

Improving Survival with Training

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Conflicts

- Employee of the American Heart Association

Celebrating 50 Years!



1966: Collaboration to create the first CPR Standards

Cardiopulmonary Resuscitation

Statement by the Ad Hoc Committee on Cardiopulmonary Resuscitation of the Division of Medical Sciences, National Academy of Sciences-National Research Council

In May 1966, the work of an ad hoc Committee on Cardiopulmonary Resuscitation culminated in a Conference on Cardiopulmonary Resuscitation at the National Academy of Sciences-National Research Council (NAS-NRC). This study was undertaken in response to inquiries from the American National Red Cross and other national and federal agencies concerned with the need for standardized techniques of performance, training, and re-training requirements, and designation of the categories of persons to be taught mouth-to-mouth ventilation and external cardiac compression under present limitations on the supply of instructors. The ad hoc committee carefully reviewed and discussed these matters with representatives of over 30 national organizations attending the conference. The full proceedings of the conference will be published by the NAS-NRC. A summary of the recommendations of the ad hoc committee follows.

In November 1958, a Conference on Artificial Respiration was held at the National Academy of Sciences-National Research Council, and led to the publication in January 1959 of a "Statement on Emergency Artificial Respiration Without Adjunct Equipment." This statement unanimously endorsed the use of mouth and nose-to-nose techniques of artificial respiration as the most practical methods of emergency respiration without adjunct equipment for all ages of persons of any age. Since that time, the American Heart Association and other organizations have continued to study and discuss these matters with representatives of over 30 national organizations attending the conference. The full proceedings of the conference will be published by the NAS-NRC. A summary of the recommendations of the ad hoc committee follows.

In an editorial in *Circulation* in September 1962,¹ closed-chest cardiopulmonary resuscitation was endorsed as a medical procedure. Subsequently, the method was reclassified as an emergency procedure in a second editorial in *Circulation* in May 1965.² This was endorsed by the American Heart Association, the American National Red Cross, the Industrial Medical Association, and the US Public Health Service, which strongly recommended that the technique should be applied by "properly trained individuals of medical, dental, nursing and allied health professions and of rescue squads."

Since publication of the second editorial, the American Heart Association, the Public Health Service, and other organizations have inaugurated intensive training programs in cardiopulmonary resuscitation in response to the widespread interest and enthusiasm of highly motivated persons at all levels from first aid workers to professional medical personnel. Their experience have indicated that clinical results vary widely and depend upon the exact technique taught, the effectiveness of training and periodic retraining, the personnel taught, the selection of cases, and numerous other factors. These considerations have guided the ad hoc Committee on Emergency Cardiopulmonary Resuscitation in formulating the following recommendations.

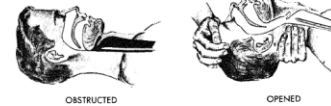
APRIL 1966

Emergency cardiopulmonary resuscitation should be taught to all persons who are likely to be called upon to render first aid to persons in cardiac or respiratory arrest. This includes all persons who are likely to be called upon to render first aid to persons in cardiac or respiratory arrest. This includes all persons who are likely to be called upon to render first aid to persons in cardiac or respiratory arrest.

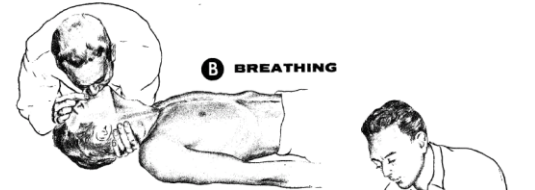
Heart-Lung Resuscitation

National Academy of Sciences—National Research Council

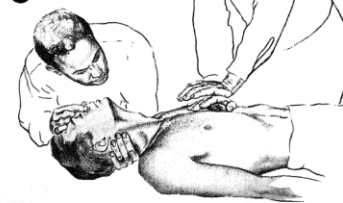
A AIRWAY



B BREATHING



C CIRCULATION



In 1966, the AHA, the National Academy of Science and the National Research Council collaborated to establish the first standards for CPR training and performance.

In the beginning...

Hours of lecture – hundreds of slides

Anatomy and physiology

Risk Factors

“Prudent Heart Living”

CPR skills taught with slides

Very little time practicing on manikins

From lecture to video

Late 1990s

- Watch, then practice format
- Emphasis on practicing skills – actually doing CPR
- With 2000 Guideline materials –
 - Removal of “extra” content from CPR courses

Advanced courses made similar transition –

- Case-based scenarios
- Integration of skills
- Minimized lectures

- 2005
 - Practice While Watching PWW



International Liaison Committee on Resuscitation (ILCOR)

“Our problems in resuscitation are similar the world over, but none of us has a monopoly of wisdom, knowledge, or experience. We must therefore continue to work effectively together for the good of all.”

Douglas Chamberlain

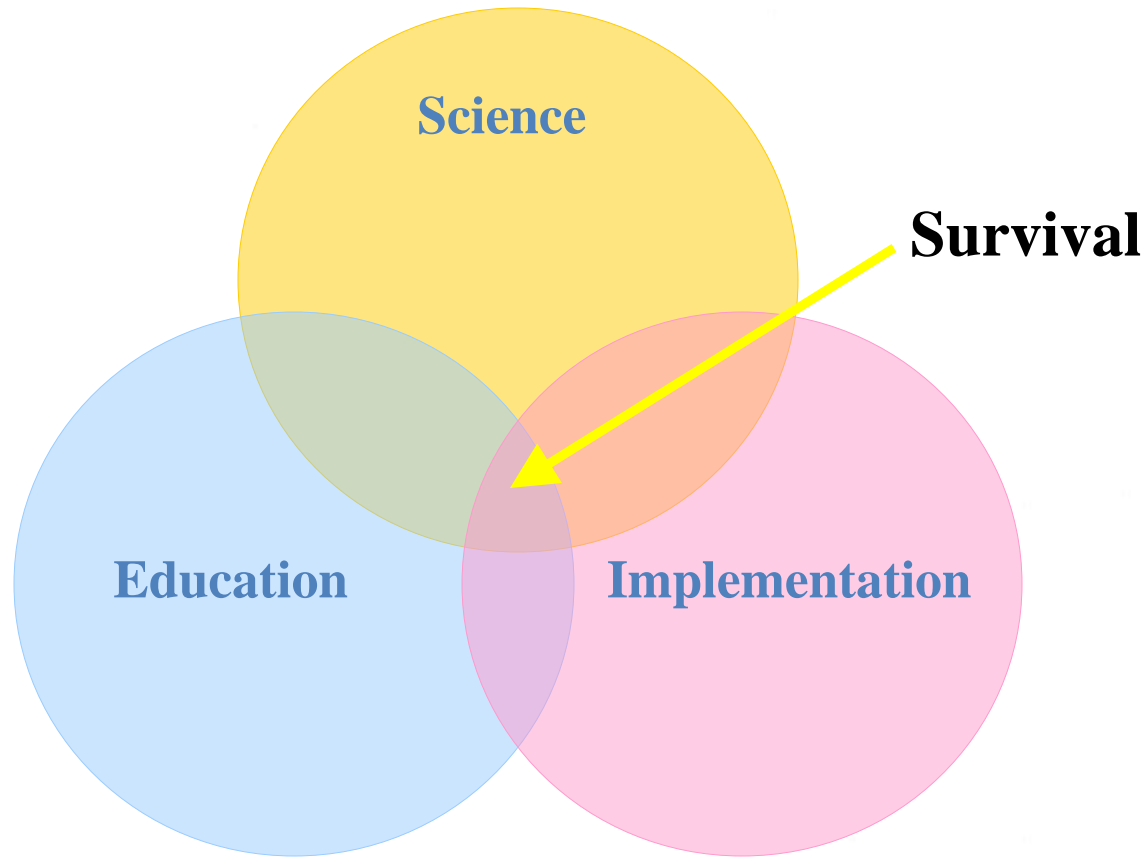
ILCOR Education in Resuscitation

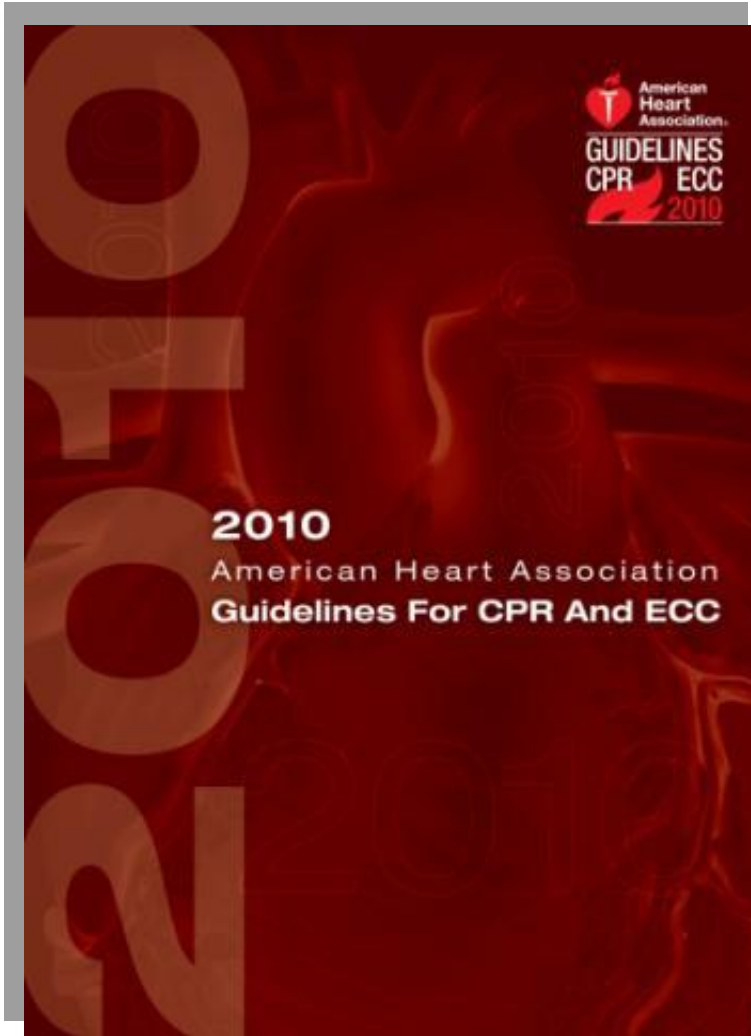
**Survival = medical science x
education x implementation**

- Science: what works
- Education: learning to do what works
- Implementation: doing what works

May 2006 ILCOR Utstein meeting.

Formula for Survival





Education, Implementation and Teams

- Part 16 of 2010 AHA ECC Guidelines
- New section focusing on methods to improve bystander willingness to act, education techniques, teamwork and leadership



EIT Key Issues

- Two Years is Too Long
 - Current 2-year certification period for BLS, ACLS and PALS should include periodic assessment of rescuer knowledge and skills, and refresher information
- Overcoming Barriers to Performance
 - Methods to improve bystander willingness to perform CPR include formal CPR training

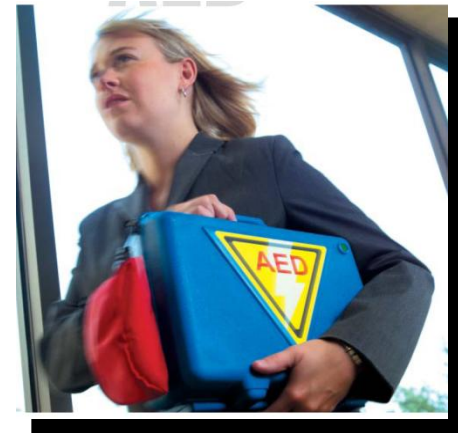


EIT Key Issues

- Learning to Mastery
 - Cardiopulmonary resuscitation prompt and feedback devices may be useful for training rescuers, and may be useful as part of an overall strategy to improve the quality of CPR.

EIT Key Issues

- Learning Teamwork Skills
 - Advanced life support training should include training in teamwork.
- AED Training Not Required for Use
 - Use of an AED does not require training, although training does improve performance.



EIT Key Issues

- Debriefing
 - Should be included in ALS courses to facilitate learning and can be used to review performance in the clinical setting to improve subsequent performance.

EIT Key Issues

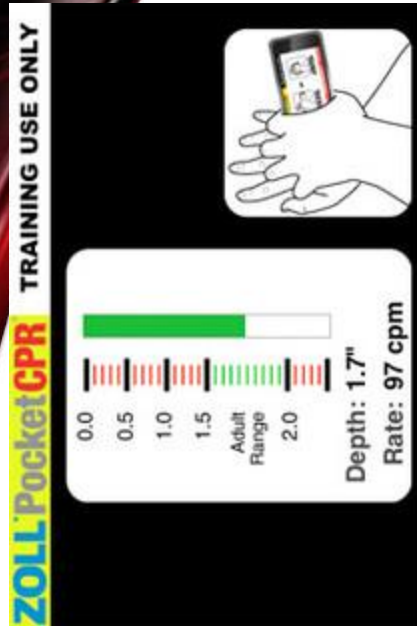
- Competency & Assessment
 - Written tests should not be used exclusively to assess participants' competence in ACLS, PALS – performance assessment also needed
 - Formal assessment should continue to be included in resuscitation courses



New Tools

- Computers and the internet
 - eBooks to Micro simulation
- Smartphones
- You Tube
- High fidelity simulation
- Training prompts and just-in-time training

Real-time feedback



New models of training and awareness

December 3, 2010 5:32 PM PST

iPhone app helps save high school b-ball star's life

by Elizabeth Armstrong Moore

Font size Print E-mail Share 25 comments

Tweet 277 Share 137 3 Digg

On a whim last week, head high school basketball coach Eric Cooper Sr. downloaded a **\$1.99 iPhone app called Phone Aid** to brush up on his CPR skills. His timing couldn't have been better.

During team practice the very next day at La Verne Lutheran High School in California, 17-year-old star center Xavier Jones stumbled while trying to receive a pass and collapsed on the court, his heart having stopped, [reports the Los Angeles Times](#).

With CPR tips from his new mobile app fresh in his mind, Coach Cooper, with the help of Assistant Coach John Osorno, was able to revive Jones and keep his heart beating until paramedics arrived. When Jones came to in the hospital the next day, he said he had no memory of the collapse.

Doctors have diagnosed 6-foot-8-inch Jones, whom teammates call "X," with **hypertrophic cardiomyopathy**, a condition in which the heart muscle myocardium thickens, making it harder for the heart to pump blood. He's been told he'll have to get a defibrillator implanted in his chest.

Fortunately, Jones already had plans outside of basketball. With a 4.0 GPA, he'd had his heart set on West Point. "I'd ask him, 'Are you going to be an NBA player?' and he would say, 'No, I'm going to be a doctor,'" Cooper told the Times. "The decision was going to be based on his career, not just basketball."



Star center Xavier Jones has been diagnosed with a heart condition that will prevent him from playing much basketball in his future.

(Credit: LeagueLineup.com)



American Heart Association | Hands-Only™ CPR
Learn and Live

If an adult suddenly collapses:

- 1  Call 911 
- 2  Push hard and fast in the center of the chest. 

Instructions and Video >

Additional Resources >

Cell phone video training

- Lay persons randomized to standard training or also given video clip with text reminders
- At 3 months, performance of CPR and AED skills better in group with video clip
- Those with video/reminders reported greater confidence and willingness to perform

New Ideas

- Training to mastery – not to the clock
- Short, frequent “training” sessions to maintain competency

Simulation

- ▶ **16 studies**- Improvement in skills as assessed using a manikin
Schwid,1999 ; Donoghue,2009 ; Mayo,2004, Owen,2006, Wayne,2005; Campbell,2009; Ali,1998; ; Christenson,1998; Rodgers, 2009; Barsuk,2005; Kory,2007; Marshall,2001; Rosenthal,2006; Wayne,2006a; Wayne,2006b; Dunning,2006
- ▶ **3 studies** -Improvement in performance of skills in ‘real’ arrests
Mayo,2004; Wayne,2008; Rosenthal,2006;
- ▶ **4 studies** -Improvement in participant knowledge
Ali,2009, Attia,1975, Bruce,2009, Donoghue,2009

**After 2 weeks
we tend to remember...**

**Nature of
Involvement**

10% of what we **READ**

READING

Verbal Receiving

20% of what we **HEAR**

HEARING WORDS

30% of what we **SEE**

LOOKING AT PICTURES

WATCHING A MOVIE

50% of what we
HEAR and SEE

LOOKING AT AN EXHIBIT

WATCHING A DEMONSTRATION

SEEING IT DONE ON LOCATION

Visual Receiving

70% of what we **SAY**

PARTICIPATING IN A DISCUSSION

GIVING A TALK

**Receiving /
Participating**

90% of what we
**both SAY
and DO**

DOING A DRAMATIC PRESENTATION

SIMULATING THE REAL EXPERIENCE

DOING THE REAL THING

Doing

PASSIVE

ACTIVE

International Journal of Nursing
Education Scholarship

Volume 7, Issue 1 2010 Article 26

“Advantages and Barriers to Use of
HeartCode™ BLS with Voice Advisory
Manikins for Teaching Nursing Students”

Marilyn H. Oermann, et al

Oermann MH, et al.

Effects of monthly practice on nursing students' CPR psychomotor skill performance.

Resuscitation (2011),

doi:10.1016/j.resuscitation.2010.11.022

- Be open to changes
- Educational Research needed