American Heart Association's new guidelines to pediatric resuscitation

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The International Liaison Committee on Resuscitation, a consortium of many of the world's resuscitation council's representatives, and the American Heart Association (AHA) published the *Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care*. In 2002, reviews (both literature and expert) began to identify, review and evaluate evidence pertaining to resuscitation and draft or revise treatment recommendations, which resulted in the *2005 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations* published in November 2005. The biggest changes were to the delivery of basic life support (BLS) and an increased emphasis on the importance of chest compressions. The following is a brief summary of changes to the **health care provider** guidelines pertaining to pediatric resuscitation:

a) Newly born applies specifically to an infant at time of birth, Newborn/neonate refers to infants from birth to discharge from hospital. Infant refers to the time from discharge from hospital to one year of age, and child is from one year of age to onset of puberty.
b) BLS sequence should be varied according to the cause of arrest:
   - Call First (get Automated External Defibrillator [AED]) if the arrest was witnessed, therefore probable shockable rhythm arrest
   - Call Fast (start CPR x 5 cycles or about two minutes) in unwitnessed arrest, therefore probable asphyxia arrest (International Liaison Committee on Resuscitation, 2005).
c) If the health care provider is unable to adequately open the airway using a jaw thrust on the trauma victim with suspected C-spine injury, the head tilt-chin lift technique should be used (Marett, 2006).
d) When intubating, either cuffed or uncuffed tubes are acceptable for infants (except newborns) and children and cuffed may be preferred, although a caution is stated about pediatric intubations (Marett, 2006).
e) Lone health care provider compression-to-ventilation ratio is 30:2 in all age groups, except the newborn. Two-rescuer health care providers compression-to-ventilation ratio is 15:2 in all age groups, except the newborn, and they should rotate the compressor role every two minutes. Emphasis is placed on the importance of adequate compressions. Push hard, push fast, minimize interruptions in chest compressions; allow full recoil of the chest and do not hyperventilate (International Liaison Committee on Resuscitation, 2005).
f) Once an advanced airway is established, compress at a rate of 100/minute and ventilate, without pausing to give the breath, at a rate of eight to 10/minute (International Liaison Committee on Resuscitation, 2005).
g) The two-thumb technique of giving compressions is stressed in two-rescuer infant CPR, and either the one-hand or two-hand technique is acceptable in children.
h) AEDs that are able to recognize pediatric rhythms and attenuate shock doses are acceptable to be used on children ≥ one year of age. Standard AEDs are recommended for children ≥ eight years of age or 25 kilograms.
i) For shockable pulseless rhythms, a single shock (initially 2 J/Kg, 4 J/Kg for subsequent shocks) is delivered, immediately followed by CPR beginning with compressions, for five cycles or about two minutes before completing a pulse check (International Liaison Committee on Resuscitation, 2005).
j) De-emphasis of drug delivery via the ETT route and increased emphasis on IV/IO route.
k) High-dose epinephrine is no longer recommended (Marett, 2006).
l) The importance of adequate ventilations at a rate of eight to 10 breaths/minute is emphasized in profound shock and/or post-arrest states.
m) For children who remain comatose upon return of spontaneous circulation, considerations should be made to inducing hypothermia (32°C to 34° C) for 12 to 24 hours (Marett, 2006).

This is only a brief summary of pediatric recommendations, and further explanations to the evidence behind these recommendations as well as recommendations to the resuscitation of adults and newborns are addressed in the *2005 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations*. Copies of these guidelines can be found on the AHA website, **www.americanheart.org**, and in **Circulation** (2005), 112.

AHA and collaborating organizations will be developing and delivering comprehensive training material in the very near future, so stay tuned.

References

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