ED NURSING™
A MONTHLY CLINICAL UPDATE ON EMERGENCY NURSING

November 2011: Vol. 15, No. 1
Pages 1-12

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Statement of Financial Disclosure: **Stacey Kusterbeck** (Author), **Shelly Morrow Mark** (Executive Editor), **Leslie Hamlin** (Managing Editor), and **Darlene Bradley** (Nurse Planner) report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies related to this field of study.

Giving meds to elder? Avoid a dangerous, unintended outcome

Effects can be lethal

When an ED physician at Scripps Mercy San Diego (CA) decided to order lorazepam to help an elderly man sleep, the ED nurse caring for the patient got a very unexpected reaction.

"Prior to the administration, the patient had a sweet disposition but kept trying to get out of bed," says **Katie Chen**, RN, CEN, CCRN, assistant nurse manager of the ED "After the [lorazepam], the patient was so confused and aggressive, that he took off his prosthetic leg and tried to physically assault the ED nurse with it."

Susan Orosz, RN, an ED charge nurse at San Francisco (CA) General Hospital, says she's had several elderly patients with dementia become more agitated after being given intravenous lorazepam for sedation.

Lorazepam can sometimes have a paradoxical effect in the elderly, warns **Rich Nepomuceno**, RN, BSN, CEN, an ED nurse at San Francisco General Hospital. "It should be used cautiously with a patient that has no prior use of this medication."

Adverse reactions

Dosing requirements for elderly ED patients are "always a concern," according to **Nancy Raschke**, RN, ED educator at Edward Hospital in Naperville, IL. "Previous and current blood urea nitrogen and creatinine levels affect dosing parameters, specifically with narcotics and antibiotics," she says.

EXECUTIVE SUMMARY

Elders may need lower doses than other patients because the absorption rate is slower; some medications should be avoided altogether. To prevent problems:
- Monitor the patient's respiratory status closely.
- Collaborate with the ED physician regarding appropriate dosing.
- Give lower initial dosages of opioid analgesia.

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Elders may need lower doses than other patients as the absorption rate is slower, says **Jeannette Witzel**, RN, CEN, an ED nurse at Ukiah (CA) Valley Medical Center, and difficulty clearing medications from the body can cause undesirable results.

Because of the high potential for adverse reactions, some medications should be avoided altogether with elders, warns Witzel, giving these examples:

- Amitriptyline often causes altered mental status and over sedation in elders.
- Chlordiazepoxide and diazepam have a prolonged half-life in the elderly, which increases the risk of falls and fractures.
- Digoxin in the elderly should not exceed 0.125 mg, as it has been shown to cause toxicity because of decreased renal clearance.

Promethazine, diphenhydramine, and hydromorphone can all have unintended bad outcomes in an elder, says Chen, and narcotics and benzodiazepines require smaller dosages.

"Unexpected side effects include restlessness, inability to follow instructions, violent behavior, confusion, and decreased level of consciousness," she says.

Smallest dose possible

Declining kidney and liver function in the elderly can cause inefficient metabolism of medications, and can be lethal, especially with opiates, warns Nepomuceno.

"Be cautious with their use. Monitor the patient's respiratory status closely post-administration," he says. "It may take them longer to clear these medications from their system than a younger patient."

An ED physician may order a larger dose than appropriate for a specific patient, or may "stack" dosing if the initial dose was ineffective, leading to a higher overall dose, warns Nepomuceno. If the physician orders 2 mg of lorazepam to be given intravenously, the ED nurse could request to give half the ordered dose and see how the patient responds, he says.

"As nurses, we should advocate for the patient," he says. "Have the discussion with the provider for perhaps a lower dose or 'test' dose." **(See related stories on opioid dosages and what to tell elders about medications, p. 3.)** ■

SOURCES

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Subscriber Information
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Subscription rates: U.S.A., one year (12 issues), $299. Add $17.95 for shipping & handling. Outside U.S., add $30 per year, total prepaid in U.S. funds. Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Missing issues will be fulfilled by customer service free of charge when contacted within 1 month of the missing issue date. Back issues, when available, are $37 each. (GST registration number R128870672.)

ED Nursing® (ISSN# 1096-4304) is published monthly by AHC Media, a division of Thompson Media Group LLC, 3525 Piedmont Road, N.E., Six Piedmont Center, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to ED Nursing®, P.O. Box 105109, Atlanta, GA 30348.

AHC Media is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity has been approved for 10 nursing contact hours using a 60-minute contact hour.

Provider approved by the California Board of Registered Nursing, Provider #14749, for 10 Contact Hours.

This activity is authorized for nursing contact hours for 24 months following the date of publication.

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CLINICAL TIP

Give elder lower initial opioid dose

Always suggest that ED physicians lower the initial dosage of opioid analgesia in elderly patients, advises **Susan Orosz**, RN, an ED charge nurse at San Francisco (CA) General Hospital.

"If the patient can tolerate the drug without bottoming out their blood pressure or becoming nauseated, then they can increase the dosage," she says. "Always, always take a blood pressure before and after giving any pain medications." ■

Tell elders these things about meds

An elderly man with nosebleeds insisted there had been no change in his medications, when being triaged by **Jinhee Nguyen**, ED head nurse at Glendale (CA) Adventist Medical Center.

"But when we asked family members, we found out that the patient should have been taking one 325 mg aspirin daily, but was having chest pain, so three were taken instead," she says. "And the patient was already taking [warfarin]."

Elder patients often come to the ED with dizziness or syncope, and ED nurses find out they're taking several medications that have affected their central nervous system, adds Nguyen.

Many adverse reactions are due to prescriptions being ordered by multiple physicians, filled at different pharmacies, says **Jeannette Witzel**, RN, CEN, an ED nurse at Ukiah (CA) Valley Medical Center. To avoid bad outcomes, tell elders these things:

1. It's important to understand how to take each medication, and why.

"If medications are ordered for three times a day, the patient may forget to take the medication twice. He or she may then take all three pills at once, resulting in an overdose," says Witzel.

2. Medications should be taken at the same time each day, and the patient should avoid changing brands.

"Not doing this can lead to different absorption rates and adverse reactions to medications," says Witzel.

3. Pain medications should be taken before the pain becomes too unbearable.

"This helps to minimize the risk of overtaking pain medications," says Witzel. ■

Is patient downplaying symptoms? Identify MI

While observing an elderly woman rubbing her arm as though it was a muscle ache, which she said was from gardening work, the possibility of a heart attack didn't cross the mind of the ED nurse caring for the patient. "She was so nonchalant about it," says **Bridget Joyce**, RN, BSN, CEN, chest pain coordinator/stroke coordinator at Our Lady of the Resurrection Medical Center in Chicago.

Because of the patient's age, an EKG was ordered, which showed an ST-elevation myocardial infarction (STEMI). "Your heart sinks when you are performing an EKG and STEMI is printing out, especially when you know you should have recognized those symptoms in a woman," says Joyce.

In Joyce's first year as an ED nurse, a young man with normal vital signs told her that he'd eaten some spicy food and had heartburn. "I sent him back to the waiting room, not thinking that this may be a life-threatening emergency," she says. "When staff brought the patient back, after a '[gastrointestinal] cocktail' not working, an EKG was performed, showing STEMI."

Use critical thinking skills even if a patient downplays his or her symptoms, says Joyce. "You have to think the worst. The patient needs you to be looking out for their best interest and safety," she says.

Ask these questions

Your patient may be anxious over having a cardiac event because of family history or sometimes even

EXECUTIVE SUMMARY

Patients may downplay symptoms due to anxiety or guilt, so your ED nursing assessment must be thorough. To avoid missing myocardial infarction:
- Rephrase questions if necessary.
- Make eye contact when asking questions.
- Ask patients to describe pain in detail.

their own guilt, says Joyce. "They may think that the lifestyle they have been living caused this event to occur," she says. "Assure them that there are resources to help them if they want to change their lifestyle." To improve your assessment, Joyce gives these tips:

If a patient doesn't answer a question correctly, don't get upset with him or her.

"It is easy to get frustrated when you are busy and bouncing from patient to patient," says Joyce. "It is in the best interest of the patient to find out the most accurate history."

Rephrase the question, or ask a different question that may ultimately give you the information you're looking for, she says.

Focus on the *patient* when you are asking questions.

You may be placing the patient on a monitor, drawing blood, and performing an EKG, but it's important to look your patient in the eye, says Joyce.

"Give them a minute of your time," she advises. "This will gain a patient's trust, and allow them to feel comfortable telling you their information." ■

SOURCE

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CLINICAL TIP

Get specifics from patient about pain

Your patient may not necessarily give you the answer "10 out of 10," even if the chest discomfort they are experiencing is the worst pain they've ever had, warns **Bridget Joyce**, RN, BSN, CEN, chest pain coordinator/stroke coordinator at Our Lady of the Resurrection Medical Center in Chicago. "More often than not, the pain scale is a very subjective question to ask," she says.

Jones says to ask the patient-specific questions such as "Does the pain radiate anywhere?" or "Does it go down your arm, to your back, or up to your jaw?"

"Have them characterize their pain as crushing, dull, stabbing, or heaviness," she adds. ■

Stroke patient won't get tPA? Avoid problems

Your next stroke patient may be aware there is a drug called tissue plasminogen activator (tPA), but he or she probably *won't* realize how few stroke patients are actually candidates for this treatment.

Patients and family members may not have enough time to process all the information that is delivered to them, says **F.D. Testai**, MD, PhD, assistant professor of neurology at the University of Illinois at Chicago Medical Center, adding that some of the inclusion and exclusion criteria for tPA are subjective.

"Thus, disagreements may occur," he says. "The condition of the patient may change rapidly, making him or her not a good candidate. In this case, withholding treatment after this had been offered may be perceived as though we are unsure on what to do."

To prevent misunderstandings, do these things:

Understand the reasoning behind the decision to offer, or not offer, tPA.

While the ED physician typically makes the decision in consultation with the neurologist, the ED nurse is spending a lot more time at the bedside, says **Patricia Gomez**, RN, MHA, MBA, administrative director of emergency services at Rush-Copley Medical Center in Aurora, IL.

"As the primary nurse, you should be fully prepared to answer any patient and/or family questions," says Gomez. "If you are not comfortable or don't feel you have the best answer, you should be pulling the ED physician into the conversation."

Patients may wrongly believe there are no other options if they don't qualify for thrombolytics. "Be knowledgeable about all the stroke treatments and

EXECUTIVE SUMMARY

ED stroke patients may not understand why they aren't candidates for treatment with thrombolytics. To avoid misunderstandings:

• Understand why a patient isn't being offered the medication.
• Document any discussions with the family.
• Inform the patient about other options.

modalities available, not only at your facility but the entire area," says Gomez.

Clearly document the reason for not offering tPA, the concerns of the patient/family members, and the information shared with them.

All reasons for not administering tPA should be documented, including contraindications, warnings, refusal by patient or family, or any other reason that resulted in the patient not receiving the thrombolytic, says **Debbie Gillen**, MSN, RN, CMSRN, stroke program coordinator at Our Lady of Lourdes Medical Center in Camden, NJ. She says that ED nurses should also document:

- Any discussions with family members regarding the use or non-use of tPA;
- Any education provided to the patient or family members;
- Any changes in the patient's condition.

Don't avoid an upset patient.

"If patient or family is demanding tPA, reinforce the risk associated with not strictly following protocol when administering this drug," says Gillen, including the devastating results of bleeding that are more likely to occur when protocol is not strictly followed.

"Risk management should be made aware if a patient or family member feels that appropriate care was not delivered," says Gillen.

Avoiding contact with an upset patient or family member isn't a good approach, warns Testai. "If a nurse runs into this type of situation, even if he or she overhears it, offer the patient or family members the opportunity to have a longer conversation with the treating physician," he says. **(See clinical tip, p. 5, on determining when symptoms started.)** ■

SOURCES

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CLINICAL TIP

Use TV show times to ID "last seen normal"

When determining when your stroke patient was last seen normal, ask if he or she remembers something specific that was occurring at the same time, such as a particular TV program or the time he or she went to bed.

"We have had people specifically state that they were last normal when they went to bed after watching the 10:00 p.m. news," says **Sandy Hoelzel**, RN, stroke coordinator at Resurrection Medical Center in Chicago. ■

Your ED patient may be taking duplicate meds

If your ED patient is taking multiple medications, he or she may have no idea what they are for. "They may tell us they are taking them because they were prescribed, without knowing what the purpose is or if the dosage changed recently," says **Jocelyn Cajanap**, RN, ED educator at Glendale (CA) Adventist Medical Center.

The ED surveyed 100 patients over a three-month period in 2010, who were taking four or more prescription medications, to measure their compliance and knowledge. Patients were asked to name the drug, dose, frequency, duration, and why they were taking the medication.

"We found that patients often knew when to take it or how many to take, but when we asked them the open-ended question, 'What's the rea-

EXECUTIVE SUMMARY

ED patients may be taking duplicate medications without realizing it, which can cause anaphylactic reactions and other bad outcomes. To identify this:
- Ask patients why they are taking each medication.
- Contact the patient's pharmacy.
- Have an ED pharmacist do medication reconciliation.

son you are taking this medication,' they didn't know the answer," says **Romic M. Eskandarian**, PharmD, director of the department of pharmaceutical services.

Problems identified

Triage nurses make an extra effort to obtain as much information from the patient as they can, says Cajanap, while at the same time, the ED pharmacist does additional research including contacting the patient's pharmacy.

Before administering any type of medications, ED nurses need to quickly assess the patient's allergies and update the system with this information, says Eskandarian. "But at times, taking the time to talk to the patient and get all that information is very challenging, due to time pressure," he says.

ED pharmacists help ED nurses to reconcile the patient's medications, says Eskandarian, so the ED physician knows which medications to continue or discontinue.

"We can recognize the appropriate dosage or maximum dosage for a patient," says Eskandarian. "If a patient comes in with a laundry list of meds, we are oftentimes able to identify duplicate medications right off the bat."

For instance, the ED pharmacist can identify if certain medications taken together might be causing a patient's adverse reaction, says Eskandarian. "Patients may be seeing multiple doctors who are prescribing the same medication or one of the same drug class," he says. "A patient may be taking a beta-blocker for hypertension and also for thyroid disorder."

Some of the most common adverse reactions seen in the ED are anaphylactic reactions, says Eskandarian, due to patients taking multiple medications.

Patients are sometimes taking medications they were supposed to discontinue, or may be taking asthma medications, as needed, when they're supposed to be taking them twice a day, says Eskandarian. "If the patient is drinking alcohol or is taking other pain medications concurrently, this can cause respiratory depression or syncopal episodes, which can lead to falls," he adds.

Length of stay is about 20 minutes less during the hours ED pharmacists work, according to a pilot study done by the ED. "We are able to help with medication reconciliation while the nurse takes care of the patient," explains Eskandarian. **(See clinical tip, p. 6, on how nursing time is saved.)** ■

SOURCE

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CLINICAL TIP

Save 40 minutes of ED nursing time

Previously, it took about 20 minutes for an ED nurse to do a patient's medication reconciliation, then the unit nurse took another 20 minutes to complete any missing elements, explains **Gwen Matthews**, RN, chief nursing officer at Glendale (CA) Adventist Medical Center. "The pharmacist was having to spend another 20 minutes clarifying and finalizing," she says.

To reduce delays, an ED pharmacist now does medication reconciliation while the ED nurse takes care of the patient. "The pharmacist step was moved to the ED at the front of the process," says Matthews. "This saves 40 minutes of nursing time." ■

Your ventilated patient may be at risk for VAP

They're "often already on the road to an infection"

If your patient has aspirated prior to being intubated, he or she is at increased risk for ventilator-associated pneumonia (VAP), warns **Nicole Schiever**, RN, MSN, ED team leader at Riverside Medical Center in Kankakee, IL.

"If patients have significant pulmonary edema, the large amount of secretions present can put them at risk," she says. "The tube doesn't allow

for the cough reflex, which would clear and protect the airway."

Also, the tube allows bacteria direct access to the lower airways, which increases the risk of pneumonia, adds Schiever. "Perform frequent suctioning and keep the head of the bed elevated," she advises. "Inquire about starting prophylactic antibiotic treatment," she adds.

Mark Goldstein, RN, MSN, EMT-P I/C, clinical nurse specialist at the Emergency Center at Beaumont Hospital in Grosse Pointe, MI, says to prevent VAP by utilizing the Hi-Lo Tracheal Tube (manufactured by Boulder, CO-based Covidien-Nellcor), which allows suctions beyond the balloon cuff near the distal end.

"Provide daily oral care to the intubated patient," he advises. "Secure endotracheal tubes with commercial devices rather than tape."

Unclean conditions

If your patient was intubated by emergency medical technicians in the field, keep in mind that those conditions are often very unclean, says **Debbie Griffin,** a respiratory therapist who works in the ED at University of Colorado Hospital in Aurora. "Paramedics are challenged to maintain clean conditions under impossible conditions," she says. "Field-intubated patients are often already on the road to an infection before they come through the door."

Griffin says that University of Colorado "has had one of the most remarkable turnarounds in the United States. In 2008, we had 55 VAP cases — as much as three deviations above the national norms. So far this year, we've had just six cases."

Certain ED nursing practices can put patients at much higher risk for VAP, warns Griffin. "Some nurses still insist on pre-opening sterile items like [endotracheal] tubes and leaving them open to the environment until used," she says.

Nurses may fail to elevate the head of the patient's bed above 30 degrees, adds Griffin. "As we are often at capacity, I know sometimes vented patients have to hang out in the ED much longer than would be 'normal.' And they often do this laying flat," she says. **(See related stories, p. 7, on starting oral care in the ED, and how one ED accomplished a 0% VAP rate, p. 8.)** ■

EXECUTIVE SUMMARY

If a patient has significant pulmonary edema, was intubated in the field, or has aspirated before intubation, he or she is at higher risk for ventilator-acquired pneumonia. To prevent this:
- Elevate the head of the bed as soon as possible.
- Move ventilated patients from stretchers to hospital beds immediately.
- Start oral care while the patient is still in the ED.

SOURCES

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CLINICAL TIP

Start oral care while patient is still in ED

Begin doing oral care for a ventilated patient in the ED instead of waiting for the patient to be transferred to the intensive care unit (ICU), advises **Debbie Griffin,** a respiratory therapist who works in the ED at University of Colorado Hospital in Aurora.

"A patient may get a tube, have some tests, and sits waiting for an ICU room for six hours," says Griffin. "It might take them another six hours to get their first oral care." ■

Accomplish a 0% VAP rate

Emergency nurses at the Medical Center of Central Georgia in Macon made several practice changes to prevent ventilator-associated pneumonia (VAP), and got some dramatic results.

"We currently have a 0% VAP rate. We are proud of our accomplishment," says **Nyssa Hattaway**, RN, CEN, the hospital's ED educator.

Hattaway notes that the typical intensive care unit (ICU) VAP "bundle" includes four elements: Elevating the head of the bed to between 30-45 degrees, providing deep venous thrombosis prophylaxis, providing peptic ulcer disease prophylaxis, and daily sedation "vacations" with assessment of readiness to extubate.

"Generally, the VAP bundle is considered an ICU measure, but there are simple interventions that can be done in the emergency setting," she says. "These interventions lay the foundation for good pulmonary hygiene and VAP prevention." Here are the interventions that prevent VAP in Hattaway's ED:

• ED nurses elevate the head of the bed as soon as an intubated patient's cervical spine has been cleared, if applicable.

• Nurses remind the admitting physician to address deep venous thrombosis and peptic ulcer disease prophylaxis.

"This is done when receiving admission orders, particularly if we are transcribing them from a physician over the phone," says Hattaway.

• Nurses insert an orogastric (OG) or nasogastric (NG) tube if the patient has been intubated in the field, or is intubated via rapid sequence intubation upon arrival to the ED.

"We try to do this *before* the chest X-ray, confirming ET tube placement is obtained," says Hattaway. "In our ER, we stock 16 and 18 French NG tubes in our critical care beds along with a 60 cc catheter tip syringe."

The patient's chest X-ray is used to confirm proper placement of the OG or NG tube, she adds. "We then decompress the abdomen and remove gastric contents by attaching the OG or NG tube to low intermittent suction to prevent aspiration," she says.

• ED nurses address the patient's nutrition needs as soon as possible, since the intubated patient's metabolic needs are high.

"With the OG/NG tube placed and confirmed in the ED, the ICU nurse can initiate tube feeds that much earlier," explains Hattaway.

• Nurses move ventilated patients to hospital beds without delay.

"This intervention is primarily to prevent skin breakdown, but has benefits for breathing as well, including allowing for more complete lung inflation and decrease in atelectasis," says Hattaway. ■

Is intubation *really* needed? Consider risks, alternatives

There may be other options

Not every patient experiencing shortness of breath needs to have definitive airway intervention such as intubation, says **Sybil Murray**, RN, an ED nurse at St. Anthony's Medical Center in St. Louis, MO.

"Sometimes, coaching the patient through deep breathing and relaxation techniques, along with proper comfort positioning, may be just enough to forego an emergent intubation," she says.

Chronic obstructive pulmonary disease patients often try to treat themselves at home and arrive at the ED tired, out of breath, pale, and diaphoretic, says **Orchid Quiton Chefalo**, RN, CEN, CCRN, charge nurse of the ED at San Joaquin Community Hospital in Bakersfield, CA. "It is probably best to intubate them at that time," she says.

On the other hand, if your patient has altered mental status but is still keeping his or her airway and there is no obstruction, "then make sure you do everything first before intubation," says Chefalo. "Sometimes you may need to put them on a BiPAP [bilevel positive airway pressure] to see if they turn around."

Use as last resort

Risks of intubation include perforation of the esophagus, notes Chefalo. "We want to prevent

EXECUTIVE SUMMARY

While some ED patients with shortness of breath require immediate intubation, a bilevel positive airway pressure, bag mask ventilation, or relaxation techniques are sufficient for others. Consider these points:
• An acute change in carbon dioxide retention may indicate ventilation failure.
• Chronic obstructive pulmonary disorder patients may acclimate to altered gas tension.
• Previously intubated patients can deteriorate quickly.

intubation, but sometimes we do have to. If they've been working hard to breathe for a long time, the patient may need to take a rest," she says.

Endotracheal intubation and laryngeal mask airways are "last resort efforts" to improve the patient's oxygenation perfusion, says **Chris Ruckman**, RN, MBA, CEN, manager of adult emergency services at Vanderbilt University Hospital in Nashville, TN.

"These advanced airway techniques allow for more precise delivery of oxygen to the patient's lung fields," he says. Bag mask ventilation is an option if you need to deliver direct oxygenation to a patient who has developed an airway compromise or has an episode of oxygen desaturation, adds Ruckman.

"This type of oxygen delivery is non-invasive," says Ruckman. "It can provide the patient with ample oxygen while preparing for an advanced airway, such as an endotracheal intubation."

Look for these signs

"There are some basic signs that you can observe when you walk in the room and first lay eyes on the patient," says **Nicole Walkinshaw**, RN, an ED nurse at St. Elizabeth Regional Medical Center in Lincoln, NE.

She says to see if the patient is awake, alert, swallowing secretions, if he or she is able to speak to you, whether there are any obvious obstructions, and to check the color of his or her skin and membranes.

Walkinshaw says to consider these items when assessing intubation necessity:

- Is there failure of airway maintenance, or failure of protection of the patient's airway?
- Is there failure of ventilation? "Sometimes a patient with a chronic airway disease process such as chronic obstructive pulmonary disease acclimates to altered gas tension," she says. "But if there is an acute change in carbon dioxide retention, that can indicate ventilation failure."
- Is there failure of oxygenation?

"If hypoxic, the patient may appear restless, agitated, cyanotic, confused, or obtunded," Walkinshaw she says. **(See related stories on assessment, p. 9, and a question to ask patients, p. 10.)** ■

SOURCES

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Assessing airway? Don't overlook these things

When assessing a patient's airway, do you look for tracheal deviation and subcutaneous emphysema around the neck and clavicle? Do you compare the right lung and left lung fields with alternating side auscultation?

These items are frequently forgotten by ED nurses, according to **Chris Ruckman**, RN, MBA, CEN, manager of adult emergency services at Vanderbilt University Hospital in Nashville, TN. "Never listen to lung fields through clothing. Sounds get distorted," he says. Use these clinical practices for airway assessment:

Don't go by lab values alone.

The general appearance of your patient tells you a lot, especially skin color and level of consciousness, says **Orchid Quiton Chefalo**, RN, CEN, CCRN, charge nurse of the ED at San Joachin Community Hospital in Bakersfield, CA. "Take a closer look. Be comfortable with telling the physician, 'I need you to look at this patient again.'"

Get an accurate pulse oximeter reading.

If a patient has chronic obstructive pulmonary disease (COPD) and you place the pulse oximeter on his or her fingernails, you may get misleading information because of the thickened nails that are common with COPD, says Chefalo.

"It may give you a false reading," she says. "Good placement is really important because the treatment is based on the trend of the oxygen saturation." Instead, place the oximeter on the patient's forehead, earlobe, or other extremities, says Chefalo.

"You'll want to see an even waveform — a good pleth that coincides with the QRS complex on the cardiac monitor. If it's not reading correctly, you won't see that nice, pretty waveform," she says. "It's not capturing what it's supposed to."

Consider non-invasive positive pressure ventilation.

This alternative avoids the complications associated with invasive ventilation, says **Wendy L. Callan**, RN, MSN, TNS, trauma nurse coordinator at Advocate Condell Medical Center in Libertyville, IL, and is used for patients with cardiac disease, exacerbations of chronic pulmonary disease, sleep apnea, and neuromuscular diseases.

"This assists ventilation without the use of an endotracheal tube, using either a nasal mask, oronasal mask, or mouthpiece," says Callan.

Simply greet the patient and watch how he or she responds.

When the patient begins to speak, you can quickly assess the use of accessory muscles, nasal flaring, the ability to speak in full sentences without dysphonia, mental status, skin color, obvious trauma to the nasal airway, and posture, says Ruckman.

Do continous reassessment.

If the patient is put on a bilevel positive airway pressure machine, assess whether he or she is tolerating it and comfortable, and listen to the patient's breath sounds, says Chefalo.

Consider hypoxia if the patient appears restless, anxious, or combative, and consider hypercardia if the patient appears drowsy or lethargic, says Callan. "If the patient goes from restless to lethargic, this is not a good sign!" she warns. ■

CLINICAL TIP

Ask patients this key question

Ask your ED patient with respiratory difficulty, "Have you ever been intubated before?" recommends **Leah M. Gehri,** RN MN CCRN, director of emergency and trauma services at MultiCare Good Samaritan Hospital in Puyallup, WA.

"This is a key indicator of how severe their illness has been," says Gehri. "If patients have been intubated multiple times in the past, they can get sick very quickly and require a high level of attention." ■

Detect early problem signs with sedated ED patient

Rapid detection is key

If your ED patient is sedated, he or she may have an adverse reaction to medications used in the procedure, an allergic reaction, or become hypoxic from inadequate respiratory effort, warns **Brad Guffin,** BSN, RN-BC, CPEN, director of emergency services at Martin Memorial Medical Center in Stuart, FL.

"Patients at highest risk are the very elderly, the very young, and patients with liver or kidney disease," he says, adding that you should always have emergency equipment readily available. He gives these recommendations:

• **Attach a cardiac monitor/defibrillator to the patient prior to the medication administration and procedure.**

"Have oxygen and suction available for immediate use," adds Guffin.

• **Have a patent intravenous (IV) line with normal saline infusing at a "keep vein open" rate for the preprocedure time period.**

"Depending on the medication, patient medical history and procedure, it may be pertinent to have two IV lines," says Guffin.

• **Have respiratory therapy at the bedside with an Ambu bag (manufactured by Glen Burnie, MD-based Ambu) ready for use, and have reversal medications at the bedside.**

"Many hospitals have switched to machine dispensing of medications," he says. "This is time-consuming when medications are needed immediately." ■

Monitor constantly

L. Eve Tuttle, BSN, RN, CEN, an ED nurse manager at Wake Forest Baptist Medical Center

EXECUTIVE SUMMARY

ED patients undergoing procedural sedation may have an adverse reaction to medications, an allergic reaction, or become hypoxic. To avoid problems:
• Attach a cardiac monitor/defibrilator to the patient before the procedure.
• Have reversal medications at the bedside.
• Use capnography to rapidly detect apnea, upper airway obstruction, and respiratory depression.

in Winston Salem, NC, says that while serious complications are rare with moderate sedation, the most significant risk is respiratory compromise.

"The patient is at risk for hypoventilation and apnea," she says. "With each medication used, there are risks related to side effects such as a severe drug reaction, hypotension or hypertension, tachycardia and bradycardia, and emergence reactions."

In the ED, there is increased concern for aspiration as a result of vomiting, adds Tuttle. "Most patients are not NPO when they come in, but the urgent nature of most procedures precludes waiting," she says. "The key to decreasing adverse events during sedations is preparation."

Monitor your patient's blood pressure and pulse-oximetry throughout the procedure, says Tuttle, adding that capnography is a key element to prevent adverse events because it provides instantaneous feedback about ventilation.

"Capnography rapidly detects apnea, upper airway obstruction, and respiratory depression," she says. "It reflects changes well before your pulse oximeter is able to detect them." ■

SOURCE

For more information on monitoring ED patients during sedation, contact:

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COMING IN FUTURE MONTHS

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1. Publication Title	2. Publication Number	3. Filing Date
Emergency Department Nursing	1 0 9 6 _ 4 3 0 4	10/1/11
4. Issue Frequency	5. Number of Issues Published Annually	6. Annual Subscription Price
Monthly	12	$299.00

7. Complete Mailing Address of Known Office of Publication *(Not printer) (Street, city, county, state, and ZIP+4)*
3525 Piedmont Road, Bldg. 6, Ste. 400, Atlanta, Fulton County, GA 30305
Contact Person: Robin Salet
Telephone: 404-262-5489

8. Complete Mailing Address of Headquarters or General Business Office of Publisher *(Not printer)*
3525 Piedmont Road, Bldg. 6, Ste. 400, Atlanta, GA 30305

9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor *(Do not leave blank)*

Publisher *(Name and complete mailing address)*
James Still, President and CEO
AHC Media LLC, 3525 Piedmont Road, Bldg. 6, Ste. 400, Atlanta, GA 30305

Editor *(Name and complete mailing address)*
Shelly Mark, same as above

Managing Editor *(Name and complete mailing address)*
Leslie Hamlin, same as above

10. Owner *(Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)*

Full Name	Complete Mailing Address
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GSC, LLC	500 Campus Drive, Florham Park, NJ 07932
Natixis	9 West 57th Street, 35th Floor, New York, NY 10019
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11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities. If none, check box → ☐ None

Full Name	Complete Mailing Address
Thompson Publishing Group Inc.	805 15th Street, NW, 3rd Floor, Washington, D.C. 20005

12. Tax Status *(For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one)*
The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes:
☑ Has Not Changed During Preceding 12 Months
☐ Has Changed During Preceding 12 Months *(Publisher must submit explanation of change with this statement)*

PS Form **3526,** October 1999 *(See Instructions on Reverse)*

13. Publication Title: Emergency Department Nursing			14. Issue Date for Circulation Data Below: September 2011	
15.		Extent and Nature of Circulation	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a.		Total Number of Copies *(Net press run)*	268	251
b. Paid and/or Requested Circulation	(1)	Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541. *(Include advertiser's proof and exchange copies)*	122	131
	(2)	Paid In-County Subscriptions Stated on Form 3541 *(Include advertiser's proof and exchange copies)*	0	0
	(3)	Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution	13	25
	(4)	Other Classes Mailed Through the USPS	28	4
c.		Total Paid and/or Requested Circulation *[Sum of 15b. (1), (2),(3),and (4)]*	163	160
d. Free Distribution by Mail *(Samples, complimentary, and other free)*	(1)	Outside-County as Stated on Form 3541	16	16
	(2)	In-County as Stated on Form 3541	0	0
	(3)	Other Classes Mailed Through the USPS	0	0
e.		Free Distribution Outside the Mail *(Carriers or other means)*	20	20
f.		Total Free Distribution *(Sum of 15d. and 15e.)*	36	36
g.		Total Distribution *(Sum of 15c. and 15f)*	199	196
h.		Copies not Distributed	69	55
i.		Total *(Sum of 15g. and h.)*	268	251
j.		Percent Paid and/or Requested Circulation *(15c. divided by 15g. times 100)*	82%	82%

16. Publication of Statement of Ownership
☑ Publication required. Will be printed in the November 2011 issue of this publication. ☐ Publication not required.

17. Signature and Title of Editor, Publisher, Business Manager, or Owner — Date: 09/12/11

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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.

1. Which is true regarding medications administered to elder patients in the ED, according to **Jeannette Witzel**, RN, CEN?
A. Benzodiazepines don't require smaller dosages in elders.
B. Amitriptyline often causes altered mental status and over sedation in elders.
C. Digoxin is not linked to decreased renal clearance in elders.
D. Elders should not be given a smaller initial dose of opioids.

2. Which is recommended to prevent ventilator-associated pneumonia in ED patients, according to **Nyssa Hattaway**, RN, CEN?
A. Wait for the patient to be transferred to the intensive care unit to begin oral care.
B. Insert an orogastric or nasogastric tube only after the chest X-ray confirming endotracheal tube placement is obtained.
C. Elevate the head of the bed as soon as an intubated patient's cervical spine has been cleared.
D. Secure endotracheal tubes with tape instead of commercial devices.

3. Which is true regarding obtaining an accurate pulse oximeter reading from a patient with chronic obstructive pulmonary disease, according to **Orchid Quiton Chefalo**, RN, CEN, CCRN?
A. Pulse oximeters should always be placed on the patient's fingernails.
B. Pulse oximeters should not be placed on a patient's forehead.
C. If placed on the patient's earlobe, a false pulse oximeter reading will result.
D. Place the oximeter on the patient's forehead, earlobe, or other extremities.

44. Which is true regarding ED patients undergoing procedural sedation, according to **L. Eve Tuttle**, BSN, RN, CEN?
A. Patients with liver or kidney disease are at lower risk for complications.
B. It is not advisable to have reversal medications at the bedside.
C. Capnography is a key element to prevent adverse events because it provides instantaneous feedback about ventilation.
D. Pulse oximetry detects apnea, upper airway obstruction, and respiratory depression before capnography.