State of Colorado

Colorado Department of Public Health and Environment

Emergency Medical and Trauma Services

Colorado EMS Waiver Protocols

Version 2013.1

Colorado Department of Public Health and Environment

Pediatric Rapid Sequence Intubation (RSI) (≤12 y.o.)

Prepare and Test Equipment

USE A LENGTH-BASED SYSTEM FOR CORRECT SIZING

BVM with High Flow O2
Suction Tested and On
Laryngoscope Tested
ETT with Stylet at Hand with Balloon Tested
Airway Adjuncts (i.e Bougie) Available
Tube Stabilizer Ready
Rescue Device Immediately Available
Cricothyrotomy Equipment Immediately Available

Prepare / Draw Up / Label Medications

USE A LENGTH-BASED SYSTEM FOR CORRECT DOSING

* RSRL - Reflex Sympathetic Response to Laryngoscopy

? Meets Indications for RSI ?

YES

E	Pre-Oxygenate 100% O2 (3-5 min) or 8 vital capacity breaths with BVM Minimize gastric distention by minimizing BVM ventilation
E-IV	Ensure adequate IV
E	Apply Monitors (Continuous ECG / HR / BP / SaO2 / ETCO2)
P	Prepare / Test Equipment
P	Prepare / Draw Up / Label Medications
E	*Obtain Complete Set of Vital Signs: HR, RR, BP, SaO2, ETCO2* *(Pre-RSI Values, Procedure Low and High Values, Post-RSI Values)*

? Evidence of Increased ICP (Head Injury or Stroke) ?

YES → P Consider for Mitigation of RSRL* — Vecuronium 1.0 mg IV; Rocuronium .06 - 0.12 mg/kg IV)

No

? Evidence of Penetrating Eye Injury ?

YES → P Consider Defasiculating Dose — Vecuronium 1.0 mg IV; Rocuronium .06 - 0.1 mg/kg IV)

No

P	Consider Atropine (0.01 - 0.02 mg / kg IV)
P	*Administer Induction Agent* *Etomidate (0.2 - 0.6 mg / kg)* | *Midazolam (0.03 - 0.1 mg/kg)* | *Ketamine (1-2 mg/kg)*
P	*Administer Paralytic Agent* Succinylcholine (1.0 - 2.0 mg / kg) | Rocuronium (0.6 - 1.2 mg / kg)
P	*Perform Endotracheal Intubation*
P	*Verify Endotracheal Tube Position / Document Continuous Capnography*
P	*Secure Endotracheal Tube*
E	Restrain Patient to Prevent Unplanned Extubation Prevent Excessive Movement of Head (Consider Backboard, C-Collar, Head Bed)
P	Post Paralysis Sedation Midazolam 0.03 - 0.1 mg/kg | Diazepam 0.2 mg / kg Fentanyl 1-3 ug/kg | Morphine Sulfate 0.2 mg/kg
P	Consider Maintenance Paralytic Vecuronium (0.1 - 0.15 mg / kg)
P	Consider Placing Nasogastric / Orogastric Tube
P	Notify Receiving Facility or Contact Medical Control
P	*Complete Colorado EMS RSI Case Report Form*
MC	*Case Review by Medical Director and Submit to EMTS*

Key Performance Indicators

Meets Indications for RSI

Obtain Complete Set of Vital Signs:
HR, RR, BP, SaO2, ETCO2
(Pre-RSI Values, Procedure Low and High Values, Post-RSI Values)

Administer Induction Agent (Length-Based Dosing)

Administer Paralytic Agent (Length-Based Dosing)

Perform Endotracheal Intubation

Verify Endotracheal Tube Position and Document Contiunuous Capnography

Secure Endotracheal Tube

Administer Post Paralysis Sedation (Length-Based Dosing)

Complete Colorado EMS RSI Case Report Form

Case Review by Medical Director and Submit to EMTS

Legend

E	Allowed at EMT Level or Above
E-IV	Allowed at EMT-IV Level or Above
P	Allowed at Paramedic Level Only
MC	Medical Control

EMPAC
Arthur Kanowitz MD, EMTS Medical Director
January, 2010 (Revised 2/2012. 2/2013)

General

1. RSI is meant to facilitate orotracheal intubation of patients requiring immediate control of their airway when other methods of airway control are either inappropriate or less advantageous.
2. Considerations for RSI include any patient that suffers a threatened airway or requires ventilatory assistance, OR is at imminent risk of suffering airway or ventilatory compromise.
3. RSI is the tool of choice (when no contraindications exist) for airway management of non-obtunded patients with a gag reflex and patients suffering from trismus.
4. If the patient is longer than the limit of the length-based dosing tape, use the Adult RSI Protocol

Indications for Intubation

1. Arrest or Impending Arrest
2. Inability to Protect Airway
3. Potential for Airway Compromise

Indications for RSI

Indication for intubation exists and one or more of the following:

1. Intact gag reflex
2. Trismus / Clenched Jaw

Contraindications

1. Known hypersensitivity to any medications used for RSI
2. Patients considered "difficult airway" candidates
3. Patients that cannot be adequately ventilated with BVM
4. Patients that can be orally intubated without the use of RSI
5. Hyperkalemia: Succinylcholine should be administered with GREAT CAUTION to patients with hyperkalemia because in these patients succinylcholine may induce serious cardiac arrhythmias or cardiac arrest. (See Note #3)

Note: If you are planning on administering RSI to a combative patient,
check a blood sugar to ensure that the combativeness is not due to hypoglycemia.

Special Notes

1. Once a patient has been administered a paralytic agent, they will no longer be able to ventilate on their own, nor will they be able to protect their airway. Therefore, you must be confident that you can either intubate or ventilate the patient by other means, prior to administering any paralytic agents. Perform a rapid pre-intubation evaluation using "LEMONS" to determine the likelihood of a "difficult intubation".

L = "Look"	Look at body habitus, neck and clinical situation.
E = "Evaluate"	The 3:3:2 rules does not apply to pediatric cases
M = "Mallampatti"	Classify the oropharynx via the Mallampati Classification.
O = "Obstruction"	Check potential for airway obstruction by blood, teeth, edema, fractures or foreign bodies.
N = "Neck Mobility"	Determine ability to properly position the head and neck
S = "Sats"	Check ability to oxygenated blood prior to the procedure

2. Continuous monitoring of HR, BP, SaO_2 and $ETCO_2$ is required during every RSI

3. GREAT CAUTION should be observed if succinylcholine is administered to patients during the acute phase of injury following major burns, multiple trauma, extensive denervation of skeletal muscle, or upper motor neuron injury. The risk of hyperkalemia in these patients increases over time and usually peaks at 7 to 10 days after the injury. The risk is dependent on the extent and location of the injury. The precise time of onset and the duration of the risk period are undetermined. Patients with chronic abdominal infection, subarachnoid hemorrhage, or conditions causing degeneration of central and peripheral nervous systems should receive succinylcholine with **GREAT CAUTION** because of the potential for developing severe hyperkalemia. If a patient develops sudden cardiac arrest after administration of succinylcholine, hyperkalemic arrest should be considered and treatment with administration of intravenous calcium, bicarbonate, glucose with insulin, and hyperventilation should be considered.

4. Secure the endotracheal tube well. Prevent excessive movement of the head. Consider use of a back board, cervical collar, head blocks and patient restraints)both physical and chemical)

5. Consider use of a transport ventilator, if available.

6. A Colorado EMS RSI Case Report must be submitted to the CDPHE - EMTS Section within 7 days of performing the procedure.