

ED NURSING™

Vol. 3, No. 9

Inside

■ **Excerpt from CDC guidelines for biological and chemical terrorism:**

Use this information to revamp your disaster plan cover

■ **Do you have a plan for bioterrorism?** 10 key components you must address now 107

■ **Are you watching for unusual patterns of illness?** You might be the first to notice a biological or chemical attack. 110

■ **Nuclear, biological, and chemical attacks:** Know the difference between these incidents 111

■ **Documentation is key under APCs:** What you need to know for maximum reimbursement . . . 111

■ **How to prepare for a post-mortem C-section:** Tips for managing this traumatic event 114

■ **New antidote for ethylene glycol poisoning:** You'll need this to care for poisoned patients 117

■ **Journal Reviews 119**

- **Inserted in this issue:**
- Bioterrorism Readiness Plan
 - Treatment for Biological Agent Exposure
 - Clinical guideline for ethylene glycol poisoning
 - Salary Survey

July
2000

New CDC bioterrorism guidelines: Take steps to update your disaster plan

If a bioterrorism or chemical terrorist attack occurred in your community today, would you have a strategic plan to decontaminate large numbers of patients? If you're like most ED nurses, your answer is "no," according to **Jeffrey Doucette**, RN, MS, CEN, director of emergency services at Medical Center of Arlington (TX).

"The majority of EDs are not prepared for this type of event should it happen today," Doucette warns.

With the ever-increasing threat of domestic terrorism and the increase in state, local, and federal funding for education and training, you should have policies and procedures in place to address nuclear, biological, and chemical (NBC) incidents, says Doucette. (See **chart that lists treatments for biological agent exposure and sample Bioterrorism Readiness Plan, inserted in this issue.**)

New guidelines from the Atlanta-based Centers for Disease Control and Prevention (CDC), titled *Biological and Chemical Terrorism: Strategic Plan for Preparedness and Response*, offer specific recommendations that emphasize the ED's role, says **Ali S. Khan**, MD, MPH, deputy director for the CDC's Bioterrorism Preparedness and Response Program.

"Key points for EDs are early recognition of suspect cases and having

ED Nursing wins 1st place national award

ED Nursing has received the 1st place national award in instructional reporting from the Newsletter and Electronic Publisher's Association in Arlington, VA. The award is for a special report on substance abuse in nursing that was published in April 1999. In announcing the award, the association commented on the depth of the report, which included tools to identify impaired nurses and information on alternative programs to save their licenses. To purchase a copy of this award-winning issue, contact customer service at (800) 688-2421 or customerservice@ahcpub.com.

EXECUTIVE SUMMARY

New guidelines from the Atlanta-based Centers for Disease Control and Prevention offer specific recommendations to prepare for biological and chemical terrorism.

- Use the guidelines to develop policies and procedures that address decontamination of large numbers of patients after a biological or chemical attack.
- The ED will be the first place that a biological attack is noticed, so don't hesitate to report unusual patterns of illness, such as a large number of patients with flu symptoms in the summer.

established plans to deal with large volumes of patients that are well-exercised," Khan says. (See **excerpt of CDC guidelines, inserted in this issue, and Resources for information for obtaining complete copies of the guidelines, p. 108.**)

Don't ignore threat of bioterrorism

The threat of encountering a domestic terrorist attack involving biologic or chemical agents in your ED is real, emphasizes **Robert Suter, DO, MHA, FACEP**, medical director for the North Texas region at Questcare Emergency Services in Plano, TX. Suter also serves on the faculty of the department of military and emergency medicine at the Uniform Services University of Health Sciences in Bethesda, MD.

Be familiar with the CDC guidelines and use them to implement a disaster plan, stresses Suter. "Universal ED knowledge and compliance with these guidelines is vitally important to our role of protecting our communities," he urges. "An ED that does not incorporate the CDC recommendations is doing its community a disservice in preparedness."

The biggest misconception about disaster planning is the false belief that "it will never happen to us," says Doucette. As a result, many staffs don't take preparation seriously, he says.

"It's true that the best thought-out plans may never be utilized," Doucette says. "But when the time

comes, EDs that are well-prepared report a much smoother response to a true disaster situation." (See **related story on what to include in your ED bioterrorism plan, p. 107.**)

Here are ways to prepare for a bioterrorism incident:

• Include plans for a biological or chemical attack in your disaster plan.

Although your ED may have a detailed external disaster plan, biologic and chemical attacks must be specifically addressed, says Doucette.

"With the sheer number of actual exposures and 'worried well,' you may treat hundreds or even thousands of patients over a short period of time," he says. "That consumes a great deal of resources and manpower." (See **story on stockpiling of antidotes for a bioterrorism incident, p. 111.**)

Disaster plans should address the resources needed for a mass casualty situation, Doucette says. "In the ED, we tend to focus on short-term [two to 24 hours] disaster situations," he says. "But if a biological or chemical attack occurs, our resources may be stretched for seven to 10 days or more."

• Drill for terrorism scenarios.

Drills are absolutely essential, because you need to discover flaws in your planning, says Suter. Perform drills at least on a limited scale, he advises. "You will always identify practical issues with large-scale decontamination that need to be addressed, and your plan will need to be modified," he says.

Combine scenarios for the maximum educational impact, suggests Suter. For example, you might have a drill with a combination of an explosion and chemical release, he advises. "That results in both traumatic wounds and chemical exposure and allows you to test both your decontamination and trauma components simultaneously," Suter says.

• Participate in hospitalwide planning.

Involvement of ED nurses in the hospitalwide planning process is key, says Khan. "Such participation could include providing information on triaging patients."

• Get advice from bioterrorism experts.

Medical Center of Arlington's ED staff have benefited from national training sponsored by the Department of Defense's Domestic Preparedness program. The ED will participate in a citywide terrorism drill to

COMING IN FUTURE MONTHS

■ Update on abandoned infant laws

■ Do you suffer from secondary trauma?

■ How to get stroke patients to the ED early

■ Don't overlook myocardial infarction in women

be held this month, along with local, state, and federal agencies. "These drills are best handled by experts in the bioterrorism field since the actual event is so complex," Doucette says.

The ED held an eight-hour class on recognition of symptoms and presentation, managing patients from arrival to decontamination to discharge, protecting the caregiver and the facility, and specific treatments for chemical and biological agents, says Doucette. Bioterrorism experts from the Department of Defense taught the class and provided the materials, he adds.

"We had a significant need to improve our decontamination process, and through the education and consultation with bioterrorism experts, we are better prepared for this type of incident," says Doucette.

The drill will help the ED to prepare for a significant number of patients over an extended period of time, says Doucette. "We will receive between 50 and 100 patients in a two-hour window during the initial phase of the drill," he says.

If your ED doesn't have access to this type of training program, contact the Department of Defense for a list of hospitals that are planning to participate in drills, so you can send a representative to observe a drill in a nearby city, Doucette recommends. (See **Resources for contact information, p. 108.**)

- **Consider community resources.**

Assess the resources available in your community before drawing up plans of action, Doucette suggests. "For example, we have a very close collaborative relationship with the HazMat team at the city fire department. We can focus more closely on patient management rather than decontamination in our plan since our mutual aid agreement moves some of the initial care management to the HazMat group," he says.

This type of planning is crucial because the entire medical response system will be taxed, says Doucette. "The elimination of rework or duplicative processes will be key to maximizing resources and efficiency in a response of this scale."

- **Realize that with preparation, you can save lives.**

The concept of a terrorist attack might seem overwhelming, but avoid taking a fatalistic approach, says Suter. "You cannot throw up your hands and say 'Everybody's going to die anyway, so what is the point?' These instances are survivable for patients, if people are prepared to take the right steps if and when they occur."

A biological or chemical attack is like any other disaster, except it has a couple of twists that make it more challenging, says Suter. "If you think of it that way, you will approach it with more confidence than if you say, 'This is a chemical catastrophe, and we've

SOURCES

For more information about preparing for a bioterrorism incident, contact:

- **Jeffrey Doucette**, RN, MS, CEN, Emergency Services, Medical Center of Arlington, 3301 Matlock Road, Arlington, TX 76015. Telephone: (817) 472-4870. Fax: (817) 472-4878. E-mail: jeffrey.doucette@lonestarhealth.com.
- **Ali S. Khan**, MD, MPH, Bioterrorism Preparedness and Response Program, Mail Stop C-18, Centers for Disease Control and Prevention, 1600 Clifton Road, Atlanta, GA 30333. Telephone: (404) 639-1724. Fax: (404) 639-0382. E-mail: ask0@cdc.gov.
- **Robert Suter**, MD, FACEP, QuestCare, 101 E. Park Blvd., Suite 921, Plano, TX 75074. Telephone: (972) 881-8353. Fax: (972) 422-2208. E-mail: r.suter@questcare.com.

never done anything like this before," he says.

Remember that the basic principles of disaster management are the same, no matter what the cause of the disaster, Suter notes. "Realize that you already have the basic skills and problem-solving approach to care for patients," he says. ■

Your bioterrorism plan must include 10 items

Does your ED have a comprehensive bioterrorism plan with which all staff are familiar? If not, develop one now, emphasizes **Richard S. Roman**, MHA, senior epidemic support coordinator for the Bioterrorism Preparedness and Response Program at the Centers for Disease Control and Prevention (CDC) in Atlanta.

"The importance of this cannot be stressed enough," he says. "During mass-casualty events, normal emergency room care goes out the window."

When developing your ED plan, work with a committee of key hospital individuals, advises Roman. "You definitely need to get top-level management buy-into this process," he says. "Otherwise, you will never get the cooperation and input you need from other departments."

Here are key components to include in your mass

casualty disaster plan:

1. Emergency procedures for triaging. Include a system, such as a tagging system, for identifying the most critically injured needing immediate care and patients who can wait, says Roman.

2. Use of barrier protection. Medical staff safety and health issues are of paramount importance, stresses

Roman. "You need to have barrier protection recommendations, depending on the agent used and prophylaxis recommendation to prevent sickness," he says.

3. Emergency call-down rosters for recalling personnel. Those rosters should be updated at least

quarterly and kept handy for emergency purposes, recommends Roman.

4. Instructions for whom to contact. When a bioterrorism incident occurs, your plan should include contact names and phone number for the following, he says:

Inside the hospital:

- your infection control staff;
- your hospital epidemiologist, if you have one;
- your hospital administrator;
- the chief of your ED;
- your public information officer.

Outside the hospital:

- your local health department infection control bureau;
- your state health department epidemiologist;
- the FBI field office closest to your hospital;
- the CDC.

5. Infection control practices. Isolation precautions must include hand washing, gloves, masks/eye protection, and gowns, says Roman.

"The plan should address patient placement considerations, especially for overwhelming numbers of victims who will flood the ED," he advises. "The worried well will be extremely costly in terms of medical resource use for nonpriority persons."

6. Patient transport. Address patient transport for moving massive numbers of patients to other hospitals if needed, Roman says. "For example, do you use National Guard vehicles or police cars?"

Don't assume you can rely on your EMS system, because they will be busy responding to incident calls, Roman cautions. "Your plan should include

"The plan should address patient placement considerations, especially for overwhelming numbers of victims who will flood the ED."

RESOURCES

A complete copy of the Center for Disease Control and Prevention (CDC) guidelines titled *Biological and Chemical Terrorism: Strategic Plan for Preparedness and Response*, which were published in the April 21, 2000, issue of *Morbidity and Mortality Weekly Report (MMWR)*, can be downloaded at the CDC Web site: www.cdc.gov (click on "MMWR"). A hard copy of the guidelines can be purchased for \$2.50. Ask for stock number 717-016-01094-2. Contact:

- **Superintendent of Documents**, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250. Telephone: (202) 512-1800. Fax: (202) 512-2250. E-mail: orders@gpo.gov. Web site: <http://bookstore.gpo.gov>.

The Domestic Preparedness training programs are a federal initiative managed by the Department of Defense to improve the capability of local, state, and federal emergency responders in incidents involving nuclear, biological, or chemical terrorism. For more information on training programs, contact:

- **Department of Defense**, U.S. Army, SBC-COM — Domestic Preparedness Office. Web site: www.nbc-prepare.org.

For technical assistance in nonemergency cases, call the Domestic Preparedness program's Chemical/Biological HelpLine at (800) 368-6498. For technical assistance during a chemical or biological incident, call the Chemical/Biological Hotline, which is staffed 24 hours a day, seven days a week, at (800) 424-8802.

recommendations for patient transport, and your mutual aid agreements with other area hospitals for receiving and transporting patients," he says.

7. Cleaning, disinfecting, and sterilization procedures. Include recommendations for contaminated equipment and the ED environment, says Roman. "Does your hospital have a plan describing how patients are decontaminated before being allowed into an ED for treatment? If not, you need to develop one," he urges.

8. Post-mortem disposition. Roman advises that EDs address several issues regarding large numbers of deceased patients:

SOURCE

For more information about bioterrorism and mass casualty plans, contact:

- **Richard S. Roman**, MHSA, Bioterrorism Preparedness and Response Program, Mail Stop C-18, Centers for Disease Control and Prevention, 1600 Clifton Road, Atlanta, GA 30333. Telephone: (404) 639-0393. Fax: (404) 639-0382. E-mail: rsr1@cdc.gov.

- How many corpses can your hospital morgue hold at any one time?
- If you don't have a hospital morgue, where do you store the deceased until the medical examiner arrives?
- What are your procedures and policies for holding massive numbers of deceased that could present after a large bioterrorism attack?
- How will the deceased be prepared without infecting staff members?
- How will the deceased with infectious diseases be dispositioned?

Establish lab protocols

9. Hospital laboratory procedures. The hospital lab will probably be doing the initial testing of human samples once symptomatic individuals begin presenting, Roman says. Your plan must include specific instructions for the following issues, he says:

- What protocols does the laboratory have in notifying the state public health laboratory once a presumptive diagnosis is found in your laboratories?
- Who confirms your findings?
- What procedures are in place to transport samples to various reference laboratories to confirm your hospital's findings?
- If you suspect bioterrorism, law enforcement requires maintaining the chain of custody of the evidence, which are your hospital laboratory samples. Do you have proper handling and transport procedures in place for this?

10. Disease-specific information. Address specific diseases that are the highest concern from a public health standpoint, recommends Roman. These include anthrax, smallpox, tularemia, botulism, plague (pneumonic), and the viral hemorrhagic fevers (Marburg, filoviruses, arenaviruses, and Ebola), he says.

"Information regarding these can be obtained from your local or state health department or from the CDC directly," Roman says. ■

Could you decontaminate hundreds of patients?

If a chemical attack occurs, you might need to decontaminate hundreds or perhaps thousands of people, says **Robert Suter**, DO, MHA, FACEP, medical director for the North Texas region at Questcare Emergency Services in Plano. Suter also serves on the faculty of the department of military and emergency medicine at the Uniform Services University of Health Sciences in Bethesda, MD.

Most EDs are not prepared for this scenario, he warns. "For many hospitals, state-of-the-art decontamination means showers adjacent to the ED. But when it comes to preparation for a terrorist attack, that's completely inadequate," says Suter. "It's the same principle, but a difference of scale."

You might need the parking lot

Here are ways to prepare for large-scale decontamination:

- **Identify a large area for decontamination.**

HazMat showers built into your ED are ideal for taking care of low numbers of patients, says Suter. "But you need to be prepared to take it out into the parking lot," he adds. "Everybody has space limitations, but you need a large area the size of a football field where you can do outdoor decontamination."

- **Don't rely on the fire department.**

Most ED staff mistakenly believe that the fire department will be able to decontaminate large numbers of patients if a chemical attack occurs, warns Suter. "You may be counting on the local fire department to perform this function for you, but that is not going to be an effective strategy in the event of a large-scale incident that is caused intentionally. You need to prepare for this."

Use your fire department as consultants in developing a plan, Suter recommends. "Have them come and evaluate your decontamination team setup, but don't rely on them as providers," he says. "Don't develop your plan expecting them to do everything for you, because that is not realistic."

Likewise, don't assume patients will be decontaminated before they arrive at your ED. "Although patients who are transported from the scene of the event may be decontaminated on the scene prior to transport, those arriving by car or other means of transportation will require decontamination," says **Jeffrey Doucette**, RN, MS, CEN, director of emergency services at Medical Center of Arlington (TX).

- **Protect yourself.**

Always take a safety-first approach, warns Suter. “If you are unprepared or untrained to decontaminate patients, then your duty is to either wait for instructions or for someone else to do it,” he says. “Don’t give in to the urge to jump in and do something.” Your first responsibility is to protect yourself so you can care for patients, he adds.

- **Develop plans with local organizations.**

EDs should work closely with local and state HazMat agencies, such as the fire department, to develop plans for mass decontamination efforts, says Doucette.

- **Know which patients need decontamination.**

Understand who does and doesn’t need to be decontaminated, says **Ali S. Khan, MD, MPH**, deputy director for the Bioterrorism Preparedness and Response Program for the Atlanta-based Centers for Disease Control and Prevention. “Remember that this is generally an issue only for chemical exposures and not biological casualties.”

- **Consider training other hospital staff to perform decontamination.**

You might want to train other hospital personnel to decontaminate in the event of a bioterrorism incident, suggests Suter.

“There is no law that patient care personnel can’t do the decontamination,” he says. “In fact, you can make the argument that you are better off using administrative personnel to decontaminate, so the ED caregivers receive patients at the point when they are capable of being treated.”

Care that occurs prior to decontamination is very limited, explains Suter. “So the actual work of decontaminating patients may be best assigned to people with no patient care duties whatsoever,” he says.

That plan might be difficult to sell politically, but it actually makes a lot of sense, Suter maintains. “People don’t need to be performing billing during a disaster,” he says. ■

Watch for patterns of symptoms in the ED

Be on the lookout for suspicious symptoms so you can recognize and report a possible bioterrorism incident, urges **Ali S. Khan, MD, MPH**, deputy director for the Atlanta-based Centers for Disease Control and Prevention’s (CDC) Bioterrorism Preparedness and Response Program.

“The sooner you recognize an outbreak, the sooner

RESOURCES

To report an unusual pattern of illness, contact:

- **Centers for Disease Control and Prevention**, Emergency Preparedness and Response Branch, 4770 Buford Hwy., Mail Stop F38, Atlanta, GA 30341-3724. Fax: (770) 488-7107. E-mail: keg1@cdc.gov. The bioterrorism emergency response hotline is answered 24 hours a day, seven days a week. Telephone: (770) 488-7100.

For technical assistance and consultation, contact:

- **Centers for Disease Control and Prevention**, Hospital Infections Program, 1600 Clifton Road, Mail Stop E69, Atlanta, GA 30333. Telephone: (404) 639-6413. Fax: (404) 639-6459. E-mail: zzb8@cdc.gov.

you can find all affected persons and offer them prophylaxis or vaccines,” he says.

The ED will be the first place that a biological or chemical attack is noticed, says **Robert Suter, DO, MHA, FACEP**, medical director for the North Texas region at Questcare Emergency Services in Plano, who also serves on the faculty of the department of military and emergency medicine at the Uniform Services University of Health Sciences, in Bethesda, MD.

Identify problem early

The biggest obstacle to identifying a bioterrorism incident is that at the very beginning, you don’t realize there is a problem, says Suter. “Many of the biological agents, including anthrax, are highly treatable if discovered early. But if discovered late, the mortality rates approach 100%,” he notes.

Be suspicious of illnesses or symptoms that are unusual for your community or the season, Suter recommends. “If it looks like your ED is being hit with a big flu outbreak in June, that is out of the ordinary and should be reported,” he says.

If a biologic attack occurs during the flu season, it would be more difficult to detect, notes Suter. “But even during flu season, if the volume of patients with certain complaints is significantly above what you historically expect, you need to be concerned,” he says. “You are basically looking for anything out of the ordinary.”

Don’t hesitate to report your suspicions to local agencies, says Suter. “Every ED staff member should

EDs should stockpile these antidotes

When a bioterrorism incident occurs, your ED might not be able to access substances needed to save lives, warns **Robert Suter, DO, MHA, FACEP**, medical director for the North Texas region at Questcare Emergency Services in Plano. Consider stockpiling the following, he recommends:

- **Atropine.** Atropine is an antidote for nerve agents and is a common drug in every ED crash cart, notes Suter. The usual maximum dose for a patient for cardiac reasons is 2-3 mg, he says. However, a nerve agent casualty could easily use 20-30 mg of atropine, Suter warns. "So essentially, just a couple patients could wipe out the entire hospital's stock of atropine in an hour or two," he says.

- **Bleach.** To some extent, you can decontaminate with good planning and lots of water, says Suter. "But ideally, you would utilize bleach to decontaminate the deadliest chemicals," he says.

Consider stockpiling 55-gallon drums of bleach where they can be quickly accessed and brought to a decontamination station at the hospital, he suggests.

- **Ciprofloxacin.** This substance is an antidote to many biological warfare agents, but there might not be enough to go around in your city, so consider stockpiling a supply, says Suter. ■

feel they are a public health deputy in helping to identify unusual illness outbreaks," he says. "This is not something that nurses should leave to the physicians."

Three doctors might have worked various shifts in the previous day, Suter points out. "They may not notice an unusual pattern developing, but the nursing staff do," he says.

Contact public health

If you suspect there is an unusual pattern, contact the CDC or bring it to the attention of the public health surveillance in your community, recommends Suter. (See Resources for contact information, p. 110.)

"That's how these things are identified in a timely enough manner to save lives," he says. "If you wait for somebody else to figure it out, it may be too late." ■

NBC incidents: Know these terms

NBC stands for nuclear, biological, and chemical incidents, which are all considered weapons of mass destruction. Here are key differences between each type of incident, according to **Robert Suter, DO, MHA, FACEP**, medical director for the North Texas region at Questcare Emergency Services in Plano. Suter also serves on the faculty of the department of military and emergency medicine at the Uniform Services University of Health Sciences, in Bethesda, MD.

- **Nuclear.** This type of incident ranges from detonation of nuclear devices to contamination of food or other products with highly radioactive materials. Accidental exposures to highly radioactive plutonium pellets occurred in South America, when a gamma accelerator used for cancer treatment was sold as scrap metal, says Suter. "This particular incident was accidental, but could be done purposely, too."

- **Biological.** This term refers to any living organism such as virus or bacteria, or any spores of those agents.

"This is the type of incident which is most likely to occur and can have a wide range of impact," says Suter. For example, a 1986 incident involved a cult in Oregon that sprayed salmonella bacteria on salad bars so people would get sick with gastroenteritis.

- **Chemical.** This term includes any chemical compound used to harm others, such as the nerve gas that cultists in Japan used to injure 5,000 people in the 1995 Tokyo subway attack. Chemical weapons could kill hundreds or even thousands of people, stresses Suter. "It's relatively easy to disperse a chemical agent." ■

How APCs will change the way you document

Ambulatory payment classifications (APCs) are the method of reimbursement under Medicare's new outpatient prospective payment system (PPS) and will change the way you document, says **Candace E. Shaeffer, RN, MBA**, vice president of coding/quality management for Lynx Medical Systems, a Bellevue, WA-based consulting firm that specializes in coding and reimbursement for EDs.

The outpatient PPS was scheduled to take effect July 1, 2000, for hospitals, but the Baltimore-based Health Care Financing Administration (HCFA)

EXECUTIVE SUMMARY

You'll need to change the way you document in order to be reimbursed under ambulatory payment classifications, Medicare's new outpatient prospective payment system, which is now scheduled to go into effect Aug. 1 for hospitals.

- Certain procedures can be billed separately, but your documentation needs to be thorough for these procedures.
- When monitoring a patient, correlate the data you are monitoring with the patient's presentation or condition.
- Document specific details about the patient's condition, treatment, and response to demonstrate the patient's severity of illness and the intensity of services provided.

delayed the effective date by one month to Aug. 1.

Reimbursement under APCs is based on nursing documentation, stresses **Janice Salisbury**, RN, CEN, nurse manager of ED at Fairview Southdale Hospital in Edina, MN. "If there is not adequate documentation to support the charges, you won't be reimbursed," Salisbury warns.

Assign a code, or lose money

Here is how the APC reimbursement system will impact the way you document:

• Document procedures performed during the ED visit.

Prior to APCs, Medicare reimbursed for the supplies and pharmaceuticals used when procedures were performed, Shaeffer explains. This will no longer be the case, she says. "If the ED wants to be paid for these items, they will have to assign a code for the procedure."

• Know which procedures are reimbursed separately.

Previously, EDs charged for a level of service that covered all of the procedures you might do for a patient, Salisbury explains. "We billed for a certain level based on what you did with that patient, which included equipment and supplies," she says.

Under APCs, specific procedures will be added on separately, rather than increasing the level of service, says Salisbury. "You need to take advantage of the procedures we can bill for, and support it with adequate documentation," she advises.

Know the procedures you are allowed to bill

separately for and provide adequate documentation to support that billing, says Salisbury. (**See examples of procedures that can be billed separately, p. 113; and Resource for information on obtaining the complete list of procedures, p. 114.**)

HCFA has listed 451 APCs that will be reimbursed, says Shaeffer. "These are paid as a result of outpatient ED coders assigning codes and billing for the services and procedures that map to these APCs."

Procedures may be surgical, diagnostic, or nursing, Shaeffer explains. Medicare will reimburse the ED as long as the service/procedure was performed, documented, coded using common procedural terminology (CPT) or HCFA's common procedure coding system (HCPCS) codes, and meets the following criteria, she says:

- The service was medically necessary.
- It was not classified as an "inpatient" procedure.
- The patient was an outpatient (not admitted).
- The CPT or HCPCS code is not considered a component or bundled procedure in another procedure code (i.e., passes the correct coding initiative [CCI] edits).

— The appropriate outpatient modifiers are appended.

— The appropriate outpatient modifiers are appended.

• Document specific details about the patient's condition, treatment, and response.

Thorough and complete documentation demonstrates the patient's severity of illness and the intensity of services provided, says Shaeffer.

"In addition to medico-legal considerations, payers look at this information to determine the medical necessity and payment for the visit," she says.

At a minimum, document the following, says Shaeffer:

- the time a procedure was performed;
- the nature of the procedures and services performed/delivered;
- procedure details and results;
- patient tolerance and outcome of the procedure;
- patient education;
- follow-up information.

• Document reasons for monitoring patients.

Document why you are monitoring a patient, and correlate the data you are monitoring with the patient's presentation or condition, says Salisbury. "Just writing down numbers is not sufficient."

For example, if you are monitoring oxygen saturation, it isn't enough to write down the figure of 98%, Salisbury explains. You need to include the following, she says:

- why you are monitoring the patient;
- why you are concerned;
- what other symptoms the patient is having;

SOURCES

For more information about the outpatient reimbursement system and nursing documentation, contact:

- **Janice Salisbury**, RN, CEN, Emergency Department, Fairview Southdale Hospital, 6401 France Ave. S., Edina, MN 55435. Telephone: (612) 924-5409. Fax: (612) 924-5796.
- **Candace E. Shaeffer**, RN, MBA, Lynx Medical Systems, 15325 S.E. 30th Place, Suite 200, Bellevue, WA 98007-6595. Telephone: (425) 641-4451, ext. 2039. Fax: (425) 641-5196. E-mail: candaces@lynxmed.com.

— whether the symptoms change;

— if there is a decrease in the saturation, what you have done about it. ■

Here are procedures you can bill separately

Examples of procedures that can be billed separately under ambulatory payment classifications (APCs) include the following, according to **Candace E. Shaeffer**, RN, MBA, vice president of coding/quality management for Lynx Medical Systems, a Bellevue, WA-based consulting firm that specializes in coding and reimbursement for EDs:

- Incision and drainage of an abscess, simple, common procedural terminology (CPT) 10060, APC 0006.
- Avulsion nail plate, simple, CPT 11730, APC 0013.
- Evacuation of subungual hematoma, CPT 11740, APC 0009.
- Simple laceration repair, less than 2.6 cm, face, CPT 12011, APC 0024.
- Apply short arm splint, CPT 29125, APC 0059.
- Control nasal hemorrhage, posterior, CPT 30905, APC 0250.
- Catheterization, complex, CPT 53675, APC 0164.
- Lumbar puncture, CPT 62270, APC 0210.
- Injection, subcutaneous or intramuscular; CPT 90782, APC 0359.
- Cardiopulmonary resuscitation, CPT 92950, APC 0094.
- Rhythm Electrocardiogram, 3 lead, tracing only, CPT 93041, APC 0366. ■

Here are key points to know about APCs

At press time, ambulatory patient classifications (APCs) were to be implemented in hospital-based outpatient settings on July 1, 2000. Here are key points to be aware of, according to **Candace E. Shaeffer**, RN, MBA, vice president of coding/quality management for Lynx Medical Systems, a Bellevue, WA-based consulting firm that specializes in coding and reimbursement for EDs:

- APC reimbursement includes only the facility portion of the ED visit.
- APCs do not affect physician payment. Physicians will continue to be reimbursed using the Medicare physician fee schedule.
- Initially, APCs will only apply to reimbursement for Medicare patients. Other government payers and commercial payers might follow.
- APCs include medical visit APCs and procedure APCs. If both visit and procedure services are provided and documented during a single ED encounter, both will be paid.
- In general, APC payment will be determined by multiplying the APC weight by a conversion factor. Payment will be indexed for location. Minimum and maximum patient copayments have been established by the Health Care Financing Administration (HCFA).

You won't use ICD-9-CM codes for payment

- The hospital coders will assign common procedural terminology (CPT) visit and procedure codes based on the ED nurses' and physicians' documentation or convert the nurse-identified visit level and procedures (on a charge ticket for example) to CPT codes. The CPT codes (and *International Classification of Diseases, Ninth Revision, Clinical Modification* [ICD-9-CM] codes) will be submitted to Medicare for payment. ICD-9-CM codes won't be used to determine payment for the ED medical visit as suggested in the proposed APC rule in September 1998.
- There are 451 APCs listed in the final rule: 290 medical visit and procedure APCs and 161 pharmaceutical, blood product, or other medical product APCs. There are four visit APCs in the ED: 610, 611, 612, and critical care, 620. In addition, most of the surgical, nursing, and diagnostic procedures performed in the ED — by nurses or physicians — have a corresponding CPT code and APC reimbursement. Examples of such procedures include laceration repair, fracture care, 12 lead ECG, 3 lead monitor, splinting, and intramuscular or

RESOURCE

The new hospital outpatient prospective payment system regulations, including the complete list of procedures that may be billed separately, are published in the April 7, 2000, *Federal Register*. The regulations are available from the *Federal Register's* on-line database through GPO Access, a service of the U.S. Government Printing Office (www.access.gpo.gov/su_docs/aces/aces140.html). The regulations also can be downloaded from the Health Care Financing Association's Web site at www.hcfa.gov. Also, the *Federal Register* is available at many libraries. Or for copies, send your request to:

- **New Orders**, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. The cost of each copy is \$8. Specify the date of the issue and enclose a check or money order payable to the Superintendent of Documents, or your Visa or MasterCard number and expiration date. Credit card orders also may be placed by calling the order desk at (202) 512-1800 or by faxing them to (202) 512-2250.

intravenous injections.

- Under APCs, most supplies and pharmaceuticals will be "bundled" in to the visit or procedure and will not be paid separately.

- An ED's facility coding methodology and Charge-master will need to be revised to incorporate procedures if they are not already included. Review a copy of the final regulation, published in the April 7, 2000, *Federal Register*, to determine each procedure that is performed in a particular ED that also has a corresponding APC value. (See **Resource, above, for information on obtaining a copy of the regulations.**)

Be consistent with charging system

- HCFA has said that an ED does not need to change its particular "level of service" coding methodology, but it does need to have a charging system that it applies consistently. This charging system will have to be translated to the ED CPT codes, 99281-99285 and critical care 99291 in order for the ED to bill for services under APCs.

- If a patient is transferred from the ED to observation, the ED visit CPT code will be assigned along with codes for any procedures performed in either setting. There will be no separate "visit"

reimbursement for the observation stay.

- Expert outpatient coders will be required to perform the ED coding function. In addition to the need to assign CPT codes, HCFA has identified specific modifiers that will be required in the code assignment process, and the correct coding initiative (CCI) edits will apply.

CCI is a program that HCFA implemented in January 1996. The goal was to identify and eliminate the incorrect coding of medical services. To accomplish this goal, HCFA installed "edits" in their claims processing systems to catch potential code combination problems. The two main edits are comprehensive and component code combinations and mutually exclusive code combinations. The rules for these edits come from CPT definitions and Medicare carrier instructions.

- If a Medicare patient is seen in the ED and admitted to the hospital, a separate APC or APCs will not be paid. The ED visit is rolled into the inpatient stay, and the hospital is reimbursed under the inpatient DRG payment system. ■

Are you prepared to handle a post-mortem C-section?

When a pregnant woman has arrested and a post-mortem cesarean may be needed, it's one of the most challenging situations you can encounter, stresses **Renee Holleran**, RN, PhD, chief flight nurse and clinical nurse specialist at Cincinnati Medical Center.

"The most important issue to emphasize with the pregnant patient who has suffered a cardiac arrest is that in order to save the baby, the mother needs to be cared

EXECUTIVE SUMMARY

When a pregnant woman has arrested, the child's survival is dependent upon the mother's survival, so direct all your efforts toward resuscitating the mother.

- Loss of the mother and baby calls for critical stress debriefing for ED staff.
- For the child to have a chance of survival, the fetal age must be greater than 20 weeks.
- Gather information, contact the obstetrician, trauma surgeon, OB support nurses, and assemble equipment immediately when you learn that a pregnant woman has been critically injured.

for,” she says. (See stories on critical incident stress management and specific steps to take, p. 116.) Here are ways to effectively manage this scenario:

- **Focus efforts toward caring for the mother.**

When a pregnant woman has arrested, the child’s survival is dependent upon the mother’s survival, Holleran stresses. “All efforts should be directed at providing an airway, oxygenation, and circulation to the mother.”

The fetus is absolutely dependent on maternal blood flow for life, so resuscitation of the mother is the priority, says **Cindy Jimmerson**, RN, trauma/transport outreach coordinator for Community Medical Center in Missoula, MT. “If resuscitation fails, then CPR, mechanical ventilation, heart compressions of the mother, and immediate C-section are the only steps that will offer the fetus a chance of survival,” Jimmerson says.

- **Consider the cause of arrest.**

The causes of maternal arrest influence the infant’s outcome, notes Holleran. “Years ago, chronic illness such as tuberculosis was a cause of arrest,” she says. “Today, embolus or trauma are more common causes.”

Since trauma is the No. 1 cause of death in women of childbearing age, a pregnant patient is always at risk for a traumatic injury, says Holleran. The most common mechanism of injury are motor vehicle crashes, she says, adding that ED nurses can use that information to educate pregnant patients who are being discharged from the ED.

“ED nurses need to ensure that the pregnant patient knows how to fasten their seat belt appropriately,” Holleran says.

Lap belt should be low

According to **Janet Lassman**, RN, BS, national instructor trainer for Alexandria, VA-based Emergency Nurses Care (EN CARE), pregnant women should wear seat belts with the lap belt low on the pelvis and the shoulder harness across the clavicle and chest. “The belt should be snug and away from the mass of the baby, and the seat positioned away from the airbag,” she says.

EN CARE is a not-for-profit organization affiliated with the Emergency Nurses Association. Its mission is to reduce preventable injuries and deaths by educating the public to increase awareness and promote healthy lifestyles.

- **Know increased risks of domestic violence.**

Research has shown an increase in domestic violence against pregnant women, notes Holleran. Make pregnant women aware of community resources for support related to domestic violence, she advises.

SOURCES

For more information about management of post-mortem cesareans, contact:

- **Renee Holleran**, RN, PhD, University of Cincinnati Medical Center, P.O. Box 670736, Cincinnati, OH 45267. Telephone: (513) 594-7522. Fax: (513) 584-4533. E-mail: hollerre@Healthall.com.
- **Cindy Jimmerson**, RN, Community Medical Center, 2827 Fort Missoula Road, Missoula, MT 59804. Telephone: (406) 327-4074. Fax: (406) 327-4505. E-mail: cjimmerson@communitymed.org.
- **Janet Lassman**, RN, EN CARE, 205 S. Whiting St., Suite 403, Alexandria, VA 22304. Telephone: (703) 370-4050. Fax: (703) 370-4005. E-mail: encare@aol.com.

Penetrating trauma such as gunshot wounds or stabbing injuries is a common problem with domestic disputes and might contribute to the need for emergency cesarean, Jimmerson says.

- **Know indications for the procedure.**

Cessation of maternal vital signs within five minutes is an indication for this procedure, says Holleran.

“However, the effects of prolonged hypotension prearrest on the mother and child must be taken into consideration,” she advises.

The mother’s body will divert circulation from the fetus to sustain the mother, says Holleran. “Many times, manifestation of maternal stress from illness or injury is manifested first in the fetus generally by a change in the baby’s heart rate [tachycardia-bradycardia].”

Unsuccessful cardiac resuscitation might be another indication for a perimortem section, says Holleran.

Age of fetus critical

- **Determine the age of the fetus.**

The fetal age should be greater than 20 weeks for the child to have a chance of survival, says Holleran. “It is a good idea to have a chart available that indicates the age of the fetus by looking at the mother’s abdomen.”

Other ways of determining fetal age include asking family members when the baby is due or the date of the mother’s last period, or having an ultrasound machine available to determine the gestational age of the fetus, says Holleran.

- **Have equipment readily available.**

You'll need neonatal resuscitation equipment including airway management equipment-resuscitation bag and endotracheal tubes based on infant size, advises Holleran.

- **Obtain all necessary information.**

Gather the facts relative to pregnancy and the event that helps make the decision, says Jimmerson. This includes mechanism of injury, CPR or pulselessness in the field prior to ED arrival, gestation of the fetus, presence and quality of fetal heart tones, she adds. Contact the patient's obstetrician, particularly if they are locally available, she adds.

- **Give adequate oxygen and fluid resuscitation.**

The mother needs a significant amount of oxygen and fluid resuscitation in the form of crystalloids and blood products," Jimmerson says. "During the third trimester of pregnancy, placental flow is approximately 700cc/minute," she says. "Potential for blood loss with injury is massive, and correction of hypovolemia is essential for fetal survival." ■

Address emotional trauma of post-mortem C-sections

It is extremely traumatic for family members when both the mother and child are lost following a post-mortem cesarean, notes **Renee Holleran**, RN, PhD, chief flight nurse and clinical nurse specialist at Cincinnati Medical Center.

"You are dealing with an especially difficult situation because the family may not only lose the baby, but the mother, as well," she says. "This would definitely be considered a critical stress incident."

The scenario is also emotionally charged for staff, especially for flight nurses and other prehospital personnel who lose the mother in the field, says **Cindy Jimmerson**, RN, trauma/transport outreach coordinator for Community Medical Center in Missoula, MT. "First, they hit an emotional low, then have a 'high' of hope that they can save the baby by maintaining the moribund mother," she says. "If they discover the baby will not survive, it creates another devastating low."

Get help quickly

Critical incident stress management is a must, stresses Jimmerson. "The loss of a parent, disruption of a family unit, orphaning of a child, or loss of an unborn life is so easy for each of us to relate to," she says. "It can be extremely painful, and will be disruptive to our

work lives to try to assimilate this without help."

It's best if this is done within 48 hours after the event, says Jimmerson. "This is an opportunity for the individuals involved with care to sit in a safe environment and talk about their role in the event and how they felt," she explains. "I like to describe it as an opportunity to unload emotional baggage."

Ideally, everyone involved in the event should participate, including prehospital personnel, says Jimmerson. "This kind of stress is cumulative. By unloading this baggage we can prolong our emotional life span, which allows us to continue to be effective in the kind of work we have chosen."

Critical incident stress management should be done for events that exceed the normal expectations of tragedy that is associated with working in the ED, Jimmerson recommends. "Examples of this include death of children, babies, pregnant moms, gross disfigurement, multiple victims, and violent crime," she says.

Observe your colleagues to detect when an event has exceeded the emotional capacity of the staff and suggest critical incident stress management, Jimmerson advises. "This is not about analyzing correct medical treatment," she says. "It is about care for the caregiver." ■

Pregnant trauma patients need special attention

When you receive information from the field about an incident that involves a pregnant injured patient, do the following, according to **Cindy Jimmerson**, RN, trauma/transport outreach coordinator for Community Medical Center in Missoula, MT:

1. Assess the capabilities of the prehospital service. For example, they may be staffed by paid or volunteers, paramedics, EMTs, or first responders, says Jimmerson. "That way, you know what to expect of prehospital personnel in evaluation, reporting, and treatment capabilities to be offered."

Get details of trauma

2. Prompt the prehospital responders with specific questions. Ask about the following, Jimmerson recommends:

- Mechanism of injury. What exactly happened to the patient? For example, where were they sitting in the car, did they use seat belts, what type, did the airbag deploy, how much damage was there to the car? If the unit carries a Polaroid camera, a photo of

the scene is very helpful to bring in with the patient.

- Is there another person who can provide information, or does the patient carry identification with information on a local OB physician, medications the patient may be taking, associated illnesses, and due date of the patient?

- The patient's first vital signs and any subsequent vital signs or points of evaluation that will help determine before the patient arrives at the hospital the following important information: Is the patient getting better, or is the patient getting worse? This is very important in preparing for what will arrive.

- Has the mom suffered pulselessness or cessation of respirations at any time? If so, for how long? Was CPR needed, or did the mom spontaneously resume vital signs? Are the prehospital personnel able to hear fetal heart tones? Have they been repeated frequently, and is there a change in rate and regularity? When did the incident occur? What is the ETA?

If the patient arrives without notice or brief notice, you should collect this preliminary information while they also prepare for a possible emergency cesarean, says Jimmerson.

- What treatment has been initiated? Does the patient have two large bore IVs running, O₂ on at a high flow rate? Is the mother positioned on her left side or with one hip elevated to reduce the pressure of the uterus on her vena cava? Is the patient being kept warm?

Prevent heat loss and stress

3. Activate the neonatal team to provide resuscitation.

Rapid transport of the infant is essential, says **Renee Holleran, RN, PhD**, chief flight nurse and clinical nurse specialist at Cincinnati Medical Center. "An isollette or warming lights should be used during resuscitation of the infant to prevent heat loss and stress to the neonate," she advises.

Contact the obstetrician, trauma surgeon, and OB support nurses, and assemble equipment immediately after information comes from the field that a pregnant woman has been critically injured, stresses Jimmerson.

"Time is of the greatest essence in the survival of this patient [the fetus] that we cannot see," she says. Include clinicians who can be of assistance should the patient spontaneously deliver or require emergency cesarean, says Jimmerson.

4. Prepare for emergency delivery.

If the mother is significantly injured, the body may try to expel the fetus and labor may commence, says Jimmerson. "Premature onset of labor is a frequent side-effect of maternal head injury as well, even when the mother is unconscious."

When obtaining information from the field or examining the patient initially in the ED, look for any vaginal bleeding or signs of ruptured membranes (for example, perineal wetness not confused with urine), or any other signs of early labor, Jimmerson advises. ■

Here's an antidote you should know about

When treating patients for ethylene glycol and methanol toxicity, the antidote Antizol (fomepizole) will give you a better option, ED experts say. (See **clinical guideline for ethylene glycol poisoning, inserted in this issue.**)

"The drug is a better treatment than ethanol, which has been the antidote used for several decades," according to **Helen Zimmerman, MSN, CRNP, CEN**, nurse practitioner at the Milton S. Hershey Medical Center in Hershey, PA. (See **symptoms of ethylene glycol and methanol toxicity, p. 118.**)

When treated with ethanol, patients are often kept intoxicated for days while toxic alcohols are excreted out of their bodies, Zimmerman explains. "The new antidote is much safer than adding alcohol to the system," she says.

Intensive nursing care

Nursing care for the patient is also intensive with ethanol, notes **Steve Weinman, RN, BSN, CEN**, emergency department instructor at New York Weill Cornell Medical Center at New York Presbyterian Hospital in New York City. Admission to the intensive

EXECUTIVE SUMMARY

Antizol (fomepizole) is an FDA-approved antidote for ethylene glycol and methanol toxicity.

- The antidote is a safer treatment than ethanol, which added alcohol to the patient's system for extended periods.
- Advantages include a slower rate of elimination, longer duration of action, a reasonable dosing schedule, and less potential for adverse affects.
- The drug is costly — at approximately \$1,000 per vial — but admission to the ICU may be avoided for less severe poisonings.

Here are symptoms to watch for

Approximately 10,000 poisonings every year are attributed to products that contain ethylene glycol or methanol, but the diagnosis is often missed in the ED, says **Helen Zimmerman**, MSN, CRNP, CEN, nurse practitioner at the Milton S. Hershey Medical Center in Hershey, PA.

“Making the diagnosis in the ED is a real problem,” Zimmerman says. “It’s missed often because we’re not looking for it.”

Here are signs and symptoms to watch for, according to Zimmerman:

- **For ethylene glycol poisoning:**

- nausea, vomiting, hyperventilation, hypertension, muscular tetany, convulsions, coma, and acute kidney failure;

- the presence of urinary crystals;

- initial symptoms which begin 30 minutes to 12 hours after ingestion and include inebriation, slurred speech, vomiting, and sleepiness.

- 4-12 hours after ingestion, an increase in metabolic acidosis, hyperventilation, hypertension, and tachycardia;

- 12-36 hours after ingestion, symptoms that might include progressive tachypnea, cyanosis, pulmonary edema, and cardiac failure leading to death.

- **For methanol poisoning:**

- blurred vision, accompanied by headache, dizziness, nausea, vomiting, and abdominal pain;

- visual complaints, ranging from blurred vision to spots before the eyes, to total loss of vision;

- diminished pupillary reflex, pupillary dilation, and optic disc hyperemia;

- initial central nervous system depression is weaker than that produced by ethanol, with a latent period of 10-30 hours. Symptoms include nausea, vomiting, weakness, abdominal pain, respiratory depression, and coma. ■

SOURCES AND RESOURCE

For more information about the antidote for ethylene glycol and methanol poisoning, contact:

- **Helen E. Zimmerman**, MSN, CRNP, CEN, The Milton S. Hershey Medical Center, Department of Cardiology, H047, P.O. Box 850, Hershey, PA 17033-0850. Telephone: (717) 531-8521. Fax: (717) 531-7969. E-mail: hzimmerman@psghs.edu.
- **Steve Weinman**, RN, BSN, CEN, Emergency Department, New York Weill Cornell Medical Center at New York Presbyterian Hospital, 525 E. 68th St., Box 174, New York, NY 10021. Telephone: (212) 746-2914. Fax: (212) 746-1490. E-mail: RescSteve@aol.com.

For information about Fomepizole, contact:

- **Orphan Medical**, 13911 Ridgedale Drive, Suite 250, Minnetonka, MN 55305. For questions about the product, call Professional Services. Telephone: (888) 867-7426. Fax: (952) 541-9209. E-mail: pservices@orphan.com. Web site: www.orphan.com.

blood alcohol between 100 and 130, which is legally drunk.”

It’s difficult to keep blood alcohol in that narrow band,” she acknowledges. “But if you go above that, the patient can aspirate.”

Fomepizole (manufactured by Minnetonka, MN-based Orphan Medical) has several other advantages, including a slower rate of elimination, longer duration of action, a reasonable dosing schedule, and less potential for adverse affects, says Zimmerman.

Administer drug quickly

The drug should be given as soon as possible, says Zimmerman. If fomepizole is given before kidney failure occurs, metabolite accumulation is minimized, says Zimmerman. “The kidneys may then excrete ethylene glycol,” she says.

The drug is costly, at approximately \$1,000 per vial. Ethanol is relatively inexpensive with an average cost of less than \$100 per patient, whereas fomepizole therapy may cost as much as \$5,000 for loading dose and maintenance doses, depending on toxicity, notes Weinman. However, the cost is offset because the patient may not have to be admitted to the ICU for less severe poisonings, he adds. ■

care unit for close observation, serial serum ethanol levels, and ethanol dosing (typically as a constant intravenous infusion) are necessary, he adds.

Also, blood alcohol levels must be taken frequently to make sure the range is between 100 and 130 mg/dL, Zimmerman notes. “With ethanol, you have to keep the



JOURNAL REVIEWS

Richman PB, Dinowitz S, Nashed AH, et al. The emergency department as a potential site for smoking cessation intervention: A randomized, controlled trial. Acad Emerg Med 2000; 7:348-353.

There was no difference in the smoking cessation rates between ED patients who received written materials and those who were counseled by ED physicians, found this study from Morristown (NJ) Memorial Hospital. In the study, 152 patients were enrolled in the control group that received a "Stop Smoking" pamphlet, or the intervention group that received the pamphlet and scripted counseling, which included a referral to a smoking cessation program at the hospital. Here are the study's key findings:

- None of the patients in the intervention group contacted or attended the smoking cessation program during the study period.
- The control and intervention groups had the same smoking cessation rate (10%) after three months.

However, the results should not discourage future efforts to use the ED as a venue to promote smoking cessation, say the researchers. "Rather, it should serve as an impetus for improving/modifying the intervention model that we constructed for this investigation," they wrote. They suggest the following:

- Refer patients to programs that have costs subsidized in cases of need or are available at no cost to the patient.
- Use multiple smoking cessation program sites to give patients more options. ▼

Grierson R, Green R, Sitar DS, et al. Gastric lavage for liquid poisons. Ann Emerg Med 2000; 25:435-439.

Gastric lavage is not likely to improve outcomes because of its unreliable performance and modest extent, says this study from the University of Manitoba in Winnipeg, Canada. The study looked at whether gastric lavage reduces the absorption of ingested liquids. Although gastric lavage is no longer a standard treatment for toxic ingestions, there was minimal data on the use of this technique for the ingestion of liquids.

Ten volunteers ingested a solution of acetaminophen in water, and underwent gastric lavage one hour later. There was a 20% reduction in acetaminophen bioavailability, but that was not likely to be clinically significant, the researchers note.

Activated charcoal is a less risky alternative, say the researchers, who note that adverse effects from gastric lavage include aspiration pneumonia, arrhythmias, and cardiac arrest and occur in 3% of cases. "We do not recommend gastric lavage for the treatment of toxic ingestions of liquids," they conclude. ▼

Leneski L, Morton P. Delay in seeking treatment for acute myocardial infarction: Why? J Emerg Nurs 2000; 26:125-129.

There are many identifiable factors that contribute to patients being excluded from thrombolytic therapy because of a delay in seeking treatment, says this research from the University of Maryland School of Nursing in Baltimore, which summarized published data on this topic. Here are some of the factors identified that cause patients to delay seeking treatment:

- **Gender.** Women experiencing an acute myocardial infarction (AMI) wait longer than men in seeking treatment. Denial was a common response of women experiencing the onset of symptoms of an AMI.
- **Educational level.** Patients with fewer years of education waited longer to seek treatment.

Subscriber Information

Customer Service: (800) 688-2421 or Fax (800) 284-3291.
World Wide Web: <http://www.ahcpub.com>.
E-mail: customerservice@ahcpub.com.

Subscription rates: U.S.A., one year (12 issues), \$299. With approximately 16 CE contact hours, \$349. Outside U.S., add \$30 per year, total prepaid in U.S. funds. One to nine additional copies, \$239 per year; 10 or more additional copies, \$179 per year. 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 \$48 each. (GST registration number R128870672.) Photocopying: No part of this newsletter may be reproduced in any form or incorporated into any information retrieval system without the written permission of the copyright owner. For reprint permission, please contact American Health Consultants®. Address: P.O. Box 740056, Atlanta, GA 30374. Telephone: (800) 688-2421, ext. 5491. Fax: (800) 284-3291.

ED Nursing™ (ISSN 1044-9167) is published monthly by American Health Consultants®, 3525 Piedmont Road, N.E., Six Piedmont Center, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodical postage paid at Atlanta, GA. POSTMASTER: Send address changes to ED Nursing™, P.O. Box 740059, Atlanta, GA 30374-9815.

ED Nursing™ is approved for approximately 18 nursing contact hours. This offering is sponsored by American Health Consultants®, which is accredited as a provider of continuing education in nursing by the American Nurses' Credentialing Center's Commission on Accreditation. Provider approved by the California Board of Registered Nursing, Provider Number CEP 10864, for approximately 18 contact hours.

Opinions expressed are not necessarily those of this publication. Mention of products or services does not constitute endorsement. Clinical, legal, tax, and other comments are offered for general guidance only; professional counsel should be sought for specific situations.

Editor: Staci Bonner.
Vice President/Group Publisher: Brenda Mooney.
Managing Editor: Joy Daughtery Dickinson,
(joy.dickinson@ahcpub.com).

Production Editor: Nancy McCreary.
Copyright © 2000 by American Health Consultants®, ED Nursing™ is a registered trademark of American Health Consultants®, a Thomson Healthcare Company. The trademark ED Nursing™ is used herein under license. All rights reserved.

Editorial Questions

For questions or comments, call Joy Daughtery Dickinson at (912) 377-8044.

• **Income.** Patients with an annual income of less than \$20,000 wait longer to seek treatment than those with an annual income over \$60,000.

• **Age.** Older patients wait longer than younger patients to seek treatment. This might be due to the fact that older patients are more likely than younger patients to have a history of medical conditions that might mask an AMI.

Understanding the reasons why patients delay treatment is essential, say the researchers. "With this understanding, more appropriate public education can be undertaken about the signs and symptoms of AMI and when to dial for an ambulance," they wrote.

Also, specific populations known to delay seeking treatment (the elderly, women, and African-Americans) can be targeted for educational efforts. ■



• **July 10-12, 2000** — The Community as Victim: Crisis Management for Public Safety, Kansas City, MO. Sponsored by the National Criminal Justice Association and Missouri Department of Public Safety. For more information, contact: Cabell Cropper, National Criminal Justice Association, 444 N. Capitol St., Suite 618, Washington, DC 20001. Telephone: (202) 624-1440. E-mail: ccncja@sso.org.

• **Aug. 30-Sept. 2, 2000** — North American Stroke Meeting 2000, Toronto. Sponsored by the National Stroke Association, Canadian Stroke Society, and Mexican Academy of Neurology. For more information, contact: Gretchen Bliss, National Stroke Association, North American Stroke Meeting, 9707 E. Easter Lane, Englewood, CO 80112-3747. Telephone: (303) 754-0940. E-mail: gbliss@stroke.org.

• **Sept. 20-24, 2000** — 2000 Emergency Nurses Association Annual Meeting, Chicago. For more information, contact: Emergency Nurses Association, 915 Lee St., Des Plaines, IL 60016. Telephone: (800) 243-8362 or (847) 460-4000. E-mail: enainfo@ena.org.

• **Oct. 20, 2000** — A Crash Course in Emergency Nursing, New York City. Sponsored by New York-Presbyterian Hospital, New York Weill Cornell Center, Department of Nursing Education, and School of Continuing Education for Nurses. For more information, contact: Steve Weinman, 525 E. 68th St., Box 174, New York, NY 10021. Telephone: (212) 746-2914. E-mail: RescSteve@aol.com. ■

EDITORIAL ADVISORY BOARD

Consulting Editor: Renee Holleran, RN, PhD
Chief Flight Nurse, Clinical Nurse Specialist
Cincinnati Medical Center, Cincinnati

Kay Ball,
RN, MSA, CNOR, FAAN
Perioperative Consultant/Educator
K&D Medical
Lewis Center, OH

Darlene Bradley,
RN, MSN, MAOM, CCRN, CEN
Clinical Director
Emergency/Express Care
Services
Loma Linda University Medical
Center & Children's Hospital
Loma Linda, CA

Colleen Bock-Laudenslager,
RN, MSN
Consultant
Bock-Laudenslager & Associates
Redlands, CA

Sue Dill Calloway, AD, BA,
BSN, RN, MSN, JD
Director of Risk Management
Ohio Hospital Association
Columbus, OH

Liz Jazwiec, RN
President
Liz Jazwiec Consulting
Crestwood, IL

Linda Kosnik, RN, MSN, CEN
Unit Manager
Overlook Hospital
Summit, NJ

Gail P. Loadman, RN, CEN
Director, Emergency Services
Riverside Methodist
Hospitals
Riverside Campus
Columbus, OH

Larry B. Mellick,
MD, MS, FAAP, FACEP
Chair & Professor
Department of Emergency
Medicine
Director of Pediatric
Emergency Medicine
Medical College of Georgia
Augusta, GA

Barbara M. Pierce, RN, MN
Director of Emergency Services,
Huntsville Hospital System,
Huntsville, AL

Judy Selfridge-Thomas, RN,
MSN, CEN, FNP
Family Nurse Practitioner
St. Mary Medical Center
Urgent Care
Long Beach, CA
General Partner
Selfridge, Sparger,
Shea & Associates
Ventura, CA

CE objectives

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

1. Identify clinical, regulatory, or social issues relating to ED nursing. (See *Could you decontaminate hundreds of patients? Are you prepared to handle a post-mortem C-section? Here's an antidote you should know about* and *Journal Reviews* in this issue.)

2. Describe how those issues affect nursing service delivery.

3. Cite practical solutions to problems and integrate information into the ED nurse's daily practices, according to advice from nationally recognized experts. ■

Biological and Chemical Terrorism

Strategic Plan for Preparedness and Response

Recommendations of CDC Strategic Planning Workgroup (Excerpt)

The Centers for Disease Control and Prevention's (CDC) strategic plan is based on the following five focus areas, with each area integrating training and research:

1. Preparedness and prevention.

Detection, diagnosis, and mitigation of illness and injury caused by biological and chemical terrorism is a complex process that involves numerous partners and activities. Meeting this challenge will require special emergency preparedness in all cities and states. CDC will provide public health guidelines, support, and technical assistance to local and state public health agencies as they develop coordinated preparedness plans and response protocols. CDC will also provide self-assessment tools for terrorism preparedness, including performance standards, attack simulations, and other exercises. In addition, CDC will encourage and support applied research to develop innovative tools and strategies to prevent or mitigate illness and injury caused by biological and chemical terrorism.

2. Detection and surveillance.

Early detection is essential for ensuring a prompt response to a biological or chemical attack, including the provision of prophylactic medicines, chemical antidotes, or vaccines. CDC will integrate surveillance for illness and injury resulting from biological and chemical terrorism into the U.S. disease surveillance systems, while developing new mechanisms for detecting, evaluating, and reporting suspicious events that might represent covert terrorist acts. As part of this effort, CDC and state and local health agencies will form partnerships with frontline medical personnel in hospital emergency departments, hospital care facilities, poison control centers, and other offices to enhance detection and reporting of unexplained injuries and illnesses as part of routine surveillance mechanisms for biological and chemical terrorism.

3. Diagnosis and characterization of biological and chemical agents.

CDC and its partners will create a multilevel laboratory response network for bioterrorism. That network will link clinical labs to public health agencies in all states, districts, territories, and selected cities and counties and high-tech facilities that can analyze biological agents. As part of this effort, CDC will transfer diagnostic technology to state health laboratories and others that will perform initial testing. CDC will also create an in-house rapid-response and advanced technology laboratory. The laboratory will provide around-the-clock diagnostic confirmatory and reference support for terrorism response teams. The network will include regional chemical laboratories for diagnosing human exposure to chemical agents and provide links with other departments (e.g., the U.S. Environmental Protection Agency, which is responsible for environmental sampling).

4. Response.

A comprehensive public health response to a biological or chemical terrorist event involves epidemiologic investigation, medical treatment, and prophylaxis for affected persons, and the initiation of disease prevention or environmental decontamination measures. CDC will assist state and local health agencies in developing resources and expertise for investigating unusual events and unexplained illnesses. In the event of a confirmed terrorist attack, CDC will coordinate with other federal agencies in accord with Presidential Decision Directive (PDD) 39. PDD 39 designates the Federal Bureau of Investigation as the lead agency for the crisis plan and charges the Federal Emergency Management Agency with ensuring that the federal response management is adequate to respond to the consequences of terrorism. If requested by a state health agency, CDC will deploy response teams to investigate unexplained or suspicious illnesses or unusual etiologic agents and provide on-site consultation regarding medical management and disease control. To ensure the availability, procurement, and delivery of medical supplies, devices, and equipment that might be needed to respond to terrorist-caused illness or injury, CDC will maintain a national pharmaceutical stockpile.

5. Communication systems.

U.S. preparedness to mitigate the public health consequences of biological and chemical terrorism depends on the coordinated activities of well-trained health care and public health personnel throughout the United States who have access to up-to-the-minute emergency information. Effective communication with the public through the news media also will be essential to limit terrorists' ability to induce public panic and disrupt daily life. During the next five years, CDC will work with state and local health agencies to develop:

- high-tech communication system that will support disease surveillance;
- rapid notification and information exchange regarding disease outbreaks that are possibly related to bioterrorism;
- dissemination of diagnostic results and emergency health information;
- coordination of emergency response activities.

Through this network and similar mechanisms, CDC will provide terrorism-related training to epidemiologists and laboratorians, emergency responders, emergency department personnel, and other frontline health care providers and health and safety personnel.

Recommendations

Implementing CDC's strategic preparedness and response plan by 2004 will ensure the following outcomes:

- U.S. public health agencies and health care providers will be prepared to mitigate illness and injuries that result from acts of biological and chemical terrorism.
- Public health surveillance for infectious diseases and injuries — including events that might indicate terrorist activity — will be timely and complete, and reporting of suspected terrorist events will be integrated with the evolving, comprehensive networks of the national public health surveillance system.
- The national laboratory response network for bioterrorism will be extended to include facilities in all 50 states. The network will include CDC's environmental health laboratory for chemical terrorism and four regional facilities.
- State and federal public health departments will be equipped with high-tech tools for rapid epidemiological investigation and control of suspected or confirmed acts of biological or chemical terrorism, and a designated stock of terrorism-related medical supplies will be available through a national pharmaceutical stockpile.
- A cadre of well-trained health care and public health workers will be available in every state. Their terrorism-related activities will be coordinated through a rapid and efficient communication system that links U.S. public health agencies and their partners.

Conclusion

Recent threats and use of biological and chemical agents against civilians have exposed U.S. vulnerability and highlighted the need to enhance our capacity to detect and control terrorist acts. The United States must be protected from an extensive range of critical and biological chemical agents, including some that have been developed and stockpiled for military use. Even without threat of war, investment in national defense ensures preparedness and acts as a deterrent against hostile acts. Similarly, investment in the public health system provides the best civil defense against bioterrorism. Tools developed in response to terrorist threats serve a dual purpose. They help detect rare or unusual disease outbreaks and industrial injuries that might resemble terrorist events in their unpredictability and ability to cause mass casualties (e.g., a pandemic influenza outbreak or a large-scale chemical spill). Terrorism-preparedness activities described in CDC's plan, including the development of a public health communication infrastructure, a multilevel network of diagnostic laboratories, and an integrated disease surveillance system, will improve our ability to rapidly investigate and control public health threats that emerge in the 21st century.

Source: Centers for Disease Control and Prevention, Atlanta.