

American Red Cross

Self-study Guide for Instructors and Instructor Trainers Orienting to Emergency Cardiovascular Care (ECC) 2000 Guidelines Revisions

The purpose of this guide is to help you orient to the revisions in American Red Cross CPR courses as a result of the Emergency Cardiovascular Care (ECC) 2000 Guidelines.

Self-study Guide Contents

- Section A Summary of Emergency Cardiovascular Care (ECC) 2000 Guidelines
Page 2 Revisions. This section includes a summary of revisions from the ECC 2000 Guidelines that affect Red Cross courses that include CPR for certified lay responders and professional rescuers.
- Section B Self-study Questions. The 20 questions included in the self-study are categorized by revisions that are universal to all Red Cross CPR courses and additional revisions that apply specifically to certified lay responders and professional rescuers. All instructors and instructor trainers are to answer all the questions. This will help you understand the differences in information and skills taught in the different levels of Red Cross CPR courses.
- Section C Answer Sheet. As you review the summary of revisions, complete the guide by marking or filling in your answers on the answer sheet. If you would like to check your answers, the answer key to this self-study is available on the ECC Update page of CrossNet and on the Instructor's Corner of www.redcross.org through December 31, 2001. There is no pass or fail for this self-study.
- Section D Verification Form. Upon completing this self-study guide, please complete the CPR Instructor Upgrade to AED Teaching Skills Verification Form. Sign the form and submit it along with the completed answer sheet from the self-study guide to your local Red Cross chapter's Health and Safety Services Administrator. This is the same form that is used in the Guide for Upgrading CPR Instructors to AED Teaching Skills. **It is recommended that each instructor and instructor trainer submit one form with all of the necessary information completed for all the steps of the upgrade process.**

Section A—Summary of Emergency Cardiovascular Care (ECC) 2000 Guidelines Revisions

For All CPR Courses

The following is a summary of the ECC guideline changes related to all Red Cross CPR courses. Revisions for specific levels (certified lay responders and professional rescuers) are in addition to the universal revisions listed below. These changes are reflected in ECC-revised programs as they are released:

Recovery Position

Whenever the victim is breathing and unconscious, or if the responder is alone and must leave the victim to get help, the victim should be placed on his or her side in the recovery position. Once in the recovery position, the victim should be turned to the opposite side after 30 minutes or if there are signs of loss of circulation to the lower arm, such as pale, ashen or grayish skin that is cool to the touch. If there is a suspected head, neck or back injury and a clear, open airway can be maintained, do not move the victim unnecessarily. If a clear airway cannot be maintained, the victim should be moved to his or her side maintaining in-line stabilization. This position is not demonstrated nor specifically recommended for infant victims.

Rationale—A victim that is lying face up and breathing may develop an obstructed airway by his or her tongue, mucous, vomit or other body fluids, such as blood. This problem can be avoided by placing the victim on his or her side so that fluid may drain from the mouth. While maintaining an open, clear airway, it is also important to maintain adequate circulation. Since there is no single ideal position for all victims, the videos portray slightly different approaches. The position should allow unimpaired breathing and an open airway.

Use of Breathing Barriers When Giving Rescue Breaths

It is recommended that a breathing barrier be used whenever possible. However, a responder should not delay care if a breathing barrier is not immediately available or if he or she is unsure of how to use it. A resuscitation mask has advantages over a face shield. The primary advantage is that a resuscitation mask is equipped with a one-way valve that prevents the victim's exhaled breath from entering the responder's mouth.

Professional rescuer level programs and the First Aid/CPR/AED Program incorporate the practice of using breathing barriers, such as face shields and resuscitation masks, when giving rescue breaths. Other Red Cross programs and courses for the certified lay responder, such as First Aid: Responding to Emergencies and Community First Aid and Safety show their use but do not require them for training.

Rationale—Mouth-to-mouth rescue breathing has proven to be a safe and effective means of providing oxygen to a non-breathing victim and has saved many lives. While using breathing barriers may reduce the risk of disease transmission when giving breaths, the incidence of disease transmission during direct mouth-to-mouth rescue breathing is very low.

Rescue Breaths

Whenever a breath is given to an unconscious victim, it is considered a "rescue breath." Rescue breaths should be given to an unconscious adult, child or infant victim in such a way to ensure the delivery of **effective** breaths and to reduce the risk of gastric inflation (air in the stomach). An effective breath will cause the victim's chest to clearly rise.

For an unconscious **adult** victim:

- Each breath should be slow, gentle and last about 2 seconds.
- The responder should pause and take a breath between breaths given to the victim.
- Each rescue breath should cause the victim's chest to clearly rise.

For an unconscious **child or infant** victim:

- Each breath should be slow, gentle and last about 1_ seconds.
- The responder should pause and take a breath between breaths given to the victim.
- Each rescue breath should cause the victim's chest to clearly rise.

Rationale—Slower breaths reduce the amount of gastric inflation that can cause serious complications such as vomiting, aspiration or pneumonia and restrict lung movement. When the responder pauses and takes a breath between rescue breaths, it ensures maximum oxygen and minimum carbon dioxide in each rescue breath.

Chest Compressions

- CPR for an adult victim will be taught at a ratio of 15 chest compressions to 2 rescue breaths for one or two responders at a rate of **about** 100 compressions per minute.
- CPR for a child victim will be taught at a ratio of 5 chest compressions to 1 rescue breath at a rate of **about** 100 compressions per minute.
- CPR for an infant victim will be taught at a ratio of 5 chest compressions to 1 rescue breath at a rate of **at least** 100 compressions per minute.

Rationale—The rate of compressions has been increased to achieve the best possible blood flow during CPR. For an adult victim, the research shows that CPR is most effective when more uninterrupted chest compressions are delivered. As such, the ratio of 15 chest compressions to 2 rescue breaths will apply in both a one or two responder situation. For infants and children, breathing problems are the most common cause of arrest. Also, the breathing rate of infants and children is faster than in adults. Therefore, for this age group (age 8 and younger), the emphasis is to achieve the maximum oxygen, so the ratio will remain 5 chest compressions to 1 breath.

AED Use in Children

The use of an AED is not currently recommended for an infant or child less than 8 years old or who weighs less than 55 pounds. For an infant or child less than 8 years old or who weighs less than 55 pounds who is in cardiac arrest, the initial priorities continue to be

calling 9-1-1 and supporting the airway, breathing and circulation through rescue breaths and chest compressions.

Rationale—The energy levels in current models of AEDs may be too high for use on children less than 8 years old or who weighs less than 55 pounds.

Sequence for A Responder Who Is Alone

When the responder is **alone**, **Call First**, that is, call 9-1-1 or the local emergency number before providing care for:

- An unconscious adult victim or child 8 years old or older, and
- An unconscious infant or child known to be at a high risk for heart problems.

When the responder is **alone**, provide 1 minute of care, then **Call Fast** for:

- An unconscious victim less than 8 years old;
- Any victim of submersion or near drowning;
- Any victim of arrest associated with trauma; and
- Any victim of drug overdose.

Rationale—The situations in **Call First** should be assumed to be cardiac emergencies, such as sudden cardiac arrest, and the **time factor is critical**. Research shows that the shorter the time from collapse to first shock from an AED, the greater the chance of survival for an adult or child 8 years old or older. For an infant or child with a known risk of heart problems, early access to the EMS system and the advanced medical care that results increases that victim's chance of survival.

In the **Call Fast** situations, the conditions are most often related to breathing emergencies rather than sudden cardiac arrest. In these situations, providing support for airway, breathing and circulation through rescue breaths and/or chest compressions, as appropriate, is the most important initial step a trained responder should take. Instructors need to be prepared to clarify these situations for course participants.

For Certified Lay Responders

The following is a summary of the ECC guideline changes specific to certified lay responders. These changes are reflected in the following Red Cross programs and courses as they are released as ECC-revised programs:

- First Aid/CPR/AED Program (released February 2001);
- First Aid: Responding to Emergencies;
- Community First Aid and Safety; and
- Sport Safety Training.

Pulse Check

Where previously instructed to check for a pulse, responders are now instructed to look, listen and feel for "signs of circulation." Signs of circulation include:

1. Normal breathing;
2. Coughing or movement in response to rescue breaths; and
3. A pulse.

This check should last no more than 10 seconds.

Rationale—Research shows that most responders do not accurately determine the absence or presence of a pulse. It is more harmful to delay or choose not to give care to a victim who needs it than to perform chest compressions on or attach an AED to a victim who is not in cardiac arrest. Additionally, research shows that the time spent trying to locate a pulse often exceeds the recommended limit of 10 seconds. Manufacturers of AEDs contacted by national headquarters indicated that the voice prompt on both AED trainers and live devices will continue to instruct the responder to "check pulse." **For certified lay responders, the emphasis is placed on other life signs in assessing a victim's circulation ahead of a pulse check.**

Two-Rescuer CPR Technique

Certified lay responders should be shown two-rescuer CPR where time and interest permit. The information on two-rescuer CPR is provided in the instructor's manual and guide for training instructors. Practice time can be allotted but this skill is **not required** for certified lay responders.

Full CPR Versus Compressions-Only CPR

Responders will be taught full CPR that includes chest compressions and rescue breaths. The question of compression-only CPR may be raised in a class. If asked, the instructor's response should be: "If the responder is unwilling or unable to perform rescue breaths **and** chest compressions, it is better to either provide rescue breaths or chest compression than nothing at all."

Rationale—CPR that includes chest compressions and rescue breaths is more effective than either skill on its own for a victim of cardiac arrest. As stated, it is better to either provide rescue breaths or chest compressions than nothing at all. Because of difficulty in leading an **untrained bystander** (a person who has no previous knowledge of or training in CPR) on the telephone, an EMS dispatcher may simplify the steps to care for a victim of cardiac arrest to compression-only CPR. The simplicity of modified, compression-only

CPR allows untrained bystanders to provide at least some care for the victim until advanced medical personnel arrive and take over.

Unconscious Choking Victim

For an unresponsive (unconscious) choking victim, certified lay responders will be taught a modified CPR technique to clear the airway obstruction. Once it is determined that the airway is obstructed, the responder will begin CPR. Each time the airway is positioned to give rescue breaths, the responder will look for an object in the victim's mouth and remove an object only if one is seen. Then the breath(s) in the CPR cycle are given. This process applies regardless of whether the victim is an adult, child or infant.

Rationale—Early scientific research indicates that chest thrusts are as effective as, and potentially more effective than, abdominal thrusts. The result of this revision is simplified training for the certified lay responder by reducing the number and complexity of skills taught in class. The same basic skill of chest compressions and rescue breaths is used on victims who either have no pulse/signs of circulation or are unconscious and choking.

Since this skill is a modified CPR technique, responders will be taught CPR **before** the airway obstruction skill so that the learning process is logically connected and builds on the skills previously learned.

This technique is not new. The chest compression technique basically equates to the "chest thrust" that was previously taught in Red Cross courses for the unconscious choking victim who is noticeably pregnant. This modified CPR technique is virtually identical to CPR in that the compressions-to-breaths ratios are the same as is the rate of delivery and technique of compressions. There is no retilt nor reattempt of breaths performed during the modified CPR cycle except in the initial assessment or check of the unconscious victim.

Jaw-Thrust Maneuver to Open the Airway

For a suspected head, neck or back injury, the jaw-thrust maneuver will be shown as a technique to open the airway on an adult or child victim. This skill is not required for certification, but responders need to be aware of this alternative airway management technique. This technique is shown in detail in the Workplace Training: Standard First Aid and the Infant & Child CPR videos.

Rationale—The certified lay responder should be familiar with this skill to reduce the possibility of causing further injury to a victim with a suspected head, neck or back injury.

For Professional Rescuers

The following is a summary of the ECC guideline changes related to American Red Cross courses designed for professional rescuers. These changes are reflected in the following Red Cross programs and courses as they are released as ECC-revised programs:

- Emergency Response (released January 2001);
- Lifeguarding (released January 2001); and
- CPR for the Professional Rescuer.

Bag–Valve–Mask Breathing with or without Supplemental Oxygen

When using a bag-valve mask, the rescuer should give rescue breaths for 1 to 2 seconds using only the force necessary to cause the chest to clearly rise for adult, child and infant victims.

Rationale—As with mouth–to–mouth and mouth–to–mask breathing, less pressure and volume delivered at a slower rate when using a BVM can reduce gastric inflation that can cause serious complications such as vomiting, aspiration or pneumonia and restrict lung movement.

Pulse Check

Where previously instructed to check for a pulse only, rescuers now are instructed to look, listen and feel for several signs of circulation including:

1. A pulse;
2. Normal breathing; and
3. Coughing or movement in response to rescue breaths.

This check should last no more than 10 seconds.

Rationale—Research shows that most rescuers do not accurately determine the absence or presence of a pulse. It is more harmful to delay or choose not to give care to a victim who needs it than to perform chest compressions on or attach an AED to a victim who is not in cardiac arrest. Additionally, research shows that the time spent trying to locate a pulse often exceeds the recommended limit of 10 seconds. The more time that care is delayed, the more the chance of survival decreases significantly. Manufacturers of AEDs contacted by national headquarters indicate that the voice prompt on both AED trainers and live devices will continue to instruct the responder to "check pulse." **For professional rescuers, the emphasis continues to be placed on a pulse check ahead of other life signs in assessing a victim's circulation.**

Additional Method for Infant Chest Compressions for Two Rescuers

The two–rescuer, two–thumb encircling hands technique is an alternate method to the current two–finger technique for giving CPR to young or small infants. It is not a required skill. The technique is:

When two rescuers are providing CPR on an infant, one rescuer encircles the infant's chest with his or her hands and compresses the chest with his or her thumbs. The second rescuer provides ventilation.

Rationale—Research shows that this method of CPR on a young and/or small infant may be more effective. It must be performed by two rescuers.

Section B—Emergency Cardiovascular Care (ECC) Revisions Self-study Questions

Directions: Complete the guide by marking or filling in your answers on the answer sheet. If you would like to check your answers, the answer key to this self-study is available on the ECC Update page of CrossNet and on the Instructor’s Corner of the www.redcross.org through December 31, 2001. There is no pass or fail for this self-study.

For All CPR Courses

1. When and why should a victim be placed in the recovery position?
2. The recovery position is used when providing care for both infants and children.

True
False
3. For certified lay responders, the use of breathing barriers and disposable gloves are shown in photographs and in the video. In which program is the use of breathing barriers and disposable gloves required?
 - a. Community First Aid and Safety
 - b. Sport Safety Training
 - c. Responding to Emergencies
 - d. First Aid/CPR/AED
4. Which programs for the professional rescuer require the use of breathing barriers and disposable gloves?
 - a. Lifeguarding
 - b. Emergency Response
 - c. CPR for the Professional Rescuer
 - d. All of the above
5. For how long do responders check for signs of circulation?
 - a. 3 to 5 seconds
 - b. At least 10 seconds
 - c. No more than 10 seconds
 - d. About 10 seconds
6. For an unconscious adult victim, each breath should be slow, gentle and last _____
_____.

7. When giving rescue breaths, the responder should pause and take a breath between breaths given to a victim.
- True
False
8. When giving CPR to an adult victim, the ratio of chest compressions to rescue breaths for one responder is—
- a. 5 compressions to 1 breath.
 - b. 4 compressions to 1 breath.
 - c. 3 compressions to 1 breath.
 - d. 15 compressions to 2 breaths.
9. When giving CPR to an adult victim, the ratio of chest compressions to rescue breaths for two responders is—
- a. 10 compressions to 2 breaths.
 - b. 15 compressions to 2 breaths.
 - c. 5 compressions to 2 breaths.
 - d. 5 compressions to 1 breath.
10. When giving CPR to an adult or child victim, chest compressions should be given at a rate of—
- a. No more than 100 per minute.
 - b. Exactly 100 per minute.
 - c. About 100 per minute.
 - d. At least 100 per minute.
11. When giving CPR to a child or infant victim, the ratio of chest compressions to rescue breaths is—
- a. 5 compressions to 1 breath.
 - b. 4 compressions to 1 breath.
 - c. 3 compressions to 1 breath.
 - d. 15 compressions to 2 breaths.
12. The concept of "Call First/Call Fast" applies when the responder is alone.
- True
False
13. If a responder is alone, list situations in which he or she should Call First rather than Call Fast.

For Certified Lay Responders

14. List the signs of circulation in their order of emphasis for certified lay responders:

15. Two-rescuer CPR is a required skill for certified lay responders.

True

False

16. If a participant asks about compressions-only CPR, how should an instructor respond?

17. What steps do certified lay responders take to clear an airway obstruction in an unconscious choking victim?

For Professional Rescuers

18. List the signs of circulation in the order of emphasis for professional rescuers.

19. When using a bag-valve mask, the rescuer should give rescue breaths for 1 to 2 seconds using only the force necessary to cause _____ for adult, child and infant victims.

20. The two-rescuer, two-thumb encircling technique for infant CPR is:

- a. A skill that must also be practiced.
- b. The only acceptable technique for two-rescuer infant CPR.
- c. Performed by one or two rescuers.
- d. An alternate method that is not a required skill.

Section C—American Red Cross Self-study Guide Answer Sheet

Directions: As you review the summary of revisions, complete the guide by marking or filling in your answers on the answer sheet. If you would like to check your answers, the answer key to this self-study is available on the ECC Update page of CrossNet and on the Instructor’s Corner of www.redcross.org through December 31, 2001. There is no pass or fail for this self-study.

For All CPR Courses

1. _____

2. True
False
3. a b c d
4. a b c d
5. a b c d
6. _____
7. True
False
8. a b c d
9. a b c d
10. a b c d
11. a b c d
12. True
False
13. _____

For Certified Lay Responders

14. _____

15. True
False

16. _____

17. _____

For Professional Rescuers

18. _____

19. _____

20. a b c d

Section D—American Red Cross CPR Instructor Upgrade to AED Teaching Skills Verification Form

Instructor Name _____

Address _____

City _____ State _____ Zip _____

Phone _____ E-mail _____ Instructor ID Number _____
(optional)

Directions: Upon completing this self-study guide, please complete the CPR Instructor Upgrade to AED Teaching Skills Verification Form. Sign the form and submit it along with the completed answer sheet from the self-study guide to your local Red Cross chapter's Health and Safety Services Administrator. This is the same form that is used in the Guide for Upgrading CPR Instructors to AED Teaching Skills. **It is recommended that each instructor and instructor trainer submit one form with all of the necessary information completed.**

Verification of Authorization

I am currently a: (check all that apply)

- CPR for the Professional Rescuer Instructor
- First Aid: Responding to Emergencies Instructor
- Community First Aid and Safety Instructor
- Community CPR Instructor
- Infant and Child CPR Instructor
- Adult CPR Instructor
- Sport Safety Training Instructor
- Instructor Trainer (specify program) _____

Note: Instructor trainers should also complete “Application/Worksheet for Instructor Trainers,” Appendix P: Part I, Sections A-E and Part VIII, Sections A and B in the *Health and Safety Services Instructional System, Manual for the Instructor Trainer*. Instructor trainers will then be issued an authorization (C3006) indicating the appropriate program area.

SECTION 1—Verification of AED Teaching Skills Upgrade Session

I verify that the named individual has successfully completed the CPR Instructor Upgrade to AED Teaching Skills session.

Date of Completion _____ Location of Training _____

Signature of Upgrade IT

Printed Name of Upgrade IT

SECTION 2—Verification of Orientation to ECC-revised Program Specific Materials (r.2001)

I attended a **group orientation session** to the _____ program.

Date of session _____ Location _____

Signature of IT conducting the orientation session **or** the H&SS Administrator

Printed Name of IT **or** H&SS Administrator

-OR-

I completed a **self-study orientation** to the ECC changes by completing the following self-study guide (check method):

- Lifeguarding (r.01) Self-study Guide
- First Aid/CPR/AED Program Self-study Guide
- Self-study Guide for Instructors and Instructor Trainers Orienting to ECC 2000 Guidelines Revisions*

I certify that I have reviewed the following program materials for the _____ (write in program name) (check all that apply):

- Participant’s manual/booklet
- Skills cards
- Handbook
- Course workbook
- Instructor’s manual
- Guide for training instructors (IT’s only)
- Video(s)
- Self-study guide

Signature of instructor or instructor trainer / /
Date

*Prior to teaching a course using new materials, instructors must become familiar with all of the products for that course.