AMERICAN HEALTH CONSULTANTS®

ED Management®

The monthly update on Emergency Department Management

Vol. 14, No. 5

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MAY 2002

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Finally, an APC code for observation: Now find out the rules for getting paid

Experts predict closed ED observation units will reopen

A 45-year-old woman comes to your ED with nausea and shortness of breath, with a history of high cholesterol. Her cardiac markers and electrocardiogram (ECG) are normal. Do you discharge or admit?

In this case, the woman was sent to an ED observation unit. Three hours later, she began having chest pain, and a second set of enzymes and an ECG revealed a myocardial infarction, recalls **Sandra Sieck**, RN, director of cardiovascular development at Providence Hospital in Mobile, AL.

In the past, the patient would have been discharged with a possible return admission within 72 hours, or admitted without a confirmed diagnosis, says Sieck. New reimbursement for ED observation gives you a "third door" option for patients, she reports.

As of April 1, you're reimbursed by the Centers for Medicare & Medicaid Services (CMS) for observing patients with chest pain, asthma, and congestive heart failure in the ED, due to a new ambulatory payment classification code (APC 0339). **(See resource box for information on how to obtain a copy of the complete CMS ruling, p. 51.)**

The new APC code has a payment rate of $351, and it will be a major financial boost if you provide observation services for Medicare patients, according to **Michael A. Ross**, MD, FACEP, director of the emergency observation unit and chest pain center at William Beaumont Hospital in Royal Oak, MI.

"The amount that is paid for this observation APC is greater than what is paid for any of the emergency visit APCs, and it is in addition to those," he explains.

Executive Summary

A new ambulatory payment classification code was created for observation, with a payment rate of $351.

- Three diagnoses qualify for reimbursement: congestive heart failure, chest pain, and asthma.
- Active physician involvement in assessment and writing orders is required.
- Nurses should document the time when physician orders were started.

This is appropriate, because more time and nursing care is required for observation patients, adds Ross. **(See related story on what to tell your administrator about the new APC code, p. 51.)**

Some ED observation units closed after APCs were implemented in April 2000, because there was no separate reimbursement. But that likely will change, according to Ross. *(For more information on this topic, see "APCs have disturbing impact on emergency observation services" in* ***ED Management,*** *May 2001, p. 49.)*

"Since the new APC code was announced, the number of calls I have received about ED observation has quadrupled," he reports. "I have also seen several EDs open new units in the last six months."

Some patients still left out

Some ED managers argue that CMS didn't go far enough, because many patients still are not covered.

"CMS first offered no separate reimbursement and are now giving it back only for 20% of patients," argues **Louis Graff**, MD, FACEP, FACP, associate chief of emergency medicine at New Britain (CT) General Hospital.

He points to the following conditions that are not covered under the new APC code: dehydration, abdominal pain, syncope, gastrointestinal bleeding, atrial fibrillation, and seizures.

"If you are observing a patient with a condition other than chest pain, asthma, or congestive heart failure, you won't be reimbursed," he says.

To be reimbursed for any patient observed in the ED, you must follow specific criteria required by CMS, as follows:

• An ED visit (APC 0610, 0611, or 0612) or a clinic visit (APC 0600, 0601, or 0602) must be billed in conjunction with each bill for observation services.

If you don't have a billing code for an ED visit or clinic visit, you will fail the billing audit by CMS and won't be reimbursed for observation, says Graff.

"There are specific CPT billing codes for the three conditions, and you need to be familiar with them," he adds.

• Observation care must be billed hourly for a minimum of eight hours up to a maximum of 48 hours.

Ross notes that most patients do not spend more than 12-15 hours in an observation unit. "If a patient's length of stay is beyond that, you may be losing money, or at least not maximizing payment," he says. "So it's in your best interest to do everything possible to meet that benchmark."

He notes that the patient's stay in ED observation isn't counted from when the physician writes the orders, because that is a physician service and not a hospital service. "The clock starts when the nurse *acts* on the physician orders," he explains. Therefore, it's important that the ED nurse documents that action in a clearly identifiable way, says Ross.

"CMS does not specify the setting observation must take place in," he notes. "If the physician wrote the orders in the ED, the nurse could start the orders there, before the patient actually is brought to the observation bed."

It's also important for physicians to document the time they discharged the patient from observation, because that is when the "clock" ends, adds Ross.

• The patient must be under the care of a physician during the period of observation, as documented in the medical record by admission, discharge, and other appropriate progress notes that are timed, written, and signed by the physician.

Sources

For more information about reimbursement for observation, contact:

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COMING IN FUTURE MONTHS

- Comply with new patient confidentiality laws
- Reduce liability risks of sexual assault victims
- Innovative ways to use ancillary staff
- Update on nurse staffing ratios

CMS requires in-person physician involvement for ordering observation, assessing, and writing orders and admission/discharge notes, says Ross. He gives the following examples of "bad observation" in CMS' view:

— prolonged ED visits billed as observation;

— patients discharged but awaiting a ride home, to meet the eight-hour rule;

— a patient in a holding pattern who is not being actively managed.

"These are examples of the type of service they are trying to steer away from," says Ross. "They want clear documentation of very aggressive physician involvement. For that kind of service, they are willing to unbundle observation."

• The medical record must include documentation that the physician used risk stratification criteria.

You must use specific criteria to support the use of ED observation, advises Ross. "You need a written policy for how the service will operate in general, and also written policies for each of the specific conditions you will be managing," he says. **(See Observation Unit Operational Guideline and guidelines for ED observation of asthma, congestive heart failure, and chest pain inserted in this issue.)**

• The physician must write admission and discharge notes in the medical record.

Ross notes that the following documentation is required for ED observation patients:

— the initial history, physical, and medical decision-making done in the ED;

— progress notes;

— a final discharge summary including the clinical course in the unit, final examination, medical decision-making, and discharge instructions.

"This allows the ED physicians to bill the 'observation' professional CPT codes instead of the 'emergency' codes," says Ross. "The advantage is that the observation CPT codes also pay for the work of discharging the patient, whereas the emergency codes do not."

• With regard to direct admissions from physician offices, separate payment for observation will not be made unless a physician is present to order the initiation of observation services and to monitor the patient as clinically appropriate.

When a patient is admitted directly from a physician's office, there is no separate payment for observation, says Ross.

"CMS is making it crystal clear that payment for that type of observation occurs, but it's a bundled payment," says Ross. Instead, the patient could be sent from the physician's office to the ED where initial evaluation and management occurs, Ross suggests. "In many cases, patients may actually meet inpatient criteria," he says. "If not, they still can be observed." ■

Resources

The Centers for Medicare & Medicaid Services final rule, which contains information about the new ambulatory payment classification code created for ED observation, is *Medicare Program; Correction of Certain Calendar Year 2002 Payment Rates Under the Hospital Outpatient Prospective Payment System and the Pro Rata Reduction on Transitional Pass-Through Payments; Correction of Technical and Typographical Errors*. The final rule was published in the *Federal Register* on Nov. 30, 2001, and an amendment was published March 1, 2002.

To order a copy, contact New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Specify the date of the issue requested and enclose a check or money order payable to the Superintendent of Documents, or your Visa or Master Card number and expiration date. Credit card orders can also be placed by calling the order desk at (202) 512-1800 or by faxing to (202) 512-2250. The cost for each copy is $10. The *Federal Register* is available at many public and academic libraries. It is also available via GPO Access, a service of the U.S. Government Printing Office. The web site address is: www.access.gpo.gov/nara/index.html.

Share this good news with your administrator

The new ambulatory patient classification (APC) code for ED observation presents an exciting opportunity for better outcomes, both clinical and financial, according to **Sandra Sieck**, RN, director of cardiovascular development at Providence Hospital in Mobile, AL.

"Show your hospital CEO that this is a win-win situation for patients, hospitals, ED physicians, and cardiologists," she urges. "Finally, hospitals have a financial incentive for ED observation."

Here are some key points to share with your administrator:

• There will be a boost in revenue.

The new APC code will have a significant impact at William Beaumont Hospital in Royal Oak, MI, according to **Michael A. Ross**, MD, FACEP, director of the emergency observation unit and chest pain center.

"With the introduction of APCs, we were not paid in any identifiable manner for a third of the patients we observed," he says. "Now we are paid for those cases, in a way that I think is fair and equitable."

The ED observes approximately 7% of its total census, reports Ross. "We have a very high acuity and avoid

admitting 80% of the patients we observe," he says.

He reports that of patients older than 65 observed in the ED over the past five years, 34% had chest pain, asthma, or congestive heart failure, the three covered conditions under the new APC.[1]

Ross says the ED observation service was "hanging by a thread" after the implementation of APCs in April 2000. "If the additional payment had not been given, we might have had no choice but to close the unit and admit everybody," he says.

Ross points to another financial benefit of ED observation. "At our facility, we found that one observation bed effectively opened between 2.35 and 3.15 inpatient beds by providing accelerated care," he says.[2,3]

The hospital desperately needed the additional capacity because of overcrowding, he explains. "That factored into our decision to continue ED observation," says Ross.

Sieck recommends handing your administrator a single-page flowchart that shows how to optimize clinical and financial outcomes. "The chart demonstrates patient flow from triage through discharge from the ED, admission, or observation, and shows you how to receive the additional reimbursement from the new APC code," she says. **(See Acute Coronary Syndrome Billing Guidelines, inserted in this issue.)**

• There are better clinical outcomes.

The new APC code gives you a chance to provide better care without being hindered by lack of reimbursement, says Sieck.

"We are now able to provide the quality of care that the community deserves," she says. "We can find out whether the patient had a heart attack, is going to have a heart attack, and educate them about risk factors for a heart attack, all in the ED."

She points to research showing that patients with sporadic chest pain take over two days to consider coming to the ED.[4] "By the time they have compounding symptoms, there is a mean time of 2.5 hours before they enter the hospital," says Sieck.

She points to an ED observation unit as "an environment of easy access" that can reduce delays for patients seeking care.

• Cardiologists will benefit from ED observation.

According to CMS, cardiologists had a 12% reduction in reimbursement last year and therefore have an incentive to pick up more patient volume, says Sieck.

"They can do this through the ED observation unit," she urges. "More than half of ED patients with chest pain are unassigned to a physician."

The ED physician can call for a consultant from a number of physicians, Sieck explains. "If you would like the referral, play ball with the ED," she says.

• You can improve patient throughput in your ED.

Sieck gives examples of two typical ED patients that can occupy a bed for hours: a patient with acute myocardial infarction who may be treated with thrombolytics, and a patient with non-ST segment elevation and unstable angina waiting for lab results.

"Meanwhile, a woman in your waiting room is complaining that her child was up all night with a 104 degree fever, and they have been waiting for six hours," she says.

If you create a designated area to observe the chest pain patients, you can dramatically reduce delays in your ED, according to Sieck. "You can then place the other patients in beds which were previously used by chest pain patients," she says.

References

1. Ross MA, Compton S, Wilson AG. An ED observation unit is effective for elders. *Acad Emerg Med* 2001; 8:452-453.

2. Ross MA, Wilson AG, McPherson M. The impact of an ED observation bed on inpatient bed availability. *Acad Emerg Med* 2001; 8:576.

3. Martinez E, Reilly B, Evans A, et al. The observation unit: A new interface between inpatient and outpatient care. *Am J Med* 2001; 110:274-277.

4. Goff DC, Sellers DE, McGovern PG, et al. Knowledge of heart attack symptoms in a population survey in the United States: The REACT trial. *Arch Intern Med* 1998; 158:2,329-2,338. ■

Case study: ED acts quickly after anthrax

[Editor's note: This is an ongoing series profiling EDs that have updated their disaster plans in response to the Sept. 11 terrorist attacks. If you'd like to share the changes that you've made to your disaster plan, contact Staci Kusterbeck, Editor, ED Management, 280 Nassau Road, Huntington, NY 11743. Telephone: (631) 425-9760. Fax: (631) 271-1603. E-mail: StaciKusterbeck@aol.com.]

When anthrax attacks occurred last fall, EDs nationwide were forced to revamp disaster plans to manage scores of patients who feared exposure. But for EDs in communities with documented cases of anthrax exposure, the situation was even more urgent.

"Trenton was essentially the epicenter of the first known bioterrorism incident in the U.S.," says **David Schreck**, MD, FACEP, chairman of the department of emergency medicine at Capital Health System in Trenton, NJ, which includes the Helene Fuld Medical Center and Mercer Medical Center — Trenton.

Executive Summary

After last year's anthrax attacks, EDs at Capital Health System in Trenton, NJ, had to address decontamination of large numbers of patients.

- Patients who didn't require decontamination were sent to the hospital's employee health facility so they could bypass the ED.
- Clinicians, nursing staff, educators, and paramedics were trained in the decontamination process.
- Direct communication with first responders was established with a portable scanner.

"We had to revise our policy for an incident that had never occurred before, so certain modifications were needed," he says. "But if this should ever happen again, we're ready."

Here are some changes that were made to the ED's disaster plan:

• Notification procedures were streamlined.

Contacting various individuals and agencies became of the utmost importance, according to Schreck.

"There were so many people involved in the notification process, it was incredible," he says. These included hospital administration, the state department of health, law enforcement, hazardous materials agencies, patients' families, infectious disease experts, and private physicians, he notes.

Notifications were made in a particular order and documented in a specially created log book, says **Deborah Cioffi**, RN, BSN, director of emergency services. "The information was clearly documented and shared between the infectious disease department, corporate health, and the ED," she explains. **(See story on how the data collection process was improved, p. 54.)**

• "Contingency" plans were developed.

Because the situation was constantly changing, the disaster plan was evaluated on a daily basis, says Cioffi.

"The ED spent [more than] 60 days on high alert status," she reports. "Every day, staff geared up for 'what if' scenarios to prepare for the worst."

Contingency plans included updating phone lists so staff could be contacted at a moment's notice and putting vendors on alert in case additional medications or decontamination supplies were needed.

"Our plan clearly looked at how we could accommodate 30 patients, 300 patients, or even more patients," says Cioffi. To increase the number of patients that could be managed simultaneously, an $8,000 decontamination tent was purchased for one of the EDs, she adds.

• A scanner was used to communicate directly with EMS.

Schreck now carries a portable scanner for direct communication with EMS, police, and HazMat response teams. This scanner allowed him to find out if patients are being taken to his ED or another facility, he explains.

"You are used to mobilizing your resources whenever you get calls from the dispatch unit. But in this case, there were a lot of false alarms when patients were actually sent to other hospitals," he says.

In this scenario, having direct communication with first responders ensures that you're aware of last-minute decisions, Schreck says.

"It's vitally important to know exactly who is coming to your ED," he explains. "You can provide much more efficient care that way."

• Some patients were diverted to employee health.

In many cases, patients who were worried about exposure but didn't require decontamination bypassed the ED and instead were managed at the hospital's employee health facility.

"This was extremely helpful, because it reduced the numbers of nonurgent cases in our EDs," says Cioffi.

In total, the ED managed a total of 167 patients with suspected anthrax exposure, and employee health handled about 490 suspected anthrax exposures.

"We are fortunate that they are only a block away and could handle patients who were sent by their employer for routine screening, and also the 'walking worried' who presented to the ED," says Schreck.

If patients were symptomatic, they were always seen in the ED, but they usually went to employee health otherwise, he explains. Even so, the ED treated about eight patients with suspected anthrax exposure each day for 20 straight days, and the ED decontaminated about 30 patients, Schreck reports.

• Staff members were trained in the decontamination process.

In addition to ongoing inservices given by the clinical nurse specialist, staff received training in the entire

Sources

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decontamination process from paramedics who volunteered their time, says Cioffi.

"If you don't actually use the equipment, you don't know what you're doing," she says. "Staff became familiar with setting up the decontamination tents by doing this all hours of the day and night and weekends." ■

System makes anthrax care more efficient

During the anthrax attacks, the need to improve internal communication became crystal clear at EDs in communities with confirmed cases of exposure.

With the influx of patients with suspected anthrax exposure and rising panic, it became of the utmost importance to "close the loop" on the ED visit, says **Deborah Cioffi**, RN, BSN, director of emergency services at Capital Health System in Trenton, NJ, which includes the Helene Fuld Medical Center and Mercer Medical Center — Trenton.

"We had to make sure that every patient who had lab work done got a return phone call, letting them know that everything was OK," she says. The vast majority of tests were negative, and hearing from an ED physician or nurse was key to calming panicked patients, she emphasizes. To facilitate that communication, some documentation issues had to be addressed.

"Everybody was keeping their own data, including the ED, registration, employee health, and infectious disease," reports **David Schreck**, MD, FACEP, chairman of the department of emergency medicine. "I felt there was a need for a central data collection instrument which everyone could have access to."

There were a lot of people collecting the same information, but none of it was easily accessible, he explains.

"There wasn't any one place where you could go for information about a patient," Schreck explains. "I could always walk upstairs or call someone, but there wasn't anyplace where I could just go and access it myself. You always had to go to somebody else."

The anthrax attacks revealed the importance of all types of communication during a disaster, says Schreck.

"In addition to the need for effective communication with EMS or police at the site where the problem was, there was also a need for us to communicate internally," he explains.

Schreck created an electronic medical record specifically for bioterrorism incidents. The tool features all components in the patient's medical chart, including clinical, demographic, epidemiological, and outcomes measures. "This way, you are able to keep a central log of all the vital information about the patient, with universal access for everyone involved," he says.

The tool is stored on a database, which can be accessed by various departments at different points in time, says Schreck, adding that the ED never had a chance to actually use it.

"There was a period of about four weeks when these patients just kept coming in, and we were extremely busy during that time," he explains. "I designed it in the last few days of the incident. But it is ready now, should this ever occur in the future." ■

Comply with regs for needlestick prevention

Do you evaluate and purchase safer needle devices to prevent needlesticks from occurring? Do nurses routinely give input on new devices? And do nurses help to choose which devices are used in your ED?

If you answer "no" to the above questions, you're not in compliance with regulations from the Occupational Safety and Health Administration (OSHA).[1]

A new compliance directive instructs OSHA inspection officers in enforcement of the Needlestick Safety and Prevention Act. The directive focuses on the requirement that employers select safer needle devices as they become available and involve employees in identifying and choosing those devices. **(See resource box on p. 55 to obtain a copy of the directive.)**

Here are ways to comply:

• Make it easy for nurses to give input about new devices.

At Saint Jude Medical Center in Fullerton, CA, nurses are strongly encouraged to give input about new devices.

"I tell nurses 'If you don't speak up, you may be stuck — no pun intended — with a product that you don't like,'" says **Vicki Cadwell**, RN, MS, CEN, CCRN, clinical educator for the ED.

An evaluation form is given to nurses when a new device is given a trial in the ED, says Cadwell. The ED

Executive Summary

A new compliance directive clarifies enforcement of regulations to prevent needlestick injuries.

- Involve staff in the selection of safer devices.
- Have nurses complete evaluation forms for new devices.
- Encourage nurses to ask questions about products even after the initial inservice.

managers and educators encourage nurses to complete the forms, which are sent to the employee health nurse for tabulation, she explains. **(See Needlestick Prevention Device Assessment Form and Safety IV Catheter Evaluation Form, inserted in this issue.)**

The form asks nurses to rate the inservice for the product, and rate the design in terms of comfort for both the nurse and patient. For intravenous (IV) catheters, nurses are asked to rate the product in terms of ease of insertion.

During one trial period of an IV product that nurses had selected, problems with insertion were reported on the evaluation forms. "Many nurses felt it was not sharp enough. Others felt that it did not thread easily, resulting in more discomfort for the patient and multiple sticks for many patients," says Cadwell.

The nurses' negative responses resulted in discontinuation of use of the product, says Cadwell. "We are now trialing two other IV products," she reports.

• Provide inservicing on an ongoing basis.

When a new product is put into use, the manufacturer provides the initial training, says Cadwell. "The company educators go around for several days on all shifts and inservice all the nurses in the use of the product," she says.

Each inservice includes a basic overview of the product, its safety features, and tips for successful use, says Cadwell. "They bring in the product and allow staff to practice with it as much as they need to," she explains. "Hands-on practice with immediate feedback is essential to success."

However, she notes that with the IV product that is no longer used, nurses gave the inservicing high scores. "They had no problem with the education provided. The issue was with the product itself," she says.

Cadwell addresses ongoing concerns about new products and provides education about efficient and safe use. "I try to become an expert in the use of the product, so when the company support is no longer there, I can be a resource to staff as needed," she says. "If I am unable to answer a question, I contact the company."

There have been times when the manufacturer's clinical educator has returned for additional inservicing, she adds. Cadwell stresses the importance of having inservicing available even after a product is introduced. "Nurses need to feel comfortable asking questions if they're not comfortable with a product," she says.

• Go "needleless."

Barbara Pierce, RN, MN, director of emergency services at Huntsville (AL) Hospital System, reports that the ED has switched to a "needleless" system.

"We no longer use syringes that are not protective

Sources

For more information on reducing needlestick injuries, contact:

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Resources

Below is a partial listing of resources pertaining to needlestick injury prevention:

- The Occupational Safety and Health Administration (OSHA) has issued a compliance directive on Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens (Directive Number CPL2-2.69). The Nov. 27, 2001, directive guides inspection officers in enforcing the Needlestick Safety and Prevention Act. The directive can be accessed from the OSHA web site: www.osha-slc.gov/OshDoc/Directive_data/CPL_2-2_69.html.
- A publication, *How to Prevent Needlestick Injuries: Answers to Some Important Questions,* is available free of charge. To order, contact the U.S. Department of Labor, OSHA Publications, P.O. Box 37535, Washington, DC 20013-7535. Telephone: (202) 693-1888. Fax: (202) 693-2498. On-line order form: scripts.osha-slc.gov/PHP/pubrequest/pubrequest.php
- A list of safety devices with manufacturers and product names is available at the International Health Care Worker Safety Center web site (www.people.virginia.edu/~epinet/products.html). Click on the type of device for the listing in that category. For more information, contact the International Health Care Worker Safety Center, University of Virginia Health System, Box 800764, Charlottesville, VA 22908. Telephone: (434) 924-5159. Fax: (434) 982-0821. E-mail: epinet@virginia.edu.
- Sample evaluation forms for various devices including safety syringes, IV access devices, IV medication connectors, and sharps containers for EDs are available on the Training for Development of Innovative Control Technology Project web site (www.tdict.org). Click on "Evaluation Tools," and "Safety Feature Evaluation Forms." For more information, contact the Training for Development of Innovative Control Technology Project, Trauma Foundation Building 1, Room 300, San Francisco General Hospital, 1001 Potrero Ave., San Francisco, CA 94110. E-mail: info@tdict.org.

or IV catheters without protective covers. We only use IV tubing that has ports that cannot be entered with needles," she explains. Doing this has not totally prevented needlesticks, because the ED still uses IV needles and medication needles, she acknowledges. "It has reduced the number of sticks, however," she says.

Before the ED made the switch, a vendor fair was held to demonstrate needleless products to staff and management, says Pierce. Evaluations were filled out, the top candidates brought in samples to be tried by the staff, and cost comparisons were done, she adds.

There were several training sessions held on all shifts, and ordering and swapping of inventories took place, says Pierce. "We had intended to use up the old products, but the vendors agreed to take them in exchange," she notes.

Finally, a date was set to "go live," recalls Pierce. "We picked a statistically slower day of the week for the ED to start this, instead of a Monday, weekend, or holiday," she says.

On that day, all the old products were removed, and the new products used in their place. "Adapters were available to make sure that there were no problems with the pre-filled drug syringes," she says. "We also coordinated the swap with our prehospital providers, who also went needleless at the same time."

The biggest problem area was hemolysis from drawing blood using the new syringes and supplies, says Pierce. She explains that previously, nurses were drawing blood from a port with a syringe, and had to switch to using a different type of vacutainer adaptor.

"We had to work through that with the vendor," she says. "Our hemolysis rate is much improved with some simple technique changes."

Reference

1. Occupational Safety and Health Administration. Occupational exposure to bloodborne pathogens; needlesticks and other sharps injuries; final rule. *Federal Register* 2001; 66 (12):5,317-5,325. ■

EMTALA Q & A

[Editor's Note: This column is part of an ongoing series to address reader questions about the Emergency Medical Treatment and Labor Act (EMTALA). If you have a question you'd like answered, contact Staci Kusterbeck, Editor, ED Management, 280 Nassau Road, Huntington, NY 11743. Telephone: (631) 425-9760. Fax: (631) 271-1603. E-mail: StaciKusterbeck@aol.com.]

Question: I'm confused about the new policy statement from the Baltimore-based Centers for Medicare & Medicaid Services (CMS) which implies that disaster plans for transferring patients will supercede EMTALA. My question is, whose definition of a disaster? Many hospitals these days use a modified disaster plan when the hospital or the ED is overloaded. For small hospitals, a handful of patients may activate the disaster response. For others it may be 10, 20, or 30 patients. Who decides what definition will be used?

Answer: According to **Stephen Frew**, JD, risk management consultant at Physicians Insurance Company of Wisconsin, based in Loves Park, IL, the CMS policy statement has resulted in significant confusion. "The reader's point is well-taken and reflects my own concerns with the policy statement," he acknowledges. "I do not believe that it affirmatively grants any dispensations."

Frew gives the following summation of the CMS statement: Based on a community disaster plan, under some circumstances, it may be permissible to refer patients away to a central bioclearance location. "That is a long way from saying that EMTALA does not apply to disasters," he warns.

It will be CMS officials who determine whether a situation is a disaster, probably on a case-by-case basis, says Frew. "They will probably look at the formal community disaster plan, because that is the only one mentioned in the release," he says.

The statement does not address issues of documentation, transfer procedures, medical screening standards, advance acceptance, duty to accept, or any other EMTALA specific issues, and does not apply to any situation other than bioterrorism, adds Frew.

A hospital may not rely on this statement to create its own internal policies in any way, adds Frew. "At best, if there is a community wide disaster plan, the hospital may be at less risk of EMTALA violations if they are operating under that plan," he says. "It is by no means an assurance."

Question: A computed tomography (CT) scan or other specialized examination is often necessary for patients at our satellite ED, which is 25 miles from our main campus, to determine if an emergency medical condition exists. These patients come by ambulance to the main campus to have this testing done. Must the patient be transferred over only for the specialized exam, and then officially transferred to the ED only if there are positive findings?

Answer: According to Frew, if you provide necessary pre-transfer evaluation and stabilization within your capability, and the main campus is willing to accept the patient, then with proper EMTALA documentation, you can transfer the patient to the main campus, rather than just transferring the patient for testing.

"With a 25-mile drive and limited resources back at the rural facility, this seems in the best interest of the patient," he says. ■

Sources

For more information about EMTALA, contact:

- **Stephen Frew**, JD, Risk Management Consultant, Physicians Insurance Company of Wisconsin, P.O. Box 15665, Loves Park, IL 61132. Telephone: (815) 654-2123. Fax: (815) 654-2162. E-mail: sfrew@medlaw. com. Web: www.medlaw.com.

Report gives injury statistics from 9/11

Inhalation injuries were the most common medical conditions seen in five New York City EDs in the first 48 hours after the Sept. 11 attack on the World Trade Center, according to a new report from the Atlanta-based Centers for Disease Control and Prevention. **(For information on how to access the report, see resource box, p. 58.)**

Here are key findings:

• More than half of the survivors were treated for inhalation injuries, eye injuries, or both, without other injuries. Smoke, dust, debris, or fumes caused most of these injuries.

• Rescue workers, firefighters, police officers, emergency medical services, and other disaster-related personnel made up 29% of patients treated directly as a result of the attacks. Rescue workers sustained significantly more eye injuries than other survivors, but fewer burns.

• Among 790 injured survivors, EDs treated and released 606 survivors, and 139 were hospitalized for further management.

"I am not surprised about the numbers of inhalation injuries, with the collapse of the huge towers and the amount of debris suspended in the air," says **Bettina Stopford**, RN, chair of the national Weapons of Mass Destruction (WMD) work group for the Des Plaines, IL-based Emergency Nurses Association. "Rescue workers lived on the pile for days on end and were continually exposed," Stopford says.

She adds that the inhalation injury rate is reminiscent of a large-scale fire response. "Unfortunately, most victims in the collapse did not survive, so the statistics of victim exposure would be low," she says.

Injuries sustained by rescue workers included exhaustion, temperature issues, puncture wounds, sprains, strains, fractures, respiratory issues from the dust, and eye injuries from the dust and debris, says Stopford.

"The injured rescue workers sought brief periods of medical care and were primarily interested in being returned as quickly as possible to work," she notes. "This didn't always allow for definitive care of an injury, but immediate care only."

Here are three recommendations of the report:

• improving post-disaster surveillance *before* disasters occur, with use of electronic data to speed injury reporting;

• standardizing patient record keeping to improve of point-of-care data collection and public health reporting;

• improving ED record keeping and reporting systems to track disaster-related health effects.

> "I am not surprised about the numbers of inhalation injuries, with the collapse of the huge towers and the amount of debris suspended in the air. Rescue workers lived on the pile for days on end and were continually exposed."
>
> — Bettina Stopford, RN
> National Weapons of Mass Destruction Work Group
> Emergency Nurses Association

Stopford notes that this area was in a unique situation of having an intensive emergency management plan. "They were able to draw on local assets rapidly, which is where the impact will always be, regardless of how many federal assets are available."

Stopford says the report's findings show that federal assets must be quickly mobilized in a large-scale disaster, so community responders can focus on maintaining the medical system and access local supplies.

"Perhaps staging federal caches of supplies in strategic areas of the country could be considered," she suggests.

Stopford says that standard, "nonexotic" supplies seemed to be most in demand, such as eye and respiratory protection and basic medical equipment, as opposed to WMD antidotes, she says. "That may have changed if a biological, chemical, or radiological contaminant had been introduced to the scene," she adds.

The best strategy is to have a high index of suspicion for a WMD attack and be able to identify it early,

Resources

The Centers of Disease Control and Prevention (CDC) report, *Rapid Assessment of Injuries Among Survivors of the Terrorist Attack on the World Trade Center — New York City, September 2001,* can be accessed free of charge on the CDC web site: www.cdc.gov/mmwr/preview/mmwrhtml/mm5101a1.htm.

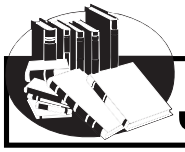
Paper copies (Item 869-045-00037-3) are available for $2 from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250. Telephone: (866) 512-1800 or (202) 512-1800. Fax: (202) 512-2250. E-mail: orders@gpo.gov.

Sources

For more information about the CDC report, contact:

- **Bettina M. Stopford**, RN, CNE, Denver Health Medical Center, 777 Bannock St., MC0261, Denver, CO 80204. Telephone: (303) 436-3431. Fax: (303) 436-6213. E-mail: bettina.stopford@dhha.org.

says Stopford. "Appropriate assets will need to be moved in quickly, using a pre-existing plan to disseminate the needed supplies," she concludes. ■



JOURNAL REVIEWS

Keshavarz R, Merchant RC, McGreal, J, et al**. Emergency contraception provision: A survey of emergency department practitioners.** *Acad Emerg Med* 2002; 9:69-74.

Although most ED practitioners were willing to offer emergency contraception (EC), physicians were less willing to prescribe it for exposures other than sexual assault, says this study from the Mount Sinai School of Medicine in New York City. A survey completed by 600 ED physicians gave nine scenarios and asked whether the respondent would offer EC for each.

Here are key findings:

• Given the scenario of a patient sexually assaulted by unknown assailants, 88% of 600 respondents said they were willing to offer EC.

• More physicians said they would offer EC if the assailant was known to be HIV-infected (90%) than if the assailant had low HIV risk factors (79%).

• More physicians said they would offer EC if a patient was sexual assaulted (88%) than if the patient had consensual sex (73%)

The researchers note that a higher percentage of female respondents were willing to offer EC in all the scenarios presented. "It is likely that female practitioners are more concerned than males about unwanted pregnancies and are more cognizant of its implications," they write.

They add that since practitioner offering of EC varied depending on whether the patient was sexually assaulted and HIV risk factors, the decision-making process of the physicians may be influenced by religious or ethical beliefs.

"Since the likelihood of pregnancy was the same in these scenarios, these results suggest that nonmedical influences such as the nature of the sexual contact and characteristics of the sexual partner affected the offering of EC," they conclude. "We suggest that practitioners draw from this study and re-examine the clinical indications for prescribing EC."

Mandavia DP, Hoffner RJ, Mahaney K, et al. **Bedside echocardiography by emergency physicians.** *Ann Emerg Med* 2001; 38:377-382.

According to this study from the University of Southern California Medical Center in Los Angeles, echocardiography performed at the bedside is reliable in evaluating a patient for pericardial effusions. Of the 515 patients at high risk for pericardial effusion who were enrolled in the study, 103 patients were diagnosed with pericardial effusion. ED physicians had an overall accuracy of 97.5%.

ED physicians can perform focused bedside echocardiography reliably to detect pericardial effusions for patients at high risk, conclude the researchers.

"Emergency training programs and departments should incorporate this important diagnostic tool into their clinical practice," they argue. ■

CE/CME questions

7. Which patient would qualify for separate reimbursement under the ambulatory patient classification code for observation?
   A. a patient with chest pain who was observed for 15 hours
   B. an asthma patient who waited in the ED for nine hours
   C. a congestive heart failure patient admitted directly from a primary care physician's office
   D. a patient with gastrointestinal bleeding

8. Which describes an action taken by the (EDs) in Trenton, NJ, after anthrax attacks occurred?
   A. All patients with suspected exposure were managed in the ED.
   B. Patients who didn't require decontamination were sent to employee health instead of the ED.
   C. Decontamination was performed at the employee health center.
   D. Only paramedics trained staff in decontamination procedures.

9. Which is required by the Needlestick Safety and Prevention Act?
   A. conversion to a needleless system
   B. forming a committee to purchase safer needle devices
   C. involving staff in selecting safer needle devices
   D. written plans for strategies to prevent injuries

ED Management® (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 Management®**, P.O. Box 740059, Atlanta, GA 30374-9815.

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Statement of financial disclosure: To reveal any potential bias in this publication, and in accordance with the Accreditation Council for Continuing Medical Education guidelines, we disclose that Dr. Auer (editorial advisory board member) is a stockholder in Lynx Medical Systems; Dr. Bukata (advisory board member) is president of the Center for Medical Education and is the developer of EDITS software; Dr. Mayer (advisory board member) is a stockholder in Emergency Physicians of Northern Virginia Ltd. and Patient Care and ED Survival Skills Ltd.; Dr. Yeh (advisory board member) serves as a consultant to Dynamics Resource Group, a spokesperson for Medic Alert, and a member of the board of directors for Vital Solutions and MassPRO.

THOMSON
AMERICAN HEALTH CONSULTANTS

10. Which is true regarding EMTALA compliance during a disaster, according to Stephen Frew, JD, risk manager at Physicians Insurance Company of Wisconsin, based in Loves Park, IL?
    A. EMTALA does not apply during disasters.
    B. If a bioterrorism attack occurs, patients may be transferred without documentation.
    C. If the hospital determines that a disaster has occurred, transfer documentation is not required.
    D. In some cases, patients may be referred to a central location after a bioterrorism attack.

CE/CME objectives

For more information on the CE/CME program, contact Customer Service at (800) 688-2421 or customerservice@ahcpub.com.

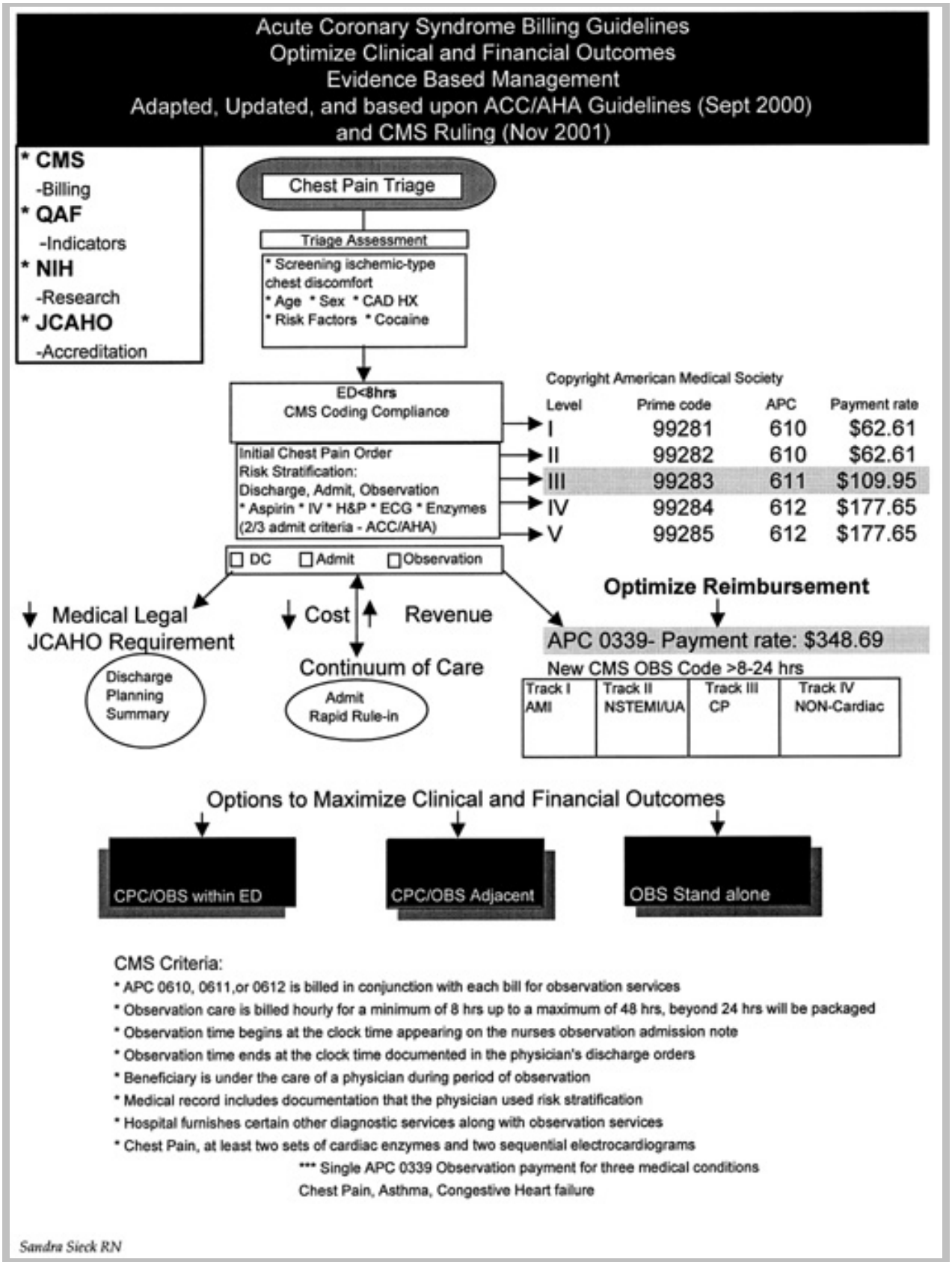
After reading this issue of *ED Management*, the continuing education participant should be able to:

1. Describe a patient who would qualify for reimbursement under the new APC code for observation. (See *"Finally, an APC code for observation: Now find out the rules for getting paid."*)
2. Name one action taken by EDs in Trenton, NJ after the anthrax attacks. (See *"Case Study: ED acts quickly after anthrax."*)
3. Identify one requirement of the Needlestick Prevention Act. (See *"Comply with regs for needlestick prevention."*)
4. Explain how EMTALA requirements may differ during a disaster. (*See "EMTALA Q&A."*).
5. Name one recommendation of the CDC report on injuries from the terrorist attack on the World Trade Center. (See *"Report gives injury statistics from 9/11."*)
6. Identify a circumstance that made it more likely for physicians to offer emergency contraception. (See *"Journal Reviews."*) ■

11. Which is recommended for disaster planning in a report from the Centers for Disease Control and Prevention?
    A. emphasizing inhalation injuries during clinical inservicing
    B. educating the community to wait for EMS if a disaster occurs
    C. using electronic data to improve surveillance of injuries
    D. increased stockpiling of antidotes

12. Which is true regarding willingness of ED physicians to prescribe emergency contraception (EC), according to a study published in *Academic Emergency Medicine?*
    A. Most ED physicians were not willing to offer EC for any situation.
    B. Most ED physicians were willing to offer EC.
    C. More than half of ED physicians were unwilling to offer EC unless a patient was sexually assaulted.
    D. The assailant's HIV status had no impact on willingness to offer EC.

Acute Coronary Syndrome Billing Guidelines



Source: Sandra Sieck, RN, director of cardiovascular development, Providence Hospital, Mobile, AL.

Observation Unit Operational Guideline

Mission Statement
An overview of the goals and purpose of the unit. It is best to review the hospitals' yearly goal and overall mission statement when drafting this. The two should be complimentary.

Administrative issues
- Unit location and operation
- Administrative structure — Hospital, nursing, and physician leadership should be defined
- "Gatekeeping" and accountability for patients in the unit
- Guidelines adherence

Observation Eligibility and Process
Indications for observation
- Focused goal of patient care — Diagnostic evaluation, short-term treatment, psychosocial, and post procedural.
- Limited intensity of service
- Limited severity of illness
- Clinical condition appropriate for observation — It is useful to append the unit guideline with a list of all conditions that seem reasonable for observation as a frame of reference for physicians and nursing.

Contraindications to observation
- High severity of illness
- High intensity of service
- Patients requiring admission, unless "holds" are included in unit, or patients without a focused goal of care.
- Length of stay — exclusion based upon projected minimum and maximum length of stay in the unit
- Limitation parameters to consider:
- Pediatric limitations (i.e., minimal age cut off)
- Obstetric limitations (i.e., obstetrical conditions or gestational age)

Patient flow — This should detail the following:
- Emergency Department care — What the minimal required interventions or duration of management should be.
- Private physician notification process
- Observation orders and documents initiated in the Emergency Department
- Generation of an Observation Unit chart
- Nursing report
- Transport to the Observation Unit
- Observation Unit care — Nursing and physician intake management, ongoing care/documentation
- Final disposition process

Staffing — 24 hour a day staffing pattern

Physician
- Sending Emergency Department physician (if different than Observation Unit physician) responsibilities
- Observation Unit Emergency Department physician — detail the following:
  1. Who is responsible during all shifts.
  2. How is care transferred from physician to physician (i.e. at shift change, or when a patient is transferred to the unit)
  3. What is the role and responsibilities of consultants and private attendings. How is communication with them documented.
- Physician Assistants — Responsibilities, and reporting to the Emergency Department physician

(over)

Nursing
- Nurse to patient ratio used (i.e., 4:1, 6:1, monitored vs. nonmonitored)
- Job requirement (i.e., training or experience required)
- Basic duties
- Responsibilities for other areas covered, if any

Ancillary support used — such as dedicated technicians, clerks, respiratory therapists, and pharmacy support.

Documentation
- General
- Physician — detail if dictated or written
- Intake assessment — two options
  1. An addendum dictation
  2. A history, physical, course in the Emergency Department differential diagnosis, and plan
- Progress notes — dictated or written, how often, etc.
- Final documentation — course in the unit and disposition
- Consultants — dictated vs. written notes, communication with Emergency Department physician
- Nursing, respiratory, ancillary staff

Observation Unit Equipment and Patient Monitoring Procedure

"Hold" Patient Management
- Eligibility
- Physician/nursing responsibility
- Tracking holds

Unit performance monitors —

Quality Assurance
- General — relation to existing Emergency Department quality assurance monitors, reporting, and continuous quality improvement goals
- Specific quality assurance/continuous quality improvement monitors to be conducted

Utilization Review
- General goals of utilization review monitors and reporting mechanism
- Specific monitors — Volume, admissions, timeliness of care

Source: William Beaumont Hospital, Royal Oak, MI.

ASTHMA

Transfer Criteria
- Acceptable vital signs
- Intermediate response to therapy — improving but still wheezing
- Peak flow 40-70% of predicted (if reliable)
- Fair to good air exchange
- Alert and oriented
- Patients should receive at least two nebulized bronchodilator treatments and steroids prior to transfer to Observation Unit

Exclusion Criteria
- Unstable vital signs or clinical condition
- Poor response to therapy
- Elevated partial pressure of carbon dioxide (if done)
- Pulse oximetry <90 on room air after initial treatment
- Peak Flow <40% predicted value after initial treatment (if reliable)
- Persistent use of accessory muscles, respiratory rate >40 after initial treatment
- Pneumonia
- Lethargy
- Toxic theophylline level
- New electrocardiogram changes

Potential Intervention
- Nebulized bronchodilator therapy
- Systemic steroids
- Chest X-ray
- Pulse oximetry, arterial blood gases
- Frequent reassessment
- Oxygen
- Telemetry Monitor System monitoring as needed

Disposition

Home —
- Acceptable vital signs
- Resolution of bronchospasm or return to baseline status
- Peak flow >70% predicted
- Pulse oximetry >94% on room air

Hospital —
- Progressive deterioration in status
- Failure to resolve bronchospasm within 18 hours
- Co-existent pneumonia
- Carbon dioxide Retention
- Persistent peak flow <70% of predicted (if reliable)
- Unstable vital signs
- Pulse oximetry <90% on room air

Estimated Time in Unit: <18 hours

2/27/98

Source: William Beaumont Hospital, Royal Oak, MI.

CONGESTIVE HEART FAILURE

Transfer criteria

- Previous history of congestive heart failure
- Acceptable vital signs: Blood pressure >100/60, Respiration rate <32, Pulse <130
- Pulse-oximetry >80 on room air, correctable to >90 on oxygen
- High likelihood of correction to baseline status within 24 hours — consider discussion with private medical doctor

Exclusion criteria

- Unstable vital signs
- New onset congestive heart failure
- Associated unstable angina, chronic obstructive pulmonary disease, myocardial infarction, sepsis, pneumonia, new murmur, confusion
- Electrocardiogram changes
- Severe anemia (Hemoglobin <8)
- New arrhythmia
- Respiratory failure, intubation

Potential intervention

- Telemetry Monitor System monitoring
- Oxygen per respiratory guidelines
- Serial exams, vital signs, electrocardiograms, cardiac enzymes, and pulse-ox checks
- Medication — diuretics, vasodilators, ACE Inhibitors, inotropics (Consider stopping medications with negative inotropic effects)

Disposition

Home — Acceptable vital signs

- Return to baseline status
- Pulse oximetry >90 on room air unless previously on home oxygen
- Electrocardiogram unchanged from baseline
- No chest pain or dyspneu at rest

Hospital — Worsening respiratory status

- New electrocardiogram changes, arrhythmia, or ischemia
- Persistent hypoxia, rales, dyspneu
- Failure to return to baseline status within 18-hour timeframe

2/27/98

Source: William Beaumont Hospital, Royal Oak, MI.

CHEST PAIN OBSERVATION

Transfer criteria:

- Clinical suspicion that risk of myocardial infarction is **less than 6%** (see Goldman algorithm).[1]
- Chest discomfort is potentially cardiac ischemia (Based on risk factors / discomfort)
- Normal electrocardiogram, or concurrence with cardiologist/private medical doctor
- Acceptable vital signs
- No history of known coronary artery disease, or concurrence with cardiologist/private medical doctor

Exclusion criteria:

- Clinical suspicion that risk of myocardial infarction **is more than 6%** (see Goldman algorithm)
- Electrocardiogram which shows evidence of myocardial infarction or clearly acute injury/ischemia pattern
- Unstable vital signs
- Clear unstable angina by history (i.e. known coronary artery disease, symptoms like prior angina/ myocardial infarction)
- Chest pain is clearly not cardiac ischemia
- Private attending chooses inpatient admission

INTERVENTIONS

Initial emergency department intervention:

- IV (heplock?), oxygen, Telemetry Monitor System hook up, initial electrocardiogram, chest X-ray, NO caffeine.
- If not contraindicated, give aspirin 325 mg by mouth, (consider Maalox 30 cc by mouth).
- Appropriate nitrates (physician discretion) — Nitroglycerine SL prn, Nitro Paste, or Nitrobid.
- Send initial biomarker(s) — Creatinine phosphokinase (CPK-MB), possibly Myoglobin or Troponini.
- Emergency attending physician speaks with primary medical doctor or chest pain center cardiologist, choose stress test option.
- If appropriate, Resting Cardiolyte Injection. Scan if feasible (i.e. time of day).

Emergency department observation unit interventions:

- Call lab to add myoglobin to initial blood drawn in Emergency Center
- Continue IV (heplock), oxygen, Telemetry Monitor System (ST segment) Monitor, Nitrates, No caffeine.
- Send patient to obtain initial resting scan if ordered.
- Perform electrocardiogram based on clinical suspicion or electrocardiogram “ST segment” monitor alert. Show Emergency Attending Physician/Physician Assistant stat.
- Protocol = Time 0- and 4-hour electrocardiogram, MB isoform creatine kinase enzyme (CK-MB), and Myoglobin

    If all tests are negative => appropriate stress test
    If abnormal CK-MB or Electrocardiogram => admit
        IF (a) No stress test planned,
        (b) ONLY myoglobin is elevated,
        (c) 0 to 4hr CK-MB /Myoglobin doubled, or
        (d) four-hour tests are missed:

    Time eight-hour Electrocardiogram, CK-MB, Troponin T
        If all tests are negative => appropriate stress test
        If abnormal CK-MB, Troponin T, or Electrocardiogram => admit

(over)

Disposition

Home —

- Acceptable vital signs
- Normal biomarkers
- Unremarkable stress test
- No significant electrocardiogram changes

Hospital —

- Unstable vital signs
- Positive biomarker
- Electrocardiogram changes
- Significant stress test abnormality
- Emergency attending physician/private medical doctor clinical discretion

1/17/01

Reference

1. Goldman L. Prediction of the need for intensive care in patients who come to the emergency department with acute chest pain. *N Engl J Med* 1996; 334:1,498-1,504.

Source: William Beaumont Hospital, Royal Oak, MI.

Sharps-Safety and Needlestick-Prevention Device Assessment Form

Device: _____

Supplier/trade name: _____

Applications: _____

Reviewer: _____

Date: _____

For each question, circle the appropriate response for the protective device being evaluated.

Healthcare worker safety

1. A. Does the protective device prevent needlesticks or other sharps injuries during use (i.e., before disposal)? . . . . . Yes No

   B. Does it do so after use (i.e., does the safety mechanism remain activated through disposal of the protective device)? . . . . . Yes No

2. A. Does the protective device provide protection in one of the following ways: either intrinsically or automatically? (Answer "No" if a specific action by the user is required to activate the safety mechanism, or if the user can somehow fail to activate the safety mechanism.) . . . . . Yes No

   B. If "No," is the mechanism activated in one of the following ways: either by a one-handed technique or by a two-handed technique accomplished as part of the usual procedure? . . . . . Yes No

3. During use of the protective device, do the user's hands remain behind the needle or sharp until activation of the safety mechanism is complete? . . . . . Yes No

4. Is the safety mechanism reliable when activated properly? . . . . . Yes No

5. Does the protective device minimize the risk of user exposure to the patient's blood? . . . Yes No

Patient safety and comfort

6. Does the protective device minimize the risk of infection to the patient (e.g., through cross-contamination)? . . . . . Yes No

7. Can the protective device be used without causing more patient discomfort than a conventional device? . . . . . Yes No

8. For intravenous (IV) protective devices: Does the protective device attach comfortably (i.e., without causing patient discomfort) at the catheter port or IV tubing? . . . . . Yes No

(continued)

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Source: ECRI. Sharps safety and needlestick prevention. Plymouth Meeting, PA: ECRI; 2001:20-21.

Sharps-Safety and Needlestick-Prevention Device Assessment Form

Ease of use and training

9. Is device operation obvious? That is, can the device be used properly without extensive training? . . . . . Yes No

10. Can the protective device be used by a left-handed person as easily as by a right-handed person? . . . . . Yes No

11. Is the technique required for using the protective device the same as that for using a conventional device? . . . . . Yes No

12. Is it easy to identify the type and size of the product from the packaging? . . . . . Yes No

13. For IV catheters and blood collection needle sets: Does the protective device provide a visible blood flashback during initial insertion? . . . . . Yes No

14. Please rate the ease of using this protective device

    A. Under normal conditions — Excellent Good Fair Poor

    B. When using the device with wet gloves — Excellent Good Fair Poor

15. Please rate the quality of the in-service training. — Excellent Good Fair Poor

Compatibility

16. Is the protective device compatible with devices (e.g., blood collection tubes) from a variety of suppliers? . . . . . Yes No

17. For IV protective devices:

    A. Is the protective device compatible with intralipid solutions? . . . . . Yes No

    B. Does the protective device attach securely at the catheter port? . . . . . Yes No

    C. Does the protective device attach securely or lock at a Y-site (e.g., for piggybacking)? . . . . . Yes No

18. Is the protective device easy to dispose of in sharps containers of all sizes (if required)? . . Yes No

19. Does using the protective device instead of a conventional device result in only a modest (if any) increase in sharps container waste volume? (Answer "No" if the protective device will increase waste volume significantly.) . . . . . Yes No

Overall

20. Would you recommend using this device? . . . . . Yes No

Comments (e.g., describe problems, list incompatibilities)

_____

_____

_____

Source: ECRI. Sharps safety and needlestick prevention. Plymouth Meeting, PA: ECRI; 2001:20-21.

SAFETY IV CATHETER EVALUATION FORM

Name _____
Unit _____

Please rate the inservice that you received on this product (using a scale from 1-5 with 5 being excellent).
Circle one 1 2 3 4 5

How many of the safety evaluation catheters have you used?
Circle one 0 1 or 2 3-5 6-10 11-20 More than 20

Please rate this safety I.V. Catheter for ease of insertion on a scale of 1-5 (with 5 being excellent).
Circle one 1 2 3 4 5

Please rate this catheter for its safety effectiveness in terms of needle stick protection (with 5 being excellent).
Circle one 1 2 3 4 5

Please rate the visibility of the flash upon insertion of this catheter (with 5 being excellent).
Circle one 1 2 3 4 5

Please rate the design of this catheter in terms of **patient** comfort (with 5 being excellent).
Circle one. 1 2 3 4 5

Please rate the design of this catheter in terms of **nurse** comfort (with 5 being excellent).
Circle one 1 2 3 4 5

Please rate your overall comfort with this product in terms of safety, ease of use, and patient comfort (with 10 being excellent).
Circle one 1 2 3 4 5 6 7 8 9 10

Comments
_____
_____
_____
_____
_____
_____
_____

Please return evaluation form to _____

Source: St. Jude Medical Center, Fullerton, CA.

BIOTERRORISM WATCH
Preparing for and responding to biological, chemical and nuclear disasters

Traumatized health care providers may need stress counseling in horrific aftermath of bioterror attack

A severe test for a mentally tough profession

In a finding that is likely relevant to many other states, a recent tabletop exercise in Columbus, OH, found that the health care system may be better prepared to deal with bioterrorism victims than the traumatized frontline providers who give them care.

The exercise was conducted by the Ohio Senior Interagency Coordinating Group in Columbus.

After running a scenario involving intentional release of pneumonic plague at a rock concert, emergency preparedness officials discovered there was little in place to address the mental health needs of doctors and nurses in the horrific aftermath. In the exercise, an attack with *Yersinia pestis* resulted in 332 fatalities, 720 hospitalizations, and 4,300 people who were examined and released.

"How do you handle all of the nurses and doctors who have seen many, many deaths, who have tried to decrease panic by remaining calm, and who have survived this huge confusion and turmoil?" asks **Kay Ball**, RN, MSA, CNOR, FAAN, a participant in the exercise and perioperative consultant and educator at K & D Medical in Lewis Center, OH. "What about their mental health? That is something that we found that we are weak in. We really have to develop that better."

The hypothetical event began Friday, March 15, when a popular regional band performed at Shawnee State University in Portsmouth, OH. Approximately 2,000 students and community members went to see the band, which is known for its use of smoke and visual enhancements, according to the scenario. **(See tabletop timeline, p. 3.)**

"[The terrorists] aerosolized the agent in a fogging system and that is how it was spread throughout the building." says **Darren Price**, exercise training officer with the state of Ohio Emergency Management Agency in Columbus.

The players take their seats

The exercise had four groups of about nine people, each working at different tables as the events unfolded. The groups were health / medical, law enforcement, fire / emergency medical services, and government. An audience of about 150 people was on hand to observe and evaluate the exercise.

"The whole purpose was to determine our strengths and weaknesses through the disaster that happened," says Ball, who served as facilitator and discussion leader of the health / medical group. "The planning committee will meet and analyze what we learned from this, and then we will bring back everybody who participated."

The scenario was divided into three phases: incubation, response, and recovery. Each phase received about an hour of discussion at the tables, and all players received updated information at the same time. **(See tabletop tips, p. 2.)** The scenario was necessarily arbitrary but designed to

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test the state's resources at many levels, Price notes.

"Anytime, you are dealing with tabletop exercises there are a lot of assumptions and artificialities built in just to make it flow," he says. "We ask [participants] to bring their emergency operations procedures and plans, and to actually react based upon their plan."

While the exercise is still being analyzed, the mental health needs for medical providers became apparent in playing out the scenario. Part of the problem is the historic perception that health care workers must not succumb to the emotional toll of patient care, Ball says.

"Even in surgery today, if we lose a patient on the table, there is nothing really in place to talk about the trauma the practitioners are going through," she says. "We just think that we are these stalwart people and we can't crumble under emotional strains. That was one of the [identified] weaknesses."

In contrast, firefighters and emergency medical service workers had a more thorough stress debriefing process than their hospital-based counterparts.

"Within the hospitals themselves we really don't have the mental and spiritual health that we need," she says.

Moreover, the scenario projected widespread "psychological manifestations" in the affected area, with students withdrawing from school and residents reluctant to return to their homes. Bioterrorism response planners brainstormed about how to fight the problem, including bringing in celebrities and public officials to show it was safe to return to the stricken area.

The scenario included a short delay in determining the etiological agent, with chaos building before plague was confirmed as the infecting pathogen. Even with the new emphasis on bioterror education, that scenario is fairly realistic because so few clinicians have seen infections caused by the potential bioterrorism pathogens.

"The first problem was what kind of a bug was it?" Ball says. "Where do we send the cultures, and how fast can we get them back?

The scenario also had many students leaving on spring break. Given the anticipated exodus of people from the community — particularly into the neighboring states of Kentucky and West Virginia — there was no attempt to set up mass quarantine areas, Price says. Instead the national stockpile of antibiotics was called up and confirmed or suspect cases were treated and isolated.

"We looked at the issue of quarantine and determined it was not really feasible," he says. "You would have these large [quarantine] circles everywhere. We moved more toward isolation [of patients] at that point."

While identifying a weakness in mental health care, the planners found communications were strong between groups, there were no turf battles, and additional resources became available quickly.

"One of the strengths that we found was that we were able to get supplies in and to call in extra people," Ball says. "We were able to pull in lots of people very rapidly. We are learning how to work more with all of the other diverse factions."

Indeed, the exercise was set in a rural area so that resources would be taxed, reaching thresholds that would trigger state response, Price adds.

"We're better prepared today than we were yesterday," he says. ■

Bioterror tips for running a tabletop

Planners of a recent bioterrorism tabletop exercise in Columbus, OH, **(see cover story for more information)** offered the following tips for participants in the exercise:

- The scenario is plausible, and events occur as they are presented.
- There are no hidden agendas or trick questions.
- All players receive information at the same time.
- There is not a "textbook" solution. Varying viewpoints and possible disagreements are anticipated.
- Respond based on your knowledge or current plans and capabilities.
- Current agency or department policies and procedures should not limit discussion and development of key decisions.
- The outcome is neither intended to set precedents or reflect an organization's final position on specific issues.
- Assume cooperation and support from other responders and agencies.
- Speak up! Talk to your colleagues and ask questions. This is your chance to learn how other agencies in your community would respond in an emergency. ■

Dire straits: Plague released at concert

Tabletop scenario from first case to aftermath

Highlights of a recent bioterrorism tabletop exercise run by planners in Ohio **(see cover story for more information)** included the following timeline of events:

Sunday, March 17, 2002, Portsmouth, OH

8:00 a.m.: At the emergency department (ED) of Southern Ohio Medical Center (SOMC), a doctor has just come on duty and sees her first patient, a 22-year-old woman. The patient's sister says the woman has been complaining of chest pain and has a temperature of 102 degrees F. The sister worries that the patient may have caught the "bug" through her position at the Shawnee State University (SSU) dormitory mailroom where she works part time. A rapid flu test shows a negative result.

The physician is suspicious in light of the national anthrax cases five months earlier and orders a sputum and blood culture. Transport assistance is requested for sending the cultures to the Ohio Department of Health (ODH) laboratory for anthrax testing. The woman is admitted. The Portsmouth City Health Department and Scioto County District Board of Health are notified of the situation. In turn, the ODH and Ohio Emergency Management Agency (EMA) duty officer are called.

2:00 p.m.: The 22-year-old woman admitted to SOMC earlier this morning develops severe respiratory complications and dies. A full autopsy is ordered, and the physician awaits the preliminary results of the sputum and blood cultures. As the day progresses, local emergency medical services (EMS) become overwhelmed with patients presenting with flu-like symptoms. People presenting with the most severe symptoms, including high fever and difficulty breathing, are hospitalized; however, with many more sick waiting in the ED, the hospital beds and wards are filling rapidly.

5:00 p.m.: Traffic around SOMC becomes impassible, and several ambulances are severely hindered. Medical facilities request security assistance from local law enforcement agencies.

10:00 p.m.: Six patients admitted during the day with the severe flu-like symptoms also die. New cases continue to arrive at SOMC with an increase in the number of patients reporting each hour.

Monday, March 18

8:00 a.m.: Overnight, a public health emergency was declared in Scioto County. A request was made by Scioto County Health, via the Scioto County EMA and elected officials for state support in the growing crisis.

A Level 2 emergency status is reached in Scioto County. The state assessment room is activated to support the events in Scioto County.

10:00 a.m.: The preliminary tests of clinical specimens taken from the 22-year-old woman who died Sunday are complete. The ODH Lab notifies the local health departments that the specimens have tested negative for *Bacillus anthracis.* The laboratory begins rule-out testing for other pathogens.

3:00 p.m.: Epidemiological evidence points to an event three days earlier as a common activity of the majority of new patients. On Friday, March 15, a popular regional band performed at SSU in Portsmouth. The band is well known for use of visual enhancements. Approximately 2,000 students and community members attended the concert.

4:00 p.m.: Hospital supplies are insufficient to meet demand. Fifteen additional patients have died, and 111 are listed in critical condition. Reports now include similar symptoms among several health care workers and first responders. SOMC hospital beds are full.

5:30 p.m.: ODH Lab staff notifies Scioto County local health officials that the 22-year-old patient's cultures are preliminarily positive for *Yersinia pestis.* Local health officials inform local health care professionals and EMS personnel that, in order to prevent the spread of disease, patients having confirmed pneumonic plague should be isolated until sputum cultures are negative for *Y. pestis* bacilli.

Those suspected of having pneumonic plague should be isolated for 48 hours after antibiotic treatment begins.

Wednesday, March 27

It has been 10 days since the first victims arrived at SOMC and local clinics. There have been no further cases of illness identified in Scioto County in the past seven days.

Waiting for signs of recovery

Resources begin to flow into the area as a result of national public outreach. Visitors, however, avoid the area and the impact of the event on the local economy becomes apparent as local businesses are slow to reopen.

The psychological manifestations associated with this event are widespread. Although school reopens, many students withdraw from classes for the quarter. Local residents, still frightened and shocked, look to local and state officials for guidance as they attempt to return to normalcy. ■

Winds of war: Researchers track airborne anthrax

A strikingly rapid and wide dispersion

Struck by the surprising level of aerosolization after merely opening an envelope, Canadian researchers are now using a spore surrogate to study how airborne anthrax silently spreads within an office building, *Bioterrorism Watch* has learned.

Researchers are using *Bacillus globigii* spores to simulant the movements of *Bacillus anthracis* in a one-story research building at the Defence Research Establishment Suffield (DRES) at the Canadian Forces Base in Suffield, Alberta, says **Kent Harding,** chief scientist at DRES. "We will be looking at movement between actual offices along corridors using the *B. globigii* as a simulant. It is a spore-like material that is a well-accepted simulant used to assess and challenge biological detection apparatus." The DRES is on the cutting edge of bioterrorism research; scientists there were studying the dispersion of anthrax from envelopes prior to Sept. 11 and its aftermath. In response to an anthrax hoax mailing in Canada in February 2001, the DRES conducted a study last year using an 1,800 cubic foot test chamber to represent an office space. "We had a hoax letter in this country that closed down a major federal office building," he says. "We were interested in [determining] had it been a real infectious material in the envelope, what was the extent of the risk? We went to the scientific literature and really didn't find anything."

It was hypothesized that opening an envelope constituted a "passive form of dissemination" that would produce minimum aerosolization of spores unless additional energy was added via panic behavior or strong airflows, the researchers stated.[1]

"Our scenario was in a chamber, which was conducive to studying the movement of materials on air currents." Harding says. "An individual was given a stack of envelopes and told to keep opening them until powder fell out. When that happened, [he or she] stood quietly by the desk and didn't move for 10 minutes. We just looked at the movement of material around the room, just simply as a consequence of opening the envelope and pulling out a piece of standard 8½ by 11 paper folded in three." Almost immediately upon opening the envelope, a significant aerosol concentration was observed in the area of the "desk." It declined slowly over the 10-minute sampling period, but the high-resolution slit sampler plates used to measure the release became densely packed with bacterial colonies. In the study, significant numbers of respirable aerosol particles were released upon opening envelopes containing 0.1 g or 1.0 g of *B. globigii* spores. A potentially deadly dose could be inhaled within seconds of opening an anthrax spore-filled envelope. Also, the aerosol quickly spread throughout the room so that other workers, depending on their exact locations and the directional airflow within the office, would likely inhale doses. There was very heavy contamination on the back and front of clothing worn by the test subject.

"There was a large dose presented to the person opening the envelope, which was not unexpected," Harding says. "But what was surprising was the very rapid and extensive movement around that room simply as consequence of the movement of normal air currents. It distributed around the room very quickly and in fairly high quantity."

The researchers also found that the spores could escape from a sealed envelope, a phenomenon that caught U.S. investigators off-guard during the 2001 attacks. "We did note that in a standard envelope sealed in the usual way — just with licking the glue on the back of — that there are substantial openings on the back of the envelope," he says. "In fact, the 'envelope people' design them that way so you can get a letter opener inside. Spores did escape from those openings, but we never quantified that and never referred to it to anything more than an anecdotal manner."

The Centers for Disease Control and Prevention (CDC) in Atlanta was apparently unaware of the study during the initial stages of the U.S. anthrax attacks. Whether it would have made any difference is impossible to say, though some wonder if it would have resulted in more aggressive treatment of postal workers.[2] Regardless, the CDC decision to administer antibiotics to a broad range of people, not just those in the immediate exposure area, is reinforced by the study, Hawkins says. The Canadian researchers have now fully briefed the CDC about the study and their ongoing research.

References

1. Defence Research Establishment Suffield. Kournikakis B, Armour SJ, Boulet CA, et al. Risk assessment of anthrax threat letters. September 2001. *Technical Report DRES TR-2001-048*.

2. Brown D. Agency with most need didn't get anthrax data. *Washington Post*, Feb. 11, 2002:A / 03. ■