

2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Presenter Name



GUIDELINES
CPR ECC
2010

Disclosures

- <INSERT Any Relationships with Industry over the preceding 12 months here. If in doubt, report it.>
- Note that some treatments (eg, therapeutic hypothermia, amiodarone for pediatric cardiac arrest) in AHA Guidelines are not approved by US FDA.

Impact of AHA Guidelines for CPR and ECC

- Accessible to all users on the world-wide web (2005 Guidelines accessed more than 2.4 million times)
- Provides science-based recommendations for resuscitation
 - Adopted by other resuscitation councils and/or health ministries.
 - Incorporated into protocols and practice
- Basis for AHA training materials.



Guidelines Development Process

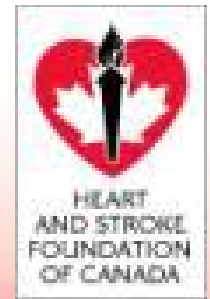
2010 AHA Guidelines for CPR and ECC

Achieving Consensus on Resuscitation Science

The American Heart Association and other member councils of International Liaison Committee on Resuscitation (ILCOR) complete review of resuscitation science every 5 years.



Australian Resuscitation Council



ILCOR: Mission Statement

- Review the international science and knowledge relevant to CPR and ECC
- Publish consensus statements on resuscitation science
- When possible, also publish treatment recommendations applicable to all member organizations around the world.
- Encourage coordination of guideline development and publication by its member organizations around the world.

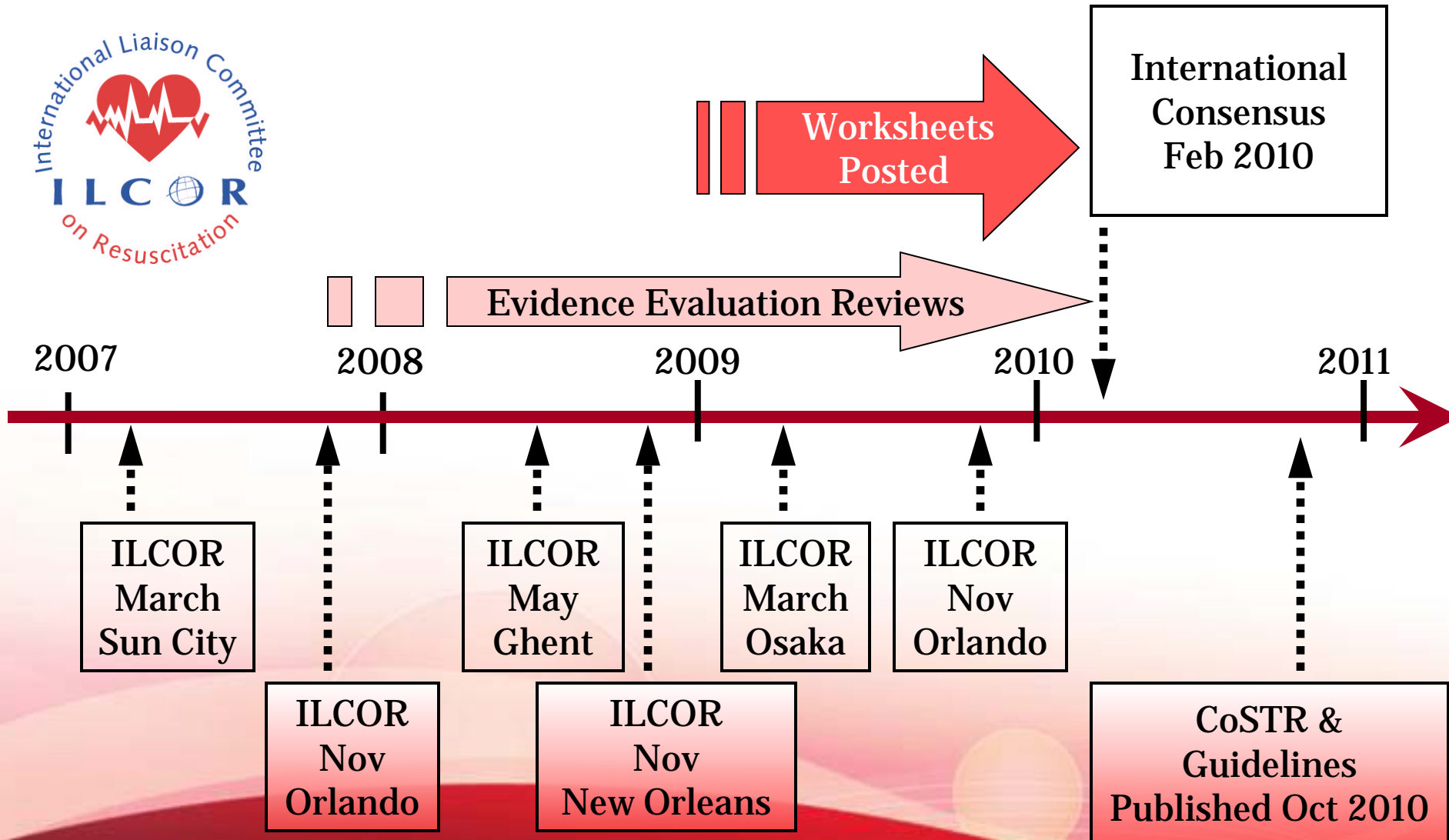
Process from Question to Guideline

1. ILCOR Task Forces formulate questions
2. Worksheet authors perform structured evidence evaluation (with help from experts), present to Task Force
3. Task Forces debate, discuss, reach consensus, draft manuscripts
4. International Editorial Board, Councils review consensus, provide input to writing groups
5. Circulation obtains peer reviews
6. Consensus on Science published
7. Councils develop Guidelines

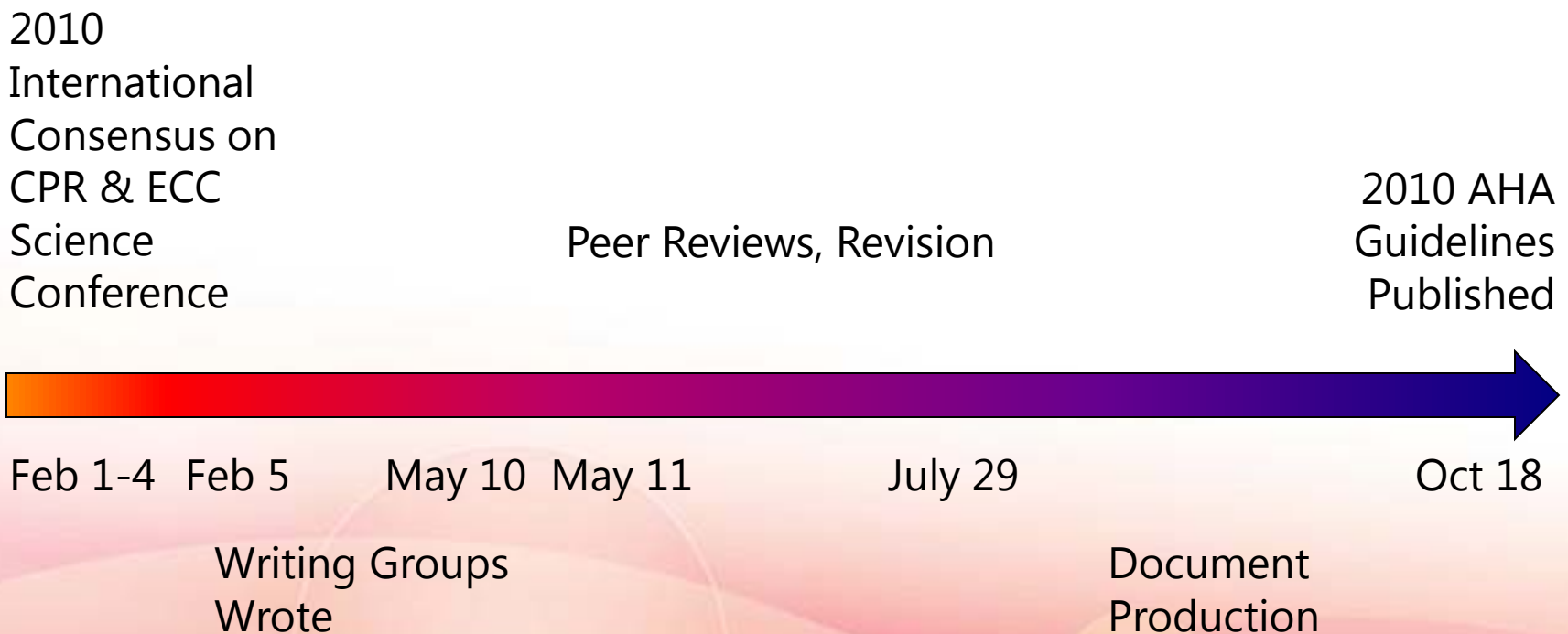
Council Guidelines

- Must consider:
 - Local factors and resources available
 - Educational challenges
 - Cost

2010 Consensus Timeline



2010 Guidelines Timeline



Strength of Evidence and Recommendation

- ILCOR used numerical Level of Evidence (LOE) to rate individual studies in Consensus on Science (i.e., LOE 5)
- AHA uses Class of Recommendation and alphabetical LOE for each guideline recommendation (i.e., Class IIb, LOE B)
- Provides internal consistency with other AHA evidence-based guidelines.

AHA Evidence Classification

		SIZE OF TREATMENT EFFECT →			
		CLASS I	CLASS IIa	CLASS IIb	CLASS III
		<p><i>Benefit >>> Risk</i></p> <p>Procedure/Treatment SHOULD be performed/administered</p>	<p><i>Benefit >> Risk</i></p> <p>Additional studies with <i>focused objectives</i> needed</p> <p>IT IS REASONABLE to perform procedure/administer treatment</p>	<p><i>Benefit ≥ Risk</i></p> <p>Additional studies with <i>broad objectives</i> needed; additional registry data would be helpful</p> <p>Procedure/Treatment MAY BE CONSIDERED</p>	<p><i>Risk ≥ Benefit</i></p> <p>Procedure/Treatment should NOT be performed/administered SINCE IT IS NOT HELPFUL AND/OR MAY BE HARMFUL</p>
ESTIMATE OF CERTAINTY (PRECISION) OF TREATMENT EFFECT	LEVEL A	<ul style="list-style-type: none"> Recommendation that procedure or treatment is useful/effective Sufficient evidence from multiple randomized trials or meta-analyses 	<ul style="list-style-type: none"> Recommendation in favor of treatment or procedure being useful/effective Some conflicting evidence from multiple randomized trials or meta-analyses 	<ul style="list-style-type: none"> Recommendation's usefulness/efficacy less well established Greater conflicting evidence from multiple randomized trials or meta-analyses 	<ul style="list-style-type: none"> Recommendation that procedure or treatment is not useful/effective and may be harmful Sufficient evidence from multiple randomized trials or meta-analyses
	LEVEL B	<ul style="list-style-type: none"> Recommendation that procedure or treatment is useful/effective Evidence from single randomized trial or nonrandomized studies 	<ul style="list-style-type: none"> Recommendation in favor of treatment or procedure being useful/effective Some conflicting evidence from single randomized trial or nonrandomized studies 	<ul style="list-style-type: none"> Recommendation's usefulness/efficacy less well established Greater conflicting evidence from single randomized trial or nonrandomized studies 	<ul style="list-style-type: none"> Recommendation that procedure or treatment is not useful/effective and may be harmful Evidence from single randomized trial or nonrandomized studies
	LEVEL C	<ul style="list-style-type: none"> Recommendation that procedure or treatment is useful/effective Only expert opinion, case studies, or standard of care 	<ul style="list-style-type: none"> Recommendation in favor of treatment or procedure being useful/effective Only diverging expert opinion, case studies, or standard of care 	<ul style="list-style-type: none"> Recommendation's usefulness/efficacy less well established Only diverging expert opinion, case studies, or standard of care 	<ul style="list-style-type: none"> Recommendation that procedure or treatment is not useful/effective and may be harmful Only expert opinion, case studies, or standard of care

Suggested phrases for writing recommendations*

should
is recommended
is indicated
is useful/effective/beneficial

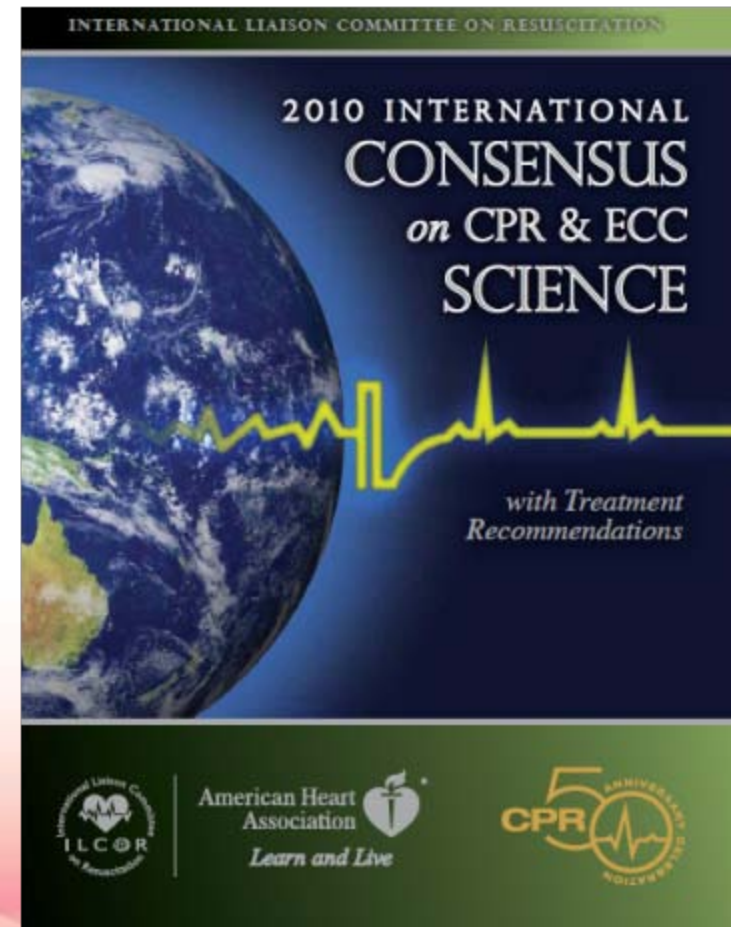
is reasonable
can be useful/effective/beneficial
is probably recommended
or indicated

may/might be considered
may/might be reasonable
usefulness/effectiveness is unknown/unclear/uncertain or not well established

is not recommended
is not indicated
should not
is not useful/effective/beneficial
may be harmful

Evidence Evaluation Process

- 411 scientific evidence reviews on 277 topics
- 313 participants at 2010 Consensus Conference, (46% from outside US)
- COI questionnaires completed by all participants (802 collected and reviewed)
- Writing group members voted on each recommendation



Management of Potential Conflicts

Part 2: Evidence Evaluation and Management of Potential or Perceived Conflicts of Interest

2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Michael R. Sayre, Co-Chair*; Robert E. O'Connor, Co-Chair*; Dianne L. Atkins; John E. Billi; Clifton W. Callaway; Michael Shuster; Brian Eigel; William H. Montgomery; Robert W. Hickey; Ian Jacobs; Vinay M. Nadkarni; Peter T. Morley; Tanya I. Semenko; Mary Fran Hazinski

- COI information posted with worksheets on website
- Industry employees excluded
- No industry support accepted for C2005 or C2010
- COI for each speaker projected during meetings
- COI printed in C2010 program and final Guidelines publication
- COI questionnaires completed by all participants

The Publications

2010 International Consensus on CPR and ECC Science
with Treatment Recommendations
2010 AHA Guidelines for CPR and ECC

The ILCOR 2010 International Consensus on CPR and ECC Science With Treatment Recommendations

- Simultaneously published in *Circulation* and *Resuscitation*
- Documented review of tens of thousands of peer-reviewed resuscitation studies.

The ILCOR 2010 International Consensus on CPR and ECC Science With Treatment Recommendations

Part 1: Executive Summary

Part 2: International Collaboration in Resuscitation Science

Part 3: Evidence Evaluation Process

Part 4: Conflict of Interest Management Before, During and After the 2010 International Consensus Conference

Part 5: Adult Basic Life Support

Part 6: Defibrillation

Part 7: CPR Techniques and Devices

Part 8: Advanced Life Support

Part 9: Acute Coronary Syndromes

Part 10: Pediatric Basic and Advanced Life Support

Part 11: Neonatal Resuscitation

Part 12: Education, Implementation, and Teams (EIT)

Part 13: First Aid

The 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

- 17 chapters published in *Circulation*
- Foundation for ECC training materials

2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science

Part 1: Executive Summary

Part 2: Evidence Evaluation and
Management of Potential
or Perceived Conflicts of
Interest

Part 3: Ethics

Part 4: CPR Overview

Part 5: Adult Basic Life Support

Part 6: Electrical Therapies

Part 7: CPR Techniques and
Devices

Part 8: Adult Advanced Life
Support

Part 9: Post-Cardiac Arrest Care

Part 10: Acute Coronary
Syndromes

Part 11: Adult Stroke

Part 12: Cardiac Arrest in Special
Situations

Part 13: Pediatric Basic Life
Support

Part 14: Pediatric Advanced Life
Support

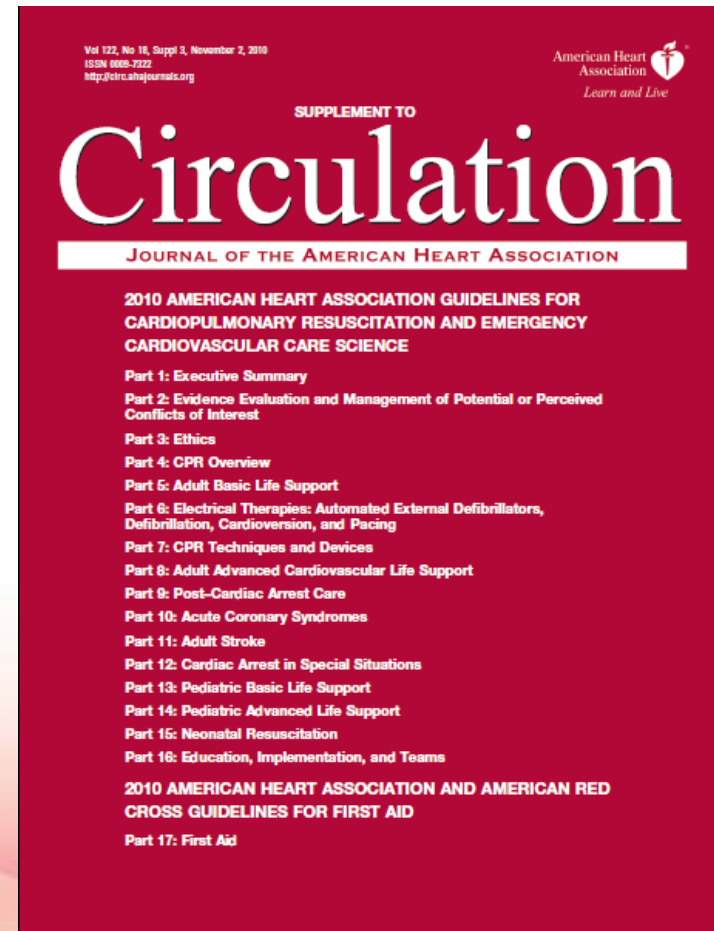
Part 15: Neonatal Resuscitation

Part 16: Education,
Implementation, and
Teams (EIT)

Part 17: First Aid

CPR & ECC Guidelines

- Guidelines available online October 18, 2010 at 12:30 a.m. EDT.
- Printed Guidelines supplement published November 2, 2010 in *Circulation*.
- Can be downloaded free of charge at www.heart.org/cpr



Key Changes

2010 AHA Guidelines for CPR and ECC

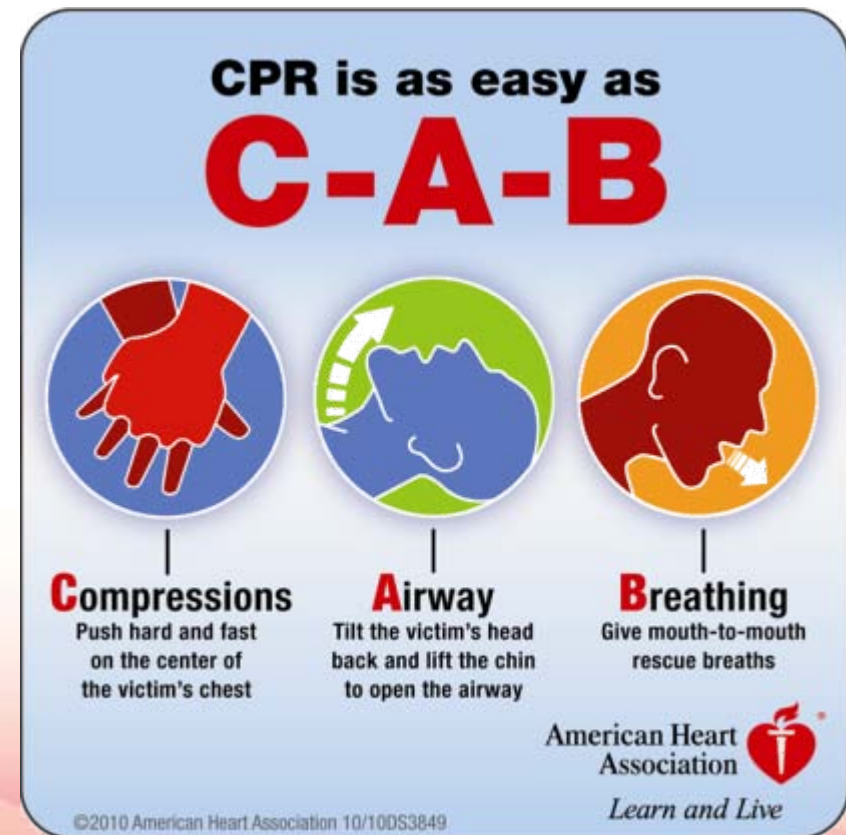
New AHA Adult Chain of Survival

- New 5th link – post-cardiac arrest care
- Links in the new adult Chain of Survival:
 - Immediate recognition and activation of emergency response system
 - Early CPR, w/emphasis on chest compressions
 - Rapid defibrillation
 - Effective advanced life support
 - Integrated post-cardiac arrest care



CPR Sequence

- Change:
 - From A-B-C to C-A-B
 - Initiate chest compressions before ventilations
- Why?
 - Goal: To reduce delay to CPR, sequence begins with skill that everyone can perform
 - Emphasize primary importance of chest compressions for professional rescuers



CPR Starts with Compressions

- Many adults with witnessed arrest have ventricular fibrillation (VF)/pulseless ventricular tachycardia (VT), and require
 - chest compressions
 - early defibrillation
- Chest compressions can be started immediately (no equipment needed)
- Opening airway, providing ventilation may significantly delay other actions
- Ventilation delayed by 18 seconds or less

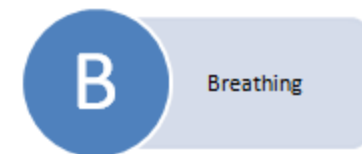
Primary Emphasis on Chest Compressions

- All rescuers should, at a minimum, provide chest compressions.
- If bystander not trained (adult arrest): Hands-Only CPR
- If bystander trained and able: perform compressions and ventilations at rate of 30:2
- Healthcare provider: perform compressions and ventilations at rate of 30:2
- For all pediatric arrest, compressions and ventilations still recommended

Emphasis on Chest Compressions

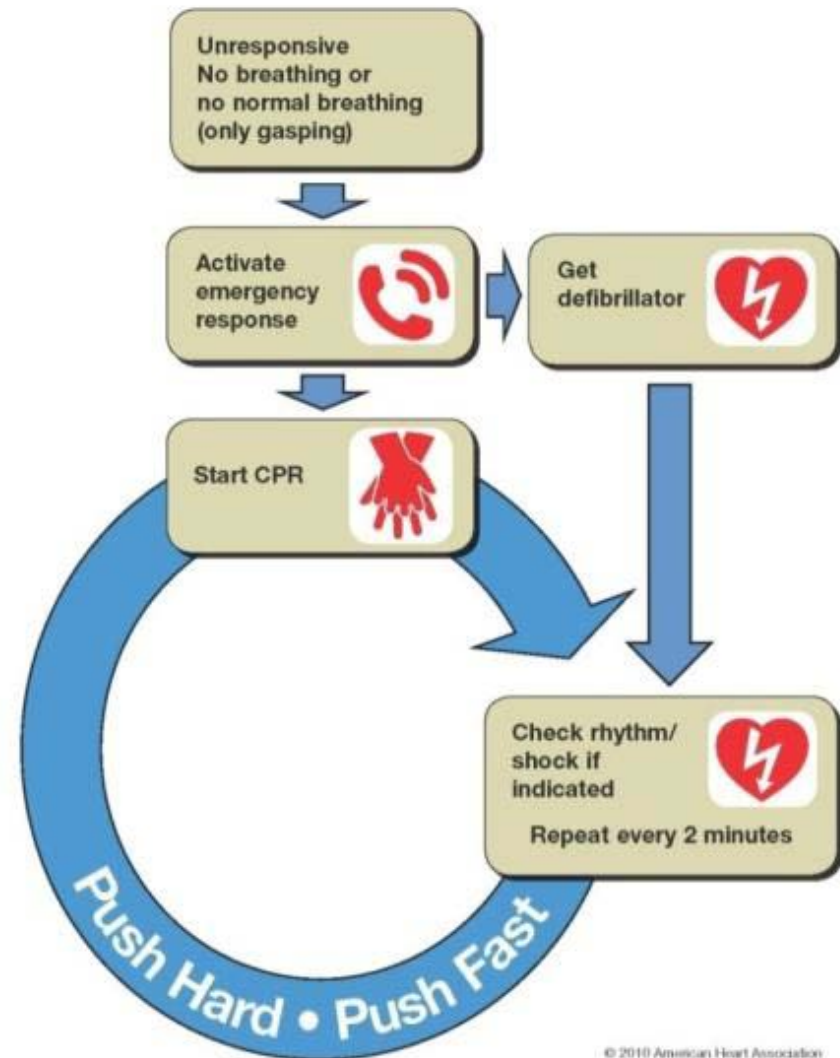
- Why?
 - Hands-Only CPR is easy to perform for adult victims and can be readily guided by EMS dispatchers over phone.
 - When all adult cardiac arrests reported, survival rates similar whether bystander provides Hands-Only CPR or traditional CPR.

C-A-B (not A-B-C)



Universal Algorithm for Adult CPR

- Traditional algorithm updated
- Alternative graphic provided
- All graphics emphasize importance of uninterrupted periods of CPR



Adult Chest Compression Depth

- Change:
 - Compress *at least* 2 inches
 - 2005 recommendation was 1½ to 2 inches.
- Why?
 - Compressions of at least 2 inches are more effective than those of 1½ inches.
 - Rescuers often do not “push hard” enough.
 - Confusion may result when range of depth is recommended.



Chest Compressions Critical

- Without effective chest compressions
 - Oxygen flow to brain stops.
 - Oxygen flow to heart stops.
 - Drugs go nowhere.

Chest Compression Rate

- Change:
 - Compression rate *at least* 100 per minute.
 - 2005 recommendation: Compression rate about 100/min
- Why?
 - Absolute number of compressions delivered/minute has been linked with survival.
 - Actual compression rate is often well below 100/min.

Elimination of “Look, Listen, and Feel” for Breathing

- Change:
 - This action removed from the CPR sequence
 - After delivery of 30 compressions, lone rescuer opens airway and delivers 2 breaths.
- Why?
 - Rescuer checks for response and “no breathing or no normal breathing” in adult before beginning CPR
 - Starting CPR with compressions minimizes delay to action

Table 1**Summary of Key BLS Components for Adults, Children, and Infants***

Component	Recommendations		
	Adults	Children	Infants
Recognition	Unresponsive (for all ages)		
	No breathing or no normal breathing (i.e., only gasping)	No breathing or only gasping	
	No pulse palpated within 10 seconds for all ages (HCP only)		
CPR sequence	C-A-B		
Compression rate	At least 100/min		
Compression depth	At least 2 inches (5 cm)	At least 1/3 AP diameter About 2 inches (5 cm)	At least 1/3 AP diameter About 1 1/2 inches (4 cm)
Chest wall recoil	Allow complete recoil between compressions HCPs rotate compressors every 2 minutes		
Compression interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds		
Airway	Head tilt–chin lift (HCP suspected trauma: jaw thrust)		
Compression-to-ventilation ratio (until advanced airway placed)	30:2 1 or 2 rescuers	30:2 Single rescuer 15:2 2 HCP rescuers	
Ventilations: when rescuer untrained or trained and not proficient	Compressions only		
Ventilations with advanced airway (HCP)	1 breath every 6-8 seconds (8-10 breaths/min) Asynchronous with chest compressions About 1 second per breath Visible chest rise		
Defibrillation	Attach and use AED as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.		

Abbreviation: AED, automated external defibrillator; AP, anterior-posterior; CPR, cardiopulmonary resuscitation; HCP, healthcare provider.
*Excluding the newly born, in whom the etiology of an arrest is nearly always asphyxial.

Healthcare Provider



ADULT BLS Sequence

- Recognize unresponsive adult with no breathing or no normal breathing (ie, only agonal gasps)
- Activate emergency response, retrieve AED (or send someone to do this)
- Check for pulse (*no more than 10 seconds*)
- If no pulse, begin sets of 30 chest compressions and 2 breaths
- Use AED as soon as available

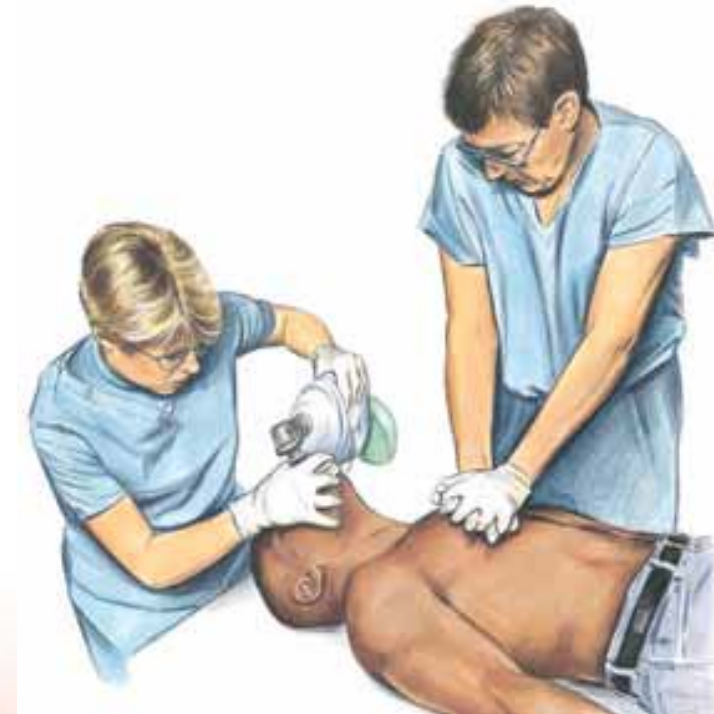
Healthcare Provider

CHILD BLS Sequence

- Recognize unresponsive child with no breathing or only agonal gasps
- Send someone to activate emergency response & retrieve AED.
- Check for pulse (*no more than 10 seconds*)
- If no pulse, begin sets of 30 chest compressions and 2 breaths.
- Lone rescuer activates emergency response after 2 minutes of CPR.
- Use AED as soon as available.

Cricoid Pressure

- Change:
 - Routine use of cricoid pressure during CPR is generally NOT recommended.
- Why:
 - Cricoid pressure can interfere with ventilation and advanced airway placement.
 - Not proven to prevent aspiration or gastric insufflation during cardiac arrest.



Team Resuscitation

- Change:
 - Increased focus on using a team approach during resuscitations
- Why:
 - Many CPR interventions performed simultaneously
 - Collaborative work minimizes interruption in compressions
 - Clear communication minimizes errors

Resuscitation Systems Must Institute CQI Processes

- Outcomes vary widely
- Each system must evaluate and improve outcomes

Devices for CPR

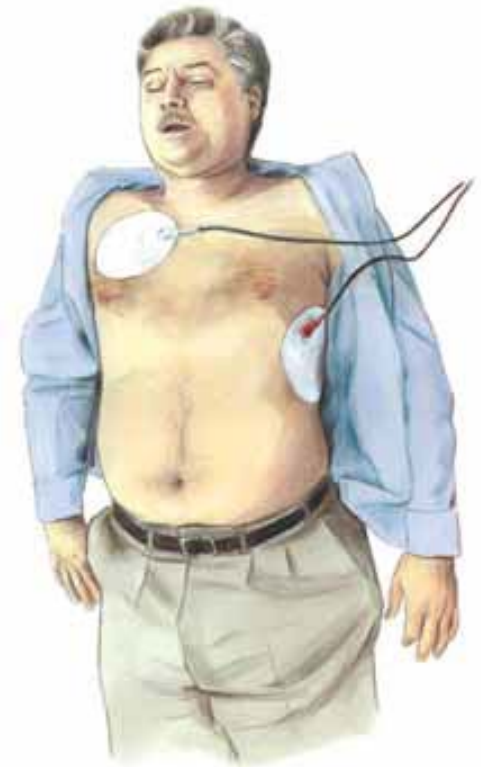
- Impedance threshold device (ITD): may be considered by trained personnel as a CPR adjunct in adult cardiac arrest (Class IIb, LOE B).
- Mechanical piston devices: may be considered for adult cardiac arrest by properly trained personnel when manual resuscitation difficult (Class IIb, LOE C). Insufficient evidence to support or refute *routine use* for cardiac arrest.
- Load Distributing Band (LDB) (e.g., AutoPulse): may be considered for adult cardiac arrest by properly trained personnel (Class IIb, LOE B). Insufficient evidence to support *routine use* for cardiac arrest.

Precordial Thump

- The precordial thump should not be used for unwitnessed out-of-hospital cardiac arrest.
- The precordial thump may be considered for patients with witnessed, monitored, unstable VT (including pulseless VT) if a defibrillator is not immediately ready for use, but it should not delay CPR and shock delivery.

Electrical Therapies

- Practice needed to minimize interruption in chest compressions to deliver shock.
- In-hospital use of AEDs may facilitate early defibrillation (goal: ≤ 3 minutes, monitor results).
- AEDs can now be used in infants if a manual defibrillator is not available.
- Defibrillation doses unchanged, adult cardioversion doses provided

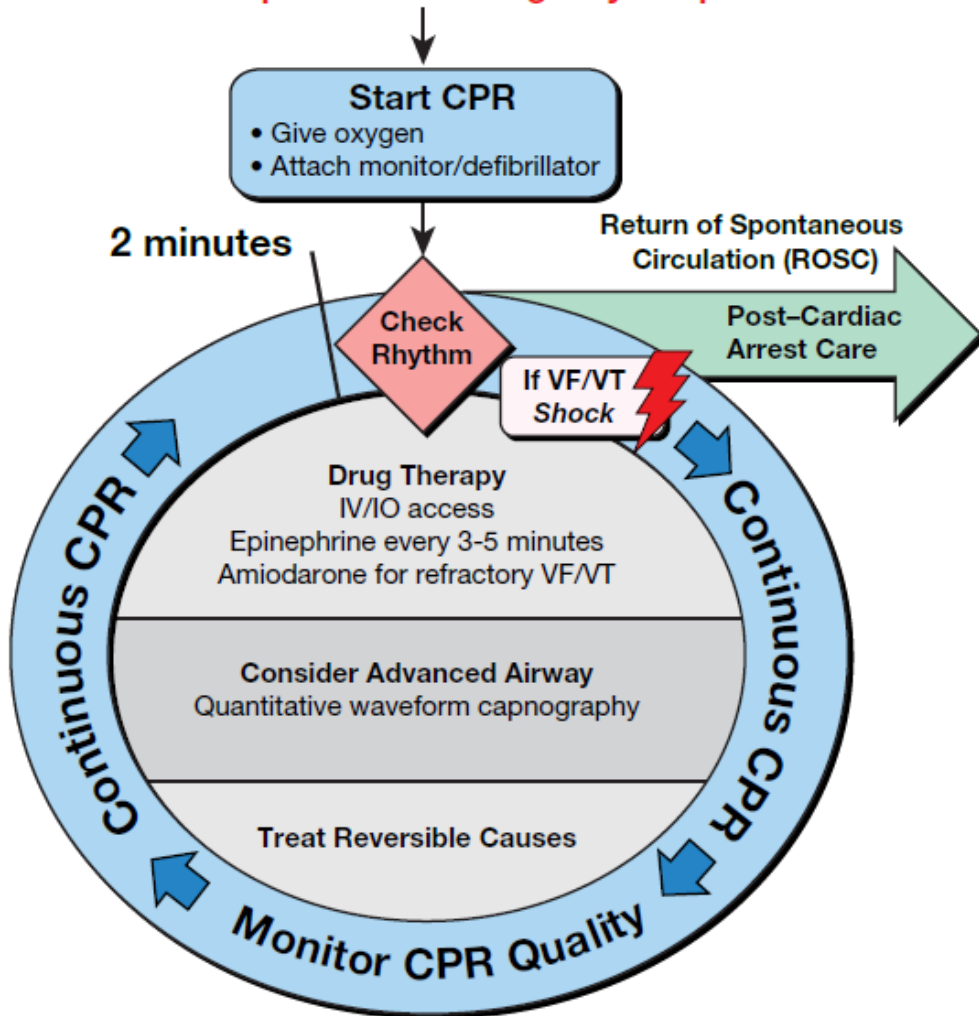


Advanced Cardiovascular Life Support (ACLS)



- Foundation of successful ACLS is good BLS.
- Traditional cardiac arrest algorithm simplified and alternative conceptual design (both emphasize importance of high-quality CPR.)
- Increased emphasis on continuous waveform capnography to
 - verify endotracheal tube placement
 - optimize CPR quality and detect ROSC.

Shout for Help/Activate Emergency Response



CPR Quality

- Push hard (≥ 2 inches [5 cm]) and fast (≥ 100 /min) and allow complete chest recoil
- Minimize interruptions in compressions
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 30:2 compression-ventilation ratio
- Quantitative waveform capnography
 - If $PETCO_2 < 10$ mm Hg, attempt to improve CPR quality
- Intra-arterial pressure
 - If relaxation phase (diastolic) pressure < 20 mm Hg, attempt to improve CPR quality

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in $PETCO_2$ (typically ≥ 40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

Shock Energy

- **Biphasic:** Manufacturer recommendation (120-200 J); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- **Monophasic:** 360 J

Drug Therapy

- **Epinephrine IV/IO Dose:** 1 mg every 3-5 minutes
- **Vasopressin IV/IO Dose:** 40 units can replace first or second dose of epinephrine
- **Amiodarone IV/IO Dose:** First dose: 300 mg bolus. Second dose: 150 mg.

Advanced Airway

- Supraglottic advanced airway or endotracheal intubation
- Waveform capnography to confirm and monitor ET tube placement
- 8-10 breaths per minute with continuous chest compressions

Reversible Causes

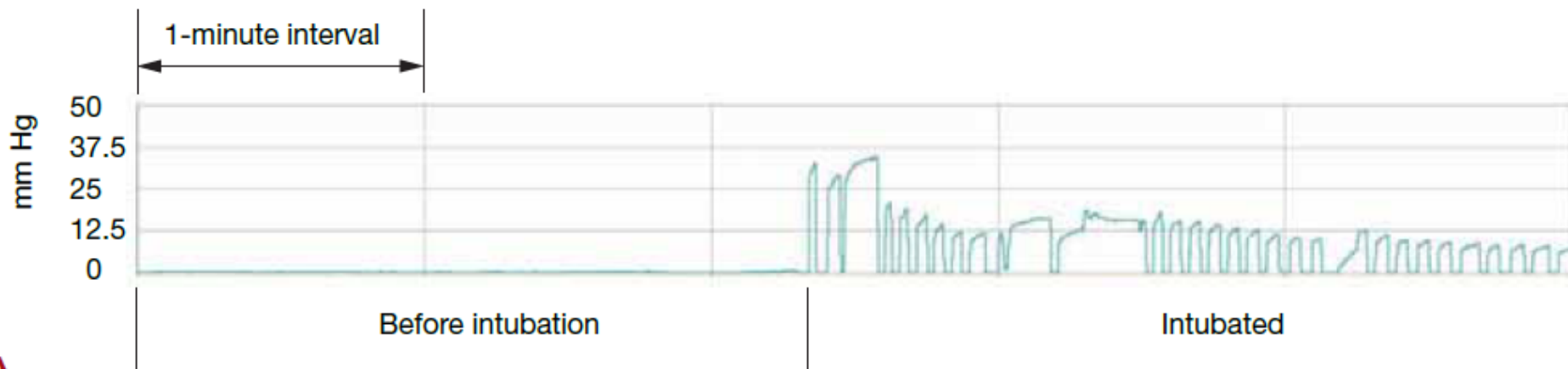
- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

ACLS: Waveform Capnography

- Change:
 - Quantitative waveform capnography is most reliable method to confirm and monitor correct ET tube placement (Class I, LOE A).
- Why:
 - Unacceptably high incidence of unrecognized ET tube misplacement or displacement.
 - Capnography has high sensitivity and specificity to identify correct endotracheal tube placement in cardiac arrest.

ACLS: Waveform Capnography

- After intubation, exhaled carbon dioxide is detected, confirming tracheal tube placement.
- Highest value at end-expiration.



A.

Capnography to confirm endotracheal tube placement. This capnography tracing displays the partial pressure of exhaled carbon dioxide ($PETCO_2$) in mm Hg on the vertical axis over time when intubation is performed. Once the patient is intubated, exhaled carbon dioxide is detected, confirming tracheal tube placement. The $PETCO_2$ varies during the respiratory cycle, with highest values at end-expiration.

ACLS: De-emphasis of Devices, Drugs and other Distracters

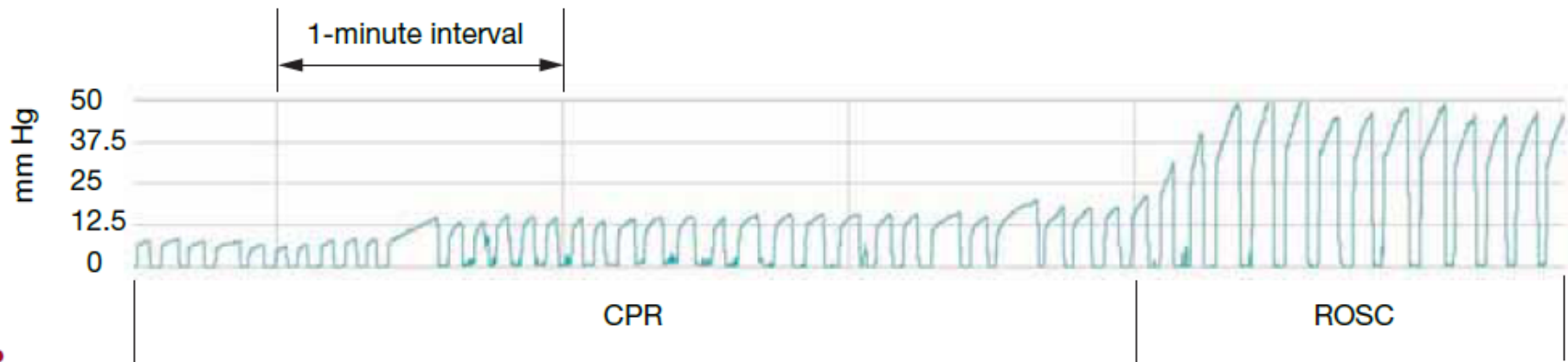
- Focus on high-quality CPR and defibrillation
- Atropine no longer recommended for routine use in management of PEA/asystole.
- Chronotropic drug infusions now recommended as alternative to pacing in symptomatic and unstable bradycardia.
- Adenosine recommended as safe and potentially effective for treatment and diagnosis in initial management of undifferentiated regular monomorphic wide-complex tachycardia.

ACLS: Medications for Pulseless Arrest



- Atropine: deleted from pulseless arrest algorithm
- Epinephrine: dose, interval unchanged
- Vasopressin: dose, use unchanged
- Amiodarone: dose, indications unchanged
- Lidocaine: dose, indications unchanged
- Sodium Bicarbonate: Routine use not recommended (Class III, LOE B).
- Calcium: Routine administration for treatment of cardiac arrest not recommended (Class III, LOE B).

ACLS: Physiologic Monitoring During CPR



B.

Capnography to monitor effectiveness of resuscitation efforts. This second capnography tracing displays the P_{ETCO_2} in mm Hg on the vertical axis over time. This patient is intubated and receiving CPR. Note that the ventilation rate is approximately 8 to 10 breaths per minute. Chest compressions are given continuously at a rate of slightly faster than 100/min but are not visible with this tracing. The initial P_{ETCO_2} is less than 12.5 mm Hg during the first minute, indicating very low blood flow. The P_{ETCO_2} increases to between 12.5 and 25 mm Hg during the second and third minutes, consistent with the increase in blood flow with ongoing resuscitation. Return of spontaneous circulation (ROSC) occurs during the fourth minute. ROSC is recognized by the abrupt increase in the P_{ETCO_2} (visible just after the fourth vertical line) to over 40 mm Hg, which is consistent with a substantial improvement in blood flow.

Post-Cardiac Arrest Care

- Change:
 - New 5th link in the chain of survival
- Why:
 - Emphasize importance of comprehensive multidisciplinary care through hospital discharge and beyond
- Includes:
 - Optimizing vital organ perfusion
 - Titration of FiO₂ to maintain O₂ sat $\geq 94\%$ and $< 100\%$
 - Transport to comprehensive post-arrest system of care
 - Emergent coronary reperfusion for STEMI or high suspicion of AMI
 - Temperature control
 - Anticipation, treatment, and prevention of multiple organ dysfunction

Acute Coronary Syndromes (ACS)

- Support for STEMI systems of care
- Continue to implement prehospital 12-lead ECG program
- Triage to hospitals capable of performing PCI
- Supplementary oxygen is not needed for patients without evidence of respiratory distress if the oxyhemoglobin saturation is $\geq 94\%$.
- Use morphine with caution

Stroke

- Goal: minimize acute brain injury and maximize patient recovery
- Treatment is time sensitive: guidelines again emphasize the “D’s of Stroke Care” (important steps and times of potential delays)
- Stroke systems of care significantly improve stroke outcome

Pediatric Resuscitation

- Revised pediatric chain of survival
- New post-arrest care link



Pediatric Basic Life Support

- Similarities in pediatric BLS and adult BLS
 - C-A-B rather than A-B-C sequence
 - Continued emphasis on high-quality CPR
 - Removal of “look, listen and feel”
- De-emphasis of pulse check for HCPs
- Use AEDs as soon as available
- AEDs may be used in infants, although manual defibrillation preferred

Pediatric Basic Life Support

- Some differences between pediatric BLS and adult BLS
- Chest compression depth – at least 1/3 of the anterior-posterior diameter of chest
 - Infants: about 1½ inches
 - Children: about 2 inches
- Lone rescuer provides 2 minutes of CPR before activating emergency response
- Two rescuers use 15:2 compression to ventilation ratio
- Traditional CPR (compressions and ventilations) by bystanders associated with higher survival than chest compressions alone

Support (PALS)

- Optimal energy dose for defibrillation of children unknown.
 - Initial dose 2-4 J/kg.
 - Subsequent dose ≥ 4 J/kg
- Post-ROSC: titrate oxygen to limit hyperoxemia.
- Therapeutic hypothermia (to 32°C to 34°C) may be beneficial (studies in progress)
- Young victims of sudden, unexpected cardiac arrest should have a complete autopsy with genetic analysis of tissue to look for inherited channelopathy.

Neonatal Resuscitation

- For babies born at term, begin resuscitation with room air rather than 100% oxygen.
- Any oxygen administered should be blended with room air, titrated based on oxygen saturation measured from right upper extremity.
- Suctioning after birth reserved for infants with obvious airway obstruction, those requiring ventilation or non-vigorous babies with meconium
- Therapeutic hypothermia recommended for babies near term with evolving moderate to severe hypoxic-ischemic encephalopathy.

Ethics

- Prehospital BLS and ALS termination of resuscitation rules provided.
- Indicators of poor outcome after cardiac arrest used in the past may not be valid when therapeutic hypothermia used.
- Assessment of clinical neurologic signs, electrophysiologic studies, biomarkers and imaging recommended where available 3 days after cardiac arrest.

Education, Implementation, and Teams (EIT)



- New section focusing on methods to improve bystander willingness to act, education techniques, teamwork and leadership
- Key Issues:
 - Current 2-year certification period for BLS, ACLS and PALS should include periodic refresher courses
 - Hands-Only CPR should be taught
 - Practice-while-watching is effective for BLS
 - Training should not be required for lay rescuers but it does improve performance
 - Debriefing is effective

First Aid

- First Aid Guidelines again co-sponsored with American Red Cross
- Routine oxygen administration is not recommended as a first aid measure (except for diving injuries).
- Aspirin for chest discomfort is recommended.
- Epinephrine for anaphylaxis (allergic reaction)
 - If symptoms persist despite epinephrine administration, first aid providers should seek medical assistance before administering second dose
- Recommendations added for jellyfish stings

First Aid

- Hemostatic agents
 - Routine use of hemostatic agents to control bleeding as a first aid measure not recommended at this time.
- Control of bleeding
 - Use of pressure points and elevation are not recommended to control bleeding.
 - Tourniquets to control bleeding of the extremities indicated only if direct pressure not effective or possible and only with proper training.

Systems of Care

- Change:
 - Communities and hospital-based resuscitation programs should monitor quality of care and outcomes.
- Why:
 - Provides information necessary to optimize care
 - Narrow gaps between ideal and actual resuscitation performance

Summary of 2010 Guidelines

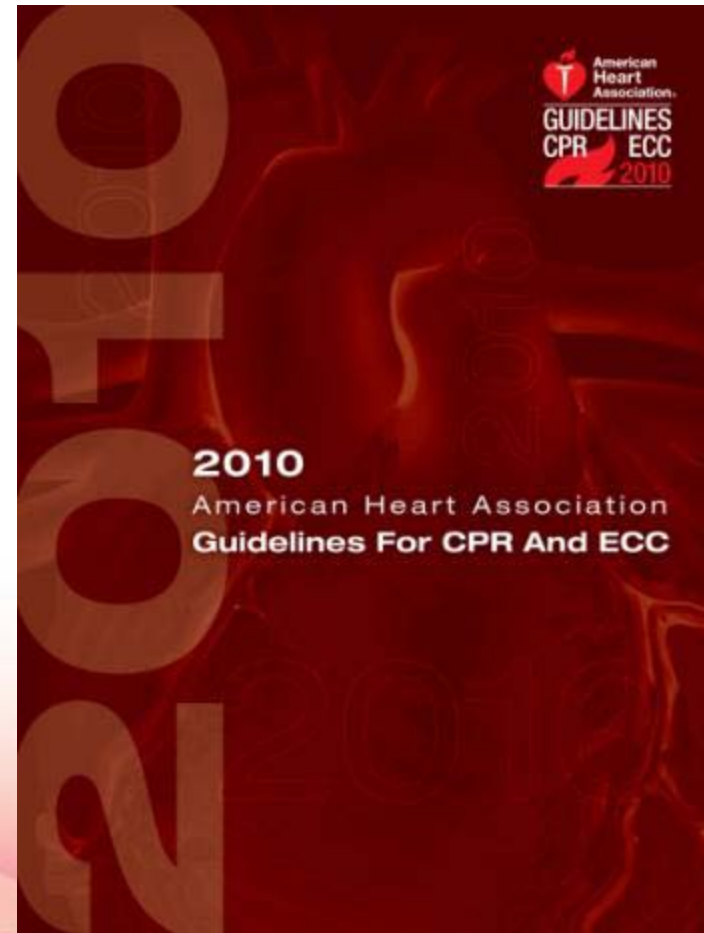
- Many resuscitation systems and communities have documented improved survival from cardiac arrest.
- Too few victims of cardiac arrest receive bystander CPR.
- CPR quality must be high.
- Victims require excellent post–cardiac arrest care by organized, integrated teams.
- Education and frequent refresher training key to improving resuscitation performance.
- We must rededicate ourselves to improving the frequency of bystander CPR, the quality of all CPR and the quality of post–cardiac arrest care.

The Products

2010 AHA Guidelines for CPR and ECC

2010 AHA Guidelines Reprint

- Printed Guidelines published November 3, 2010.
- Can be purchased through www.heart.org/cpr



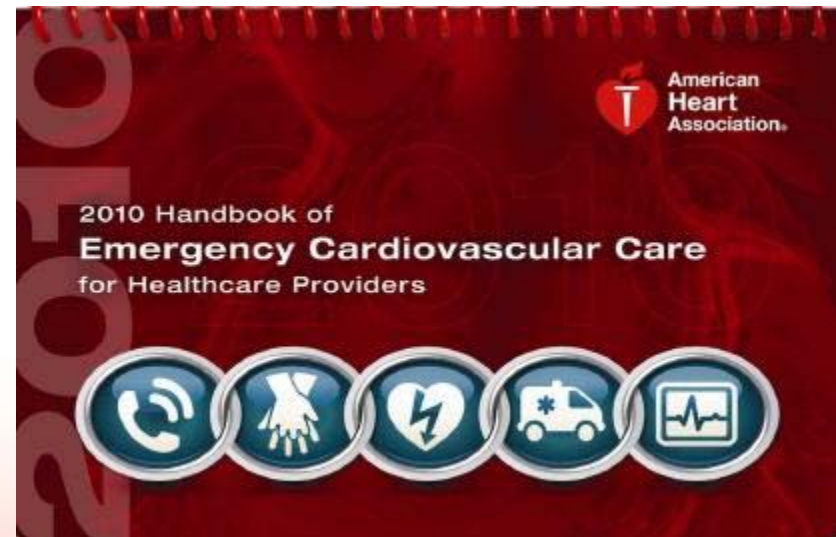
Guidelines Highlights

- Summarizes key changes in the 2010 AHA Guidelines for CPR and ECC
- Available electronically in English and 12 other languages at: heart.org/cpr



2010 Handbook of Emergency Cardiovascular Care for Healthcare Providers

- Valuable quick reference tool that incorporates the latest science and includes updated algorithms as well as information on therapeutic agents, stroke, and acute coronary syndromes.
- Was available right after guidelines release.



Educational and Training Materials

- Materials are being updated to reflect the new science.
- Currently in pilot testing with release planned in 2011:
 - CPR Anytime
 - Heartsaver First Aid, CPR & AED
 - Basic Life Support for Healthcare Professionals
 - Advanced Cardiovascular Life Support
 - Pediatric Advanced Life Support

Questions

To view a copy of this presentation please go to www.heart.org/cprscience.

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