**This protocol is ONLY for MCCP/MCCN'S who have been specifically trained to perform this skill and have approval from the WVOEMS State Medical Director and corresponding Squad Medical Director.**

Drug assisted intubation (DAI) should only be performed if an immediate need for an airway is indicated, and benefits outweigh potential risks. This guideline is for patients that require intubation but are awake, continue to have respiratory effort, and intact cough/gag reflex. Whenever possible, **DAI should be performed prior to transport**. This guideline is not intended for patients in cardiac arrest because they should be intubated without drugs per **Airway Management Protocol 4901**.

1) General Information:
   a) Two (2) paramedics must be present, one (1) of which is an MCCP/MCCN.
   b) Patient must be on a cardiac monitor and pulse oximeter. Maintain patient on high flow supplemental oxygen either by mask, CPAP/BiLevel or bag-valve-mask. Confirm patency or initiate two (2) IVs, if possible, preferably large bore. Have suction hooked up, turned on, and within reach. Have bag-valve-mask attached to oxygen regulator and immediately available.
   c) Perform airway assessment and evaluate for ability to ventilate with a BVM and for potential difficult airway (LEMON, HEAVEN, etc.)
      i) If a difficult airway is identified have:
         (1) Back up airway devices within reach
         (2) Percutaneous cricothyrotomy equipment/device within reach, landmarks are identified and marked on patient
         (3) Most qualified provider on scene perform intubation
   d) Position patient in sniffing position with external auditory meatus aligned with sternal notch unless contraindicated (spinal trauma). pre-oxygenate for 3 minutes using 100% oxygen (NRB mask, CPAP etc.). Assure that you can assist ventilations with a bag-valve-mask prior to proceeding. **DO NOT** BAG VENTILATE the patient unless necessary—this only causes increased gastric distention and the increased risk of aspiration.
      i) Attempt to raise SpO2 > 92% before proceeding.
2) **Considered Indications:** Patients ≥ 12 years old whose airway cannot be controlled by any other means:
   a) Inability to maintain airway patency.
   b) Actual or potential airway impairment or aspiration risk (trauma, stroke, AMS).
   c) Actual/impending ventilatory failure (pulmonary edema, COPD, asthma, anaphylaxis; shallow/labored effort; respiratory failure-SpO2 ≤ 90%; ETCO2 ≥ 60 mmHg.)
   d) Increased work of breathing (retractions, use of accessory muscles) resulting in severe fatigue.
   e) GCS 8 or less due to an acute condition unlikely to be self-limited (examples of Self-limited conditions: seizures, hypoglycemia, postictal state, certain drug overdoses).
   f) Inability to ventilate/oxygenate adequately after inserting an NPA and or via BVM.

g) Need for increased inspiratory or positive end expiratory pressures (PEEP) to maintain gas exchange.
h) Need for sedation to control ventilations.

3) Contraindications/restrictions to use of sedatives: Coma with absent airway reflexes or known hypersensitivity/allergy.

The EMS provider must have a backup/rescue airway plan (Supraglottic device *and* Percutaneous Cricothyrotomy, etc.), and immediately accessible for all patients under consideration for DAI prior to proceeding. Verbalize plan to team to improve success of plan utilization should it be necessary:

C. **DAI Procedure:**

1) Resuscitate patient prior to medication therapy
   a) Administer IVF boluses as appropriate
   b) Administer 20 micrograms of diluted epinephrine as a push dose pressor for shock patients (including shock index ≥ 0.9).
      i) Draw up 1 mL of cardiac epinephrine (1:10,000) and add it to 9 mL of Normal saline for a final concentration of 10 mcg/mL. Administer 2 mL to equal 20 micrograms of epinephrine.
2) Consider pain management:
   a) **Fentanyl (Sublimaze®)**: 1 microgram/kg IV/IO. Withhold if hypotensive

3) Sedation/Induction:
   a) . **Etomidate* (Amidate®)** (avoid in septic/adrenal suppression patients if possible):0.3mg/kg IV/IO (consider 0.2 mg/kg IV/IO for shock patients- shock index greater than or equal to 0.9) ***OR***
   b) **Ketamine* (Ketalar®)** (**preferred for asthma/COPD**/bronchoconstricted patients): 2 mg/kg IV/IO (consider 0.5-1 mg/kg IV/IO for shock patients-shock index greater than or equal to 0.9)
   ~~c)~~ Ativan (Lorazepam ®) 2 mg Slow IV/IO. Do not use in hypotensive patients or shock index greater than or equal to 0.9.

4) Apply "BURP"- backwards, upwards, rightward (patients right) cricoid pressure.
   (a) If not contraindicated, administer **Succinylcholine (Anectine®)**: 2 mg/kg IV push. When paralysis is achieved and muscle fasciculation have stopped (in about 30 - 45 seconds), use a gum elastic bougie as a stylet, orally intubate, inflate cuff, and confirm tube placement with bilateral breath sounds, appropriate end-tidal carbon dioxide waveform, etc.

1. ****Note:** Contraindications include personal or familial history of Malignant hyperthermia, high potassium (K > 5.5, peaked T-waves, rhabdomyolysis), skeletal muscle myopathies (Duchanne muscular dystrophy, myasthenia gravis, etc.), CAN PRECIPITATE HYPERKALEMIA IN BURNS, CRUSH INJURIES, DENERVATION OR SEVERE INFECTION > 5 days old), pseudocholinesterase deficiency, high intraocular pressure.**

6. Perform Intubation. Maintain O2 via NC during intubation
7. If unable to intubate, consider suctioning, monitor oxygen saturations and use BVM to ventilate between attempts: consider jaw thrust, changing operators, using a different blade/video blade, etc.

Unless contraindicated, Succinylcholine should already be drawn up and follow Etomidate administration.

# DRUG ASSISTED INTUBATION (DAI)

Use rescue airway plan (Supraglottic device, video laryngoscopy {required}, needle cricothyrotomy or percutaneous cricothyrotomy, etc.) and/or bag-valve-mask if unable to intubate after three (3) attempts.

8. Once intubation is confirmed,
    1. Sedation:
        i. **Ketamine (Ketalac®):** 1 mg/kg IV/IO may repeat in 5 minutes if needed **OR**
        ii. **Midazolam (Versed®)**: 2 mg slow push IV/IO may repeat every 5 minutes for a max of 0.1 mg/kg IV/IO **(reduce dose and use caution if RISK of hypotension, avoid if hypotension is present) OR**
        iii. **Ativan (Lorazepam ®):** 2 mg slow push IV/IO, may repeat every 5 minutes for a max dose of 0.1 mg/kg. (Reduce dose and use caution if risk of hypotension, avoid if hypotension is present)
    2. Analgesia:
        i. **Fentanyl (Sublimaze®)**: 1 microgram/kg slow IV/IO push, may repeat for a max of 3 micrograms/kg ***OR***
        ii. **Morphine**: 2 mg IV/IO every 5 minutes as needed but not to exceed 0.1 mg/kg slow IV/IO push **(avoid if risk of hypotension {shock index ≥0.9} or patient is hypotensive)**
    3. Long-term paralytic (only after endotracheal tube placement has been verified and **only if necessary**):

        i**. Vecuronium (Norcuron®)**: 0.1 mg/kg IV/IO (only if necessary, adequate sedation preferred goal RASS -3)

***-OR-***

**Rocuronium (Zemuron®)**: 1.0 mg/kg IV/IO *(OPTIONAL MEDICATION)*
(only if necessary, adequate sedation preferred goal RASS -3)

D. **Contact Medical Command** once enroute to hospital with patient update for all patients requiring intubation.

***Note:*** *An agent for long term paralysis MUST never be given until endotracheal tube placement is fully confirmed.*

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| 10. All patients given a long-term paralytic agent ***must*** also periodically be given sedation while they remain paralyzed. |  |

# DRUG ASSISTED INTUBATION

## GUIDELINES

- A Squad Medical Director (SMD) must apply in writing to the WVOEMS State Medical Director for a particular squad to be considered for the RSI program. A Memorandum of Understanding (MOU) shall be established between the Squad Director, Squad Medical Director, and WVOEMS State Medical Director.
- Each individual Squad Medical Director will choose candidates for the program.
- The Squad Medical Director will be responsible for establishing initial and continuing education, performance improvement, etc.
- Continuing education by the SMD will be held Quarterly. The Squad Medical Director should directly observe the MCCP/MCCN perform an intubation and RSI sequence once a year (this can be in a clinical or classroom setting).
- The CCT Coordinator should directly observe the MCCP/MCCN perform an intubation and DAI/DSI once a quarter.
- The DAI protocol is for adults only at this time (12 years old and up).
- The Squad must agree to purchase, store appropriately, and replace appropriately the necessary medications.
- Squads entering the program shall be required to have video assisted laryngoscopy equipment.
- Squads participating in this program shall be required to have wave form capnography available.
- Every DAI intubation is to be enrolled in the squad's quality assurance program.

- A minimum of two (2) Paramedics is required in the patient compartment throughout transport on any DAI call.
- At the 12 month point in the program, the SMD must reapply with the WVOEMS State Medical Director to continue the program.

# DRUG ASSISTED INTUBATION (DAI) - GUIDELINES

- Candidates shall have at least three (1) years experience as an

  active and certified WVOEMS MCCP/MCCN EMS provider.

- All candidates shall be required to perform a minimum of ten (10) intubations at a WVOEMS accredited training facility utilizing simulation. These intubations must be directly observed by a WVOEMS approved CCT Coordinator and/or the Squad Medical Director. These intubations may also be obtained in an operating room setting, if available.