Human, Ethical, and Legal Dimensions of ECC and ACLS

Part 1—Rescuer and Witness Issues

How Often Will CPR, Defibrillation, and ACLS Succeed?

Many public health experts consider CPR training to be the most successful public health initiative of modern times. Millions of people have prepared themselves to take action to save the life of a fellow human being. But despite our best efforts, in most locations half or more of out-of-hospital resuscitation attempts do not succeed. CPR at home or in public results in return of spontaneous circulation (ROSC)—ie, even temporary return of a perfusing rhythm—only about 50% of the time.

Tragically even when ROSC occurs, only about half of VF cardiac arrest patients admitted to the emergency department and hospital survive and go home. This means that 3 of 4 prehospital CPR attempts will be "unsuccessful" in terms of neurologically intact survival to hospital discharge. Also, there is a > 80% mortality for in-hospital arrest. We must consider and plan for the emotional reactions from rescuers and witnesses to any resuscitation attempt. This is particularly true when their efforts appear to have "failed."

Take Pride in Your Skills as an ACLS Provider

You should be proud that you are learning to become an ACLS provider. Now you can be confident that you will be better prepared to do the right thing when your professional skills are needed. Of course these emergencies can have negative outcomes. You and the other emergency personnel who arrive to help in the resuscitation may not succeed in restoring life. Some people have a cardiac arrest simply because they have reached the end of their life. Your success will not be measured by whether a cardiac arrest patient lives or dies but rather by the fact that you tried and worked well together as a team. Simply by taking action, making an effort, and trying to help, you will be judged a success.

Stress Reactions After Resuscitation Attempts

A cardiac arrest is a dramatic and emotional event, especially if the patient is a friend or loved one. The emergency may involve disagreeable physical details, such as bleeding, vomiting, or poor hygiene. The emergency can produce strong emotional reactions in physicians, nurses, bystanders, lay rescuers, and EMS professionals. Failed attempts at resuscitation can impose even more stress on rescuers. This stress can result in a variety of emotional reactions and physical symptoms that may last long after the original emergency.

It is common for a person to experience emotional "aftershocks" following an unpleasant event. Usually such stress reactions occur immediately or within the first few hours after the event. Sometimes the emotional response occurs later. These reactions are frequent and normal. There is nothing wrong with you or with someone who has such reactions following an event.

Psychologists working with professional emergency personnel have learned that rescuers may experience grief, anxiety, anger, and guilt. Typical physical reactions include difficulty sleeping, fatigue, irritability, changes in eating habits, and confusion. Many people say they are unable to stop thinking about the event. Remember that these reactions are *common* and *normal*. They do not mean that you are "disturbed" or "weak." Strong reactions simply indicate that this particular event had a powerful impact on you. With the understanding and support of friends and loved ones, the stress reactions usually pass.

Techniques to Reduce Stress in Rescuers and Witnesses

Psychologists tell us that one of the most successful ways to reduce stress after a rescue effort is simple: *talk about it.* Sit down with other people who witnessed the event and talk it over. EMS personnel who respond to calls from lay rescuer defibrillation sites are encouraged to offer emotional support to lay rescuers and bystanders. More formal discussions, called "critical event debriefings," should include not only the lay rescuers but also the professional responders.

In these discussions you will be encouraged to describe what happened. Do not be afraid of "reliving" the event. It is natural and healthy to talk about the event. Describe what went through your mind during the rescue effort. Describe how it made you feel at the time. Describe how you feel now. Be patient with yourself. Understand that many reactions will diminish within a few days. Sharing your thoughts and feelings with your companions at work, fellow rescuers, EMS personnel, or friends will help reduce stress reactions and help you recover.

Other sources of psychological and emotional support are local clergy, police chaplains, fire service chaplains, and hospital and emergency department social workers. Your course instructor may be able to tell you what plans are established for critical event debriefings in your professional setting.

Psychological Barriers to Action

Performance Anxiety

The ACLS Provider Course helps prepare you to respond appropriately to a future emergency. ACLS providers have expressed some common concerns about responding to sudden cardiac emergencies: Will I be able to take action? Will I remember the steps of the ACLS approach? Will I remember how to perform the skills of CPR, defibrillation, and intubation and the details of drug doses and the steps in the algorithms? *Will I really have what it takes to respond to a true emergency?* Any emergency involving a patient you have grown close to, a friend or a family member will produce a strong emotional reaction.

Disagreeable Aspects of CPR

What about the unpleasant and disagreeable aspects of performing CPR in either the in-hospital or out-of-hospital setting? Will you really be able to

perform mouth-to-mouth rescue breathing on a stranger? What if the patient is bleeding from facial injuries? Would this not pose a risk of disease for a rescuer without a CPR barrier device? CPR and defibrillation require that the rescuer remove clothing from the patient's chest. You cannot attach defibrillation electrodes unless the pads are placed directly on the skin. The rescuer must open the patient's shirt or blouse and remove the undergarments. Common courtesy and modesty may cause some people to hesitate before removing the clothing of strangers, especially in front of many other people in a public location.

Everyone is familiar with the concept of defibrillation shocks as shown in television shows and movies. Everyone knows to expect the "jump" and muscle contractions whenever a character yells "clear" and delivers a shock. These shocks appear painful. Can you overcome your natural tendency not to hurt others, even in an emergency when your actions could be lifesaving? Often friends and relatives will be at the scene of an emergency. If you respond and take action, these people will look to you to perform quickly, effectively, and confidently.

These psychological barriers can hinder a quick emergency response, especially in settings where such events are rare. There are no easy solutions to help overcome these psychological barriers. Your instructor will encourage you to anticipate many of the scenes described above. The case scenarios will include role-playing and rehearsals. Think through how you would respond when confronted with such a circumstance. Mental practice, even without hands-on practice, may help improve your future performance. The best preparation, however, is frequent practice with manikins in realistic scenarios and situations.

Leaders of all courses that follow the AHA guidelines are aware of the mental and emotional challenge of rescue efforts. You will have support if you ever participate in a resuscitation attempt. You may not know for several days whether the patient lives or dies. If the person you try to resuscitate does not live, take comfort from knowing that in taking action you did your best.

Part 2—Legal and Ethical Issues

The Right Thing to Do

The AHA has supported community CPR training for more than 3 decades. Citizen CPR responders have helped save thousands of lives. The AHA believes that training in the use of CPR and AEDs will dramatically increase the number of survivors of cardiac arrest.

Anyone can perform emergency CPR without fear of legal action.

Chest compressions and rescue breathing require direct physical contact between rescuer and patient. Often these 2 people are strangers. Too often the arrest patient dies. In the United States people may take legal action when they think that one person has harmed another, even unintentionally. Despite this legal environment, CPR remains widely used and remarkably free of legal issues and lawsuits. Although attorneys have included rescuers who performed CPR in lawsuits, no "Good Samaritan" has ever been found guilty of doing harm while performing CPR.

All 50 states have Good Samaritan laws that grant immunity to any volunteer or lay rescuer who attempts CPR in an honest, "good faith" effort to save a life. A person is considered a Good Samaritan if

- The person is genuinely trying to help
- The help is reasonable (you cannot engage in gross misconduct, ie, actions that a reasonable person with your training would never do)
- The rescue effort is voluntary and not part of the person's job requirements

Most Good Samaritan laws protect laypersons who perform CPR even if they have had no formal training. The purpose of this protection is to encourage broad awareness of resuscitative techniques and to remove a barrier to involving more people. Unless you are expected to perform CPR as part of your job responsibilities, you are under no *legal* obligation to attempt CPR for a patient of cardiac arrest. Failure to attempt CPR when there is no danger to the rescuer and the rescuer has the ability is not a legal violation, but it might be considered an *ethical* violation by some.

Principle of Futility

If the purpose of medical treatment cannot be achieved, it is considered futile. The key determinants of medical futility are length and quality of life. An intervention that cannot establish any increase in length or quality of life is futile.

Patients or families may ask physicians to provide care that is inappropriate. But physicians have no obligation to provide such care when there is scientific and social consensus that the treatment is ineffective. An example is CPR for patients with signs of irreversible death. Other healthcare providers also have no obligation to provide CPR or ACLS if no benefit can be expected (ie, CPR would not restore effective circulation). Beyond these clinical circumstances, and in the absence of advance directives (including

DNAR) or living wills with statements to the contrary, healthcare providers should attempt resuscitation.

A careful balance of the patient's prognosis for both length and quality of life will determine whether CPR is appropriate. CPR is inappropriate when survival is not expected.

When the likelihood of survival is borderline, or when the likelihood of morbidity and burden to the patient are relatively high, rescuers should support the patient's desires. If the patient's desires are unknown, healthcare providers may follow the preferences of the legally authorized surrogate decision maker. Noninitiation of resuscitation and discontinuation of life-sustaining treatment during or after resuscitation are ethically equivalent. When the patient's prognosis is uncertain, consider a trial of treatment while gathering more information to determine the likelihood of survival and the expected clinical course.

Terminating Resuscitative Efforts

The decision to stop resuscitative efforts rests with the treating physician in the hospital. The physician bases this decision on many factors, including time to CPR, time to defibrillation, comorbid disease, prearrest state, and initial arrest rhythm. None of these factors alone or in combination is clearly predictive of outcome. *The most important factor associated with poor outcome in adults with normothermic cardiac arrest is the duration of resuscitative efforts.* The chance of discharge from the hospital alive and neurologically intact diminishes as resuscitation time increases. The responsible clinician should stop the resuscitation when he or she determines with a high degree of certainty that the patient will not respond to further ACLS efforts.

In the absence of mitigating factors (eg, drug toxicity, hypothermia), prolonged resuscitative efforts are unlikely to be successful. If ROSC of any duration occurs, it may be appropriate to extend resuscitative efforts. It is important to consider the circumstances of the cardiac arrest (eg, drug overdose or submersion in icy water) when deciding whether to continue resuscitative efforts.

For the newly born infant, discontinuation of resuscitation can be justified after 10 minutes with no signs of life despite continuous and adequate resuscitative efforts. The prognosis for survival or survival without disability has been shown to be extremely poor when there is lack of response to intensive resuscitative efforts for >10 minutes.

When Not to Start CPR

Few criteria can accurately predict the futility of CPR. In light of this uncertainty, all patients in cardiac arrest should receive resuscitation unless

- The patient has a valid Do Not Attempt Resuscitation (DNAR) order
- The patient has signs of irreversible death (eg, rigor mortis, decapitation, decomposition, or dependent lividity)
- No physiologic benefit can be expected because vital functions have

deteriorated despite maximal therapy (eg, progressive septic or cardiogenic shock)

Withholding CPR for newly born infants in the delivery room may be appropriate under circumstances such as the following:

- Confirmed gestation <23 weeks
- Birth weight <400 g
- Confirmed anencephaly
- Confirmed trisomy 13
- Other congenital anomalies that are incompatible with life

Withholding vs Withdrawing CPR

BLS training urges the first lay responder at a cardiac arrest to begin CPR. Healthcare providers are expected to provide BLS and ACLS as part of their duty to respond. There are a few exceptions to this rule:

- A person lies dead with obvious clinical signs of irreversible death (eg, rigor mortis, dependent lividity, decapitation, or decomposition).
- Attempts to perform CPR would place the rescuer at risk of physical injury.
- The patient or surrogate has indicated that resuscitation is not desired with an advance directive (DNAR order).
- No physiologic benefit can be expected because vital functions have deteriorated despite maximal therapy (eg, progressive sepsis or cardiogenic shock).

No rescuer should make a judgment about the present or future quality of life of a patient of cardiac arrest on the basis of current (ie, during the attempted resuscitation) or anticipated neurologic status. Such “snap” judgments are often inaccurate. Conditions such as irreversible brain damage or brain death cannot be reliably assessed or predicted during an emergency.

Out-of-hospital DNAR protocols must be clear to all involved (eg, physicians, patients, family members, loved ones, and out-of-hospital healthcare providers). Advance directives can take many forms (eg, written bedside orders from physicians, wallet identification cards, and identification bracelets).

The ideal EMS DNAR form is portable in case the patient is transferred. In addition to including out-of-hospital DNAR orders, the form should provide direction to EMS about initiating or continuing life-sustaining interventions for the patient who is not pulseless and apneic.

Withdrawal of Life Support

Withdrawal of life support is an emotionally complex decision for family and staff. Withholding and withdrawing life support are ethically similar. The decision to withdraw life support is justifiable when it is determined that the patient is dead, if the physician and patient or surrogate agree that treatment goals cannot be met, or the burden to the patient of continued treatment would exceed any benefits.

Some patients do not regain consciousness after cardiac arrest and (ROSC). In most cases the prognosis for adults who remain deeply comatose (Glasgow Coma Scale score <5) after cardiac arrest can be predicted with accuracy within 2 to 3 days of resuscitation. Specific physical findings or laboratory tests may be helpful to assist with this process. The following 3 factors are associated with poor outcome:

- Absence of pupillary response to light on the third day
- Absence of motor response to pain on the third day
- Bilateral absence of cortical response to median somatosensory evoked potentials when used in normothermic patients who are comatose for at least 72 hours after the cardiac arrest and resuscitation.

Withdrawal of life support is ethically permissible under these circumstances.

Patients in the end stage of an incurable disease, whether responsive or unresponsive, should receive care that ensures their comfort and dignity. The goal of such care is to minimize the suffering associated with pain, dyspnea, delirium, convulsions, and other terminal complications. It is ethically acceptable to gradually increase the dose of narcotics and sedatives to relieve pain and other symptoms, even to levels that might shorten the patient's life.

Advance Directives, Living Wills, and Patient Self-Determination

An advance directive is any expression of a person's thoughts, wishes, or preferences for his or her end-of-life care. Advance directives can be based on conversations, written directives, living wills, or durable powers of attorney for health care. The legal validity of various forms of advance directives varies from jurisdiction to jurisdiction. Courts consider written advance directives to be more trustworthy than recollections of conversations.

A living will provides written direction to physicians about medical care the patient would approve if he or she becomes terminally ill and unable to make decisions. A living will constitutes clear evidence of the patient's wishes and can be legally enforced in most areas.

Patients should periodically reevaluate their living wills and advance directives. Desires and medical conditions may change over time. The Patient Self-Determination Act of 1991 requires healthcare institutions and managed-care organizations to ask if patients have advance directives. Healthcare institutions are required to facilitate the completion of advance directives if patients request them.

Out-of-Hospital DNAR Orders

Many patients for whom 911 is called because of cardiac arrest are chronically ill, have a terminal illness, or have a written advance directive (DNAR order). States and other jurisdictions have different laws for out-of-hospital DNAR orders and advance directives. Even if a patient has a DNAR order, it may be difficult to determine whether to start resuscitation. It is

especially difficult if family members have differing opinions. You should initiate CPR and ACLS if you have reason to believe that

- There is reasonable doubt about the validity of a DNAR order or advance directive
- The patient may have changed his or her mind
- The best interests of the patient are in question

Sometimes within a few minutes of resuscitation's being initiated, relatives or other medical personnel arrive and confirm that the patient had clearly expressed a wish that resuscitation not be attempted. CPR or other life support measures may be discontinued, with approval of medical direction, when further information becomes available.

When you cannot obtain clear information about the patient's wishes, you should initiate resuscitative measures.

EMS No-CPR Programs

A number of states have adopted "no-CPR" programs. These programs allow patients and family members to call 911 for emergency care, support, and treatment for end-of-life distress (ie, shortness of breath, bleeding, or uncontrolled pain). Patients do not have to fear unwanted resuscitative efforts.

In a no-CPR program the patient, who usually has a terminal illness, signs a document requesting "no heroics" if there is a loss of pulse or if breathing stops. In some states the patient must wear a no-CPR identification bracelet. In an emergency the bracelet or other documentation signals rescuers that CPR efforts, including use of an AED, are not recommended.

If an ACLS provider arrives at the side of a person in apparent cardiac arrest (unresponsive, no pulse, no breathing) and sees that the person is wearing a no-CPR bracelet (or has some other indication of no-CPR status), the provider should respect the person's wishes. Report the problem as a "collapsed, unresponsive person wearing a no-CPR bracelet." State that you think CPR should not be performed.

Check with your state or ask your instructor to see what the law is in your jurisdiction regarding "no-CPR orders" in the out-of-hospital setting.

Transport

If an EMS system does not allow nonphysicians to pronounce death and stop all resuscitative efforts, personnel may be forced to transport a deceased patient of cardiac arrest to the hospital. Such an action is unethical. If carefully executed BLS and ACLS treatment protocols fail in the out-of-hospital setting, then how could the same treatment succeed in the emergency department? A number of studies have consistently shown that <1% of patients transported with continuing CPR survive to hospital discharge.

Delayed or token efforts to provide CPR and ACLS—or so-called “slow codes” (knowingly providing ineffective resuscitation)—are *inappropriate*. These practices compromise the ethical integrity of healthcare providers and undermine the provider-patient relationship.

Many EMS systems authorize the termination of a resuscitation attempt in the out-of-hospital setting. EMS systems should establish protocols for pronouncement of death and appropriate transport of the body. EMS systems should also train personnel to deal sensitively with family and friends.

Legal Aspects of AED Use

Defibrillators, including many AEDs, are restricted medical devices. Most states have legislation that requires a physician to authorize the use of restricted medical devices. Lay rescuer CPR and defibrillation programs that make AEDs available to lay rescuers (and in some cases EMS providers) may be required to have a medical authority or a healthcare provider who oversees the purchase of AEDs, treatment protocols, training, and contact with EMS providers. In a sense the medical authority prescribes the AED for use by the lay responder and therefore complies with medical regulations.

In the United States malpractice accusations and product liability lawsuits increase every year. In the past, fear of malpractice suits hindered innovative programs to bring early CPR and early defibrillation into every community, but such fears have proven unfounded.

To solve this problem of fear of litigation, all states have changed existing laws and regulations to provide limited immunity for lay rescuers who use AEDs in the course of attempting resuscitation. Many states have amended Good Samaritan laws to include the use of AEDs by lay rescuers. This means that the legal system will consider lay rescuers to be Good Samaritans when they attempt CPR and defibrillation for someone in cardiac arrest. As a Good Samaritan you cannot be successfully sued for any harm or damage that occurs during the rescue effort (except in cases of gross negligence). By the year 2000 plaintiffs and attorneys had started filing lawsuits against some facilities for failing to train and equip their employees to perform CPR and use an AED, but as of 2005 no lawsuits were identified involving a lawsuit for an attempted resuscitation in which a lay rescuer used an AED.

Some states grant limited immunity for lay rescuer use of AEDs only when specific recommendations are fulfilled. These recommendations may require that the rescuer must

- Have formal training in CPR and use of an AED (eg, the AHA Heartsaver AED Course or equivalent)
- Use treatment protocols approved by a recognized medical authority
- Perform routine checks and maintenance of the AED as specified by the manufacturer
- Notify local EMS authorities of the placement of the AED so that EMS personnel, particularly the dispatchers, will know when emergency calls are

made from a setting with an AED

The AHA recently published a statement detailing recommended legislation to promote lay rescuer CPR and AED programs and to assist legislators and policymakers in removing impediments to these programs: (http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.106.172289v1)

Lay rescuer CPR and AED programs should implement processes of continuous quality improvement, including evaluation of the following:

- Performance of the emergency response plan, including accurate time intervals for key interventions (such as collapse to shock or no shock advisory to initiation of CPR) and patient outcome
- Responder performance
- AED function
- Battery status and function
- Electrode pad function and readiness, including expiration date

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Part 3—Providing Emotional Support for the Family

Notifying Survivors of the Death of a Loved One

Despite our best efforts, most resuscitation attempts fail. Notifying the family of the death of a loved one is an important aspect of resuscitation. It should be done compassionately, with sensitivity to the cultural and religious beliefs and practices of the family.

Family members have often been excluded from the resuscitation of a loved one. Surveys suggest that healthcare providers hold a range of opinions concerning the presence of family members during a resuscitation attempt. Several commentaries have expressed concern that family members may interfere with procedures or faint. Exposure of the institution and providers to legal liability is another concern.

But several surveys conducted before resuscitative efforts were observed showed that most family members wished to be present during a resuscitation attempt. Family members have reported that being at a loved one's side and saying goodbye during their final moments of life was comforting. In addition, being present during the resuscitation attempt helped them adjust to the death of their loved one, and most indicated they would attend again. Several retrospective reports note positive reactions from family members, many of whom said that they felt a sense of having helped their loved one and of easing their own grieving process. Most parents wanted to be given the option to decide whether to be present at the resuscitation of a child.

Given the absence of data suggesting that family presence is harmful, and in light of data suggesting that it may be helpful, it seems reasonable to offer selected relatives the option to be present during a resuscitation attempt. This recommendation assumes that the patient, if an adult, has not previously raised an objection. Parents seldom ask if they can be present unless encouraged to do so by healthcare providers.

Resuscitation team members should be sensitive to the presence of family members. It is helpful to have one team member available to answer questions from the family, clarify information, and otherwise offer comfort.