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If You're Stricken, Minutes Matter, Yet Many Ignore Signs, Delay Treatment

By Melinda Beck

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The advice sounds very simple. The best way to survive a heart attack is:

1. Recognize the symptoms.
2. Call 911.
3. Chew an aspirin while waiting for emergency personnel to arrive.

But every year, 133,000 Americans die of heart attacks, and another 300,000 die of sudden cardiac arrest—largely because they didn't get help in time.

Of all the efforts to combat cardiovascular disease in the U.S., "this is our Achilles' heel, and it's the area where we've made the least progress," says Ralph Brindis, a past president of the American College of Cardiology.

Heart-attack sufferers fare best when they get to the hospital within one hour after symptoms start. But on average, it takes two to four hours for patients to arrive, and some wait days before seeking medical care. Reasons range from confusion to denial to fear of looking silly if they aren't having a health crisis after all.

◀ How to Prevent

935,000

Number of Americans who will suffer a heart attack this year. Cardiovascular disease is the leading killer of men and women.

75%

Decrease in the rate of U.S. deaths from coronary heart disease, adjusted for age, since 1968.

10 minutes

Amount of brisk exercise a day to reduce heart-

How to Survive ▶

Within 1 hour

Optimal time to get to the hospital after onset of heart-attack symptoms.

2 to 4 hours

Typical amount of time before sufferers arrive at the hospital.

50%

Percentage of heart-attack sufferers who call 911

attack risk by nearly 50%. Thirty minutes cuts risk by 75%.

50%

Reduction in heart-attack risk one year after a smoker quits the habit.

'For people who sit most of the day, their risk of heart attack is about the same as smoking.'

—Martha Grogan, cardiologist at the Mayo Clinic

and arrive by ambulance.

13%

Percentage of people who drive themselves to the hospital.

7.6%

Percentage of people who suffer cardiac arrest outside of a hospital and who survive long enough to be discharged.



'Thank God we have spouses. I can't tell you how often, if it was left up to the patient, they never would have sought care.'

—RALPH BRINDIS, senior adviser for cardiovascular disease for Northern California Kaiser

Percentages of people who die within one year of having their first heart attack:

19% OF MEN **26% OF WOMEN**

Sources: American Heart Association Statistical 2012 Update; Centers for Disease Control and Prevention; Yale Heart Study; University of Michigan Health Systems, 2009; Mayo Clinic

ILLUSTRATION: GETTY IMAGES

"We've got this idea of not bothering physicians unless it's really necessary," says Angelo Alfonzo, a research scientist at the Yale School of Nursing and head of the Yale Heart Study,

which is exploring why people suffering heart attacks don't seek help faster. It hopes to have 2,300 survivors complete its online survey. He also thinks that social responsibilities play a big role. "If you ask people what they'd do if they had crushing chest pain, they say, 'I'd call 911.' But when push comes to shove, they're in a meeting or there's an event they can't miss. People find it very hard to drop everything."

Heart attacks, officially called myocardial infarctions, typically occur when a blockage forms in one of the coronary arteries, depriving part of the heart muscle of blood. Doctors can open the blockage with drugs or cardiac catheterization—but the more time that takes, the more heart muscle dies. "Time is muscle," as cardiologists say. Even if the initial heart attack isn't fatal, damaged heart muscle can lead to congestive heart failure—one of the reasons why 19% of men and 26% of women over age 45 die within one year of having their first heart attack, according to the American Heart Association.

Severe damage is bad enough. It can disrupt the heart's rhythm and lead to cardiac arrest, where the heart stops pumping blood. At that point, the victim has only a few minutes to live unless bystanders or paramedics restart the heart with a defibrillator or perform CPR.

Cardiac arrest often happens with no warning. Only 7.6% of people who suffer one outside of a hospital survive long enough to be discharged, a rate that hasn't changed much in 30 years, according to a 2010 University of Michigan study.

Recognize the Symptoms

With most heart attacks, victims do have some warning—but the symptoms can be confusing. The stereotypical "Hollywood heart attack," clutching the chest in agony, is only one scenario. The feeling in the chest may be more squeezing, tightening or heavy pressure. It may radiate down the left arm or up to the jaw or around the back between the shoulder blades, particularly in women. One study found that 71% of women experience flulike symptoms with no chest pain at all.

Both men and women may have indigestion, nausea, lightheadedness, profuse sweating, shortness of breath with little exertion and overwhelming fatigue.

"People whose heart muscle is shutting down often feel really tired, so they lie down and take a nap," says Dr. Alonzo. "That's not a good idea. They may not wake up."

Dr. Alonzo, who has studied behavior during heart attacks for 40 years, notes that people delay getting help longer when they're at home than in the office. At home, "you have more

resources to use—you have your bed to lay down on, your favorite drink or your favorite comfort food. If you're at work, you tend to get out of there much faster," says Dr. Alonzo, who titled one talk on heart-attack delays "Who's Going to Feed the Canary?"

"Thank God we have spouses," says Dr. Brindis. "I can't tell you how often, if it was left up to the patient, they never would have sought care." He says one cardiologist colleague thought he was having a heart attack, and ran up and down the stairs of his building to give himself a stress test. Turned out he was.

Some people call their physicians to discuss their symptoms—but experts say that only wastes more time. Even if you merely suspect you might be suffering from a heart attack, seek help as soon as possible. "It takes skilled physicians and nurses and lab technicians and often some kind of imaging tests to actually diagnose a heart attack, so there's no way you can diagnose it yourself at home," says cardiologist Janet Wright, executive director of the Department of Health and Human Service's Million Hearts campaign, which aims to prevent one million heart attacks and strokes in the next five years.

Call 911

Once they do decide to go the emergency room, only about 50% of heart-attack sufferers call 911 and arrive by ambulance, studies show. In the Yale Heart Study to date, 41% of respondents said someone else drove them, and 13% drove themselves.

According to Dr. Alonzo, some said they were worried about the cost of ambulance; others said they would be embarrassed to have neighbors see them taken away on a gurney.

But calling 911 has many important advantages. Emergency-medical technicians can perform CPR or use a defibrillator in case of cardiac arrest. Some can start intravenous fluids and give medications. EMTs can also administer electrocardiograms to gauge the extent of heart damage and notify the hospital to have the appropriate equipment standing by. That can significantly cut "door-to-balloon time"—the time between when a heart-attack sufferer first arrives and his or her blocked artery is opened.

"Patients who are brought in my ambulance are treated differently by the medical team," says Dr. Brindis. If you do go to the hospital on your own, be sure you announce, "I think I'm having a heart attack!" for immediate attention.

Take an Aspirin

It does make sense to take one adult-strength aspirin, which prevents blood clots and may help keep an artery partially open. Chewing it will get it into your bloodstream quicker than swallowing it. The brand doesn't matter, as long as it's uncoated. Tylenol, Advil and other pain-relievers that aren't aspirin-based won't have the same effect.

If you have a history of heart disease or are at high risk for cardiac arrest, it may make sense to buy a home defibrillator, which costs about \$1,200. "Cardiac arrest is what will kill you," says Douglas Zipes, another past president of the American College of Cardiology. "Having it in your home is a very cheap insurance policy."

The Right Recovery

Sadly, surviving a heart attack doesn't end with getting to the hospital quickly.

Cardiac-rehabilitation programs that offer exercise and diet plans along with education and support groups can help lower that risk. Many hospitals offer them, but they're under-used. In one study, only 14% of heart-attack survivors on Medicare enrolled.

PERSONAL STORIES: Vignettes from heart-attack patients.

Her Symptoms Overlooked

Women generally take longer than men to seek help when they have heart-attack symptoms--partly because they don't want to make trouble, partly because they have too much else to do and partly because some doctors brush them off when they do.

Carolyn Thomas of Victoria, Canada, was 58, experienced all three in 2008 when she had the classic symptoms—"crushing pain in the chest, nausea, sweating, pain down the left arm"—while out for her usual morning walk.

"I leaned against a tree, thinking, 'This better not be a heart attack because I don't have time for one,' " recalls Ms. Thomas, who worked in hospital communications at the time.

She went to the emergency room anyway, but was told her tests were normal. "The doctor said, 'You're in the right demographic for acid-reflux. Go see your family doctor,'" she says. "I was so embarrassed. I left like I had wasted five hours of their time."

The pain returned, then subsided, on and off for days. Ms. Thomas, made an appointment to see her doctor, but didn't think it was urgent. "I knew it couldn't be my heart, because this guy with an MD just told me it wasn't," she says.

She went on a long-planned visit to see her mother in Ottawa. But on the way back, the chest pain got worse. She had two more attacks in the airport and two more during the five-hour flight home. She didn't notify the flight attendant "because I didn't want to make a fuss," she says.

When she landed in Vancouver, after midnight, she was too weak to walk and barely made her connecting flight to Victoria. "I kept thinking, if I can just get home, I'll be all right," she says. An airport staffer with a wheelchair helped her to her car "with me apologizing all the while," she says. It took her 20 minutes to gather the strength to drive home.

At the hospital the next morning, doctors said she had a 99% blockage in her left anterior descending artery—known as "the widowmaker," since blockages there are so often fatal.

"Notice they don't call it 'the widower-maker,' " says Ms. Thomas, who learned that men with the symptoms she had on her first visit would typically be kept for observation far longer.

Since then, Ms. Thomas attended a leadership program for women heart-attack survivors

at the Mayo Clinic and started a blog, myheartsisters.org, to help educate women about heart disease.

Among the research on her site: a study in the *New England Journal of Medicine* showing that women are seven times more likely than men to be misdiagnosed in mid-heart attack and sent home from the hospital, and a 2005 poll from the American Heart Association that found that only 8% of family-care physicians and 17% of cardiologists were aware that more women have died from heart disease than men every year since 1984.

Women do bear some of the responsibility for delays in care themselves. "Women think, 'Yes, we'll call the doctor after we pick up the kids and finish that report and put the casserole in the oven,' " says Ms. Thomas.

But she urges others to pay more attention to their bodies and their instincts. "You know when something is not right. That's what I didn't pay attention to," says Ms. Thomas. "The acid test is, 'If somebody that you love is experiencing these symptoms, what would you do?' "

Public-health officials also say that physicians need to be more aware of women's heart issues, and watch their bedside manner with false alarms.

Says Janet Wright, executive director of the Department of Health and Human Service's Million Heart campaign: "We need to work on medical personnel to say something like, 'You are not having a heart attack, but we're so glad you came in, and here are five things you can do to prevent one in the future.' "

Attack Wiped His Memory Clean

James Wilson

Fewer than 8% of people who suffer sudden cardiac arrest outside of a hospital live long enough to be discharged. James Wilson was one of the lucky ones.

In 1999, Mr. Wilson, then a 41-year old lawyer, was a Naval Reserve commander on active duty in Paris. He and his wife were on a bus heading to Monet's Garden when he said to her, "I don't feel good," and collapsed.

The bus driver gave him mouth-to-mouth resuscitation and restored his breathing while other passengers kept his heart beating with cardiopulmonary resuscitation until emergency-medical technicians arrived and shocked his heart with a defibrillator—twice—

before his normal heartbeat returned.

Still, Mr. Wilson's brain had been deprived of oxygen for several minutes. He went into a coma that lasted three days. Then he was taken to an Air Force hospital in Germany, and medevac'd to Walter Reed Army Medical Center in Washington D.C..

Doctors there couldn't determine what caused Mr. Wilson's heart to stop beating, a common problem with sudden cardiac arrest. They suspected an electrical disturbance and implanted an internal defibrillator in his chest in case his heart stopped beating again.

The bigger problem, Mr. Wilson says, was that the lack of oxygen "caused my frontal lobe to be 'wiped clean,' as the doctors described it. I had more work to do getting my brain functioning again than anything I had to do with my heart." He had no memory of the event, the hospitalization or even being in Paris. He called a law firm he hadn't worked at for two years and asked for his messages.

Doctors at Walter Reed put his chances of returning to his work as a lawyer at 1%, but he beat the odds again. After four months of therapy to restore memory functions, he was cleared to practice law again. Even today, he still gets "small blips of memory, but I cannot be sure that it is legitimately my memory of being in Paris or something that comes from a movie or a magazine."

What caused Mr. Wilson's heart to stop beating is still a mystery. So far, his internal defibrillator hasn't been needed, though he does run 10K races to stay fit. His father suffered something similar years earlier. "I just hope that neither my son nor my daughter get the chance to see if it will happen to them," he says.

After Jog, Healthy 46-Year-Old Is Stricken

Lisa Schmidfrerick-Miller

On March 8, Lisa Schmidfrerick-Miller woke up, got dressed and jogged the three miles scheduled for her half-marathon training program. A licensed massage therapist, she had only one appointment and spent the rest of the day at her desk. On her way home, she realized that she was "just not feeling right." She felt light-headed, with pressure in her upper chest that extended across her collarbone, into both arms and radiated to her upper jaw.

They were classic symptoms of a heart attack—but Ms. Miller was an active, healthy 46-year old, with no risk factors for heart disease.

She knew enough from her work in public health to take an aspirin and go to the local hospital in Jamestown, N.Y., "just to get checked out." She was transported to a fully equipped cardiac-care center, where she was diagnosed with Spontaneous Coronary Artery Dissection (SCAD), a condition in which the inner lining of a coronary artery separates and folds over inside the artery. "The torn part blocks blood flow and wham-o, a heart attack," as Ms. Miller explains.

SCAD was once thought to be a rare condition, but it is increasingly being diagnosed in otherwise healthy adults their 30s and 40s. About 70% of the recent cases are in women, about one-third of them who were pregnant or had recently given birth.

Ms. Miller's SCAD was in the left anterior descending artery—the so-called widowmaker. But doctors were able to restore blood flow with cardiac catheterization. They think that with a variety of medications, her artery should be able to heal on its own.

What's frustrating—and frightening—is that it's not known whether people who have had one episode of SCAD are at high risk for another, or what they can do to reduce that risk. Ms. Miller has no history of coronary heart disease, never smoked, maintains a normal weight, has low blood pressure and very healthy cholesterol numbers.

Still, she had started a cardiac rehabilitation program—and joined a group of other SCAD survivors who are determined to further research and awareness of SCAD.

He Relented and Called an Ambulance

Bruce Smith

Bruce Smith was out for a walk around midnight on Feb. 26 when he felt "like a grenade had exploded in my chest."

He knew he was at risk for heart problems. "I'm a fat guy, and over the years, I've become more sedentary," says the 62-year-old journalist in Yelm, Wash., though he had been trying to walk more and eat less lately.

But what went flashed through his mind was: "What is this? What can I do about it? I don't have any money or any insurance."

He decided to go to sleep and woke up thinking, "Thank God, I dodged that bullet." But an hour later, the pain returned, worse than the night before. He took some aspirin and sat down and the pain got even worse, radiating across his chest, down his arm up into his jaw and face. "It was even ringing my cavities," he says.

Mr. Smith called his neighbor, Dave. Twice, but his line was busy. So he resigned himself to calling 911. Soon, he heard a siren getting louder and closer.

One firefighter rushed in with a blood pressure monitor and an EKG machine. Another helped attach pads and monitoring wires. With his blood pressure soaring to 230/169, the EMTs carried him out on a thin metal wheelchair, transferred him to a gurney and secured him in the back of the ambulance, where they squirted nitroglycerine under his tongue and got an IV flowing.

They also told him not to worry about not having money or insurance.

At Good Samaritan Hospital in Puyallup, Wash., Mr. Smith learned that he had a 95% blockage in his rear circumflex coronary artery and was whisked to the cardiac catheterization lab for angioplasty.

He asked a technician, "Would it be fair to say I've had a heart attack?"

"Dude, it could have been fatal," the tech replied.

It was only later that night, after hours of surgery and recovery, when a nurse was asking about how he lived, that he had an epiphany, Mr. Smith says. One revelation was that he

needed more love in his life. Another was that "all the things I thought I was doing for myself weren't enough. It was humbling."

Now in his seventh week of cardiac rehab, Mr. Smith says he makes a point to do something physical for at least an hour every day. He's lost 10 pounds so far and is determined to return to his high school weight. He also enjoys kibitzing with fellow members of his cardiac-rehab group while pedaling bicycles or on the treadmill. "Everybody's in the same boat. Nobody feels good," he says.

As for his medical bills, they aren't all settled yet, but Good Sam hospital is covering the cost of nursing, ER, the cardiac care and eight to 10 weeks of rehab as charity care. He's gotten discounts on medications and a local tax levy covers ambulance costs when patients can't pay. Friends and neighbors and family members are also helping with food, gas and rides to doctor visits and rehab. "God bless you all," he says.

Corrections & Amplifications

A 2005 poll from the American Heart Association that found that only 8% of family-care physicians and 17% of cardiologists were aware that more women have died from heart disease than men every year since 1984. An earlier version of the online profile of Carolyn Thomas stated that 8% of family-care physicians and 17% of cardiologists were *unaware* that more women have died from the disease.

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