
CPR: The Sorcerer's Apprentice

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Cardio-pulmonary resuscitation (CPR) can truly be described as one of the wonders of modern medicine. It was invented as a desperate response to a desperate situation, to reverse certain death when a person's heart or breathing stopped suddenly in cases where death was completely unexpected. A person who drowns in very cold water, for example, might have a chance of survival if she is fished out quickly and her heartbeat and breathing can be restored. When someone has surgery, the administration of anesthesia can cause the heart to stop beating. Especially in a circumstance like this, surrounded by expert physicians and the latest technology, if an otherwise healthy person's heart stops it makes sense to try to reverse it.

To be clear on our terms, CPR can mean two different things depending on whether you are in or out of the hospital. If you are **out** of the hospital when your heart stops, you drop to the ground and die shortly thereafter, unless some helpful citizen comes to your rescue. The Helpful Citizen undoubtedly took a CPR class through the fire department or Red Cross in his neighborhood. He sees you go down, he drops his briefcase and his coffee and races to your side. Once he has determined that your heart has really stopped and you haven't just fainted in the heat or decided to nap on the sidewalk, he begins CPR which, outside a hospital, consists of two parts. One is rhythmic pounding on your chest. He makes a two-handed fist and with great force whacks you with the heels of his hands just at your breastbone. He has to whack pretty hard, because the heart is under the breastbone, as Nature intended your breastbone to protect your precious heart from random whackings. But this is not random at all. It is a deliberate attempt to pressure the heart from outside your body to pump.

The other part of the Helpful Citizen's CPR is artificial respiration. First he "clears your airway" which is Red Cross talk for making sure your mouth and throat don't have anything in the way. Then he takes a deep breath and, covering your mouth with his own, empties his breath into your chest, making your chest rise. When he moves away, you "exhale" while he takes another breath.

When the Helpful Citizen delivers CPR, it is quite a task to keep everything going in rhythm. One can't ordinarily plan these things, but ideally one would wish to drop in the presence of **two** Helpful Citizens, one to beat on the chest and one to do the breathing.

CPR in the hospital (or ambulance) starts with those two basic parts (artificial respiration and chest compression), but adds two more. Certain medications can be given to a patient to stimulate chemically the beat of the heart. Also, an electric shock can be delivered straight to the heart muscle to make it fire up again. (This last part, the electric shock, is what television shows like Chicago Hope use to show us the situation is desperate. We see a flat line on the heart monitor, and the next thing you know, here come the plastic paddles on the patient's chest and a huge THUMP is heard.) In addition, the artificial respiration is accomplished by putting a tube down the patient's throat and attaching it to a breathing machine.

When CPR is performed in a hospital, all four steps are part of the package. "Code Blue" is the term given to CPR. When physicians anywhere in a hospital hear "Code Blue" over the p.a. system, they rush to the room where the "code" has been called and immediately begin to work as a team to do everything possible--artificial breathing, pounding on the chest, medicine and electric shock--to get the patient's heart beating again. They will keep it up until the physician in charge calls an end to the attempt, either because she sees that it has been successful, and the patient's heart is pumping unaided, or because she sees that it has failed and the patient has died in spite of everything.

This tremendous blessing of modern medicine comes with a potential burden attached. As I mentioned, CPR was invented to prevent impending death after a cardiac arrest when death was unexpected. But, like other medical technology, it migrated. It is now used widely throughout the hospital (and outside) **any** time a patient's heart stops, regardless of the patient's condition and regardless of the likelihood of success. It's a little like the Sorcerer's Apprentice who cast the Sorcerer's spells to get the buckets and brooms to help him do his chores, but was then unable to stop them: you can have too much of a good thing, especially if you don't know when to stop.

But wait, you say. I thought I had the right to consent to medical treatment, and that the medical treatment couldn't be performed on me unless I do consent. Why wouldn't I simply refuse to have CPR if my condition was terrible or I was really expecting to die?

This is a very good question. The answer to it lies in the nature of CPR. By definition it is an emergency treatment, and an emergency is one in which there is no time to dawdle. Not only is there no time to consent (or refuse), but by the time CPR is the answer it is too late to ask the question. The patient will be unconscious. Furthermore, since a patient whose heart has stopped will certainly die without it, CPR is administered almost automatically. Ordinarily, this is just the situation we desire. Especially in the absence of impending death from something else, like cancer or kidney failure, most of us would want CPR if our hearts suddenly stopped.

However, some people in hospitals are there precisely because they DO have advanced cancer, or some other disease from which they may die. Those patients often have conditions in which death is NOT unexpected. In these cases, a good physician will approach the patient to discuss in advance whether the patient wishes CPR to be attempted in the event of a heart attack. Understandably, this can be a very difficult conversation to have. But it is important to do, precisely because it gives the patient the chance ahead of time to say thanks, but no thanks.

In the abstract, many patients simply want all attempts to be made to save their lives. But when they are given the real facts, sometimes their decisions change. The real facts are these:

- Somewhere around 15% of CPR attempts in a hospital are successful. The clever reader will figure out that means that 85% or so fail. "Success" here means getting a heartbeat back, and doesn't tell us anything about the condition the patient returns to. Some "successes" mean that the patient comes back to nothing more than a vegetative state. (Luckily, if you are in a cardiac ward of the hospital when you arrest, your chances of being successfully resuscitated are the highest.)
- When CPR is administered to a nursing home resident, the success rate is somewhere between 2 and 3%. Often, six months later, even those people who made up the 2-3% are not alive. This statistic makes sense when we think of the advanced age and frail health of most nursing home residents.

- When a person's heart attack is not witnessed, meaning no one really knows when it happened, the success rates for CPR diminish considerably.
- People with advanced cancer, people who have very frail health and the very old simply *do not survive* CPR. (These "codes" are among the most awful procedures hospital personnel perform. They say that shoving a tube down a frail, old person's throat and hearing the bones in chest crunch as they are crushed makes them feel like torturers, not healers.)

When patients are given these facts, suddenly "doing everything" doesn't seem so wonderful. If a patient decides ahead of time that in the event her heart stops beating, she doesn't want CPR, a doctor then writes a No Code order into the patient's chart. Sometimes it is called a DNR (for Do Not Resuscitate) or, more honestly, DNAR (for Do Not Attempt Resuscitation). When such a note is made in the patient's chart, it means that if the patient's heart or breathing actually stops, no one will attempt to reverse the situation.

A DNR order does NOT mean that a doctor or nurse is "giving up" on the patient. In fact, some patients who don't want CPR **do** still want aggressive treatment such as chemotherapy or other drugs, radiation or even sometimes surgery. Sometimes these treatments help a patient enjoy what life is left by shrinking a tumor, removing an obstruction, making breathing easier or providing some other comfort. Sometimes the treatments are even aimed at stopping the progress of the disease. A No Code order simply means that if Mother Nature decides it's time, then it **is** time and the patient will die in peace instead of violence.