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IN THIS ISSUE

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Is your care of children with fever outdated? Don't miss warning signs

If you don't assume the worst, you may overlook sepsis or meningitis

An infant with a moderate fever dies of septic shock after being left in the waiting room for hours. Could this unthinkable scenario happen at your ED?

There's no question that poor ED nursing assessment of young children with fever can be life-threatening, says **Rebecca A. Steinmann**, RN, MS, CEN, CCRN, CCNS, clinical educator for the ED at Northwestern Memorial Hospital in Chicago.

"If the triage nurse doesn't recognize that a newborn with fever is an emergency, and they wait for hours as can happen in many EDs, the adverse outcomes potentially can be devastating," she warns, referring to septic shock and neurologic devastation from meningitis. "In the ED, missed cases of serious bacterial infection or sepsis may result in a child's death."

In addition, if an adverse outcome is linked directly to inappropriate assessment resulting in undertriaging of the child, you could be found liable, says Steinmann, adding that missed meningitis is a common cause of ED malpractice lawsuits. **(For more information on this topic, see "Warning: JCAHO wants to see meningitis strategies," *ED Nursing*, April 2003, p. 71.)**

A patient's attorney could argue that you failed to make sure that an emergent patient was seen by a physician in a timely basis, explains **Mary Ellen Wilson**, RN, BSN, nurse clinician for the pediatric ED at Johns Hopkins Children's Center in Baltimore. "However, if the nurse has alerted the physician and the physician fails to respond, the nurse should be blameless if she has

EXECUTIVE SUMMARY

Fever in young children can be life-threatening, so assess for signs of septic shock or meningitis.
- Have a high index of suspicion for serious bacterial infection in all neonates with fever.
- Allow nurses to initiate the septic work-up for infants with fever.
- A child's condition may deteriorate rapidly, so frequent reassessment is needed.

taken appropriate steps to have someone see the patient," she adds.

That's why your documentation must be consistent and thorough, stresses Wilson. "This demonstrates that the ED nurse followed the standard of care, which should minimize risk of liability," she says, adding that your ED should implement updated recommendations from the Dallas-based American College of Emergency Physicians (ACEP) for pediatric patients with fever. (To access the guidelines, go to www.acep.org. Click on "Clinical Policies" and "Clinical Policy for Children Younger Than Three Years Presenting to the Emergency Department With Fever."

To improve assessment of children with fever and comply with the new ACEP guidelines, do the following:

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• If an infant younger than 30 days of age presents with fever, initiate a septic work-up.

"Fever in young infants can be very significant," says **Michelle Widecan**, RN, MSN, CPNP, nurse practitioner for emergency services at Cincinnati Children's Hospital Medical Center. A full septic work-up, including a blood culture; complete blood count; catheterized urinalysis and urine culture; and a lumbar puncture for gram stain, culture, protein, glucose, and cell count should be done to rule out a serious bacterial infection, she advises.

Infants have an immature immune system and are unable to mount their own response to bacterial invaders, Steinmann explains. "The consequences of missing a serious bacterial infection are immense," she says.

At Cincinnati Children's, the ED's protocol recently was updated to allow nurses to begin the septic work-up if an infant younger than 60 days of age has a documented fever of 100.4°F or greater, notes Widecan. **(See resource box on p. 63 to obtain the protocol.)**

"The nurses know that if an infant has a documented fever at home or in the hospital of 100.4° or greater, they can begin the septic work-up," she adds. "We will obtain a full set of vital signs, catheterize the child, get a complete blood count, get an intravenous line placed for antibiotics, and then set up for a spinal tap," she says.

All infants younger than 30 days with fever of 100.4° or greater are admitted. Infants 30 to 60 days old still receive a full septic work-up, including a spinal tap, but they may not be admitted depending on preliminary lab results, how the infants look, and whether they can receive follow-up care the next day, Widecan explains.

• Don't consider a child's response to antipyretics to assess the likelihood of a serious bacterial infection.

Instead, base treatment decisions on the child's history and physical examination at triage, recommends Steinmann. "I think many nurses are under the mistaken belief that if a fever responds to acetaminophen or ibuprofen, the child is not as ill as the child whose temperature doesn't decrease with medication," she says.

• Ensure close follow-up if empiric antibiotics are not prescribed in children with fever without a source.

"I think this recommendation poses the biggest challenge for emergency nurses discharging patients," says Steinmann.

That's because parents are looking for a quick-fix for their ill child and don't want to be told to follow-up with their own physician the following day, says Steinmann. "They expect to leave the ED with a prescription for antibiotics, even if it is not warranted, and will

voice their displeasure when this does not occur," she says.

In addition, many families use the ED as their source of primary care and don't have a pediatrician, notes Steinmann. "The best strategy is parent education," she says, adding that nurses distribute pamphlets to explain antibiotic use in children**. (For ordering information, see resource box, right.)**

Explain that not all fevers are caused by bacterial infections and, therefore, they don't all require antibiotics, recommends Wilson.

• Give antibiotics as soon as possible.

According to the ACEP guidelines, you should consider antibiotics for previously healthy children ages 3-36 months with fever without a source, with a temperature of 102.2°F or greater and a white blood count more than 15,000/mm^3.

Antibiotics generally are given only after blood work, spinal tap, and urine culture are completed, says Widecan. "But if the child goes to the trauma room, and they think it is a septic child, the goal is to get in antibiotics in even if a spinal tap isn't done yet," she says.

Usually while the infant is getting a lumbar puncture, the nurse is drawing up the antibiotics and setting up fluids if needed, says Widecan. "Our goal is for antibiotics to be given to infants younger than 60 days in 90 minutes from the time they walk in the door with a fever," she says.

• Obtain a sterile urine specimen.

A catheterized specimen is the gold standard for obtaining urine specimens in infants and toddlers, advises Widecan. "Sometimes we get kids transferred by other hospitals that use a bag specimen, which is definitely not recommended by ACEP," she says.

• Reassess as needed.

Pediatric patients may rapidly deteriorate, so ongoing re-evaluation and assessment for progression of symptoms is essential, warns Wilson. "Children may rapidly decompensate with few signs of impending arrest," she says.

Signs and symptoms of bacterial meningitis, such as neck stiffness, may not develop in young children until late in the course of the disease, adds Wilson. "Early recognition of abnormal findings and interventions to correct underlying problems is crucial for a positive patient outcome," she says.

• Take a thorough history.

"Recognizing subtle but significant alterations in vital signs and assessment at triage is essential," underscores Wilson.

Ask about the child's medical history, feeding patterns, changes in elimination patterns, activity level, exposures to illness, medication administration, presence of pain or discomfort, recent travel, and timing of the current illness, says Wilson. "Interpret these findings based on the child's age and developmental level," she advises.

You also should ask whether the child has been

SOURCES/RESOURCES

For more information on assessment of children with fever, contact:

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- **Michelle Widecan**, RN, MSN, CPNP, Nurse Practitioner, Emergency Services, Cincinnati Children's Hospital Medical Center, 3333 Burnet Ave., Cincinnati, OH 45229-3039. Telephone: (513) 636-0461. E-mail: Michelle.Widecan @cchmc.org.
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A variety of educational brochures are available from the American Academy of Pediatrics (AAP). "Fever and Your Child" (ID No. HE0318) gives practical guidance for identifying and managing fever. "Your Child and Antibiotics" (ID No. HE0219 for English Version, ID No. HE0263 for Spanish version) discusses when antibiotics are needed and why antibiotics should not be used to treat common viral infections. The cost is $34.95 plus $7.95 shipping and handling charge for a pack of 100. To order, contact AAP, Customer Service, 141 N.W. Point Blvd., Elk Grove Village, IL 60007-1098. Telephone: (866) 843-2271 or (847) 434-4000. Fax: (847) 228-1281. E-mail: pubs@aap.org.

Clinical practice guidelines can be accessed free of charge on the Cincinnati Children's Hospital Medical Center web site (www.cincinnati childrens.org). Under "Services," click on "Departments/Divisions, "Health Policy and Clinical Effectiveness," and "Evidence-Based Clinical Practice Guidelines." For guidelines pertaining to treatment of fever in children, click on "Fever of Uncertain Source 2-36 Months" or "Fever of Uncertain Source 0-60 Days."

vaccinated recently, because routine administration of childhood vaccinations commonly causes a fever within a few hours of administration that may persist up to 48 hours, notes Wilson. "If the child has received the measles-mumps-rubella vaccination, temperature elevation may be delayed up to 10 days after vaccine administration," she adds. ■

Don't get a sick child's temperature wrong

Inaccurate readings can impact care

It's a task you may perform several times in a single day, but if you don't take a child's temperature correctly, the results can be devastating.

If your reading isn't accurate, it could lead to a delay in treatment or a missed diagnosis of sepsis or meningitis, warns **Susan N. Richards**, RN, lead transport/trauma nurse for the pediatric ED at Virginia Commonweath University Medical Center in Richmond.

"ED nurses may do an outstanding job overall, but many don't care for sick neonates or pediatric patients in large numbers," she says. "You may inadvertently miss a subtle sign of elevated temperature."

For example, you may attribute a child's elevated heart rate or respiratory rate to anxiety and fussiness, when in fact the temperature is well over the charted 97.4° axillary, says Richards. "It may not be discovered until after the septic child begins to decompensate as noted by a decreased level of consciousness, bradycardia, and hypotension," she adds. "All of these are ominous signs and difficult to correct once the child enters the state of septic shock."

To ensure an accurate temperature, use these tips:

• Use the appropriate method.

Tympanic thermometers aren't the best method to use in the ED, according to **Julie Kappes**, RN, CPNP, pediatric nurse practitioner at Pediatrics of Batesburg-Leesville (SC). "They are wonderful and easy to use in the proper environment, but in the ED their accuracy is limited," she explains.

This is because a tympanic thermometer only is accurate if you wait 20 minutes after a child has been lying on one ear, the ears have been covered, the ear has been exposed to extremely high or low temperatures, or the child has swam or bathed, notes Kappes.

"Waiting for 20 minutes to take a temperature on an ill child is often not acceptable in the ED, so other methods would need to be used," she says.

For infants younger than 3 months, an accurate temperature is of the utmost importance because of the ramifications it has for the treatment plan, says Kappes. "For this age group, rectal temperatures are the only accurate method," she advises.

Use a small amount of water-soluble lubricant to facilitate entrance into the rectum, says Richards. "Use a soft tissue or wipe to remove excess lubricant afterward," she advises.

However, you must obtain an axillary or tympanic temperature if the child has rectal bleeding, rectal injury or assault, is immunocompromised, or has any other contraindications, advises Richards. "If you need to use the axillary route, have the caregiver support the arm closely to the body for several minutes and take the temperature as you normally would," she recommends. "Be sure to chart that this is an axillary temperature so the practitioner will be aware of the route chosen."

• Take other vital signs first.

The temperature should be the last vital sign you take, since this procedure usually causes the greatest amount of stress for children, says Richards. "If you do it first, it could increase the heart rate and respiratory rate due to the anxiety of the child," she explains.

The first vital sign taken should be the respiratory rate while the child is at rest, followed by the heart rate, temperature, and accurate weight in kilograms, says Richards.

• Reward the child.

"Immediately offer the child a brightly colored sticker, crayon, rubber-glove chicken, book, or anything that will make up for this perceived heinous act by the nurse," recommends Richards.

• Review ways to lower elevated temperatures.

Have parents or caregivers return demonstrations on

EXECUTIVE SUMMARY

An inaccurate temperature can mean missed diagnoses.

- Rectal temperature is the most accurate method.
- Consider both reported and observed temperature readings when making treatment decisions.
- Take temperature after other vital signs, since the procedure can affect heart and respiratory rates.

SOURCES

For more information on temperature, contact:
- **Julie Kappes**, RN, CPNP, Pediatric Nurse Practitioner, Pediatrics of Batesburg-Leesville, 120 W. Church St., Leesville, SC 29006. Telephone: (803) 532-2208. Fax: (803) 604-0207. E-mail: jkpeds@bellsouth.net.
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the correct way to take a child's temperature, says Richards. "Encourage them to use other means to keep the child normothermic, such as juices and liquids, loose-fitting clothes, and a tepid bath," she adds.

• Reassess the child's heart rate and respiratory rate.

These vital signs can be indicators of elevation in body temperature, says Richards. "The child under stress due to an elevated temperature also will have elevated heart and respiratory rate," she explains.

• Make decisions based on both reported and observed information.

If you only go by the temperature you observe, you leave out possible diagnoses, says Kappes. "We need to take history of fever seriously, especially with children under the age of 3 months," she underscores.

If you don't consider the reported temperature when making treatment decisions, you could be harming the child, warns Kappes. "I have seen nurses discount mothers who report a fever of 105° in their infant, because they did not have a fever when the ED nurse took the temperature," she says.

Full and accurate documentation protects the patient and the nurse, she explains. "It is very dangerous to write a reported temperature in your notes, while making triage and care decisions based only on the actual temperature," adds Kappes. "If the nurse provided full and clear history of a reported fever but the physician discounts it, the nurse is covered if there are any untoward events." ■

Want to boost morale? Try creative scheduling

Flexibility helps recruitment, retention

Boosting morale. It sounds easy enough, but good solutions for this problem that plagues many EDs are tough to find. "With increasing numbers of patients seeking health care in the ED instead of their private physician, budget constraints, and the ever-increasing shortage of experienced ED nurses, indeed, morale can be a challenge," says **Vernon Craig Meche**, RN, BSN, CEN, ED nurse at Lafayette (LA) General Medical Center.

Creative scheduling is one effective way to improve both morale and retention of ED nurses, according to Meche. "Allowing staff to have some control over their practice and their lives has made a big difference in our ED," he reports.

Flexible schedules can even beat out money as a morale-boosting tool, according to **Virginia Hebda**, RN, CEN, nurse manager of the ED at F.F. Thompson Hospital, a 113-bed community hospital in Canandaigua, NY.

Three years ago, the ED began offering a separate pay differential of an additional $3 per hour for the 11 p.m.-7 a.m. shift, she says.

"This was a big incentive for night coverage and made them happier," says Hebda. "But I have also discovered that the extra money actually locks nurses into a shift that they cannot afford to leave, even if they want to — and that makes for burnout and worse."

A better solution might be a flexible schedule that gives more choices to nurses coping with child or elder care, transportation, educational, volunteering, or other conflicts, suggests Hebda. She credits flexible scheduling as a key contributing factor to her ED's current 4% vacancy rates.

To use scheduling to improve morale of ED nursing staff, do the following:

• Give nurses the opportunity to schedule themselves.

EXECUTIVE SUMMARY

Offering ED nurses flexible schedules can have a dramatic impact on morale and can improve recruitment and retention.
- Allow nurses to control their own schedules and to exchange shifts as needed.
- Offer more experienced nurses the option of working every third weekend.
- Give financial incentives to nurses who come in when the ED is short-staffed.

SOURCES

For more information on creative scheduling, contact:

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At Thompson's ED, nurses have done self-scheduling for several years. "There is a staff committee that reviews the schedule and ensures that all shifts are covered," says Hebda.

Similarly, ED nurses at Lafayette General Medical Center use a planner to mark down the days they want to work, and they schedule themselves four to six weeks in advance, says Meche. "The staff nurses are able to schedule themselves creatively by grouping several days together or spacing their shifts out over several days."

• Provide more flexibility for weekends and holidays.

A "weekend program" allows most ED nurses to work only every third weekend, says Meche. New ED nurses may have to work every other weekend and eventually will "graduate" to working every third weekend, he explains. "Being able to spend more time with one's family and friends has kept retention at a higher level."

Likewise, at Thompson's ED, new nurses are required to work every other weekend, but more experienced nurses work only every third weekend, says Hebda. As new staff are hired and pick up the weekends, older staff with more than 10 years of experience in the ED are given the option to decrease their weekends, she explains.

"Some choose to continue working every other weekend, as they like time off during the week," notes Hebda. "I currently have one long-term nurse who does one weekend out of eight, two nurses who do two out of eight, and the others do every other weekend or something in between."

Although per-diem nurses aren't obligated to work weekends, some do choose to work those shifts and are used to cover for vacations and sick calls, says Hebda. In this case, nurses get paid an additional $5/hour, increasing to $10 extra per hour during summer months.

ED nurses are required to work only two holidays: one in the summer and one in the winter, and the per-diem obligation is one holiday per year, says Hebda. Christmas Eve and New Year's Eve count for the holiday obligation, although nurses don't get paid the holiday rate for those hours, she notes.

"This gives some leeway for staff to choose, as some celebrate Christmas on the 24th," says Hebda. "Or if nurses work evenings, they can still get the holiday time in and be home in the morning."

• Allow nurses to change shifts as needed.

Nurses are allowed to switch shifts with others, so long as the manager approves the schedule change and no overtime is generated, says Meche.

At Thompson, the ED's schedule committee gives nurses time off as early as eight weeks in advance and has the summer vacation schedules available by late April, says Hebda. "This necessitates numerous phone calls and lots of shuffling and consideration for others from the staff," she says.

However, nurses are equally flexible when it comes to accommodating requests of co-workers, says Hebda. "As long as everyone is willing to give a little when it's their turn, everyone usually gets the hours they need off," she says.

One individual is responsible for arranging all requests for time off, and two individuals handle filling holes in the schedule and covering any sick calls, Hebda explains.

• Give incentives to nurses who report when the ED is short-staffed.

Nurses who are called in because of high volume or acuity in the ED are paid time and a half, says Meche.

"We are a closed unit, meaning that no other floor nurses or critical care nurses are pulled to the ED," he adds. "We reward those nurses who come in to staff the unit in times of need." ■

Pick the right five-level triage system: Here's how

(Editor's note: This is a two-part series on switching to a five-level triage system. This month, we'll address how to choose the right five-level system for your ED. Next month, we'll cover effective strategies for educating nursing staff to avoid problems during the transition.)

Have you been wondering when your ED will switch to a five-level triage scale? There's no time like the present, urges **Paula Tanabe**, PhD, RN, co-chair of the

EXECUTIVE SUMMARY

The Emergency Nurses Association is recommending that EDs switch to a five-level triage scale, but no specific system has been singled out.

- Any reliable, valid five-level scale is better than staying with a three-level system, according to triage experts.
- Solicit input from experienced triage nurses to select the best triage scale for your ED.
- Consider whether you want to base triage on acuity, expected need for resources, or both.

Des Plaines, IL-based Emergency Nurses Association (ENA) task force on five-level triage formed jointly in 2003 with the Dallas-based American College of Emergency Physicians (ACEP).

In October 2003, the task force recommended that EDs make the switch to a valid and reliable five-level triage scale, but no specific system was named. **[To access the position statement, go to the ENA web site (www.ena.org). Under "Publications" heading, scroll down and click on "Position Statements."]**

"After extensively reviewing the literature, the group ultimately recommended that individual institutions come to their own decision about which five-level system to implement," reports **Nancy Bonalumi**, RN, MS, CEN, director of the ENA and director of emergency services for PinnacleHealth System in Harrisburg, PA. The task force still is hard at work on further exploration of the topic, she adds. "ENA is not endorsing any particular system right now, as the work of the task force is not yet complete."

It's not even certain that the task force will ever recommend a specific system, adds Tanabe. "Right now, our point is that three-level systems are not reliable or valid," she says. "There are much better data on five-level systems, and they can do much more for EDs." **(For more information on the benefits of five-level triage systems, see *Journal Review* on p. 68.)**

Although there are currently few EDs using five-level systems, that number is expected to change in the near future, says Tanabe, pointing to data that showed about 3% of EDs used five-level triage in 2001, as opposed to 69% using three-level triage systems.[1] "I suspect that over the next five years, these numbers will shift to a dramatic increase in five-level systems," she predicts.

The recent ENA/ACEP recommendation will jumpstart the process for many EDs that were waiting for official word, adds **Rebecca S. McNair**, RN, CEN, president of Asheville, NC-based TriageFirst, which provides consulting and educational services for EDs, and a member of the ENA/ACEP task force. "It is the standard now, so hopefully everybody will be switching," she says.

Should you switch now?

Here's the question: Do you switch to a five-level system now or wait for the task force to recommend a specific system? If you're waiting to switch, you're making a mistake, advises McNair. "Don't hang back and wait," she says. "People just need to relax, pick one, and take the plunge. Whichever five-level system you pick, it's going to be better than the three-level system you're working with now."

If after further review, the ENA/ACEP task force comes to the conclusion that one particular system is better than the others, it will be an easy transition from whatever five-level system you wind up using, adds McNair.

There is good data showing that several five-level scales are reliable and valid, says Tanabe, adding that the task force plans to publish a review of existing systems in the coming months.

When selecting a five-level triage system, do the following:

1. Review the literature.

"A good literature search will provide multiple references available on the Canadian, Australasian, and Emergency Severity Index five-level triage systems," says Tanabe. **(See resource box for more information about each system on p. 68.)**

2. Consider individual needs of your ED.

According to McNair, the main question you must answer is: Should a triage system be based on timeliness of care, expected need for resources, or both?

At St. Joseph's Hospital and Medical Center in Phoenix, ESI was selected with the goal of improving triage and reducing delays, according to **Kim Flanders**, RN, BSN, CEN, clinical nurse manager for emergency services. "We went to ESI to improve consistency and also because of the readily available resources to use for instruction," she reports.

As a result of the switch, the ED's average arrival-to-bed time decreased from more than two hours to fewer than 50 minutes over a four-month period, reports Flanders.

"We believe this is due to ensuring that the right patients get placed in the right bed at the right time," she says. "We are also able to more objectively triage charts retrospectively and provide definitive feedback to staff to continue the improvement momentum."

3. Make a collaborative decision.

SOURCES

For more information on choosing the right five-level triage system, contact:

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The Emergency Severity Index Implementation Handbook: A Five-Level Triage System is available from the Emergency Nurses Association (ENA). The set includes a handbook, a poster of the algorithm, a laminated pocket card, and reproducible practice and competency case worksheets that can be used in teaching situations. The cost is $60 for members and $100 for nonmembers. To order, go to the ENA web site (www.ena.org) and click on "Marketplace" and the product title.

An implementation manual for the Canadian Triage and Acuity Scale (CTAS) is available on the Canadian Association of Emergency Physicians (CAEP) web site (www.caep.ca). Click on "Policies & Guidelines," "CTAS," and "CTAS Implementation Guidelines." To obtain CTAS teaching materials, contact CAEP, Suite 104, 1785 Alta Vista, Ottawa, ON Canada K1G 3Y6. Telephone: (800) 463-1158 or (613) 523-3343. Fax: (613) 523-0190. E-mail: ctas@caep.ca.

Information on the Australasian Triage Scale can be accessed on the Australasian College for Emergency Medicine web site (www.acem.org.au). Click on "Policies" and "Australiasian Triage Scale."

ED nurses and physicians need to read the literature and collaboratively come to a decision about which system will work best, says Tanabe.

At St. Joseph's, a team including the ED manager, educator, and eight experienced triage nurses was formed to evaluate the different five-level systems and determine how they would be implemented, says.

Once ED nurses are educated about the importance and scope of the triage process and the attributes of different triage scales, they then are able to give effective input to help in the selection process, emphasizes McNair. "The leadership team, including the medical director and nurse manager, along with clinicians and educators, should be able to take this information and make a decision," she says.

Reference

1. Emergency Nurses Association. *2001 ENA National Benchmark Guide: Emergency Departments.* Des Plaines, IL; 2002. ■

Tanabe P, Gimbel R, Yarnold PR, et al. **The emergency severity index (version 3) five-level triage system scores predict ED resource consumption.** *J Emerg Nurs* 2004; 30:22-29.

Triage scores assigned by ED nurses based on the Emergency Severity Index (ESI), a five-level triage system that was developed to improve reliability and validity of triage, can accurately predict both the amount of ED resources needed and the patient's length of stay, says this study from Northwestern University in Chicago. The researchers retrospectively reviewed 403 ED patient records and found that the triage level assigned by ESI correlated strongly with the ED length of stay and amount of resources used — a benefit that is not possible with a three-level triage system. For example, when the ESI scale was used, it became clear that patients in the low-acuity triage levels required few ED resources, while Level 1 and 2 patients needed significantly more resources, and Level 4 and 5 patients experienced the shortest length of stay, whereas Level 2 and 3 patients had the longest length of stay. With a better understanding of ED acuity and resource needs, proactive, real-time interventions can reduce overcrowding, the researchers suggest.

"The ability to describe ED acuity that includes not only patients in the treatment process but also those in

the waiting room is essential in today's overcrowded environment," they wrote. "These data will give hospital administrators the ability to predict staffing needs and be alerted much earlier of a potential overcrowding situation." ▼

Prina LD, Decker WW, Weaver AL, et al. **Outcome of patients with a final diagnosis of chest pain of undetermined origin admitted under the suspicion of acute coronary syndrome: A report from the Rochester epidemiology project.** *Ann Emerg Med* 2004; 43:59-67.

Patients who are discharged with a diagnosis of chest pain of undetermined origin with an initial abnormal electrocardiogram (ECG), pre-existing diabetes, or pre-existing coronary artery disease are at higher risk of a subsequent adverse cardiac event, according to this research from the Mayo Clinic and Mayo Foundation in Rochester, MN. The study's authors reviewed 230 ED patients who were admitted with chest pain of undetermined origin and found that the above risk factors put patients at a significantly higher risk for having an adverse cardiac event within 12 months of the initial ED visit. In contrast, patients with a diagnosis of chest pain of undetermined origin and without identified risk factors are unlikely to experience a cardiac adverse event or die from a cardiac cause within the same time period, according to the researchers. They give the following recommendations, based on the study's findings:

• Patients presenting with a first episode of chest pain should be investigated to rule out an acute coronary syndrome.

• Patients presenting with chest pain after a recent negative work-up for cardiac ischemic disease and without cardiovascular risk factors might warrant a period of observation in the ED with serial ECG and cardiac markers before being safely discharged.

• For chest pain patients with any of the above risk factors, a period of observation with serial ECG and cardiac markers is important before concluding that the patient can be discharged safely, even after a recently negative evaluation for acute coronary syndromes. ▼

Colman I, Dryden DM, Thompson AH, et al. **Utilization of the emergency department after self-inflicted injury.** *Acad Emerg Med* 2004; 11:136-142.

Patents who come to the ED with self-inflicted injuries were more likely to have return visits for mental disorders, substance abuse, unintentional injuries, assault, headache pain, and other complaints, says this study from the University of Alberta in Edmonton, Alberta, Canada. Researchers compared 478 patients with self-inflicted injuries with groups of asthmatics, which are commonly associated with heavy ED use, and a third group of patients with other complaints. Compared with the two control groups, patients with self-inflicted injuries returned to the ED more frequently for diverse reasons and were more likely to have more than three repeat visits a year to the ED. The ED visit is a good opportunity to direct these individuals to appropriate treatment programs, say the researchers. "Although mental health interventions in the ED may not be efficient, appropriate, or possible for all patients with self-inflicted injuries, interventions to assist with their problems are clearly required and imperative," they wrote. They give the following strategies:

• Identify individuals at high risk for suicidal behavior and refer them for outpatient prevention services.

• Schedule an appointment for follow-up referral while the patient still is in the ED.

• Encourage patients to comply with follow-up treatment. ■

Are you giving poor care to migraine patients?

Many EDs undertreat headache pain

Over a two-year period, a 39-year-old woman came to Richmond-based Virginia Commonwealth University Medical Center's ED more than 100 times for treatment of migraines, and each time she insisted that specific narcotics be given, reports **Denise Sullivan-Wade**, BSN, RN, the ED's case manager.

The patient was encouraged to seek care in a less acute setting to ensure consistent treatment, but the

EXECUTIVE SUMMARY

Pain reported by patients with migraine headaches often is undermanaged in the ED, with fewer or lower doses of medications given compared with chest or fracture pain.

- Survey patients to assess satisfaction with management of headache pain.
- Educate patients about how to mitigate pain and identify headache triggers.
- Give patients an individualized plan to manage migraine pain.

woman instead chose to continue seeking care at a variety of EDs, says Sullivan-Wade. "This disjointed ED care can lead only to frustration and migraines that never are controlled," she says.

Sound familiar? Unfortunately, this scenario is commonplace, and spotlights the unique challenges of caring for migraine patients in the ED, says Sullivan-Wade. In fact, when Sullivan-Wade sought care at an ED for her own severe migraine, she didn't receive relief from her pain and, instead, endured a lumbar puncture to rule out life-threatening causes. "I went home with the migraine still present — and a new pain from so many needlesticks to my back," she says.

ED nurses at McKay-Dee Hospital Center in Ogden, UT, treat more than 100 headache patients each month, reports **Kayleen L. Paul**, RN, BS, CEN, care center director for emergency, critical care, and trauma services. "Headache is one of our top five diagnoses for discharged patients," she says. "The staff estimates that 80%-90% of those are migraine patients."

To improve care of patients with migraine headaches, do the following:

• Use current approaches for migraines.

Migraine patients may be treated with intravenous fluids, promethazine, prochlorperazine, butorphanol tartrate, or some other combination of drugs, says Paul. Here are the steps that occur when an ED patient presents with a complaint of headache:

— A triage nurse evaluates the patient, and the patient is escorted to a room, where the patient care nurse evaluates onset, description, triggers, and assessment with use of a pain score.

— The nurse initiates comfort measures, such as darkening the room, applying warm or cold packs, and controlling noise as much as possible.

— After the physician examines the patient and diagnostic testing is completed, the nurse administers any medications and evaluates the patient's response.

"For migraines, the aim is to start pain relief, not necessarily get the patient pain-free before discharge," Paul explains.

• Improve the way you manage pain.

Recent patient satisfaction surveys revealed dissatisfaction with the way headache pain was managed in the ED, reports Paul. "Although the nurse often had charted comfort measures for these patients, the perception of the patient was that little had been done," she says.

Charts were reviewed for patients with chest pain, fracture pain, abdominal pain, and headache to ascertain which type of pain was addressed fastest and most thoroughly. "As you might imagine, chest pain and fracture pain were treated most quickly, then abdominal pain, then, last by a long shot, headache," says Paul.

The audits showed that chest pain and fracture pain were addressed within minutes and abdominal pain usually was medicated within an hour, but headache pain often took even longer.

In addition, headache patients often received fewer or lower doses of pain medications, says Paul. "It seemed that headache somehow wasn't as valid or believable as the other sorts of pain," she says.

ED nurses now make a concentrated effort to reduce head pain by consistently performing comfort measures, such as lowering the lights, placing patients in a quiet room, and using pain scales to monitor response to interventions.

"We discuss application of warm or cold compresses and how that might mitigate pain, and sometimes we even experiment to see which works best," says Paul.

As a result of these changes, the ED's scores for the survey question, "How well was your pain controlled?" increased to a score of more than four in a numeric scale rating one as poor and five as excellent, Paul reports.

• Teach patients to control their own headache pain.

When headache patients are discharged, ED nurses

SOURCES

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now include a brief discussion of headache triggers and ergonomic factors affecting tension headaches, says Paul. Nurses teach patients to mitigate or prevent headaches with massage; warm or cold packs; light and noise control; avoidance of alcohol, tobacco, and caffeine; stress reduction techniques; ergonomics; sufficient sleep; and over-the-counter pain medications. "One of the ED nurse's most important roles is to teach the patient about ways she can prevent or mitigate the headache pain," says Paul.

• Take pain reports seriously.

Often, migraine patients are labeled wrongly as chronic pain medication seekers, notes Sullivan-Wade. "While the ED is most certainly the place to go for emergent exacerbation of migraine, multiple visits may give nurses a negative view of the patient's motivation for seeking treatment," she says.

Give migraine patients an individualized plan of care, advises Sullivan-Wade. "Our goal is to have ED visits occur only for severe, acute exacerbations, which should be infrequent if the migraine is properly managed," she says. "Otherwise, they are at high risk for overdose and have no continuity of care. The results can be devastating." ■

TIP OF THE MONTH

Give infectious patients a respiratory packet

It's a year-round problem in every ED: How to limit exposure of coughing, sneezing, or sniffling patients. At St. Jude Medical Center in Fullerton, CA, ED nurses had a networking session at the beginning of last year's flu season to find effective ways to protect patients and staff.

The nurses came up with an inexpensive solution: At triage, any patient with a fever, cough, or respiratory complaint is given a resealable plastic bag containing a simple isolation mask, antiseptic hand wipes, small packet of tissues, and a paper disposable bag. The "respiratory packet" gives instructions in English and Spanish about hand washing and basic infection control, and it has been very effective in stopping the spread of germs, says **Vicki Sweet**, RN, MS, CEN, CCRN, manager of emergency services.

"The packets have been very well accepted by the staff, and most patients are very grateful," Sweet reports. "They appreciate the efforts we have taken to protect them from further infection."

[Editor's note: For more information, contact Vicki Sweet, RN, MS, CEN, CCRN, Manager, Emergency Services, St. Jude Medical Center, 101 E. Valencia Mesa Drive, Fullerton, CA 92835. Telephone: (714) 992-3979. E-mail: vsweet@sjf.stjoe.org. Do you have a tip to share with ED Nursing *readers? If so, please contact Staci Kusterbeck, Editor,* ED Nursing*, 280 Nassau Road, Huntington NY 11743. Telephone: (631) 425-9760. Fax: (631) 271-1603. E-mail: StaciKusterbeck@aol.com.]* ■

COMING IN FUTURE MONTHS

- ■ Dramatically improve assessment of geriatric patients
- ■ Update on new treatments for ischemic stroke
- ■ Boost staff satisfaction with team nursing
- ■ What you're legally allowed to tell patients about waiting times

CE instructions

Nurses participate in this continuing education program by reading the issue, using the provided references for further research, and studying the questions at the end of the issue. Participants should select what they believe to be the correct answers, then refer to the list of correct answers to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material. After completing this semester's activity with the June issue, you must complete the evaluation form provided in that issue and return it in the reply envelope provided in order to receive a certificate of completion. When your evaluation is received, a certificate will be mailed to you. ■

CE*questions*

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

- Identify clinical, regulatory, or social issues relating to ED nursing. (See *Is your care of children with fever outdated? Don't miss warning signs* and *Are you giving poor care to migraine patients?* in this issue.)
- Describe how those issues affect nursing service delivery. (See *Don't get a sick child's temperature wrong.*)
- Cite practical solutions to problems and integrate information into the ED nurse's daily practices, according to advice from nationally recognized experts. (See *Pick the right five-level triage system: Here's how.)*

13. Which is a current recommendation for infants with fever, according to guidelines from the American College of Emergency Physicians?
A. All infants with fever should be given antibiotics.
B. A septic work-up should be done for all infants younger than 30 days old presenting with fever.
C. If an infant with fever responds to antipyretics, there is very little likelihood of a serious bacterial infection.
D. A bag urine specimen should be obtained.

14. Which is recommended when taking a child's temperature in the ED, according to Julie Kappes, RN, CPNP, pediatric nurse practitioner at Pediatrics of Batesburg-Leesville?
A. Consider both observed and reported temperatures when making treatment decisions.
B. Don't consider reported temperatures when triaging children with fever.
C. Only axillary readings should be charted.
D. Take the child's temperature before you assess heart and respiratory rate.

15. Which is accurate regarding switching to a five-level triage system, according to Paula Tanabe, PhD, RN, co-chair of the Emergency Nurses Association task force on five-level triage?
A. Three-level and five-level triage systems are equally reliable.
B. The decision should be postponed until a specific scale is recommended.
C. Five-level triage systems with reliable and validity data are preferable to three-level systems.
D. EDs should not switch to five-level systems until more data are available.

16. Which of the following is accurate regarding caring for patients with migraines, according to Kayleen L. Paul, RN, BS, CEN, care center director for emergency, critical care, and trauma services at McKay-Dee Hospital Center?
A. Give headache patients lower doses of pain medications than fracture patients.
B. Suggest strategies for patients to manage headache pain.
C. Discourage migraine patients from seeking care in the ED.
D. Avoid giving pain medications to migraine patients who may be drug seekers.

Answers: 13. B; 14. A; 15.C; 16. B.