening and intervention in the ED, says this study from the National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, and Emory University School of Medicine, all based in Atlanta. Patients were screened using an Alcohol Use Disorders Identification Test (AUDIT). Patients who screened positive for alcohol problems were given brief, on-site counseling and referral. Here are key findings of the study:

- Of 1,034 patients approached, 78.3% (810) agreed to participate after being informed they would be asked specifically about alcohol problems.
- Of these patients, 21.2% (172) screened positive for mild to moderate alcohol problems.
- Out of 88 patients who screened positive for alcohol problems, 94.3% (83) of patients accepted an intervention (a brief counseling session), and most set goals to decrease or stop drinking.
- Of 23 patients who were contacted again, most reported significant decreases in alcohol intake and dependence symptoms.

Overall, the researchers found high consent rates for participation, acceptance of brief counseling, willingness to set goals to decrease drinking, and satisfaction in follow-up interviews.

The researchers used dedicated staff who had time to screen patients and provide counseling. “The protocol was acceptable to ED staff because it neither interfered with clinical operations nor increased workload for current ED staff,” they note. ▼

Cydulka RK, Emerman CL, Rowe BH, et al. **Differences between men and women in reporting of symptoms during an asthma exacerbation.** *Ann Emerg Med* 2001; 38:123-128.

Men are less likely than women to report severe asthma symptoms, according to this study from Metro-Health Medical Center in Cleveland. The study combined data from four studies performed from 1996 to 1998 using a standardized protocol. Women were more likely than men to report “severe” complaints pertaining to frequency of symptoms, intensity of symptoms, and activity limitations.

Although men who came to the ED for treatment of acute asthma had similar airway obstruction, they reported less frequent and less severe asthma symptoms.

“It is unclear if men are less able to perceive low levels of obstruction or if they are less disturbed by them,” the researchers note. They also theorize that the tendency for men to develop asthma at an earlier age may result in less awareness of obstruction, or that men may be more reluctant to seek care until the problem is so acute they can’t ignore it any longer.

These findings support the use of objective measures of airway obstruction when treating asthmatic patients so that patients can be properly treated. “Educational programs geared toward men, particularly those who may be poor perceivers of obstruction, and geared toward health care providers could help further this simple goal,” they wrote. ■



Don't miss spinal cord injuries

When assessing a patient for spinal cord injuries, use this technique developed by **Laura M. Criddle**, MS, RN, CS, CEN, CCRN, CNRN, emergency, trauma, and neurological clinical nurse specialist at Oregon Health and Sciences University in Portland.

“This is a quick little assessment I think of as the ‘SCI Dance,’” she says. “It begins, ‘C one through four, breathe no more; five, six, seven, eight.’ What this means is: If your patient is still breathing spontaneously, the injury is below C-4.”

Have the supine patient abduct his or her arms from his or her torso (tests C-5), then flex the arms and bend them at the elbow (C-6). Next, extend the arms back down on the bed (C-7), and finally, move the fingers (C-8).

“Try doing this yourself a few times, and it becomes stuck in your brain,” says Criddle. “This is an easy way to get a gross determination of level of injury without looking at a neurological assessment chart.”

Sensory assessment of the SCI patient also is crucial, but standard dermatome charts often are very confusing, notes Criddle. “If you have a chart that shows the patient in the quadruped position vs. the usual upright/biped stance, dermatome distribution makes a lot more sense,” she says.

However, the two key levels to remember are T-4 at the nipple line and T-10 at the umbilicus, she adds. “With those two sites in mind, you can ‘guesstimate’ whatever falls in between,” she says.

[Editor’s Note: For more information about assessment of spinal cord injuries, contact Laura M. Criddle, MS, RN, CS, CEN, CCRN, CNRN, Oregon Health and Sciences University, Mail Code UHS 8Q, 3181 S.W. Sam Jackson Park Road, Portland, OR 97201. Telephone: (503) 494-1350. Fax: (503) 494-7441. E-mail: criddlel@ohsu.edu.] ■

Give parents facts about car safety

When a 5-year-old boy died in a car crash, he was buckled into an adult seat belt.

“His parents mistakenly thought the state law, which only covered kids up to 4 years old, was equivalent with what is safest for children,” says **Laurie Flaherty**, RN, MS, an emergency nurse at Suburban Hospital in Bethesda, MD, and traffic safety consultant with the Washington, DC-based National Highway Traffic Safety Administration (NHTSA).

The child’s mother was shocked to learn that her son should have been in a booster seat. “She was instrumental in passing Washington’s law, which requires kids up to 6 years old and 60 pounds to be placed in a booster seat instead of a seat belt,” says Flaherty.

As an ED nurse, you see what happens when children are not properly restrained, says Flaherty. “You are a highly credible source of information on health maintenance and health protection. Use this influence to encourage use of car seats, which are proven to save lives and prevent injuries,” she urges.

Flaherty recommends taking advantage of “teachable moments” to give out information to parents and caregivers, even if the visit wasn’t injury-related.

Here are the latest statistics about child passenger safety to share with parents, according to Flaherty:

- Children who weigh more than 40 pounds should

not be in seat belts until they are approximately 4’9” and 80 pounds. Instead, they should be in a booster seat.

- The adult seat belt should be used only if the child can sit with their back straight against the vehicle seat cushion, with knees bent over the vehicle’s seat edge without slouching.

- If the shoulder belt crosses the child’s neck, they should be in a booster seat. It is not safe to place the shoulder belt under the arm or behind the child’s back.

- Children age 12 and younger are safest when they are properly restrained in the back seat.

- Over half of all child passenger fatalities were not restrained at all.

[Editor’s note: For more information on child passenger safety, contact Flaherty at Office of Communications and Outreach, US DOT/NHTSA, 400 Seventh St. S.W., NTS-22, Room 5119, Washington, DC 20590. Telephone: (202) 366-2705. Fax: (202) 366-6916. E-mail: lflaherty@nhtsa.dot.gov.] ■

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Editorial Questions

For questions or comments, call
Joy Daughtery Dickinson
at (229) 377-8044.

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Editor: Staci Kusterbeck.
Vice President/Group Publisher: Brenda Mooney.
Senior Managing Editor: Joy Daughtery Dickinson,
(joy.dickinson@ahcpub.com).
Production Editor: Nancy McCreary.

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CE objectives

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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 *Acute cardiac ischemia protocols: Update or risk poor outcomes; Don't put latex-allergic patients in danger; Prepare for late-night Joint Commission surveys; Journal Reviews* 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. ■

CE questions

9. According to a new report from the National Heart Attack Alert Program, which is a current approach for treatment of acute cardiac ischemia in the ED?
 - A. A single biomarker is effective in diagnosing acute myocardial infarction (AMI).
 - B. A single ECG is effective in diagnosing AMI.
 - C. Out-of-hospital ECGs are not recommended.
 - D. Symptomatic patients should receive serial ECGs after arriving at the hospital.
10. Which of the following is accurate regarding patients with latex allergy, according to Kristi K. Miller, RN, C, MS, president of Solutions for Healthcare Inc., and former project manager for Latex Initiatives at Allina Health System?
 - A. Using a separate cart for latex-free supplies is the safest and most cost-effective strategy.
 - B. Once powdered latex gloves are removed from a patient's room, there is no danger of a reaction.
 - C. The severity of a reaction depends on the individual's level of sensitization from mild to severe, the route of exposure (cutaneous, mucous membrane, IV, peritoneal, or respiratory) and the amount of allergen load in the product.
 - D. All latex products have the same potential for an allergic reaction.
11. Which of the following is true regarding night surveys conducted by the Joint Commission on Accreditation of Healthcare Organizations, according to Kathleen Catalano, RN, JD, director of administrative projects at Children's Medical Center?
 - A. Surveyors always arrive in the third night of a four-day survey.
 - B. Night staff generally have more time to attend training sessions.
 - C. Answers on the night shifts don't have to match the answers given by the day shift staff.
 - D. Answers should always reflect policy and procedures, even if actual practice deviates from that policy.
12. Which of the following is true regarding pain management and patient satisfaction, according to a study published in *Journal of Emergency Nursing*?
 - A. Patient satisfaction scores did not correlate with effective pain management.
 - B. Acute pain was adequately evaluated and treated.
 - C. Most patients were unwilling to go home with any level of pain.
 - D. Patient satisfaction scores were low for patients who did not have pain managed quickly and effectively.

Source for all charts: Providence Hospital, Mobile, AL.