ZOLL MEDICAL CORPORATION

Code Communications

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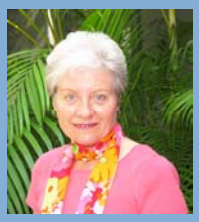


JUDY BOEHM

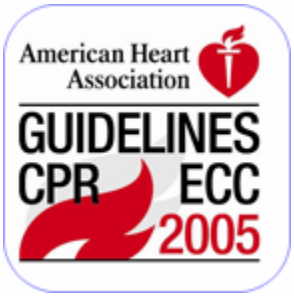
Judy Boehm, RN, MSN, is a cardiac clinical nurse specialist living now in Bradenton, Florida. Beginning in 1975, she worked as CNS for the cardiac units at Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire, retiring in early 2006. Since the formation of the DHMC CPR Committee in 1983, she was active in establishing policies and procedures for resuscitations, translating resuscitation research into practice, and selection of training in emergency equipment, life support education, and CPR data collection/analysis.

Judy received her MSN from University of Alabama, and her BSN from Case Western Reserve University. She enjoys playing golf with her husband, walking her Golden Retriever, and learning about tropical plants.

Guidelines 2005—Now What?

The 2005 American Heart Association (AHA) Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care were published in a Supplement to *Circulation* on December 13, 2005. Many of us who provide care during "codes" have been anticipating the release of the Guidelines for months. It probably seems like an overwhelming task to implement the new AHA Guidelines 2005. The first step is to be informed of the recommendations for change yourself. Then use the resources that are available to inform others.

Given the newest recommendations, what are best strategies for translating them into practice within our work environments? How do we handle the upcoming months until the AHA life support training materials are available for Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), and the Neonatal Resuscitation Program (NRP)? How should we proceed until changes are made by the manufacturers in their defibrillators so their operation aligns with the Guidelines?

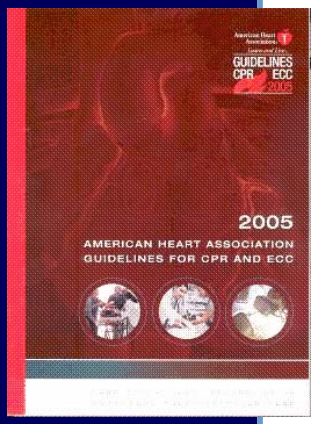


For example, if the pulseless victim has ventricular fibrillation (VF), one shock is now advised followed immediately by CPR for 5 cycles (or approximately 2 minutes). After this interval, the rhythm is then checked. Automated External Defibrillators (AEDs) will analyze the rhythm and advise a single shock if VF persists. For those who use manual defibrillators, after the 5 cycles of CPR the provider should check for a pulse if there is an organized rhythm and perform manual defibrillation as needed. Scientists critically evaluated the research to recommend this major change in the care of the pulseless victim with VF. You'll remember that the 2000 Guidelines recommended 3 stacked shocks at the outset for VF, followed by a pulse/circulation check and then CPR if needed for one minute before rhythm analysis again.

The dilemma:
Since this new recommendation could result in a better patient outcome, wouldn't it be best to change our practice today? How do we get the word out about this change in practice to those within our environment? If we use the old ACLS and PALS written tests, won't those taking a course be confused? If they answer test questions with the old practice of 3 stacked shocks followed immediately by a pulse check, then they will achieve a correct response to the test question – but the patient's outcome may be compromised. If an AED is being used, the manufactures have not yet changed the device prompts and actions to be in accordance with the new Guidelines. So what should a knowledgeable person do???

Welcome to **Code Communications**, ZOLL's Online Newsletter for hospital clinicians interested in the field of resuscitation. Each month we will explore a new topic in the field with an emphasis on practical solutions for changing practice and improving outcomes. Register here to automatically receive these monthly issues.

Get Familiar with Guidelines 2005



First, gain an understanding of the changes reflected in the Guidelines. Obtain a copy of the Supplement to *Circulation* and begin to read it. The AHA provides several additional means to update your knowledge.

Currents in Emergency Cardiovascular Care

The Winter 2005-2006 issue of this publication has an excellent summary of the new changes, the old recommendations, and the "why" change. It is divided into sections describing major changes affecting all rescuers, changes in lay rescuer CPR, and changes in healthcare provider BLS & ACLS. Download PDF

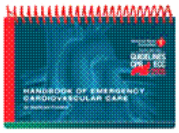
Emergency Cardiovascular Care Guidelines Webcasts

Webcasts are presented by resuscitation experts for use by instructors and practitioners in hospital, EMS, and corporate/community settings.

There are three focused webcasts. These can be viewed at: www.eccguidelineswebcast.org

Handbook of Emergency Cardiovascular Care for Healthcare Providers, 2006

This handy quick reference is now available through the usual distributors of AHA life support materials: Channing Bete Company, Laerdal Medical Corporation, and Worldpoint ECC, Inc.



The 2005 Guidelines take a 'back to basics' approach to resuscitation," said Robert Hickey, M.D., chair of the American Heart Association's Emergency Cardiovascular Care programs. "Since the 2000 Guidelines, research has strengthened our emphasis on effective CPR as a critically important step in helping save lives. CPR is easy to learn and do, and the association believes the new Guidelines will contribute to more people doing CPR effectively."

Professional Journals & Online Education

Search in your professional journals for review articles on the new Guidelines.

Feb 2006

For example, Grif Alspach wrote an editorial in the February, 2006 issue of *Critical Care Nurse* entitled "2005 Guidelines for CPR and ECG, New but Improved?" She applies a KISS ("Keep it Simple, Stupid") Index, a subjective measurement of the degree to which the change simplifies CPR procedures, making them easier to learn, retain, and perform correctly. Read issue

Marett, B. E. American Heart Association releases new guidelines. Journal of Emergency Nursing. 2006 Feb;32(1): 63-4. View PDF

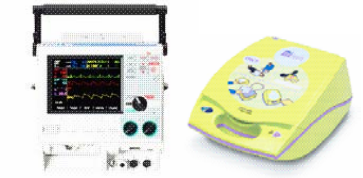
March 2006

The Journal of Emergency Medical Services (JEMS) has a number of Guidelines related articles available online that discuss the implications related to EMS including:

Heart Smarter EMS Implications of the 2005 AHA Guidelines for ECC & CPR. An exclusive supplement in the March issue of JEMS sponsored by The American Heart Association, Laerdal Medical Corp., Medtronic, Philips Medical Systems & ZOLL Medical Corp. View PDF

CPR Revived: New Research Demonstrates the Importance of CPR Quality, is an editorial supplement to the December 2005 issue of JEMS sponsored by Philips and Laerdal. View PDF

Update Life Support Instructors



ZOLL M Series® & AED Plus™

If you are a life support instructor in BLS, ACLS, PALS, or NRP, contact your AHA Training Center Coordinator to learn the timeline for updating. Training materials are now available in BLS for Healthcare Providers. Next to arrive are materials for training Heartsavers. Since the ACLS training materials won't be ready until September, the AHA has provided a "bridge" package for teaching the new Guidelines until then. They eliminated some questions from the old ACLS written test so those remaining do not contradict the new Guidelines. Last to arrive will be the PALS training materials sometime in the 4th quarter of 2006. BLS and ACLS instructors can teach the new content after they attend an update from their AHA Training Center. It will not be acceptable to teach the old BLS content after June 30, 2006.

To learn when the manufacturers will make software and hardware changes in their AEDs to be in accordance with the new Guidelines, talk with your territory manager.

ZOLL Medical Corporation plans for their AED Plus to be updated this summer, and the M Series to be revised in the fall.

Plan Your Organizational Roll-Out

So how does an organization plan the roll-out of these new Guidelines? Usually an administrative group, e.g., the CPR Committee, will compose an implementation strategy.

Schedule a Timeline

Some content can be discussed and taught immediately. For example, providers can now be taught more effective compression technique:

- *Push hard and fast at 100/minute*
- *Ensure full chest recoil after each compression*
- *Minimize interruptions in chest compressions*
- *Rotate compressors every 2 minutes*

The organization will establish a schedule to update all BLS, ACLS, PALS, and NRP instructors in their training network. A date will be given by which instructors must teach the new Guidelines for new provider and renewal courses.

Major phases of a successful training rollout:

- *needs analysis*
- *skills assessment*
- *budget allocation*
- *courseware dev.*
- *training delivery*
- *delivery progress*
- *program evaluation*
- *post-training review*

How Do You Reach All Providers?

How do you reach the providers who are not yet due to take a renewal course with the newest recommendations? Some organizations may choose no further educational endeavors at this time and use their renewal courses over the upcoming two years to reach everybody. This is the way it has often been done in the past. But during these two years some providers will administer care according to the 2000 Guidelines, while others will be practicing according to the 2005 Guidelines. This is a set-up for confusion, and the patient doesn't receive the full benefit.

Now is your time to be creative. Individualize your strategies for reaching out based on the target population(s) and their learning needs. Is your audience healthcare providers and/or lay rescuers? Is your audience out-of-hospital or in-hospital? What is the "need to know" for first responders versus advanced responders in your organization?

Can the CPR Committee produce a newsletter outlining the major changes? Does your organization have a web site for presenting practice changes to staff? Could a VHS tape, DVD, or PowerPoint presentation be developed outlining the changes? Can the changes be presented at staff meetings, nursing grand rounds, or medical grand rounds? Could the new content be incorporated into unit-based mock arrests? Can a poster be developed that reminds providers of the changes? The Winter 2005-2006 issue of *Currents* and ACLS bridge materials can help you outline the changes.

Institutional Policies, Protocols, Supplies

Policies, procedures, and supplies in your organization will need to be revisited related to the new Guidelines.

Factors to consider include:

- Will EMS policies be changed so that compressions are given prior to defibrillation if the call-to-response interval is greater than 4-5 minutes?
- How can CPR team leaders be trained as coaches to monitor that effective compressions and ventilations are being provided during resuscitations?
- Should cuffed endotracheal tubes be added to pediatric arrest carts since they are considered as safe as uncuffed tubes?
- Should intraosseous devices be added to adult arrest carts since IV and IO are the preferred routes of medication administration? Endotracheal administration does not provide as predictable drug delivery and pharmacologic effect as IV and IO routes.
- Is a CO2 detection device available at all resuscitations to confirm correct tube placement? Providers should use clinical assessment along with a device as *primary* confirmation methods.

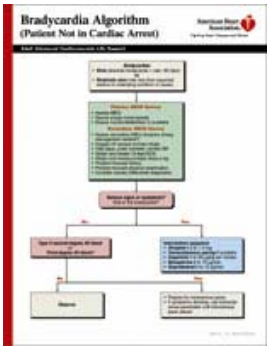
- If isoproterenol is still on arrest carts, will it be removed since it was eliminated from the bradycardia algorithm? Is there sufficient amiodarone on arrest carts to support its use as the preferred antiarrhythmic medication? Should 30 mg vials of epinephrine remain on arrest carts since there appears to be no survival benefit from high dose epinephrine?
- Will CPR prompts be purchased to use during training and actual codes? Simple metronomes found in music stores and available at less than $20 can help providers verify a compression rate of 100/minute. Defibrillator manufacturers are working on various CPR feedback devices. The ZOLL CPR-D Padz have built-in prompts for compression depth and rate.

- Will impedance threshold devices be purchased to improve blood circulation during compressions and provide a light cue for the ventilation rate of 8-10 per minute following intubation?

It is important to establish an approximate date for changeover to the new Guidelines in your organization so that all the players are "singing off the same sheet of music".

The revised policies, procedures and supplies should be in place by this date to support the practice changes. If AEDs are being used, it will be important to instruct providers how these will be used until the software is changed to support the new Guidelines, i.e., one shock followed by CPR without a pulse or circulation check. Those who use manual defibrillators can incorporate the changes immediately.

"Place the revised ACLS, PALS, and NRP algorithms on all arrest carts as soon as they are available from the distributors to use as a quick reference"



CPR Outcome Statistics

In order to determine the impact of the 2005 Guidelines in your practice setting, you will want to compare the rate of survival to discharge before and after the 2005 Guidelines were implemented. So make sure that you are collecting the needed resuscitation data and preparing outcome reports. The ZOLL CodeNet resuscitation data management system can ease the burden of collecting your CPR statistics and provide instant aggregate reports.

CodeNET®

Conclusion

It probably seems like an overwhelming task to implement the new AHA Guidelines 2005. The first step is to be informed of the recommendations for change yourself. Then use the resources that are available to inform others. Ask various provider groups within your organization how they would like to learn about the changes – and have them practice in a lab setting. Work with your administrative group to develop an implementation plan, and then follow through on the timeline - always keeping the players informed. Confusion and frustration are most often due to lack of communication. Take the time to develop an institutional plan for implementation of the AHA Guidelines, so that you can use this same methodology in 5 years when they change again! The sooner you incorporate these 2005 Guidelines into your practice setting, the sooner you will be able to translate new science into saving more lives.