Section: Pediatric Medical
Subject: CARDIAC ARREST – GENERAL PROTOCOL
Section #: 343.06
Issue Date: March 21, 2011
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Approved By:  Michael Lozano, Jr., M.D., HCFR Medical Director

1. Treatment of cardiac arrest will place particular emphasis on high quality CPR.

2. The following are important points to be followed for all patients in cardiac arrest:
    a. Continuous and effective chest compressions, an adequate airway, and proper ventilation and oxygenation are more important than administering medications and therefore take precedence over attempts at endotracheal intubation, initiating an IV line, or injecting medications.
    b. When resuscitation is indicated, the patient will be treated quickly and aggressively where found if possible.
        i. If it is subsequently determined that the patient's intention was for a DNRO to be in effect, efforts at resuscitation may be stopped in order that the natural course of disease may proceed.
    c. Pulse checks will be no more than 5 seconds, and be initiated within 10 seconds of arrival
    d. As long as the patient is pulseless (e.g. asystole, PEA, VF/pVT) 200 compressions (two minutes of CPR) will follow the administration of any drug or shock.
    e. Compressions / Ventilations:
        i. Compressions will be immediate and sufficient to produce a central pulse at a rate of at least 100 per minute.
            1. Any interruption in compressions must be extremely limited and for as brief a period as possible.
            2. Rotate personnel performing CPR every two minutes.
        ii. Given that maintaining continuous compressions is of paramount importance, the initial capture of the airway will be with a multi-lumen airway device.
            1. If there is return of spontaneous circulation (ROSC), the airway may be converted to an ETT by an approved method at the discretion of the paramedic in charge.
            2. If a previously intubated patient experiences cardiac arrest, the ETT may continue to be used.
        iii. The compression to ventilation ratio will be 15:2 for 2 rescuers. The ratio for single rescuers is 30:2. In either case, use the ratio until such time an advanced airway is established.
            1. Once an advanced airway is placed, compression will be continuous with ventilations performed at a rate of 8 to 10 per minute.
            2. Avoid excessive ventilations.
            3. Capnography shall be used in all cardiac arrest patients.
    f. Defibrillation:
        i. All initial defibrillation attempts for pediatric patients will be at 2 joules/kg
            1. All defibrillator models used by HCFR are biphasic.
            2. Subsequent doses are 4J/kg or higher (not to exceed 10 J/kg or standard adult dose)
        ii. Immediately after each defibrillation, perform 200 chest compressions (two minutes of CPR) prior to performing a pulse and rhythm check.
            1. Remember in all situations, chest compression will only be interrupted for the briefest amount of time possible.

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g. Intravenous Therapy:
    i. The primary route of medication administration will be intravenous, but intraosseous will also be acceptable.
        1. All doses listed as IV can also be given IO.
    ii. The largest bore catheter possible *shall* be used.
    iii. The external jugular vein may be considered acceptable for use in adolescents suffering cardiac arrest.
    iv. The internal jugular and subclavian veins are not authorized to be accessed by HCFR personnel.
    v. When using an extremity vein, medication administration should be followed by a 20 mL bolus of normal saline and immediate elevation of the extremity to facilitate flow into the into the central circulation.
    vi. If the patient is hypoglycemic (≤ 50 mg/dL), follow the HCFR PEDIATRIC HYPOGLYCEMIA protocol.
    vii. If narcotic overdose is suspected, give naloxone 0.1 mg/kg IV/IO.
h. Post Intubation Care:
    i. End-tidal CO_2 detection will be used and documented in all intubated patients or patients with an advanced airway.
    ii. Capnography will be used and documented when available
        1. If the $ETCO_2$ <10 mmHg attempt to improve CPR quality.
    iii. An NG tube shall be inserted in intubated pediatric patients to maximize tidal volume.
    iv. Airway protection:
        1. When using manual CPR, minimize the possibility of airway device dislodgement by securing the patient to a long spine board with head immobilization devices.
i. Return of Spontaneous Circulation (ROSC):
    i. See HCFR ROSC protocol.