

ED NURSING™

Vol. 3, No. 6

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Special Report: Acute Myocardial Infarction (AMI) in the ED

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**April
2000**

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Acute myocardial infarction guidelines: Update the way you treat patients

New doses, interventions, and approaches listed for the ED

When a patient complaining of chest pain walks into your ED, you'll be using new approaches and interventions, outlined in new guidelines for myocardial infarction (MI).

The updated *Guidelines on Management of Acute Myocardial Infarction* were published jointly by the Dallas-based American Heart Association (AHA) and the Bethesda, MD-based American College of Cardiology (ACC), and will have a major impact on the ED, according to sources interviewed by *ED Nursing*.¹

Key sections of the guideline, previously published in November 1996, were updated and will have a major impact on how you manage those patients, according to **Julie Bracken**, RN, MS, CEN, director of nursing education at Cook County Hospital in Chicago and representative to the Heart Attack Alert program for the Des Plaines, IL-based Emergency Nurses

**Special
Report: Acute
Myocardial
Infarction
in the ED**

EXECUTIVE SUMMARY

New guidelines for treatment of acute myocardial infarction (MI) have been published jointly by the Dallas-based American Heart Association and the Bethesda, MD-based American College of Cardiology.

- A lower heparin dose is recommended, which should be added to your ED's protocol immediately.
- More patients can safely be given thrombolytics, including patients over 75 and patients with longer intervals from symptom onset, and more patients benefit from angioplasty.
- Beta blockers should be given routinely to patients with suspected MI (with or without elevation), except patients who have had prior beta blocker therapy and still have persistent symptoms or cannot tolerate beta blockers.

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Association. (See excerpt of guidelines, inserted in this issue, and flowchart with key changes, right.)

It's imperative that ED nurses stay abreast of changes in the guidelines, which reflect current research, Bracken emphasizes. "We need to make appropriate science-based changes in our practice."

Thrombolytics are addressed

Here are key changes in the new guidelines:

- **Give thrombolytics to more patients.**

The guidelines state that more patients can safely be given thrombolytics, including patients over 75 and patients with longer intervals from symptom onset, reports **Barbara Riegel**, DNSc, RN, CS, FAAN, one of the authors of the updated guidelines. Riegel is a member of the executive committee for the AHA Council on Cardiovascular Nursing.

You can be influential in this decision over whether to administer thrombolytics, Riegel suggests: "If you are working with a physician who has dated information and tells you, 'This patient is too old for a thrombolytic,' you should cite the new guidelines."

- **Give a lower heparin dose.**

There is a change in the recommended heparin dose for patients treated with thrombolytic therapy. "There are data suggesting that the previous dose is too high and are associated with intracranial hemorrhage," says **W. Douglas Weaver**, MD, FACC, division head for the department of cardiovascular medicine at Henry Ford Hospital in Detroit and a member of the task force that developed the guidelines. "The new guidelines use weighted doses, and the top dose is lower than in the old protocol."

Look at your own ED's protocol and bring it up to date for heparin use, urges Weaver. "Know the research behind this, so you can share it with colleagues if they're not aware of it. Most ED protocols don't have this new information yet, so ED nurses should drive this change more rapidly."

The new dosage recommendation should be incorporated in your protocol immediately, adds Weaver. "You should absolutely share the guidelines and data at staff meetings and make it happen." (See related story on changing your MI protocols, p. 70.)

- **Give angioplasty to more patients.**

The guidelines stress that angioplasty is beneficial

Use Flowchart to Comply with New AMI Guidelines

Source: Reproduced with permission. ACC/AHA Guidelines for the Management of Patients with Acute Myocardial Infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Management of Acute Myocardial Infarction). *J Am Coll Cardiol* 1999; 34:890-911.

COMING IN FUTURE MONTHS

- Use patient cards for triage
- Screen for domestic violence
- Protocol for gastrointestinal contamination
- Courses to prevent violence in the ED

to a larger group of patients. "This is strong evidence that you should triage those patients after diagnosis to a tertiary care hospital if you don't have a cath lab," says Weaver.

Previously, there was no urgency to make the diagnosis or intervene, he says. Now it's important that the cardiologist be alerted early, Weaver says. "I suspect this isn't done as rapidly as it should be."

A key concept change

- **Consider acute myocardial infarction (AMI) as part of a continuum.**

The guidelines label AMI as "acute coronary syndrome," which is a key concept change, stresses Riegel. "It's now the view that acute MI is the final step in a process."

Patients may have unstable angina, non-Q-wave MI, or an MI aborted by a thrombolytic, leading to confusion, says Riegel. "For example, did a patient have an MI or not; if the patient did not manifest subsequent Q-waves, but did come in with ST-segment elevation, classic symptoms, and received a thrombolytic?"

This confusion led the committee to use the term "acute coronary syndrome," Riegel explains. "The goal is to prevent the patient from having a completed MI by intervening early enough in the acute coronary syndrome," she says. "This is particularly important in patients with nondiagnostic ECG findings."

The labeling as acute coronary syndrome might be a mindshift for many, but it's important to understand acute MI as occurring along a continuum of physiological changes, says Riegel. "It is not a yes/no or all/none phenomenon. Once understood as a process, interventions aimed at interfering with the process make more sense."

- **Consider staffing issues.**

The guidelines address nursing staffing and institutional changes and the influence of those changes on quality of care and adverse events. "These staffing and organizational change issues have important implications for nurses everywhere," says Riegel.

Since a report on adverse events in medicine was recently published by the Huntingdon Valley, PA-based Institute for Safe Medication Practices, everyone will be watching those issues even more closely, Riegel notes.² When treating MI patients, you'll need to document not only adverse events but the context in which those events occurred (patient load, situational factors), she explains. "In this era of evidence, people will be receptive to objective data that help explain why events occurred," Riegel says.

- **Educate patients on risk factors.**

The guidelines recommend that you take steps to

RESOURCES

The complete text of the new recommendations can be downloaded from the following Web sites:

- **American College of Cardiology**, www.acc.org. After registering, click on "clinical information" and then "clinical guidelines."
- **American Heart Association**, www.americanheart.org. Under the "science and professional" heading, choose "publications." Click on "scientific publications" and then "scientific statements."

The 1996 and 1999 guidelines are available by mail for \$5. (Ask for document XG015.) The Executive Summary and Recommendations published in the Aug. 31, 1999, issue of *Circulation* (document XS015) are also available for \$5. Contact:

- **American College of Cardiology**, 9111 Old Georgetown Road, Bethesda, MD 20814. Telephone: (800) 253-4636 ext. 694. Fax: (301) 897-9745.

The Institute of Medicine issues a report on medication errors. A complete copy of the report, *To Err is Human: Building a Safer Health Care System*, is available for \$45 plus \$4.50 shipping and handling. To order, contact:

- **National Academy Press**, 2101 Constitution Ave. N.W., Lockbox 285, Washington, DC 20055. Telephone: (888) 624-8373 or (202) 334-3313. Fax: (202) 334-2451. E-mail: zjones@nas.edu.

modify risk factors. "Increasingly, the medical/nursing community is willing to accept responsibility for risk factor modification, even in acute care settings," notes Riegel.

For example, discuss smoking cessation with patients, Riegel advises. "A significant number of patients quit smoking just with advice about the wisdom of doing so. Even brief interventions are extremely powerful."

In a nonconfrontational manner, briefly state factual information such as: "'Your illness/disease/child's asthma would improve if you quit smoking. Is there anything I can do to help you achieve such a goal?'" suggests Riegel, adding that the same type of nonconfrontational message can be used with other behaviors such as diet and exercise.

The guidelines also stress that diagnostic and treatment delays should be reduced, due to patient or family

ADDITIONAL RESOURCES

Resources are available from the National Heart Attack Alert Program (NHAAP), part of the National Heart Lung and Blood Institute (NHLBI). The NHAAP has as its goal the reduction of the morbidity and mortality associated with acute myocardial infarction (including sudden death) through rapid identification and treatment. The following publications can be downloaded at no charge from the NHLBI Web site: www.nhlbi.nih.gov/about/nhaap/index.htm. The price listed is for ordering by mail.

- *Patient/Bystander Recognition and Action: Rapid Identification and Treatment of Acute Myocardial Infarction* (Publication 3303, \$3);
- *Rapid Identification and Treatment of Acute Myocardial Infarction* (Publication 3302, \$3);
- *Emergency Medical Dispatching: Rapid Identification and Treatment of Acute Myocardial Infarction* (Publication 3287, \$3);
- *Staffing and Equipping Emergency Medical Services Systems: Rapid Identification and Treatment of Acute Myocardial Infarction* (Publication 3304, \$3);
- *Emergency Department: Rapid Identification and Treatment of Patients With Acute Myocardial Infarction* (Publication 3278, \$3);
- *Emergency Department: Rapid Identification and Treatment of Patients With Acute Myocardial Infarction Slide/Lecture Resource* (Publication 55-709, free while supplies last);
- *Educational Strategies to Prevent Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction* (Publication 3787, \$3);
- *The Physician's Role in Minimizing Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction: Recommendations From the National Heart Attack Alert Program* (Publication 55-823, \$1.50);
- *An Evaluation of Technologies for Identifying Acute Cardiac Ischemia in the Emergency Department: Executive Summary of a National Heart Attack Alert Program Working Group Report* (Publication 55-819, \$1.50).

To order by mail, contact :

- **Mary M. Hand**, MSPH, RN, Coordinator, National Heart Attack Alert Program, National Heart, Lung, and Blood Institute, 31 Center Drive, MSC 2480, Room 4A16, Bethesda, MD 20892-2480. Telephone: (301) 594-2726. Fax: (301) 592-8563. E-mail: NHLBIinfo@rover.nhlbi.nih.gov.

hesitation, or prehospital treatment, transport, or treatment delays, says **Dorothy M. Lanuza**, PhD, RN, FAAN, a professor at Niehoff School of Nursing in Maywood, IL.

Educate the public, patients, and families about what to do if the patient has chest pain, Lanuza says. "You should also work on committees to minimize system problems [that] may delay prompt diagnosis and treatment once the patient enters the ED."

- **Administer beta blocker therapy routinely.**

According to the guidelines, routinely give beta blockers to patients with suspected MI (with or without ST elevation), with the exception of patients who have had prior beta blocker therapy and still have persistent symptoms or cannot tolerate beta blockers, Lanuza says. **(See related story on new medications used in MI patients, below.)**

References

1. Ryan TJ, Antman EM, Brooks NH, et al. 1999 update: ACC/AHA guidelines for the management of patients with acute myocardial infarction: A report of the American College of Cardiology/American Heart Association task force on practice guidelines (Committee on Management of Acute Myocardial Infarction). *J Am Coll Cardiol* 1999; 34:890-911.
2. Cohen MR, Proux SM, Crawford SY, et al. Survey of hospital systems and common serious medication errors. *J Healthc Risk Manag* 1998; 18:16-27. ■

New meds available for myocardial infarction

There are exciting new classes of drugs recommended in the new guidelines for management of acute myocardial infarction (AMI), according to **Barbara Riegel**, DNSc, RN, CS, FAAN, one of the authors of the updated guidelines, and a member of the executive committee for the American Heart Association (AHA) Council on Cardiovascular Nursing.

Here are new medications for AMIs recommended in the new guidelines, published jointly by the Dallas-based AHA and the Bethesda, MD-based American College of Cardiology (ACC):

- **Low molecular weight heparin (LMWH).**

This is a major category of drugs added enthusiastically to the guidelines because of their effectiveness and convenience, Riegel says.

Heparin was used in the past, but studies have found

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that LMWHs have fewer side effects for patients, notes **Julie Bracken**, RN, MS, CEN, director of nursing education at Cook County Hospital in Chicago and representative to the Heart Attack Alert program for the Emergency Nurses Association.

LMWHs are given if there is no major contraindication, such as bleeding risk to patients believed to be having an MI without ST elevation who also have refractory ischemia and/or high-risk features (signs of shock, pulmonary congestion, heart rate over 100 beats per minute), says **Dorothy M. Lanuza**, PhD, RN, FAAN, a professor at Niehoff School of Nursing in Maywood, IL.

The LMWHs are a distinct class of drugs, but there is important variety within specific agents, cautions Riegel. "The trials have shown differing results when different LMWHs were used. This led us to realize that the class is the same, but the specific agents are not interchangeable."

- **Glycoprotein (GP) 11b/111a inhibitors.**

These appear to reduce acute events and stabilize patients in the acute phase of MI, but without ST-segment elevation, reports Riegel. "This class of drugs generated quite a bit of enthusiasm among the guideline committee members."

GP IIb/IIIa inhibitors are geared toward stabilizing patients with non-Q-wave MIs (subendocardial infarction), which comprise about 65% of total MI patients, notes Bracken. "Those are the ones that are harder to diagnose," she says. "The Q-wave MIs are pretty easy since see you can see the elevation and changes on the EKG. It's the patients who don't have those changes who are more difficult to diagnose."

The GP IIb/IIIa inhibitors are new a category of drugs, notes Bracken. "They have only been around for about two years and were used in cardiology and inpatient care, but not in the ED. Now since many more patients are having angioplasty, the use is greater."

The greater use in the ED reflects a shift in therapy to the ED, says Bracken. "We're seeing more use in the ED, because more patients are going to the cath lab for angioplasty than in the past."

- **New cardiac markers.**

Rapid, sensitive cardiac markers, such as troponin, are improving diagnostic accuracy and the comfort of staff who have to discharge "suspect" patients home," says Riegel.

It's the patient without ST elevation, but with classic symptoms, who is most worrisome, she says. "Is this an MI or is this unstable angina? Should this patient get a thrombolytic or not? With the new markers, we can tell what's really going on without waiting for a confirmation that it's too late to give a thrombolytic."

There is an excellent discussion of the new cardiac

SOURCES

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markers in the updated guidelines, Riegel recommends. "Nurses should read up on these new markers and know which one to use based on the time of chest pain onset."

For example, if the patient presents early, the cardiac marker CK-MB (isoenzyme of creatine kinase with muscle and brain subunits) has an improved sensitivity and specificity for diagnosis of acute MI within the first six hours, Riegel says. "If ED nurses don't know when the various markers peak, they won't know which test should be ordered based on the onset of chest pain."

Although the guidelines clearly state that patients with detectable levels of troponin benefit from the most from thrombolytics, cardiac markers are not routinely used in the ED, notes **W. Douglas Weaver**, MD, FACC, division head for the department of cardiovascular medicine at Henry Ford Hospital in Detroit and a member of the task force that developed the ACC/AHA guidelines. "With the advent of these new therapies for unstable angina and non-ST segment elevations, the guidelines now suggest the result of both these biomarkers be available to the treating physician within 30 to 60 minutes."

A thorough assessment and continuous monitoring of patients with suspected coronary syndromes, including a targeted history, detecting electrocardiogram abnormalities, and elevations in serum cardiac marker levels (such as myoglobin), are crucial to early detection and treatment of myocardial ischemia, injury, or infarction, says **Dorothy M. Lanuza**, PhD, RN, FAAN, a professor at

Niehoff School of Nursing in Maywood, IL. "As bedside testing for serum cardiac markers becomes more prevalent, this will help to speed up the diagnostic work-up," she says, adding that bedside results should be confirmed by traditional lab results. ■

Revamp your AMI protocol with new guidelines

It's essential to revise your protocol to stay current with new guidelines for acute myocardial infarction (AMI) patients, urges **Sandra Sieck**, RN, cardiovascular community coordinator at Providence Hospital in Mobile, AL. New guidelines that recommend rapid diagnostic testing in the ED and new treatment modalities represent a paradigm shift in treatment.

The guidelines, published jointly by the Dallas-based American Heart Association (AHA) and the Bethesda, MD-based American College of Cardiology

(ACC), stress early interventions in the ED, which lower overall costs, according to Sieck. "Who would ever guess the ED would be keeping up with the ACC/AHA guidelines? It is a change that will impact the hospitals economically and with great patient outcomes."

Sieck says if a patient presents to the ED with atypical symptoms of chest pain, and after a few minutes the symptoms are gone, the ED physician has two choices: "Either admit the patient and drive up health care costs, or discharge the patient and worry about a missed acute MI, which could lead to litigation."

Ultimately, in that scenario, the patient most often was admitted, says Sieck, adding that the guidelines gave new options for ED management of those patients.

No more hit or miss

Previously, ED interventions with cardiac patients was a hit-or-miss situation, she says. "Maybe a hospital had a systematic approach with an acute MI protocol, or maybe they just went by the way they always did things: judgment." ED managers have never really been concerned with the ACC/AHA guidelines because they would only have the patient for a short time, Sieck adds.

That's no longer the case, she emphasizes. "The rapid testing, as in serial enzymes, has decreased our diagnostic times significantly," Sieck says. "There are even bedside assays available now."

At Providence, ED protocols were developed based on the guidelines. "This will produce an increase in quality of care, increase in revenue, decrease in cost, and decrease in length of stay," says Sieck.

Here are key points of the ED AMI protocol, which categorizes patients in one of four tracks:

• **Track I — AMI (inadequate distal collateralization) ST elevation enzymes on admission (0/hrs):**

- continuous cardiac monitoring;
- nitroglycerin, beta blockers, ace inhibitors (less than 5% of this population receive this drug), aspirin;
- primary treatment: reperfusion;
- thrombolytics, primary angioplasty or percutaneous coronary intervention.

• **Track II — Non-Q Wave/ Unstable Angina (with distal collateralization) Non-ST Elevation:**

- enzymes 0, 3, 6, 9 hours;
- continuous cardiac monitoring;
- nitroglycerin, aspirin;
- primary treatment: prevention of total occlusion;
- anti-ischemic drugs;
- glycoprotein IIb/IIIa inhibitors (anti-platelets);
- low molecular weight heparins;
- if the patient is refractory to medical treatment, then the patient is sent to the cath lab.

• **Track III — Chest Pain of Probable Cardiac Origin:**

- enzymes 0, 3, 6 hours;
- continuous cardiac monitoring;
- medications (nitroglycerin, aspirin given as needed).

• **Track IV — Chest Pain of NON-Probable Cardiac Origin:**

- electrocardiogram, cardiac monitoring, labs;
- quickly identified after clinical judgment often found to be gastrointestinal, pneumonia, or musculoskeletal.

The first two tracks are geared around the concept of "acute coronary syndrome," which is discussed in the guidelines, Sieck stresses.

"Treatment should begin immediately in the ED. The patient should not be moved around the hospital for several hours, just because they did not have ST elevation," she says. "The goal is to begin treatment and carry out the disposition. Time is muscle!"

At Providence Hospital, 33% of all acute MIs diagnosed within the ED came from Track III, notes Sieck. "Where would they be if there was not a systematic approach to these patients?"

Track IV is for patients who are atypical presenters, with normal electrocardiogram, normal enzymes, and chest pain that comes and goes. "The question is, do you send them home or admit them?" asks Sieck. "This patient is held in the chest pain center until

SOURCE

For more information about incorporating the guidelines into your ED protocol, contact:

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definitive tests are completed without the traditional 2.66-day stay.” This clinical judgment is completed

within nine hours or less, she adds.

Use the guidelines as a guide to change your protocols, Sieck urges. Consider these areas:

- Are your Track I patients getting ace inhibitors or beta blockers?
- Are you sending all Track II patients to the cath, or are you administering anti-ischemic drugs, monitoring the patient for 12-23 hours and then sending a stable patient the cath lab the next day?
- Where are the track III patients within your institution?

“These are the questions you should be asking.” ■

Use packet to treat occupational exposure

Although current guidelines recommend that health care workers be treated within hours, not days, after an occupational exposure (OE) to infectious disease including human immunodeficiency virus (HIV), hepatitis B (HBV), and hepatitis C (HCV), this treatment doesn't always happen, notes **Anna Smith**, RN, MSN, director of emergency services at University of Louisville (KY) Hospital. “The process is often confusing,” she says. “Also, nurses often don't know how soon the medications need to be given.”

This is partly due to the episodic nature of those incidents, says **J. Celeste Kallenborn**, RN, BSN, senior nurse coordinator in the department of emergency medicine at the University of Louisville School of Medicine. “For instance, we may have four OEs in one month, and then not see another one for two

months,” says Kallenborn. “Materials not used on a regular basis tend to be forgotten.”

There is a tendency to push an incident of OE aside since it wasn't considered an emergency, she notes. “When the Centers for Disease Control and Prevention [CDC] came out with new recommendations that these patients should be given postexposure prophylaxis within hours, we developed a packet of clear-cut guidelines to address this issue and avoid delays,” says Kallenborn.¹

A multidisciplinary team set a goal of a two-hour turnaround time for ED treatment of OE patients. “Two hours is the recommended time factor for the most effective benefit of the medications,” says Smith. “You can still treat and medicate after two hours, but the efficacy decreases with increased time.”

Based on CDC guidelines

The ED's OE packet of forms is based on the CDC guidelines of occupational exposure. “By putting all the forms together in a packet, it eliminates searching for forms, as well as prompting them to use all of the appropriate forms,” says Kallenborn.

The ED packet for occupational exposure includes the following items:

- protocol checklist (see **Occupational Exposure Checklist, pp. 73-74**);
- health care worker information sheet regarding postexposure care;
- consent for HIV testing;
- consent for postexposure prophylaxis therapy;
- laboratory slips and labels for rapid HIV testing;
- MMWR recommendation tables for physician reference;
- education information sheets explaining side effects, interactions, and instructions;
- discharge instruction sheet.

Here are key components to include when creating an OE packet:

EXECUTIVE SUMMARY

Current Centers for Disease Control and Prevention guidelines recommend that patients be treated within hours, not days, after an occupational exposure (OE) to infectious disease including human immunodeficiency virus (HIV), hepatitis B (HBV), and hepatitis C (HCV).

- There is a tendency to push an incident of OE aside because it wasn't considered an emergency, but timeframes for interventions are key.
- Because OEs are episodic, forms may be misplaced or forgotten.
- A packet of OE forms can facilitate the process and reduce delays in care.

ED Flowchart for Occupational Exposure

Source: University of Louisville (KY) Hospital.

- **Use a flowchart to standardize care.**

A flowchart takes the guesswork out of what needs to happen, Smith notes. **(See ED flowchart for OE, above.)** The algorithm is attached to the outside of the packets, which are kept at the triage station.

“It tells you what type of exposure you may possibly be dealing with, so you can address the patient’s concerns right there at triage. It also tells you whom you are to notify, such as lab and the attending,” she explains.

For example, an employee may have a scratch on his or her arm, which is a lower risk exposure, while another employee may have stuck him or herself on the dialysis unit, which is a much higher risk exposure, Smith says. The algorithm directs the nurse to follow certain steps, depending on which exposure category the patient falls under, she explains.

- **Refrigerate test kit at triage.**

The algorithm directs nurses to call the lab right

from triage and refrigerate the test kit as needed so that by the time the physician assesses the patient, the kit is ready to be used.

“If you don’t let the lab know the patient is there until they are back in the treatment room, it delays care,” says Smith. At that point, it would take another 45 minutes for the kit to reach optimal temperature. “That’s more time you are eating up in the two-hour time limit, which is our goal for treatment of these patients.”

Protocol saves time

- **Address the timeframes for treatments.**

The protocol jump-starts the process and saves time, says Smith. “There is a timeline to have an effective outcome from interventions, and there is not a lot of time to work with,” she stresses.

(Continued on page 75)

PACKET # _____

PATIENT LABEL

OCCUPATIONAL EXPOSURE CHECKLIST

(Optimal Outcome is Time-Dependent)

TRIAGE RN TO COMPLETE THIS SECTION

1. Triage occupationally exposed worker and bring to ED, then
 - ◆ Notify Senior Resident or Attending of Occupational Exposure and need for immediate evaluation.
 - ◆ Notify microbiology lab of potential SUDS testing at Ext. _____.
 - ◆ If **any** possibility for pregnancy exists, send blood for HCG.
2. Give PINK information sheet to patient to review while waiting.

MD TO COMPLETE THIS SECTION

3. *HISTORY of EXPOSURE* (critical elements to be charted by MD)
 - Date of exposure
 - Time of exposure
 - How exposure occurred
 - Details of exposure:
 - Type and amount of fluid
 - Severity of exposure (e.g., depth of injury, whether fluid is injected)
 - If available, obtain details of exposure source (whether source material contained HIV, bloodborne pathogens, known high-risk behaviors)
 - If a source is a known HIV+ patient, if available, obtain
 - Stage of disease
 - History of anti-retroviral therapy
 - Viral load
4. MD to determine exposure code (EC), see Step One of BLUE sheet
(IF NO SOURCE IS AVAILABLE, GO TO #6)

PRIMARY RN TO COMPLETE THIS SECTION

5. If "SUDS" and/or Hep C are ordered:
 - ◆ Label blood with source's name (with enclosed label), complete miscellaneous slip by filling in source's name, fill in MD name on red flag, attach red flag to blood, and send to microbiology.
 - ◆ **CONSENT FORM** for HIV must accompany specimen to lab.
 - If consent is unavailable, Hep C should still be sent (correct misc slip).
 - If MD is to obtain consent from source, they can reference the back of the consent form (enclosed in packet) for HIV testing counseling guidelines.
 - ◆ Primary nurse to notify charge nurse that SUDS test is sent, and recheck time is _____ (45 min)

Continued

MD TO COMPLETE THIS SECTION

6. MD makes decision on Postexposure Prophylaxis (PEP), step 2 and 3 on BLUE sheet:

(Circle one) **NO PEP** **PEP-basic** **PEP-expanded**

IF ORDERED, PEP PACKETS ARE AVAILABLE IN PYXIS

7. MD counsels exposed patient and obtains consent for PEP:
(PEP consent form in packet)

- Medication Education
- Serial Testing
- Methods to Prevent Secondary Transmission
- Pregnancy Prevention
- Refrain from Donating Blood, Plasma, Tissue, or Semen
- Follow-Up Care

8. If PEP is started, order baseline labs of CBC, AST, ALT.

9. Notify Infection Control at _____/ beeper _____ of results and follow-up instructions.

Called @ _____ Returned call @ _____

PRIMARY RN TO COMPLETE THIS SECTION

10. If ordered, dispense PEP from Pyxis, give medication sheets to patient. (GREEN sheets included in packet)

11. Give discharge instructions from Logicare (or YELLOW sheet in packet), listed under "Occupational Exposure to Infectious Diseases."

12. Fax this completed occupational exposure checklist to _____

13. Place this occupational exposure checklist in manager's box when completed. **(DO NOT PLACE IN CHART.)**

COMPLETED BY: _____ **MD**

Source: University of Louisville (KY) Hospital.

SOURCES

For more information about the occupational exposure packet, contact:

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(Continued from page 72)

Before the CDC guidelines were published, there was not a push to get prophylaxis determination made within two hours, notes Kallenborn. "These patients tended to sit in the ED for hours because it was not perceived as 'emergent care.'"

In the first six months after the OE packet was developed, 11 health care workers were treated with an OE. A review showed that average turnaround time from triage to discharge from the ED was 2 hours and 2 minutes, Kallenborn reports.

The OE protocol has reduced delays in treatment, notes Smith. "Since we had no protocol to begin with, we had various treatment regimens and associated time factors involved in care, some as high as four hours."

If prophylaxis medications are started within a few hours of exposure, it is thought that their seroconversion rate is lower, Kallenborn says. "This has not been proven in human studies, due to the ethical dilemma of withholding medications. But at any rate, it is suggested to start medications right away, rather than waiting until the following day at employee health."

Meeting the two-hour deadline

• Include a checklist.

A detailed checklist is used to guide you through the steps of the process, says Kallenborn. This ensures that nurses meet the goal of the two-hour "door to decision/treatment" time, she explains. The process begins in the triage area, including the following:

- rapid registration;
- notification of the laboratory to prepare for the rapid HIV testing;
- notification of the physician to include immediate evaluation;

— evaluation of the need for initiation of pregnancy testing for women of child-bearing age.

• Include a lab slip and packet.

This simplifies the steps that involve the lab, says Kallenborn. "It requires a miscellaneous lab charge slip, and this is potentially something that may not be readily available, so we include it in the packet," she explains. "Also, this ensures that both the hepatitis and HIV tests are ordered correctly."

• Inservice nurses.

A 20-minute inservice on the OE packet was given to ED nurses during other mandatory educational sessions, says Kallenborn. After one year, a mandatory update is also given with a 15-minute inservice.

The university also created a self-study binder for new employees to review during orientation. The binder explains the packet in detail, Kallenborn says.

Reference

1. Centers for Disease Control and Prevention. Public health service guidelines for the management of health care workers' exposures to HIV and recommendations for postexposure prophylaxis. *MMWR* 1998; 47:1-34. ■

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Editorial Questions

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JOURNAL REVIEWS

Rogers FB, Rozycki GS, Osler TM, et al. A multi-institutional study of factors associated with fetal death in injured pregnant patients. Arch Surg 1999; 134:1,274-1,277.

Fetal deaths in injured pregnant patients are linked with increased injury severity and abnormal maternal physiologic profile and could potentially be prevented with the routine use of cardiographic monitoring (CTM), according to this five-year retrospective review of pregnant trauma admissions at 13 Level I and Level II trauma centers. CTM is used to detect potentially threatening fetal heart rates.

Here are key findings:

1. Injured pregnant patients comprised 1.3% of female admissions, and of those, 84% had blunt injuries and 16% had penetrating injuries.
2. There were 14 maternal deaths (3.8%) and 35 fetal deaths (9.4%).
3. The population suffering fetal death had higher injury severity scores, lower Glasgow Coma Scale scores, and lower admitting maternal pH.
4. An injury score over 25 was associated with a 50% fetal mortality rate.
5. Most women who lost their fetus arrived in shock or had a fetal heart rate of less than 110 beats/min at some time during their hospitalization.
6. CTM was performed on only 61% of pregnant women in their third trimester.
7. Factors linked with increased fetal mortality were increasing injury score, decreasing Glasgow Coma Score, maternal shock, acidosis (an abnormal increase in hydrogen in the body, such as renal tubular acidosis), and a decrease in fetal heart rate.

CTM may decrease mortality

CTM is underused in injured pregnant patients in their third trimester, even after admission to major trauma centers, say the researchers.

“Increased use of cardiographic monitoring may decrease the mortality caused by placental abruption,” they suggest.

“Increased awareness of the importance of routine CTM in the pregnant trauma patient may help decrease the incidence of fetal mortality associated with abruption in this population.” ■

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CE objectives

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 *Acute myocardial infarction guidelines: Update the way you treat patients; New meds available for myocardial infarction; and Journal Reviews* in this issue).
2. Describe how those issues affect nursing service delivery.
3. Cite practical solutions to problems and integrate information into the ED nurse's daily practices, according to advice from nationally recognized experts (see *Use packet to treat occupational exposure promptly*). ■