Timing Is Everything: Motivating Patients to Call 9-1-1 at Onset of Acute Myocardial Infarction

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Editorial

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Motivating Patients to Call 9-1-1 at Onset of Acute Myocardial Infarction

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Over the past 20 years, advances in reperfusion therapy with angioplasty and thrombolysis have revolutionized the management of acute myocardial infarction (MI). Use of these therapies has led to impressive reductions in mortality from acute MI.[1] Unfortunately, their full potential has not been realized, because many patients do not reach the hospital in time to benefit from them.

Studies show that only ≈1 in 5 patients gets to the hospital within 1 hour of the onset of acute MI symptoms; this is the time frame in which they would obtain the greatest benefit from reperfusion.[2] We can greatly decrease death and disability among our patients (≈40% of the 1.1 million heart attacks in the United States each year are fatal[3]) if we motivate and educate them to call 9-1-1 at the earliest suggestion of an acute MI.

Data from the Fibrinolytics Therapy Trialists' Collaborative Group[4] indicate that for every hour of delay, 2 lives per 1000 patients are lost. The GUSTO I trial[5] and others demonstrated that mortality was 2 times as great if thrombolytic treatment occurred 4 to 6 hours after onset compared with 1 to 2 hours after onset (8.9% versus 4.3%). The GUSTO IIb study[6] also showed a time dependency for primary angioplasty, with a 30-day mortality of 1% when angioplasty was performed within 60 minutes of hospital arrival and of 6.4% when it was delayed >90 minutes. In the Myocardial Infarction Triage and Intervention Trial, the rate of death among patients with acute MI who were treated within 70 minutes after the onset of symptoms was 1.3% compared with 8.7% among patients who were treated later.[7]

Many Reasons for Patient Delays

Research has identified a number of reasons for patient delay in seeking medical treatment for an acute MI. In many cases, patients expect the type of heart attack that they often see in movies and medical television shows: the kind with crushing chest pain that drops a person to the ground. The reality, of course, is that many heart attacks are much "quieter," causing only mild chest pain or discomfort or other symptoms such as shortness of breath or diaphoresis.

The Rapid Early Action for Coronary Treatment (REACT) trial, a community intervention study funded by the National Heart, Lung, and Blood Institute (NHLBI),[8] documented the public's lack of awareness about heart attack symptoms. Researchers conducted random phone surveys in 20 US communities and found that although 90% of the respondents knew that chest discomfort or pain is a symptom of a heart attack and 67% could identify arm pain as a symptom, only half knew that shortness of breath can be a symptom of acute MI. Awareness of sweating (21%) and other heart attack symptoms was even less common. Overall, the average REACT respondent could identify only 3 of 11 heart attack symptoms.[9]

Calling 9-1-1 Saves Lives

Patients need to understand that they should never attempt to drive themselves to the hospital if they think they are having a heart attack; they should not even let a friend or relative drive them. Rather, they should call 9-1-1 if they suspect they are having a heart attack.

In a study published in the July 10, 2000, issue of *Circulation*,[10] REACT researchers found that people recognize the benefit of calling 9-1-1 for others but delay calling for their own heart attack symptoms. Respondents to the telephone survey were asked, "If you thought someone was having a heart attack, what would you do?" and given a choice of 2 responses: (1) call 9-1-1 or an ambulance or (2) drive the person to the hospital. Approximately 89% said they would call 9-1-1 if they witnessed a person having a heart attack; this is the action recommended by the American Heart Association and by the NHLBI. About 8% said they would consider driving someone with possible heart attack symptoms to the hospital.

The REACT investigators also collected information on 875 individuals in the same communities who arrived at the emergency department with chest pain. These people were asked how they arrived at the hospital and what factors influenced their decision to seek medical help quickly or wait to go to the hospital. Only 23% of the chest pain sufferers had called 9-1-1. About 60% were driven to the hospital by someone else, and an astonishing 16% drove themselves to the hospital.

The study revealed that many of the chest pain patients delayed calling 9-1-1 because they took aspirin or attributed their symptoms to heartburn and took an antacid instead. Others put off calling 9-1-1 after speaking with their physicians. This finding highlights the important and often delicate role that physicians play in relieving their patients' anxiety while, at the same time, motivating them to make haste to the emergency room.

Helping Your Patients Create a Heart Attack Survival Plan

Fewer than 10% of heart attack patients in the REACT trial reported that they had ever spoken with a physician about

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what to do in case of an acute MI. While recovering in the hospital, less than half of the patients reported that someone had talked to them about acute MI symptoms and the need to get to the hospital quickly (J.R. Finnegan, unpublished data, 1999). Yet such discussions can deliver a powerful message about key symptoms and appropriate actions to take to minimize treatment delays.

The American Heart Association and the NHLBI are working to reduce the time-to-treatment for acute MI through cooperative educational efforts designed to achieve the goals of Healthy People 2010, the federal government's blueprint for building a healthier nation. Healthy People 2010 includes 4 objectives that specifically address improving the awareness of heart attack symptoms, action time to treat potential heart attack patients, and access to emergency medical care. Both organizations are calling on physicians and other healthcare providers to engage their patients in potentially lifesaving discussions about heart attack warning signs and the need to call 9-1-1 immediately when such symptoms occur.

In support of physicians' efforts the NHLBI, through its National Heart Attack Alert Program, and the American Heart Association, through its Operation Heartbeat, have developed programs to reduce the time between the onset of symptoms and treatment. Specifically, the American Heart Association's strategic plan includes the goal of increasing the unaided awareness of cardiac warning signs by 20% by 2003. The association is also working to increase by 15% the awareness of the need to call 9-1-1 first when experiencing symptoms of a heart attack. Additionally, because many of the awareness issues are similar for stroke patients, the American Heart Association has established Operation Stroke and has set parallel goals for stroke awareness.

The NHLBI's *Act in Time to Heart Attack Signs* campaign calls on healthcare providers to deliver messages about heart attack awareness, risk, and survival. Both the American Red Cross and the National Council on the Aging are partnering with the NHLBI and the American Heart Association in this effort. By launching the campaign on September 11, 9-1-1 day, which was created by the National Emergency Number Association, we hope to emphasize the importance of calling 9-1-1.

The *Act in Time* campaign encourages primary care physicians, internists, and cardiologists to use the TIME method developed by the REACT researchers. It has the following 4 key components:

Talk to patients about their risk of heart attack, how to recognize symptoms of acute MI, and the proper action to take if they think they are having a heart attack.

Investigate patients' feelings about heart attack and any barriers that may prevent them from seeking prompt medical help if they are experiencing one.

Make, in conjunction with your patients, a plan of action for dealing with a heart attack and rehearse the plan.

Evaluate your patients' understanding of the risks involved in delaying treatment for acute MI.

When in Doubt, Check It Out

Often patients are unsure about whether the symptoms they are experiencing are due to a life-threatening situation, such as a heart attack, or something much less severe. Fear of being wrong or being embarrassed keeps many patients from receiving the treatments that can save their hearts and their lives.

Patients need to be encouraged to seek treatment if they have any reason to suspect that they are having a heart attack. They need to understand that emergency medical personnel are accustomed to dealing with false alarms. "Better safe than sorry" has no truer application than when it comes to a heart attack.

Physicians can also remind patients regularly that coronary heart disease is the top killer of both men and women. Women in particular are not getting this message and still mistakenly believe that cancer is their leading health threat.[11]

Healthcare providers also need a better understanding about why patients fail to use 9-1-1 and new methods to motivate patients to do so. It is highly likely that the messages and techniques that are effective will differ depending on the age, sex, socioeconomic status, and cultural background of individual patients.

In concert with this country's leading healthcare organizations, physicians can and should play a pivotal role in encouraging patients to have a plan of action that can be followed in the event they or a loved one appears to be having a heart attack. This critical patient education can go a long way toward saving hearts and, thereby, saving lives.

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