BEST-PRACTICE INTERVENTIONS:

How a rapid response team saves lives
ENTERING A PATIENT'S ROOM, you say, “Hi, Mr. Gaines. How are you this afternoon?”

He says, “I feel a little dizzy.”

You see he's diaphoretic and pale. On further assessment, you find that his pulse is rapid and irregular at 135. His blood pressure is 78/50, down from a baseline of 118/70, but he's alert and oriented. What do you do? Call the attending physician or medical resident? Or perform a more thorough assessment and monitor him closely?

When you know that something is just “not right” with a patient, but he doesn’t meet code criteria, you may have to make a tough call based on your judgment and experience. You may hesitate to call for help if you have little to go on besides a gut feeling. But a wait-and-see approach could be risky if the patient suddenly takes a turn for the worse. And even if you call a physician immediately, interventions could be delayed for hours while you play phone tag and wait for new orders.

At our hospital, a nurse has another option. If she even suspects her patient is headed for trouble, she calls a “Condition C.” (The “C” stands for crisis.) Within minutes, a rapid response team arrives at the bedside to assess the patient and provide emergency care if needed. Typically within a half hour, either the crisis is resolved in the unit or the patient is transferred to an intensive care unit (ICU) or monitored bed.

Deploying a rapid response team is one of six strategies promoted by the Institute for Healthcare Improvement (IHI) to prevent avoidable deaths (see About this series). In contrast to a code blue team, a rapid response team is designed to intervene when a patient’s condition starts to deteriorate, before he experiences cardiac arrest. In most hospitals, ICU nurses and respiratory therapists (RTs) anchor the team.

At our facility, we call the rapid response team a medical emergency team (MET). In this article, we’ll describe how the system works in our hospital, why bedside nurses have embraced it, and what you can learn from our experience to improve care and save lives in your facility. For more about rapid response teams in other facilities, see Rapid response teams in action.

About this series
This article kicks off a series of articles that examine the Institute for Healthcare Improvement’s (IHI’s) suggested 100,000 Lives Campaign interventions from a staff nurse’s perspective. Each article in the series focuses on one of six key strategies that have been proven to prevent avoidable deaths:

- deploying rapid response teams
- preventing ventilator-associated pneumonia
- delivering evidence-based care to treat acute myocardial infarction
- preventing adverse drug events
- preventing central line infections
- preventing surgical site infections.

We’ll discuss how to prevent ventilator-associated pneumonia next month and explore the remaining strategies in future issues of Nursing2006. For an examination of the IHI’s 100,000 Lives Campaign from a managerial perspective, see the “Best-practice protocols” series in Nursing Management, June to December 2005.
Calling for help

Bedside nurses are encouraged to call a Condition C at the first sign that a patient’s condition is deteriorating. The IHI has identified these subtle signs and symptoms of instability that may appear hours before cardiac arrest:
- mean arterial pressure less than 70 or more than 130 mm Hg
- heart rate less than 45 or more than 125
- respiratory rate less than 10 or more than 30
- complaints of chest pain
- change in mental status.

While you wait…prepare for the team’s arrival

As part of our program, nurses are also taught what to do while waiting for the MET to arrive (see While you wait…preparing for the team’s arrival). These simple but extremely important tasks include calling a colleague for help, getting the crash cart to the bedside, setting up oxygen and suction, and positioning the patient on the backboard in case he needs cardiopulmonary resuscitation.

The MET responders are a multidisciplinary team. When they arrive at the scene of a crisis, they take on eight specific roles and assume associated responsibilities. If fewer than eight people respond to the call, team members assume additional roles as needed.
- Airway manager (MD or CRNA) ventilates the patient and performs intubation if indicated.
- Airway assistant (RN or RT) assists with ventilation and handles oxygen and suction setup.
- Bedside assessor (ICU RN or bedside RN) assesses for patent intravenous (I.V.) access, administers medications, and applies defibrillator pads.
- Crash cart manager (ICU RN) prepares medications and records code events.
- Treatment leader (MD) directs medical treatment, assesses team performance, and makes patient triage decisions.
- Circulation manager (RN, MD, or RT) checks pulse and performs chest compressions if indicated.
- Procedure clinician (MD or CRNP) performs medical procedures, such as chest tube or central I.V. line insertion.
- Data manager (RN) obtains patient chart, records interventions, and reviews test results.

Rapid response teams in action

Pioneered in Australia, rapid response teams have been introduced in about 950 U.S. hospitals participating in the 100,000 Lives Campaign, according to the Institute for Healthcare Improvement (IHI). These teams are designed to rescue patients early in their decline, before cardiac arrest occurs. Hospitals using rapid response teams typically report reductions in the number of cardiac arrests, unplanned transfers to the ICU, and, in some cases, overall mortality rate.

At some hospitals, including the University of Pittsburgh (Pa.) Medical Center Presbyterian Shadyside Hospitals, the rapid response (Condition C) team and code blue (Condition A) team are composed of the same eight people: the bedside nurse, two ICU nurses, two respiratory therapists, another nurse or junior resident, a critical care intensivist, and a critical care fellow. With this system, the bedside nurse needn’t spend time deciding which team to call. In most hospitals, however, rapid response teams are smaller and distinct from code teams.

Although many rapid response teams include a critical care intensivist and a physician assistant, most are anchored by an ICU nurse and a respiratory therapist. Bedside nurses call the team into action by phone, beeper, or overhead page; team members may be alerted simultaneously or sequentially. In some hospitals, nurses have the option of calling the team at their discretion; in others, calling the team is mandatory if the patient exhibits certain signs and symptoms. These variations, which reflect differences in hospital culture and resources, illustrate the flexibility of the rapid response concept.

Hospitals that have fully implemented a rapid response program report that teams are called 10 to 15 times per month for every 100 occupied beds, according to the IHI.

lines. Our list of Condition C criteria is an example of a guideline nurses use independently to enlist emergency assistance.

The biggest challenge to the success of our program was persuading bedside nurses to accept and act on the empowerment that Condition C activation offered. Calling the intern or resident on duty at the first sign of trouble was the established norm. At first, nurses were reluctant to “jump over their heads” by calling the MET for help.

They were also sensitive to criticism about calling for help based on nursing intuition. But the architects of the MET program knew that nursing intuition is no myth. Instead, they recognized it as a form of critical thinking, defined as the blending of knowledge, skills, and attitude. Because the nurse is in a position to make frequent patient observations, she’s the first to see subtle changes that indicate a patient is improving or getting worse. With the power to act on this information at the right time, she can get immediate help for a patient headed for trouble, possibly preventing a cardiac arrest and death.

**Getting it together**
If you’re developing a rapid response program at your facility, incorporate these points into the planning:

- Engage the support of the facility’s senior leadership.
- Determine the best structure for the team in your environment. No matter what structure you adopt, team members should have critical care expertise, receive team training, and be able to respond immediately to a call without constraint from competing responsibilities.
- Provide appropriate education and training to team members and to those who will utilize the team.
- Establish structured criteria and mechanisms for activating the response.

**While you wait...preparing for the team’s arrival**

This algorithm shows unit nurses’ responsibilities from the time the bedside nurse (RN 1) recognizes a crisis and calls a Condition C until the team’s arrival.
Adopt a detailed standard documentation tool.
• Develop an immediate follow-up mechanism, such as a phone call from the MET coordinator, to let the bedside nurse know that she made the right call.

Five E’s for success
These five E’s are the basis for our program’s success:

Education. All staff members are educated about the program. Everyone knows what a Condition C is, when it’s appropriate, and how to call one. Staff nurses also learn what to do while waiting for the MET response.

The ICU nurses, bedside nurses, RTs, and other designated responders are trained for their roles in a simulation lab. Crisis team training is a 4-hour program based on the concept that practice makes perfect. Videotaping of simulated crises and analysis of performance are part of the program.

Empowerment. All staff nurses are authorized and expected to use their assessment and critical thinking skills to decide when a patient needs help. They’re also empowered to act according to established criteria and are supported in doing this by nursing and medical administration.

Efficiency. Standardizing team membership, clearly defining participants’ roles and duties, and establishing a policy and procedure for initiating the call for help have created an efficient system.

Equipment. Over the years, we’ve standardized the equipment used for emergency treatment. Crash carts and defibrillators in all of our 50-plus nursing units at two hospitals are set up exactly the same. Emergency bags carried by MET responders are stocked with standard airway intubation equipment and medications, and are arranged in exactly the same way. Standardizing equipment has added to the efficiency of the response, boosted confidence in the responders’ ability to function, and promoted self-confidence among MET members.

Evaluation. Continuous evaluation of the response process has helped us improve the emergency response process and its outcomes. Almost every Condition C called is later reviewed by a team of nurses and physicians. The situation is reconstructed and opportunities for process improvements are investigated. Several quality improvement initiatives and protocols have been developed as a result of the Condition C reviews; for example, a protocol for treating hypoglycemia, the creation of a blood administration team, and changes in practice related to patient-controlled analgesia and to the transport of critically ill patients.

Success stories
As our MET system has evolved, we’ve seen a dramatic increase in the number of Condition C’s called. At first glance, you might think that this is bad news—too many patients in crisis. But looking more closely, we found that this has been accompanied by a proportional decrease in the number of “Condition As”—our code designation for cardiac arrest. By proactively responding to threatening situations, the MET program has reduced the number of patients who progress to cardiac arrest by 30% and reduced the rate of unexpected mortality by 27%.

What do nurses think?
Nurses want to do what’s best for their patients by delivering the highest possible quality of care. They also enjoy working in an environment where their work is valued and their voices are heard. Nurses at our facility believe the MET program supports those values.

In an informal survey of 300 nurses in our organization, most respondents felt that the MET program improved patient care and the nursing workplace. Nearly all (98%, or 210 of 214 respondents) rated the MET program as important, very important, or essential to their practice. Two out of three nurses said they’d consider the availability of a rapid response program when making future decisions about where they might work.

How Mr. Gaines fares
What happened to Mr. Gaines, the patient who was feeling dizzy at the start of this article? Within minutes of the MET responders’ arrival, he’s assessed and found to be in rapid atrial fibrillation with a heart rate of 160. The treatment leader orders 5 mg of metoprolol (Lopressor) I.V. push. After a few minutes, Mr. Gaines’ heart rate slows to 70, the arrhythmia converts to normal sinus rhythm, and his blood pressure returns to baseline. The crisis over, Mr. Gaines is transferred to a monitored bed.

As it happened, Mr. Gaines didn’t need the services of all the health care professionals who responded—but if his condition had deteriorated to cardiac arrest, he would have. Calling for help before the situation deteriorated further may have made the difference between a calm transfer to a monitored bed and a hasty trip to the ICU—or worse.

SELECTED REFERENCES

Carol C. Scholle is director of critical care and transplant services at the University of Pittsburgh (Pa.) Medical Center (UPMC) Presbyterian Hospital. Nicolette C. Mininni is an advanced practice nurse at UPMC Shadyside, also in Pittsburgh.

SELECTED WEB SITE
Institute for Healthcare Improvement, 100,000 Lives Campaign
http://www.ihi.org/IHI/Programs/Campaign/
Last accessed on December 1, 2005.