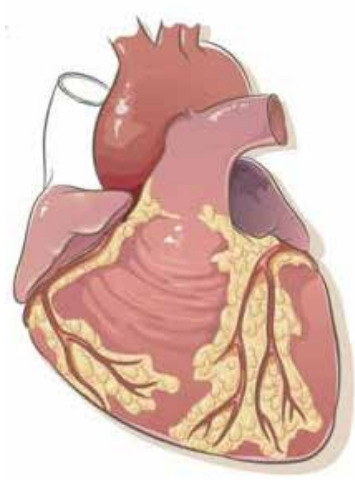
More Controversy About CPR:
Is There a "Duty" to Try and Save Every Life?

ABSTRACT

CPR is one of the most dramatic undertakings in medicine, putting aside military medicine which is in a class by itself. The apparent "saving of a life" doomed to death but for the interventions of "passersby" in the street, skating rinks, restaurants and other public places and in hospitals by health care professionals, cannot be equaled by too many other undertakings in medicine which are more often measured and better organized and appear less chaotic. There is a great deal of controversy about the place of CPR in the older population because the outcomes in most well-designed studies are dismal, especially in the very elderly and those with underlying co-morbidities including dementia. Whenever there is a case that reaches the media, the "experts" come out again and all the views make it again into the public domain for discussion, disagreement and soul-searching.

KEYWORDS: CPR, cardiac arrest, event, time, medicine

On March 4, 2013, an article written by the Associated Press described the death from an apparent cardiac arrest of Lorraine Bayless, an 87 year old resident of Glenwood Gardens, a California independent living home in Bakersfield California. From the original report it appears that a nurse on-site refused to perform cardiopulmonary resuscitation despite what appeared from the 911 recordings, desperate pleas from the emergency dispatcher. The event has prompted wide media coverage and a wealth of responses. These have ranged from outrage over the apparent abrogation of a responsibility to "save a life" to more sanguine responses



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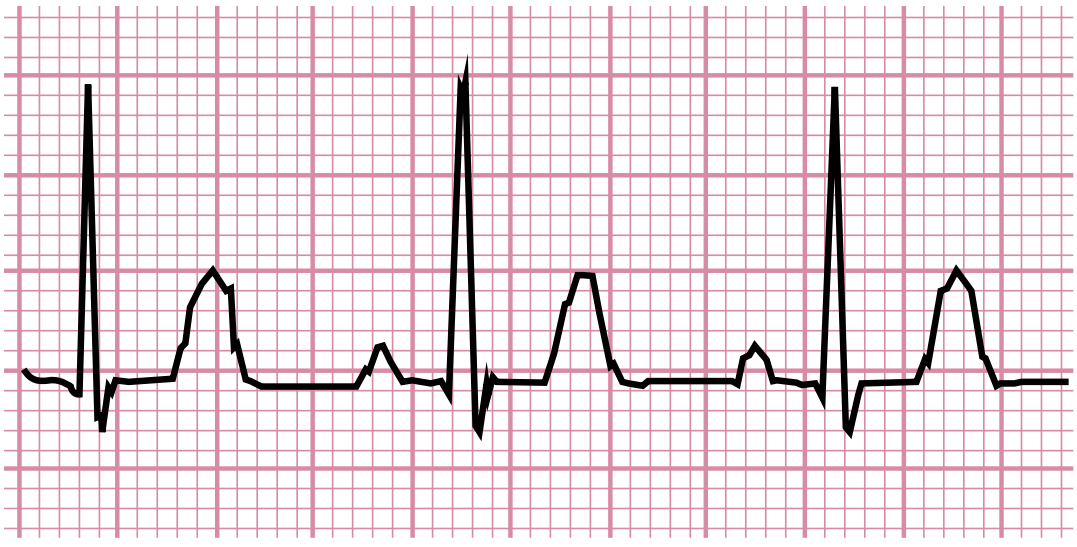
from those involved in elder care who have attempted to place the event in a framework of evidence-based medical knowledge and personal values. The question remains from this event which made all the major media is whether in our era of "personal choice" as a driving force in modern medicine, how much technology should be used in potentially life-ending events when benefits may be much muted and not necessarily result in a future life comparable to that which existed before the event.

Evolution of CPR as an Acceptable and almost Mandatory Treatment

Since my early days in medicine, I have always had an interest in the potential benefits and disappointments of the CPR process. When I finished medical school in Dundee, Scotland, in 1966, CPR was hardly on the agenda as an end-of-life undertaking even in Dundee's teaching hospitals. I had witnessed my first cardiac resuscitation attempt as a young medical school student when I spent the summer of 1963 at the then Beth-El Hospital (later to be renamed Brookdale Hospital) in Brooklyn, New York, as a combined educational and personal experience. It allowed me to visit my family, living in my childhood home in Brooklyn, for the only prolonged period during my six years abroad to study medicine and undertake part of my early post-graduate training.

During that summer at Beth-El, where I was exposed to the famous Dr. Isidore Snapper, author of his remarkable book *Bedside Medicine* (of which I have an autographed copy he gave me during that summer), I learned how to do venipunctures and hone my physical examination skills, which for Dr. Snapper was the hallmark of his European mastery of clinical medicine. One day while doing rounds with the senior medical resident, a patient with severe heart disease, who was receiving oxygen via an oxygen tent (a system used in those days to provide an oxygen-rich atmosphere that required no effort or discomfort on the part of the patient and often resulted in patients not being as carefully examined as everyone was "afraid" to open the "tent" lest the oxygen leak out) suddenly turned blue, and by the time we pulled the flaps of the tent away, it was clear that he was pulseless. This was prior to the advent of closed chest cardiac resuscitation, so following the usual protocols and procedures at the time, a resuscitation team was



called which rapidly opened his chest with a "thoracotomy" incision and open-chest cardiac massage was applied. There was blood all over the place as the physicians doing the resuscitation called out instructions to the nurses to continue providing oxygen through an Ambu Bag (first developed in 1953 by the German engineer Dr. Holger Hesse from Germany along with the Danish anesthetist Henning Ruben). The device went into general use starting in 1956, which meant that when I was doing my summer rotation at Beth-El in 1963, it was already in use. After about half an hour of effort, it was clear that the patient had not responded and was pronounced dead. It was one of the most dramatic events I had witnessed during my early medical education days.

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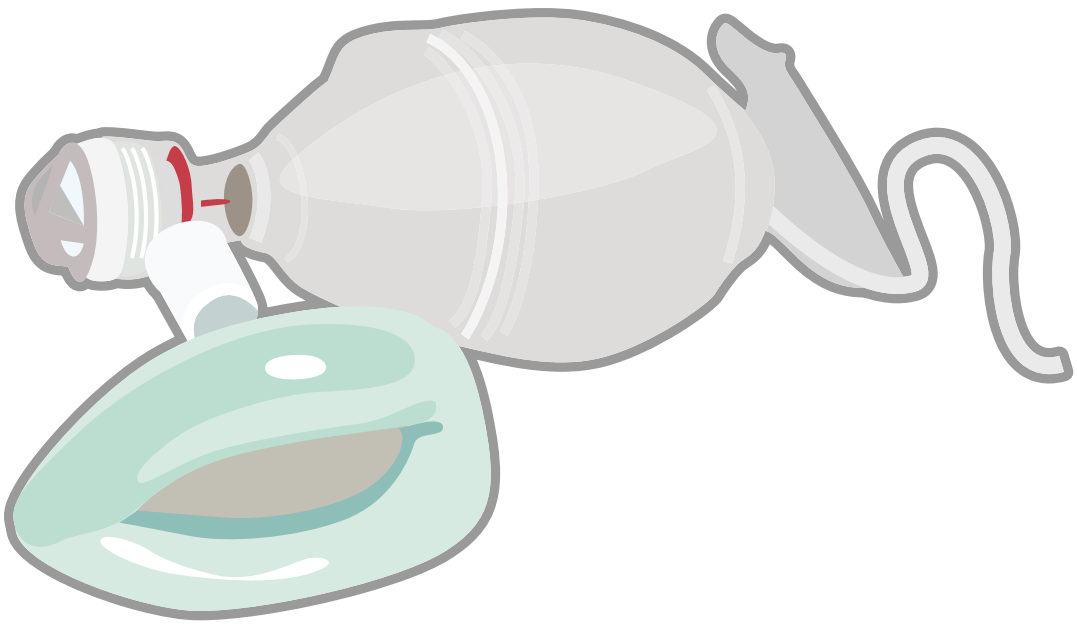

The advent of closed chest CPR was in its very infancy during that summer and had not yet come into general use. Its modern evolution started through a number of events, including an observation during animal experiments in 1958, when three investigators, William Bennett Kouwenhoven, Guy Knickerbocker, and James Jude at Johns Hopkins University, revealed that thoracic compression in cardiac-arrested dogs resulted in a palpable pulse. This finding eventually became translated into the practice of closed-chest cardiac massage with later combinations of massage and ventilation, which became the basis of CPR. Interventions such as defibrillation occurred somewhat later on. The first medical journal report was in 1960, where 70% of patients in the study (many as the result of an arrest during anesthesia) were saved. In that seminal article the authors wrote, "Anyone, anywhere, can now initiate cardiac resuscitation procedures. All that is needed is two hands."

In 1963, the year of my summer at Beth-El, cardiologist Leonard Scherlis started the American Heart Association's CPR Commit-

tee. In May 1966, the National Research Council of the National Academy of Sciences convened an ad hoc conference on cardiopulmonary resuscitation. The result was a program of standardized training and performance CPR. From that historical event in 1966, the sophistication and introduction of CPR into the repertoire of emergency medical intervention has become ubiquitous. Even by the time I completed medical school in 1966, the year of the beginning of the promulgation of CPR protocols in the United States, it was a long way for CPR to become part of the general standard of practice and care. Over the years I have witnessed the almost obsessive-compulsive adoption of CPR as a means of "saving" patients and heading off the "grim reaper" with occasional very dramatic outcomes, each one of which was usually memorable. On the other hand, during my medical residency, which spanned many years at number of "high octane" medical centers, I saw such extremes of what turned out to be futile CPR efforts that I began to wonder about its universal use.

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CPR in North America

My first experience of American-style CPR contrasted greatly to the half-hearted efforts I saw towards the end of my medical school and internship in Dundee and Aberdeen, Scotland, respectively. I saw a senior Scottish staff physician make a few thumps of the chest and inject adrenalin directly into the heart and thump again—but that was it, and invariably the death was then pronounced a short time after. On my first day at a Boston teaching hospital, during the intern orientation (there were 10 of us—all male—all other than me right out of medical school), although I had done an internship in Scotland, I had never been shown the underpinnings of a hospital which in the case of this orientation included a visit to the business office where patients and families would "settle their financial accounts" something of course which was anathema under the British National Health Service.

In fact, over that year in Boston I witnessed some of the bizarre implications of the corporate-based health care system within which some of my patients explained to me how they had been "ruined" by their illness and had become dependent on the wel-

fare system because of one chronic disease or another that required on-going medical expenses for which they did not have insurance or what illness that they had did not cover. In Britain I had never heard money mentioned in relation to a patient-care decision, whereas during that year in Boston I heard many times that something "could not be done" because of inadequate coverage or that someone was coming in as a "public" patient because they did not have insurance and that there were implications to that status. One major implication was that on the "public," which were the teaching wards—in essence, the house-staff "ran the show" under the supervision of a senior medical resident with ultimate responsibility being the attending physician who provided regular "teaching rounds" on the patients but the old adage of "see one, do one, teach one" was the method of choice of learning.

On that first day's visit, while being shown the various billing clerk's cubicles in the financial and accounts receivable office and undergoing and explanation of the various types of medical insurance that existed, a man apparently waiting to pay a medical bill collapsed. Within moments, the "arrest team" arrived as the group of new interns moved back. I was mesmerized at the commotion while an ECG machine was hooked up to the man, an intravenous line started and one young doctor compressed his chest while another attempted to intubate him, which did not go well, so he ended up using an "Ambu bag" with some sort of mouthpiece to provide oxygen to him while the chest compressions continued. The paper from the single channel ECG was pouring out, sort of reminiscent of pictures I had seen of the stock exchange as in the older days, quotes were pouring on to the exchange's floor as traders yelled and held up their hands furiously trying to complete an order. After about half an hour, the apparently most senior medical resident, "called the arrest off" and pronounced the patient deceased. He was removed from the office, the reams of ECG paper were carefully gathered and folded in layers while an intern was writing on a clipboard and the rather large cart containing all the equipment had its drawers closed and removed. We were told, in short, that it was a post-MI (heart attack) patient who was paying his bill and just had a sudden "cardiac arrest." What an introduction for me to CPR in the modern and advanced world of American medicine.

A year later, while a medical resident at a major teaching hospital in Montreal Canada, I spent two months on the "cardiac service," which meant being on the "arrest team". By this time I had been involved in enough CPR

attempts in Boston to feel quite confident in the process and range of approaches, use of drugs and the art of rapid intubation. But, my senior resident in Montreal was a passionate believer in the potential benefits of CPR and had a philosophy that no one in essence should "die" because of a cardiac arrest without our staff at least trying an act of salvage with what had become a very sophisticated CPR protocol with all the latest medications and techniques reported to be beneficial tried until it was clear after enough time had passed that despite our thumping, pumping, respiring and "shocking" the patient did not recover. As part of the usual "black humor" of medical students and trainees, we used to say that the only way to die at our hospital was to lock oneself in the bathroom, die and hope no one found you until rigor mortis had set in. Even though it was at times dramatic and exciting, I began to develop a somewhat skeptical view to what appeared to be universally applied CPR, to young and old, those with severe late stage disease and those with apparent unexpected "heart attacks."

CPR and the Older Population

It was many years later that I became involved in geriatric medicine and my curiosity about whether this dramatic undertaking which had been adopted as the "norm" in all the general hospitals in which I had done my years of medical training was really suitable for everyone, especially most of my very elderly patients with multiple diseases. I witnessed a few such CPR attempts in the last general hospital in which was completing my internal medicine training and began to feel that we were in fact committing an assault on this dying woman, for whom life had given her many full years and at the end of it she was ravaged my multiple serious diseases an her attempt at "dying" was being interrupted by some technological "marvel" that was completely inappropriate for her. But this was before the advent of the concept of an advanced directive, the first one of which was a DNR order. As it turned out since most of the staff knew which very elderly, frail patients would not respond to CPR there was an almost subterranean silent but mutual agreement about what became known as "slow codes" sometimes indicated by a small colored sticker on the patient's chart so although the staff "went through the motions" of CPR for a few minutes, it was without the strict standards and efforts required for successful CPR and the patient could be pronounced dead and chart could contain the statement, "CPR attempted but failed." By the end of my residency at this hospital the DNR protocol had been introduced and had been

determined by the legal community to be acceptable but the initial protocols were very cumbersome and had to be frequently re-

IN MANY LONG-TERM CARE FACILITIES, PROTOCOLS AND POLICIES HAVE BEEN DEVELOPED TO TRY TO MINIMIZE UNNECESSARY AND LIKELY FUTILE ATTEMPTS AT CPR THROUGH A COMBINATION OF EFFORTS.

asserted otherwise the default CPR status returned.

It was by chance that not long after taking up my staff position at the geriatric center at which I have worked for more than 35 years that one of my medical residents asked me for a topic that he might present for "grand medical rounds." I had just seen the title of a *New England Journal of Medicine* article, which I had not yet read about the results of "out of hospital" CPR and suggested he should read it and if the findings were pertinent to our organization and to the care of the elderly in general it might make a good topic. At that time although CPR was common in general hospitals, it was virtually never done in long-term care or nursing home settings. The study revealed something very interesting: there was a very substantial difference in survival (which in any event was on the low side), but for those identified as "dependent" (that is in need of care for some or many ADLs (Activities of Daily Living), even if living at home, did very poorly. The conclusion seemed to be that "dependency" was a surrogate measure of multiple medical co-morbidities, which over the years of study seemed to be one of the defining factors that determined survivability from a cardiac arrest even if immediate CPR was provided.

Another factor that seemed to have an effect on outcomes was the time between the presumed event and the initiation of CPR efforts. This resulted in the conclusion that only if an arrest were actually "witnessed" and "unexpected" (especially in the elderly frail population), the likelihood of a beneficial outcome fell dramatically, to the point of hardly ever occurring, and if the person survived there was often substantial impairment in function afterwards.

CPR in the Elderly Requiring Long-term Institutional Care

Therefore, in many long-term care facilities, including nursing homes and other facilities that cater to the older populations, protocols and policies have been developed to try to minimize unnecessary and likely futile attempts at CPR through a combination of efforts. One approach is to inform all applicants to a facility whether on site CPR or any kind might be provided in the event of what would appear to be a cardiac arrest. With the assessment/monitoring/shocking equipment that has become quite ubiquitous it has become possible for a minimally trained person to apply the monitor and if there is a cardiac rhythm amenable to DC shocking, it will be done automatically. As long as the attending staff is trained to do proper chest compression, time can be bought for the EMS to arrive and undertake a more fulsome resuscitative effort. Thus far the results of such efforts have not been shown to be overwhelmingly positive, but it may take more time and studies to verify whether better training and more easily used equipment might change the results. At present, many older people including older physicians choose to forgo CPR in the event of a cardiac arrest with a view that immortality is not part of medicine's repertoire. It has become clear to many that the results of the undertaking, despite erroneous presentations on popular television programs, the possibility of a poor quality of life if death is averted but full function not returned is a daunting prospect for many who would prefer accepting that such an end might be the best one that can be hoped for. As was quoted in one of the many articles written as an outcome of the Bayless event; "If we're surprised, let me add that referring to TV shows was no joke. In 1996, The New England Journal of Medicine published an analysis of three popular series: "ER," "Chicago Hope" and "Rescue 911." Two-thirds of those victims survived to discharge after CPR, possibly because in Teeveeland, cardiac arrests occur most often in children, teenagers and young adults wounded by gunshots or injured in auto crashes. In reality, most people whose hearts stop are elderly people with cardiac disease."[1]

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Other quotes from other articles included the following impor-

tant information, comment and question. "Long-term success" has a particular definition here. It means that a patient, after cardiac arrest, survives long enough to be discharged from a hospital. Studies often don't report what happens thereafter. But even that modest kind of success occurs less frequently in older people who receive CPR, declining slightly for those in their 70s, and then more steeply for those in their 80s and 90s, several studies show. And like any other medical intervention, CPR involves its own risks. This can all seem very abstract to a healthy middle-aged person with no history of heart problems. But as people age, and increasingly cope with multiple diseases and frailty, the issue grows more urgent and more complex. The blunt question: Should a frail, elderly person receive CPR?[2]

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Doctors and Other Experts Express Many Opinions

An article by Ken Murray in the February 25, 2012, *Wall Street Journal* entitled "Why Doctors Die Differently" says, "Doctors don't want to die any more than anyone else does. But they usually have talked about the limits of modern medicine with their families. They want to make sure that, when the time comes, no heroic measures are taken. During their last moments, they know, for instance, that they don't want someone breaking their ribs by performing cardiopulmonary resuscitation (which is what happens when CPR is done right). They are also aware of the medical literature and know that despite the media depiction of significant success with CPR, in reality, a 2010 study of more than 95,000 cases of CPR found that only 8% of patients survived for more than one month. Of these, only about 3% could lead a mostly normal life." And like all such studies, the statistics were negatively skewed in the older population.[3]

In the current case that has been heavily reported in the media with all kinds of "experts" weighing in from the perspective of medicine, law, ethics, ageism and proper communication, of interest is the fact that the family has chosen not to complain nor take legal action as they were of the belief that what happened and what was done would have been the wishes of Mrs. Bayless. All agree that there will be some sort of investigation, but if there are any lessons to be learned from this event which caught

the interest of the media they are as follows:

Older people, especially, should communicate their wishes and preferences to their family members and all others who ultimately may be responsible for making decisions for them either in an emergency or when they are not in a position to make the decision on their own. Communication should, if possible, be documented in one format or another or at least in a way that all concerned are comfortable with the decision, are willing and able to accept it and act on it accordingly. Specific issues related to CPR is that some individuals and organizations recommend having the DNR instruction displayed in such a way (medical alert bracelet, sign on the refrigerator or in a container in the refrigerator addressed to EMS staff).[4]

WHEN POSSIBLE WISHES FOR A DNR STATUS SHOULD BE DOCUMENTED IN A WAY THAT EVERYONE THAT MIGHT BE IN A POSITION TO MAKE A DECISION ABOUT INITIATING CPR KNOWS ABOUT THE DNR REQUEST.

What Happens and should happen Long-term care?

Organizations (nursing homes, retirement homes) that cater to older individuals should have clear policies that are communicated to residents, patients and their families as to what can and cannot, will or will not be done in the event of a sudden loss of vital signs, which is usually, but not always, due to a cardiac arrest. When possible wishes for a DNR status should be documented in a way that everyone that might be in a position to make a decision about initiating CPR knows about the DNR request. A study done by myself and Dr. Brian Schwartz in 1996, in Ontario, Canada, revealed a wide range of policies and practice across the long-term industry in that province. Although there are many recommendations as to how such organizations might approach exploring and documenting the wishes of their clients, residents and patients, at that time and currently there is usually no regulation or legislation that requires a person to indicate their wishes even though it is strongly recommended.[5]

Clarification of the status of registered professional staff working for the organization as to whether or not they have a “higher” professional duty to administer what might be construed as basic and potentially “life-saving” CPR if they have witnessed or are called to such an event in the absence of a clear policy that prohibits it or clear knowledge of the expressed wishes of the individual affected by the apparent cardiac arrest.

All individuals who are contemplating entering any kind of retirement home or nursing home should receive sufficient information to allow them to understand the implications of a DNR decision, and that it should not negate any normally required treatments and should relate only to a true cardiac arrest which is manifested by a loss of vital signs (cardiac output and breathing) with the associated features of impending doom (skin color and mottling of the skin). Once the information is provided all efforts should be to obtain the DNR order if at all possible.

Of particular importance when it comes to such discussions and decision-making, the evidence is quite compelling that in the very elderly, especially those with multiple pathologies and experiencing dementia as part of their collection of chronic medical conditions, the results of CPR are particularly dismal. Moreover, the effect on the person receiving almost as a last rite of modern North American medicine can be akin in my opinion to assault.[6]

In the absence of a DNR order, no attempts at CPR should be taken unless the event itself was witnessed as it occurred and was not expected by nature of some acute underlying illness such as a serious infection or serious heart ailment. Only then should an attempt at defining the event with the portable monitors so readily available should be undertaken and if deemed suitable a DC defibrillation will occur while CPR is performed until EMS arrives and takes over. If the communication and proper protocols are in place such an undertaking will occur rarely and hopefully only in those who have any semblance of a positive outcome. One should not have to pass through the gates of modern technology to leave this world.

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Further reading

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