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Thérèse Stukel headed a study whose conclusion was that many heart-attack patients don't get optimal care.

## High-tech care may not be best for heart attacks

**D**rug therapy can be as beneficial as expensive, high-tech cardiac procedures in prolonging survival after a heart attack, according to a recent Dartmouth study. Furthermore, the treatment that patients get varies widely by geographic region. “What we found was . . . a bit of a surprise,” says Thérèse Stukel, Ph.D., lead author of the study, which was published in the *Journal of the American Medical Association*. “We really are not prescribing drugs optimally.”

**Survival:** Every year, more than 280,000 Medicare patients are admitted to hospitals with heart attacks—and 18% of them die within 30 days. The researchers examined seven years of data on 158,000 Medicare patients who were hospitalized after a first heart attack in 1995 or 1996. The study focused on how the treatment that patients got—medical management versus invasive management—affected their survival.

Medical management involves the administration of drugs, such as aspirin, that thin the blood; drugs that reduce blood pressure; and thrombolytics, drugs that prevent the formation of clots. Invasive management includes cardiac catheterization, a diagnostic procedure whereby a thin tube is threaded through the arteries to find blockages; angioplasty, a therapeutic procedure whereby a

balloon-tipped catheter is inserted into a blocked vessel to improve the blood flow; and bypass surgery, where a new vessel is grafted onto an artery to circumvent a blockage.

Stukel and her colleagues found that patients who received invasive therapy lived no longer than those who received optimal medical therapy. “So what we are doing is exposing patients to these high-tech, high-risk procedures that are very costly without getting the benefit,” she explains.

Some cardiologists disagree with the study's findings, saying clinical trials have shown that invasive treatments improve survival. Stukel, however, points out that those trials were performed on ideal patients in facilities where experienced doctors “perform the procedures within 12 hours of the heart attack.” But, she adds, “this is by and large not the case in the real world.”

The problem is that “the public wants the latest, high-tech service and feel that care is being rationed if they're not receiving it,” she says. “It's very difficult to tell a patient that this may not improve their survival, whereas taking their cardiac medications might.”

**Supply:** Patients are more likely to get invasive procedures if they live in areas of the country that have a greater supply of high-tech cardiac services. “There is a strong rela-

tionship between how much technology is available and the likelihood of these patients getting it,” says one of Stukel's coauthors, David Wennberg, M.D., M.P.H., an adjunct associate professor of community and family medicine at DMS.

“It's very difficult to turn your back on a piece of technology that's just down the hall,” Stukel points out.

The study also confirmed previous work showing that older, high-risk patients, who are more likely to benefit from invasive care, are *less* likely to receive it. Ironically, doctors may fear that invasive therapy is too dangerous for these patients. “What tends to drive that treatment practice is possible physicians' misconceptions about risk/benefit trade-offs,” Stukel says. “Typically, they direct the therapy to lower-risk and younger patients.”

**Risk:** So if drugs aren't being prescribed optimally and invasive therapy is being given to the wrong patients, what's the solution? “What we are recommending is a systems-minded approach, such as standing orders at hospitals and electronic medical records, so that every eligible heart-attack patient is immediately stratified into high-risk or low-risk and receives the cardiac drugs, unless the physician orders” otherwise, says Stukel.

In addition, some experts propose regional cardiac centers but disagree on the model. Some argue that all heart attack patients should be transported as quickly as possible to such a center. Others, like Stukel, think patients should go to a local hospital to get immediate thrombolytics and medical therapy, and if necessary later be referred to regional centers specializing in intensive heart treatments. “Time is muscle,” Stukel says. “Heart-attack patients need to have thrombolytics . . . as fast as possible.”

The authors hope the results will improve the care patients get. “What I would hope is that the seduction of high-tech medicine will be tempered by the finding that really good basic medicine is as important [as], or more important than, these high-tech type of activities,” says Wennberg. SION E. ROGERS