

Cardiac Arrest – General

This protocol should be followed for all pediatric cardiac arrests. Once arrest is confirmed emphasis should be on avoiding interruptions in CPR. When an ALS unit is present follow this general cardiac arrest protocol until a rhythm is determined. Once this is done, see the appropriate rhythm specific protocol. CPR should be done in accordance with current guidelines established by the American Heart Association.

Note: Primary cardiac arrest in the pediatric patient is rare. Most arrests are secondary to respiratory failure. Consider maintaining basic airway management techniques if effective. Advanced airway insertion attempts should be performed in such a manner as to keep CPR interruptions to a minimum. Medications given during arrest are best given IV or IO. Avoid endotracheal administration unless IV or IO access is unavailable.

Pre-Medical Control

MFR/EMT/SPECIALIST/PARAMEDIC

1. If CPR has not been initiated and arrest is not witnessed, perform 2 minutes of CPR and then apply AED (per **Electrical Therapy Procedure**).
2. If arrest is witnessed or if CPR is in progress upon arrival, complete CPR cycle, then apply AED.
3. Reassess patient, if pulseless continue CPR.
4. Establish a patent airway, maintaining C-Spine precaution if indicated, using appropriate airway adjuncts and high flow oxygen.
5. Initiate ALS response if available.

PARAMEDIC

1. If CPR has not been initiated and arrest is not witnessed by ALS personnel, perform 2 minutes of CPR and then apply cardiac monitor and treat rhythm according to appropriate protocol, or
2. If arrest is witnessed by ALS personnel or if CPR is in progress upon ALS arrival, apply cardiac monitor, complete CPR cycle and treat rhythm according to appropriate protocol.
3. Reassess patient, if pulseless continue CPR.
4. Measure patient using Broselow Pediatric Emergency Care tape.
5. Establish a patent airway, maintaining C-Spine precaution if indicated, using appropriate airway adjuncts and high flow oxygen. Monitor capnography if available.
6. Reassess ABC's as indicated by rhythm or patient condition change. Pulse checks should take no more than 10 seconds. If no pulse after 10 seconds, assume pulselessness.
7. After insertion of advanced airway, provide continuous CPR. Ventilations delivered at 8-10 per minute.

SPECIALIST/PARAMEDIC

8. Start an IV/IO NS KVO. IO may be first line choice. If IV is unsuccessful after 2 attempts start an IO line per **Vascular Access Procedure**.

Post-Medical Control

MFR/EMT/SPECIALIST/PARAMEDIC

9. Additional basic and/or advanced life support care as appropriate.
10. Consider termination of resuscitation per local MCA protocol.

Notes:

1. **Excellent CPR is a priority:**
 - a. 30 compressions: 2 ventilations in groups of 5 cycles over 2 minutes.
 - b. Push hard and fast (100/min) and allow full recoil of chest during compressions.
 - c. Change rescuer doing compressions every 2 minutes to avoid fatigue.
 - d. After establishment of airway, ventilation rate should be 8-10/minutes without pausing compressions to deliver ventilation.
 - e. Restart CPR immediately after any defibrillation attempts.
 - f. Keep pauses in CPR to a minimum by checking rhythm when rotating rescuer doing compressions and by avoiding pauses in CPR during airway management and other interventions.
2. If AED has been applied by BLS personnel, skip to appropriate place in protocol that incorporates previous care. ALS personnel should switch to manual defibrillator after initial AED shock or place AED in manual mode.
3. Biphasic devices may shock at lower energy levels following manufacturers' instructions. After the initial shock, subsequent shocks should be at the maximum energy level.
4. Ventilation with BVM may be as effective as endotracheal intubation in children. If unable to intubate on up to 3 attempts, ventilate with BVM, if possible. Any patient 3 years of age or younger shall be ventilated via BVM or other basic maneuver. If unable to ventilate, or unable to maintain patent airway, then intubation shall be attempted. Refer to Broselow Pediatric Emergency Care tape or similar tape for proper pediatric airway equipment guidelines.
5. Confirm and document tube placement with absence of gastric sounds and presence of bilateral breath sounds AND confirmatory device (i.e. wave-form ETCO₂ detector).
6. If possible, contact medical control prior to moving or transporting patient.
7. Continue resuscitation attempts and initiate transport, **unless** field termination is ordered by Medical Control.
8. Use impedance threshold device during CPR, if available. Device should be discontinued immediately upon return of spontaneous circulation.

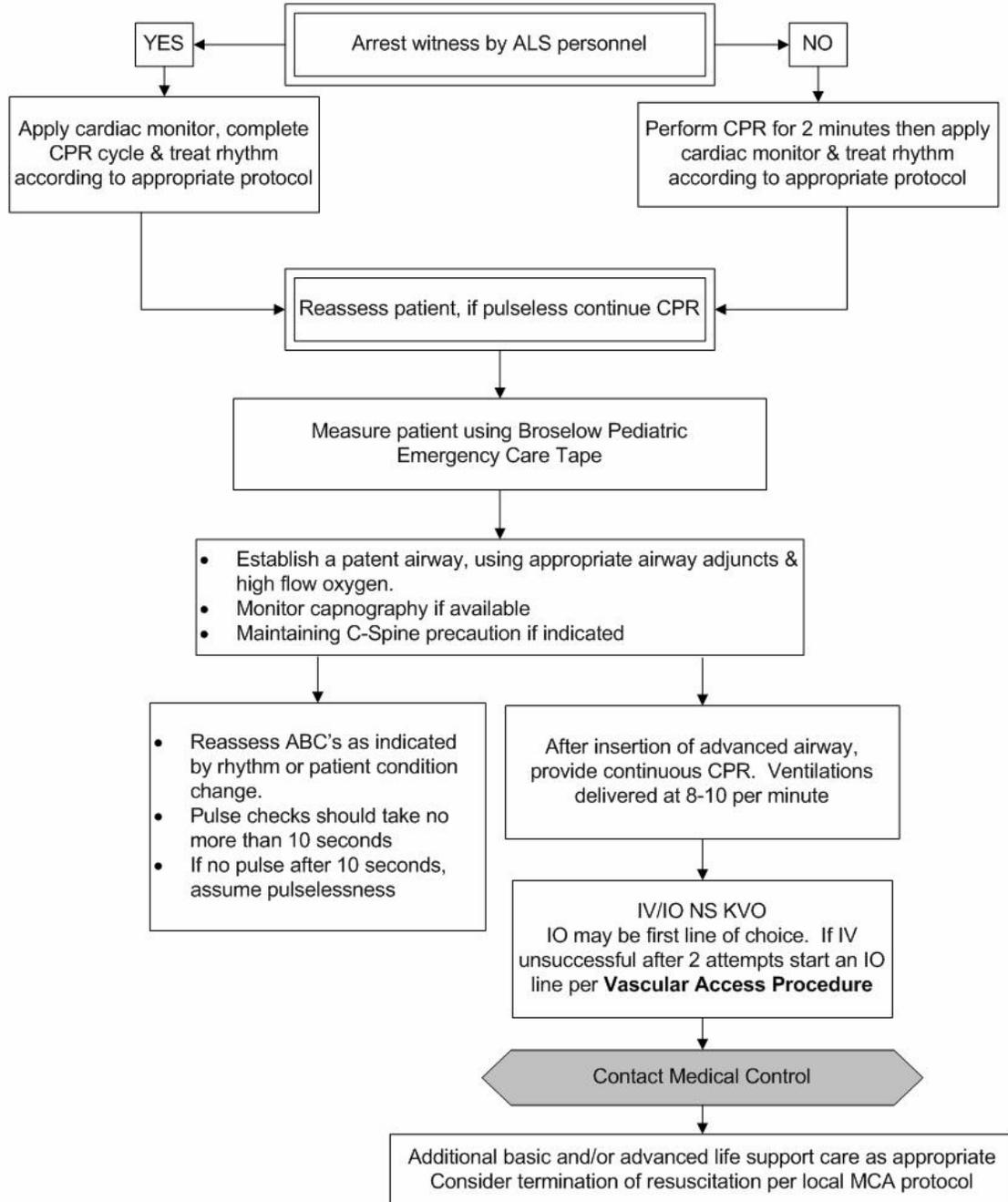
Michigan
Pediatric Cardiac Protocols
CARDIAC ARREST – GENERAL PROTOCOL

Date: July 31, 2009

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