POSITIVE ATTITUDE

It changes everything.
پزشک بهترین عوامل مرگ و میر در دنیا به ترتیب

جلگه
تازداری و لودینگ
انتهایی و سوختگی
فقر
جوادی درمانی
بیماری های عفونی و روانی
امراض جاده‌ای
عوامل اجتماعی
بیماری های اجتماعی و اقتصادی
دریافت
امراض ناشی از عوامل
بیماری های ناشی از عوامل
بیماری های کلیوی
بیماری های سیستم کوکسی
بیماری های سیستم عصبی
CPR Comes to Life

1530
First documented mouth-to-mouth resuscitation

1732
Fireplace bellows first used to force air back into the lungs

1891
Chest compressions first used in humans

1960
Mouth-to-mouth breathing combined with chest compressions to create modern CPR
The Three Fathers of Modern CPR

Jude, Kouwenhoven
Knickerbocker
September 1960

Heart-Lung Resuscitation

A AIRWAY

OBSTRUCTED

OPENED

B BREATHING

CIRCULATION

C CIRCULATION

National Academy of Sciences—National Research Council
CPR training has been recommended for healthcare professionals and for the lay public for more than 35 years.

The American Heart Association established guidelines for resuscitation in 1974 and has continued to revise CPR and ECC guidelines based on the latest science.

Updates to the American Heart Association guidelines were published in 1980, 1986, 1992, 2000, 2005, 17 oct 2010 and have been used as the basis of other major organizations’ resuscitation training.

The latest guidelines was published in 15 october 2015.
Top 5 Changes to CPR

1. Compression rate: 100-120
   A higher upper rate limit was added as CPR as quality decreases with >120 compressions per minute.

2. Maximize compression time
   Increased emphasis has been placed on minimizing the time without compressions to maximize coronary perfusion.

3. Deep, but not too deep
   An upper limit on the depth of chest compressions has been added. They should be between 5cm (2") and 6cm (2.5"). Deeper can be harmful.

4. Directive dispatchers
   Callers can receive increased guidance from emergency dispatchers regarding when to begin CPR. Dispatchers can also utilize social media applications to direct nearby assistance.

5. Audiovisual feedback
   Feedback to lay-providers may improve CPR. When available, audiovisual devices may be used to optimize CPR quality.

Read the complete 2015 AHA Guidelines at this link: https://eccguidelines.heart.org/index.php/circulation/cpr-ecc-guidelines-2/
Top 5 Changes to ACLS

1. **Vasopressin is OUT**
   In an effort to streamline and simplify cardiac arrest algorithms, vasopressin has been removed. Epinephrine & vasopressin have equivalent outcomes.

2. **Ultrasound for ETT confirmation**
   Ultrasound has been added as an additional method for confirming endotracheal tube placement.

3. **If you can't shock, give epi ASAP**
   Non-shockable rhythms (e.g. PEA) may have distinct pathophysiologic origins. It is reasonable to administer epinephrine ASAP to these non-shockable rhythms.

4. **Use maximum Oxygen during CPR**
   Use maximum FIO2 during CPR. This recommendation was strengthened, but remember to titrate your oxygen after ROSC.

5. **ECMO is a possible alternative**
   Venoarterial extracorporeal membrane oxygenation (ECMO) is a possible alternative to conventional CPR in patients with refractory cardiac arrest if the etiology is thought to be reversible.

Read the complete 2015 AHA Guidelines at this link: https://eccguidelines.heart.org/index.php/circulation/cpr-ecc-guidelines-2/
RATE: Chest Compressions at a Rate of 100 - 120/min

DEPTH: Compress to a Depth of 2in (5cm) - 2.4in (6cm)

RECOIL: Allow Full Recoil after each Compression

INTERRUPTIONS: Minimize Pauses in Compressions

2015 AHA CPR Guideline Update
Simplified Adult BLS Algorithm

Unresponsive
No breathing or no normal breathing (only gasping)

Activate emergency response

Get defibrillator

Start CPR

Check rhythm/shock if indicated
Repeat every 2 minutes

Push Hard • Push Fast
Adult Cardiac Arrest

Shout for Help/Activate Emergency Response

Start CPR
- Give oxygen
- Attach monitor/defibrillator

2 minutes

Check Rhythm

Return of Spontaneous Circulation (ROSC)

Post-Cardiac Arrest Care

Drug Therapy
- IV/IO access
- Epinephrine every 3-5 minutes
- Amiodarone for refractory VFA/VT

Consider Advanced Airway
- Quantitative waveform capnography

Treat Reversible Causes

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 PETCO₂ <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 PETCO₂ (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

Shock Energy
- Biphasic: Manufacturer recommendation (eg, initial dose of 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

© 2010 American Heart Association
Building Blocks of CPR

- Hands-Only CPR
- 30:2 CPR
- Rescue Breaths
- Team-Work
- Multirescuer Coordinated CPR
- Chest Compressions
- No Training
- Highly Trained
- Rescuer Proficiency
Other changes in CPR recommendations

at least 2 inches (5 cm) in adults and
about 2 inches (5 cm) in children and
about 1.5 inches (4 cm) in infants.

(At least 1/3AP diameter for children & infants)
Chain of survival

The links in the new AHA ECC Adult Chain of Survival are as follows:

1. Immediate recognition of cardiac arrest and activation of the emergency response system
2. Early CPR with an emphasis on chest compressions
3. Rapid defibrillation
4. Effective advanced life support
5. Integrated post-cardiac arrest care
Patient Survival
Resuscitation Success vs. Time

One person & Two Person Bag Valve Ventilation