

# Hospitals try to break a deadly 'code' LONG

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- *From:* William Wagner <DieSpam\_williamwag@xxxxxxxxxx>
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Rapid response teams helping to save lives

By Liz Kowalczyk, Globe Staff | November 27, 2005

Every year, thousands of patients suffer a cardiac or respiratory arrest in what seems like the best possible spot, the place most likely to guarantee their survival: A hospital bed. But despite their proximity to nurses, doctors, and life-saving medical equipment, more than 80 percent of patients who "code" in the hospital die before going home.

Dr. Michael Howell, an intensive care specialist at Beth Israel Deaconess Medical Center, said studies have started to provide clues as to why: In some cases, caregivers took too long to recognize the danger signs and, as a result, delayed potentially life-saving treatment. The problem may be worsening, as more bedside nurses on regular floors outside of intensive care units are fresh out of school and without the experience to recognize subtle warnings.

"It's a failure to give patients the best shot," Howell said.

After studying the approach of Australian hospitals that say they have reduced patient mortality by one-third, Beth Israel Deaconess last month became one of a growing number of US hospitals to establish a special rapid response team that aims to recognize warning signs sooner and prevent patients from arresting. Holyoke Medical Center established such a team last year, and Brigham and Women's Hospital will begin testing

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the concept on its 14th floor medical unit on Dec. 5.

Howell hopes the team will prevent delays like one he described to the Beth Israel Deaconess board of directors last month: Doctors admitted an elderly man to the hospital for gastric bleeding. When his systolic blood pressure dipped into the 80s, his nurse and an intern gave him intravenous fluids to push it back up to normal range. His pressure climbed back into normal range. Over the next eight hours, the patient's blood pressure kept falling, and they kept pumping in fluids. Low blood pressure is generally not life threatening until it dips into the 70s or 60s. But they failed to recognize that the subtler decline masked a more serious underlying problem: massive stomach bleeding. The next morning, a senior doctor did, and transferred the patient to the ICU, which has the staffing expertise and equipment to intervene more rapidly. But it was too late.

"I don't know that we would have saved him," Howell said. "But it's absolutely possible."

Now, when a patient's condition worsens in one of six specific ways, including systolic blood pressure that dips below 90, or when a nurse has marked concern about a patient, the nurse is required to set into motion a series of events called a trigger. The nurse pages a special team — including a senior nurse, an intern (a first-year doctor), and a respiratory therapist if it's a breathing problem — immediately to the patient's bedside. The intern is required to notify the resident, who is required to call the attending doctor, or senior physician. Continued... Previously, it was up to nurses to decide whether to call in reinforcements. And even when they did, interns at times gave instruction over the phone and did not come see the patient right away.

"At night, when something happens, you ask yourself, 'Is this really important? Is it really worth bothering a doctor?'" said Rose Segura, 33, a nurse on one of Beth Israel Deaconess general medical floors for one year. "This makes it crystal clear there are situations that need to be addressed. It's a way of reaching up the chain of command to more experienced people to make sure you're doing the right thing."

Not everyone is convinced.

Australian hospitals were among the first to adopt medical emergency teams to intervene before cardiac or respiratory arrests, or to transfer patients to the ICU. One hospital reported in a study last year in the journal *Critical Care Medicine* that establishing such a team reduced mortality among post-surgery patients by 36 percent. Several US hospitals have reported similar results.

But in a study published in June in the *Lancet*, Australian researchers compared 12 hospitals that introduced these teams with 11 hospitals that did not. Surprisingly, both groups reduced deaths, cardiac arrests, and unplanned ICU admissions by about one-third. It's possible, Howell and other doctors said, that the latter group improved care to patients simply because doctors and nurses knew they were being closely watched as part of the study.

Because of these results and because of the cost of extra nurses and doctors to serve on the teams, Brigham and Women's scrapped plans for a hospital-wide rapid response team this summer and decided to move more

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slowly. "We need to find out if this really going to make a difference," said Dr. Andy Whittemore, the hospital's chief medical officer.

Beth Israel Deaconess will study whether there are fewer unexpected deaths among patients after adopting the team. One issue is whether the hospital's trigger teams can match the results of the Australian and other US teams, which generally include doctors or nurses trained in ICU care.

"A trigger is not about excitement and drama; it's about intervening before there's drama," Jeanne Quinn, a senior nurse, said Tuesday morning during break on a unit for post-surgery and trauma patients. Minutes earlier, Judy Wagoner, a 29-year-old nurse with 2 1/2 years experience, had activated a trigger when her patient's blood pressure plunged to 56.

As the senior nurse on the floor, Quinn responded and helped Wagoner gradually raise Carol Emerson's pressure back into the 100s. The team ordered an electrocardiogram to rule out underlying heart problems and a blood transfusion, and kept the patient an extra night. About 80 percent of the nurses on the floor have less than two years' experience, while Quinn has 15.

No one knows for sure if early intervention helped Emerson, who was in the hospital so surgeons could repair broken bones in her left arm, avoid cardiac arrest. And Wagoner said she would have asked for Quinn's help even before the new rules.

But doctors believe the key to reducing patient mortality is to intervene at the first sign of trouble, before the patient "arrests," an emergency involving the heart or lungs — or both— shutting down. According to a 2003 study of 14,720 cardiac arrests in 207 US hospitals, only 17 percent of patients survived to discharge. Even some top-level academic medical centers do only slightly better. Brigham and Women's saves about 24 percent of patients who suffer an arrest, doctors there said.

Howell said it's so difficult to save these patients because their bodies already have begun shutting down. Within four to six minutes of a cardiac arrest, a person's brain cells start dying and the other organs stop working.

Some of these patients are so sick with underlying heart disease or other serious illnesses or trauma that they will die no matter what doctors and nurses do. But in a 2002 British study, researchers found that 68 percent of 118 cardiac arrests in one hospital could have been prevented; in almost half the cases, caregivers did not act on a warning sign that the patient's condition was deteriorating, including low blood pressure or a deepening coma.

US hospitals that use rapid response teams are reporting better outcomes. At the University of Pittsburgh Medical Center Presbyterian, the cardiac arrest rate dropped to 4.5 of every 1,000 patients in 2000 from 6.8 the previous year, and patient mortality fell 30 percent, said Dr. Michael DeVita, an intensive care physician and associate medical director of the hospital.

But even at Beth Israel Deaconess, some staff members resisted the shift in culture — at least initially. Dr. Inga Lennes and Dr. Amanda

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Pressman, both third-year residents, worried the program would create an avalanche of extra paperwork. "We didn't want to lose our autonomy," Lennes said. "We didn't want a system where all of these important decisions are taken out of our hands and moved up the chain of command." Howell, who supervised them when they were interns, told them the hospital was going to adopt the teams, so they should find a way to make it work. The two women decided to survey interns and residents about their experiences on the teams and hold extra teaching sessions on how to evaluate and treat patients with potentially dangerous warning signs. They are starting to see benefits: Now, when nurses call interns and residents about a problem on the trigger list, the doctors know they must drop what they're doing and see the patient. "No one is arguing anymore," she said. "It's the policy."

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- Next by Date: **Re: My Mom – Statin Needed?**
- Previous by thread: **How Do Statin Drugs Damage the Liver?**
- Next by thread: **Re: Hospitals try to break a deadly 'code' LONG**
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