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Warning: Your boarded patients may be missing life-saving medication dosages

Scheduled meds not always given

Editor's Note: This is a two-part series on medication safety for inpatients being held in the ED. This month, we give strategies to avoid missed dosages; next month, we'll cover how ED nurses can reduce errors with inpatient medications.

When an inpatient is boarded in your ED for hours, do you have a process to ensure their timed medications are not overlooked? "ER nurses are used to giving meds as soon as they are ordered. Our work flow typically does *not* include scheduled meds," says **Melanie Gullixson**, clinical director of the ED at St. Joseph's Hospital ED in St. Paul, MN. "We have to think differently when patients are being held."

Bad outcomes can occur if a patient misses even a single dose of a time-sensitive medication, warns Gullixson. A missed dose of furosemide could cause fluid overload, and any missed blood-pressure medication can cause dangerously high blood pressure, says Gullixson.

"A missed nebulizer treatment could cause a respiratory issue, missed digoxin could cause a rhythm change, and missed warfarin could cause a decrease in INR [international normalized ratio]," adds Gullixson.

Leighann Kristin Flanagan, RN, CEN, clinical educator/supervisor for adult emergency services at Wake Medical Center in Raleigh, NC, says it's not uncommon for an ED nurse to be responsible for several boarded patients, as well as other patients with high-acuity illness or injury.

The ED, says Flanagan, is a "high pressure environment with frequent interruptions," and could cause a patient's timed medication dose to be missed.

Medications are timed to ensure that there are sufficient levels in the patient's

EXECUTIVE SUMMARY

Medication dosages for inpatients held in the ED may be missed because nurses typically don't administer scheduled medications, and this can cause bad outcomes for patients. To avoid missing dosages:

- Store inpatient medications in a separate area.
- Ask patients why a particular medication is taken.
- Double check the Medication Administration Record with the original physician order.

bloodstream, adds Flanagan, and may need to be timed with meals for proper absorption.

“Pain medications are timed so that the patient receives a dose *before* they begin to experience intense pain,” she says. “Missing doses of regularly taken medications can cause uncomfortable side effects.”

If a patient misses timed doses of a medication for seizure activity, says Flanagan, this places them at risk to have a seizure. Likewise, missed doses of blood-pressure or heart medications may mean extra workload on their heart, she says, and missed anticoagulant doses could result in a blood clot forming.

Wake Medical’s ED nurses keep boarded patients separate from acute-care areas, says Flanagan. “We attempt to make our patient-care assignments such that the nurses

caring for boarded patients can avoid caring for acutely ill ED patients as well,” she adds.

No hunting for meds

“Being a small community hospital, our patient load increases greatly when it is flu and cold-weather season. Therefore, our admissions max out,” says **Tammy Johnson**, RN, BSN, an ED nurse at Carteret General Hospital in Morehead City, NC. “We do hold inpatients in our ER for several hours.” Here are some ways ED nurses avoid missed medication dosages:

Stat orders are flagged.

“These are to be done or carried out within one hour, and medications are faxed to the pharmacy within two hours,” says Johnson. For example, a patient on warfarin may have a stat order for a prothrombin time/INR test, she says, or a pneumonia patient may have orders for stat antibiotics.

Medications for boarded patients are kept in a separate automated medication dispenser.

“It is located in a central location separate from the regular ER Pyxis,” says Johnson. “This has decreased medication errors due to not hunting to find the med or pharmacy tubing half and then later receiving the others,” says Johnson.

It also prevents dosage timing errors because when an ED nurse pulls a medication, it indicates when the last time that med was pulled, adds Johnson.

Johnson says that there are sometimes delays from the time the medication is ordered to the dispenser being stocked. “Our pharmacy works very hard at getting medications, especially the essential meds, to us in a timely manner,” she says.

The ED’s EMR system prints out a medication administration record (MAR) with the time indicators.

“This assures we are giving the meds on schedule,” says Johnson. “Our EMR has a different set of templates for the emergency room and floor. The central MAR shows *all* the medications the patient has received.”

Dosages are documented.

“We are working at educating all staff from the accepting floors and ER on where to check for documentation that meds have been given,” says Johnson. “This decreases the risk of double giving medications.” (See an important question to ask your patient and related story on documentation of inpatient medications, p. 63.) ■

SOURCES

For more information on medications given to ED-boarded patients, contact:

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Clinical Tips

Ask boarded patient why they take meds

The majority of medications you administer to boarded patients are ones they take on a regular basis, notes **Leighann Kristin Flanagan**, RN, CEN, clinical educator/supervisor for adult emergency services at Wake Medical Center in Raleigh, NC. "Ask them if they are familiar with the medication," she advises. "Are they aware of the reason they are taking it? This is a safety check, as well as a teaching moment." ■

Document *this* about inpatient medications

The need to transcribe, administer, and document timed medications in a busy ED leaves admitted patients "particularly vulnerable to a drug error," according to **Leighann Kristin Flanagan**, RN, CEN, clinical educator/supervisor for adult emergency services at Wake Medical Center in Raleigh, NC.

Many times, says Flanagan, the emergency nurse must order a medication from the pharmacy, and it's not always obtained in a timely manner.

"The ED nurse is presented with hand-writing a patient Medication Administration Record [MAR] with the correct medication, dosages, and times, per the hospital policies," she says. "ED nurses do not have a lot of experience with this type of transcription."

Inpatient order set utilized

Melanie Gullixson, clinical director of the ED at St. Joseph's Hospital ED in St. Paul, MN, says that one problem in her ED is that the ED's electronic medical record (EMR) doesn't "talk to" the inpatient

electronic record, and vice versa.

"So we work off the ER record. If the attending writes orders, we work off of the paper orders," she says.

If the attending hasn't seen the patient yet, then nurses use the ER bridging orders, and use pen and paper to keep track of what needs to be done, says Gullixson. "We rely on the nurses following a process of utilizing the inpatient order set to get and give the meds," she says.

If the patient is boarded for a prolonged period of time, ED nurses make sure to contact the attending physician to get the scheduled orders, Gullixson says. Otherwise, she says, "the attending doesn't often come down. A big reason meds are missed is that they simply aren't ordered."

Since the ED doesn't have an electronic inpatient record available, the ED's EMR is used, explains Gullixson, with paper documentation of the next dose. "This is similar to the way inpatient nurses keep rounding notes on their patients in their pockets," she says. "We then transcribe the order into the ER's EMR to give the med."

Always be sure there was a double check with the MAR against the original physician order, warns Flanagan. "Many times, an error occurs when the order was not correctly transcribed," she says. ■

Do this immediately for heat-injured ED patients

Consider age and activity

Exertional heat-related injuries are on the rise in EDs, with an estimated 54,000 patients treated over a 10-year period — a 133% increase that was not linked to increased seasonal temperatures, according to a new study (*see reference*).

"Activity and age may be important factors for ED nurses to consider when evaluating patients for exertional heat-related injuries," says **Lara McKenzie**, PhD, MA, one of the study's authors and principle

EXECUTIVE SUMMARY

Exertional heat-related injuries are increasing in EDs, according to a new study. To improve care of these patients:

- Remember that dehydration can lead to electrolyte imbalances.
- Obtain an EKG, labs, and urinalysis.
- Don't cool patients too quickly.

investigator at the Center for Injury Research and Policy at Nationwide Children's Hospital in Columbus, OH.

For example, men and boys sustained a greater proportion of exertional heat-related injuries while participating in yard work and home maintenance compared to women and girls, and patients younger than 20 sustained a greater proportion of sports and recreational exertional heat-related injuries.

Educate your ED patients, particularly older adults, that extreme temperatures are *not* necessary to sustain a heat-related injury, advises McKenzie, and that normal household maintenance, yard work, and leisure activities can pose a risk.

"Be aware that heat-injury cases can come into the ED at any time, not just on heat-advisory days," McKenzie says. "Pay attention to the patient's history to be able to identify heat injury appropriately." Use these practices to improve care:

Remember that elders are at greater risk for heat injury.

This is because they are more prone to environmental stress due to decreased physiological reserves, increased comorbidities, and more likely use of prescription medications, such as diuretics for hypertension, says Curtis Olson, RN, BSN, BA, EMT-P, CEN, an ED nurse at Saint Elizabeth Regional Medical Center in Lincoln, NE.

Remember that dehydration can lead to electrolyte imbalances.

This can, in turn, lead to cardiac arrhythmias, seizures, and kidney damage, says Olson. "The acute kidney failure is exacerbated by rhabdomyolysis, which is also common in heat injury," says Olson.

Obtain an EKG, labs, and urinalysis, and insert a Foley catheter.

"These are essential rapid interventions, along with respiratory support, intravenous fluids, and rehydration," says Olson (See clinical tip on cooling patients, p. 64.) ■

REFERENCE

1. Nelson NG, Collins CL, Comstock RD, et al. Exertional heat-related injuries treated in emergency departments in the U.S., 1997-2006. *Am J Prev Med.* 2011;40(1):54-60.

SOURCE

For more information on caring for ED patients with heat-related injuries, contact:

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Clinical Tips

Don't cool heat-injured patient too quickly

When caring for a heat-injured patient, "cooling should be done up to, but not to the point of, shivering," says Curtis Olson, RN, BSN, BA, EMT-P, CEN, an ED nurse at Saint Elizabeth Regional Medical Center in Lincoln, NE.

"Shivering is the body's response to being cooled too fast, and will increase the body temperature," he warns. ■

Be ready for sudden change in asthma patients' status

Patients may rapidly decompensate

“Normal-looking” asthma patients, whose condition is poorly controlled with treatment, or patients who are not compliant with treatment, may show up in your ED after weeks of deteriorating gradually, warns Anissa Washington, RN, BSN, ED nurse at St. John's Mercy Medical Center in St. Louis, MO.

"Their effort to breathe eventually becomes tiring, and the patient may suddenly decompensate," says Washington.

Consider the patient's vital signs, including pulse oximetry, listen to breath sounds, and perform a thorough medical history, says Washington. Ask about history of sudden exacerbation, intensive-care unit admission, recent hospital and ER visits, use of inhalers or sudden withdrawal from corticosteroids, drug use, and comorbidities, she says.

"Interventions, such as supplemental oxygen, breathing treatments and appropriate medications, should promptly be administered to these patients," says Washington. "Additional monitoring such as pre

EXECUTIVE SUMMARY

Your ED asthma patients may suddenly decompensate if their condition is poorly controlled with treatment or they are non-compliant. To improve their care:

- Assess for signs of respiratory failure.
- Give medications in a timely manner.
- Reassess the patient after each treatment.

and post-peak flows, cardiac monitoring and arterial blood gases are also necessary.”

Monitor closely

Just because you’ve administered a medication doesn’t mean your asthma patient will respond, says **William Downum**, RN, an ED nurse at St John’s Mercy Medical Center in St. Louis, MO. “Assess for signs of respiratory failure,” he says. “Close monitoring of your asthma patient is a number-one priority.” Here are Downum’s recommendations:

1. **Visually inspect the chest for sternal retractions and intercostal retractions, and use of accessory muscles.**
2. **Reassess your patient after each treatment and medication given.**

Many times, a single breathing treatment given in the ED doesn’t solve the problem, says Downum. “Children may have been given nebulizers at home, before coming to the hospital,” he says. “Follow-up breathing treatments, continuous nebulizers, and IV [intravenous] medications may be required to improve the patient’s condition.” (See **clinical tip on giving treatments, p. 65.**) ■

SOURCES

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Clinical Tips

Always give asthma meds without delay

When caring for an asthma patient, **William Downum**, RN, an ED nurse at St John’s Mercy Medical Center in St. Louis, MO, says to always give medications and breathing treatments in a timely manner. “If you have an order to give three breathing treatments 20 minutes apart, it will have less effect if you give the treatments 45 minutes or an hour apart,” he explains. ■

Reduce restraint use for mental-health patients

Do quick assessments

Adrienne Jones, RN, an ED nurse at Providence St. Vincent Medical Center in Portland, OR, says that ED nurses used to see about five to 10 mental-health patients a day, but are now seeing twice as many. ED nurses use these practices to decrease restraint use:

A medical screening examination, an examination by a social worker, and a safety assessment for patient and staff is done.

Each patient who presents to ED nurses with a mental-health complaint is asked, “Have you had thoughts about hurting yourself or others,” “Do you have a plan and/or means,” and “Have you made previous suicide attempts or gestures?”

“Triage nurses should use clinical judgment, as they do in determining medical risk. Err on the side of caution,” says Jones.

Mental-health patients may present with medical issues, and may *not* be there for a mental-health issue, warns Jones. “Their mental-health issue may distract you, and cause a serious medical issue to be missed,” she says.

A patient may have a headache, fever, or cough unrelated to the mental-health issue, she adds, and this can worsen a patient’s mental-health crisis. “When determining risk assessment and triage category, take into account the family’s, caregiver’s, and police account of the incident,” she says.

You may learn that your patient made previous suicide attempts, says Jones, or that he or she has a specific plan to harm him- or herself, such as carbon monoxide poisoning.

A SBARR form is used for ED mental-health patients.

“The form is used from the time they hit the door until disposition,” says Jones. “It is updated as things

EXECUTIVE SUMMARY

ED nurses are seeing increasing numbers of mental-health patients, and quick assessments and medication administration can avoid restraint use. Other ways to avoid restraints:

- Remember that some medical issues can worsen a mental-health crisis.
- Obtain information from the family, caregiver, or police.
- Have the triage nurse give consistent information to the primary nurse.

change, much like the old kardex.” [A protocol for intoxicated patients in the ED is included with the online version of this month’s *ED Nursing*. For assistance, contact customer service at (800) 688-2421 or customerservice@ahcmedia.com.]

When a patient is handed over from triage to the primary nurse, the SBARR form is used, says Jones. “The same information that the triage nurse has obtained needs to be passed to the primary nurse,” she says. “When a patient is brought from triage, the handover must be done nurse to nurse.”

All ED nurses are trained in de-escalation of violent patients.

A four-hour class, Prevention and Management of Assaultive Behavior (PMAB), is given by mental-health nurses and technicians, and covers assessment, de-escalation techniques, and what to do if attacked by a patient, says Jones.

“Patients coming in who are currently violent are assessed *prior* to coming into the building,” says Jones. “By emphasizing PMAB instead of a code gray, the mindset of those involved is to promote the least restrictive intervention possible.”

All mental health patients are dressed in green scrubs.

“The green scrubs alert all staff, including the doctors, that this patient is in the ED for mental-health issues,” says Jones. “If we see a patient wandering the halls or attempting to go out of the ED, we can stop them *before* a crisis occurs, and get them back to their room.” (See related stories on medication administration and the patient’s home medications, p. 66.) ■

SOURCE

For more information on restraint use in the ED, contact: **Adrienne Jones**, RN, Emergency Department, Providence St. Vincent Medical Center, Portland, OR. Phone: (503) 216-2361. Fax: (503) 216-2330. E-mail: adrienne.jones@providence.org.

Fast assessment, meds can avoid restraints

Abigail Coffin, MSN, PMHNP-BC, ANP-BC, a psychiatric nurse practitioner in the ED at Duke University Hospital in Durham, NC, says that quick assessments and medication administration are two keys to avoiding restraint use.

“If the patient has a history of aggression, get the PRNs ready,” says Coffin. “Offer [oral medications]

first, so the patient feels some sense of control. If the [oral medication] is refused and the patient is agitated and dangerous to self or others, force intramuscular medications.”

Give medications immediately when a patient starts to become agitated, advises Coffin. “If they cannot redirect themselves and calm down, there is no need to wait,” she says. “I often see patients medicated well beyond the point of no return. Treat the agitation well *before* restraints are required.”

All of Duke’s ED nurses have received training in de-escalation, and how to defend oneself if necessary from an aggressive patient, adds Coffin. “The number of restraints and seclusions has dropped dramatically,” she reports. “We also do not require the use of our police nearly as much.” ■

SOURCE

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Clinical Tips

Keep psychiatric patients on their home meds

If a psychiatric patient is being held in your ED, keep the patient on the medications he or she is supposed to be taking, advises **Abigail Coffin**, MSN, PMHNP-BC, ANP-BC, a psychiatric nurse practitioner in the ED at Duke University Hospital in Durham, NC.

“Often, the home meds are forgotten. Do not stop them because they are in the ED,” says Coffin. She adds that due to lack of available inpatient beds on psychiatric units in North Carolina, psychiatric patients can wait in the ED for up to a *week*.

If a schizoaffective patient is on [divalproex sodium] 1500 mg PO QHS and [risperidone] 2 mg PO QHS to control agitation, mania, and psychosis, for example, it is important to continue these medications and not miss doses, says Coffin.

“It is also important to know if a patient cannot take [haloperidol] due to a history of a severe dystonic reaction, or if they cannot take [lorazepam] due to severe disinhibition,” she notes. ■

Do rapid HIV test without any delays

Avoid patient flow problems

A 63-year-old construction worker came to the ED at Jacobi Medical Center in Bronx, NY, with difficulty swallowing, and reported losing 40 pounds in the previous six months. He tested positive for human immunodeficiency virus (HIV), and was seen at the hospital's clinic the same day. "His CD4 is now more than 400, he has gained 40 lbs. back, and is able to do his construction work," says **Jason M. Leider**, MD, PhD, associate professor of clinical medicine.

More than 60,000 of the ED's patients have been tested since October 2005, using a new rapid HIV test (INSTI, manufactured by Vancouver, Canada-based Biological Laboratories), and more than 200 tested positive.

The rapid HIV testing is offered to all ED patients at Jacobi Medical Center, performed by public-health advocates (PHAs), with video counseling done with the use of portable personal computers, reports Leider.

If one of the ED's patients tests positive, the PHAs make sure that he or she is immediately referred to the hospital's HIV clinic. "This allows ED nurses to work unimpeded," says Leider. "They simply encourage patients to get tested, and then have the PHAs work with the patients."

"Our nurses could not be happier, as they achieve a major health-care objective without hampering their other duties," he says.

Rapid testing is a screening tool with very high sensitivity and specificity, says Leider. "It can tell patients who test negative, with high certainty, that they are truly negative," he says. "For patients testing positive, further confirmatory testing is needed."

Rapid HIV testing in the ED can identify patients who are unknowingly infected and are transmitting the infection, says Leider. "Such patients account for about 20% of all those who are infected, yet account for 50%-75% of transmissions," he says.

EXECUTIVE SUMMARY

ED patients at Jacobi Medical Center in Bronx, NY, are routinely tested using a new rapid HIV test. These practices are used:

- Video counseling is done with portable personal computers.
- Patients who test positive are immediately referred to the HIV clinic.
- Patients are identified who are unknowingly infected.

In the ED, there is a "golden moment of learning," says Leider. "It is quite hard to calculate the long-term impact of counseling on risk-reduction behavior," he says. "But it is our firm belief that if HIV counseling can be seamlessly woven into the fabric of ER medical care without impeding the flow, then it should be done." ■

SOURCE

For more information on rapid HIV testing in the ED, contact: **Jason M. Leider**, MD, PhD, Department of Medicine, Jacobi Medical Center, Bronx, NY. Phone: (718) 918-3669. Fax: (718) 918-7686. E-mail: jleider@hotmail.com

You may overlook these pneumonia symptoms

72% of misdiagnoses occur in ED

Smoking, lung diseases, and chest X-ray abnormalities may result in your ED patient being diagnosed with bronchitis, flu, pleurisy, costochondritis, and upper respiratory infection, when he or she actually has pneumonia, says **Carrie April**, RN, BSN, an ED nurse at St. John's Mercy Medical Center in St. Louis, MO.

"Patients can be discharged from the hospital with these diagnoses, allowing the pneumonia to increase in severity," says April.

It is especially important to note all patients with a productive cough of discolored phlegm, fever, shaking, and chills, says April. Elderly and/or immune-compromised patients are at high risk for getting pneumonia, she warns.

"If misdiagnosed or undiagnosed, this population can become septic," she says. "Sepsis is a serious, life-threatening illness that will require critical care from a team of multi-disciplinary professionals."

Assess carefully

Of 127 patients diagnosed with pneumonia at Henry Ford Hospital in Detroit between December 2008 and

EXECUTIVE SUMMARY

ED pneumonia patients are often misdiagnosed due to inadequate patient history or assessment. Avoid missing cases by:

- Identifying all patients with productive cough of discolored phlegm, fever, shaking, and chills.
- Remembering that elderly and immunocompromised patients are at high risk.
- Ordering chest X-rays at triage.

December 2009, and readmitted within 30 days of a previous hospitalization, 92 were misdiagnosed with health care-associated pneumonia. Of this group, 72% of the misdiagnoses occurred in the ED (*see reference #1*).

Hiren Pokharna, MD, MPH, the study's lead author and an infectious disease physician at Henry Ford, says that ED nurses should have a high clinical suspicion for pneumonia.

Be aware of the Centers for Disease Control and Prevention/National Healthcare Safety Network surveillance criteria for pneumonia, advises Pokharna (*see reference #2*). "That way, whenever a patient presents, you can determine more closely if the patient fulfills criteria for pneumonia," he says.

Be aware of the conditions associated with misdiagnosis, adds Pokharna. "Another sub-study that we conducted suggests that most of the cases misdiagnosed as pneumonia were chronic obstructive pulmonary disorder exacerbation, congestive heart failure exacerbation, or tracheobronchitis," he says.

April recommends advocating for appropriate diagnostic tests in the ED, and using triage protocols to speed care. If a chest X-ray is ordered by the ED nurse, the radiologists can confirm a diagnosis, and antibiotics can be started immediately, she explains. "Advocate for the patient, should you feel that there is a misdiagnosis," she adds.

Ask your patient if he or she has been recently discharged from the hospital. "Hospitalized patients are at high risk for developing nosocomial infections, such as pneumonia," says April. (**See related story on assessment of pneumonia, and clinical tip on chest X-rays, p. 68.**)

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2. Horan TC, Andrus M, Dudeck MA. CDC/NHSN surveillance definition of health care-associated infection and criteria for specific types of infections in the acute care setting. *Am J Infect Control*. 2008;36:309-332.

SOURCES

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Identify pneumonia patient's true status

If your pneumonia patient is misdiagnosed, he or she could become a lot sicker and possibly need an extended hospital stay, warns **Suzanne Watson**, RN, ED manager at the Nebraska Medical Center in Omaha. "Unfortunately, there are still patients who die from pneumonia each year," she adds.

Carefully assess your patient's status, advises Watson, including temperature, lung sounds, oxygen saturations, signs of increased work of breathing, and retractions.

An inadequate patient history can lead to a misdiagnosis, says Watson. "Listen to what your patient is telling you, both verbally and visually," she says. "Do a complete set of vital signs, including a temperature."

Find out the length of the illness, any impact on the patient's ability to perform daily activities, and the temperature, color, and moistness of the patient's skin, says Watson. "Those are all cues to the severity of the patient's illness," she says.

Ask your patient if he or she took any antipyretics, adds Watson. "They may be afebrile in the ED because they just took [acetaminophen] or [ibuprofen] at home," she says. "Listen to lung sounds, and get an oxygen saturation. Look for retractions and any signs of cyanosis."

Admitted patients who are diagnosed with community-acquired pneumonia have a decreased mortality rate if the appropriate antibiotics are given within six hours of presentation and blood cultures are obtained prior to the antibiotic therapy, notes Watson.

"This is part of the core measure for treatment of pneumonia, which was established as best practice by the Centers for Medicare and Medicaid Services," says Watson. "This is something we track." ■

Clinical Tips

Don't be fooled by normal chest X-ray

Pneumonia may be misdiagnosed in your ED patient because the chest X-ray comes back essentially normal, says **Suzanne Watson**, RN, ED manager at the Nebraska Medical Center in Omaha.

A chest CT may be done if the ED physician is working the patient up for possible pulmonary embolism, or has a high clinical suspicion that the patient has pneumonia, she explains. “There have been times that the pneumonia is diagnosed via the chest CT, but the chest X-ray was read as normal,” reports Watson. ■

Never assume ED patient is “just intoxicated again”

Medical emergency may exist

Paramedics arrive with a man you recognize instantly — from his many previous visits to your ED, always intoxicated. You learn that his vital signs are stable, and he was found on the ground by bystanders, says **Tia Valentine**, RN, CEN, clinical nurse educator for the ED at University of California-San Diego Medical Center.

“He had a fifth of vodka in his possession, half of it gone,” says Valentine. “He is lethargic, but arouses to noxious stimuli.”

The man is placed on a gurney in the hallway, close enough to be seen by staff, but not on any monitor, adds Valentine. “As the staff is very familiar with him, they leave him alone to ‘sleep it off,’ just as they have done many times before.”

When the charge nurse goes to make rounds in the ED, however, she is unable to rouse the patient. “There is no response, his skin is cool,” says Valentine. “She checks for a carotid pulse; there is none. CPR is immediately started, but despite a heroic attempt, the team is unable to obtain spontaneous return of circulation.”

Does this sound like an improbable story? “In fact, it happens more times than one can imagine,” says Valentine.

Mary Ellen Swanson, RN, a senior staff nurse in the ED at Hennepin County Medical Center in Minneapolis, MN, says that her ED has a designated area where assessments of intoxicated patients are done. “Intoxicated patients can be agitated and verbally abusive,” she says. “Having a locked area allows us to maintain a safe environment and avoid using restraints.”

EXECUTIVE SUMMARY

ED nurses may wrongly assume a patient is intoxicated, or overlook a medical emergency in an intoxicated patient. To avoid these mistakes:

- Check the patient’s glucose level.
- Place a portable monitor on the patient.
- Do serial examinations.

Don’t overlook this

Valentine says to ask yourself how many times you have assumed a patient just needs to “sober up.” In fact, she says, your patient could be suffering from low blood sugar, a stroke, or a transient ischemic attack. Here are Valentine’s recommendations to avoid missing a medical emergency in an intoxicated patient:

Check the patient’s glucose level.

“He may be homeless, and not had a meal in a few days,” says Valentine.

Place a portable monitor on the patient.

Obtain at least an oxygen saturation or end-tidal carbon dioxide, says Valentine. “A lot can be trended from these readings,” she says. “You can actually see deterioration in numerical values before the patient gets into crisis mode.”

Valentine notes that there are many different portable monitors available at a variety of cost levels. “From personal experience, I strongly recommend purchasing these devices for patients that may require a little more closer monitoring from a distance,” says Valentine.

Avoid making assumptions.

“While caring for the same patient time and time again with the same complaint, it can certainly become run of the mill,” says Valentine. “But that type of bias thought will tend to get a prudent nurse into a world of trouble.” (See **clinical tip on assessment, p. 70.**) ■

SOURCES

For more information on caring for intoxicated ED patients, contact:

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Clinical Tips

Do serial exams for intoxicated patients

Serial examinations are very important with intoxicated patients, emphasizes **Mary Ellen Swanson**, RN, a senior staff nurse in the ED at Hennepin County Medical Center in Minneapolis, MN. “You don’t just

do a quick exam and that's the end of it," she says. "If someone walks in the door, their exam may look really good. Two hours later, you may not be able to get them to wake up at all, or their pupil shape is different."

Your "intoxicated" patient may, in fact, have a subdural hematoma, Swanson warns. "It is very easy to categorize people as homeless or intoxicated," she says. "You oftentimes don't know their history, and there may not be a visible injury. You don't have the common presenting portrait of somebody with an acute bleed." ■

Avoid multiple IV sticks; Reduce risk of infection

With intraosseous (IO) vascular access, patients are subjected to a minimum number of sticks, so there is less chance of creating a portal for infection, says **Sean Hall**, an ED nurse at Mount Desert Island Hospital in Bar Harbor, ME. "The time which can be saved by using these devices can be lifesaving in a critical patient," he says.

A new clinical guideline recommends IO access as an alternative to intravenous (IV) use in many settings (*see reference*). Hall says that in his ED, IO access is considered when two attempts of IV access have been made by two ED nurses.

"IO should only be used when access for the patient is a must — if you are unable to give a dose of medication, or hydration cannot be by mouth," says Hall.

Hall recommends using lidocaine to reduce discomfort. He says there are several points that can be accessed, with the tibial plateau being the most common. "Try to access the center of the plateau," he recommends. "In my own personal experience, this causes less discomfort for the patient during the infusion."

Adequate training

Mount Desert Island Hospital's ED nurses train fre-

EXECUTIVE SUMMARY

If ED nurses use IO vascular access when necessary, patients have less risk of infection and potentially life-threatening delays are avoided. Use these practices:

- Consider IO access when two attempts of intravenous access have been made by two ED nurses.
- Train ED nurses frequently.
- Use IO as a "bridge" if your patient needs a central line but doesn't have time to wait.

quently on the device initially, says Hall, with refreshers every six months. "Staff with frequent training will become more willing to use this technology, and not waste critical time looking for a substandard IV site," says Hall.

Hall says that in his ED, IO use is included in policies for therapeutic hypothermia, cardiac arrest, and sepsis. "By integrating this device into training sessions for each of these policies, it keeps its use fresh in the mind of staff," he says.

Teri Campbell, BSN, RN, CEN, CFRN, PHRN, an emergency nurse who participated in the Consortium on Intraosseous Vascular Access in Healthcare Practice, and a consultant for the Vidacare Corporation, manufacturer of the EZ-IO® Intraosseous Infusion System, notes that IO access doesn't carry the many risks of central lines, and allows nurses to treat patients immediately.

Campbell notes that the 2010 Advanced Cardiac Life Support and Pediatric Advanced Life Support guidelines from the American Heart Association recommend IO access over central lines for immediate vascular access.

"IO access is a safe and fast option, as opposed to prolonged, repeated attempts at peripheral access or the risks associated with central lines," Campbell says. "It provides a very rapid route for infusion of medications, fluids, and blood or blood products." (See **clinical tip on IO use for patients who need a central line, p. 71.**) ■

REFERENCE

1. Phillips L, Proehl J, Brown L, et al. Recommendations for the use of intraosseous access for emergent and nonemergent situations in various healthcare settings: A consensus paper. *Journal of Infusion Nursing*. 2010;33(6):346-351.

SOURCES

For more information on intraosseous access in the ED, contact:

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COMING IN FUTURE MONTHS

■ Update on induced hypothermia for cardiac patients

■ Uncover life-saving medication history on your patient

■ Subtle signs your ED patient is abusing prescription drugs

■ Dramatically improve care of elder trauma patients

Clinical Tips

Use IO as “bridge” for central lines

If your patient needs a central line but doesn't have time to wait, IO “is a safe and efficient bridge” says **Teri Campbell**, BSN, RN, CEN, CFRN, PHRN, an emergency nurse who participated in the Consortium on Intraosseous Vascular Access in Healthcare Practice. This is also true for patients who would be receiving a central line solely for vascular access, she adds. “IO is a safer and faster route for the patient,” she says. ■



Give life-saving meds faster with new e-Broselow system

Guesswork is eliminated

Dosages based on the color-coded Broselow Pediatric Emergency tape will soon be displayed on a large LCD monitor for all ED staff to see, says **Andre A. Muelenaer Jr.**, part of the product's developmental team and an associate professor of pediatrics at the Virginia Tech Carilion School of Medicine in Roanoke.

“The driving force behind this innovation was a desire for access to the content of the Broselow-Luten tape during resuscitation,” according to Muelenaer.

More rapid response

The device gives a time-stamped display of medications administered, display of elapsed time since administration of each medication, and alerts for time-sensitive medications, such as epinephrine, requiring repeat dosing at specific time intervals, adds Muelenaer.

“We believe that this device will be available by the end of 2011,” he says. Muelenaer says that the impact on emergency nursing clinical practice “is unlimited.

It will enable each member of the resuscitation team to have immediate access to critical information.”

This permits less experienced personnel to assist in resuscitation, explains Muelenaer. “For example, we recently gave a quick demonstration of the device to a group of college summer interns,” he says. “We then set up a simulated cardiac arrest in the simulation lab.”

The students were able to provide correct equipment and medications because all the information was available to them, he says. “It appears that efficiency will permit more rapid response to needs and marked reduction in errors,” adds Muelenaer.

No more guesswork

ED nurses at Osceola Regional Medical Center in Kissimmee, FL, are already using the electronic Broselow system, reports **Michelle Tracy**, RN, MA, CEN, director of emergency services. “We made it available on every computer. Staff may access it by the hospital's intranet site,” says Tracy.

Tracy says the system alleviates the guesswork in making sure that you are delivering an accurate dose of medication to a child. “With a few clicks of a mouse and a weight/and or height of a patient, you can

EXECUTIVE SUMMARY

ED nurses are using a new electronic version of the color-coded Broselow Pediatric Emergency tape. Some advantages of this tool:

- The entire resuscitation team has immediate access to critical information.
- ED nurses can pull up dosages of multiple medications.
- Patients get life-saving medications more quickly.

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

pull up the dosages of multiple medications that you have to give to the child,” she says.

The ED uses standardized dosages according to the recommendations from the Broselow-Luten System, adds Tracy. “This allows for not only a correct dose, but it also tells you how many cc’s of the medication to give to a child,” she says.

If a child comes in needing intubation or in full cardiac arrest, ED nurses find the color code and it automatically shows all of the dosages, says Tracy.

“The patient gets the medications much faster than by using the old calculating method of trying to figure it out under stress,” says Tracy. “This shaves important minutes off of the time a child goes without medications.” ■

SOURCES

For more information on the electronic Broselow system, contact: **Andre A. Muelenaer, Jr., MD, MS, FAAP, FCCP**, Virginia Tech Carilion School of Medicine, Roanoke. Phone: (540) 985-9810. Fax: (540) 985-4018. E-mail: aamuelenaer@carilionclinic.org.

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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.

13. Which is recommended regarding asthma patients in the ED, according to Anissa Washington, RN, BSN, ED nurse at St. John’s Mercy Medical Center in St. Louis, MO?

- A. Timing of medications and breathing treatments doesn’t make these more or less effective.
- B. It is not advisable to visually inspect the patient’s chest for sternal retractions and intercostal retractions.
- C. Reassessment is not necessary if a breathing treatment was given in the ED.
- D. Additional monitoring is necessary, such as pre- and post-peak flows, cardiac monitoring, and arterial blood gases.

14. Which is recommended to improve assessment of ED pneumonia patients, according to Carrie April, RN, BSN, an ED nurse at St. John’s Mercy Medical Center?

- A. Remember that elder patients are at lower risk for pneumonia.
- B. Note all patients with a productive cough of discolored phlegm, fever, shaking, and chills.
- C. Rule out pneumonia if the patient’s chest X-ray comes back normal.
- D. Don’t consider whether antipyretics were taken at home when determining the severity of the patient’s illness.

15. Which is recommended to improve assessment of intoxicated patients, according to Tia Valentine, RN, CEN, clinical nurse educator for the ED at University of California-San Diego Medical Center?

- A. Obtaining oxygen saturation or end-tidal carbon dioxide levels is not necessary.
- B. It is not necessary to do serial examinations of the patient’s vital signs.
- C. Portable monitors should be used to monitor patients from a distance.
- D. Intoxicated patients should not be assessed in a designated area.

16. Which is recommended regarding intraosseous (IO) vascular access for ED patients, according to Sean Hall, an ED nurse at Desert Island Hospital?

- A. Include IO use in policies for therapeutic hypothermia, cardiac arrest, and sepsis.
- B. IO should not be used as a “bridge” if your patient needs a central line but doesn’t have time to wait.
- C. Avoid accessing the center of the tibial plateau, as this increases discomfort.
- D. Remember that IO access is riskier for the patient than central lines.

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