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Report every case of suspected child abuse — or face criminal charges

Missouri case serves as a wake-up call for all ED nurses

Identifying signs of abuse in an injured child is one of the worst parts of any ED nurse's job. But there is another frightening possibility that you may not be aware of: If you miss a case, choose not to report your suspicions, or make a judgment call that turns out to be wrong, you could face criminal charges.

That is exactly what happened to a Missouri ED nurse when she treated a 2-year-old boy with bruises on his back and, according to prosecutors, failed to report them to the attending physician. The nurse told authorities she did not report possible abuse because she believed the foster mother's explanation that the child got the bruises by leaning back in his booster seat.

The child was brought back to the ED four days later with seizurelike symptoms. He slipped into a coma and died from what is suspected to be shaken-baby syndrome.

The nurse was charged with two misdemeanors for failing to report the possible abuse after the first ED visit. At press time, the outcome of the case was pending. Regardless of the outcome, however, this case is a wake-up call for all ED nurses, says **Pamela S. Rowse**, RN, assistant nurse manager for the ED at St. Rose Dominican Hospitals in Henderson, NV.

"This is a case that will serve as a precedent to the rest of the country about our role in reporting suspected child abuse," Rowse says. "We have an obligation to the children that we treat, as well as to our profession. We as ED nurses may be their only hope."

The recognition and reporting of child abuse is a common occurrence in the

EXECUTIVE SUMMARY

An ED nurse has been charged criminally for failing to report suspected child abuse, highlighting the need to report all suspicions.
- Nurses are legally required to report suspected abuse and neglect.
- Always document who you told about possible abuse.
- If the caregiver's explanation doesn't match the injury, you must report.

ED — a fact that could put you at higher risk for criminal charges, says **Sharon LaDuke,** RN, patient documentation analyst at Claxton-Hepburn Medical Center in Ogdensburg, NY.

"That can make an ED nurse or physician a high-profile target for a charge of failure to report, compared to others who were involved in the same case," LaDuke explains.

You must consider these facts when making a decision about reporting suspected child abuse:

• **Your state laws require you to report.**

All states include nurses, physicians, and paramedics as mandated reporters, notes **Angie Black,** RN, BSN, trauma coordinator at Children's Memorial Hospital in Chicago.

"Each state also has a legal time limit for making the report," she adds.

At Children's, orientation for ED nurses includes a lecture on recognition and treatment of child abuse that reviews state laws on mandated reporting, says Black.

• **You don't have to be certain abuse is occurring.**

Once you suspect abuse, you are legally required to report, says Black.

"The key word here is *suspicion*," she emphasizes. "We do not have to prove it. We just need to suspect it."

The issue is similar to that of adverse drug reaction reporting, says LaDuke.

"It can be hard to get nurses to report adverse reactions, because even though they suspect that the symptoms they are seeing were caused by a medication, they are reluctant to document their conclusions," she says. "They may feel it's not within their scope of practice to judge."

But the fact is, you aren't required to *prove* that symptoms are the result of an adverse reaction, says LaDuke. "You are only required to report your suspicions and let the appropriate committee sort it out," she says.

• **Don't let others involved keep you from reporting.**

If you suspect child abuse or neglect, first report your suspicions to the attending physician, says Black. "But even if the physician does not feel the need to report, the nurse needs to follow through and make that report on their own," she says. **(For more on child abuse, see "Are you examining every child for signs of abuse?" *ED Nursing*, August 2002, p. 135, and "Take these 4 steps if you suspect abuse," on p. 138 in the same issue.)**

Passing on the information to a physician or another nurse in report, leaving a message for social services, or doing a referral for follow-up is not enough, advises Rowse.

"You still are ultimately responsible to make sure the abuse was reported," she says. "We as nurses must stand our ground and report, regardless of the other individuals involved in the case."

Never ignore your gut feeling, says Black. "This is a wonderful diagnostic tool that should not be discounted," she says.

Many nurses and physicians fear reporting because they worry they could be wrong, says Black. "The law actually provides immunity for civil or criminal liability for reporting child abuse and neglect if the report was made in good faith," she explains.

• **Don't let yourself be singled out.**

Among all the caregivers involved in the Missouri child's ED visit, only an ED nurse was singled out for criminal prosecution, emphasizes LaDuke.

"Maybe it's simply that state health and local criminal officials felt that because a recently hospitalized child died, *something* had to be done to somebody," she says.

Carefully document what you see, the history you are given, and who you have reported this information

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Editorial Questions

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to, such as "Dr. Jones notified of bruises to patient's buttocks," says Black. "That way, you are not the only one left standing, as this nurse is in Missouri," she says.

Even if a social worker does the actual reporting, as is the case at Children's ED, you still should document this reporting, says Black.

"If someone else is reporting, make sure you document that 'Social Worker Jane Doe contacted Child Protective Services at 1800,'" she says. "Usually, they will be given a case number/case worker's name that can be added to the chart."

• If you are questioned, obtain good legal representation.

If you're questioned about a case of abuse, it's a mistake to speak to investigators without legal representation, says LaDuke.

"The Missouri nurse made herself an easy target by speaking to investigators, instead of invoking her right to silence — as the physician in this case reportedly did," she says.

You need a lawyer immediately

An attorney who specializes in the handling of high-profile criminal cases now is representing the Missouri nurse, notes LaDuke. "The importance of excellent and immediate legal representation cannot be overstated," she says.

Even if found innocent of a crime, she may face a professional misconduct charge and prosecution from the state's licensing agency/board of nursing, says LaDuke. "If such a development occurs, she will need representation by an attorney who's an expert at representing licensees in misconduct cases," she says.

To find attorneys specializing in these areas, LaDuke recommends asking physicians or attorneys for contacts or referrals, and contacting your local bar association or state nurses association.

• If the explanation doesn't make sense, you must report.

The main question to consider if you suspect abuse is, "Does the story match the injury?" says Rowse.

"Perpetrators of child abuse will come up with really elaborate and changing stories to explain the injuries of the children that were in their care," she says. "Falls from a coffee table, couch, or changing table don't result in major subdural hematomas, retinal hemorrhaging, and rib fractures."

Often, abuse may not be obvious or clear-cut, says Rowse. "The majority of shaken babies that present to EDs don't look abused," she adds.

You must report if an injury is questionable for any reason, says Rowse. "If you can't make a decision about the causative factors, you must make sure that further investigation is done," she says. "The child's welfare has to be foremost in our minds." ■

SARS cases are growing — prepare with these steps

With the threat of smallpox and anthrax looming, ED nurses now have one more thing to worry about: severe acute respiratory syndrome (SARS). At press time, there were 115 cases in 27 U.S. states, including at least two health care workers.

ED triage nurses at Northwest Community Hospital in Arlington Heights, IL, reacted quickly when a man with fever and cough informed them, "I think you are supposed to put a mask on me, because I just got back from Hong Kong."

The patient immediately was masked and escorted to a negative airflow room. "Procedures inducing aerosolization were avoided, and appropriate specimens were sent," reports **Barbara Weintraub,** RN, MPH, MSN, coordinator of pediatric emergency services.

Procedures such as bronchoscopy, airway suctioning, and endotracheal intubation potentially could facilitate the transmission of SARS because they induce coughing, according to the Atlanta-based Centers for Disease Control and Prevention (CDC).[1]

CDC officials believe that the illness is transmitted

EXECUTIVE SUMMARY

The recent outbreak of severe acute respiratory syndrome (SARS) cases underscores the need to review proper isolation procedures.

- Avoid aerosol-generating procedures such as bronchoscopy, airway suctioning, and endotracheal intubation if you suspect SARS.
- You should have a high index of suspicion for any patient with cough and fever.
- Use personal protective equipment including gown, gloves, eye protection, and N95 respirator.

through droplets spread when an infected person coughs or sneezes. However, there also is concern about SARS being transmitted through contaminated objects and the possibility of airborne transmission across broader areas.[2]

The CDC says that transmission to health care workers seems to have occurred only after unprotected exposure to SARS patients. Currently, the agency recommends use of personal protective equipment, including gown, gloves, eye protection, and N95 respirators.[3]

The recent outbreak of SARS makes ED nurses worry about yet another uncontrolled infectious disease, says **Darlene Matsuoka**, RN, BSN, CEN, CCRN, clinical nurse educator for the ED at Harborview Medical Center in Seattle.

"It seems new, the symptoms are vague, and the disease is hard to diagnose," she says. "What seems scary is the fact that 10%-20% of patients require intubation, the disease affects health care workers, and there is no definitive treatment." **(See box, right, for the CDC's definition of SARS.)**

The patient may have diarrhea and usually presents with fever and dry cough, says Matsuoka.

SARS patients are leukopenic, thrombocytopenic, and have elevated creatine kinase and liver transaminases, she adds.

"On chest X-ray, they may have interstitial infiltrates, or some consolidation," says Matsuoka. "There is a 3% mortality rate on current patients."

Since the cause of SARS has not yet been determined, the CDC gives no specific treatment recommendations at this time. The guidelines say that treatment should be based on the severity of the disease and may include use of antivirals and steroids, says Matsuoka.

"Involve and consult with your infectious disease staff resources," she recommends. "It is important to notify the health department."

Your mindset should be more "global" to be ready for every possibility, according to Matsuoka.

"In Seattle, we are having a tuberculosis outbreak among our homeless," she reports. ED staff members are receiving smallpox vaccinations, and letters containing white powder (determined to be hoaxes) still are being mailed, she adds.

This is an excellent time to review your policies for isolating patients, says Matsuoka. "We are increasingly suspicious about any pneumonia or communicable disease," she reports. "Our threshold is very low to isolate patients."

Patients with suspected tuberculosis, anthrax, smallpox, and now SARS all can be managed the same way initially, advises Matsuoka.

"This is just like the concepts of universal precautions and bloodborne pathogens," she says. "Being global in this approach ensures consistency of care and the safety of all."

A triage nurse these days must function with a

Do You Know SARS Symptoms to Watch for?

Here is the case definition of severe acute respiratory syndrome (SARS) from the Atlanta-based Centers for Disease Control and Prevention:

- Respiratory illness of unknown etiology with onset since Feb. 1, 2003, and the following criteria:
- Measured temperature > 100.5°F (>38°C);

AND

- One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, hypoxia, or radiographic findings of either pneumonia or acute respiratory distress syndrome);

AND

- Travel within 10 days of onset of symptoms to an area with documented or suspected community transmission of SARS (see list below; excludes areas with secondary cases limited to health care workers or direct household contacts);

OR

- Close contact within 10 days of onset of symptoms with either a person with a respiratory illness who traveled to a SARS area or a person known to be a suspect SARS case. (Close contact is defined as having cared for, having lived with, or having direct contact with respiratory secretions and/or body fluids of a patient known to be suspect SARS case.)
- Areas with documented or suspected community transmission of SARS are People's Republic of China; Hanoi, Vietnam; and Singapore.

SOURCES

For more information about severe acute respiratory syndrome (SARS), contact:

- **Darlene Matsuoka**, RN, BSN, CEN, CCRN, Emergency Department, Harborview Medical Center, Mail Stop 359875, 325 Ninth Ave., Seattle, WA 98104. Telephone: (206) 731-2646. Fax: (206) 731-8671. E-mail: dmatsuok@u.washington.edu.
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higher level of suspicion, not just for SARS, but for any infectious disease, says Matsuoka. "Rather than screen for a disease, you must think about screening for symptoms and symptom management," she says.

You should be prepared to isolate patients with a cough, fever, or rash to protect yourself, patients, and other staff, she says. Take these critical steps:

• **Isolate the patient quickly.**

Provide them with masks or tissues to cough in while walking to the isolation room, advises Matsuoka.

The room must be negatively pressurized with adequate air exchanges of six per minute minimum, she says. "Portable air exchange units should be available," she adds.

• **Use appropriate respiratory protection.**

"We use positive airway pressure units for all suspicious infectious respiratory conditions," Matsuoka reports.

• **Do an early chest X-ray.**

"We send an appropriately attired technician in the room to do a portable X-ray first," she says. "This is a good exclusionary tool for tuberculosis."

• **Practice body substance isolation.**

This includes good hand washing, gloves and masks, and cover gowns if needed for open lesions, says Matsuoka.

• **Consider employee exposure and the need for follow-up and prophylaxis.**

If a patient with a contagious disease was transported by ambulance, the emergency medical services agency need to be notified, adds Matsuoka.

• **Consider bioterrorism if there is an unusual presentation.**

Red flags for bioterrorism include a patient who is sicker than expected and presentation of multiple patients, she says. **(For more on bioterrorism, see "Is it smallpox? When panicked patients storm the ED, nurses will be the refuge," *EDN*, February 2003, p. 41; and for more information on a SARS audioconference, see p. 87.)**

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1. Centers for Disease Control and Prevention. I*nfection Control Precautions for Aerosol-Generating Procedures on Patients who have Suspected Severe Acute Respiratory Syndrome (SARS).* March 20, 2003. Web: www.cdc.gov/ncidod/sars/aerosolinfectioncontrol.htm.
2. Centers for Disease Control and Prevention. CDC Telebriefing Transcript SARS Update March 29, 2003. Web: www.cdc.gov/od/oc/media/transcripts/t030329.htm.
3. Centers for Disease Control and Prevention. *Interim Domestic Guidance for Management of Exposures to Severe Acute Respiratory Syndrome (SARS) for Healthcare and Other Institutional Settings.* March 27, 2003. Web: www.cdc.gov/ncidod/sars/exposureguidance.htm. ■

Are you putting spinal cord injury patients in danger?

If you don't follow recent guidelines, a patient may come into your ED with a spinal cord injury and leave paralyzed.

"Patients with cervical spine fractures could cause more damage to their spinal cord if not appropriately immobilized," underscores **Kelli Vaughn**, RN, BSN, CEN, trauma nurse coordinator at John D. Archbold Memorial Hospital in Thomasville, GA. "This could lead to more paralysis and greater complications."

New guidelines for acute cervical spine and spinal cord injuries were developed by the Rolling Meadows, IL-based American Association of Neurological Surgeons and the Schaumburg, IL-based Congress of Neurological Surgeons.

Use these key points from the guidelines to ensure you don't injure a patient with potential spinal cord injuries:

• **Make sure the patient is immobilized adequately.**

Since approximately 20% of spinal cord injuries involve noncontinuous vertebral levels, the complete spine should be immobilized until injury has been ruled out, advises **Michael Frakes**, BSN, CFRN, CCRN, EMTP, flight nurse at Lifestar/Hartford (CT) Hospital. Adequate immobilization consists of a rigid cervical collar with supportive blocks on a rigid backboard with straps, he says.

You must make sure that adequate precautions are taken for all patients who present with a possible spinal

EXECUTIVE SUMMARY

Follow recent guidelines for acute cervical spine and spinal cord injuries to prevent further injury in these patients.

- The complete spine should be immobilized until injury has been ruled out.
- Perform a careful initial respiratory assessment, monitor closely for ventilatory compromise, and perform frequent serial neurological checks.
- Methylprednisolone is used to decrease the secondary injury to the spinal cord.

cord injury, stresses Frakes. "This includes ensuring the adequacy of spinal restriction placed by EMS [emergency medical services] and also placing appropriate equipment on patients who do not arrive by EMS," he says.

According to the Des Plaines, IL-based Emergency Nurses Association's Trauma Nurse Core Course, spinal immobilization is required for "any patient whose mechanism of injury, symptoms, or physical findings suggest a spinal injury," notes Frakes.

The following areas are associated with potential spinal injury, he says:

— ***Mechanism of injury:*** Motor vehicle crash, fall, diving injury, near-drowning, direct force to spine or head, penetrating trauma to spine, or ejection from motor vehicle.

— ***Symptoms:*** Spinal pain or tenderness, paresthesias, and paralysis.

— ***Physical findings:*** Head injury or altered level of consciousness after trauma.

• Don't remove immobilization until adequate imaging is completed.

No single film can adequately rule out injury in symptomatic or obtunded patients, says Frakes. These patients should have a three-view series of plain films supplemented by computerized tomography or magnetic resonance imaging, he explains.

"You should ensure that immobilization remains in place until adequate imaging is completed and the studies read," says Frakes.

It's a mistake to think you can clear a neck injury with only a lateral cervical spine view, says Frakes. "If there is an injury to the anterior aspects of the cervical spine that are only visible on the odontoid view, particularly high cord injuries, that would be missed," he says.

• Perform a thorough respiratory assessment.

Patients with spinal cord injuries are at high risk for airway compromise and pulmonary dysfunction, says Frakes.

SOURCES AND RESOURCES

For more information on the treatment of spinal cord injuries in the ED, contact:

- **Michael Frakes,** BSN, CFRN, CCRN, EMTP, Flight Nurse, Lifestar/Hartford Hospital, P.O. Box 5037, Hartford, CT 06102-5037. Telephone: (860) 545-4369. Fax: (860) 545-5491. E-mail: Mfrakes@harthosp.org.
- **Kelli Vaughn,** RN, BSN, CEN, Trauma Nurse Coordinator, John D. Archbold Memorial Hospital, P.O. Box 1018, Thomasville, Georgia, 31799-1018. E-mail: KVaughn@archbold.org.

Guidelines for the Management of Acute Cervical Spine and Spinal Cord Injuries were published in a supplement to the March 2002 issue of *Neurosurgery*. The guidelines can be ordered on-line at www.neurosurgery-online.com/home2.html. Scroll down to "Guidelines for management of acute cervical spinal injuries," and click on "Full text print." The cost to download the guidelines is $20 per chapter. Or single copies of the supplement issue (which contains the complete text of the guidelines in 22 chapters) are available for $61, including shipping. To order, contact Lippincott, Williams & Wilkins, P.O. Box 1600, Hagerstown, MD 21740-1600. Telephone: (301) 223-2300. Fax: (301) 223-2400. E-mail: customerservice@lww.com. Web: www.lww.com.

"The ED nurse should complete a careful initial respiratory assessment and provide close ongoing monitoring for ventilatory compromise," he says.

Supplement frequent examinations and vital signs measures with pulse oximetry and capnography, recommends Frakes.

• Monitor blood pressure carefully.

A single episode of hypotension is potentially harmful, warns Frakes.

"You should carefully monitor the patient's blood pressure and advocate for blood pressure support as necessary," he says.

• Arrange for transport if necessary.

Patients with acute spinal cord injuries should be monitored in an intensive care unit (ICU) at a center with spinal cord injury expertise, says Frakes.

"If transport for a specialty ICU is required, transport should be arranged early," he says. "The patient should be transported by a team with trained flight nurses."

• Consider risks of methylprednisolone.

Methylprednisolone therapy may not be appropriate for everyone, says Frakes.

"The risks and benefits of therapy should be carefully weighed for each patient," he says.

Methylprednisolone is a steroid therapy, and for spinal cord injuries, the therapy is a high dosage and continuous for 24 hours, explains Vaughn. "So, you want to consider side effects of steroids, including decreased immune response stomach ulcers, and fluid retention," she says.

Methylprednisolone is used to decrease the secondary injury to the spinal cord, says Vaughn. The primary injury is the event causing the spinal cord injury, such as a motor vehicle accident or fall, Vaughn explains. "The secondary injury is the swelling, inflammation that occurs from the primary injury," she says.

Research has shown that the drug works best if given as soon as possible following the injury, says Vaughn. "That does not mean that it should not be given if treatment has been delayed, but results may not be as effective," she says.

• Perform frequent serial neurological assessments.

You carefully must monitor spinal cord injury patients for changes, as you would in any critically injured patient, says Vaughn.

"These changes need to be documented and the physician notified as appropriate," she says. "For example, a thoracic fracture may not initially affect respiratory status, but as swelling of spinal cord occurs, respiratory status can become an issue." ■

Triage switch could fail without these steps

If you switch to a five-level triage system without examining your processes, the entire process could fail, warns **Elisabeth K. Weber**, RN, MA, CEN, a Chicago-based consultant who specializes in emergency services and process improvement. Weber has implemented five-level triage systems at three EDs.

"I suppose that if you have a perfectly running ED with no capacity or access issues, then you really do not have to review front-end processes along with a triage change," she says. "Otherwise, it is worthwhile."

The Des Plaines, IL-based Emergency Nurses Association will recommend a specific five-level triage system for use, although no time frame has been announced. Most EDs are expected to switch to the triage system that is endorsed.

You can reap tremendous benefits from switching to a five-level triage system, but only if you eliminate existing problems, says Weber. **(For more information on the five-level triage scale, see "Are you ready for a 5-level triage scale? Be prepared: Most EDs will switch soon," *ED Nursing,* January 2003, p. 29.)**

"To take a five-category system and just drop it into an old system really misses a great opportunity," she says. "You have the chance to review your process to determine how it should work. If you don't do this, the outcome may not be successful."

Here are the assessments that are critical for the switch to be successful:

• Identify existing problems with triage.

If you have any "yes" answers to the following questions, you'll need to review your entire triage process, says Weber:

— Are there risk issues at triage?

— Do patients wait beyond benchmarks to see providers?

— Does the current system no longer meet the needs of the hospital due to volume, changes in ED population, or being part of a network that seeks consistency across the system?

— Are patient satisfaction issues a problem?

You'll need to identify existing patient flow bottlenecks from the time of a patient's arrival until a provider is seen, advises **Jean Mullally**, RN, MBA, nurse manager at Louis Stokes Cleveland VA Medical Center, where a five-level triage system was implemented in December 2002.

To identify bottlenecks, collect and analyze data such as the number of patients arriving each hour for a full 24-hour cycle for a month, she recommends.

"This helps establish anticipated triage volume and may identify significant trends," says Mullally.

A review of the frequency of top diagnosis codes was used to assign medical conditions to each of the five severity levels, she adds.

• Get input from a variety of sources.

Weber suggests you ask the following individuals for ideas and suggestions for ways to improve triage:

EXECUTIVE SUMMARY

Before you switch to a five-level triage scale, you should review your entire front-end systems.

- Identify existing problems with triage, such as bottlenecks and delays.
- Ask for input from a wide variety of hospital employees, and include patients and volunteers.
- Allow a year for implementation of the new system.

SOURCES

For more information on switching to a five-level triage scale, contact:

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physicians, security, the lab, radiology, patients or a patient representative, registration clerks, secretaries, social workers, interpreters, residents, techs, pre-hospital providers, hospital volunteers, and administrators.

"Even though triage is within the realm of nursing, I think it is valuable to ask basically anyone who interacts with triage in the ED," she says.

A small committee, in turn, can interview others using a self-developed tool or a formal meeting, in order to gather a wide variety of impressions of triage, suggests Weber. "It is amazing what kind of perceptions others have of the process," she says.

For instance, some valuable tips came from hospital volunteers, reports Weber. "They see the broken process as a patient or consumer does," she says. "Radiology and security were also very helpful with their impressions."

Radiology set aside a room for quick "in-and-out" triage X-rays, says Weber. "They recognized that we could make the nonurgent population much happier if they did not have to queue behind all the urgent patients to have a simple single X-ray," she says.

Security took on the task of walking some patients directly to the triage nurse instead of always staying at a command post, she reports.

• **Identify your goals.**

When a five-level system was being implemented at Mullally's facility, the following triage objectives were identified:

— decrease time from patient arrival to provider assessment;

— standardize assignment of triage severity by nursing staff;

— identification and assignment of low-severity patients to fast-track area following triage;

— improve information collection in triage using a customized triage note in the electronic medical record.

Here is how front-end processes were improved to meet these triage goals:

• Fast track was restructured with additional providers and rooms to meet peak demands.

• Additional nurses are assigned to triage during peak hours.

"We are doing focused audits to monitor time of arrival to provider evaluation, to track our progress toward meeting our target goals," she says.

• **Allow enough time.**

The shortest implementation time for a new triage scale was eight months in Weber's experience, she reports.

"Triage is so important as a risk reduction strategy," she emphasizes. "Doing it right takes time to plan, implement, train, precept, and support."

You should never do an implementation anytime a major regulatory visit is coming up, if you can help it, advises Weber. "Triage and front end redesign is a project for an entire year," she says. ■

Boost morale with 'core team' of ED nurses

How do you make big changes when you lack major resources? It may be as simple as looking to your long-term ED nurses.

At Mecosta County General Hospital, a 78-bed hospital in Big Rapids, MI, 10 nurses, each with five years of continuous experience in the ED, were invited to be part of a core group and attend a brainstorming meeting to solve chronic problems in the ED.

The goal was to boost morale by including the most experienced ED nurses in developing policies and standards, providing staff education, setting minimum practice standards, and decision making, says **Kathleen M. Walter**, RN, BSN, the ED's clinical support nurse.

All ED nurses were asked for suggestions to be addressed at monthly meetings. **(See memorandum on p. 85 that explains the core team to ED nurses.)**

"There is a new energy in the department with the core nurses assuming a greater leadership role," says **Virginia R. Keusch**, RN, clinical manager of the ED. "It's amazing how creative and talented nurses are when given the chance to shine."

You have the potential to realize these significant benefits with a core team:

• **There are zero vacancy rates.**

Before the core team was started, the ED had a 30% vacancy rate, says Keusch. "Currently, we have no open positions and no need for agency staff nurses," she says.

EXECUTIVE SUMMARY

A "core team" of experienced ED nurses can have a major impact on patient flow, morale, and vacancy rates.

- Inservices are provided to staff to supplement education budget cuts.
- The nurses came up with inexpensive "quick fixes" for ongoing problems.
- Changes included adding a dedicated triage role, putting the triage sheet on top of the patient's file, and adding technician tasks to a patient tracking board.

Several ED nurses from other area hospitals have started working on a per-diem basis in hopes they will obtain a staff position, she reports.

"Since nurses see that they can make a difference, we anticipate continued success with retention and recruitment," says Keusch. "Less-experienced nurses anticipate joining the core team."

• Staff members receive frequent inservices.

"Our nurses were hungry for more inservices because our education budget was cut, and it's difficult to send them for training," says Walter.

To meet this need, the core nurses now give numerous inservices. They are held in two sessions so that all nurses can attend, including per diems, and an evaluation form completed afterward. **(See Evaluation Form enclosed in this issue.)** Topics include shock, thoracic trauma, thrombolytics, pediatric intravenous lines, and abuse, says Walter.

• ED managers have a resource to solve chronic problems.

When a problem surfaces, ED nurse managers can take it to the core group, says Walter. "This gives a forum of people to help us share the responsibility for problem solving," she says.

Recently, there was a problem with charting done by LPNs who were assigned to the ED.

"The core group helped us come up with a decision," says Walter. "They are now being used pretty much the same way as health care technicians and won't be assigned patients."

• Many ED processes have been improved.

As a small rural ED, making major changes seemed impossible due to lack of resources, but the core group proved that assumption wrong, says Walter. "Simple and cheap solutions were found," she says.

The core group found many quick fixes for chronic ED problems. Here are several:

Memo

To: ER Staff
From: ER Core Team
Date: 12/20/2002

A new team has been developed as part of our ongoing effort to build a strong foundation and to provide direction for the future of our department.

Named the "ER Core Team," it's comprised of RNs with a minimum of five years continuous ER experience. Our hope is to provide a forum to resolve problems, make decisions and set standards (e.g., ACLS, PALS).

It is our hope that as staff members reach this level of expertise they will be excited to join this dynamic team! Current members are Kathy Belville, Kristy Whalen, Marlene Skodak, Shelly May, Mary Jacobs, Lola Callaghan, Rose Duchon, Sue McIntyre, Ginny Keusch, and Kathy Walter.

The Core Team needs your input. Please let a member know of any ideas or concerns. Let us all work together and continue to make MCGH's ER the best!

Source: Mecosta County General Hospital, Big Rapids, MI.

— ***A dedicated triage nurse role was created.***

Previously, whichever nurse was free would do triage, but this system was problematic, says Walter.

"After a while, nurses didn't want to do triage because they were so busy taking care of patients," she says. "It got to be a real problem."

A dedicated triage nurse is now utilized for four-hour blocks of time, she says. This nurse also keeps patients informed about delays, offers them ice or blankets, and performs tasks such as starting IVs, says Walter.

— ***The patient tracking board is used to assign tasks to health care technicians.***

Previously, nurses instructed the technicians continually, which was frustrating for all concerned, says Walter. Now, nurses write the jobs in blue marker on the patient assignment board, she explains.

"They techs just look at the board, and it gives them direction without a nurse having to tell them what to do next," she explains. "This also gives the techs some more autonomy so they don't feel bombarded."

— ***A call system was put in the charting area.***

A counter area was put in the utility room for nurse to do charting, but the charge nurse constantly had to come ask nurses to perform certain tasks, says Walter.

SOURCES

For more information on the core team of ED nurses, contact:

- **Virginia R. Keusch**, RN, Critical Care Services Clinical Manager, Emergency and Cardiopulmonary Departments, Mecosta County General Hospital, 405 Winter Ave., Big Rapids, MI 49307. Telephone: (231) 796-8691, ext. 4381. Fax: (231) 592-4421. E-mail: gkeusch@mcghhospital.com.
- **Kathleen M. Walter**, RN, BSN, Clinical Support Nurse, Emergency and Cardiopulmonary Departments, Mecosta County General Hospital, 405 Winter Ave., Big Rapids, MI 49307. Telephone: (231) 796-8691, ext. 4131. Fax: (231) 592-4421. E-mail: kwalter@mcghhospital.com.

"She was feeling pretty stressed," says Walter.

A doorbell system was installed to alert nurses to come find out what is needed, she says. "It cost us about $20, and it solved our problem."

— ***The triage record sheet is placed on top of the patient's chart.***

When Walter was doing quality improvement checks on charts, she noticed that there were abnormal findings noted at triage that weren't being addressed.

"Nurses weren't looking at the triage form, which was buried underneath everything else," she says.

The sheet was simply put right on top so nurses can't miss it, she says. "I see it reflected on the charting that they are addressing abnormal vital signs that they were missing before," she says.

— ***A "communication book" is used.***

This is a notebook kept at the nurses' station for staff to leave messages for each other, says Walter

"For example, somebody may write, 'We rearranged our trauma cart; go look at it,'" she explains. "Notes can be left by anybody who has anything to pass on. We are all responsible for reading it and initialing afterward." ■

Are you giving aspirin to stroke patients?

If you fail to give aspirin to stroke patients in your ED, you're not following recommendations of a recent report from the St. Paul, MN-based American Academy of Neurology and the Dallas-based American Stroke Association.

According to the report, all acute ischemic strokes have the potential to benefit from early aspirin administration, says **Dawn K. Beland**, RN, MSN, CCRN, CS, stroke center coordinator at The Stroke Center at Hartford (CT) Hospital.

SOURCE

For more information on giving aspirin to stroke patients, contact:

- **Dawn K. Beland**, RN, MSN, CCRN, CS, Stroke Center Coordinator, The Stroke Center at Hartford Hospital, 80 Seymour St., Hartford, CT 06106-5037. Telephone: (860) 545-2183. Fax: (860) 545-5062. E-mail: dbeland@harthosp.org.

Administer within 48 hours

To reduce the patient's chance of having another stroke, you should give 160 to 325 mg of aspirin within 48 hours of symptom onset, if there are no contraindications such as allergy and gastrointestinal bleeding and the patient will not be treated with recombinant tissue-type plasminogen activator, she advises.

She points to this compelling statistic from the report: "It was estimated that 13 more patients were alive and independent for every 1,000 patients treated with antiplatelet agents."[1]

Because some patients may be unable to take anything by mouth after the onset of stroke, an aspirin dose also may be given by way of rectum, notes Beland. However, you should not give aspirin until after the noncontrast head computerized tomography scan has been read and hemorrhagic stroke ruled out, she says.

"Giving aspirin within 48 hours of symptom onset does increase the risk of hemorrhage, but the benefits of reducing death, disability, and early recurrent stroke are worth the risk," says Beland.

Reference

1. Coull BM, Williams LS, Goldstein LB, et al. Anticoagulants and antiplatelet agents in acute ischemic stroke: Report of the Joint Stroke Guideline Development Committee of the American Academy of Neurology and the American Stroke Association (a Division of the American Heart Association). *Neurology* 2002; 59:13-22. ■

SARS: What U.S. hospitals can learn from Canada

Hospital clinicians in the United States are watching with grave concern as severe acute respiratory syndrome (SARS) — a rapidly emerging infection with unclear treatment options — strikes the health care system of their Canadian colleagues. Particularly beset is the city of Toronto, where nosocomial spread from unsuspected hospital patients set off an epidemic that has resulted in the quarantine of 9,000 people.

With sporadic, but increasing SARS cases appearing in the United States, the lessons learned in Toronto can provide critical guidance for U.S. clinicians. To prepare yourself and your facility, don't miss **SARS: What U.S. Hospitals Must Learn from the Canadian Outbreak** on May 6, 2003, from 2:30-3:30, EST, an audio conference program presented by Thomson American Health Consultants.

Transmission within hospitals to health care workers and patients has been clearly documented in eight Toronto hospitals. Two hospitals have been closed to all new admissions, with their staff, visitors, and patients quarantined. A Toronto long-term care facility also is under quarantine, a particular concern because the mortality rate of SARS rises with increasing age in the infected. Though numbers were still increasing, as this bulletin was prepared, Toronto had some 160 SARS cases and nine dead.

The first speaker is a physician who is dealing directly with SARS patients in Toronto and leading hospital efforts to prevent further spread to workers and patients. **Andrew Simor**, MD, an infectious disease specialist at the University of Toronto and hospital epidemiologist at Sunnybrook and Women's College Health Sciences Centre, will describe the enormous impact on the city after SARS started with one case patient returning from Hong Kong. He will discuss hospital transmission and infection control measures to prevent further spread.

Be prepared when a SARS patient walks into your emergency department. Learn the lessons of Toronto, and receive a comprehensive update on the U.S. situation from the program's second speaker, **Patti Grant**, RN, BSN, MS, CIC, director of infection control at RHD Memorial Medical Center in Dallas. A board member of the Association for Professionals in Infection Control and Epidemiology, Grant will detail the U.S. SARS situation and provide practical advice on implementing new Centers for Disease Control and Prevention guidelines to prevent transmission.

Health care workers infected

An apparent new corona virus that may well have made the leap from an animal host to man, SARS has rattled the health care community since its rapid emergence from China. Many of the first cases have been in health care workers. Get the latest information on the etiology, modes of transmission, respiratory protection, protecting household contacts, and possible treatment options. At the conclusion of this program, participants will be able to:

- describe lessons learned by Canadian clinicians;
- employ measures to prevent transmission in health care settings;
- discuss the phenomena of "super-spreaders";
- summarize the most current information on the etiology and mode of transmission of this emerging pathogen.

Educate your entire staff for one low fee including one hour of CE, CME, or Critical Care credits for all attendees. You may invite as many participants as you wish to listen for the low fee of $299. Information on obtaining audio conference instructions and continuing education forms will be in the confirmation notice, which will be mailed upon receipt of registration. Your fee also includes access to a 48-hour replay following the conference and a CD recording of the program.

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COMING IN FUTURE MONTHS

- Novel ways to streamline documentation
- How to avoid being assaulted by a patient
- Effective strategies to retain your nurses
- Improve the way you care for dying patients

CE instructions

Nurses participate in this continuing education program by reading the issue, using the provided references for further research, and studying the questions at the end of the issue.

Participants should select what they believe to be the correct answers, then refer to the list of correct answers to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material.

After completing this semester's activity with the June 2003 issue, you must complete the evaluation form provided in that issue and return it in the reply envelope provided in order to receive a certificate of completion. When your evaluation is received, a certificate will be mailed to you. ■

CEquestions

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

1. Identify clinical, regulatory, or social issues relating to ED nursing. (See *"Are you putting spinal cord injury patients in danger?" "Triage switch could fail without these steps"* in this issue.)
2. Describe how those issues affect nursing service delivery. *(See "Report every case of suspected child abuse — or face criminal charges.")*
3. Cite practical solutions to problems and integrate information into the ED nurse's daily practices, according to advice from nationally recognized experts. (See *SARS cases are growing — prepare with these steps.")*

17. What is recommended regarding suspected child abuse, according to Angie Black, RN, BSN, trauma coordinator at Children's Memorial Hospital?
A. You should report only if the attending physician concurs.
B. Passing on information to the physician is adequate.
C. You must report every case of suspected abuse.
D. Reporting is voluntary unless you are certain abuse is occurring.

18. What is recommended when caring for patients with suspected severe acute respiratory syndrome (SARS), according to Darlene Matsuoka, RN, BSN, CEN, CCRN, clinical nurse educator for the ED at Harborview Medical Center?
A. There is no reason to avoid performing procedures such as airway suctioning and endotracheal intubation.
B. Patients should only be isolated if they present with both cough and fever.
C. Positive airway pressure units should be used when caring for any patient with a suspicious infectious respiratory condition.
D. N95 respirators should be used only if a patient is coughing.

19. Which of the following is recommended for care of patients with possible spinal cord injuries, according to Michael Frakes, BSN, CFRN, CCRN, EMTP, flight nurse at Lifestar/Hartford Hospital?
A. The complete spine should be immobilized until injury has been ruled out.
B. Immobilization can be removed immediately after magnetic resonance imaging is completed.
C. A cervical injury can be ruled out with a lateral cervical-spine X-ray.
D. Methylprednisolone therapy is appropriate for all.

20. Which of the following is recommended when switching to a new triage system, according to Elisabeth K. Weber, RN, MA, CEN?
A. Avoid changes until after the system is implemented.
B. Review your existing triage process beforehand.
C. Make changes based on the recommendations of triage nurses only, instead of consulting other staff members.
D. Implement the new system within six months.

Answers: 17. C; 18. C; 19. A; 20. B.

Emergency Department
Evaluation Form for Competency Day

Presenters:

_____

_____

Please take a moment to evaluate the ED unit-specific Competency Day.

1. Coverage of the topics:
   Poor 1 2 3 4 5 Excellent

2. Speakers:
   Poor 1 2 3 4 5 Excellent

3. Practical value of subject matter to me:
   Poor 1 2 3 4 5 Excellent

4. Will the information in the program influence the way in which you assess and/or treat your own patients?
   Yes No
   If so, how? _____

5. Effectiveness of slides/handouts in understanding subject matter:
   Poor 1 2 3 4 5 Excellent

6. Value of program to patient care in the hospital:
   Poor 1 2 3 4 5 Excellent

7. Was the room adequate?
   Poor 1 2 3 4 5 Excellent

8. I have the following recommendations to improve the session:

_____

_____

9. I would suggest the following topics for future sessions:

_____

_____

10. I would like to see a similar program offered:
    Once per year Twice a year Four times a year

11. Overall impression of this program:
    Poor 1 2 3 4 5 Excellent

Source: Mecosta County General Hospital, Big Rapids, MI.

From the Publishers of ED Nursing®

Emergency Nursing Reports

A supplement to *ED Nursing*

May 2003, BB #S03158

Update on Wound Closure: Evidence-Based Strategies for Optimizing Outcomes

Nurse Editor: **Reneé Semonin Holleran, RN, PhD,** Chief Flight Nurse, Clinical Nurse Specialist, University Hospital, Cincinnati.

Peer Reviewer: **Darlene Bradley, RN, MSN, MAOM, CNS, CCRN, CEN,** University of California Irvine Medical Center, Orange, CA.

Introduction

Collectively, wounds are the third most common problem seen in the emergency department (ED).[1] In 2000, more than 7 million wounds were treated in EDs in the United States.[2] Although the ultimate aims in wound treatment are to prevent infection and to obtain a functional and attractive scar, patient priorities also include, in descending order of importance, normal function, the least visible scar possible, and the least painful repair possible.[3,4] These goals may be achieved by decreasing tissue contamination, properly debriding devitalized tissue, and performing a well-approximated skin closure.[5] **(See Rapid Access Management Guidelines, enclosed in this issue.)**

Epidemiology

Almost one-third of wounds occur in adult males between ages 19 and 35 years. Most of these wounds are located on the head or neck (50%) or on an upper extremity (35%), and the fingers or hands usually are involved.[5] The most common method of injury is blunt trauma, such as bumping the head against a hard surface. Other common sources of injury include sharp instruments, glass, and wooden objects.[6] Mammalian bites are a relatively uncommon cause of significant lacerations.

The magnitude and direction of the injuring force and the volume of tissue on which the force is dissipated determine the type of wound sustained. The resulting disruption or loss of tissue determines the configuration of the wound. Based on these mechanisms, wounds have been classified into six types: abrasions, lacerations, crush wounds, puncture wounds, avulsions, and combined wounds.[7]

Methods of Wound Closure

Tissue Adhesives. Tissue adhesives are being used with increasing frequency in the United States since the introduction of octylcyanoacrylate (Dermabond, Ethicon) after Food and Drug Administration (FDA) approval in 1998. A tissue adhesive offers many potential advantages over standard wound closure, including ease of use, decrease in pain and time to apply, as well as not requiring a follow-up visit for suture removal.[8]

When applied to tissues, cyanoacrylate adhesives polymerize rapidly through an exothermic reaction catalyzed by a small amount of moisture. This produces heat, which is more pronounced the more heavily the adhesive is applied. Adhesives can cause an intense inflammatory reaction in the subcutaneous tissues and never should be applied within wounds.[9]

A study in 1998 compared the one-year cosmetic outcome of wounds treated with octylcyanoacrylate tissue adhesive vs. monofilament sutures and correlated the early, three-month and one-year cosmetic outcomes.[10] This study led the authors to recommend indications for the use of tissue adhesives shown in **Table 1, p. 2**.[10] If wound edges are separated more than 5 mm by underlying skin tension, the wound is unlikely to stay closed with tissue adhesives alone.[9] Relatively short wounds also are preferred candidates for tissue adhesive closure.

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A recent Cochrane review of tissue adhesives was done to summarize the best available evidence for the effect of tissue adhesives in the management of lacerations in children and adults.[8] Included in the review were eight studies that compared a tissue adhesive with standard wound care. No significant difference was found for cosmesis at any of the time points examined. Pain scores and procedure time significantly favored tissue adhesives. A small but statistically significant increase in wound dehiscence was found in the tissue adhesives group. Until recently, Dermabond was the only FDA-approved tissue adhesive being used in the United States. In September 2002, n-butyl-2-cyanoacrylate (Indermil) was approved for use.

Wounds that are to be closed with a tissue adhesive should be cleaned and irrigated in a similar manner as for lacerations that would be closed with sutures or staples. The wound edges should be approximated with fingers or forceps, and the skin surface must be dry. To use Dermabond, the inner glass vial must be cracked by squeezing the outer plastic cylinder and forcing the liquid through the applicator tip onto the wound surface.[11] Three to four thin layers of Dermabond should be painted over the opposed wound edges, extending at least 5 mm beyond the edges of the wound, in the direction of the long axis of the wound. The wound edges should be held together manually for at least 30 seconds after Dermabond application to complete polymerization.[10,11] **(See more on problems and prevention, Table 2, p. 3.)**

Table 1. Indications for Use of Tissue Adhesives

LOCATION	INDICATION
Face	Most cutaneous closures
Lips and mucosa	Not recommended
Extremities and torso	Cutaneous closures, deep sutures recommended; not over the joint
Hands and feet	Minor lacerations only; generally not recommended

Aftercare instructions should include prohibiting the use of antibacterial or other petroleum-based products on the wound as these hasten the breakdown of the adhesive. The wound should not be soaked in water and should not be scrubbed. It may be washed gently after 24 hours. No dressing is required, as tissue adhesives provide their own dressing. The adhesive typically sloughs off in 7-10 days.[10,12,13]

Staples. Closing lacerations with skin staples has several advantages over suturing: speed of repair, lower cost, and low level of tissue reactivity. In prospective, randomized studies of stapling vs. suturing, stapling was shown to be less costly than suturing (with that advantage increasing as the laceration length increases), overall time for wound care was shorter, and there were no additional complications.[14,15] Overall, staples have been shown to produce cosmesis identical to that from sutures when used on the scalp, neck, trunk, and extremities.[14-16] Wounds that can be considered for staple closure include linear lacerations with sharp, straight edges on the extremities, scalp, or trunk. Prior to stapling a wound, the wound edges should be approximated, but this often is difficult to do adequately. Staples should not be used for deep scalp lacerations with active bleeding or on the face, neck, hands, or feet. Deep sutures should be placed when necessary to reduce skin tension. Avoid placing staples too tightly, as this can lead to tissue ischemia and necrosis. The timing of staple removal is the same as the timing of suture removal and is specific for the body part involved.

Sutures. The goal of suturing is to reduce skin tension while approximating opposing wound edges. Excessive tension leads to unnecessary scarring, wound necrosis, and possible dehiscence. Placement of deep

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Questions and Comments

For editorial questions and comments, please contact **Joy Daughtery Dickinson** at (229) 377-8044 or joy.dickinson@ahcpub.com.

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Statement of Financial Disclosure

To reveal any potential bias in this publication, we disclose the following: Holleran (nurse editor) and Bradley (peer reviewer) have no relationships related to this field of study. We disclose that Drs. Freeman, Pethe (authors), and Stapczynski (peer reviewer) report no relationships with companies related to the field of study covered by this CME program. Dr. Hollander (peer reviewer) is a consultant for Ethicon and conducts research for Closure Medical.

Table 2. Pearls and Pitfalls of Tissue Adhesive Use

PROBLEM	PREVENTION
Adhesive sticks to gloves	Use vinyl gloves instead of latex; adhesive easily is removed with gentle traction
Gauze sticks to skin	Dampen gauze with water or saline
Adhesive runs into eyes	Position sensitive areas uphill from area where adhesive is being applied and surround area with damp gauze
Adherence to plastic forceps	Use metal instruments; less adherent
Seepage into wound	Do not release wound edges until polymerization is complete; may remove with petrolatum-based ointment
Hematoma formation	Ensure complete hemostasis prior to wound closure
Adherence to skin sutures	Do not apply adhesive over or near skin sutures that already have been placed

sutures helps reduce skin tension and decrease dead space and hematoma formation. All of these factors likely will improve cosmetic outcome, although well-designed trials to prove this are lacking.[5]

The use of subcuticular or subcutaneous sutures had both advantages and disadvantages. The use of buried, absorbable subcuticular sutures decreases the tension on wound edges, maintains eversion for a prolonged period of time, and provides tensile support. This allows for early removal of transdermal sutures, which decreases the likelihood of suture track marks and minimizes scarring overall.[17-19] It probably is best to avoid subcuticular sutures for acute wounds, except for the cleanest wounds in cosmetically important areas.

Deep sutures do not increase infection rate in low-risk wounds[20,21] Sutures should not be placed through adipose tissue, as they will not hold tension and will increase the infection rate.[5] Using the smallest diameter suture that adequately will close the wound can minimize scarring. Characteristics of the various suture types as well as size choices and time to removal are summarized in **Table 3, lower left.**

Table 3. Suture Size and Timing of Removal

LOCATION OF WOUND	SUTURE SIZE	TIMING OF REMOVAL
Scalp	4-0, 5-0	5-8 days
Face	5-0, 6-0	3-5 days
Chest/abdomen	3-0, 4-0	7-10 days
Back	3-0, 4-0	12-14 days
Upper extremity	4-0, 5-0	8-10 days
Lower extremity	3-0, 4-0	8-12 days
Foot	3-0, 4-0	10-12 days
Joint–extensor surface	3-0, 4-0	10-14 days
Joint–flexor surface	4-0, 5-0	8-10 days

Skin-Closure Tapes. Skin closure tapes can be used to close a wound primarily or to provide additional support after suture or staple removal. Skin tapes work best for a superficial straight laceration that is under little tension. They also can be used to close lacerations that are under a splint or cast to preclude the need for suture or staple removal. Skin tapes can be used to repair skin tears in the elderly, as their skin often is too friable to hold suture. Tapes alone cannot maintain wound integrity in areas subject to tension.[5]

The wound and surrounding skin must be clean and dry. Adherence of the tape to the skin is improved by the use of benzoin painted on the skin 2-3 cm beyond the wound edges. Care should be taken not to allow any benzoin to enter the wound, as this can cause induration and wound infection.[18] If properly applied, the tapes will fall off in a few days when the skin exfoliates.[9]

*(**Editor's note:** This story originally was written by **Lisa Freeman**, MD, FACEP, assistant professor, associate program director, department of emergency medicine, University of Texas Medical School at Houston; and **Rajeev S. Pethe**, MD, department of emergency medicine, University of Texas Health Sciences Center, Houston. It was peer reviewed by **J. Stephan Stapczynski**, MD, professor, department of emergency Medicine, University of Kentucky College of Medicine, Lexington; and **Judd Hollander**, MD, associate professor, clinical research director, department of emergency medicine, University of Pennsylvania Health System, Philadelphia.*

*It originally was edited by **Gideon Bosker**, MD, FACEP, Assistant Clinical Professor, Yale University School of Medicine, New Haven, CT.)*

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CE Participation

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CE Objectives:

After reading this issue of *Emergency Nursing Reports,* the continuing education participant will be able to:

- identify a way to decrease wound infection.
- list the type of wound most appropriately closed with tissue adhesives.
- identify an advantage of using staples for wound closure.
- describe when skin-closure tapes may be used.

CE Questions

1. Wound infection may be decreased by:
   A. leaving devitalized tissue in the wound.
   B. extending the length of the wound.
   C. decreasing tissue contamination.
   D. making an effort to minimize only the worst pain involved in wound repair.

2. Tissue adhesives are recommended for closure of which of the following wounds?
   A. Dog bites of the hand
   B. Knife wounds over the finger joints
   C. Short well-approximated facial wounds
   D. Crush wounds of the foot

3. An advantage to the use of staples for wound closure include:
   A. Time required providing wound care is shorter.
   B. There is an increased risk of complications over regular sutures.
   C. Staples do not provide good cosmesis.
   D. They can be used to close only scalp wounds.

4. Skin-closure tapes may be used to close which of the following wounds?
   A. Wounds with a great deal of skin tension
   B. Skin tears in the elderly
   C. Combination wounds
   D. A deep laceration over a finger joint

Answers: 1. C; 2. C; 3. A; 4. B.

Emergency Nursing Reports

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Wound Management

Properties of Commonly Used Local Anesthetics

AGENT (BRAND NAME)	CLASS	CONCENTRATION (%)	ONSET (MIN)	DURATION (HR)	MAXIMAL DOSE (MG/KG)
Procaine (Novocaine)	Ester	0.5-1.0	2-5	0.25-0.75	7
Procaine with epinephrine				0.5-1.5	9
Lidocaine (Xylocaine)	Amide	0.5-2.0	2-5	1-2	4.5
Lidocaine with epinephrine				2-4	7
Bupivacaine (Marcaine)	Amide	0.125-0.25	2-5	4-8	2
Bupivacaine with epinephrine				8-16	3

Adapted from: Hollander JE, Singer AJ. Laceration management. *Ann Emerg Med* 1999;34:356-367.

Wounds Managed with Secondary or Delayed Primary Closure

- Wounds that already are infected
- Wounds that are heavily contaminated and/or with visible debris
- Those with extensive tissue damage involving both the wound and surrounding skin
- Most bites on the trunk or extremities
- Those with a retained foreign body
- A major tissue defect that cannot be closed without excessive tension

Suture Size and Timing of Removal

LOCATION OF WOUND	SUTURE SIZE	TIMING OF REMOVAL
Scalp	4-0, 5-0	5-8 days
Face	5-0, 6-0	3-5 days
Chest/abdomen	3-0, 4-0	7-10 days
Back	3-0, 4-0	12-14 days
Upper extremity	4-0, 5-0	8-10 days
Lower extremity	3-0, 4-0	8-12 days
Foot	3-0, 4-0	10-12 days
Joint–extensor surface	3-0, 4-0	10-14 days
Joint–flexor surface	4-0, 5-0	8-10 days

Pearls and Pitfalls of Tissue Adhesive Use

PROBLEM	PREVENTION
Adhesive sticks to gloves	Use vinyl gloves instead of latex; adhesive easily is removed with gentle traction
Gauze sticks to skin	Dampen gauze with water or saline
Adhesive runs into eyes	Position sensitive areas uphill from area where adhesive is being applied and surround area with damp gauze
Adherence to plastic forceps	Use metal instruments; less adherent
Seepage into wound	Do not release wound edges until polymerization is complete; may remove with petrolatum-based ointment
Hematoma formation	Ensurecomplete hemostasis prior to wound closure
Adherence to skin sutures	Do not apply adhesive over or near skin sutures that already have been placed

Simplified Tetanus Prophylaxis in the Acute Wound

PRIMARY IMMUNIZATION	TD	TIG
Not complete	Yes	Yes
Completed, < 5 yrs	No	No
Last booster > 5 yrs	Yes	No

Post-Exposure Prophylaxis Recommendations

ANIMAL	DISPOSITION	RECOMMENDATION
• Dogs, cats, ferrets	Healthy and available for 10 days observation	No prophylaxis unless animal develops symptoms
	Rabid or suspected rabid	Immediate vaccination
• Skunks, raccoons, foxes, lagomorphs, large rodents, other mammals	Consider individually	Consult health department

Indications for Admission with Human Bites to the Hand

- Wound greater than 24 hours old
- Established infection
- Penetration of the joint or tendon sheath
- Presence of foreign body
- Unreliable patient or poor home situation
- Diabetic or otherwise immune compromised

Indications for Prophylactic Antibiotics

- Extremity bite wounds
- Punctures
- Intraoral lacerations that are sutured
- Orocutaneous lip wounds
- Highly contaminated wounds
- Involvement of tendons, bones, or joints
- Delayed closure greater than 12-24 hours
- Patients with immune compromise

Animal Bite Wounds with Increased Risk for Infection

- Patient older than 50 years old
- Puncture or hand wound
- Wound that is sutured
- Wound greater than 24 hours old
- Full-thickness skin puncture
- Wounds requiring debridement
- Wounds involving joints, tendons, or ligaments
- Wounds associated with fractures
- Wounds in patients with high-risk hosts

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