Section: Adult Medical
Subject: CARDIAC ARREST – GENERAL CARE
Section #: 340.05
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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. 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. See HCFR END OF LIFE protocol.
    b. 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 placing an advanced airway, initiating an IV/IO line, or administering medications.
    c. Pulse checks will take 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) 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, with rate/depth in accordance with current American Heart Association guidelines and HCFR COMPRESSIONS – VENTILATIONS GUIDE.
            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.
            3. If available and indicated, an automated CPR device may be used.
        ii. Given that maintaining continuous compressions is of paramount importance, the initial capture of the airway will be with a supra-glottic 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 per American Heart Association guidelines
            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 adult patients will be at 200 joules
            1. Subsequent defibrillation attempts may be increased to 300 joules.
            2. Upon recognition of VF/pVT, the goal is to defibrillate in <60 seconds
            3. All defibrillator models used by HCFR are biphasic.
            4. If the patient remains in VF/VT after an antiarrhythmic has been administered, the defibrillation energy may be increased to 360 joules.
        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 patients 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 narcotic overdose is suspected, give naloxone 4.0 mg IV/IO.
   vii. The administration of dextrose during resuscitation in adult patients with cardiac arrest was found to be associated with significantly decreased chances of survival and a decreased chance of good neurological outcome. Therefore, the focus should be on high quality CPR.[1] Only treat hypoglycemia in the event of ROSC.

h. Post Intubation Care:
   i. End-tidal CO_2 detection will be used and documented in all patients which have an advanced airway in place.
   ii. Capnography will be used and documented when available
      1. If the $ETCO_2$ <10 mmHg attempt to improve CPR quality.
   iii. Airway protection:
      1. When an automated CPR device is in use, it may be secured to a long spine board using approved lashing materials.
      2. 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.

[1] Peng, Teng J., et al. "The Administration of Dextrose during In-Hospital Cardiac Arrest is Associated with Increased Mortality and Neurological Morbidity." Critical Care, 2015.