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These clinical changes could save patients being held in your ED

Minimize the 'potential for disaster'

Have you ever found yourself running back and forth between a myocardial infarction patient in one room and a patient with uncontrolled diabetes on an insulin drip in another room?

When ED nurses care for critically ill admitted patients being held while waiting for an available bed, in addition to their ED patients, this “is fraught with the potential for disaster,” says **Gary Howard**, RN, MHA, director of emergency services at Vanderbilt Medical Center in Nashville, TN.

There are a “whole host of things that can go wrong,” he says. “Make no mistake about it; there is a lot of opportunity for misadventure. We have recognized this potential at Vanderbilt and are taking steps on the front end to diminish or prevent opportunities for bad outcomes.”

ED nurses are “front end-heavy people,” says **Michele Bascom**, RN, an ED nurse at The Hospital of Central Connecticut in New Britain. “Once the legwork is done, admitted patients tend to slide down the list — not intentionally, but because they are set,” she says. “The busier the ED, the lower down the line they go.”

To add to those risks, admitted patients may fail to alert ED nurses if their condition changes. “In my experience, people are hesitant to ‘bother’ us when they can see and hear the place is crazy,” says Bascom.

To improve care of those vulnerable patients, “you have to get creative,” says Howard. “It’s not an ideal situation in *any* ED — regardless of how small or large you are. But unfortunately, that is the reality we are living in.” (See

EXECUTIVE SUMMARY

Having emergency nurses care for admitted patients being boarded in the ED while waiting for inpatient beds to become available is a high-risk situation. To reduce risks:

- give nurses a way to summon immediate help if a patient deteriorates;
- put inpatients in one place;
- have a designated nurse do the required charting and history and physical.

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related stories on getting immediate help if a patient's condition changes, grouping inpatients in one area, and offloading nonclinical tasks for admitted patients, all on p. 63.)

Here are some clinical practice changes ED nurses have made:

- **Extra training is given for medication administration records.**

"If you are asking an ED nurse to manage a medication administration record that they ordinarily do not have to manage, they need to be cross-trained on that," says Howard.

At University of Colorado Hospital in Denver, ED nurses were given an inservice on the way to administer scheduled medicines for inpatients being held. "In ED care, we give medications when they are ordered,"

explains **Molly A. Evans**, RN, ED manager. "We needed to make sure if medications are ordered every six hours for admitted patients, that we give them 8-2-8-2; not 6-12-6-12. Inpatients have a defined plan of care that will go over several days, not hours."

In addition, the ED has added a separate automated medication dispenser for inpatient medications, says Evans. "The pharmacy prints MARS [medication administration record sheets] for medication documentation," she says.

- **Nurses don't hesitate to ask for help.**

If you're performing a procedure you have rarely done, or administering medications you have little experience with, then you need to say, "I'm just not comfortable taking care of this patient. I need somebody to help me," says Howard. "Most ED nurses are not comfortable saying that because we think we can save anybody anytime. That is our mentality," he says.

- **Repeat assessments are done.**

Give boarded patients a complete secondary assessment, especially elderly and pediatric patients, because their conditions can change very quickly, says **Stephanie Santana**, RN, BSN, an ED nurse at The Hospital of Central Connecticut. "Don't assume that just because a patient has been in the ED for some time and has been completely worked up that they are 'all set,'" she warns. "We tend to get comfortable with these 'extended-stay' patients, and that's when the unexpected happens."

- **Nurses are reminded about medications and**

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monitoring for inpatients.

Inpatients held in the ED must be adequately monitored, just as they would be on the floor, with daily medications given. **Casey Kasenetz**, BSN, RN, an ED nurse at The Hospital of Central Connecticut, says, “This is very different from the care of ED patients.” ■

Use one location for all ‘boarded’ patients

Admitted patients are in danger of getting lost in the shuffle when ED nurses are busy caring for immediate and lifesaving tasks, says **Casey Kasenetz**, BSN, RN, an ED nurse at The Hospital of Central Connecticut in New Britain. “A localized area for admitted patients can help continuity of care and save lives,” she says.

Molly A. Evans, RN, ED manager at University of Colorado Hospital in Denver, reports that inpatients are moved to one area of the ED “in the hopes of keeping the area free of as much traffic and noise as possible.”

Vanderbilt Medical Center’s ED has two pods with long halls connecting each. The “A” pod is for patients with conditions such as myocardial infarctions, strokes, and traumas, and the “B” pod is for fast-track, observation, and admitted patients.

“We budget and staff it based on an inpatient model. Our nurse-to-patient ratios are never more than 1-to-4, and sometimes they are 1-to-3,” reports **Gary Howard**, RN, MHA, director of emergency services at Vanderbilt

Medical Center in Nashville, TN. “We have monitors and crash carts in strategic places.” ■

Can you afford to add nurse to care for inpatients?

If emergency nurses are caring for admitted patients along with ED patients, this is dangerous as the “‘new’ ED patient will take precedent,” says **Michele Bascom**, RN, an ED clinical manager at The Hospital of Central Connecticut in New Britain.

Gary Howard, RN, MHA, director of emergency services at Vanderbilt Medical Center in Nashville, TN, says, “Any time you can keep the ED nurse focused on ED patients and somebody else watching over your admitted patients, it’s a better strategy.”

Here are three approaches to offload some of the “inpatient” tasks from ED nurses:

- **A designated nurse handles charting and paperwork.**

Vanderbilt’s ED has switched to all electronic charting, but with inpatients, a completely different charting system has to be used. “That has been very frustrating for our ED nurses,” says Howard. To offload this time-consuming task, the ED now has acute care nurses handle inpatient charting.

Vanderbilt also has hired “admission” nurses: medical/surgical nurses who do nothing but admit patients from the ED, including all the necessary paperwork, social screening, the history and physical required for admission, a complete medication reconciliation, and patient education. “They get their [intravenous lines] going and their meds started. Then the ED nurses just manage the patient as things come up,” Howard explains. “Patients are getting a high level of care, equal to or better than what they get on the floor. They don’t notice any big differences other than the lack of shower facilities.”

- **Medical/surgical nurses occasionally care for ED inpatients.**

When inpatient beds are not available at University of Colorado Hospital in Denver, the ED charge nurse requests two to four nurses to come down to the ED, depending on the number of inpatients being held. ED manager **Molly A. Evans**, RN, says, “We also bring in nurse assistants and clerical support to meet the inpatient standards.”

- **Critical care nurses “round” on patients being held in the ED.**

Teri Arruda, MSN, FNP-BC, CEN, an ED nurse at Mission Hospital in Mission Viejo, CA, reports, “When rounding, the critical care charge nurse collaborates with

CLINICAL TIP

Use a ‘staff assist’ light to get immediate help

If an ED nurse at Vanderbilt Medical Center in Nashville, TN, is drawing labs on a patient who suddenly complains of chest pain, has a syncopal episode, or is unresponsive, a light can be hit in any room that pages a distinct sound overhead.

“If a patient starts to deteriorate, it brings everybody to the room. It mobilizes the team, similar to when we have a trauma alert paged out,” says **Gary Howard**, RN, MHA, director of emergency services. ■

the ED nurse regarding the patient's care. We find that such an interaction is invaluable."

The two nurses review orders, labs, and medications to "bridge the gap between the ED and the critical care unit," says Arruda. ■

Interventions by nurses cut sepsis deaths by 30%

ED nurses at Carolinas Medical Center in Charlotte, NC, completely revamped the way they care for sepsis patients, which resulted in a 30% decrease in mortality.

ED nurses use a modified version of an early goal-directed therapy protocol, which gives more aggressive treatment to sepsis patients. **(For more information on how to obtain the ED's flowchart, see source box, above right.)**

These steps are taken by ED nurses:

- Point-of-care lab testing is done at triage by emergency nurses, which gives the patient's lactate level. "This assists with identifying sepsis," says **Anne Focht**, RN, MSN, who participated in the sepsis project as a clinical nurse specialist in the case management department. "Blood cultures are also drawn, and appropriate antibiotics are initiated if sepsis is suspected."
- If the patient meets systemic inflammatory response syndrome criteria, has a low blood pressure that doesn't respond to fluid boluses, and/or a lactate level equal to or greater than 4, a "Code Sepsis" is paged.
- This triggers the response team, which consists of an ED physician, an ED nurse, a respiratory therapist, and a medical intensive care unit (MICU) nurse. The "code sepsis" cart is brought to the patient's bedside and set up for central venous oxygen saturation ScvO₂

EXECUTIVE SUMMARY

With aggressive interventions for sepsis patients, ED nurses decreased mortality rates by 30%. Some clinical practice changes made by ED nurses:

- Lactate levels are determined with point-of-care testing.
- Nurses determine if patients have a low blood pressure that doesn't respond to fluid boluses and/or a lactate level equal to or greater than 4.
- Central venous pressure and central venous oxygen saturation are monitored.

SOURCE

To obtain a copy of the severe sepsis and septic shock flowcharts, contact:

- **Anne Focht**, RN, MSN, Clinical Practice Manager, Pulmonary and Critical Care Medicine, Carolinas Medical Center, Charlotte, NC.
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central line insertion.

"This allows the nurse and physician to monitor CVP [central venous pressure] and ScvO₂, which guides further treatment and interventions as needed," says Focht.

Once the patient is stabilized and a MICU bed is available, the patient is transferred out of the ED.

"The protocol was somewhat challenging for ED nurses initially, as it required learning how to set up monitoring for CVP and ScvO₂," says Focht.

The two biggest challenges for ED nurses were documentation of CVP and ScvO₂, and to meet the six-hour time frame from ED presentation. To improve both of those, ED nurses received education and passed a competency checklist, which is now part of their annual competency. **[Editor's note: The ED's competency evaluation form is included with the online version of this month's ED Nursing. For assistance, contact customer service at customer.service@ahcmedia.com or (800) 688-2421.]** "The ED nursing staff also received support from the MICU nurse who responds to the codes and assists with set-up as needed," she says. "Code Sepsis' has become a routine protocol in the ED, which the staff is very comfortable with initiating." ■

ID abnormal vital signs more quickly

A patient's condition 'can and will' decline

Hours after arrival in the ED, a patient's condition suddenly, unexpectedly, deteriorates. How do you get this patient immediate help? Here are different approaches used by ED nurses:

- A "trigger" program brings immediate help to patients with abnormal vital signs.

When an ED nurse at Beth Israel Deaconess Medical Center in Boston calls a "trigger," this brings a charge

EXECUTIVE SUMMARY

ED nurses need a process to receive immediate help if a patient's condition deteriorates suddenly. Some approaches:

- If a patient meets certain criteria, ED nurses immediately summon help.
- Rapid response nurses care for critically ill patients alongside ED nurses.
- A code team is called to respond.

nurse, senior resident, and attending physician to the patient. ED nurses use this criteria:

- heart rate less than 40 or above 130;
- respiratory rate less than 8 or over 30;
- blood pressure less than 90;
- oxygen saturation less than 90% on room air;
- marked nursing concern.

"A trigger can be called at any point during the patient's stay," says **Shelley Calder**, RN, CEN, MSN, clinical nurse specialist for the ED. "We have seen that patients can and will decline hours after arrival."

• **A "rapid response" nurse works alongside ED nurses caring for critically ill patients having an acute event.**

"In these events, we need all hands on deck. These critical patients often require complex diagnostic workups, treatments, or medical procedures," says **Teri Arruda**, MSN, FNP-BC, CEN, an ED nurse at Mission Hospital in Mission Viejo, CA. "These resources often require multiple nurses to administer the best possible care." (See **Clinical Tip, right, on improving care in these situations by using packets.**)

• **ED nurses call a "Code Purple" if a pediatric patient is deteriorating or is found in distress, which alerts the designated ED code team to respond.**

For example, if a child suddenly goes into respiratory distress, "the goal is to provide the immediate intervention before they lose their pulse or spontaneous respiration," says **Rosie Rodriguez-Henderson**, RN/MHL, an advanced clinician in the pediatric ED at Baptist Children's Hospital in Miami.

To call the "code purple," nurses pull buttons that sound an alarm heard in every patient room, and a light flashes outside the patient's room.

The team consists of a physician team leader, a pediatric ED technician, and three nurses. The nurses include a primary nurse, who does all documentation during the code; a medication nurse, who draws up all

medications and continuous drips as needed; and a procedure nurse, who performs procedures such as intravenous line starts, setups for line placements, and cardiopulmonary resuscitation. "Depending on the individual needs of the patient, we request assistance from other areas such as respiratory therapists, child life specialists, chaplains, and radiology," says Rodriguez-Henderson. ■

CLINICAL TIP

Packets can give better critical care outcomes

Teri Arruda, MSN, FNP-BC, CEN, an ED nurse at Mission Hospital in Mission Viejo, CA, recommends developing packets to use when caring for patients who present with critical care events such as stroke, sepsis, or an ST-segment elevation myocardial infarction. Each packet includes the appropriate checklist, algorithm, order set, and guidelines.

"These packets effectively guide the patient's care," says Arruda. "The packets support critical thinking during an acute event. The novice to expert nurse can benefit from this tool. It reduces error and promotes better patient outcomes." [Editor's note: **The ED's sepsis code packet is included with the online version of this month's *ED Nursing*. For assistance, contact customer service at customer.service@ahcmedia.com or (800) 688-2421.] ■**

SOURCES

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Handoff questions: More important than you think?

Don't assume information is irrelevant

Do you ever get frustrated answering questions asked by inpatient nurses about your ED patient, as they seem unimportant to you?

“As ED nurses, we are trained to rapidly assess and react,” says **D.D. Fritch-Levens**, RN, BSN, an administrative resource nurse in emergency services at Children’s Healthcare of Atlanta. “ED nurses are not always aware of what goes on in an inpatient area. We are unable to predict the information that is important to the receiving nurse.”

Remember that the receiving nurse is more “forward thinking” in the plan of care than you are, says Fritch-Levens. “The ED nurse has two or three hours with each patient, while the inpatient nurse often has days,” she says. “The information that is requested is important to the inpatient nurse, even though it might not be critical to the care of the patient while in the ED.”

In fact, questions asked by receiving nurses may seem completely unrelated to the patient’s diagnosis or treatment, such as, “When was their last meal?” or “When was their last bowel movement?” says **Deborah A. Keim**, BSN, RN, MICN, an administrative nurse in the emergency department at University of California — Los Angeles (UCLA) Medical Center. “I may not know the answer, and it may have no relevance to the patient’s admission,” she says.

In this case, Keim says she questions the inpatient nurse to understand what he or she is getting at. “From the inpatient perspective, there is nothing worse than an ED nurse who doesn’t know their patient and who

doesn’t help you get a full picture.” (See related stories on making information consistent, below, and when to give report in person, p. 67.)

To improve handoffs with receiving nurses, do the following:

- **Make it easy to reach you.**

When handing off patients from the ED to inpatient floors, it might be a challenge just to get the receiving nurse on the phone, or vice versa. “You both are forever a moving target. Neither may have time to just drop what they are doing when one decides to call report,” says Keim. “Just getting the right person on the other end when you finally have time to make the call is sometimes problematic.”

At Children’s Healthcare of Atlanta, the patient’s medical report is sent via tube station to the receiving nurse as soon as a bed has been assigned. “Then, the receiving nurse is given the direct phone number of the ED nurse to allow for questions,” says Fritch-Levens.

- **Tailor the type of handoff to the individual patient.**

For “noncomplex” patients handed off at Children’s Healthcare, a written report is sent to the receiving nurse, but this report isn’t sufficient for patients with a more complex medical or social history. For those patients, the receiving and ED nurse talk by phone.

Report is given in person for intensive care unit and operating room patients, or if a phone report is given, an ED nurse always escorts the patient to the receiving nurse. “When a patient’s clinical care or history is more complex than what can be easily documented on one piece of paper, it is important to know that the receiving nurse understands this,” says Fritch-Levens. ■

EXECUTIVE SUMMARY

Receiving nurses might ask questions that seem unrelated to your admitted patient’s diagnosis and treatment during handoffs, but inpatient nurses have reasons for needing this information. To improve handoff communication:

- Give the receiving nurse the direct phone number of the ED nurse.
- Do an in-person update to convey any changes since you gave the report.
- For patients undergoing procedures before transfer, meet with the receiving nurse for a face-to-face report on the patient’s current status.

Make inpatient handoff info more consistent

What ED nurses convey is biggest ‘risk point’

At Baptist Hospital Miami, ED nurses always left a verbal report on inpatients being transferred to the floors using an audio tool.

“Any questions or needs were answered by follow-up phone calls, or in person if indicated,” says **Donna Sparks**, MSN, RN, director of emergency services. “However, we lacked a standardized approach to the specific information we shared.”

A team of inpatient and ED staff nurses, managers, transporters, bed control staff, and risk managers conducted an analysis on the handoff communication process when patients are admitted from the ED. **Eve Butler**,

RN, the hospital's director of evidence-based nursing practice, said, "We found our biggest risk point to be the actual information that is provided when a patient is admitted."

For this reason, ED nurses began using the Situation-Background-Assessment-Recommendation (SBAR) format for handoffs. **[Editor's note: The ED's SBAR form is included with the online version of this month's *ED Nursing*. For assistance, contact customer service at customerservice@ahcmedia.com or (800) 688-2421.]** "The format has served to provide consistency with pertinent facts, and the template facilitates the communication," says Sparks.

To get ED nurses familiar with the new form, they were asked to listen to a taped report using the tool.

CLINICAL TIP

Give last-minute update on your handoff patients

When you give a report on an admitted ED patient to a receiving nurse, the patient's status might change by the time the patient actually arrives at the inpatient unit.

At Barnes-Jewish Hospital in St. Louis, ED nurses give a verbal report by phone before the patient is transported, but they also do a brief face-to-face update when the patient arrives in the intensive care unit (ICU). This extra communication is important, says **Jennifer Williams, MSN, RN, ACNS-BC**, clinical nurse specialist for emergency services, because "this is the time that the ED nurse can advise the receiving nurse of any changes since they spoke."

Medication rates might have changed, additional tests might have been completed, or additional intravenous fluids might have been given. "There can sometimes be up to an hour that has elapsed prior to arrival on the floor, especially if the ED nurse took the patient to a procedure in between," she explains.

If the patient is going to a procedure area with its own nursing staff, such as interventional radiology, on the way to the ICU, then the ED and ICU nurses meet in the procedure area for a face-to-face report. By taking this step, says Williams, "all are aware of what the patient's status and appearance was at the time of transition." ■

"They were asked to fill in the information, as if they were receiving report on the unit," says Butler. "As with all change initiatives, there was some pushback — especially from experienced nurses that felt they did not need such a tool."

To obtain buy-in from resistant ED nurses, the importance of *consistent* information was emphasized. ED nurses now say that it helps them to organize information. "And inpatient staff say that they are receiving a more complete report," says Butler.

At University of California — Los Angeles Medical Center's ED, nurses have switched to electronic documentation and now use this system as a template for their report. Prior to this, a form developed by a multi-disciplinary team was used to standardize the information given to the admitting nurse. **[Editor's note: The ED's Acute Care Shift Report form is included with the online version of this month's *ED Nursing*. For assistance, contact customer service at customer service@ahcmedia.com or (800) 688-2421.]**

The form was developed by a team of ED and inpatient nurses, and it includes diagnosis, allergies, a focused review of systems assessment, past medical and surgical history, the circumstances that brought the patient to the ED, lab and diagnostic test results, and the plan going forward.

Now, however, ED nurses provide this information to receiving nurses using the clinical documentation system. They have a "Nurse View" tab that has all of this information in it, says **Deborah A. Keim, BSN, RN, MICN**, an administrative nurse in the ED. "We use this to call report from," she says. "When the patient gets flipped to inpatient status in the computer, the floor nurse can open their chart through another system and see the same page."

The new system saves time because all of the information on the patient can be viewed by the ED and receiving nurse. "You still have to decide what to actually say, but all the information is right in front of you," says Keim. ■

Music can reduce stress in your ED's waiting room

Adults bringing children to a pediatric ED waiting area were much less anxious when classical music was playing in the background, says a new study.¹

"If there is any delay in bringing patients to the back, implementation of a music program in the waiting area may help to reduce the general anxiety levels of the patients and their families," says **Lydia Holm, MD**, the study's lead author and an attending physician in the pediatric ED at Blank Children's Hospital in Des Moines, IA.

To do this in your ED is “not difficult,” she says. “All that is required is a CD player with an appropriate number of speakers for your waiting area. We rotated five CDs of slow-paced concert music.”

The only costs involved would be the stereo system, speakers, audio CDs, and installation, which totaled about \$1,000, says Holm.

The study also tested the impact of aromatherapy, using two diffusers placed in strategic locations in the ED, but no difference in anxiety levels was detected. “I was a little surprised that the aromatherapy had no effect at all,” she recalls. “I still think this was primarily an application problem: We had a continuous air-flow recirculation system, so the scent may have been circulated away before it could have any effect. It does not mean that aromatherapy as a tool is ineffective.”

Reference

1. Holm L, Fitzmaurice L. Emergency department waiting room stress: Can music or aromatherapy improve anxiety scores? *Ped Emerg Care* 2008; 24:836-838. ■

Should you tell patients a drug error was made?

Of 13,932 ED medication errors analyzed in a recent study, patients or family members were notified about the mistakes only 2.7% of the time.¹

This finding was “surprising,” according to **Julius Cuong Pham**, MD, PhD, the study’s lead author and assistant professor of the Department of Emergency Medicine at Johns Hopkins University School of Medicine in Baltimore. “This is something to think about,” he says.

Error disclosure, however, should not be done by an individual ED nurse, Pham says. It should be a “concerted effort that the whole health care team

EXECUTIVE SUMMARY

Patients or family members were notified about medication errors only 2.7% of the time, according to a recent study. Another study reports that ED nurses often are not involved when errors are disclosed. When disclosing errors:

- Consult with other members of the health care team.
- If an error is severe, involve risk management.
- Involve the ED nurse and physician.

CLINICAL TIP

Don't inform a patient about *this* type of error

There are times that it's not a good idea to inform a patient about a drug error, because it could have a negative impact on their care, says **Matt Lowery**, RN, ED nurse manager at Presbyterian Hospital, Charlotte, NC. For example, an ED nurse misreads a 2 mg dosage order of an anxiolytic medication given to a patient with severe anxiety, and gives 1 mg instead, but the patient's symptoms have resolved.

“This would represent a variance between the order and the dose given and would be documented as such. But it would probably not be beneficial for the patient to advise them of the variance and generate anxiety,” says Lowery. “The physician would evaluate the patient and revise the order as the clinical situation indicated.” ■

makes together.”

ED nurses at Saint Elizabeth Regional Medical Center in Lincoln, NE, “are very up front about errors,” says **Libby Raetz**, RN, director of the ED. “I have told patients and families that there has been an error many times.”

She says generally speaking, “the more severe your errors get, the more other people need to be involved.” The involved parties might include risk management, the house supervisor, or the chief nursing officer.

Raetz says in her ED, medication errors are “tiered” using these levels:

- **Level 1:** An error was made, but there was no potential for an adverse outcome. For example, Mylanta was given instead of Maalox.
- **Level 2:** An error was made with no adverse outcome, but there was potential for an adverse outcome. For example, something was given intravenously that should have been given intramuscularly.
- **Level 3:** An error was made, and there was an adverse outcome, ranging from having to keep the patient in the ED another few hours, admitting the patient overnight, all the way up to sentinel events.

If a drug error does occur, “your first priority is patient safety,” says **Matt Lowery**, RN, ED nurse

manager at Presbyterian Hospital in Charlotte, NC. These steps occur in Lowery's ED:

— The ED physician is notified, and the physician evaluates the patient and the medication.

— Patients are advised that an error has occurred, if this is deemed appropriate by the physician.

"We are very up front with patients about any unintended event in patient care," says Lowery. "The nurse and physician are both involved in telling the patient about any occurrence." (See related stories on when not to disclose an error, p. 68 and involving ED nurses in the disclosure process, below.)

Reference

1. Pham JC, Story JL, Hicks RW, et al. National study on the frequency, types, causes, and consequences of voluntarily reported emergency department medication errors. *J Emerg Med* 2008; In press. Doi:10.1016/j.jemermed.2008.02.059. ■

Are ED nurses left out if errors are disclosed?

It should be a 'team decision'

Nurses often are not included when physicians tell patients about serious mistakes, according to new research involving focus groups of 96 nurses, including emergency nurses.¹

Error disclosure needs to be a "team sport," according to **Sarah E. Shannon**, PhD, RN, the study's lead author and associate professor of behavioral nursing and health systems at the University of Washington, Seattle. The study also found that most nurses were unaware of their hospital's disclosure policies, but they wanted a role in the disclosure process so they could communicate directly to the patient and avoid being blamed for the event.

Shannon recommends the following:

— having an error disclosure policy that creates a "safe harbor," so that anyone can get an objective outsider to look at a case they are worried about;

— giving ED nurse managers training on how to tell patients and families that a mistake has occurred, so they can serve as a "de facto disclosure coach" for emergency nurses.

"Like their physician colleagues, nurse managers currently do *not* get training in error disclosure," says Shannon. "We recommend that this training include simulation with patient actors."

Patricia Ann Bemis, RN, CEN, author of the *Emergency Nursing Bible*, Fourth Edition, says the way to

"stay out of trouble" is to closely follow your hospital's policies. "At no point should the ED nurse take matters into her own hands and speak to the patient without consulting with the physician and her supervisors," she says. "The decision of disclosure is a team decision."

Reference

1. Shannon SE, Foglia MB, Hardy M, et al. Disclosing errors to patients: perspectives of registered nurses. *Jt Comm J Qual Pat Saf* 2009; 35:5-12. ■

Use these assessment tips for kidney injury

Pain and hemodynamic instability. These are the two most significant assessment findings related to kidney injuries, according to **Katie Ryan**, RN, BSN, director of the ED at St. Rose Dominican Hospitals — San Martin Campus in Las Vegas. Here are assessment tips:

• **Pain from kidney injuries might present as flank or back pain on the affected side if the bleeding from this injury has remained localized.**

"If, however, the bleeding does not remain localized, the patient may complain of abdominal pain or generalized low back pain," says Ryan. "Hemodynamic instability is related to the amount of blood loss from the injury."

Injury to the kidney itself usually will become self-contained as the kidney capsule creates pressure allowing the bleeding to be controlled by a tamponade effect, she says.

• **Fluid resuscitation of 1 to 2 liters usually is enough to offset the initial blood loss.**

"While the complaints of pain may continue for these patients, the vital signs will return to baseline and will remain adequate unless the bleeding returns," says Ryan.

If, however, there is injury to the capsule or the

EXECUTIVE SUMMARY

Acute kidney injury might require immediate treatment. The condition could be life-threatening if your patient:

- reports severe pain in the abdomen or low back;
- requires continued resuscitation with fluid and blood products;
- has hemodynamic instability that remains constant, or returns quickly after initial resuscitative measures have been tapered off.

blood vessels supplying the kidney, the injury becomes much more potentially lethal, she says. "Because of their location deep in the renal pelvis, the kidneys are challenging in terms of bleeding control," says Ryan. (See stories on how to tell if your patient's condition is life-threatening, right, and interventions to take immediately, below.)

- Patients may present with profound hemodynamic instability and severe pain most likely in the abdomen or low back.

"These patients will most likely *not* respond to 1 to 2 liters of fluid, but rather, will require continued resuscitation with fluid and blood products until definitive measures such as surgery or interventional angiography can be performed," says Ryan.

- A secondary finding for the patient with a kidney injury is blood in the urine.

"This may present as pink-tinged urine to frank bloody urine," Ryan says. "However, blood-tinged urine may also be present for other injuries, so this finding is not unique to kidney injuries alone."

- The "gold star" diagnostic indicator for kidney injury is the contrast enhanced CT scan of the abdomen and pelvis.

"If the injury is believed to be vascular in nature, diagnostics will then include angiography to determine the exact location of the injury, as well as the best method of injury repair," says Ryan. ■

Immediate steps to take for kidney injuries

Do these interventions immediately if you suspect kidney injury in your patient, says **Katie Ryan**, RN, BSN, director of the ED at St. Rose Dominican Hospitals — San Martin Campus in Las Vegas:

- Insert two large-bore intravenous lines, 16 gauge or greater.
- Complete a head-to-toe assessment with the patient fully exposed.
- Obtain a complete set of vitals, including the patient's temperature.
- Keep the patient as warm as possible, to reduce the risk of hypothermia.
- Monitor vital signs frequently, every five to 15 minutes, until the patient's diagnostic tests are complete and the extent of the injury is known.
- Obtain baseline labs.
- Insert a Foley catheter to closely monitor input and output, and keep the bladder and urethra free from blood clots. ■

Could the kidney injury be life-threatening?

Kidney injuries that are potentially life-threatening will present as profound hemodynamic instability, says **Katie Ryan**, RN, BSN, director of the ED at St. Rose Dominican Hospitals — San Martin Campus in Las Vegas.

"Although resuscitative measures may provide a brief return to normal, uncontrolled bleeding will again create a hypodynamic state," she says. "The patient may become hypothermic as well as coagulopathic, causing more potentially lethal problems."

The most significant sign that a patient has a life-threatening injury is hemodynamic instability that remains constant or that returns quickly after initial resuscitative measures have been tapered off, says Ryan. The patient's complete blood count might show a lower than normal hemoglobin or hematocrit. "However, this may not be evident on the initial set of lab results. Follow-up lab results may be more indicative of how much blood has been lost," she says.

Ryan says an equally important sign, however, is "How does your patient look?" "Nurses must always take the time to look at their patients and to listen to what they

Emergency Department Crowding: Causes, Consequences, and Solutions

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are saying,” she says. “Pale, scared, diaphoretic, and a sense of impending doom have always helped me key in on patients in need of rapid lifesaving interventions.” ■

Young chest pain patients wait longer for EKGs

If a young patient walks into an ED with chest pain, he or she will wait longer than an older patient to get an EKG, according to a new study.¹

Researchers looked at 214 patients with a chief complaint of chest pain, who also were at low risk for ST-segment elevation myocardial infarction (STEMI)/acute coronary syndrome. They found the overall median time to EKG was 29 minutes, but time to EKG was 42 minutes for patients 18-39 years old.

At Tallahassee (FL) Memorial Hospital, ED nurses use protocols that initiate an EKG even before triage, if a patient presents with chest pain or other symptoms related to MI at 30 years or older. “Our protocol allows the triage tech who signs the patient in to order the EKG if the complaint is chest pain and the patient is 30 years or older,” says **Freda Lyon**, RN, BSN, MHA, service line administrator for the Bixler Emergency Center at Tallahassee Memorial Hospital. “If younger, they have to ask the triage nurse,” she adds.

Lyon adds, “Any patient with chest pain, no matter the age or reason, is on our ‘Immediate See List.’ This means the triage nurse must lay eyes on them immediately and determine if they need an EKG or not. Our staff is taught to err on the side of caution.”

EXECUTIVE SUMMARY

Younger patients have longer delays for EKGs than older patients, according to new research. To improve care of young chest pain patients:

- give EKGs even before triage;
- obtain an EKG immediately for any patient with chest pain, no matter the age;
- don’t hesitate to get an EKG even if the patient doesn’t have chest pain.

Lyon has seen many patients younger than 30 who ultimately were diagnosed with an MI. Two recent cases did *not* involve chest pain. One 29-year-old man had been seen at another ED the previous week for elbow pain. He’d been given nonsteroidal anti-inflammatory medication and instructed to follow up with his primary care physician. He presented to Lyon’s ED with severe elbow pain, a pain scale score of 10, and diaphoretic. “The triage nurse stated he just ‘looked bad’ and obtained an EKG. He was having an ST-elevated MI,” says Lyon.

Another patient was a 25-year-old woman whose father had died a week earlier at age 44 from a massive MI. She presented to the ED with indigestion, fatigue, anxiety, and elevated blood pressure. “The triage nurse, for several reasons — the patient’s family history, the patient was anxious, and something about the patient just did not look right — did an EKG,” recalls Lyon. “Both times, the triage nurse saved these patients’ lives by following their instinct.”

Patients with crushing chest pain, indigestion, and left arm or jaw pain are “easy to pick up,” she says. It is the female or diabetic patient with atypical symptoms that you must watch for. “Not everyone with an MI presents the same,” Lyon says.

Reference

1. Pearlman MK, Tanabe P, Mycyk MB, et al. Evaluating disparities in door-to-EKG time for patients with noncardiac chest pain. *J Emerg Nurs* 2008; 34:414-418. ■

CNE 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** 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. ■

COMING IN FUTURE MONTHS

■ Dramatically improve care of cardiac arrest patients

■ Must-do changes to prevent pressure ulcers

■ Proven strategies for your most challenging psychiatric patients

■ A quick and simple test that can rule out penicillin allergy

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CNE objectives/questions

Participants who complete this activity will be able to:

- **identify** clinical, regulatory, or social issues relating to ED nursing;
 - **describe** how those issues affect nursing service delivery;
 - **integrate** practical solutions to problems and information into the ED nurse's daily practices, according to advice from nationally recognized experts.
13. Which is recommended to improve care of admitted patients held in the ED?
 - A. Avoid storing inpatient medications separately from other medications used in the ED.
 - B. Give nurses additional training on managing Medication Administration Records.
 - C. Don't give boarded patients a complete secondary assessment, as patient flow is adversely affected.
 - D. Group inpatients throughout the ED, instead of all in one area.
 14. Which is done by ED nurses to improve care of sepsis patients at Carolinas Medical Center?
 - A. Lactate levels are no longer obtained at triage.
 - B. Blood cultures are drawn at triage.
 - C. ED nurses no longer monitor central venous pressure and central venous oxygen saturation.
 - D. Antibiotics are only given if a sepsis diagnosis is confirmed.
 15. Which patients should receive an immediate electrocardiogram, according to Freda Lyon, RN, BSN, MHA, service line administrator for the Bixler Emergency Center?
 - A. Patients over age 30 with chest pain.
 - B. Patients under age 30 with a family history of myocardial infarction and anxiety.
 - C. A patient under age 30 with mild chest pain.
 - D. Any of the above patients.
 16. Which is true for patients with kidney injury?
 - A. Fluid resuscitation of 1 to 2 liters is not enough to offset the initial blood loss, even if patients are not hemodynamically unstable.
 - B. The patient will always show a lower than normal hemoglobin level on the initial complete blood count.
 - C. Patients with profound hemodynamic instability will require continued resuscitation with fluid and blood products.
 - D. Patients are unlikely to become hypothermic, so warming measures are not necessary.

Answers: 13. B; 14. B; 15. D; 16. C.

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PreSep® Catheter & ScvO₂ Vigilance Monitoring

Competency Evaluation

Name and Title _____
Date _____ **Department** _____
Satisfactory _____ **Unsatisfactory** _____

Recommendations if Unsatisfactory _____

Criteria	Yes	No
Plugs in and turns on Vigilance Monitor (green button)		
Connects oximetric monitoring cable (burgundy port) to monitor		
Presses "SvO ₂ "		
Opens Side 1 of the PreSep® Catheter Tray		
Connects Blue port of oximeter to optimetrix cable		
Calibrates oximeter "In Vitro" (must be done prior to insertion-otherwise an "In Vivo" calibration must be done)		
Washes hands before and after patient contact		
Explains procedure to patient		
Positions patient in a flat supine position (unless patient cannot tolerate)		
Assists physician with skin prep (Chloraprep) & insertion of catheter		
Monitors SQI (Signal Quality Index)-4 "boxes" indicates poor signal		
Verbalizes causes of poor signal		
Monitors ScvO ₂ —goal is >70%		
Documents ScvO ₂ on Six Hour Sepsis Resuscitation Flow Sheet every 15 min. until goal met		
Removes oximetric cable from monitor when transporting patient—does not disconnect oximeter from cable		
Resumes ScvO ₂ monitoring when patient returns		
Presses "SvO ₂ " and "Transport" and "Recall" to begin monitoring		

Validator's Signature _____

Source: Carolinas Medical Center, Charlotte, NC.

TRANSFER OF ACCOUNTABILITY: SBAR Transfer of Accountability Template for Admitted Patients

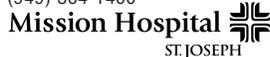
S	Situation: Admission Patient's name _____ DOB _____ Age _____ Gender _____ Diagnosis: _____ Chief Complaint: _____ Abnormal Labs/Diagnostics: _____ Admitting MD: _____ Code Status: <input type="checkbox"/> Full Code <input type="checkbox"/> Levels of Care <input type="checkbox"/> DNR Core Measures: <input type="checkbox"/> AMI <input type="checkbox"/> CAP <input type="checkbox"/> CHF <input type="checkbox"/> CABG <input type="checkbox"/> Hip & Knee <input type="checkbox"/> SCIP <input type="checkbox"/> Medication Reconciliation Initiated <input type="checkbox"/> NPO <input type="checkbox"/> Isolation Type: _____ Precautions: _____ Procedures done in ED: _____																				
B	Background: Significant PMH _____ Allergies: _____ Medications given prior to ED arrival: _____																				
A	Assessment: Vital Signs prior to transfer: <input type="checkbox"/> Alert and Oriented T: _____ P: _____ R: _____ BP: _____ O ₂ Sat: _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;"> RESPIRATORY: <input type="checkbox"/> WNL <input type="checkbox"/> Decreased BS Location: _____ <input type="checkbox"/> Chest Tube: _____ <input type="checkbox"/> Wheezes <input type="checkbox"/> Crackles/rales <input type="checkbox"/> Drainage amt.: _____ O₂@ _____ liters via _____ <input type="checkbox"/> CPAP Settings: _____ <input type="checkbox"/> NC <input type="checkbox"/> Simple Mask <input type="checkbox"/> Venti Mask <input type="checkbox"/> NRB <input type="checkbox"/> Trach Size: _____ <input type="checkbox"/> BIPAP Settings: _____ Treatments/Frequency: _____ _____ <input type="checkbox"/> Vent Settings: _____ </td> <td style="width: 33%; vertical-align: top;"> CARDIAC: <input type="checkbox"/> WNL <input type="checkbox"/> Telemetry/Indications: _____ <input type="checkbox"/> Meets criteria for nurse transport Rhythm: _____ Edema: _____ Pulses: _____ <input type="checkbox"/> Pacer <input type="checkbox"/> Defibrillator <input type="checkbox"/> Central Line </td> <td style="width: 33%; vertical-align: top;"> NEURO: <input type="checkbox"/> WNL <input type="checkbox"/> Confused <input type="checkbox"/> Responds to Verbal <input type="checkbox"/> Responds to Pain <input type="checkbox"/> Unresponsive <input type="checkbox"/> Speech Slurred Weakness: <input type="checkbox"/> R <input type="checkbox"/> L <input type="checkbox"/> Neuro ✓s: _____ <input type="checkbox"/> Pupils: _____ Ambulatory Status: _____ </td> </tr> <tr> <td colspan="2" style="vertical-align: top;"> GU: <input type="checkbox"/> WNL <input type="checkbox"/> Foley <input type="checkbox"/> Incontinent Urine output: _____ </td> <td colspan="4" style="vertical-align: top;"> PAIN: <input type="checkbox"/> NA <input type="checkbox"/> Prior to transfer (intensity, location and quality) _____ </td> </tr> <tr> <td colspan="2" style="vertical-align: top;"> GI: <input type="checkbox"/> WNL Diet: _____ Bowel sounds: _____ <input type="checkbox"/> Tender <input type="checkbox"/> Distended <input type="checkbox"/> Firm <input type="checkbox"/> NG/PEG/ND Last BM: _____ </td> <td colspan="4" style="vertical-align: top;"> SKIN <input type="checkbox"/> Intact: _____ <input type="checkbox"/> Bruising <input type="checkbox"/> Tears <input type="checkbox"/> Wound Location/Describe: _____ DRIPS: (Include DC time if applicable) Tubes/Lines: _____ </td> </tr> </table>						RESPIRATORY: <input type="checkbox"/> WNL <input type="checkbox"/> Decreased BS Location: _____ <input type="checkbox"/> Chest Tube: _____ <input type="checkbox"/> Wheezes <input type="checkbox"/> Crackles/rales <input type="checkbox"/> Drainage amt.: _____ O ₂ @ _____ liters via _____ <input type="checkbox"/> CPAP Settings: _____ <input type="checkbox"/> NC <input type="checkbox"/> Simple Mask <input type="checkbox"/> Venti Mask <input type="checkbox"/> NRB <input type="checkbox"/> Trach Size: _____ <input type="checkbox"/> BIPAP Settings: _____ Treatments/Frequency: _____ _____ <input type="checkbox"/> Vent Settings: _____	CARDIAC: <input type="checkbox"/> WNL <input type="checkbox"/> Telemetry/Indications: _____ <input type="checkbox"/> Meets criteria for nurse transport Rhythm: _____ Edema: _____ Pulses: _____ <input type="checkbox"/> Pacer <input type="checkbox"/> Defibrillator <input type="checkbox"/> Central Line	NEURO: <input type="checkbox"/> WNL <input type="checkbox"/> Confused <input type="checkbox"/> Responds to Verbal <input type="checkbox"/> Responds to Pain <input type="checkbox"/> Unresponsive <input type="checkbox"/> Speech Slurred Weakness: <input type="checkbox"/> R <input type="checkbox"/> L <input type="checkbox"/> Neuro ✓s: _____ <input type="checkbox"/> Pupils: _____ Ambulatory Status: _____	GU: <input type="checkbox"/> WNL <input type="checkbox"/> Foley <input type="checkbox"/> Incontinent Urine output: _____		PAIN: <input type="checkbox"/> NA <input type="checkbox"/> Prior to transfer (intensity, location and quality) _____				GI: <input type="checkbox"/> WNL Diet: _____ Bowel sounds: _____ <input type="checkbox"/> Tender <input type="checkbox"/> Distended <input type="checkbox"/> Firm <input type="checkbox"/> NG/PEG/ND Last BM: _____		SKIN <input type="checkbox"/> Intact: _____ <input type="checkbox"/> Bruising <input type="checkbox"/> Tears <input type="checkbox"/> Wound Location/Describe: _____ DRIPS: (Include DC time if applicable) Tubes/Lines: _____			
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	Consultant	Reason for Consult	Notified	Called Back																	
	Special Needs, Status Changes: _____																				
	Report given by: _____ Time: _____ Contact phone: _____ Bed Assigned: _____																				

EMC ACUTE CARE SHIFT REPORT

Room #		Code Status:		Restraints: Vest SR/ x2 x4 5150:	
		Isolation:		Date: Time: Needs Renewal: <input type="checkbox"/> Sitter <input type="checkbox"/>	
		Resident: Intern:		PRECAUTIONS: FALL / ASP / SZ /	
DX:		Team:		TESTS/ PROCEDURES: CT/MRI/ Ultrasound	
ALLERGY:		Diet/ NPO/ NPO p MN:		STATS/NEW ORDERS/MISCELLANEOUS: <input type="checkbox"/> Admit Orders <input type="checkbox"/> Monitored/Non-monitored/ICU	
N:	PMH/PSH:	PIV <input type="checkbox"/> Central Line <input type="checkbox"/>			
C:	Psychosocial:	IVF:			
R:		MEDS PO:	MEDS IV:		
GU:		Blood products:			
GI:					
Skin:					
DSG:					
Drains:	VITAL SIGNS/PAIN ASSESSMENT:	ACCU-CHECK:		Dentures, Belongings, Valuables (Make sure they go up with the patient.)	
Labs:	Intake/Output:				
Labs to be drawn/ Specimens to be collected:					

ACUTE CARE SHIFT REPORT

Room #		Code Status:		Restraints: Vest SR/ x2 x4 5150:	
		Isolation:		Date: Time: Needs Renewal: <input type="checkbox"/> Sitter <input type="checkbox"/>	
		Resident: Intern:		PRECAUTIONS: FALL / ASP / SZ /	
DX:		Team:		TESTS/ PROCEDURES: CT/MRI/ Ultrasound	
ALLERGY:		Diet/ NPO/ NPO p MN:		STATS/NEW ORDERS/MISCELLANEOUS: <input type="checkbox"/> Admit Orders <input type="checkbox"/> Monitored/Non-monitored/ICU	
N:	PMH/PSH:	PIV <input type="checkbox"/> Central Line <input type="checkbox"/>			
C:	Psychosocial:	IVF:			
R:		MEDS PO:	MEDS IV:		
GU:		Blood products:			
GI:					
Skin:					
DSG:					
Drains:	VITAL SIGNS/PAIN ASSESSMENT:	ACCU-CHECK:		Dentures, Belongings, Valuables: :(Make sure they go up with the patient.)	
Labs:	Intake/Output:				
Labs to be drawn/ Specimens to be collected:					



ST. JOSEPH HEALTH SYSTEM

27700 MEDICAL CENTER ROAD, MISSION VIEJO, CALIFORNIA 92691

SEPSIS DEFINITION:

Suspected infectious process with ≥ 2 SIRS criteria (Systemic Inflammatory Response Syndrome):

- ✓ Temp ≥ 100.4°F
- ✓ Heart rate ≥ 90
- ✓ Respiratory rate ≥ 20
- ✓ WBC > 12.0, < 4.0 or > 10% bands

Utilize the Mission Sepsis Screening Tool to assess patient. If patient has an initial positive sepsis screen, initiate the following:
(Note: if the patient has a history of cardiomyopathy with low ejection fraction, end stage liver disease, pulmonary edema, or chronic renal failure, the resuscitation plan needs to be adjusted accordingly by the MD)

- Severe Sepsis:** Sepsis associated with ≥ 1 organ dysfunction and/or Lactic Acid > 4 mmol/L
- Septic Shock:** Sepsis with hypotension (SBP < 90 or MAP < 65), despite fluid resuscitation of 20-40 mL/kg

ADMIT TO:

DIAGNOSIS:

ALLERGIES: NKA or _____ **Height:** _____ **Weight:** _____

CODE STATUS: Full Code See DNR order sheet

NUTRITION: NPO Ice chips Clear Liquids Regular Diet or:

LAB, DIAGNOSTIC AND IMAGING: ✓ Lactic Acid level STAT and q 6 hours x 24 hours then q days x 2. If > 2.2, continue q 6 h until ≤ 2.2 for two consecutive draws

- ✓ CBC with **manual** differential STAT and q AM x 3 days
- ✓ CMP, Magnesium, Phosphorus STAT
- ✓ DIC Screen (PT, PTT, INR, D-Dimer) STAT
- ✓ Type and Screen
- ✓ BMP STAT and q am x 3 days
- ✓ ABG prn respiratory distress if not already done
- ✓ Chest xray daily x _____
- Procalcitonin
- Nutrition labs (CMP, Magnesium, Phos, Triglycerides, Prealbumin)
- Cardiac enzymes q _____ hours x 3 or _____
- Echocardiogram with Doppler
- Ultrasound – type & reason:
- CT Scan – type & reason:
Contrast IV or PO
- Other tests:
- Other tests:
- Other tests:
- ✓ **If not done in the past 48 hours:**
- Blood Culture x 2 different sites (peripheral and central line if available)
- Urinalysis Gram Stain, C&S
- Sputum Gram Stain, C&S
- Wound Gram Stain, C&S
- CSF Gram Stain, C&S

NURSING CARE:

- ✓ Call Intensivist if:
 - Temp > 102° F or < 95° F or _____
 - HR > 120 or < 60 or _____
 - SBP > 150 or < 90 or _____
 - RR > 30 or < 8 or _____
 - O2 sat < 92 % or _____
 - Urine output < 0.5 ml/kg/hr or _____

				Entered By	Date Time
Physician Signature	Date	Time		Noted By	Date Time
Print Name	PATIENT I.D. AREA – DO NOT WRITE IN THIS SPACE				

CRITICAL CARE SEPSIS ORDERS

NURSING CARE:
(cont'd)

- Vital signs and neuro checks per CICU/SICU standard of care
- Foley catheter
- Gastric tube to low suction irrigate to maintain patency

MEDICATIONS:

Empiric Antibiotics Based Upon Source of Infection (from Mission Hospital's 2007 Antibiogram):

- Give first dose of antibiotics STAT but after blood cultures obtained (do not delay antibiotics > 30 minutes while awaiting blood cultures) Empiric antibiotics should NOT be continued beyond 72 hours without C&S to justify the antibiotics or an infectious disease evaluation.

Abdominal, Lung, Gynecologic, Skin, Soft Tissue or Unknown Source of Sepsis:

1. Vancomycin 1 gram IVPB q 12 hours **OR**
 Vancomycin per Pharmacy
2. Imipenem (Primaxin) 500mg IVPB q 6 hr (renal dosage adjustment per Pharmacy)

If Penicillin allergic, replace Imipenem with

- Tobramycin per pharmacy **AND**
Metronidazole (Flagyl) 500mg IVPB q 8 hours

Community Acquired Pneumonia (in addition to above antibiotics):

1. Azithromycin (Zithromax) 500mg IVPB q 24 hours

Genitourinary (Renal/Bladder/Prostate):

1. Vancomycin 1 gram IVPB q 12 hours **OR**
 Vancomycin per Pharmacy
2. Imipenem (Primaxin) 500mg IVPB q 6 hr (renal dosage adjustment per Pharmacy)

If Penicillin allergic, replace Imipenem with

- Tobramycin per pharmacy

Central Nervous System:

1. Vancomycin 1 gram IVPB q 12 hours **OR**
 Vancomycin per Pharmacy
2. Imipenem (Primaxin) 500mg IVPB q 6 hr (renal dosage adjustment per Pharmacy)

If Penicillin allergic, replace Imipenem with

- Chloramphenicol 500mg IVPB q 6 hours

OTHER ANTIBIOTICS:

SEDATION & ANALGESIA:

- If on mechanical ventilator, institute sedation protocol including lighten sedation q 24 hours
- Morphine _____ mg (usual dose 2-4 mg) IV q _____ hours prn moderate/severe pain
- Hydromorphone (Dilaudid) _____ mg (usual dose 0.2-0.6 mg) IV q _____ hours prn moderate/severe pain
- Lorazepam (Ativan) _____ mg IV q _____ hours prn **OR** Infusion 0.01-0.05 mg/kg/hr; titrate for sedation
- Midazolam (Versed) _____ mg IV q _____ hours prn **OR** Infusion 0.02-0.1 mg/kg/hr; titrate for sedation
- _____
- _____

OTHER MEDICATIONS:

- Accucheck q 6 hours x 2. If blood glucose > 150mg/dl, initiate insulin orders "Intensive Insulin Drip Orders for Critical Care"
- Initiate "Potassium Chloride Sliding Scale Orders for ICU/CICU" (ONLY if serum creatinine < 1.8 mg/dL)
- Acetaminophen (Tylenol) 650mg PO/PR/NGT every 4 hrs PRN temperature > 101.5° F
- Docusate (Colace) 100mg PO/NGT q 12 hrs
- Hydrocortisone 50mg IVP every 6 hrs x 7 days

				Entered By		Date	Time
Physician Signature		Date	Time	Noted By		Date	Time

Print Name _____

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CRITICAL CARE SEPSIS ORDERS
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ST. JOSEPH HEALTH SYSTEM 27700 MEDICAL CENTER ROAD, MISSION VIEJO, CALIFORNIA 92691

OTHER MEDICATIONS (cont'd):	<input type="checkbox"/> Ondansetron (Zofran) 4mg IV push q 8 hours prn nausea or vomiting <input type="checkbox"/> Bisacodyl (Dulcolox) 10mg supp PR q day prn constipation <input type="checkbox"/> MOM 30ml PO q day prn constipation <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
DVT PROPHYLAXIS:	Pharmacologic: <input type="checkbox"/> Heparin 5,000 units SQ every 8 hours with platelet count every third day x 3. Hold heparin if platelet count < 100,000 and call MD. (Preferred if creatinine clearance < 30 ml/min) <input type="checkbox"/> Fondaparinux (Arixtra) 2.5 mg SQ q 24 hrs. (Not recommended if creatinine clearance < 30 ml/min or wt < 50kg). Hold if platelet count < 100,000 and call MD <input type="checkbox"/> Enoxaparin (Lovenox) 40mg SQ every 24 hours with platelet count every third day x 3. Hold Enoxaparin if platelet count < 100,000 and call MD. *Pharmacy to adjust dose if renal dysfunction. Non-pharmacologic: <input checked="" type="checkbox"/> TED hose and Sequential Compression Devices
STRESS ULCER PROPHYLAXIS:	<input type="checkbox"/> Pantoprazole (Protonix) 40mg PO or IV push every 24 hours <input type="checkbox"/> Famotidine (Peppcid) 20mg PO or IV push every 12 hours
HEMODYNAMIC MONITORING:	<input type="checkbox"/> Prepare for triple lumen central line placement. Have Vascular Access consent form available for physician For patients with a central line: Follow the algorithm in conjunction with resuscitation endpoints below Central Venous Pressure (CVP) – Preload: <input checked="" type="checkbox"/> If CVP < 8mmHg (non-ventilated) or < 12 (ventilated), initiate IV fluids wide open with: <input type="checkbox"/> Normal Saline 500ml IV bolus <input type="checkbox"/> 5% Albumin 250ml IV <input type="checkbox"/> Alternate Normal Saline/Albumin with ratio of _____ <input checked="" type="checkbox"/> Repeat every 20-30 minutes to maintain CVP 8-12 if not ventilated, or CVP 12-15 if ventilated, even if MAP is > 65 <input checked="" type="checkbox"/> Maintenance IV Normal Saline at 150 ml/hr or _____ Mean Arterial Pressure (MAP) – Afterload: <input checked="" type="checkbox"/> Initiate vasopressors prn MAP < 65 or SBP < 90. *Notify Intensivist. Continue fluid resuscitation and wean pressors early. ONLY infuse via central line <input type="checkbox"/> Norepinephrine 2 - 20 mcg/min continuous IV drip <input type="checkbox"/> Dopamine 5 - 20 mcg/kg/min continuous IV drip <input type="checkbox"/> Vasopressin 0.04 unit/min continuous IV drip (not titrated, use as adjunct to other catecholamines) <input type="checkbox"/> Other: _____ Central Venous O₂ Sat (ScvO₂) or SvO₂ – Oxygen debt: <input type="checkbox"/> PA catheter with continuous SvO ₂ monitoring (goal > 65%) Recalibrate SvO ₂ every morning <input type="checkbox"/> CVP – Draw an ABG from the <u>distal</u> tip for an ScvO ₂ q 6 hours until goal met (> 70%) <input type="checkbox"/> Transfuse 1 unit of PRBC's if all 3 parameters are present: • CVP ≥ 8 (non-ventilated) or CVP ≥ 12 (ventilated) • SvO ₂ < 65% or ScvO ₂ < 70% • HCT < 30 • Notify intensivist and obtain blood consent <input checked="" type="checkbox"/> Notify Intensivist for further orders if all 3 parameters are present: • CVP ≥ 8 (non-ventilated) or CVP ≥ 12 (ventilated) • SvO ₂ < 65% or ScvO ₂ < 70% • Hct ≥ 30

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HEMODYNAMIC MONITORING (cont'd)	For patients without a central line: Utilize resuscitation endpoints
	<input checked="" type="checkbox"/> Initiate IV fluids wide open with: <input type="checkbox"/> Normal Saline 500ml IV bolus, MR X _____ <input type="checkbox"/> 5% Albumin 250ml IV, MR X _____
	<input checked="" type="checkbox"/> Repeat above resuscitation until the following endpoint is met (call MD if patient develops respiratory distress): <input checked="" type="checkbox"/> Lactic acid q 6 hours x 24 hours then q day x 2. If > 2.2, continue q 6 h until ≤ 2.2 for two consecutive draws <input checked="" type="checkbox"/> Maintenance IV Normal Saline at 150 ml/hr or _____
	GOALS FOR RESUSCITATION ENDPOINTS: <input checked="" type="checkbox"/> Lactic Acid Level ≤ 2.2 <input checked="" type="checkbox"/> UO > 0.5 ml/kg/hr <input checked="" type="checkbox"/> Base deficit -2 to +2 <input checked="" type="checkbox"/> HCO ₃ > 22 on ABG or CO ₂ > 22 on BMP <input checked="" type="checkbox"/> Anion gap < 15 <input checked="" type="checkbox"/> Decreasing HR, preferably < 90-100
RESPIRATORY CARE:	<input checked="" type="checkbox"/> Oxygen therapy to maintain SpO ₂ ≥ to 92% or _____ <input checked="" type="checkbox"/> No BIPAP if diagnosis of pneumonia (contraindicated) <input type="checkbox"/> Respiratory Treatments: _____ <input type="checkbox"/> Mechanical Ventilation Mode <input type="checkbox"/> AC = _____ BPM <input type="checkbox"/> SIMV = _____ BPM <input type="checkbox"/> Other = _____ BPM FiO ₂ = _____ % to maintain SpO ₂ _____ % Vt = _____ ml Peep = _____ Other _____ Other _____ <input checked="" type="checkbox"/> Daily ABG's while on ventilator <input checked="" type="checkbox"/> Daily PCXR while on ventilator <input checked="" type="checkbox"/> Daily ventilator weaning parameters <input checked="" type="checkbox"/> Ventilator Protocol: HOB 30 degrees, oral care every 2 hours, turn every 2 hours, lighten sedation daily per sedation protocol, empty condensation from ventilator tubing
	SCREEN FOR DROTRCOGIN ALFA (ACTIVATED) -XIGRIS NEED: Screen for Drotrecogin Alfa (activated) - Xigris need within 24 hours of admission. (Physician to complete page 1 of the Xigris Order Sheet). If Xigris is deemed necessary, physician is to complete page 2 of order sheet to initiate Xigris. Patients not deemed appropriate for Xigris therapy upon initial screen should be assessed periodically until stable for potential later need for Xigris.
	For APACHE II Calculation, go to the following web site: http://www.sfar.org/scores2/apache22.html

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CRITICAL CARE SEPSIS ORDERS
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ED SEPSIS NURSING EVALUATION CHECKLIST TOOL

How do I use this tool? Please check each box for the care that you provide to this patient. It is of the utmost importance that you use this checklist not only as a guide to anticipatory care, but also for data collection for our sepsis efforts.

You may page Teri Arruda, pager 870, for any questions or concerns.

<p><u>Systemic Inflammatory Response Syndrome (SIRS):</u> Manifested by two or more of the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Temperature >38°C (100.9°F) or <36°C (96.8°F) <input type="checkbox"/> Heart rate >90 beats/min <input type="checkbox"/> Respiratory rate >20 breaths/min or PaCO₂ <32 mmHg <input type="checkbox"/> WBC > 12,000 cells/mm³, <4000 cells/mm³ or >10% bands 	<ul style="list-style-type: none"> <input type="checkbox"/> Sepsis: SIRS with a suspected or documented infection. <input type="checkbox"/> Severe Sepsis: Sepsis associated with ≥ 1 organ dysfunction, or hypoperfusion (lactate > 4 mmol/L) Call Code Sepsis <input type="checkbox"/> Septic Shock: Sepsis with hypotension (BP < 90/60), despite a fluid bolus of 20 mL/kg) Call Code Sepsis
---	---

The sepsis bundle (proven interventions that done in the *Golden Hour* that make a significance difference in patient comes)

- Cardiac Monitoring
- Pulse oximetry
- Supplemental oxygen to keep saturation > 92%
- Obtain core temp unless oral temp is > 100.9 °
- Sepsis panel(blood culture x 2 from two different sites,
- Lactate (draw in grey tube on ice) **Time Sent** _____
- CBC with differential, comprehensive metabolic panel, glucose, Pt/PTT, D-dimer, Troponin I, Time _____
- Urine culture, urinalysis
- Fluids via 18 gauge access to administer NS 500ml bolus if hypotension present or until CVP is 8-12mmHg, then continue at 150ml/hr
- Initiate antibiotic administration within 1 HOUR of sepsis recognition, not to exceed 3 HOURS from ED arrival . Time Administered** _____

Does your patient have any of the following: Severe Sepsis or Septic Shock as indicated by 1 or more:

- SpO₂ < 90% on room air or on supplemental O₂
- Hypotension. Systolic < 90 mm Hg or MAP < 65 mm Hg
- Altered mental status
- Creatinine > 2.0 mg/dl (176.8mmol/L) or urine output < 0.5ml/kg/hr for > 2 hours
- Bilirubin > 2mg/ dl (34.2 mmol/L)
- Platelet count < 100,000
- INR > 1.5 or a PTT > 60 secs
- Lactate > 2mmol/L (18.0 mg/dl)

Continue Resuscitation Efforts:

- Call Code Sepsis (RRT, Lab, RT, Pharmacy)
- 12 Lead EKG
- Normal Saline 500ml bolus until CVP is 8-12mmHg, then continue at 150ml/hr
- Consider vasopressors if SBP < 90mmHg after 2 liters of IVF.
- Consider afterload reducer if SBP > 160 mmHg
- ScVo₂ < 70% consider transfusion of PRBC's for hemoglobin < 10 g/dL
- Oxygen saturation continues < 93% consider intubation and mechanical ventilation
- Tylenol 1 Gm po every four hours prn temp > 38.3° C as ordered
- Lactate to be repeated every 6 hours

- Glucose every four hours
- Intake and output every hour

Treatment Targets Met:

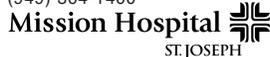
(The goal directed therapy is to optimize tissue perfusion)

- CVP 8-12 mmHg
- MAP >65-90 mmHg
- Urine output > 0.5ml/kg/min
- ScvO₂ > 70%

Alert MD if :

- O₂ sat < 92% or peak-inspiratory plateau pressure > 30 cm H₂O (on mechanical ventilation).
- CVP < 8 mmHg or > 15 mmHg
- SBP < 90 mmHg or > 160 mmHg (MAP < 65 mm Hg or >110 mm Hg)
- Hgb < 10 g/dL
- Lactate > 2 mmol/L
- ScvO₂ < 70 %

- Patient admission to PCSU, CICU, Other _____



SEPSIS DEFINITION:
 Suspected infectious process with ≥ 2 SIRS criteria (Systemic Inflammatory Response Syndrome):
 Temp ≥ 100.4°F
 Heart rate ≥ 90
 Respiratory rate ≥ 20
 WBC > 12.0, < 4.0 or > 10% bands (on **manual** differential)

Utilize the Mission Sepsis Screening Tool to assess patient. If patient has an initial positive sepsis screen, initiate the following:
 (Note: if the patient has a history of cardiomyopathy with low ejection fraction, liver disease, pulmonary edema, or chronic renal failure, the resuscitation plan needs to be adjusted accordingly by the MD)

ADMIT TO:

DIAGNOSIS:

ALLERGIES: NKA or **Height:** **Weight:**

CODE STATUS: Full Code See DNR order sheet

NUTRITION: NPO Ice chips Clear Liquids Regular Diet or:

LAB:
 Lactic Acid level STAT and q 6 hours x 24 hours
 CBC with manual differential if not done in the past 24 hours
 BMP if not done in the past 24 hours
 ABG prn respiratory distress
 If not done in the past 48 hours:
 Blood Culture x 2 different sites (peripheral and central line if available)
 Urinalysis Gram Stain, C&S
 Sputum Gram Stain, C&S
 Wound Gram Stain, C&S

DIAGNOSTIC and IMAGING
 Portable AP chest xray – reason:
 Ultrasound – type & reason:
 CT Scan – type & reason:
 Contrast IV or PO
 Other tests:
 Other tests:

NURSING CARE:
 Reassess patient with the sepsis screening tool: monitoring for s/s of organ dysfunction q 4 hours for 24 hours
 Continuous pulse oximeter
 For PCSU and Cartel only: 1:3 nurse staffing ratio x 24 hours
 Telemetry monitoring

ACTIVITY:

VITAL SIGNS:
 Call MD if:
 • Temp > 102° F or < 95° F (for neutropenic patients, call for temp > 101° F)
 • HR > 120 or < 60
 • SBP > 150 or < 90

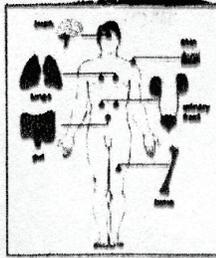
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MEDICAL SURGICAL SEPSIS ORDERS
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VITAL SIGNS: (cont'd)	<ul style="list-style-type: none"> • RR > 30 or < 8 • O2 sat < 95% • Urine output < 0.5 ml/kg/hr <input checked="" type="checkbox"/> Vital signs q 15 minutes x 4, q 30 minutes x 2, q 2 hours x 2, then q 4 hours (notify MD if further organ dysfunction occurs)
RESPIRATORY:	<input checked="" type="checkbox"/> Oxygen therapy to maintain SpO2 ≥ 95%
GU:	<input type="checkbox"/> Foley catheter
FLUID RESUSCITATION:	<input checked="" type="checkbox"/> Initial fluid resuscitation (1 liter Normal Saline per the following parameters for sustained SBP < 90 mmHg): <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Normal Saline 500 ml IV wide-open at rate not to exceed 30 minutes x 1 <input checked="" type="checkbox"/> Reassess respiratory rate: if the following parameters are not present, OK to infuse a second 500ml Normal Saline IV at same rate <ul style="list-style-type: none"> <input checked="" type="checkbox"/> RR does not increase by ≥ 4 breaths/min <input checked="" type="checkbox"/> Pulse oximeter does not decrease by 2% or more <input checked="" type="checkbox"/> If SBP ≤ 90 mmHg after fluid resuscitation is complete, call MD to consider another 1 liter Normal Saline as directed above <input checked="" type="checkbox"/> Continue IV fluids: <input checked="" type="checkbox"/> Call the MD to consider transfer to a higher level of care (CICU or SICU) if the patient demonstrates severe sepsis <u>post-resuscitation</u> (any of the following 3 criteria): <ol style="list-style-type: none"> 1. BP < 90 mmHg 2. Lactic Acid > 4.0 3. Other s/s of organ dysfunction based on the "Mission Sepsis Screening Tool"
MEDICATIONS:	<input type="checkbox"/> Acetaminophen (Tylenol) 650mg PO/PR/NGT every 4 hours PRN temperature > 101.5° F Antibiotics: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Give first dose of antibiotics STAT but after blood cultures obtained (do not delay antibiotics > 30 minutes while awaiting blood cultures) <input checked="" type="checkbox"/> Reassess antibiotic therapy within 72 hours <input type="checkbox"/> Antibiotics to be given: <input type="checkbox"/> Other:

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MEDICAL SURGICAL SEPSIS ORDERS
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“ER Quick Notes” CODE SEPSIS—711

Tech/Float

- Undress pt completely, place in labeled belonging's bag
- 1st vitals, admit to monitor, place 2lt O2 on pt, BP set q 15min
(Oral temp >100.9—Get Rectal Temp)
- Bring bag of Ice to bedside
- Bring 2 pumps & Sonosite to bedside
- Bring Central line Kit to bedside & extra sterile gowns
- EKG
- Obtain & Send BCx2
- Urine Dip & Send Urine Culture
- Check O2 tank on gurney
- Complete Belonging's list
- Check and Chart I&O hourly

RN/RRT/ICURN

- 2 Large Bore IV's-Obtain labs if lab tech not available
- Obtain Urine
- Foley PRN
- NS
- Assist for Central Line Placement/monitoring
- Meds per Acute Sepsis Protocol Antibiotic order form-(after cultures obtained)

LAB

- Sepsis panel-1 grey on ice, 2L, 1B, 1G, BCx2(Lactate q 3 hours)

Packet Includes:

- ***Sepsis Resuscitation Protocol***
- ***Septic ED Tool Checklist/Sepsis Flowsheet***
- ***Acute Sepsis Protocol ABX order form-0603***

NOT PART OF THE MEDICAL RECORD

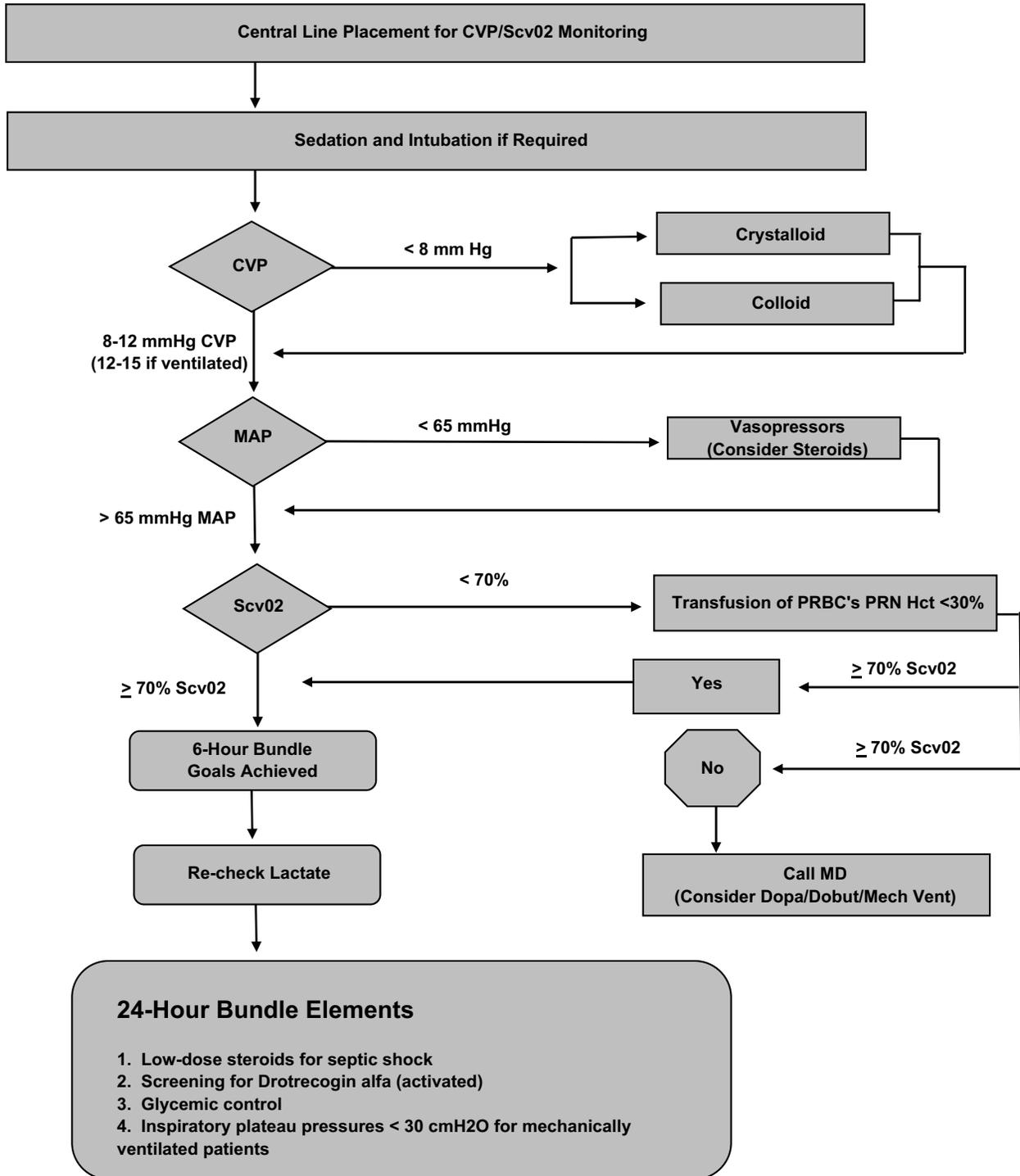
ER Practice Council 3-15-07

Source: Mission Hospital, Mission Viejo, CA.

Severe Sepsis Algorithm

Severe Sepsis: Sepsis associated with ≥ 1 organ dysfunction &/or Lactate > 4 mmol/L

Septic Shock: Sepsis with hypotension (SBP < 90 or MAP < 65), despite fluid resuscitation of 20-40mL/kg



3/9/2009

Kirsten Pyle, RN SICU

Source: Mission Hospital, Mission Viejo, CA.