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Does your staff provide conflicting, inadequate info to receiving units?

Don't miss important facts during handoffs

If you forget to tell an inpatient nurse that your ED patient has an allergy or was given a certain medication, the consequences could be dire.

"Any patient can have a death associated with a handoff," says **Sommer Alexander**, MS, senior quality consultant at Fairview Health Services in Minneapolis, which participated in a handoff collaborative led by The Joint Commission's Center for Transforming Healthcare.

Four handoffs would occur when a child was admitted from the ED, which took 40 minutes, says Alexander. The ED nurse called the inpatient nurse, an ED doctor called an inpatient attending, that same ED doctor called an inpatient resident, and those two inpatient physicians then would discuss the patient.

"We found that different information was being given to each of those people," says Alexander. "Everyone had heard something slightly different, and no one knew what the other people on their team knew. This put our patients at risk, because everyone had a different clinical picture for that patient."

Report is now given during a conference call, says Alexander, with the ED nurse, physician, inpatient nurse, and inpatient physician all on the call together. "Instead of having all those disjointed phone calls, we have *one* call," she explains.

It is sometimes a challenge, though, to get all the participants on the conference call at the same time, says **Anne Renaker**, RN, DNP, CNS-BC, the ED pediatric clinical nurse specialist at University of Minnesota Amplatz Children's Hospital in Minneapolis. If the receiving nurse wasn't

EXECUTIVE SUMMARY

Handoffs from ED nurses to inpatient units might be needlessly time-consuming, inconsistent, and dangerous, and important clinical information might be omitted. To improve handoffs:
- Use a single conference call to give report.
- Convey the same information to everyone.
- Have inpatient nurses use the same format as ED nurses.

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available to be on the call, the unit charge nurse would receive report instead, Renaker explains. "If there were additional questions, the receiving nurse would then call back, and the ED nurse would repeat a similar report," she says.

When a call was arranged, the page went out to the ED charge nurse, who was carrying the pager, says Renaker. "This was not a consistent practice, and some pages were missed," she says. A change was made to have the pediatric ED nurse carry the pager instead, because it saved time to connect directly with the nurse caring for the patient, she says.

The new process means that everyone hears the information at the same time, with the opportunity to ask questions, says Renaker. "The old method was multiple phone calls between several individuals, and the story was never shared," she says. "Once the one phone call is complete, the patient is ready to go to the inpatient unit. The outcome is a safe and efficient handoff."

With the old process, ED nurses didn't always convey important clinical information to the rest of the health care team, such as a patient becoming increasingly agitated, says Renaker. To address this problem, a standardized list was created that the ED nurse follows as he or she begins the handoff, she says. The list covers the patient's name; date of birth; diagnosis; history; relevant past medical, surgical, and social history; medications; allergies; ED interventions; and the plan of care.

"Secret shoppers" were used to observe the handoff process, and they found that key information sometimes was being overlooked, says **Hallie Rector**, RN, an ED manager at LDS Hospital in Salt Lake City, which also participated in the handoff initiative.

A standardized format was developed for ED nurses to give report. "This way, we are sure that we are hitting all of the critical things we need to be communicating to whoever we are handing off our patients to," Rector says.

Inpatient nurses taking the report use the same format, so that if a piece of information is missed, it's noticed by both nurses immediately, she says.

Initially, the new process was a little more time-consuming on both ends, acknowledges Rector. "But our ED nurses have found they are communicating vital information more consistently," she says. *(See story, p. 51, on important information to share. For more information on handoffs, see "Don't miss key details: Do face-to-face reports," ED Nursing, October 2010, p. 138.)* ■

SOURCES

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Clinical Tips

Tell inpatient nurses what wasn't done in ED

If a medication or intervention was ordered in the ED for your admitted patient, but not yet given or completed, be sure to inform the receiving inpatient nurse, says **Anne Renaker**, RN, DNP, CNS-BC, the ED pediatric clinical nurse specialist at University of Minnesota Amplatz Children's Hospital in Minneapolis.

The patient may have been given one dose of an antibiotic in the ED, but the second dose has not yet been given, says Renaker, or a patient may have not yet had an ordered urine specimen or stool sample collected.

"In our current world, we transfer a patient from a department that is on paper to a department that is on an electronic medical record," explains Renaker. "The receiving nurse is not as likely to see an incomplete order on the paper form." ■

Be the one who first IDs patient's abnormal EKG

If an ED nurse at Christiana Care Health System in Wilmington, DE, suspects a patient could be having a myocardial infarction (MI), he or she does the EKG immediately at the bedside and interprets it on the spot, says **Patricia L. Blair,** RN, BSN, CEN, patient care coordinator.

"We are the eyes and ears of the physicians," says Blair. "We always see the patient first. The recognition of an abnormal EKG in real time, as it is being done, allows us to have a rapid door-to-balloon time and save cardiac muscle."

At times, the ED nurse initiates the Heart Alert and obtains intravenous access, while the ED physician calls cardiology and the cardiac catheterization lab. "If the EKG is not looked at by the nurse, the chart would wait for a physician," says Blair. "There could be delays in physician evaluation due to overcrowding."

While all Christiana Care's ED nurses are certified in Advanced Cardiac Life Support (ACLS) and can read basic EKG rhythms, triage nurses receive more advanced training in reading a 12-lead EKG in "a very systematic way," says Blair. "If you look at it the same way every time, you don't miss anything."

Blair says to look at these three things: Is there a P wave with every QRS indicating a normal conduction? Is the pattern regular? And, are there are any ST depressions or elevations? "By looking at those three things every time, you are sure you don't miss anything," she says.

All ED nurses are educated to recognize significant changes in the patient's EKG, says **Cynthia Van Wyk**, RN, MSN, CCRN, patient care manager for emergency services at Scripps Mercy Hospital Chula Vista (CA). This education covers identification of areas of ischemia or injury to the heart, as well as rhythm and pattern changes that require immediate treatment, says Van Wyk.

Van Wyk recalls a patient who complained of vomiting and not feeling well. "The nurse did the EKG as a precaution and recognized subtle changes that indicated the patient may be having a decreased blood flow to his heart," she says. "She immediately called the doctor to the bedside, and the rapid treatment needed began."

An MI patient might complain of indigestion, neck or jaw pain, or even left shoulder or tooth pain, says Van Wyk. "The longer it takes to restore blood flow to the area of the heart affected, the more unrecoverable damage is done," she says. "Every minute counts."

Here are strategies to improve assessment of patients having EKGs:

• **Compare the current EKG to the patient's previous EKG if possible.**

Christiana Care's ED nurses can view the last EKG done at the facility on a bedside computer screen, which often gives important clinical information, says Blair.

"If you don't know the person has a left bundle branch block, you might think they are in ven-

EXECUTIVE SUMMARY

If ED nurses receive training in interpreting 12-lead EKGs and can recognize an abnormal EKG immediately, these steps can reduce delays in door-to-balloon time and save cardiac muscle. To improve your assessment:

• Look at whether the rhythm is regular and whether there are any elevations.
• Compare the EKG to a previous one if possible.
• Remember that myocardial infarction patients might have normal EKGs.

tricular tachycardia," she says. "Or if a left bundle branch block is there that wasn't there during the last admission, that should throw up red flags that something is really wrong here."

• Assign a tech to triage.

Blair reports that her ED has a 10-minute door-to-EKG time. "We have a technician assigned just to do EKGs and take them back to the core physician, so the attending looks at the EKG immediately," she says.

While the technician isn't able to interpret the EKG as the triage nurse would, it is "at least a safety net when our nurses are tied up," says Blair.

• When in doubt, do the EKG.

"If there is any question, just do the EKG," says Blair. "It's very quick to do, and it's a great screening. It is something we can do quickly that is going to save muscle."

One woman had elbow pain and came in requesting an X-ray, but the pain was gone by the time she arrived at the ED. "She just looked agitated and sweaty," says Blair. "Something told me to do the EKG, and it showed ST elevation."

It's not enough to ask patients whether they have any pain, warns Blair. "They might not perceive pressure or pushing to be pain," she says. "Ask patients if they feel like they could go on a long walk. Ask them, 'Do you feel like you do on a normal day?'" *(See story below on patients with normal EKGs.)* ■

Clinical Tips

Normal EKG? Go by how the patient *looks*

Your patient might report no chest pain and have a normal EKG, says **Patricia L. Blair**, RN, BSN, CEN, patient care coordinator at the ED at Christiana Care Health System in Wilmington, DE, but "the next thing you know, their troponin is coming back a 4, and they are in ventricular tachycardia. We find out a lot of times after the fact, that their left anterior coronary was completely blocked."

Blair says that she has had "plenty of patients who come in with normal EKGs, and their troponin will come back positive. If the patient doesn't look right, treat them as an MI even if their EKG looks marvelous."

SOURCES

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If you suspect a myocardial infarction but the patient has a normal EKG and no chest pain, consider whether your patient has diabetes or hypertension, Blair says. "If somebody comes in with pain without any comorbidities, you might chalk it up to their lifting something heavy last night," she says. "But if your patient has comorbidities, it should raise red flags." ■

Comply: NPSG revised on med reconciliation

An elder woman brought by ambulance from an extended care facility was awake and oriented, but didn't know her medications or even the facility's name and phone number, recalls **Donna Sparks**, MSN, RN, CEN, director of emergency services at Baptist Hospital Miami (FL).

An ED nurse "relentlessly pursued the list of meds," says Sparks. "The transfer papers had an address only, so the nurse did a Google search." The nurse found a listing of several phone numbers before losing Internet access temporarily.

The ED nurse then enlisted the help of a social worker, who provided a list of phone numbers of extended care facilities, says Sparks. "By cross-referencing the phone numbers, the nurse was finally able to identify the extended care facility," says Sparks. "She spoke to the manager, who then gave the medications over the phone."

EXECUTIVE SUMMARY

Updates to The Joint Commission's National Patient Safety Goal for medication reconciliation require ED nurses to inform patients about keeping medications updated. To improve compliance:

• Have a designated nurse document medications.
• Give medication cards to patients.
• Compare patient's previous and current medications.

New requirements

The Joint Commission's revised National Patient Safety Goal (NPSG) on reconciling medication information will become effective July 1, 2011. Ken Powers, a spokesperson for The Joint Commission, says that EP 2 might affect the ED because it allows organizations to identify the types of information to collect in settings where patients are not intended to be kept for 24 hours. This EP is similar in intent to NPSG.08.04.01 in the existing NPSG, notes Powers. "The NPSG was streamlined to focus on important risk points in medication reconciliation, most of which were also in the existing goal," he says.

Some prescriptive requirements were eliminated, such as those related to transfers within the organization, the need to send information to the next provider of care, and some documentation requirements, says Powers, "EP 5 is new, which addresses the need to inform the patient about keeping medication information updated," he says. (*See resource box, above right, on how to view the revised NPSG.)*

Here are some strategies to improve medication reconciliation:

• **Have a designated nurse record medications.**

Patients often are unaware of the medications or dosages they are taking, says **Patricia Bernier**, RN, assistant nurse manager of the ED at University of Connecticut Health Center in Farmington. "They'll say, 'the little blue pill,' which could be just about anything," she says.

ED nurses can call the pharmacy during day shifts, but this is not possible on off-shifts unless it's a 24-hour pharmacy, notes Bernier. The ED now has a designated admission nurse from 3 p.m. to 11 p.m. who documents medications in the computerized physician order entry (CPOE) system and calls local pharmacies and family members, "which is very time-consuming," says Bernier.

• **Give patients medication cards.**

Casie McMaster, RN, an ED nurse at St. Anthony's Hospital in St. Louis, MO, says, "We are continually educating our patients to bring in a list of current medications when they come into the ED. We have a good percentage of patients that do this now, or they will actually bring in the bottles."

• **Make numerous calls if necessary.**

McMaster says that on a daily basis, she sees ED nurses calling doctor's offices, pharmacies, family members, and even neighbors with access to a patient's home, to get the most accurate information. "Medication errors can be deadly," she says. "Walking that extra mile is the least we can do." *(See story, below, on comparing previous and current medications.)* ■

SOURCES/RESOURCE

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• To view the revised NPSG, go to www.jointcommission.org. Under "Standards," click on "National Patient Safety Goals," "Hospitals," "Revised National Patient Safety Goal on Reconciling Medication Information."

Clinical Tips

Compare current meds with previous list

A 25-year-old woman's complaints of pain on inspiration and cough initially caused **Casie McMaster,** RN, an ED nurse at St. Anthony's Hospital in St. Louis, MO, to suspect pneumonia. She told McMaster that she was a smoker but took no medications.

McMaster pulled up her electronic medical record (EMR) from the previous year, which listed birth control pills.

"When asked if she continues this medication, she said 'Yes, but I didn't consider that a medicine.' I now had a better picture as to what could be going on. This could be a PE [pulmonary embolism.]"

CT results confirmed McMaster's suspicion. "A simple chest X-ray would not have confirmed a PE,

but the information from the previous visit led us to think outside of the normal assumptions," she says.

Because ED nurses now enter patient medications into the EMR, they are "instantly able to compare what the patient was on in the past, to what they are on now," says McMaster. "This is fantastic, because it reduces medication errors." ■

Warning: ED is 'risky' for suicidal people

Patients may not tell you their intent

Minor respiratory complaints were all that a man reported to ED nurses at Hennepin County Medical Center in Minneapolis, but in fact, he was suicidal.

"The patient's nurse asked suicide risk questions, and the patient admitted to being very depressed due to his parent dying years ago," says **Gregory Torok**, RN. "He informed the nurse that he had means to hurt himself in his backpack that he had with him." The man was medically cleared and transferred to the hospital's acute psychiatric area, says Torok.

In early 2010, ED nurses implemented a suicide risk screening process, which is done after patients are placed in the room, he explains. "Patients may be experiencing suicidal thoughts that they don't want to admit to right away when they come into triage or the hospital," says Torok.

Carrie April, RN, BSN, an ED nurse at St. John's Mercy Medical Center in St. Louis, MO, cared for a patient with back pain who threatened to kill herself if she was not given pain medication. "The nurse was letting the doctor know this when the patient ran to the computer and tried to asphyxiate herself with the cord from the mouse," says April.

A person doesn't have to be a confirmed behavioral health patient to have suicidal ideations, says **Helen Sandkuhl**, RN, MSN, CEN, TNS, FAEN, director of nursing, emergency & trauma services at Saint Louis (MO) University Hospital. "It is also many times not the one primary ED complaint," Sandkuhl says.

ID at-risk individuals

A November 2010 *Sentinel Event Alert* from The Joint Commission warns that non-psychiatric patients are committing suicide in non-psychiatric units, including the ED. Of the 827 in-hospital suicides reported since 1995, almost 25% occurred in non-psychiatric settings, including EDs. *(See resource box, p. 55, on how to view the alert.)*

In non-psychiatric settings, an individual may not be identified upfront as a behavioral health patient, notes **Paul M. Schyve**, MD, The Joint Commission's senior vice president of healthcare improvement. "One of the risky areas, therefore, becomes the ED," he says.

Rather than recommending that every single ED patient be screened, staff should be looking for "certain behaviors and situations that may indicate there is an increased risk of imminent suicide," Schyve says.

While a patient who appears severely depressed immediately would be associated with a suicide risk, patients who appear anxious, agitated, confused, intoxicated, or those with dementia are also at risk, Schyve says. "You are talking about a whole raft of things that could diminish somebody's judgment," he says.

Another at-risk group are ED patients with chronic pain or illnesses with a poor prognosis, says Schyve. "They may be imminently suicidal," he says. "Obviously if you see a combination of these, such as a patient with chronic pain along with anxiety, that just increases your concern."

If you identify these risk factors, your next step is to screen your patient for depression and suicide risk, Schyve says. He acknowledges that not everyone in the ED is trained to do this type of screening.

"There should be someone who is specially trained that they can call, if they see one of these behaviors, to come and see the patient," Schyve

EXECUTIVE SUMMARY

Non-psychiatric patients are committing suicide in non-psychiatric units, including the ED, warns a *Sentinel Event Alert* from The Joint Commission.
- Look for behaviors or situations indicating increased risks.
- Remember that patients who appear anxious, agitated, confused, intoxicated, or those with dementia are also at risk.
- Perform a safety assessment before placing the patient in the room.

SOURCES/RESOURCE

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• To read The Joint Commission's November 2010 *Sentinel Event Alert*, go to www.jointcommission.org. Under "Topics," click on "Sentinel Event -- Sentinel Event Alert," and then "Sentinel Event Alert, Issue 46: A follow-up report on preventing suicide: Focus on medical/surgical units and the emergency department."

says. "This might be a psychiatric nurse, social worker, or an ED nurse with additional training provided by a psychiatrist in the hospital." *(See related stories on assessing the room you place the patient in, below.)* ■

Clinical Tips

No seclusion? Remove these for suicidal patients

Seclusion rooms for suicidal ED patients aren't always available, notes **Helen Sandkuhl**, RN, MSN, CEN, TNS, FAEN, director of nursing, emergency, & trauma services at Saint Louis (MO) University Hospital.

"Depending on the number of patients present in the ED at any time, EDs may have to improvise," Sandkuhl says.

If you place an at-risk patient in an area other than an approved seclusion room, remove any item that the patient could use to hang themselves, including clothing, shoelaces, belts, sheets, curtains, and blinds, as well as items that can cause suffocation, such as trash liners or shower curtains, she says. "Always check the area for safety before placing the patient in the room," says Sandkuhl. ■

Tough time obtaining venous access in a child?

Avoid multiple sticks

Are you able to try sticking your patient more than once or twice? Can you wait for the best possible nurse to be free? Do you need to consider alternative access immediately?

You need to consider all of these areas when attempting difficult intravenous (IV) access on a child, says **Denise Langley**, RN, BSN, CPEN, CEN, ED nurse manager at Doernbecher Children's Hospital in Portland, OR. Langley gives these three tips:

• Use a vein-finder light, warm water, or warm washcloths to help veins become more visible and palpable.

• Allow the child to get comfortable, in his or her position of choice.

• Know which veins are easiest to access, depending on the age of the child.

"Hand veins are easiest, up until the 7- to 11-month range when extra padding can make it more difficult. Then hand veins become more pronounced again in the preschool to school-aged child," says Langley. "Feet and ankle veins are good places to start the search in the smallest infants, as well as scalp veins."

Antecubital veins can be more difficult in a child that is moving a lot, due to the difficulty of holding and securing the site, adds Langley.

Lee Ann Wurster, RN, an ED nurse at Nationwide Children's Hospital in Columbus, OH, says,

EXECUTIVE SUMMARY

If intravenous attempts have failed or immediate venous access on a child is needed, consider use of an intraosseous drill. To increase ED nurses' comfort with this option:
• Give nurses ample time to practice.
• Give nurses a training kit to use in times of low volume.
• Use raw eggs to demonstrate the correct amount of pressure.

"The most difficult patient to obtain venous access on are the chronic children who have had multiple IVs in the past." Wurster says that the best strategy is to "recruit the best nurse to attempt IV access, right from the first stick."

Use other options

When the situation or the patient's condition requires alternative access, the intraosseous (IO) drill is effective and is quicker and easier to use than hand-placed IO needles, says Langley.

While nurses at Nationwide Children's are not permitted to place IOs, Wurster says, they are trained on the use of the EZ-IO Intraosseous Infusion system, manufactured by the Shavano Park, TX-based Vidacare Corp. "This system is used for critically ill or injured patients where urgent access is needed," she says. *(See resource box for more information on the system, above right, a story on training ED nurses on use of the IO drill, below right, and a tip to help ED nurses practice, p. 57.)*

If peripheral intravenous (PIV) insertion is needed due to a patient's history, illness, or injury, "our physicians will not hesitate to turn to the 'EZ-IO,' says Wurster. "PIV access will continue to be attempted. However, the IO can be used for fluid resuscitation or medication while PIV attempts are being made.

When using the drill, remember that the *torsion* of the drill allows for the ease of drilling through the bone, rather than amount of pressure applied to the drill, says **Heather Smyers**, BSN, RN, CEN, CPEN, ED education specialist at Cincinnati (OH) Children's Hospital Medical Center.

At in-service with a pediatric intensivist, nurses at Mount Desert Island Hospital in Bar Harbor, ME, were complimented on their quick use of the IO access drill for a child seizing. **Chris Costello**, RN, CEN, director of emergency and obstetrical services, says, "IV access was not immediately successful. One of our ED nurses was the champion to obtain the IO drill last year. If we did not have the drill, we would have had to stick this child potentially many more times before getting access."

An IO drill is typically used when IV attempts have failed or immediate venous access is needed. *(See the ED's policy, p. 57.)* When the IO drill was first used, demo equipment was made available to ED nurses. "Everyone has as much opportunity to practice with it as they need. The equipment is kept where anyone with down time can access it to refresh," says Costello. ■

SOURCES/RESOURCE

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The EZ-IO Intraosseous Infusion system's power driver retails for $295, and needles retail for $99 to $115. For more information, contact:

- **Vidacare**, Shavano Park, TX. Phone: (866) 479-8500 or (210) 375-8500. Fax: (210) 375-8537. E-mail: info@vidacare.com. Web: www.vidacare.com/EZIO.

Hesitant to use IO drill on a child? Practice!

Repetition is key

When ED nurses were learning to use the intraosseous (IO) drill for pediatric patients, they found it hard to "get over the mental barrier of using it on someone who is not coding," says **Chris Costello**, RN, CEN, director of emergency and obstetrical services at Mount Desert Island Hospital in Bar Harbor, ME.

"It is incredibly difficult to get over the mental block of using a drill on a patient, especially if it is a child and the parents are standing right there," Costello says. However, after repetitive education, "folks have become increasingly more comfortable with the IO drill," says Costello. "It has become a valuable piece of equipment for our ED."

ED nurses at Doernbecher Children's Hospital in Portland, OR, who place IO lines must complete a competency for the procedure. This competency includes correct placement in a practice model leg and a supervised placement in a patient, says Denise Langley, RN, BSN, CPEN, CEN, ED nurse manager.

Heather Smyers, BSN, RN, CEN, CPEN, ED education specialist at Cincinnati (OH) Children's Hospital Medical Center, says some staff might need more time to practice, as they have never used a drill before, so "allowing them ample time to become comfortable with the drill is key." Because IO drill use is a "low-volume, high-risk" skill, Smyers' ED offers nurses a practice kit to use, including a drill and bones.

"Staff will often get out the training kit in times of low volume," she says. "We also run simulations with manikins that allow for IO insertion." ■

Clinical Tips

Are you new to IO drill? Practice with raw eggs

Heather Smyers, BSN, RN, CEN, CPEN, ED education specialist at Cincinnati (OH) Children's Hospital Medical Center, says that an effective method for ED nurses to become comfortable using an intraosseous drill is training with raw eggs.

The torsion of the drill allows the user to puncture the eggshell without damaging around the insertion site, as long as the user does not apply too much pressure, Smyers explains.

"If the user is applying too much pressure, the eggshell will crack," she says. "This mimics what will happen when applying to much pressure to the bone: a fracture." ■

Here is ED's policy for use of IO drill

Below is the policy used for an intraosseous (IO) drill on pediatric patients by ED nurses at Mount Desert Island (MDI) Hospital, Bar Harbor, ME.

Policy: After four attempts to establish vascular access by two separate licensed medical providers, intravenous (IV) access is unable to be established in 90 seconds, or IO is deemed the most appropriate avenue for vascular access by the practitioner, and access is rapidly required, the licensed medical provider with documented competency and privileges at MDI Hospital may establish an IO in the adult patient.

After two attempts on a pediatric patient, age 8 and under, unable to establish IV access in 90 seconds, IO is deemed the most appropriate avenue for vascular access by the practitioner; and access is required, the licensed medical provider with documented competency and privileges at MDI Hospital may establish an IO.

Indications include but are not limited to: cardiac arrest, status epilepticus, all shock states, arrhythmias, dehydration, burns, drug overdose, diabetic ketoacidosis, renal failure, stroke, acute myocardial infarction (AMI), coma, obstetric complications, thyroid crisis, trauma, anaphylaxis, congestive heart failure, emphysema, respiratory arrest, hemophiliac crisis, altered level of consciousness, respiratory compromise, and hemodynamic instability. ■

Get info you need without leaving patient's bedside

Phone apps save time

When **John Provost**, RN, started working in the ED in 2006 at St. Joseph's Hospital and Medical Center in Phoenix, AZ, he purchased a PalmPilot, then added some software with medical information.

"I recall how expensive this was, and that I quickly stopped using the device due to the time it took to boot up as well as attempting to locate information," he reports.

Provost says that he carries an Iphone 4, which is "lightning fast and is always ready to go with the slide of a finger across the screen. On my device, I have an organized grouping of medical apps."

Provost uses Epocrates (manufactured by San Mateo, CA-based Epocrates. *For more information, see resource box, p. 58.*) for information

EXECUTIVE SUMMARY

Several phone applications are relevant to ED nursing clinical practice, and ED nurses are using these to:
- Obtain information at the patient's bedside.
- Obtain additional sources to compare information against.
- Calculate medication dosages.

SOURCES/RESOURCES

For more information on phone applications for emergency nurses, contact:

• **Dee Alexander**, RN, BSN, Clinical Supervisor, Emergency/Trauma Services, Pediatric Emergency Department, St. John's Mercy Medical Center, St. Louis, MO. Phone: (314) 251-9625. E-mail: delores.alexander@mercy.net.
• **John Provost**, RN, Phoenix, AZ. Phone: (602) 317-0477. E-mail: johnjprovost@me.com.

• **ITriage**, a free smartphone app containing information on thousands of symptoms, diseases and medical procedures, can be downloaded at no charge at www.itriagehealth.com/get-mobile. For more information, contact Healthagen, Lakewood, CO. Phone: (800) 985-9605. E-mail: info@healthagen.com. Web: www.itriagehealth.com.
• **Epocrates** Essentials is a drug and disease and laboratory reference ($159 a year). For more information, contact Epocrates, San Mateo, CA. Phone: (650) 227-1700. Fax: (650) 227-2770. E-mail: support@epocrates.com. Web: www.epocrates.com.
• **Medscape** Mobile is a free medical application for health care professionals that can be downloaded at http://www.medscape.com/public/mobileapp?src=hp-mobileapp. For more information, contact: Medscape, New York, NY. Phone: (888) 506-6098 or (212) 301-6700. E-mail: medscapemobile@webmd.net. Web: www.medscape.com.
• **Skyscape** offers mobile medical apps including Porter's Pocket Guide to Emergency and Critical Care ($24.95) and Rosen and Barkin's 5-Minute Emergency Medicine Consult ($99.95). For more information, contact: Skyscape, Marlborough, MA. Phone: (508) 460-6500. Fax: (508) 460-6510. E-mail: info@skyscape.com. Web: www.skyscape.com.
• **PEPID's** Professional Nursing Suite, a smart phone app that covers thousands of diseases and disorders, costs $214.95 for one year. PEPID's ED Suite app costs $254.95. For more information, contact PEPID, Evanston, IL. Phone: (888) 321-7828 Ext. 251 or (847) 491-9100. Fax: (866) 681-8207. E-mail: sales@pepid.com. Web: www.pepid.com.

on diseases, medications, and lab tests, and says it is his "favorite one-stop shop." "This application saves me time in terms of being able to look information up at the bedside of a patient instead of having to run back to a work station or call out for assistance," he says.

Provost also uses other medical information databases, including Medscape, Skyscape, and Pepid. *(For more information, see resource box.)* "This allows me to cross reference and compare information I may not trust, or when I need another description by another provider," he says.

Provost says he's had "countless occasions" where he has needed to check dosing or obtain information on a specific medication. "Having that information in my pocket at all times is a gift," he says.

Dee Alexander, RN, BSN, clinical supervisor for emergency/trauma services in the pediatric ED at St. John's Mercy Medical Center in St. Louis, occasionally uses iTriage (manufactured by Lakewood, CO-based Healthagen if she has trouble figuring out what is wrong with a patient. *(For more information on iTriage, see resource box.)* "It has been beneficial for teaching purposes," she adds. "I had a patient with atrial fibrillation, and I pulled up the images to show him what atrial fibrillation looked like on an EKG tracing."

Alexander has used MedCalc (a free medical calculator available at http://med-ia.ch/medcalc) frequently to calculate doses. "I find it very helpful in those very stressful situations when time is of the essence and I don't have time to run find a drug book," she says. ■

C. diff infections rise: Use these practices

Clostridium difficile (*C. difficile*) infections are on the rise, with an estimated 500,000 cases in hospitals and nursing homes each year and increased mortality rates, according to the Centers for Disease Control and Prevention (CDC).[1]

"Half of all *C. difficile* cases present from the community," says **L. Clifford McDonald**, MD, FACP, FSHEA, chief of the Prevention and Response Branch in the CDC's Division of Healthcare Quality Promotion. "This includes patients transferred from nursing homes and persons recently discharged from acute care hospitals."

McDonald gives these recommendations for ED nurses:

COMING IN FUTURE MONTHS

- Stop dangerous dosage errors in boarded patients
- Dramatically improve triage of intoxicated patients
- Life-saving interventions for heat-related injuries
- What to do if asthmatics don't respond to treatment

EXECUTIVE SUMMARY

Clostridium difficile infections are increasing, and ED nurses must use precautions even for patients who are potentially infected.
- Obtain a history of diarrhea, including stool frequency and consistency.
- Clean all reusable patient care equipment.
- Remove your gown before leaving the room.

• Consider *C. difficile* in any patient presenting with new onset diarrhea, especially if there is a history of antibiotic and/or inpatient healthcare exposure in the previous three months.

"ED staff should be in the habit of inquiring about these exposures and obtaining a history of diarrhea, including stool frequency and consistency," says McDonald.

• If the history and symptoms are consistent with *C. difficile*, such as more than three unformed stools in a 24-hour period, order a diagnostic assay.

• Use contact precautions including gown and gloves, to prevent cross transmission, and clean all reusable patient care equipment before use with another patient.

Ben Brooks, RN, BSN, an ED nurse at St. Elizabeth Healthcare — Florence (KY), says that it is important to use precautions even when caring for a *potential C. difficile* patient. "Even during brief patient encounters, it is very important to wash your hands to prevent the transmission of *C. difficile*," says Brooks. "Offer to help the patient clean or sanitize their hands often."

Brooks says to wear gloves to enter the room. "Wear a gown for direct patient care — touching or cleaning up the patient," he says. "Remove the gown before leaving the room."

Wearing gloves can significantly reduce the spread of *C. difficile*, says Brooks. "After gloves are removed, wash hands with soap and water or an alcohol hand sanitizer before and after patient contact, or after contact with room surfaces," he adds.

C. difficile contaminates patient care equipment and devices through fecal shedding and the soiled hands of the patient *or* the healthcare worker, notes Brooks. "A plan should be in place to clean and disinfect surfaces when fecal contamination has occurred," he says. *(See tip on preventing cross-contamination, below.)*

SOURCE

For more information on ED patients with *Clostridium difficile* infections, contact:

• **Ben Brooks**, RN, BSN, Emergency Department, St. Elizabeth Healthcare — Florence (KY). Phone: (859) 212-5483. E-mail: Ben.Brooks@Stelizabeth.com.

REFERENCE

1. Campbell RJ, Giljahn L, Machesky K, et al. *Clostridium difficile* infection in Ohio hospitals and nursing homes during 2006. *Infect Control Hosp Epidemiol* 2009;30:526-533. ■

Clinical Tips

Reduce risks: Give patient own supplies

If you are caring for a patient with *Clostridium difficile* infection, assign him or her disposable supplies or equipment whenever possible, says **Ben Brooks**, RN, BSN, an ED nurse at St. Elizabeth Healthcare — Florence (KY).

"This can minimize cross-contamination," Brooks explains. ■

CNE ANSWERS

Answers: 9. C; 10. B; 11. A; 12. B.

CNE INSTRUCTIONS

Nurses participate in this continuing nursing 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 and return it in the reply envelope provided in that issue to receive a letter of credit. When your evaluation is received, a letter will be mailed to you. ■

CNE OBJECTIVES/ QUESTIONS

Upon completion of this educational activity, participants should be able to:

- identify clinical, regulatory or social issues related to ED nursing;
- describe the effects of clinical, regulatory, or social issues related to ED nursing on nursing service delivery;
- integrate practical solutions to ED nursing challenges into daily practice.

9. Which is recommended to improve safety of ED handoffs to inpatient units, according to Sommer Alexander, MS, senior quality consultant at Fairview Health Services?
A. Avoid use of a conference call format.
B. Have ED nurses give report to the unit charge nurse during an initial phone call, then give an additional report to the receiving inpatient nurse during a follow-up call.
C. Give report with the ED nurse, physician, inpatient nurse, and inpatient physician all on the call together.

10. Which is recommended if a myocardial infarction (MI) is suspected, according to Patricia L. Blair, RN, BSN, CEN, patient care coordinator at Christiana Care Health System?
A. Avoid comparing the patient's EKG with a previous one.
B. When evaluating an EKG, look at whether there is a P wave with every QRS, indicating a normal conduction; whether the pattern is regular; and whether there are any ST depressions or elevations.
C. Ask patients specific questions about pain, as opposed to open-ended questions such as whether they feel as they normally do.

11. What should ED nurses do to reduce the risk of suicide, according to Paul M. Schyve, MD, of The Joint Commission?
A. Look for certain behaviors and situations that may indicate an increased risk of suicide.
B. Screen only those patients who appear depressed.
C. Don't suspect suicidal risk in patients who appear anxious or agitated.

12. Which is true regarding the care of *Clostridium difficile* infections, according to L. Clifford McDonald, MD, FACP, FSHEA, in the CDC's Division of Healthcare Quality Promotion?
A. *C. difficile* should be considered only for patients with a recent inpatient healthcare exposure in the previous three months.
B. *C. difficile* should be considered in any patient presenting with new onset diarrhea.
C. Precautions should only be used for confirmed *C. difficile* cases.