Section: ALS Protocols
Subject: RAPID SEQUENCE INDUCTION (RSI)
Section #: 345.19
Issue Date: March 21, 2011
Revision Date: December 1, 2017
Approved By: Michael Lozano, Jr., M.D., HCFR Medical Director

1. All patients undergoing RSI by HCFR personnel must have the Fast Patches applied and be monitored in "Paddles" mode before the induction medications are pushed.

2. Indications:
   a. All medical and trauma patients who, according to the Charge Medic's judgment, require an airway to be established are to be intubated following the current HCFR AIRWAY protocol.
   b. If the qualified paramedic cannot accomplish intubation through conventional techniques and there are no contraindications for paralytic administration, then RSI drugs may be used.
   c. RSI will only be administered for patients older than 5 years of age unless authorization is concurrently received from Medic-1.

3. Preparation:
   a. Basic ALS Treatments.
   b. Pre-oxygenate with high flow oxygen via BVM or NRBM.
   c. Confirm that you can effectively ventilate the patient with BVM.
   d. If orders are received to RSI a patient five years of age or younger (< 5 yrs.) who will be given succinylcholine:
      i. Pre-treat with atropine 0.02 mg/kg IV (min dose = 0.1 mg, max dose = 0.5 mg).

4. Initial Sedation:
   a. Etomidate (preferred for patients with normal to high BP)
      i. 0.3 mg/kg IV/IO.

   -OR-

   b. Ketamine (preferred for patients with severe bronchospasm, septic shock, or hypotension; can also be used in patients with MAP < 120 mmHg)
      i. 2 mg/kg IV/IO.

5. Initial Paralysis:
   a. To minimize the chance of aspiration, apply cricoid pressure prior to administration, and maintain it until the airway is secured.
   b. Succinylcholine:
      i. 1.5 mg/kg IV/IO over 30 seconds.
      ii. If no response to initial dose after 60 seconds, repeat succinylcholine 1.0 mg/kg IV over 30 seconds.
      iii. After a second dose of succinylcholine:
         1. In adults, be *prepared* to give atropine 0.5 mg IV/IO for bradycardia
         2. In pediatric patients, *give* atropine 0.02 mg/kg IV (min dose = 0.1 mg, max dose = 1.0 mg).
   c. Rocuronium: (in case succinylcholine is unavailable or contraindicated)
      i. 1.2 mg/kg IV/IO

6. Intubation per HCFR AIRWAY PROTOCOL:
   a. Video laryngoscope (when available) will be used on all difficult airways, or after two missed attempts.
   b. For bradycardia during intubation attempts:
      i. Stop the intubation and ventilate using a BVM and high flow oxygen.

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ii. If the patient remains bradycardic, give atropine:
1. Adult dose = 0.5 mg IV/IO.
2. Pediatric dose = 0.02 mg/kg IV/IO (min dose = 0.1 mg, max dose = 0.5 mg)

c. If intubation is unsuccessful after three (3) attempts, a rescue airway device will be placed.
d. Cricothyrotomy procedures will ONLY be performed for the "can't intubate/can't ventilate" scenario, and will follow the appropriate HCFR protocol.
e. Once intubation is successful, follow the current HCFR protocol for confirming tube placement and securing the endotracheal tube.

7. Post-procedural Maintenance:
   a. Sedation with: (Always do this)
      i. Midazolam: (for normal to high BP)
         1. In adults give 2.5 mg IV/IO over 30 to 60 seconds to start, and then repeat q5 minutes PRN for sedation.
         2. In pediatrics, give 0.05 mg/kg IV/IO over 30 to 60 seconds to start, and then repeat q5 minutes PRN for sedation.

         -OR-
      ii. Ketamine: (for borderline to low BP)
         1. 1.0 mg/kg IV//IO over 30 to 60 seconds, and then 1.0 mg/kg IV//IO q5 minutes PRN for sedation.
   b. Pain control in obvious injuries:
      i. Fentanyl: (if normal to high BP)
         1. In adults, give 100 mcg IV/IO over 30 to 60 seconds to start, and then 50 mcg IV/IO over 30 to 60 seconds q5 minutes PRN for pain.
         2. In pediatrics, give 1 mcg/kg IV/IO over 30 to 60 seconds to start, and then 0.5 mcg/kg IV/IO over 30 to 60 seconds q5 minutes PRN for pain.
   c. Paralysis with either: (at charge medic discretion when clinically indicated, and only after sedation)
      i. Vecuronium: 0.1 mg/kg slow IV/IO over 30 to 60 seconds OR
      ii. Rocuronium: 0.6 mg/kg IV/IO over 30 to 60 seconds

8. QA points:
   a. If intubation was initially achieved without RSI (i.e. in cardiac arrest), but the patient is now waking up, you can proceed directly to the Maintenance section of the protocol.
   b. Initial steps in RSI shall always include sedation and paralysis
   c. For maintenance, follow up paralytics are not required and should be considered when unable to achieve adequate sedation.
   d. Bradycardia can sometimes occur following a second dose of succinylcholine.
      i. The incidence and severity of bradycardia after succinylcholine is higher in children 5 and under, so that is why they always get a pre-treatment dose of atropine.
      ii. It may happen in adults, but not frequently, so that is why you monitor adults for the development of bradycardia before giving atropine.

9. Documentation for RSI will include:
   a. Who performed the procedure
   b. Indications for intubation
   c. Tube size

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d. Method of pre-oxygenation used and initial SpO_2
e. Confirmation of tube placement
f. Number of attempts and by whom
g. Depth of insertion and method of securing the ET tube
h. Any use of cricoid pressure (Sellick Maneuver)
i. Method of ventilating the patient after intubation
j. Cardiac rhythm strips
k. Note the method of tube placement confirmation after each time the patient is moved
l. Status of the tube at the receiving facility, breathe sounds, and SpO_2
m. $ETCO_2$ readings

10. Mandatory Notification requirements:
    a. Email the incident number for any of the below instances to assigned Quality Assurance Officer
        i. RSI of any patient < 10 years of age
        ii. Do not email PHI