



# Management<sup>®</sup>

*The monthly update on Emergency Department Management*

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## Prepared for the unthinkable: EDs respond to terrorist attacks

*Disaster plans were put to the ultimate test — Lessons learned*

On Sept. 11, 2001, 33 ED physicians were meeting in New York City less than two miles from the World Trade Center. Among those physicians was **Joseph P. Ornato, MD, FACC, FACEP**, professor and chairman for the department of emergency medicine at Medical College of Virginia Hospitals in Richmond. When two planes crashed into the World Trade Center towers, the physicians identified themselves to fire department personnel.

“They commandeered a bus with a police escort and sent us in,” Ornato says. “We were at ‘Ground Zero’ less than an hour after the [first] building collapsed.”

The EMS command center was destroyed when the first building collapsed, he reports. Ornato and his team set up a field triage unit, which took about an hour to achieve full functionality. A 40-bed field hospital was set up in a courtyard just off the street. Firefighters went into buildings and hauled out tables

## Disaster planning audio conference

The unimaginable has happened in New York City. At Saint Vincents Hospital, less than three miles from the site of the World Trade Center attack, the disaster plan was put to the test as dedicated professionals rose to the unique challenge of responding to the attack. American Health Consultants, publisher of *ED Management*, invites you to learn from the firsthand experience of the professionals at Saint Vincents how to revisit your disaster plans so that you will be ready if the unimaginable happens in your community:

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from conference rooms to use as beds.

The group initially had little equipment, so fire-fighters radioed with specific requests. Ambulances rushed to the site from nearby hospitals with supplies, including chest tubes, IVs, backboards, cervical collars, dressings, and bandaging equipment.

“It was very helpful that the fire [department] leadership allowed the medical side to dictate what we needed, where we needed it, and how to set it up,” says Ornato.

The triage station was prepared to treat hundreds or thousands of patients if needed, but it treated only 19 people, including rescue workers.

“The saddest part was that not many survivors came out,” Ornato says. At press time, the total number of people missing was 4,979, with 393 confirmed dead.

“All the critical patients that were saved, were saved before the towers collapsed,” Ornato says.

The disaster response system in New York City was put to an unbelievable challenge, Ornato says. “It was remarkable how rapidly the system was able to continue to function, despite the unthinkable loss of [391 presumed dead emergency response] personnel at the foot of the World Trade Center in the rubble.”

The horrific terrorist attacks that occurred at the Pentagon in Washington, DC, and the World Trade Center on Sept. 11 should serve as wake-up call for ED managers nationwide to revamp disaster plans with an “all-hazards” approach, says **Thom Mayer, MD**, FACEP, chairman of the department of emergency medicine at Fairfax Hospital in Falls Church, VA, and the command center physician at the Pentagon. An

## Executive Summary

The response to the terrorist attacks at the World Trade Center and the Pentagon provided many key lessons for disaster preparedness.

- Volunteer physicians were not used in most cases, but EDs recognized the need for a system to check credentials.
- Communication from disaster sites was a problem.
- Injured patients went to the nearest hospital, even if it was not the most appropriate hospital.
- Experts recommend using existing disaster plans as templates to design or update your own.

“all-hazards” approach ensures that EDs are prepared for all types of disasters, including bioterrorism, he explains.

Mayer suggests using a template of an effective plan instead of starting from scratch. “Then you can individualize the plan for your own situation,” he says. **(See Disaster Plan Policy for the Emergency Department, inserted in this issue.)**

Consider what events occurred at the disaster sites when evaluating your plan:

### • ED staff used colored tape for identification.

All ED staff at New York (City) Presbyterian Hospital, Cornell Campus, including medical residents, clergy, and housekeeping, used colored tape on their shoulders so they could be identified easily, with a different color used for each role.

**Brian Miluszusky, RN, BSN**, director of nursing for the ED, says, “The ED nurses and attending physician wear hats so they can be spotted very easily.”

The importance of doing this was identified during a previous drill, says Miluszusky. “A guy was standing there in jeans and sneakers, and I asked him to transport a patient up to OB. It turned out that he was a neurosurgeon,” he recalls. “Everyone has a role during a disaster, and that definitely wouldn’t be the best use of his time.”

Wearing necklaces with colored IDs didn’t work because they were blocked by protective garments, and colored vests had to be removed after they became contaminated, Miluszusky explains. “We needed something that was cheap and easy to put on. Even if you take off your gown, you can just put the tape back on,” he says.

### • There was a deluge of volunteers.

At both the Pentagon and World Trade Center sites, there were few patients to treat and hundreds of people wanting to help, reports **Douglas Yoshida, MD**, an ED attending physician at Bellevue Hospital Center, two miles from the World Trade Center.

“When sick patients did come in, there were so many physicians around the stretcher that care was interfered with,” he says.

Yoshida notes that dozens of medical students and physicians rushed to Ground Zero, even after reports that it was extremely dangerous and there was nothing to do. “A number of our residents almost got trampled on day 3 when a building threatened to collapse,” he adds.

Yoshida notes that there were enough EMS workers at the site, and transport times were short. “The only

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■ Unique ways to make your ED family-centered

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## Sources

For more information about the response to the terrorist attacks, contact:

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- **Joseph P. Ornato, MD, FACC, FACEP**, Department of Emergency Medicine, Medical College of Virginia Hospitals, 401 N. 12th St., P.O. Box 980525, Richmond, VA 23298-0525. Telephone: (804) 828-5250. Fax: (804) 828-8597. E-mail: Ornato@aol.com.
- **Douglas Yoshida, MD**, Emergency Department, Bellevue Hospital Center, First Avenue and 27th Street, A-345, New York, NY 10016. Fax: (212) 562-3001. E-mail: yoshid01@popmail.med.nyu.edu.

things that I conceive that a physician could have done at the site would be to treat hyperkalemia, give ketamine for a field amputation, and perform the amputation if so trained,” he says.

Other procedures could have been performed by EMS personnel or waited until the patient arrived at the hospital, because the patient already would have survived many hours or days, he argues.

At the Pentagon site, dozens of volunteer doctors, nurses, and paramedics contacted Mayer. “I can’t tell you how many people showed up and said, ‘Put me to work, I’ll do anything you want,’” he reports. Scores of visiting physicians, nurses, and paramedics offered help, but they ultimately were not needed, he adds.

However, the scenario underscores the need for a system to verify credentials of volunteer physicians, nurses, and paramedics, advises Yoshida. “Your hospital disaster plan should include an effective plan for this, such as the volunteer having to present a hospital ID or license to an administrator,” he says. (See sidebar on security at field triage site, p. 124.)

He suggests having pre-made ID badges that say “Volunteer Emergency MD,” “Volunteer Surgeon,” or “Volunteer OR Nurse.” “The volunteer then can report to the appropriate attending or charge nurse with the understanding that they are under their direction,” he explains.

### • Communication from the disaster sites was difficult.

The World Trade Center disaster site was “chaos,” according to Yoshida. “There was no functioning incident command system, and we had no idea of how many patients to expect,” he says. “Our preparedness for patients was basically rumor-driven from what we could gather from the TV and police radios.”

Cell phones and land lines often did not work, he adds. “We were able to be in contact with the other city-run hospitals, but there needs to be an inter-hospital radio system with direct communication with the on-site command center,” he recommends.

Mayer reports a similar problem at the Pentagon. “One of the most difficult things was standing by on high alert hour after hour, not seeing anybody and not knowing what was happening,” he says.

### • Patients went to the closest hospital.

Initially, most of the World Trade Center victims went to St. Vincent’s Manhattan, a small Level One trauma center, and New York University (NYU) Downtown Hospital, which is not a trauma center, says Yoshida.

“Several seriously burned patients and patients with head trauma were brought to NYU Downtown, which was quickly overwhelmed. The patients were later transferred,” he adds.

Both disasters showed that most patients show up at the closest hospital, not the most appropriate hospital, says Yoshida. “There was little or no field triage, and most patients arrived without tags,” he notes.

In the hysteria of a mass disaster, there is no way to prevent patients from coming to the closest hospital, says Yoshida.

“The EMS system can try to educate EMTs to bring them to the appropriate hospital, but a number of patients will be brought by police or private vehicle,” he says. “Therefore, every hospital must be prepared to handle trauma — and biological, chemical, and nuclear terrorism — and this should be included in your disaster plan.” ■

## Voices from the front lines

Here are some compelling first-hand accounts from HED personnel at the disaster sites in New York City and Washington, DC:

• “They asked us how many patients we could take. We told them about 150. They said, ‘Well, that’s what you’ll probably be getting.’ Ten minutes later, the

*building collapsed. I don't think I have ever seen a disaster [response] run so smoothly, and so well-organized. We had everything we needed. The only thing we didn't have was patients."*

— **Brian Miluszusky**, RN, BSN, director of nursing for the ED at New York (City) Presbyterian Hospital, Cornell Campus.

• *"That first night, at 2:30 in the morning, it was cold and dark, and everybody was trying to figure out how to get in this building. In the midst of that, I saw a couple of Marines putting a flag on a fire engine that had been burned. I suddenly got the idea, 'We need a flag, the biggest flag we can possibly find.' I called an Army major and told him, 'By first light you need that up by the crash site, so that no one can take a picture of the Pentagon without that flag, a symbol of the American spirit."*

*Later he told me, 'The flag won't go up until later today and I can't tell you why, but you'll be very happy.' President Bush arrived later that day, and shook hands with every single person on that site, as they unfurled the flag. When taking care of rescue workers, we call it 'flying the flag,' because we are acting as a symbol, that we're here to take care of you if you need it. In this case, it was more of a literal flying the flag."*

— **Thom Mayer**, MD, FACEP, chairman of the department of emergency medicine at Fairfax Hospital in Falls Church, VA.

• *"We saw about 200 patients in the main ED during the first 12 hours. Only a few patients had major trauma. The vast majority had mild to moderate smoke inhalation, conjunctivitis, acute stress reactions, or minor injuries. There were surprisingly few lacerations. Everyone that was near the site had a fine white dust covering them, with rumors that it was anthrax. We did not think it was plausible, because there was way too much dust, and we did nothing in the hospital to decontaminate them. I believe that we could have handled over a dozen major trauma victims at one time and hundreds in the first 48 hours. It is too bad there were so few survivors."*

— **Douglas Yoshida**, MD, ED attending physician at Bellevue Hospital Center, New York City.

• *"We have done an emergency department critique and debriefing and will do a hospitalwide critique. We will continue to drill as in the past, with the goal of conducting more live drills than tabletop, with full participation, and continued improvement of the disaster plan. The immediate follow-up training will include HazMat and a review of communications."*

— **Kevin Chason**, DO, director of prehospital care and disaster management for the Department of Emergency Medicine at Mount Sinai Medical Center in New York City. ■

## Warning: Sites report problems with security

A possible bomb, a deluge of family members seeking information in the ED, and a large number of community volunteers are just a few of the security issues that arose for ED managers in the hours following the terrorist attacks at the World Trade Center and Pentagon.

"As health care providers, we are trained to assume we are a secondary target until proven otherwise," says **Joseph Ornato**, MD, FACC, FACEP, professor and chairman for the department of emergency medicine at Medical College of Virginia Hospitals in Richmond.

Here are the security issues identified at the disaster site and at EDs:

### • **At the field triage site.**

While waiting to treat patients at the disaster site, Ornato learned that a mysterious duffelbag had been spotted without any medical insignia. Immediately, the caregivers on site became alarmed at the possibility that the bag contained a bomb.

"Under normal circumstances, a bomb squad would have cleared it, but none of those assets were available," Ornato says. "Ultimately, a couple of firefighters walked the bag a block away."

The bag ultimately was determined to be safe. A layperson volunteer had innocently left the unattended bag, but the frightening incident served as a wake-up call, says Ornato.

"It showed us that no matter how hard we tried to pay attention to what was going on, security was just not our priority. At that point, we literally had to set up our own security system," he says.

Firefighters and layperson volunteers were recruited to stand on the disaster site's perimeter, to ensure no one came into the area who didn't belong, says Ornato.

"We certainly did what we could to increase the surveillance and monitoring, but still, it was a wide-open courtyard and hardly a lockdown," he reports.

Volunteer laypeople were recruited by medical personnel to lift backboards. "We set up lines to log them in and put arm bands on them," he reports. "This would have given us a nonmedical workforce to move patients."

Ornato acknowledges the security risks of using layperson volunteers immediately after terrorist attacks occurred. "We did ask for photo identification, so at least we knew who they were if any problems occurred," he says. "But in a rapidly unfolding disaster situation, you've got to do the best you can with what you've got."

### • **At area EDs.**

Security would have been a major problem if the

ED at Bellevue Hospital Center in New York City had received thousands of patients, according to **Douglas Yoshida**, MD, an attending physician at the hospital.

“If the terrorists had wanted to do damage to our hospital, it would have been extremely easy to get through,” Yoshida admits.

Numerous people looking for information about their lost loved ones were able to access the ED. “Telling these poor people that we had no record of their relative was an emotionally trying and distracting experience,” Yoshida says.

Dozens of health care providers in the community also showed up, he adds. “There was no way of ascertaining their qualifications, other than it seemed like someone on staff knew who they were,” Yoshida says.

He stresses that every hospital disaster plan should include an organized security plan, with a screening process for volunteers.

However, other EDs reported that security was a strong point. “I now realize the comfort in knowing we could control hospital access, says **Kevin Chason**, DO, director of prehospital care and disaster management at the department of emergency medicine at Mount Sinai Medical Center in New York City.

The Medical Center covers four city blocks between two avenues, he explains. “In past drills, we noticed how difficult it was to control access to such a large campus with many points of entry,” he says. “We had even created drills specifically to evaluate the weaknesses.”

Prior drills included sending medical students in all states of dress, with and without ID, in an attempt to breach security at many of the access points. “On Sept. 11, we went to a total lockdown,” reports Chason. “There was one entrance in and out with ID access only, all scheduled deliveries were confirmed, and all packages were inspected,” he says.

Staff members escorted patients and family members into and out of the ED, he explains.

Chason adds that security in the emergency department also was reinforced. “There were only escorted visitors for short visits, and only personnel assigned to the department were permitted access,” he says. ■

## Reduce risks of patients who leave too soon

**W**hen a woman accompanied by her husband told the triage nurse she “wanted admission,” the nurse told them there was a wait to be seen.

“The family offered no other information, and the nurse assessment did not reveal anything in her

documentation that would lead you to believe she needed an emergent screening,” says **Michelle Myers-Glower**, RN, MS, former director of emergency and trauma services for Elmhurst (IL) Hospital and a consultant in Glencoe, IL, specializing in staffing issues.

The woman left and went to another ED, where she was admitted because she was suicidal.

In another case, a 70-year-old man complained of coughing. A chest X-ray was performed, but after an hour wait, the man left without seeing a physician.

“The next day, the radiologist reading came back and showed a huge mass indicative of a tumor,” says Myers-Glower.

When contacted, the man was reluctant to return and had not planned any follow-up care, but he agreed to be admitted and scheduled for surgery.

“These are high-risk patients, and overcrowded EDs are faced with these situations daily,” warns Myers-Glower. “They are in your waiting room like a time bomb.”

Here are ways to reduce risks of patients who leave without being seen (LWBS):

- **Consider your waiting room to be an extension of your ED.**

Consider waiting areas as a room assignment because there are sick patients in it, says Myers-Glower.

You may be in violation of the Emergency Medical Treatment and Active Labor Act (EMTALA) if you routinely keep patients waiting so long that they leave without being seen, she says.

“This is particularly risky if the hospital does not attempt to determine and document why the patient is leaving,” she adds. “You also need to reiterate to the patient that you are prepared to see them in a timely fashion.”

- **Never assume patients are not seriously ill or injured.**

Any one of your LWBS patients could die after leaving your ED, Myers-Glower says. “That is why it is so important to make attempts to prevent the walkouts.”

### Executive Summary

Patients who leave without being seen present many risks for patient outcomes and liability.

- Don't assume that patients who leave do not have life-threatening conditions.
- Call back patients to ask them to return, and see them quickly if they do.
- Keep statistics on patients who leave to show to accreditation surveyors and to use when developing budgets for the ED.

## Sources

For more information about patients who leave without being seen, contact:

- **William T. Briggs**, RN, MSN, CEN, Emergency Department, Brigham and Women's Hospital, 75 Francis St., Boston, MA 02115. Telephone: (617) 732-8508. Fax: (617) 278-6977. E-mail: wtbriggs@partners.org.
- **Michelle Myers-Glower**, RN, MS, 640 Grove St., Glencoe, IL 60022. Telephone: (847) 242-0825. Fax: (847) 242-0826. E-mail: mmyers640@aol.com.

Myers-Glower gives the example of a coughing toddler whose family decides to leave after a long wait. "The parents assume it's only a cold, when in fact the child may have swallowed something and needs to be assessed further for possible foreign body obstruction," she explains.

- **Document a patient's refusal.**

At the minimum, ask the patients to sign a statement that they have been offered a medical screening examination as required by EMTALA and have refused, says **William T. Briggs**, RN, MSN, CEN, ED assistant nurse manager at Brigham and Women's Hospital in Boston. "This signature should be witnessed, timed, and dated," Briggs adds.

If the patient refuses to sign or leaves without notifying the staff, this should be documented, he says. In this case, the ED attaches a sticker to the patient's chart that says, "Refusal of Medical Screening Exam."

- **Ask the patient to return.**

Myers-Glower recommends calling LWBS patients before the end of the shift to encourage them to come back. If this is not possible, the triage or charge nurse should call every LWBS the following day, document the call, and ask the patient if he or she would like to return, she says.

"If the patient returns, make every effort to see them quickly. Give them the name of the nurse to ask for so she will expect them," she advises.

- **Track reasons for patients who leave.**

It is imperative that LWBS patients are registered and appear in your log, even if you have minimal information, says Briggs. "For this reason, the triage nurse or receptionist should get a full name and date of birth on every patient." (See sample LWBS log, enclosed in this issue.)

Myers-Glower recommends having every LWBS chart copied so you can review it the following morning and discussing all LWBS in monthly staff meetings.

Watch for "red flags" that include patients leaving because of payment issues, such as a co-payment requirement, problems with obtaining approval from managed care organizations, or inability to pay, says Briggs. "These issues should be taken care of after the medical screening exam," he urges.

Inspectors from the Baltimore-based Centers for Medicare and Medicaid Services, formerly the Health Care Financing Administration, may ask if the patient was asked to leave or coerced to leave, says Briggs. "They may also check the patient's payer status and diagnosis," he says.

- **Keep statistics.**

To prepare for surveys by the Joint Commission on Accreditation of Healthcare Organizations, Myers-Glower recommends careful documentation of your quality improvement efforts to reduce wait times. "Surveyors may ask you to show evidence of how you have addressed this problem. This can help you avoid Type 1 recommendations," she explains.

There is another compelling reason to keep these statistics, according to Myers-Glower. "LWBS patients must be calculated into your ED volumes," she says. "If you do not calculate those numbers when budget time comes, your ED does not get the credit for that time spent triaging and FTEs may be cut." ■

## Are you ready for difficult airways?

When a patient in the intensive care unit at St. John NorthEast Community Hospital in Detroit went into respiratory arrest, anesthesia personnel were unable to secure an airway after several attempts, so **Robert Takla**, MD, FACEP, medical director of emergency services at the hospital, was called in to help.

"This patient had a very challenging airway and a short neck, which [we] were unable to extend because

## Executive Summary

Patients with difficult airways are rarely encountered, so these skills need to be practiced, and you must have the right equipment available.

- Difficult airways courses are helpful.
- Fiberoptic intubations are rare, so ED physicians should use fibroscopes routinely for other procedures.
- Use stainless steel laryngoscopes with a fiberoptic light.

of a chronic flexion,” he says.

After trying unsuccessfully to visualize the vocal cords, Takla asked for a central line kit. “I proceeded to do a percutaneous needle cricothyroidostomy and subsequently advanced the guide wire retrograde until I was able to grab it from the patient’s mouth,” he says.

Next, Takla advanced the endotracheal tube over the guide wire, confirming that it was in the trachea and not the esophagus. “Despite the flimsiness of the guide wire, it worked like a charm,” he says.

The above scenario illustrates the fact that ED physicians must be prepared for all types of airways, says Takla. “This patient would have definitely died without a definitive airway, and if it took too long, the patient would have suffered an ischemic insult,” he says.

Difficult airways that require alternative skills and techniques are rarely encountered, says Takla. “That is precisely why they must be learned and practiced.”

Preparing for rare catastrophic events is easily overlooked, adds **Richard M. Levitan**, MD, an attending ED physician at the Hospital of the University of Pennsylvania in Philadelphia.

“Failed airways can quickly result in brain injured or dead patients,” Levitan warns.

Here are ways to improve airway management in your ED:

- **Encourage physicians to attend a difficult airway course.**

ED physicians need specialized training in the management of the difficult airway, says Takla.

“Most of the time we are able to intubate without difficulty, so we become proficient and good at intubating the ‘typical’ patient,” he says.

He recommends having physicians take a “difficult airway” course. “These skills can be practiced and mastered in non-life-threatening situations, with the added benefit of experts on hand to assist in your technique,” he says. “You also learn other ways, which you may not have thought of, to skin the cat.” (See **resource box for list of courses, p. 128.**)

- **Use fiberoptic scopes routinely.**

At Levitan’s tertiary care center, fiberoptic intubations number only about three per year.

To become comfortable using fiberoptic scopes, ED personnel should use them for nasopharyngoscopy examination and not only for actual intubation, advises Levitan. “For example, they should be used for foreign body evaluation, angioedema, and smoke inhalation,” he explains.

Levitan recommends having two scopes: a short nasopharyngoscope for routine examination and a long scope for intubation. An alternative is to have a mid-length scope that is long enough for intubation if needed, but easier to use for a routine exam than a

60 cm standard intubating bronchoscope, says Levitan.

Both the mid-length scope and the intubating bronchoscope have a working channel that must be wire brushed after each use, as well as cleansed using a dedicated sterilization process, he adds.

- **Obtain the best-quality laryngoscopes.**

You can dramatically improve the performance of your staff at direct laryngoscopy by acquiring the best-quality laryngoscopes, Levitan says. (See **case study to learn more about direct laryngoscopy, p. 129.**)

“No operating room in the country routinely uses plastic blades, and we shouldn’t either,” he says.

Stainless steel blades, preferably with a fiberoptic light source, are far superior in terms of feel, performance, and illumination, he adds. “My department’s performance dramatically improved when we made this transition,” he reports.

He notes that the cost of stainless steel laryngoscopes with a fiberoptic light are about \$150-\$250, as compared to \$50 to \$100 for stainless steel laryngoscopes with a standard light.

“The disposable systems cost far less, approximately \$5 per blade or less, depending on quantity,” he says. “But these are single use.”

- **Assess your needs.**

First, Levitan recommends reviewing your current practice and performance for airway management. He suggests asking the following questions:

- How many failed airways occur in your setting?

- Are there problems specific to certain individuals?

- Is there a subpopulation of patients commonly seen with airway issues, such as head and neck cancers, major trauma, or angioedema?

- What back-up services are available to help in these circumstances?

Use this information to decide whether the acquisition and use of complicated and expensive difficult airway devices, such as a flexible fiberoptic scope for intubation, is realistic, says Levitan. “You need to consider if such services could or should be provided by an in-house consultant,” he says.

The ED tracks intubation success through a standard airway form that includes number of attempts, complications, methods of intubation, and means of tube placement confirmation, he notes. (See **form enclosed in this issue.**)

- **Become familiar with the laryngeal mask airway (LMA) and Combitube** (manufactured by Mansfield, MA-based Tyco-Kendall USA).

No practitioner will master all of the alternative devices, and no ED needs to have all of them, advises Levitan. “For rescue ventilation, every ED should have the LMA and Combitube,” he says. “Individuals can easily acquire LMA experience in the OR.” ■

## Sources/Resources

For more information about airway management, contact:

- **Richard M. Levitan**, MD, Department of Emergency Medicine, Ground Ravdin, Room 279, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19104. Telephone: (215) 662-7260. Fax: (215) 662-3953. E-mail: levitanr@mail.med.upenn.edu.
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Here is a partial listing of training resources and courses in airway management:

The Airway Course is a three-day course that includes instruction in airway techniques, including intubating, Fasttrach LMA, Combitube, rigid fiberoptic laryngoscope, fiberoptic intubating bronchoscope, needle cricothyrotomy, percutaneous cricothyrotomy, surgical cricothyrotomy, and pediatric airway skills. The cost is \$995. Upcoming course dates for 2002 are Feb. 15-17 in Las Vegas; March 22-24 in Seattle; April 12-14 in Hilton Head, SC; May 18-20 in Philadelphia; May 31-June 2 in Montreal, Quebec, Canada; Sept. 20-22 in Seattle; Oct. 25-27 in Chicago; and Nov. 15-17 in Atlanta. To register, contact:

- The Airway Course, PO Box 14694, Gainesville, FL 32604. Telephone: (866) 924-7929 or (352) 251-4752. Fax: (352) 692-1002. Web: [www.theairwaysite.com](http://www.theairwaysite.com).

Northwest Anesthesia Seminars offers an Emergency Airway Management Hands-On Workshop. Upcoming course dates are Nov. 14, 2001, in Key West, FL, and Nov. 26, 2001, in Las Vegas. For more information, contact:

- Northwest Anesthesia Seminars, P.O. Box 2797, Pasco, WA 99302. Telephone: (800) 222-6927 or (509) 547-7065. Fax: (509) 547-1265. E-mail: [info@nwas.com](mailto:info@nwas.com).

The University of Texas — Houston Medical School will hold its Fourth Biennial Difficult Airway Management Conference Feb. 28 - March 3, 2002, in Lake Tahoe, CA. For more information, contact:

- The University of Texas — Houston Medical School. Telephone: (713) 500-5126. E-mail: [bonnie.mccausland@uth.tmc.edu](mailto:bonnie.mccausland@uth.tmc.edu). Web: [www.uth.tmc.edu/cme/Conferences.htm](http://www.uth.tmc.edu/cme/Conferences.htm).

Training videotapes from the AirwayCam series are available. Volume 1 provides an introductory overview to direct laryngoscopy and demonstrates techniques and different blades on a variety of adult and pediatric patients. Volume 2 covers pediatric intubations, and Volume 3 focuses on advanced airway imaging and laryngoscopy techniques. The tapes cost \$149.95 each plus \$5 shipping and handling. For more information, contact:

- AirwayCam Technologies, P.O. Box 337, Wayne, PA 19087. Telephone: (610) 341-9560. Fax: (610) 341-1866. E-Mail: [info@airwaycam.com](mailto:info@airwaycam.com). Web: [www.airwaycam.com](http://www.airwaycam.com).

## Case study: Use direct laryngoscopy

The most effective means of tracheal intubation in the ED is by direct laryngoscopy, argues **Richard M. Levitan**, MD, an attending ED physician at the Hospital of the University of Pennsylvania in Philadelphia.

“No other means of tracheal tube insertion is faster, simpler, or more successful under ED conditions,” Levitan says. He notes that while many devices and adjunctive techniques are now available, and there are alternative means of ventilation such as the laryngeal mask airway (LMA) and Combitube, manufactured by Tyco-Kendall in Mansfield, MA, direct laryngoscopy is used for more than 99% of intubations in the ED. In fact, only one in 500 airways requires use of a surgical airway or nonstandard device such as a fiberoptic scope, or rescue device.<sup>1-2</sup>

Although many of these alternative devices and techniques are used routinely in the operating room, they do not work well under the circumstances of ED airway management, asserts Levitan.

The following case study illustrates this point:

Levitan treated a morbidly obese man who had been shot in the chest four times and arrived hypotensive, hypoxic, and combative — requiring six people to get IV access. For elective surgery, this case would have been handled with awake flexible fiberoptic intubation using light sedation and topicalization, says Levitan.

“Prior to the OR, he would have been given anti-sialogogues and been NPO overnight,” he explains. “He would have arrived to the OR sedated and cooperative.”

The ED presentation was the antithesis of this situation, according to Levitan.

“Blood and secretions in his airway would make fiberoptics difficult, if not impossible, as would his lack of cooperation,” he says. “He would have died of exsanguination and/or hypoxia during the prolonged

efforts at fiberoptic intubation.”

Instead, rapid sequence intubation was used, and the man was intubated successfully with direct laryngoscopy. “He was intubated in minutes and up in the operating room within 20 minutes,” reports Levitan.

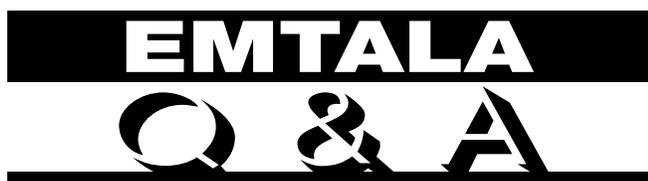
The “difficult airway” begins with failed or difficult direct laryngoscopy, says Levitan. “I believe as a specialty we have been too focused on the toys of the ‘difficult airway’ and not focused enough on the details of direct laryngoscopy,” he adds.

Simple maneuvers, such as bimanual laryngoscopy (the operator uses his or her right hand to manipulate the larynx for a better view), proper shaping of the stylet (straight back to the cuff, then bent upward at 45-60 degrees), and increasing head elevation (neck flexion, not atlanto-occipital extension) all were critical in the above case, he says.

There is a role for rescue ventilation devices, such as the LMA and the Combitube, Levitan acknowledges. “However, improved laryngoscopy skills and successful intubation on the first attempt obviates the need for rescue devices or alternative intubation techniques in almost all circumstances,” he says.

## References

1. Levitan RM, Kush S, Hollander JE. Devices for difficult airway management in academic emergency departments: Results of a national survey. *Ann Emerg Med* 1999; 33:694-698.
2. Levitan RM. Myths and realities: The “difficult airway” and alternative airway devices in the emergency setting. *Acad Emerg Med* 2001; 8:829-832. ■



**Question:** Our primary care physicians want to change the way we do our ED back-up schedule. We always have had a specific physician name listed as the physician on-call. They are proposing that instead of listing the name of the physician on-call, we would have a continual rotation through the call groups. What are the regulatory pitfalls of their proposed plan?

**Answer:** The primary care physicians are proposing to have a name of a medical group on their on-call list, says **Gloria Frank**, JD, former lead enforcement official on Emergency Medical Treatment and Active Labor Act (EMTALA) for the Centers for Medicaid and Medicare Services (CMS) and owner of EMTALA

## Sources

For more information about the Emergency Medical Treatment and Active Labor Act (EMTALA), contact:

- **Gloria Frank**, JD, EMTALA Solutions, P.O. Box 1340, Ellicott City, MD 21041. Telephone: (800) 972-7916. Fax: (410) 480-9116. E-mail: emtala@home.com. Web: www.gloriafrank.com.
- **Stephen Frew**, JD, Frew Consulting Group, 6072 Brynwood Drive, Rockford, IL 61114. Telephone: (815) 654-2123. Fax: (815) 654-2162. E-mail: sfrew@medlaw.com.

Solutions, an Ellicott City, MD-based consulting firm.

“This system is unacceptable under EMTALA, because no specific doctor could be held accountable,” she says.

This does not meet the fundamental requirement that a named physician be designated for call, adds **Stephen Frew**, JD, president of the Rockford, IL-based Frew Consulting Group, which specializes in compliance with EMTALA.

“Additionally, when this was proposed in another case, [CMS] indicated that this meant every physician was on-call at all times,” says Frew. “In other words, a physician must be capable of responding at all times and must take every call that comes to him/her, without regard to means or ability to pay.”

Frew reports that the hospital that decided to switch to this system was cited for a violation within 90 days. He cites these general rules for on-call lists:

- The ED must be specifically aware of who is on-call at all times, and the physician must be aware that they are on-call prospectively.
- The list must be written.
- The list must be maintained for five years so that CMS can determine retrospectively who was on call.
- The list must not include nonphysicians.
- The individual physician name must appear rather than a group or answering service.

**Question:** If a patient with chest pain is in a private physician’s office, about to be transferred to the ED, what EMTALA guidelines exist?

**Answer:** According to Frew, a private physician’s office would not have any requirements under EMTALA, unless the physician is employed by the hospital and operating as a provider-based clinic of the hospital.

**Question:** We are building a new urgent care area in the same location as our ED, staffed by the same physicians as the ED, and a clinic area, rented to physicians who are not hospital employees. There will

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be separate entrances for the clinic and the ED. If patients present to the ED entrance and says they want to see a doctor, is it legal for us to triage them to the clinic if we can give them an appointment that will occur at the time of their presentation? This is assuming that the problem is of a nature that would not require the ED, such as a sore throat. Also, are there EMTALA issues that would affect our ability to see them in urgent care instead of the ED?

**Answer:** It's acceptable to send a patient to the urgent care for screening, says Frank.

"It seems that the urgent care and ED are right next to each other. But if that's not the case, for instance if they are across the hall from one another, I would send a nurse or other hospital staffer to accompany the patient to the urgent care," she adds.

On the other hand, Frank advises against sending a patient to the clinic for screening. "This is because it operates under a different provider number than the hospital," she says. ■

## CE/CME objectives

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

1. Identify three ways to improve your hospital disaster plan, based on lessons learned from the terrorist attacks. (See "Prepared for the unthinkable: EDs respond to terrorist attacks.")
2. Cite two problems with security that occurred at the disaster sites. (See "Warning: Sites report problems with security.")
3. Name two things that should be done when a patient leaves without being seen. (See "Reduce risks of patients who leave too soon.")
4. Identify two ways to improve airway management skills of ED staff. (See "Are you ready for difficult airways?")
5. Cite the most common technique used for airway management. (See "Case study: Use direct laryngoscopy.")
6. Explain how to comply with EMTALA regulations regarding on-call lists. (See "EMTALA Q&A.") ■

## CE/CME questions

7. Which of the following occurred at the disaster site at the World Trade Center in New York City, according to Douglas Yoshida, MD, ED attending physician at Bellevue Hospital Center?

A. Turf battles occurred between fire and medical leadership.

B. A significant number of physicians went to the disaster site even though reports indicated there was no need.

C. There was an inadequate number of physicians on site.

D. Patients were triaged to the most appropriate hospital instead of the closest facility.

8. Which of the following is accurate about security issues identified at the disaster site or at EDs?

A. Law enforcement provided security at the field triage site.

B. There was a lack of security at the field triage site.

C. EDs uniformly reported a lack of problems with access.

D. Layperson volunteers were not utilized due to the security risks.

9. Which of the following is recommended regarding patients who leave without being seen (LWBS), according to Michelle Myers Glower, RN, MS, former director of emergency and trauma services for Elmhurst Hospital and currently a consultant?

A. Long waits are not considered a violation of the Emergency Medical Treatment and Active Labor Act.

B. LWBS patients can be safely assumed to have non life-threatening problems.

C. LWBS patients do not need to be logged in.

D. LWBS patients should be contacted as soon as possible after leaving the ED.

10. Which of the following is recommended to improve airway management, according to Richard M. Levitan, MD, an attending ED physician at the Hospital of the University of Pennsylvania?

A. using fiberoptic scopes only for actual intubation

B. having a mid-length fiberoptic scope that can be used for routine examinations and intubation

C. using stainless steel laryngoscopes with a standard light

D. obtaining all alternative airway devices

11. Which of the following comprises 99% of intubations in the ED, according to Levitan?

A. use of laryngeal mask airways

B. use of Combitube

C. direct laryngoscopy

D. use of fiberoptic scope

12. To comply with EMTALA, which of the following should be done regarding on-call physician lists, according to Stephen Frew, JD, president of the Frew

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B. The ED does not need to be specifically aware of who is on-call at all times, as long as the physician is aware that he or she is on-call prospectively.

C. The list does not need to be documented in writing, as long as the ED is aware of who is on-call.

D. The on-call list can include a group or answering service instead of an individual physician. ■

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**Objective:**

This protocol is intended to address any situation in which the resources available to treat Emergency Department patients are overwhelmed due to prevailing circumstances. This is defined as a disaster event, requiring implementation of this Disaster Plan. This policy is intended to address multi-casualty incidents ONLY.

**Definitions:**

- A. External Disaster -- event occurs outside the hospital resulting in multi-casualty incident (MCI) involving numerous patients (i.e. plane crash, building collapse)
- B. Internal Disaster -- event occurs within the hospital requiring evacuation of patients (i.e. bomb threat, fire)
- C. Hazmat Incident -- event involves exposure to potentially dangerous or lethal chemicals [see Hazmat Plan]
- D. See Addendum for contingency planning involving incidents that may be resultant in exposure to biological, chemical or nuclear threat agents.

**Pertinent Information:**

- 1. Disaster -- Any situation that produces an immediate patient load greater than the Emergency Department can handle utilizing normal personnel complements.
  - A. External -- Occurs outside the hospital: plane crash, building collapse, etc.
  - B. Internal -- Occurs within hospital: fire, explosion, etc. Patients will need to be evacuated out of the hospital.

Emergency Operations Center (EOC) will call the Communications Center with the information regarding the following (when known):

- A. type of disaster/mechanism of injury
  - B. volume of patients
  - C. acuity level of patients
  - D. types of injuries
  - E. mode of transport  
(this information may or may not be complete or accurate)
- 2. Disaster Tags
    - A. Kept in drawer in ED Senior Registrar's file cabinet marked "disaster".
    - B. Announced victims should come in with a field disaster tag. Look for it to be tied around unaffected extremity.
    - C. Unannounced victims who "walk-in" should be directed to the Disaster Triage station and a disaster tag should be applied to an unaffected extremity.
    - D. All victims should go through Disaster Triage station. Charge Nurse to designate area for set up of Disaster Triage station (i.e. Atrium, ED North side hallway). **Do not remove field triage tags** until patient identification is entered into disaster registration log.
    - E. Tags:
      - 1. Black -- Dead or expectant. Victim to Room 13 with eventual transfer to morgue.
      - 2. Red -- Highest Priority; life-threatening injury needs immediate treatment

3. Yellow -- Second priority; treatment can be delayed one hour or more
4. Green -- Delayed; patients have stable vital signs and do not require immediate attention. Patients will require periodic re-evaluation of vital signs and condition.

#### **Emergency Department Plan:**

- A. Determine need to implement Disaster Plan based on given information.
- B. Retrieve identification vests, located in marked Disaster closet (opposite Communications room; key available in Communications) along with identification vests for key personnel:
  1. Charge Physician/ED Chairman
  2. Charge Nurse
  3. Registration
  4. Radiology
  5. Pharmacy
  6. Triage Officer
  7. Emergency Management Coordinator
  8. Senior Administrator
  9. Media Relations
- C. Distribute responsibility lists to designated personnel [Patient Care Director (PCD) Charge MD, Charge RN, Communications RN, Core Secretary, Social Work]
- D. Establish Disaster Triage area. This station is to comprise Triage team (MD, RN) and Registration personnel. All incoming red and yellow tag patients are to be evaluated at this station. A Disaster Patient list is to be generated using the Inova Fairfax Hospital Medical Record Number (#801----) and the Disaster Tag number  
[See Appendix 1]
  1. RED/YELLOW Tag patients brought in by helicopter should come from the elevator to the triage station. Transporters should remain with patient until the patient care destination is determined.
  2. RED/YELLOW Tag patients brought by ground EMS units should be brought from the ambulance deck up the back hallway through Door 2 and then left into the main hallway to the triage station. Paramedic/EMT providers are to remain with patient until patient care destination is determined.
  3. GREEN Tag patients are to be directed to the ED lobby and waiting area. A nurse or paramedic provider shall be assigned to this area and will be responsible for these patients. A registrar will come to register these patients.
- E. Clear the Emergency Department of existing patients to the best extent possible.  
This will include:
  1. Expedited transport of admitted patients to the units to which they have been admitted.
  2. All visitors of Emergency Department patients, including those in the waiting area and lobby will be directed to the cafeteria.
  3. The Fast Track patient area will be closed to new patients, and the Fast Track area will be used to board patients currently in the Emergency Department awaiting disposition (i.e. work-up still in progress).
  4. Establish an alternate patient care area in the Atrium. This will be used for YELLOW/GREEN Tag patients or existing Emergency Department patients, at the discretion of the Charge MD/Charge RN. This patient care area will be supplied with stretchers, privacy curtains, telephones, desk and chair, radiology light box, and a greaseboard.

#### **Emergency Department Disaster Plan Responsibility Lists**

##### **Patient Care Director or Administrative Director**

- A. Notify Hospital Administrator of implementation of Disaster Plan.

- B. Identify the need to supplement professional staffing available to the OR, Radiology, Laboratory and Registration. All additional support staff are to report to Personnel Pool Collection Point (ECC 5). Assign administrator to this area for personnel pool log-in and to update on situation as information is available.
- C. Set up Disaster Support Center in offices adjacent to Safety and Security (Second floor, Original Building).
- D. Evaluate bed availability. Assist with expediting ED patient admissions and in-patient discharges.
- E. Direct OR/Anesthesiology to cancel all elective and non-urgent surgical procedures until further notice is given.
- F. Direct external media personnel to Physicians Conference Center [meeting rooms on ground level]. Be certain that Hospital Security is assigned to that area in order to establish crowd control. Have Hospital Media Relations set up Physicians Conference Center Auditorium for all press conference or press release functions.
- G. Direct family members of disaster event patients to area D/E/F (above Cafeteria) and Cafeteria (if overflow). These areas will be staffed by Social Work, Clergy, and Grief counselors. Direct nurses from Psychiatry to assist in the attention provided to these family members.
- H. Establish patient discharge areas in the lobby of the Tower and Women and Children's. Assign staffing complement necessary to care for these patients. Be certain that all unit charge nurses understand that patients identified as ready for discharge are brought downstairs to these lobby discharge areas.

### **Emergency Department Disaster Plan Responsibility Lists**

#### **ED Charge Nurse**

1. Notify the PCD covering the ED of implementation of Disaster Plan.
2. Coordinate with the ED physician in clearing the treatment rooms and expedite care of patients presently in the department in order to make available ED beds for incoming patients.
3. Assign ED Triage Nurse to set up triage at Disaster Triage station. All patients received during disaster (RED/YELLOW TAG) will first come to this area for initial assessment and disposition.
4. Direct Security to assist with moving all ED patient families to Cafeteria.
5. Evaluate current staffing levels in the context of expected requirements and activate calling plan. All ED personnel are to report to ED lounge.
6. Assign ED techs to specific tasks or areas.
7. Notify Disaster Support Center if additional non-clinical personnel are needed (i.e., Security, Patient Transport, etc.)
8. Advise the Administrative Director (AD) as to the number of ED nurses and techs needed.
9. Assign second nurse at Triage if needed.
10. Consider setting up additional patient treatment areas in Atrium, if necessary.

### **Emergency Department Disaster Plan Responsibility Lists**

#### **Communications Nurse**

1. Receive notification of disaster
2. Take field report of the incident obtaining the following information:
  - a. Type of disaster
  - b. Volume of patients
  - c. Acuity level of patients
  - d. Types of injuries
  - e. Mode of transport
 (This information may or may not be complete or accurate)
3. Report information to ED Charge Physician and ED Charge Nurse
4. Notify Fairfax EOC of Disaster Plan implementation.

5. Designate the need for extra Communications Nurse or Communication Specialist and delegate notification to Communication Specialist. For Command Hospital communications see Command Hospital Policy.
6. Provide periodic update on disaster field reports to Disaster Support Center
  - a. Number of patients
  - b. Acuity of patients
  - c. Possible resources needed
7. Maintain telephone logs of calls received.

**ED Social Worker(s)**

1. Assist with patient identification, family notification and coordinating the disaster victims information forms.
2. Staff members in Conference Room D, E, and F will be assigned to coordination of disaster victim family support issues. This may include reporting on medical condition, location of patient, etc.
3. Communication between team leader in the ED and the Social Work office team leader will provide timely updates on disaster scene field reports, as is available.
4. Assist ED staff as appropriate in patient identification in the Emergency Department.

**Emergency Physician In Charge**

1. Will receive notification of multi-casualty incident from Communications
2. Verify numbers and categories of victims
3. Activate External Disaster Plan in coordination with Charge Nurse
4. Direct Unit Secretary to make following contacts
5. Direct Unit Secretary to call specialty physicians on call. On call Physicians are to call the Disaster Support Center or to report to ECC 5.
6. Assign or assure function of Triage Officer. Establish Disaster Triage Station, in conjunction with ED Charge RN (North Side hallway, Atrium)
7. Clear emergency department treatment room as feasible.
8. Designate treatment zones in ED corresponding to Triage Classification (Red -- South Side, Yellow -- South Side, Green -- Waiting Room)
9. Maintain Communication with ED Chairman, ED Administrator on call, ED Disaster Committee Chairman, Medical Staff President
10. Determine termination of disaster status

**Appendix 1 Disaster Registration List**

<b>Medical Record #</b>	<b>Patient #</b>	<b>Name</b>	<b>Diagnosis</b>	<b>Disposition</b>

Source: Inova Fairfax Hospital, Falls Church, VA.

# HUP EMERGENCY AIRWAY SHEET

LOCATION: ED TRAUMA ICU CODE

**INDICATIONS:** [circle any that apply]

- |                |                    |                |
|----------------|--------------------|----------------|
| anaphylaxis    | epiglottitis       | trauma-airway  |
| angioedema     | overdose           | trauma-arrest  |
| asthma         | pneumonia          | trauma-burn    |
| cardiac arrest | pulm. embolism     | trauma-coma    |
| CHF            | shock, cardiogenic | trauma-face    |
| coma-medical   | shock, septic      | trauma-general |
| COPD           | shock, unknown     | trauma-head    |
| CVA            | status epilepticus | trauma-neck    |
| elevated ICP   | other:             | trauma-shock   |

ADDRESSOGRAPH

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Age: \_\_\_\_\_ Sex: M F Wt: \_\_\_\_\_ (kg lb)

CLINICAL DATA:	Temp	Pulse	BP systolic	BP diastolic	Resp	GCS	O2 Sat%
pre-procedure:	<b>DO NOT ENTER IF RECORDED</b>						
during (minimum):	<b>ON CRITICAL CARE SHEET</b>						
post-procedure:							

**ABG's**

(before) time: \_\_\_\_\_ pH \_\_\_\_\_ pO2 \_\_\_\_\_ pCO2 \_\_\_\_\_ O2 sat \_\_\_\_\_ HCO3 \_\_\_\_\_ BE or BD \_\_\_\_\_  
 (after) time: \_\_\_\_\_ pH \_\_\_\_\_ pO2 \_\_\_\_\_ pCO2 \_\_\_\_\_ O2 sat \_\_\_\_\_ HCO3 \_\_\_\_\_ BE or BD \_\_\_\_\_

**A. METHOD:** [circle one ---if 2<sup>nd</sup> method required, describe in D. and in NOTES at bottom]

- |                       |                        |                           |
|-----------------------|------------------------|---------------------------|
| Oral---no meds        | Nasal---no meds        | Surgical---cricothyrotomy |
| Oral---topical        | Nasal---topical        | Surgical---needle         |
| Oral---induction only | Nasal---induction only | Surgical---tracheostomy   |
| <b>Oral---RSI</b>     |                        |                           |

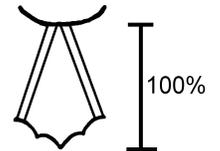
**Anticipated Difficult Laryngoscopy?**

Disproportion: Y N  
 Distortion: Y N  
 Decreased mobility of joints: Y N  
 Dentition/overbite: Y N

**B. CHOICE of METHOD BASED UPON:** [circle any that apply]

- |                     |                     |                        |                       |
|---------------------|---------------------|------------------------|-----------------------|
| Actively seizing    | C-spine precautions | Maxillofacial trauma   | Pregnancy             |
| Apnea               | Comatose patient    | Nasal mass/obstruction | Supraglottic bleeding |
| Arthritic disease   | Hypotension         | Neuromuscular disease  | Trismus               |
| Blood dyscrasia     | Increased ICP       | Operator choice        | Wired Jaw             |
| Burns/renal failure | Lingual swelling    | Oral mass/obstruction  | Other:                |

**POGO Score**  
 [Percentage of Glottic Opening]  
 Laryngeal view



**C. DEVICE:** Laryngoscope Endotrol (trigger tube) Fiberscope Other:

**D. ATTEMPTS AT INTUBATION:** [for laryngoscopy, 1 blade insertion = 1 attempt]

- Did EMS attempt intubation prior to arrival? Y N oral nasal
- C-collar and in-line stabilization during intubation here? Y N  
PGY / Attending Anesth, EM, etc. Method (oral, nasal, surgical) Blade / Size--Device POGO (0-100%)

1<sup>st</sup> \_\_\_\_\_  
 2<sup>nd</sup> \_\_\_\_\_  
 3<sup>rd</sup> \_\_\_\_\_  
 4<sup>th</sup> \_\_\_\_\_  
 5<sup>th</sup> \_\_\_\_\_

**E. AGENTS TO FACILITATE INTUBATION**

	Drug	Dose
1 <sup>st</sup>	_____	_____
2 <sup>nd</sup>	_____	_____
3 <sup>rd</sup>	_____	_____
4 <sup>th</sup>	_____	_____
5 <sup>th</sup>	_____	_____
6 <sup>th</sup>	_____	_____

**Confirmation**  
 [in sequence 1, 2, 3, 4... or arrow down]  
 \_\_\_\_\_ Auscultation  
 \_\_\_\_\_ ET CO2  
 \_\_\_\_\_ Pulse ox  
 \_\_\_\_\_ CXR  
 \_\_\_\_\_ Other:

**Immediate complications:** None: \_\_\_\_\_  
 Aspiration Hypotension  
 Avulsion of cords Hypertension  
 Cardiac arrest Laryngospasm  
 Cuff leak Main stem intubation  
 Dental trauma Pneumomediastinum  
 Dysrhythmia Self-extubation  
 Epistaxis Tube obstruction  
 Esophageal Other:

**F. OUTCOME:**

- Successful intubation: Y N
- Tube size: \_\_\_\_\_
- Tape position: \_\_\_\_\_ cm. at: teeth / lip
- How many episodes of bagging required? \_\_\_\_\_
- Estimated duration of method (mm:ss): \_\_\_\_\_
- Time tube placed: \_\_\_\_\_

**Disposition**  
 ICU  
 OR  
 Died  
 Discharged  
 Other:

**NOTES:**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Name/Signature of intubator: \_\_\_\_\_ Attending signature: \_\_\_\_\_

# BIOTERRORISM WATCH

*Preparing for and responding to biological, chemical and natural disasters*

## Clinicians must be voice of reason, reassurance now that bioterrorism battle has been joined

*The threat is real, but we are far from defenseless*

A new era of bioterrorism has begun with the intentional anthrax scares that have left several people dead and many more exposed as this issue went to press.

But amid the shrill coverage of the widening anthrax investigations, the scramble for gas masks and the expected hoarding of Cipro, there must be a voice of calm and reason. That voice must be your own.

Infection control professionals, hospital epidemiologists, and other key clinicians involved in health care bioterrorism readiness and response must set the tone for a panicky public and an uneasy health care work force, emphasizes veteran epidemiologist **William Schaffner, MD**, chairman of preventive medicine at Vanderbilt University School of Medicine in Nashville.

"We have to re-instill a sense of confidence for people who work in the health care system," he says. "Start with the doctors. They are the ones who are going to be more panicked than the nurses."

### ***Restoring calm to health care community***

The current situation is reminiscent of the early stages of the HIV epidemic, when there was much anxiety about the communicability of the disease and whether even casual contact would spell a death sentence for health care workers.

In that chilling time of alarmist reactions and burning mattresses, Schaffner recalls that ICPs, epidemiologists, and other clinicians, stepped

into the fray to provide calming confidence and accurate risk data.

"I'm beginning to think that we may be in a similar position now," he says. "We could have a very powerful educational and reassuring effect. Everybody's anxious about this, but I think we can diminish the level of anxiety," Schaffner adds.

### ***Infection control methods in place***

Health care workers must be educated about bioterrorism agents and provided reassurance that the patient isolation precautions developed by the Centers for Disease Control and Prevention (CDC) are extremely effective, urges Schaffner.<sup>1</sup>

"The barrier precautions are going to work for bioterrorism. Once you get to chemical [weapons] then you get into the whole 'moon suit' issue. But for bioterrorism, we don't need that," he says.

For example, systems of barrier precautions such as gloves, gowns, and masks to isolate patients infected with all manner of infectious diseases are already in place in virtually all U.S. hospitals.

"They work," he says. "Look, we all know pulmonary tuberculosis is communicable. I'm an infectious disease doctor, have been for 30 years. I've seen a lot of patients with tuberculosis, but I have also been meticulous about my use of [face masks and respirators]. My tuberculin test continues to be negative."

This supplement was prepared by Gary Evans, editor of *Hospital Infection Control*. Telephone: (706) 742-2515. E-mail: gary.evans@ahcpub.com.

## A Bioterrorism Time Line

- 1155** Barbarossa uses the bodies of dead soldiers to poison the wells at the battle of Tortona.
- 1346** Mongols catapult corpses of plague victims into the city of Kaffa to infect the defenders.
- 1763** British commander Sir Jeffrey Amherst ordered the transfers of blankets used by British smallpox victims to Native American tribes, ostensibly as a gesture of goodwill, with the intention of inducing illness.
- 1970** The United States ends its programs of developing biological agents for use in warfare. The offensive use of such weapons was forbidden by U.S. policy under executive orders of President Richard Nixon.
- 1972** Soviet Union signs off on Biological and Toxin Weapons Convention, but continues a high-intensity program to develop and produce biological weapons at least through the early 1990s. Hundreds of tons of weaponized anthrax spores are stockpiled, along with dozens of tons of smallpox and plague. Many of these agents are reputed to have been specifically designed to be resistant to common antibiotics.
- 1984** Members of the Rajneesh cult contaminated salad bars in Oregon with salmonella, resulting in the infection of 751 people. The Paris Police raided a residence suspected of being a safe house for the German Red Army Faction. During the search, they found documentation and a bathtub filled with flasks containing *Clostridium Botulinum*.
- 1990s** Japan's Aum Shinrykyo cult plans attacks using biological agents, specifically, anthrax and botulinum toxin. While these biological attacks were not successful, cult members later implemented the release of sarin nerve gas in the Tokyo subway system.
- 1995** A U.S. microbiologist with right-wing ties orders bubonic plague cultures by mail. The ease with which he obtained these cultures prompts new legislation to ensure that biologic materials are destined for legitimate medical and scientific purposes.
- 1998** A variety of feigned exposures to anthrax spores occurred in several U.S. cities including Indianapolis, where a full-scale response by emergency services and public health occurred before the episode was found to be a hoax.

### Sources

1. Stewart C. *Topics in Emergency Medicine: Biological Warfare. Preparing for the Unthinkable Emergency.* Atlanta: American Health Consultants; 2000.
2. Bosker G. Bioterrorism: An update for clinicians, pharmacists, and emergency management planners. *Emergency Medicine Reports* (in press) 2001. ■

And anthrax, of course, is not communicable from person to person, reminds Schaffner, who investigated a case of occupational anthrax in an animal-hide worker when he was a epidemiologist for the CDC in the late 1960s.

"The bacteria do not cause a conventional pneumonia," he says. "They replicate locally and then release toxins. Because the bacteria never replicate to very high numbers the person is not communicable. It is not so much an infection as it is an intoxication."

Inordinate fear of anthrax could cause another problem — hoarding and misuse of Ciprofloxacin and other antibiotics. That tactic eventually could contribute to emerging resistance in pathogens such as *Streptococcus pneumoniae*, Schaffner notes.

"It is one thing for a hospital and the health department to develop an inventory in the event of an emergency," he says. "I do not recommend that individuals do that. I'm quite concerned that with antibiotics in their medicine cabinets there will be a temptation to just use it now and again for inadequate reasons in inadequate doses. If there was a recipe for antibiotic resistance — that's it."

### More terror than toll

While the anthrax mailing campaign now under way sends out another shock wave with every news report, the tactic will likely result in more terror than actual toll. The rapid administration of antibiotics has offset illness following exposures, the disease is not communicable from those actually infected, and everyone is now on high alert for suspicious mailings.

Indeed, if the wave of anthrax mailings continues, postal-treatment technologies may become a growth industry.

Regardless, anthrax is problematic as a bio-weapon because only a certain micron size of the inhaled spore will lodge in the upper lungs where it can release its toxins, says **Allan J. Morrison Jr.**, MD, MSc, FACP, a bioterrorism expert and health care epidemiologist for the Inova Health System in Washington, DC.

"If it is too large, it won't go in," says Morrison, a former member of the U.S. Army Special Forces. "If it's too small, it goes in and moves about freely without ever lodging. This is not as easy as getting a culture, growing it in your home, and the next day having infectious microbes.

"The sizing, preparation, and ability to deliver such a weapon are extremely difficult," he adds.

The Aum Shinrykyo cult in Tokyo attempted at least eight releases of anthrax or botulism during 1990 to 1995 without getting any casualties, he recalls. (See time line, p. 2.) Variables such as humidity can come into play, clumping up spores even if they are perfectly sized for inhalation. Anthrax spores bound for human targets are also at the whims of ultraviolet light, rain, and wind dispersal patterns, Morrison says.

"It is a very hostile climate for microbes on planet earth," Morrison says. "The intent may be widespread, but the ability to deliver weapons grade agents is going to be restricted to a very small subgroup. And even among them, they still will require optimal climatic conditions to carry it out. There will be causalities, as in war, but the distinction here is that there has not been widespread infection."

While anthrax is the current weapon of choice, the direst scenarios usually turn to the most feared weapon in the potential arsenal of bioterrorism: smallpox.

"Invariably, I have seen smallpox described as 'highly infectious,'" Schaffner says. "It's not. That is erroneous." For example, during the global eradication efforts in the 1960s, African natives infected with smallpox were often found living with extended families in huts, he adds. "It would usually take two to three incubation periods for smallpox to move through an extended family."

"It doesn't happen all at once. This was a critical concept in the strategy to eradicate smallpox. If you could find smallpox, you could vaccinate around that case and prevent further transmission. If it had been a frighteningly [rapid] communicable disease, that strategy would never have worked," Schaffner explains.

In addition, some medical observers question the certitude of the general consensus that all those vaccinated decades ago are again susceptible to smallpox. They argue that those immunized during the eradication campaign may at least have some greater protection against fatal infection.<sup>2</sup>

Regardless, rather than dropping like flies, as many as 70% of those infected with smallpox actually survive and then have lifelong immunity.

While there are many other agents to discuss and prevention plans to outline in the weeks and months ahead, perhaps the greatest protective factor is the unprecedented level of awareness in the health care system. The world has changed so much since Sept. 11th that hospitals are probably more prepared for bioterrorism than they have

ever been. Everywhere, lines of communication have been opened with health departments and affiliated clinics, emergency plans have been reviewed and hot-button phone numbers posted on the wall.

"We're on alert," says **Fran Slater**, RN, MBA, CIC, CPHQ administrative director of performance improvement at Methodist Hospital in Houston. "We are *all* on alert."

## References

1. Garner JS, the Centers for Disease Control and Prevention Hospital Infection Control Practices Advisory Committee. *Guideline for Isolation Precautions in Hospitals*. Web site: <http://www.cdc.gov/ncidod/hip/ISOLAT/isolat.htm>.
2. Bosker G. Bioterrorism: An update for clinicians, pharmacists, and emergency management planners. *Emergency Medicine Reports* (in press) 2001. ■

## Should clinicians get smallpox vaccinations?

### *Questions arise, stockpile expansion fast-tracked*

The recent decision to accelerate production of a new smallpox vaccine is raising the complex question of whether health care workers — front-line soldiers in the war against bioterrorism — should be immunized against the disease.

As opposed to the current anthrax attacks, a biological release of smallpox would result in incoming patients with an infectious disease. Even health care workers directly exposed to anthrax could be treated with ciprofloxacin and several other antibiotics, so the anthrax vaccine is not a likely candidate for health care.

On the other hand, legitimate questions have been raised about whether health care workers will stay on the job during a smallpox outbreak unless they and their families are rapidly vaccinated. The only known stocks of smallpox virus are held by the United States and Russia, but many bioterrorism experts have warned for years that another nation or group might have secret stocks.

"I think if smallpox [vaccine] became available, we should definitely immunize all the health care workers," says **Martin Evans**, MD, hospital epidemiologist at the University of Kentucky Chandler Medical Center in Lexington. "A lot of people think [health care workers] ought to

be high on the list because they are part of the response team if there was an outbreak in the community. Not to sound self-serving, but I think we ought to immunize the medical community.”

But the question currently is somewhat moot because the Centers for Disease Control and Prevention (CDC) is not wavering from its established policy of mobilizing the available vaccine only if smallpox is released. “I’m sure CDC wants to conserve its current stocks for dealing with an outbreak so it could immunize contacts,” Evans says. “If [the agency has] already used [its stock] by immunizing all the health care workers in the country, then it won’t be able to respond.”

### ***15 million doses stockpiled***

Currently, there are some 15 million doses of the old smallpox vaccine available, according to Secretary of Health and Human Services **Tommy Thompson**, who recently announced plans to accelerate production of a new smallpox vaccine. Forty million new doses of vaccine are expected to be available by mid-to-late 2002, moving the project up considerably from its original completion date of 2004 or 2005.

The manufacturer of the new vaccine is Acambis Inc. (formerly OraVax) — based in Cambridge, UK, and Cambridge and Canton, MA. The new vaccine will be a purified derivative of the same strain of cowpox virus (vaccinia) that was used in the United States previously, because the old vaccine’s efficacy was clearly demonstrated by direct exposures to those infected. While the method of immunization through scarification will be essentially the same, the new vaccine will be produced in a mammalian cell culture that contains no animal protein.

Acambis stated on its web site that it would have no other comment on the project other than to confirm it has “accelerated” its production plans. But when the project was first announced in 2000, company officials said they had the ability to scale up production well beyond the requested 40 million doses. They were even scouting for other global markets. That means the capability to produce smallpox vaccine in abundance is on the horizon, and the question of immunizing health care workers will invariably arise. *Bioterrorism Watch* was unable to get a CDC response on the question as this issue went to press, but CDC director **Jeffrey Koplan**, MD, MPH, outlined the agency’s position in an Oct. 2, 2001 Health Alert posted on a CDC web site.

“Smallpox vaccination is not recommended

and, as you know, the vaccine is not available to health providers or the public,” Koplan said. “In the absence of a confirmed case of smallpox anywhere in the world, there is no need to be vaccinated against smallpox. There also can be severe side effects to the smallpox vaccine, which is another reason we do not recommend vaccination. In the event of an outbreak, the CDC has clear guidelines to swiftly provide vaccine to people exposed to this disease. The vaccine is securely stored for use in the case of an outbreak.”

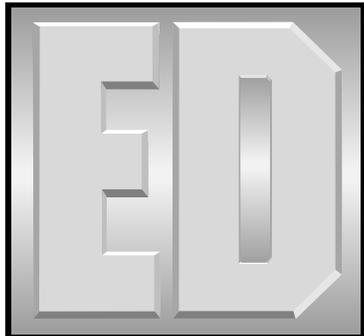
One factor in favor of the CDC’s position to rapidly deploy the vaccine — rather than do widespread vaccinations — is that immunization should still be effective several days after a smallpox exposure. In the smallpox global eradication campaign, epidemiologists found they could give vaccine two to three days after an exposure and still protect against the disease. Even at four and five days out, immunization might prevent death. Still, though the new vaccine will be improved in many ways, the hazards and risk factors of introducing cowpox into the human body are expected to be roughly the same as those documented with the old vaccine.

“We are looking at probably about one death per million primary vaccinations,” says **D.A. Henderson**, MD, director of the Center for Civilian Biodefense Studies at Johns Hopkins University in Baltimore. “We are looking at one in 300,000 developing post-vaccinal encephalitis — an inflammation of the brain, which occasionally is fatal and sometimes can leave people permanently impaired.”

Based on those estimates, if the new stockpile of 40 million doses is eventually rolled out, approximately 40 of those immunized will die, and another 133 will develop encephalitis. In addition to those severe outcomes, the arm lesion created during inoculation can be very large and painful, serving as a reservoir to self-inoculate the eyes or even infect immune-compromised patients.

The downside is real, but as more vaccine becomes available immunization will certainly be discussed at hospitals in previously targeted areas such as New York City and Washington, DC. If they are not immunized in advance, health care workers are going to want vaccine very quickly if they are expected to take care of smallpox patients, says **Allan J. Morrison Jr.**, MD, MSc, FACP, health care epidemiologist for the Inova Health System in Washington, DC. “Forget about smallpox patients. We’re talking about taking care of any patients.” ■

## 2001 SALARY SURVEY RESULTS



# Management®

*The monthly update on Emergency Department Management*

## Are you losing staff to other facilities? Here's what ED managers need to do

**D**oes your ED have high turnover and vacancy rates? You may be losing ED staff members to the competition because you're not keeping up with trends in benefits, salary, and incentives, warns **Nancy Bonalumi**, RN, MS, CEN, director of emergency services for PinnacleHealth Hospitals in Harrisburg, PA.

"With a nursing shortage, you need to find ways to keep the employees you have by being competitive in the market," she urges.

Current estimates show a vacancy rate of about 13% nationwide for nurses, reports **George D. Velianoff**, RN, DNS, CHE, executive vice president

of nursing for the Des Plaines, IL-based Emergency Nurses Association.

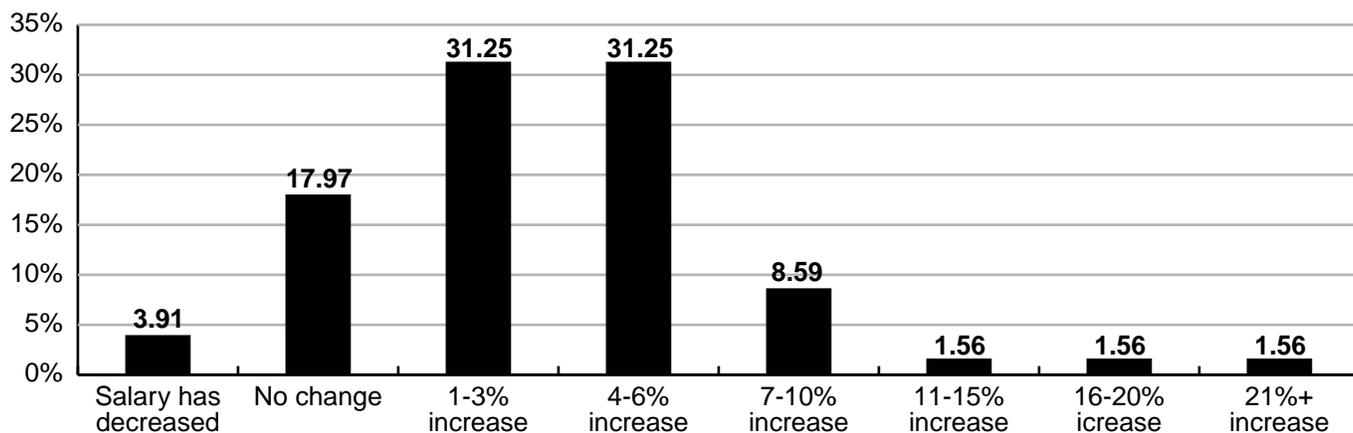
"That is not super high, but there is no one to fill the slots," he explains. "In the ED it is even more of a problem, because of having to hold patients that are admitted. There are no staff in the rest of the hospital to man the beds."

Here are current trends you'll need to address in your ED:

- **There is a narrow difference between staff and manager salary.**

This trend is due to the highly competitive job market for staff nurses, says Bonalumi. Staff

### How has your salary changed in the past year?



members receive incentives and bonuses that provide a take-home pay greater than a manager, and that can be frustrating to the manager, she explains.

“We gave all our nurses, up to and including nurse managers, a \$1 market adjustment in addition to their regular salary increase this July,” reports Bonalumi. “There is nothing worse than to lose a good employee for a dollar an hour wage difference.”

Staff appreciated the additional raise, she notes. “It made them feel respected and recognized, that the organization really did care about them and wanted to make them happy. Despite the fact that money is only a short-term satisfier in the workplace, it has helped morale here quite a bit.”

• **Generous relocation monies are being offered.**

Bonalumi points to a new benefit being offered to nurses who have taken a position from another location: relocation money.

“We offer relocation to staff nurses as well as managers, for employment at the acute-care hospitals,” she says. “This is not offered at our specialty psychiatric and long-term care sites and not for our own physician practices.”

Nurses are offered between \$2,000 and \$5,000 in location support, depending on the position and how far away they are coming from, she says. “It is not the first time we offered relocation dollars, but we are more generous now than in the past because of the shortage,” she adds.

• **Incentives are being given for certain shifts.**

Staff salary trends include incentive bonuses for working during high acuity, high vacancy, and

less desirable shifts, and a differential for working in the ED, says Bonalumi.

Some facilities are considering radical shift differentials, such as \$5 to \$10 per hour, for off-shifts and weekends, she reports.

Pinnacle does not offer the radical shift differential, Bonalumi notes. “We had to make a choice about how we were going to spend our money and chose acuity and certification bonuses instead,” she says.

Any nurse who works extra time on a unit with greater than a 20% vacancy rate is eligible for the vacancy bonus of \$6-10 per hour, depending on the day and the shift, says Bonalumi. “Acuity bonus offers the same pay,” she adds. “All these incentives are an attempt to improve staffing levels.”

• **Recruitment sign-on bonuses have created morale problems.**

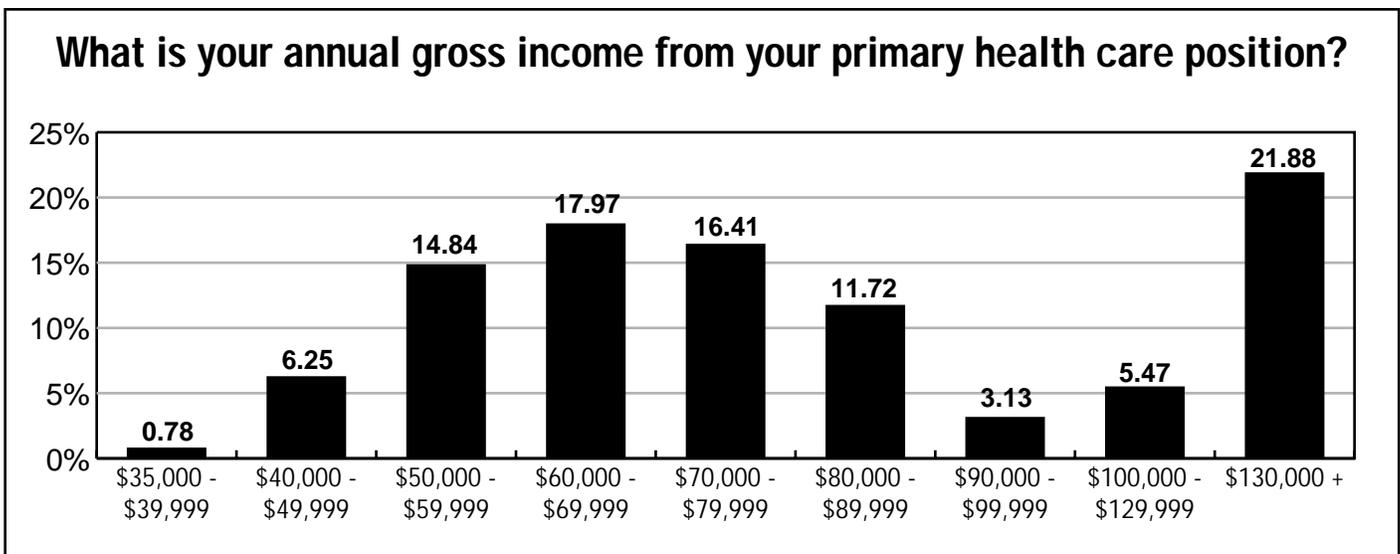
One concern with offering recruitment sign-on bonuses is the dissatisfaction it creates among current nursing staff, says Bonalumi. “This is especially true if you offer no additional incentives for that group,” she adds.

Sign-on bonuses can be a short-term fix, but may have a negative impact on morale for the long term, says Bonalumi. “Nurses feel devalued as long-term employees when an organization spends thousands on bringing in new staff, yet offers nothing to those who are experienced and have chosen to stay,” she explains.

Pinnacle does not offer nurses a sign-on bonus for this reason, she says.

• **Certification bonuses are being given.**

At Pinnacle, ED nurses are given annual certification bonuses of \$500 annually, pro-rated for



part-time employees. "We are offering this as a retention incentive," says Bonalumi. "Many of our senior staff are certified, and it is a way to recognize them for their expertise."

Certification bonuses are also a good recruitment tool if a new nurse is certified upon hire, she says. "They are eligible after successfully completing their six-month probationary period," she explains.

### **High turnover for nurse managers**

ED nurse managers are leaving positions for a variety of reasons, according to **Diana Contino**, RN, MBA, CEN, CCRN, president of Emergency Management Systems, a Monarch Beach, CA-based consulting firm that specializes in staffing issues. These reasons include lack of support from administrators, lack of training regarding business operations, inability to implement solutions to fix the problems, lack of decision-making autonomy to solve problems, and frustration with staffing shortages, she says.

In many facilities, the nurse manager is still seen as the staffing coordinator, says Contino. "We need to elevate the role of the nurse manager and enhance the education requirements and accountability," she argues.

If you have high manager turnover at your ED, you probably have unrealistic expectations and lack a defined role for the position, Contino says.

Nurse managers have to focus continually on decreasing expenses by cutting staffing costs and increasing efficiencies, she says. "Often, this is a no-win situation and professionally unrewarding."

A key part of the nurse manager role is support of ED staff, she emphasizes. "Today's nurse manager needs experience and education in managing human resources, decreasing turnover, and finding creative ways to make nurses feel valued and important so they will stay," she says.

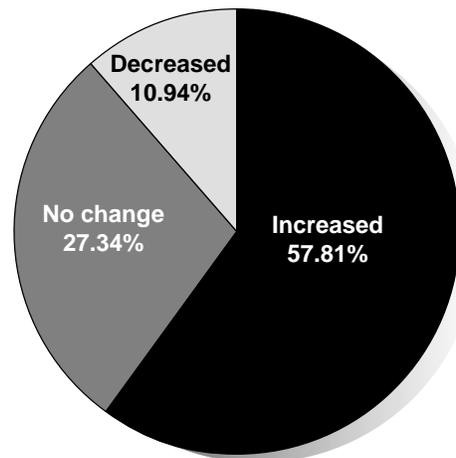
Contino points to a trend of hiring nurse managers with MBAs. "Some facilities are hiring business managers. These are non-nurses with MBAs," she adds.

Nurse managers "absolutely need to understand" the financial operations of the hospital, she underscores. "They must be able to translate workflow into cash flow," she says.

You must be able to do a cost/benefit analysis of projects, she explains. "Successful managers meet budgets, enhance quality, implement creative solutions, and decrease turnover," she says.

The *ED Management 2001 Salary Survey* was mailed in June to 1,453 subscribers. There were

**In the past 12 months, how has the number of employees in your company or department changed?**



128 responses, for a response rate of 8.8%. Here are several career and salary trends for ED managers, based on the survey results:

- **Salaries have increased somewhat. (See p. 1, How Has Your Salary Changed in the Past Year?, and p. 2, What Is Your Annual Gross Income From Your Primary Health Care Position?)**

According to the survey, 91% of ED managers make at least \$50,000 per year, with 63% of total respondents reporting an increase of 1% to 6% over the last year. Salary trends depend largely upon the hospital's financial status, explains Contino.

"Facilities that are breaking even and or have profits of 1% to 3% have the ability to increase the employer contributions to 401Ks, increase vacation time, increase reimbursement for education and or increase sign-on or retention bonuses," she says. **(For more on benefits, see story, p. 4.)**

Other facilities are changing their reimbursement structures to increase the salaries for higher degrees and specialty certifications, says Contino.

The hospitals that are losing money have fewer options, she notes. "They are hoping for more new graduates, because they are unable to increase salaries or benefits," she says. "They are scrambling for ways to cut costs so they can cover their agency expense."

Many of these facilities are changing staffing patterns to utilize more unlicensed staff, she adds.

- **Most ED managers work more than 46 hours a week.**

The survey's results showed that 82% of respondents work more than 46 hours a week, and almost half work more than 50 hours a week.

As an ED manager, you'll need to find ways to meet a variety of different staff needs, including decreasing the workload if needed, says Contino.

"Today's nurse manager has to blend many solutions to meet the multiple needs of today's nursing workforce," she emphasizes.

### ***Be as flexible as you can***

According to the survey, 78% of ED managers responded that a flexible work schedule was important or very important.

"For some employees, scheduling may be the most important thing. For others, benefits, education, or money may be the No. 1 priority," she adds. "The successful manager knows who is who and finds creative ways to meet their needs."

Contino gives the following example: A 20-year-old nurse who is just out of school might be willing to work more overtime. In return for picking up extra shifts when needed, the nurse may want to arrange several days off in a row, she says.

Another nurse may want to go back to school and is considering working for a registry instead of the ED, Contino says.

"See if you can offer a retention bonus and significant education reimbursement to keep the nurse from leaving," she recommends.

Similarly, a single nurse may pay close attention to retirement and health benefits.

"Know how to sell these benefits for your institution," she says. "If your facility doesn't have a 401K with matching funds, then suggest that they get one as a recruiting tool."

#### **• Staff size has increased in the past year.**

According to the survey, 58% of ED managers have seen the number of employees in their department grow in the past year. **(See p. 3, In the Past 12 Months, How Has the Number of Employees in Your Company or Department Changed?)**

"I'm finding facilities are adding staff to the ED, many of which were understaffed," says Contino. "If you look at the staffing benchmarks used by the consulting firms, many were unrealistic for the ED," she adds.

This is a major reason for the current staffing shortages in many EDs, Contino concludes. "Nurses do not want to work in unsafe, understaffed environments," she says. ■

## **Which benefits are important to you?**

### *Child care and elder care rank last*

In the *ED Management 2001 Salary Survey*, respondents ranked the following benefits as important or extremely important:

- medical coverage: 88%;
- 401K or other plan: 86%;
- pension plan: 79%;
- flexible work schedule: 78%;
- dental coverage: 73%;
- life insurance: 55%;
- tuition reimbursement: 49%;
- eyecare coverage: 41%;
- annual/semi-annual bonus: 37%;
- profit-sharing plan: 21%;
- maternal/paternal leave: 19%;
- exercise facilities: 15%.
- child care: 9%;
- elder care: 5%;

Some hospitals are increasing 401K matching funds to as much as 9% or up to \$5,000, says **Diana Contino**, RN, MBA, CEN, CCRN, president of Emergency Management Systems, a Monarch Beach, CA-based consulting firm that specializes in staffing issues.

"Others are increasing vacation time or combining vacation and sick time into a 'paid time off' bank," she adds.

Education reimbursement has increased between \$1,000 to \$2,500 on average, with some facilities offering much more for BSN or MSN degrees for full-time staff and prorated for part-time staff, she notes.

Advertisements for positions increasingly emphasize enhanced benefits, says Contino.

"One facility is even offering a \$50,000 bonus for ED nurses, a few thousand in the first year and the balance at the end of four years," she reports.

"They are able to do this because the traveling agency's overhead is about \$15 to \$20 per hour because of housing costs," Contino explains.

This equates to between \$31,200 and \$41,600 per FTE, says Contino.

"The chief nursing officers, chief financial officers, and chief executive officers understand these figures and are using a portion of this money to attract staff instead of paying agencies," she explains. ■