H. ADULT RAPID SEQUENCE INTUBATION PROTOCOL PACKAGE

1. Rapid Sequence Intubation (RSI) Pilot Program

a) Indications

(1) Inability to tolerate laryngoscopy, and:
  (a) GCS less than or equal to 8 with respiratory rate less than or equal to 8 or greater than or equal to 35 or
  (b) GCS less than or equal to 8 with oxygen saturation less than or equal to 90% on non-rebreather face mask

(2)  On-line medical direction for RSI may be requested in the following situations:
  (a) GCS less than or equal to 8 with clenched jaw, inability to adequately suction airway, and without above respiratory parameters
  (b) Respiratory extremis with contraindications to nasotracheal intubation (respiratory rate greater than or equal to 35 with air hunger, use of accessory muscles, and oxygen saturation less than or equal to 90% on non-rebreather face mask)

b) Contraindications

(1) Conditions that may cause hyperkalemia:
  (a) Burns greater than 24 hours old
  (b) Spinal cord injury greater than 24 hours old
  (c) Known neuromuscular disease (Guillain-Barré Syndrome, myasthenia gravis, amyotrophic lateral sclerosis, muscular dystrophy)
  (d) Chronic renal failure on hemodialysis/Presence of hemodialysis access
(2) Patients who have not yet reached their 15th birthday
(3) History of malignant hyperthermia

c) Preparation

(1) Pre-oxygenate with 90–100% oxygen.
(2) Monitor oxygen saturation with pulse oximetry and EKG.
(3) Ensure functioning IV and fluid therapy as per protocol.
(4) Evaluate for difficult airway.
(5) Perform focused RSI neurologic exam.
(6) Prepare equipment
  (a) Intubation kit
  (b) Bag-Valve-Mask (BVM)
  (c) Suction
  (d) RSI kit
    (i) Prepare medications
    (ii) Alternative airway device, Cricothyroidotomy equipment
  (e) Capnograph

d) RSI Procedure

(1) Sedation

Adequate sedation must be provided to prevent awareness during paralysis from neuromuscular blockade.

Etomidate, if available, will be the preferred agent for patients who are aware of their surroundings and do not have hypotension or possible hypovolemia.

Dose: Administer 0.3 mg/kg IVP over 30–60 seconds. If the patient is hypotensive or the provider suspects hypovolemia, the initial dose will be 0.15 mg/kg IVP over 30–60 seconds. May repeat 0.15 mg/kg IVP in 2–3 minutes if inadequate sedation.

OR

Ketamine may be used if etomidate is unavailable, and may be preferred for patients who have hypotension or possible hypovolemia.

Dose: Administer 2 mg/kg IVP over 60 seconds.

OR

Midazolam should be considered for patients with isolated head injury and elevated blood pressure, especially with possible seizure activity. Midazolam should not be used for patients with hypotension, and should be avoided with possible hypovolemia.

Dose: Administer 0.05 mg/kg IVP over 1–2 minutes.
Maximum single dose is 5 mg.

Only one sedative agent should be administered prior to succinylcholine unless otherwise directed by medical consultation.

(2) For patients with head injury or suspected increased intracranial pressure, administer lidocaine 1 mg/kg (40–100 mg) IVP over 1–2 minutes.

(3) In-line cervical spine stabilization by second caregiver (in trauma setting)

(4) Apply cricoid pressure (by third caregiver).

(5) Succinylcholine: Administer 1.5 mg/kg rapid IVP. Maximum single dose is 200 mg.

(6) Intubate trachea and verify ET placement.

(7) If inadequate relaxation after 2–3 minutes, administer atropine 1 mg to avoid bradycardic response and repeat succinylcholine 1 mg/kg IVP. Maximum single dose is 200 mg.

e) Successful Endotracheal Tube Placement

(1) Release cricoid pressure and secure ET.

(2) Ventilate to $EtCO_2$ of 30–32 mmHg.

(3) If significant resistance to ventilation occurs as succinylcholine wears off (4–5 minutes), refer to Ventilatory Difficulty Secondary to Bucking Protocol.

f) Unsuccessful Endotracheal Tube Placement

(1) Maintain cricoid pressure and resume BVM ventilation for 30 seconds.

(2) If unable to ventilate, see “If Unable to Ventilate” below.

(3) Reattempt oral ET intubation.

(4) If unsuccessful, resume BVM ventilation for 30 seconds.

(5) Insert an approved alternative airway device (refer to Laryngeal Mask Airway Optional Supplemental Program or Laryngeal Tube Airway Device procedure).
(6) Attach capnograph and ventilate to desired $EtCO_2$ level.
(7) If significant resistance to ventilation occurs as succinylcholine wears off (4–5 minutes), or if patient exhibits difficulty in tolerating an approved alternative airway device as succinylcholine wears off, refer to Ventilatory Difficulty Secondary to Bucking Protocol.

g) If Unable to Ventilate

Insert an approved alternative airway device (refer to Alternative Airway Device Protocol).

h) If still unable to ventilate using an approved alternative airway device, remove and perform cricothyroidotomy (refer to Cricothyroidotomy Protocol).

2. Ventilatory Difficulty Secondary to Bucking or Combativeness in Intubated Patients

a) Indication

Patients successfully intubated with an endotracheal tube, an approved alternative airway device, or cricothyroidotomy, for whom the ability to provide manual or mechanical ventilation is impaired secondary to bucking or combativeness

b) Contraindication

Unsecured airway

c) Procedure

(1) **Etomidate**, if available, will be the preferred agent for patients who are aware of their surroundings and do not have hypotension or possible hypovolemia.

Dose: Administer 0.3 mg/kg IVP over 30–60 seconds. If the patient is hypotensive or the provider suspects hypovolemia, the initial dose will be 0.15 mg/kg IVP over 30–60 seconds.

May repeat 0.15 mg/kg IVP every 15 minutes to a total of three doses.

OR

Ketamine may be used if etomidate is unavailable, and may be preferred for patients who have hypotension or possible hypovolemia, or if ventilatory difficulty is thought to be the result of pain response.

Dose: Administer 2 mg/kg IVP over 60 seconds. May repeat 1 mg/kg for IVP every 10–15 minutes to a total of three doses as necessary.


Additional doses require medical consultation.

OR

Midazolam should be considered for patients with isolated head injury and elevated blood pressure, especially with possible seizure activity. Midazolam should not be used for patients with hypotension, and should be avoided with possible hypovolemia.

Dose: Administer 0.05 mg/kg IVP over 1–2 minutes, titrated to abate bucking and relax ventilation while maintaining systolic BP greater than 90 mmHg. Maximum single dose is 5 mg.


Additional doses require medical consultation.

(2) If ventilatory difficulty is thought to be the result of pain response,
Ketamine: Dose 2 mg/kg IVP over 60 seconds. May repeat 1 mg/kg IVP every 10–15 minutes as necessary to a total of three doses as necessary.


Additional doses require medical consultation.

OR

Opioid may be used per Pain Management Protocol in addition to, or instead of, midazolam, ketamine, or etomidate. Titrate to abate bucking and relax ventilation while maintaining systolic BP greater than 90 mmHg.

(3) If significant resistance to ventilation continues, the paramedic may administer:
(a) Vecuronium 0.05 mg/kg IVP. Maximum single dose is 10 mg.

PRE-SEDATION MUST BE PROVIDED WHEN VECURONIUM IS ADMINISTERED TO A PATIENT WHO IS EITHER RESPONSIVE TO STIMULUS, OR WHO MAY BECOME RESPONSIVE TO STIMULUS DURING NEUROMUSCULAR BLOCKADE. USE OF VECURONIUM REQUIRES FUNCTIONING $EtCO_2$ MONITORING. VECURONIUM MAY ONLY BE USED IF CONTINUOUS, BREATH TO BREATH $ETCO_2$ MONITORING CAN BE PROVIDED.

(b) Dose may be repeated in 4–6 minutes if necessary.
(c) **Maintenance of amnesia**
Follow above dosing of either **etomidate** or **ketamine** with required repeat dosing every 10–15 minutes.

(4) Continue to monitor oxygen saturation and ventilate to desired $EtCO_2$.
(5) 
Obtain on-line medical direction if further problems present.

3. Protocol for Cricothyroidotomy (Surgical and Needle)

a) Indications

(1) Inability to ventilate despite having tried BVM with oropharyngeal/ nasopharyngeal airway, ET placement, and an alternative airway device (if not contraindicated)
(2) Inability to place ET in the setting of life-threatening upper airway hemorrhage
(3) Completely obstructing upper airway foreign body that cannot be removed via BLS maneuvers or Magill forceps with direct visualization

b) Preparation

(1) Prepare suction and cricothyroidotomy kit.
(2) Begin at sternal notch and locate cricoid cartilage.
(3) Palpate cricothyroid membrane anteriorly between cricoid cartilage and thyroid cartilage.
(4) Prepare skin with betadine or alcohol swabs.

c) Surgical Cricothyroidotomy

(1) Stabilize thyroid cartilage and make vertical incision (1–1½ inches) over cricothyroid membrane. Alternatively, a needle puncture dilator device may be utilized.
(2) Palpate cricothyroid membrane with gloved finger and carefully make transverse incision through membrane. Insert scalpel handle and rotate 90 degrees.
(3) Insert a 6.0 mm cuffed ET tube, using the natural curve of tube.
(4) Insert ET tube to just beyond cuff.
(5) Inflate cuff and ventilate patient.
(6) Monitor oxygen saturation and $EtCO_2$ level.
(7) Secure ET tube. (Do not cut or trim ET tube.)
(8) If significant resistance to ventilation develops, or if patient develops difficulty in tolerating successful cricothyroidotomy, refer to Ventilatory Difficulty Secondary to Bucking or Combativeness Protocol.

Protocol for Cricothyroidotomy (Continued)

d) Needle Cricothyroidotomy

ONLY NEEDLE CRICOTHYROIDOTOMY SHOULD BE PERFORMED FOR PATIENTS LESS THAN THE AGE OF 8 WHO REQUIRE CRICOTHYROIDOTOMY.

(1) Insert 12- or 14-gauge over-the-needle catheter through the cricothyroid membrane at a 45-degree angle toward the feet. Aspiration of air with a syringe indicates tracheal entry.
(2) Hold needle in place and advance catheter, then remove needle.
(3) Attach catheter hub to intermittent jet oxygen insufflator valve.
(4) Manually secure catheter at hub at all times to prevent kinking or displacement.
(5) Monitor oxygen saturation.
(6) If significant resistance to ventilation develops, or if patient develops difficulty in tolerating cricothyroidotomy, refer to Ventilatory Difficulty Secondary to Bucking or Combativeness Protocol.

4. RSI Quality Assurance Process

a) Individual Paramedic Approval for RSI Pilot Participation

(1) Successful completion of small group training includes all five of the following:
   (a) Classroom lecture
   (b) Mannequin instruction
   (c) Cadaver lab, including cricothyroidotomy
   (d) Anesthesia computerized mannequin simulator
   (e) Must demonstrate proficiency through skills testing and written test

(2) Successful completion of individualized operating room training
   (a) Individual operating room training with Attending Anesthesiologist, and
   (b) Must demonstrate proficiency to Attending Anesthesiologist's satisfaction

b) Ongoing Demonstration of Proficiency

(1) A verification of all RSI skills and review of RSI principles of safety will be performed on a quarterly basis. In one of the quarters, this will be accomplished via direct observation in the operating room. In another quarter, substitute instruction and demonstration of skill proficiency may be approved by the program medical director on an individual basis. In a third quarter, the medical director will perform this during a full paramedic skills evaluation. A fourth quarter verification will be accomplished via an anesthesia mannequin simulator, an RSI skills module, or a documentation and review of a field utilization.

(2) Ongoing Demonstration of Proficiency for surgical cricothyroidotomy
   (a) During bi-annual recertification classes, each paramedic will repeat the classroom lecture and placement of the device using the pig's trachea.
   OR
   Substitute instruction and demonstration of skill proficiency may be approved by the program medical director on an individual basis.
   (b) RSI providers who participate in the continuing education program for the surgical cricothyroidotomy pilot will satisfy this requirement.

(3) Documentation of the quarterly verification process shall be submitted to the State EMS Medical Director on an annual basis.

c) Review of Each Call

(1) Mechanism for follow-up of each call will be in accordance with the Quality Review Procedure for Pilot Programs (formerly "Class B" Additional Procedure Algorithm) of the Maryland Medical Protocols, with the following additions:
   (a) Immediate notification of your jurisdictional RSI supervisor for all RSI attempts
   (b) Medical Director evaluation of all RSI attempts within 12 hours
   (c) Maintenance of detailed RSI database
   (d) All individual RSI attempts shall be documented after the jurisdictional review process on the approved RSI QA form and submitted to the State EMS Medical Director on a quarterly basis.

d) Maintenance of detailed RSI database

I. PEDIATRIC RAPID SEQUENCE INTUBATION PROTOCOL PACKAGE

(For children who have not yet reached their 15th birthday)

1. Rapid Sequence Intubation (RSI) Pilot Program

a) Indications

(1) Inability to tolerate laryngoscopy and have the following:

(a) GCS less than or equal to 8, indicated by a patient that will not: open eyes, cry, say words, or show purposeful movement in response to painful stimulus.

AND

(b) Respiratory insufficiency, demonstrated by oxygen saturation less than or equal to 90% on non-rebreather face mask, respiratory rate less than or equal to 8, or respiratory rate greater than or equal to 45 (age less than 1 yr), greater than or equal to 40 (age 1–5 yrs), greater than or equal to 35 (age 6–9 yrs) with signs of air hunger and accessory muscle use.

PATIENTS WITH AN IDENTIFIED DIFFICULT AIRWAY WHO CAN BE BAGGED TO AN OXYGEN SATURATION GREATER THAN 90% REQUIRE ON-LINE MEDICAL DIRECTION FOR RSI, PREFERABLY FROM A PEDIATRIC BASE STATION.

(2)  On-line medical direction for RSI may be requested (preferably from a Pediatric Base Station), in the following situations:

(a) GCS less than or equal to 8 with clenched jaw, inability to adequately suction airway, and without above respiratory parameters

(b) Respiratory extremis with contraindications to nasotracheal intubation (respiratory rate greater than or equal to 35 with air hunger, use of accessory muscles, and oxygen saturation less than or equal to 90% on non-rebreather face mask)

(c) Identified difficult airway patient with a GCS less than or equal to 8 and signs of respiratory insufficiency who cannot tolerate laryngoscopy but is able to be bagged to an oxygen saturation greater than 90%

b) Contraindications

(1) Conditions that may cause hyperkalemia:

(a) Burns greater than 24 hours old

(b) Spinal cord injury greater than 24 hours old

(c) Known neuromuscular disease (Guillain-Barré Syndrome, myasthenia gravis, amyotrophic lateral sclerosis, muscular dystrophy)

(d) Chronic renal failure on hemodialysis/presence of hemodialysis access

(2) History of malignant hyperthermia

c) Preparation

(1) Pre-oxygenate with 90–100% oxygen.
(2) Monitor oxygen saturation with pulse oximetry and EKG.
(3) Ensure functioning IV and fluid therapy as per protocol.
(4) Evaluate for difficult airway.
(5) Perform focused RSI neurologic exam.
(6) Prepare equipment
  (a) Intubation kit: Recommended to carry both cuffed and uncuffed ET tubes for patients less than 8 years of age or 25 kg.
  (b) Bag-Valve-Mask (BVM) with manometer. (Manometer may be part of the BVM or separate.)
  (c) Suction
  (d) RSI kit
    (i) Prepare medications
    (ii) Alternative airway device, Cricothyroidotomy equipment
  (e) Capnograph

d) RSI Procedure

(1) Adequate sedation must be provided to prevent awareness during paralysis from neuromuscular blockade.

Etomidate, if available, will be the preferred agent for patients who are aware of their surroundings and do not have hypotension or possible hypovolemia.

Dose: Administer 0.3 mg/kg IVP over 30–60 seconds. If the patient is hypotensive or the provider suspects hypovolemia, the initial dose will be 0.15 mg/kg IVP over 30–60 seconds. May repeat 0.15 mg/kg IVP in 2–3 minutes if inadequate sedation.

Ketamine may be used if etomidate is unavailable, and may be preferred for patients who have hypotension or possible hypovolemia.

Dose: Administer 2 mg/kg IVP over 60 seconds.

Midazolam should be considered for patients with isolated head injury and elevated blood pressure, especially with possible seizure activity. Midazolam should not be used for patients with hypotension, and should be avoided with possible hypovolemia.

Dose: Administer 0.05 mg/kg IVP over 1–2 minutes. Maximum single dose is 5 mg.

(a) **Hold for** BP less than 60 in neonates (patients less than 28 days old), less than 70 in infants (patients less than 1 year of age), less than [70 + (2 x years) = systolic BP] for patients greater than 1 year of age.

(2) For patients with head injury or suspected increased intracranial pressure, administer lidocaine 1 mg/kg IVP over 1–2 minutes.
(3) If patient is less than 8 years of (or if age unknown and using ET tube smaller than 6.0), pretreat patient with atropine 0.02 mg/kg IVP.

(4) In-line cervical spine stabilization by second caregiver (in trauma setting)
(5) Apply cricoid pressure (by third caregiver).
(6) Succinylcholine: Administer 1.5 mg/kg rapid IVP.
(7) Intubate trachea and verify ET placement.
(8) If inadequate relaxation after 2–3 minutes, repeat succinylcholine 1.0 mg/kg IVP.

e) Successful Endotracheal Tube Placement

(1) Release cricoid pressure and secure ET.
(2) Ventilate to $EtCO_2$ of 30–32 mmHg.
(3) If significant resistance to ventilation occurs as succinylcholine wears off (4–5 minutes), refer to Ventilatory Difficulty Secondary to Bucking Protocol.

f) Unsuccessful Endotracheal Tube Placement

(1) Maintain cricoid pressure and resume BVM ventilation for 30 seconds.
(2) If unable to ventilate, see "If Unable to Ventilate" below.
(3) Reattempt oral ET intubation.
(4) If unsuccessful, resume BVM ventilation for 30 seconds.
(5) Insert a laryngeal mask airway designed to facilitate hospital placement of an endotracheal tube (see Airway Management: Laryngeal Mask Airway Optional Supplemental Program).

g) If Unable to Ventilate

If unable to ventilate, verify appropriate oropharyngeal airway placement and reposition BVM for optimal mask seal. If still unable to ventilate, refer to Needle Cricothyroidotomy Protocol.

2. Ventilatory Difficulty Secondary to Bucking or Combativeness in Intubated Patients

a) Indication

Patients successfully intubated with an endotracheal tube, or needle cricothyroidotomy, for whom the ability to provide manual or mechanical ventilation is impaired secondary to bucking or combativeness

b) Contraindication

Unsecured airway

c) Procedure

(1) **Etomidate**, if available, will be the preferred agent for patients who are aware of their surroundings and do not have hypotension or possible hypovolemia.

Dose: Administer 0.3 mg/kg IVP over 30–60 seconds. If the patient is hypotensive or the provider suspects hypovolemia, the initial dose will be 0.15 mg/kg IVP over 30–60 seconds. May repeat 0.15 mg/kg IVP in 2–3 minutes if inadequate sedation.

OR

Ketamine may be used if etomidate is unavailable, and may be preferred for patients who have hypotension or possible hypovolemia, or if ventilatory difficulty is thought to be the result of pain response.

Dose: Ketamine: 2 mg/kg IVP over 60 seconds. May repeat 1 mg/kg for IVP every 10–15 minutes to a total of three doses as necessary.

Additional doses require medical consultation.

OR

Midazolam should be considered for patients with isolated head injury and elevated blood pressure, especially with possible seizure activity. Midazolam should not be used for patients with hypotension, and should be avoided with possible hypovolemia.

Dose: Administer 0.05 mg/kg IVP over 1–2 minutes, titrated to abate bucking and relax ventilation while maintaining systolic BP: greater than 60 in neonates, 70 in infants, [70 + (2 x years) = systolic BP] for patients greater than 1 year of age. Maximum single dose is 5 mg.

(2) If ventilatory difficulty is thought to be the result of pain response,
Ketamine: Dose: 2 mg/kg IVP over 60 seconds. May repeat 1 mg/kg IVP every 10–15 minutes as necessary to a total of three doses as necessary.

Additional doses require medical consultation.

OR

Opioid may be used per Pain Management Protocol in addition to, or instead of, midazolam, ketamine, or etomidate. Titrate to abate bucking and relax ventilation while maintaining systolic BP greater than 60 in neonates, 70 in infants, [70 + (2 x years) = systolic BP] for patients greater than 1 year of age.

(3) If significant resistance to ventilation continues, the paramedic may administer:

(a) Vecuronium 0.05 mg/kg IVP (may not be used for patients with needle cricothyroidotomy because of inability to monitor breath to breath $EtCO_2$). Maximum single dose is 10 mg.

ALERT

PRE-SEDATION MUST BE PROVIDED WHEN VECURONIUM IS ADMINISTERED TO A PATIENT WHO IS EITHER RESPONSIVE TO STIMULUS OR MAY BECOME RESPONSIVE TO STIMULUS DURING NEUROMUSCULAR BLOCKADE. VECURONIUM MAY ONLY BE USED IF CONTINUOUS, BREATH TO BREATH $ETCO_2$ MONITORING CAN BE PROVIDED.

(b) Dose may be repeated in 4–6 minutes if necessary.

(c) **Maintenance of Amnesia**
Follow above dosing of either **etomidate** or **ketamine** with required repeat dosing every 10–15 minutes.

(4) Continue to monitor oxygen saturation and ventilate to desired $EtCO_2$.
(5) Obtain on-line medical direction (preferably from a Pediatric Base Station), if further problems present.

3. Protocol for Cricothyroidotomy
Surgical (for 8 years old or greater) and Needle

a) Indications
(1) Inability to ventilate despite having tried BVM with oropharyngeal/ nasopharyngeal airway, ET placement, and alternative airway device (if not contraindicated)
(2) Inability to place ET in the setting of life-threatening upper airway hemorrhage
(3) Completely obstructing upper airway foreign body that cannot be removed via BLS maneuvers or Magill forceps with direct visualization

b) Preparation
(1) Prepare suction and cricothyroidotomy kit.
(2) Begin at sternal notch and locate cricoid cartilage.
(3) Palpate cricothyroid membrane anteriorly between cricoid cartilage and thyroid cartilage.
(4) Prepare skin with betadine or alcohol swabs.

c) Surgical Cricothyroidotomy <u>for 8 years old or greater</u>
(1) Stabilize thyroid cartilage and make vertical incision (1–1 1/2 inches) over cricothyroid membrane. Alternatively, a needle puncture dilator device may be utilized.
(2) Palpate cricothyroid membrane with gloved finger and carefully make transverse incision through membrane. Insert scalpel handle and rotate 90 degrees.
(3) Insert a 5 to 6.0 mm cuffed ET tube, using the natural curve of tube.
(4) Insert ET tube to just beyond cuff.
(5) Inflate cuff and ventilate patient.
(6) Monitor oxygen saturation and $EtCO_2$ carbon dioxide level.
(7) Secure ET tube. (Do not cut or trim ET tube.)
(8) If significant resistance to ventilation develops, or if patient develops difficulty in tolerating successful cricothyroidotomy, refer to Ventilatory Difficulty Secondary to Bucking or Combativeness Protocol.

ALERT ONLY NEEDLE CRICOTHYROIDOTOMY SHOULD BE PERFORMED FOR PATIENTS LESS THAN AGE 8 WHO MAY REQUIRE CRICOTHYROIDOTOMY.

d) Needle Cricothyroidotomy

(1) Insert 12- or 14-gauge over-the-needle catheter through the cricothyroid membrane at a 45-degree angle toward the feet. Aspiration of air with a syringe indicates tracheal entry.
(2) Hold needle in place and advance catheter, then remove needle.

(3) Attach catheter hub to intermittent jet oxygen insufflator valve.
(4) Manually secure catheter at hub at all times to prevent kinking or displacement.
(5) Monitor oxygen saturation.
(6) If significant resistance to ventilation develops, or if patient develops difficulty in tolerating cricothyroidotomy, refer to Ventilatory Difficulty Secondary to Bucking or Combativeness Protocol.

4. Pediatric RSI Quality Assurance Process

a) Individual Paramedic Approval for Pediatric RSI Pilot Participation

(1) Successful completion of small group training includes all of the following:
  (a) Classroom lecture
  (b) Mannequin instruction
  (c) Must demonstrate proficiency through skills testing and written test
(2) Successful completion of individualized operating room training
  (a) Individual operating room training with Pediatric/Critical Care/Anesthesiology Attending approved by the Associate State EMS Medical Director for Pediatrics
  (b) Must demonstrate proficiency to Attending Pediatric/Critical Care/Anesthesiologist's satisfaction

b) Ongoing Demonstration of Proficiency

(1) A verification of all pediatric and adult RSI skills and review of pediatric and adult RSI principles of safety will be performed on a quarterly basis.
(2) Documentation of the quarterly verification process shall be submitted to the State EMS Medical Director on an annual basis.

c) Review of Each Call

(1) Mechanism for follow-up of each call will be in accordance with the Quality Review Procedure for Pilot Programs (formerly "Class B" Additional Procedure Algorithm) of the Maryland Medical Protocols, with the following additions:
  (a) Immediate notification to jurisdictional RSI supervisor for all RSI attempts
  (b) Medical Director evaluation of all RSI attempts within 12 hours
  (c) Maintenance of detailed RSI database
  (d) All individual RSI attempts shall be documented after the jurisdictional review process on the approved RSI QA form and submitted to the State EMS Medical Director on a quarterly basis.

J. RAPID SEQUENCE INTUBATION PHARMACOLOGY

1. ETOMIDATE (AMIDATE)

a) Pharmacology
Hypnotic

b) Pharmacokinetics
A short-acting nonbarbiturate hypnotic agent without analgesic properties

c) Indications
Pre-sedation of responsive patients prior to administration of neuromuscular blocking agents

d) Contraindications
Known hypersensitivity to etomidate

e) Adverse Effects
(1) Respiratory depression or apnea
(2) Hypotension (infrequent)
(3) Involuntary myoclonus
(4) Adrenal suppression (possible with repeated dosing)

f) Precautions
(1) The effects of etomidate can be accentuated by CNS depressants such as opioids and alcohol.
(2) Myoclonic movements are common and should not be confused for fasciculations due to a depolarizing neuromuscular blocking agent or seizure activity.

g) Dosage
(1) Adult:

Administer 0.3 mg/kg IVP over 30–60 seconds.
If the patient is hypotensive or the provider suspects hypovolemia, the initial dose will be 0.15 mg/kg IVP over 30–60 seconds.
Ventilatory Difficulty Secondary to Bucking or Combativeness in Intubated Patients:
Administer 0.3 mg/kg IVP over 30–60 seconds. If the patient is hypotensive or the provider suspects hypovolemia, the initial dose will be 0.15 mg/kg IVP over 30–60 seconds.
May repeat 0.15 mg/kg IVP every 15 minutes to a total of three doses.

Pediatric:

Administer 0.3 mg/kg IVP over 30–60 seconds.
If the provider suspects hypovolemia, the initial dose will be 0.15 mg/kg IVP over 30–60 seconds. May repeat 0.15 mg/kg IVP after succinylcholine effects resolve and patient is bucking or combative. May repeat 0.15 mg/kg IVP every 15 minutes to a total of three doses.


Additional doses require medical consultation.

2. KETAMINE (KENTANEST, KETASET, KETALAR)

a) Pharmacology
Hypnotic Analgesic

b) Pharmacokinetics
A rapid-acting nonbarbiturate hypnotic analgesic agent characterized by normal pharyngeal-laryngeal reflexes, normal or enhanced skeletal muscle tone, and possible cardiovascular and respiratory stimulation.

c) Indications
(1) Pre-sedation of responsive patients prior to administration of neuromuscular blocking agents
(2) Sedation of intubated patients with ventilatory difficulty secondary to bucking or combativeness

d) Contraindications
Known hypersensitivity to ketamine

e) Adverse Effects
(1) Although respiration is frequently stimulated, respiratory depression may occur with rapid IV administration. Laryngospasm has been known to occur.
(2) Although hypotension may occur, blood pressure and heart rate are frequently stimulated.
(3) Involuntary myoclonus that may mimic seizure activity
(4) Possible enhanced secretions
(5) Possible unpleasant dreams and delirium upon emergence from sedation

f) Precautions
(1) The likelihood of respiratory depression and undesired pressor effects is increased by too rapid IV administration.
(2) Myoclonic movements are possible and should not be confused for fasciculations due to a depolarizing neuromuscular blocking agent, seizure activity, or emergence from sedation.

g) Dosage
(1) Adult:
Administer 2 mg/kg IVP over 60 seconds.
May repeat 2 mg/kg IVP after succinylcholine effects resolve if patient is bucking or combative.
May repeat 1 mg/kg for IVP every 10–15 minutes to a total of three doses as necessary.

Additional doses require medical consultation.

(2) Pediatric:
Administer 2 mg/kg IVP over 60 seconds.
May repeat 2 mg/kg IVP after succinylcholine effects resolve if patient is bucking or combative.
May repeat 1 mg/kg for IVP every 10–15 minutes to a total of three doses as necessary.

Additional doses require medical consultation.

3. MIDAZOLAM (VERSED)

a) Pharmacology
(1) Sedative
(2) Hypnotic

b) Pharmacokinetics
A short-acting benzodiazepine with strong hypnotic and amnestic properties

c) Indications
(1) Pre-sedation of responsive patients prior to administration of neuro-muscular blocking agents
(2) Sedation of intubated patients with ventilatory difficulty secondary to bucking or combativeness

d) Contraindications
(1) Hypotension
(2) Acute narrow-angle glaucoma
(3) Known hypersensitivity to midazolam

e) Adverse Effects
(1) Respiratory depression or apnea
(2) Hypotension
(3) Amnesia

f) Precautions
The effects of midazolam can be accentuated by CNS depressants such as opioids and alcohol

g) Dosage
(1) Adult:
Administer 0.05 mg/kg, SLOW IVP over 1–2 minutes, while maintaining systolic BP greater than 90 mmHg. Maximum single dose is 5 mg.
(2) Pediatric:
Administer 0.05 mg/kg SLOW IVP over 1–2 minutes, while maintaining systolic BP greater than 60 in neonates, 70 in infants,
[70 + (2 x years) = systolic BP] for patients greater than 1 year of age. Maximum single dose is 5 mg.

ADMINISTER UP TO 0.05 MG/KG IV WHEN TREATING ENDOTRACHEAL TUBE BUCKING, STOPPING ONCE BUCKING HAS RESOLVED AND VENTILATION IS RELAXED.

4. SUCCINYLCHOLINE (ANECTINE)

a) Pharmacology
Neuromuscular blocking agent (depolarizing)

b) Pharmacokinetics
Paralyzes skeletal muscles, including respiratory muscles, and removes gag reflex

c) Indications
To achieve paralysis to facilitate endotracheal intubation in patients as per Rapid Sequence Intubation Protocol

d) Contraindications
(1) Conditions that may cause hyperkalemia:
  (a) Burns greater than 24 hours old
  (b) Spinal cord injury greater than 24 hours old
  (c) Known neuromuscular disease (Guillain-Barré Syndrome, myasthenia gravis, amyotrophic lateral sclerosis, muscular dystrophy)
  (d) Chronic renal failure on hemodialysis or presence of hemodialysis access
(2) History of malignant hyperthermia
(3) Patients with known hypersensitivity to the drug

e) Adverse Effects
(1) Bradycardia
(2) Prolonged paralysis

f) Precautions
Paralysis occurs in 1–2 minutes and generally lasts 4–6 minutes.

g) Dosage/Route
(1) Adult:
  Administer 1.5 mg/kg rapid IVP to a maximum single dose of 200 mg.
  If relaxation is inadequate after 2–3 minutes, a repeat dose of 1 mg/kg rapid IVP may be given to a maximum single dose of 200 mg.
(2) Pediatric:
  Administer 1.5 mg/kg rapid IVP to a maximum dose of 200 mg.
  If relaxation is inadequate after 2–3 minutes, a repeat dose of 1 mg/kg rapid IVP may be given to a maximum dose of 200 mg.

5. VECURONIUM (NORCURON)

a) Pharmacology
Neuromuscular blocking agent (non-depolarizing)

b) Pharmacokinetics
(1) Skeletal muscle relaxant
(2) Paralyzes skeletal muscles, including respiratory muscles

c) Indications
For treatment of ventilatory difficulty secondary to bucking or combativeness in intubated patients

d) Contraindications
(1) Non-intubated patients
(2) Patients with known hypersensitivity to the drug

e) Adverse Effects
(1) Bradycardia
(2) Prolonged paralysis

f) Precautions
(1) Pre-sedation must be provided when vecuronium is administered to a patient who is either responsive to stimulus or who may become responsive to stimulus during neuromuscular blockade.
(2) Paralysis occurs within 2–4 minutes and generally lasts 25–40 minutes.

g) Dosage/Route
(1) Adult:
Administer 0.05 mg/kg IVP. Maximum single dose is 10 mg.
(2) Pediatric:
Administer 0.05 mg/kg IVP.
(3) If bucking or combativeness persists 4–6 minutes after initial vecuronium administration, a second dose of 0.05 mg/kg IV may be administered for an adult or pediatric patient. Maximum single dose is 10 mg.

K. TACTICAL EMS

1. INTRODUCTION

a) Scope and Applicability

(1) These protocols are intended for use during high-risk, large-scale, and extended law enforcement or homeland security operations.

(2) The Tactical Emergency Medical Services (TEMS) provider is not directly responsible for any person(s) outside the direct field of operations, whose care may safely be provided by the local EMS Operational Program.

(3) These protocols supplement the current version of *Maryland Medical Protocols for Emergency Medical Services Providers* and, at the Tactical Physician's discretion, may incorporate other EMS protocol components such as: Wilderness, Interfacility, Pilot/Optional, and WMD sections.

(4) The Tactical Emergency Medical Services Protocols shall be used only by Tactical EMS providers sponsored by a law enforcement agency and operating under law enforcement command.

(5) To be approved, there must be a written, integrated relationship between the EMS Operational Program and the TEMS program, with both the EMS Operational Program Medical Director and the TEMS Medical Director having signed off on the agreement.

(6) Tactical EMS Providers at the EMT or ALS levels may administer the medications and perform the procedures listed in these protocols only after receiving specific training on their use and only under the medical direction of a Tactical Physician.

(7) The primary function of the Tactical EMS Provider is to support law enforcement or homeland security operations by facilitating the health and safety of critical public safety personnel inside the perimeter of high-risk, large-scale, and extended operations.

(8) Once the patient is removed from the law enforcement perimeter of operations, the TEMS Protocol will end, the Maryland Medical Protocols for EMS Providers will be implemented, and the transition of care will be made to the local EMS agency.

(9) An exception may be made when the Tactical EMS Provider's specialized training is needed to manage a specific illness/injury.

(a) If the Tactical EMS Provider's specialized training is needed to manage the patient's illness/injury, then the highest-trained Tactical EMS Provider shall ride to the hospital with the patient to maintain medications that are not allowed by Maryland Medical Protocols for EMS Providers.

(b) If, during transport, Tactical EMS personnel encounter a significant conflict between TEMS Protocols and those of the transporting EMS agency, they should attempt to contact their own Tactical Physician and request a dual consult with the local Base Station Physician.

(c) If they cannot reach a Tactical Physician, they should contact the local EMS Base Station for on-line medical consultation.

b) Definition of Tactical Environment
   (1) Any law enforcement or homeland security operation where deployed personnel are in a large-scale operation or where the risk of injury is sufficiently high as to warrant the presence of on-scene emergency medical services providers.
   (2) Types of operations may include: high-risk warrant service, hostage-barricade situations, emergency ordinance disposal, executive protection details, civil demonstration or protest, dynamic training operations, aquatic operations, high-angle, search and rescue missions, and acts of terrorism.
   (3) Any prolonged law enforcement deployment, where performance decrement or environmental issues may arise and the safety of the public and deployed law enforcement personnel would benefit from the presence of a Tactical EMS Provider to monitor these circumstances.

c) Demonstration of Need
   (1) Jurisdictions that seek approval for a Tactical EMS Program shall submit a demonstration-of-need letter outlining the necessity for the program.
   (2) The letter shall be submitted to the State EMS Medical Director for approval and include the following:
      (a) Name of organization and scope of the proposed Tactical EMS Team
      (b) Name and qualifications of the Tactical Medical Director and other Tactical Physicians
      (c) Name and qualifications of the Tactical EMS Coordinator and other Tactical EMS Providers

d) Sponsoring Law Enforcement Agency Requirements
   (1) Sponsoring Law Enforcement Agencies shall be responsible for
      (a) Completing background investigations appropriate for medical providers working in and around law enforcement operations
      (b) Providing appropriate personal protective equipment, to accommodate conditions that the team may reasonably encounter, to the Tactical EMS Providers and Tactical Physician(s) and ensure adequate training in the equipment's use and capabilities
      (c) Providing written documentation to MIEMSS that addresses the medical liability and personal injury considerations of the Tactical EMS Providers/Physician(s)

e) Tactical EMS Provider/Tactical Physician Minimum Training Requirements
   (1) The Tactical EMS Provider shall be a Maryland-certified EMT or Maryland-licensed ALS provider and have successfully completed a nationally-recognized Counter-Narcotic Tactical Operation Medical Support/Integrated Force Health Provider Program (CONTOMS/IFHP) or equivalent Tactical Provider course that includes instruction and training in
      (a) Team wellness and health management, including preventive medicine
      (b) Providing care under fire/basic weapons safety
      (c) Officer rescue
      (d) Planning medical operations and medical intelligence
      (e) Response to the active shooter

(f) Orientation to specialized medical gear personal protective equipment used in tactical medical operations
(g) Remote medical assessment ("medicine across the barricade")
(h) Response and management of WMD events, including field-expedient decontamination ("hasty decon") procedures
(i) Operational security, light and sound discipline, helicopter operations, pyrotechnic and other chemical agents, as utilized by law enforcement teams
(j) Less-than-lethal weaponry, the injuries they may cause, and any specific interventions required

(2) The Tactical EMS Provider shall have responsibilities for part or all of these protocols, as summarized as follows, based on either EMT or ALS (CRT-I or paramedic) level certification.

INTERVENTION	EMT	ALS
Provision of access to medications: ibuprofen, naproxen, fexofenadine, cetirizine, pseudoephedrine, oxymetazoline nasal spray, Mylanta, cimetidine, loperamide, clove oil, acetaminophen, tramadol, caffeine, modafinil, ondansetron ODT, scopolamine patch, ophthalmologic proparacaine/tetracaine and fluorescein, prednisone PO, dexamethasone PO, albuterol MDI, aspirin, epinephrine 1 mg/mL IM, naloxone IN, glucose PO	●	●
Administration of medications in Protocol, not listed above		●
Cyanoacrylate tissue adhesive	●	●
Field expedient wound closure (stapling)		●
Conducted electrical weapon (CEW) dart removal	●	●

(3) The Tactical EMS Provider shall document each patient contact utilizing a patient care report (PCR) (eMEDS®). The documentation must be consistent with current MIEMSS regulations for interventions, as summarized in the above table.
(4) The Tactical Physician shall possess an unrestricted Maryland License (preferred Emergency Medicine, General/Orthopedic/Trauma Surgery, or Critical Care), have experience in on-line medical direction, and have completed a nationally-recognized (CONTOMS/IFHP or equivalent) tactical medical director's course that includes instruction and training in the following topics:
(a) History of/need for tactical EMS provision
(b) Administrative/command concerns and responsibilities
(c) Care under fire
(d) Special equipment/hazards in the tactical environment
(e) Forensic examination
(f) Medicine "across the barricade"
(g) Medical threat assessment

f) Quality Assurance Properties
   (1) Individual Tactical EMS Providers must be approved for TEMS Program Participation by the TEMS Medical Director.
   (2) Classroom lecture
   (3) Mannequin instruction
   (4) Must demonstrate proficiency through skills testing and written test
   (5) Ongoing demonstration of proficiency
   (6) A verification of all TEMS skills and review of TEMS principles of safety will be performed on an annual basis by the Medical Director, or the provider may document utilization of skills in the field
   (7) Review of each call
      (a) Upon completion of the tactical incident, notification of any implementation of the TEMS Protocol will be made to your jurisdictional TEMS supervisor, who will ensure notification to TEMS Medical Director.
      (b) TEMS Medical Director will review and evaluate all TEMS interventions within 48 hours of resolution of the tactical incident and provide feedback.
   (8) The TEMS program will maintain a detailed TEMS database and will provide an annual report to the State EMS Medical Director.

2. GENERAL PROTOCOLS

a) Medical Direction
   (1) Tactical EMS Providers may provide medical care using Tactical Medical Protocols only under the medical direction of a Tactical Physician.
   (2) Immediately available telephone or radio contact during an operation shall be considered a reasonable substitute for in-person supervision of Tactical EMS Providers.
   (3) In the absence of medical direction by a Tactical Physician, jurisdictional trained and designated Tactical EMS Providers should defer to their usual EMS protocols.

b) Operational Command
   (1) Operational command within a law enforcement perimeter of operation lies with the law enforcement commander. At times, the safety and success of the law enforcement objectives may override the need to care for casualties. The law enforcement commander is responsible for the care and movement of casualties within a law enforcement operation.

3. SPECIAL CONSIDERATION FOR TACTICAL EMS

a) The execution of some law enforcement operations may require that minor illness or injury in essential public safety personnel be treated and, to the extent that it is medically safe to do so, that those treated personnel return to duty. Fitness for duty of public safety personnel with minor injuries or illnesses shall be determined by the law enforcement commander in consultation with a Tactical Physician.

b) Prescription and over-the-counter (OTC) medications may be used for the treatment (or “symptomatic relief”) of constitutional symptoms as required to

promote the health, safety, and functionality of persons necessary to the operation. The Tactical EMS Provider(s) under the Tactical Physician will know the indications/contraindications for the medications available to them (as will be delineated under "Additional Medications for Tactical EMS," to follow). At the EMT level, medications will be made available to those persons under the Tactical Provider's care to self-select and self-medicate at the individual requesting person's own discretion regarding appropriateness of use.

c) The Tactical EMS Provider may provide care to all persons associated with the operation, and shall be responsible for initial access, assessment, and stabilization (within the scope of The Maryland Medical Protocols for EMS Providers) of those victims, bystanders, and suspects within the "warm" or "hot" zones until they may be extracted to local EMS providers. The Tactical EMS provider is not directly responsible for any person(s) outside the direct field of operations, whose care may safely be provided by the local EMS Operational Program.

4. SPECIFIC PROCEDURES

a) Cyanoacrylate tissue adhesive
   (1) Purpose: To limit blood loss, pain, and risk of secondary contamination/injury to a minor open wound
   (2) Indications
      (a) Clean wounds
      (b) Minor bleeding wounds difficult to control with other interventions
      (c) Wounds in personnel who must remain operational
   (3) Contraindications
      (a) Grossly contaminated wounds
      (b) Greater than two hours since infliction of wound
      (c) Macerated/crushed surrounding tissue
      (d) Wounds near the eyes
   (4) Potential adverse effects/complications
      (a) This is not intended to constitute definitive wound closure; however, if properly cleaned prior to procedure, may be reviewed by physician without further intervention.
      (b) Transient local pain at application site may be reported.
   (5) Precautions
      (a) Ask regarding previous reaction/exposure to agent.
      (b) Advise patient of requirement for further evaluation by physician.

b) "Field expedient" wound closure (stapling)
   (1) Purpose: To limit blood loss and risk of secondary contamination injury to an open wound.
   (2) Indications
      (a) Clean wounds
      (b) Delay in transportation to definitive care will be or is anticipated to be several hours
      (c) Bleeding wounds difficult to control with other interventions
      (d) Wounds in personnel who must remain operational

(3) Contraindications
  (a) Grossly contaminated wounds
  (b) Greater than six hours since infliction of wound
  (c) Macerated/crushed surrounding tissue
  (d) Situations with less than two hours anticipated time to transportation to definitive care
  (e) Facial wounds
(4) Potential adverse effects/complications
  (a) This is not intended to constitute definitive wound closure—this will minimize the risk for increased infection and increased foreign body retention.
(5) Precautions
  (a) Ask regarding local anesthetic allergies.
  (b) Advise patient of requirement for further evaluation by physician.

c) Impaled conducted electrical weapon dart removal
(1) ANY conducted electrical weapon dart impalement to the head, neck, hands, feet, or genitalia must be stabilized in place and evaluated by a physician.
(2) In order to safely transport the patient, attempted extraction may be made one time by a Tactical EMS Provider as long as the dart is not lodged in a location listed in (1) above and is not fully embedded up to the hub in tissue.
(3) All patients receiving conducted electrical weapon intervention will need to be transported to the emergency department for assessment.

5. SUPPLEMENTAL FORMULARY FOR TACTICAL EMS

a) Tactical EMS providers may administer the following medications to support and maintain Tactical personnel in the operation environment. Bolded medications are required as part of the standardized TEMS load-out at the EMT or ALS level; the others are optional.
(1) Antihistamines/Decongestants
  (a) Pseudoephedrine (Sudafed)
  (b) Cetirizine (Zyrtec)
  (c) Diphenhydramine (Benadryl)
  (d) Fexofenadine (Allegra)
  (e) Oxymetazoline nasal spray (Afrin)
(2) Gastrointestinal
  (a) Antacid (Mylanta or other equivalent antacid)
  (b) Cimetidine (Tagamet—or other equivalent H2 blocker)
  (c) Loperamide (Imodium)
  (d) 5-HT3 Antagonist (Zofran ODT/Ondansetron, 5-HT3 antagonist)
  (e) Metoclopramide (Reglan) (injectable)
  (f) Dimenhydrinate (Dramamine),
  (g) Meclizine (Antivert) (for motion sickness)
  (h) Scopolamine transdermal

(3) Opthalmologicals
- **(a) Proparacaine or Tetracaine (Alcaine) ophthetic**
- **(b) Fluorescein stain (and blue light)**
- **(c) Eye irrigation solution**
- **(d) Erythromycin ophthalmic ointment**
- **(e) pH paper**

(4) Antimicrobials/antiviral (agent-specific training)
- **(a) Ciprofloxacin (following exposure or prophylaxis)**
- **(b) Triple Antibiotic Ointment (Bacitracin/Polymyxin/Neomycin)**
- (c) Amoxicillin/Clavualic acid (Augmentin)
- (d) Cefazolin (Ancef) (PO or IV) (for trauma applications when transport delayed)
- (e) Clindamycin (Cleocin)
- (f) Trimethoprim/Sulfamethoxazole (Bactrim)
- (g) Azithromycin (Zithromax)
- (h) Doxycycline
- (i) Mupirocin topical ointment (Bactroban)
- (j) Emtricitabine and tenofovir (Truvada) (high-risk post-exposure management)

(5) Steroids
- **(a) Prednisone (PO)**
- (b) Dexamethasone (Decadron) (IV/IM and/or PO)

(6) Analgesics/Anesthetics
- **(a) Acetaminophen (PO)**
- **(b) Ibuprofen (Motrin/Advil)**
- **(c) Naproxen (Aleve/Naprosyn) (PO)**
- **(d) Tramadol (Ultram) (PO)**
- **(e) Ketamine**
- **(f) Naloxone (Narcan) (IN and/or IV)**
- (g) Lidocaine (transdermal for muscular relief, or IM/SQ for stapling as temporizing measure only, alternate dosing regimen)
- (h) Fentanyl Transmucosal (PO)
- (i) Clove oil (for topical dental analgesia)
- (j) Ketorolac (Toradol) (injectable)

(7) Sleep/Wake
- **(a) Caffeine (No-Doz)**
- (b) Zaleplon (Sonata) (sleeper)
- (c) Modafinil (Provigil)

(8) Wound Management
- **(a) Cyanoacrylate tissue adhesive (Dermabond)**
- **(b) Topical hemostatic agent**
- **(c) Steri-strips**
- (d) Staples

(9) ACLS/Resuscitation
- **(a) Albuterol MDI**

(10) Anti-hypoglycemics

(a) Oral glucose

(11) Additional Medications for Tactical EMS: The following is a list of medications from the Maryland Medical Protocols that is strongly encouraged to be readily accessible to complement the Tactical Medic's Formulary.

Aspirin (EMT, ALS)..... Non-Operational
Atropine Multi-Dose (ALS) ..... Non-Operational
Dexamethasone (ALS) .....Operational
Dextrose (ALS) ..... Non-Operational
Epinephrine 1:1,000, (EMT, ALS) ..... Non-Operational
Haldol (ALS) ..... Non-Operational
Morphine or Fentanyl for injection (ALS)..... Non-Operational
Midazolam (ALS)..... Non-Operational
Nitroglycerin (ALS) ..... Non-Operational

OPERATIONAL: THE MEDICATION MAY BE GIVEN TO A LAW ENFORCEMENT MEMBER WHO MAY CONTINUE TO PERFORM THEIR ASSIGNED DUTIES.

NON-OPERATIONAL: ONCE THE MEDICATION HAS BEEN ADMINISTERED, THE LAW ENFORCEMENT MEMBER IS REMOVED FROM THEIR ASSIGNED DUTIES SINCE THE MEDICATION OR THE ASSOCIATED MEDICAL/TRAUMATIC COMPLAINT FOR WHICH THE MEDICATION IS INDICATED MAY IMPAIR THEIR ABILITY TO PERFORM CRITICAL LAW ENFORCEMENT TASKS AND DUTIES.

b) Tactical EMS Medical Formulary

(1) Antihistamines/Decongestants

(a) Pseudoephedrine (Sudafed)

(i) AVAILABILITY.....30 mg or 60 mg tablets (OTC)
(ii) ACTION.....Decongestant
(iii) INDICATIONS.....Nasal congestion; rhinorrhea
(iv) CONTRAINDICATIONS.....Known hypersensitivity; hypertension
(v) PRECAUTIONS.....
(vi) OPERATIONAL STATUS? .....Operational
(vii) SIDE EFFECTS.....Insomnia
(viii) INTERACTIONS.....
(ix) DOSAGE.....30–60mg, every 4–6 hours, as needed

(b) Cetirizine (Zyrtec)

(i) AVAILABILITY.....10 mg tablet
(ii) ACTION.....Non-sedating antihistamine
(iii) INDICATIONS.....Allergic symptoms
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Hypertension; liver/kidney dx
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....Dry mouth, urinary retention
(viii) INTERACTIONS.....
(ix) DOSAGE.....10 mg/once daily

(c) Diphenhydramine (Benadryl)

(i) AVAILABILITY.....25 mg or 50 mg tablets
(ii) ACTION .....Sedating antihistamine
(iii) INDICATIONS .....Allergic symptoms
(iv) CONTRAINDICATIONS .....Known hypersensitivity
(v) PRECAUTIONS.....Hypertension; liver/kidney dx
(vi) OPERATIONAL STATUS?.....NON-OPERATIONAL
(vii) SIDE EFFECTS.....Dry mouth, urinary retention, somnolence
(viii) INTERACTIONS.....
(ix) DOSAGE.....25–50mg every 4–6 hours, as needed; per MD/DO

(d) Fexofenadine (Allegra)

(i) AVAILABILITY.....60 mg tablet
(ii) ACTION .....Non-sedating antihistamine
(iii) INDICATIONS .....Allergic symptoms
(iv) CONTRAINDICATIONS .....Known hypersensitivity
(v) PRECAUTIONS .....Hypertension history; aLK CC [a]+
(vi) OPERATIONAL STATUS.....Operational
(vii) SIDE EFFECTS .....Dry mouth, urinary retention
(viii) INTERACTIONS.....
(ix) DOSAGE .....60mg/once or twice daily

(e) Oxymetazoline nasal spray (Afrin)

(i) AVAILABILITY.....Nasal spray 0.05%
(ii) ACTION .....Nasal vasoconstriction; decongestant
(iii) INDICATIONS .....Rhinorrhea; sinus congestion and pain
(iv) CONTRAINDICATIONS .....Known hypersensitivity
(v) PRECAUTIONS .....aL CC [a]?
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....Nose bleed (minor) possible; often used in treatment of nose bleed
(viii) INTERACTIONS.....
(ix) DOSAGE .....Two sprays per nare, 2–3 times per day

(2) Gastrointestinal

(a) Antacid (Mylanta or other equivalent antacid)

(i) AVAILABILITY.....Liquid (OTC)
(ii) ACTION .....Antacid
(iii) INDICATIONS .....GI upset, GERD, PUD, gastritis, esophagitis
(iv) CONTRAINDICATIONS .....Known hypersensitivity

(v) PRECAUTIONS.....Some medications require acidic pH and should not be taken at same time with this medication: aK C+ (? 1st trimester) [a]?
(vi) OPERATIONAL STATUS? .....Operational
(vii) SIDE EFFECTS.....
(viii) INTERACTIONS.....Loose stools possible
(ix) DOSAGE.....15–45 mL every 4–8 hours

(b) Cimetidine (Tagamet—or other equivalent H2 blocker)

(i) AVAILABILITY .....200/300/400 mg tablets; 300 mg IV/IM
(ii) ACTION.....H2 blocker
(iii) INDICATIONS PUD, GERD, esophagitis, gastritis
(iv) CONTRAINDICATIONS.....Known hypersensitivity; concomitant Proton Pump Inhibitor (PPI) use
(v) PRECAUTIONS.....aL CC [a]?
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....
(viii) INTERACTIONS.....
(ix) DOSAGE.....300 mg IV/IM/PO every 6–8 hours; 400 mg twice daily

(c) Loperamide (Imodium)

(i) AVAILABILITY .....2 mg tablet (OTC) and 1mg/5mL suspension
(ii) ACTION.....Anti-diarrheal
(iii) INDICATIONS.....Diarrhea
(iv) CONTRAINDICATIONS.....Known hypersensitivity; hypertension; bloody diarrhea
(v) PRECAUTIONS.....aL CB [a]+
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....ENT dryness
(viii) INTERACTIONS.....
(ix) DOSAGE.....4 mg first dose; 2 mg each subsequent episode until stool formed; maximum 16 mg per day

(d) 5-HT3 Antagonist (Zofran ODT/Ondansetron, 5-HT3 antagonist)

(i) AVAILABILITY .....IM/IV injectable; tablets
(ii) ACTION.....Anti-emetic; anti-motion sickness
(iii) INDICATIONS.....Nausea/vomiting
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....aK CB [a]?
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....
(viii) INTERACTIONS.....
(ix) DOSAGE.....Per MD/DO

(e) Metoclopramide (Reglan) (injectable)
- (i) AVAILABILITY ..... IM/IV injectable; 10 mg
- (ii) ACTION ..... Anti-emetic; promotes GI motility
- (iii) INDICATIONS ..... Nausea/vomiting
- (iv) CONTRAINDICATIONS ..... Known hypersensitivity
- (v) PRECAUTIONS ..... Dystonic reaction risk (treat with diphenhydramine); may see sedation; aK CB [a]?
- (vi) OPERATIONAL STATUS? ..... NON-OPERATIONAL
- (vii) SIDE EFFECTS ..... Sedation; dystonia
- (viii) INTERACTIONS .....
- (ix) DOSAGE ..... 10–20 mg IM/IV/PO every 4 hours, as needed; per MD/DO

(f) Dimenhydrinate (Dramamine)
- (i) AVAILABILITY ..... IM/IV injectable; 50 mg tablet
- (ii) ACTION ..... Anti-emetic; anti-motion sickness
- (iii) INDICATIONS ..... Nausea/vomiting
- (iv) CONTRAINDICATIONS ..... Known hypersensitivity
- (v) PRECAUTIONS ..... May see sedation; aK CB [a]?
- (vi) OPERATIONAL STATUS? ..... NON-OPERATIONAL
- (vii) SIDE EFFECTS ..... Sedation
- (viii) INTERACTIONS .....
- (ix) DOSAGE ..... 50–100 mg IM/IV/PO every 4 hours, as needed; per MD/DO

(g) Meclizine (Antivert) (for motion sickness)
- (i) AVAILABILITY ..... 25–50 mg tablet
- (ii) ACTION ..... Anti-emetic; anti-motion sickness
- (iii) INDICATIONS ..... Nausea/vomiting
- (iv) CONTRAINDICATIONS ..... Known hypersensitivity
- (v) PRECAUTIONS ..... May see sedation; aK CB [a]?
- (vi) OPERATIONAL STATUS? ..... NON-OPERATIONAL
- (vii) SIDE EFFECTS ..... Sedation
- (viii) INTERACTIONS .....
- (ix) DOSAGE ..... 25–50 mg PO every 4 hours, as needed; per MD/DO

(h) Scopolamine transdermal
- (i) AVAILABILITY ..... 1 mg patch
- (ii) ACTION ..... Anti-emetic; anti-motion sickness
- (iii) INDICATIONS ..... Nausea/vomiting/motion sickness prevention
- (iv) CONTRAINDICATIONS ..... Known hypersensitivity, hx angle closure glaucoma; hypersensitivity to belladonna alkaloids, seizures, urinary retention
- (v) PRECAUTIONS ..... May cause sedation, disorientation underwater

(vi) OPERATIONAL STATUS?.....Operational (if previously tolerated scopolamine)
(vii) SIDE EFFECTS.....Sedation
(viii) INTERACTIONS.....Use with caution when taking other potentially sedative drugs or anticholinergics
(ix) DOSAGE.....1 mg patch every 3 days, as needed; per MD/DO

(3) Opthalmologicals

(a) Proparacaine or Tetracaine (Alcaine) ophthetic

(i) AVAILABILITY .....Ocular anesthetic solution
(ii) ACTION.....Topical anesthetic
(iii) INDICATIONS.....To facilitate eye exam; relieve eye pain; per MD/DO
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Ensure eye protection from foreign objects after exam
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....
(viii) INTERACTIONS.....Eye pain
(ix) DOSAGE.....1–2 drops per eye; per MD/DO

(b) Fluorescein stain (and blue light)

(i) AVAILABILITY.....Single application strips
(ii) ACTION.....Dye to facilitate eye exam
(iii) INDICATIONS.....Suspected eye injury (foreign body/ corneal abrasion)
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....N/A
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....N/A
(viii) INTERACTIONS.....N/A
(ix) DOSAGE.....One drop per eye

(c) Eye irrigation solution

(i) AVAILABILITY.....100 mL, 200 mL bottles (other sizes may also be available)
(ii) ACTION.....To facilitate irrigation of contaminants from the eye
(iii) INDICATIONS.....Following exposure of foreign body or chemical to eye
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Not be used in penetrating eye trauma
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....
(viii) INTERACTIONS.....
(ix) DOSAGE.....Irrigate until an eye pH of 7.4 is achieved

(d) Erythromycin ophthalmic ointment

(i) AVAILABILITY.....0.5% ointment
(ii) ACTION.....Macrolide antibiotic
(iii) INDICATIONS.....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity to penicillins
(v) PRECAUTIONS.....Topical use only
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....GI upset; nausea/vomiting; diarrhea
(viii) INTERACTIONS.....
(ix) DOSAGE.....Per MD/DO

(e) pH paper

(i) AVAILABILITY.....Rolls or precut pieces of paper (other sizes may also be available)
(ii) ACTION.....To measure baseline and repeat pH during decontamination/ irrigation
(iii) INDICATIONS.....Following exposure of foreign body or chemical to eye or skin
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Not be used in penetrating eye trauma
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....
(viii) INTERACTIONS.....
(ix) DOSAGE.....One strip approximately 1–2 inches; per MD/DO

(4) Antimicrobials/antiviral (agent-specific training)

(a) Ciprofloxacin (following exposure or prophylaxis)

(i) AVAILABILITY.....250/500/750 mg tablets; 400 mg IVPB; 250 or 500/5 suspension
(ii) ACTION.....2nd generation quinolone antimicrobial agent
(iii) INDICATIONS.....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....aLK CC (teratogenicity unlikely) [a]?+
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....GI upset, nausea/vomiting, diarrhea, yeast infection
(viii) INTERACTIONS.....
(ix) DOSAGE.....Per MD/DO

(b) Triple antibiotic ointment or equivalent (Bacitracin/Polymyxin/Neomycin)

(i) AVAILABILITY.....Topical ointment
(ii) ACTION .....Polypeptide antibiotic
(iii) INDICATIONS .....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Topical use only
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS .....Local irritation, GI upset
(viii) INTERACTIONS.....
(ix) DOSAGE .....Apply to superficial scrapes, burns, wounds, prior to dry sterile dressing.

(c) Amoxicillin/Clavulanate (Augmentin)

(i) AVAILABILITY.....875 or 125 mg tablets
(ii) ACTION .....Beta-lactamase inhibitors
(iii) INDICATIONS .....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity to penicillins
(v) PRECAUTIONS.....Liver/Kidney dx
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS .....GI upset; nausea/vomiting; diarrhea
(viii) INTERACTIONS .....
(ix) DOSAGE.....Per MD/DO

(d) Cefazolin (Ancef) (PO or IV) (for trauma applications when transport delayed)

(i) AVAILABILITY .....0.5–2 grams IM/IV
(ii) ACTION .....1st generation Cephalosporin antimicrobial agent
(iii) INDICATIONS .....Per MD/DO—infectious exposures/ trauma
(iv) CONTRAINDICATIONS.....Known hypersensitivity to PCN or Cephalosporins
(v) PRECAUTIONS.....aK CB [a]+
(vi) OPERATIONAL STATUS?.....NON-OPERATIONAL
(vii) SIDE EFFECTS .....GI upset, nausea/vomiting, diarrhea, yeast infection
(viii) INTERACTIONS .....
(ix) DOSAGE .....Per MD/DO

(e) Clindamycin (Cleocin)

(i) AVAILABILITY.....150 or 300 mg tablets; reconstituted liquid 75mg/5mL
(ii) ACTION.....Antibiotic
(iii) INDICATIONS.....Suspected pharyngitis or respiratory Infection, cellulitis
(iv) CONTRAINDICATIONS.....Hypersensitivity to clindamycin
(v) PRECAUTIONS.....
(vi) OPERATIONAL STATUS? .....Operational

(vii) SIDE EFFECTS .....Diarrhea
(viii) INTERACTIONS.....
(ix) DOSAGE.....Pediatrics – 10 mg/kg every 8 hours
Adult – 300 mg every 8 hours

(f) Trimethoprim/Sulfadiazine (Bactrim)
(i) AVAILABILITY.....DS tablet
(ii) ACTION .....Sulfonamide antibiotic
(iii) INDICATIONS .....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS .....Liver/kidney dx, anemia, thrombocytopenia
(vi) OPERATIONAL STATUS? .....Operational
(vii) SIDE EFFECTS .....GI upset, nausea/vomiting, diarrhea
(viii) INTERACTIONS .....
(ix) DOSAGE .....Per MD/DO

(g) Azithromycin (Zithromax)
(i) AVAILABILITY.....250 mg tablet
(ii) ACTION .....Macrolide antibiotic
(iii) INDICATIONS .....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity to penicillins
(v) PRECAUTIONS.....Liver/kidney dx
(vi) OPERATIONAL STATUS.....Operational
(vii) SIDE EFFECTS .....GI upset, nausea/vomiting, diarrhea
(viii) INTERACTIONS .....
(ix) DOSAGE.....Per MD/DO

(h) Doxycycline
(i) AVAILABILITY .....100 mg tablet
(ii) ACTION.....Tetracycline antibiotic
(iii) INDICATIONS .....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity to tetracyclines, pregnancy
(v) PRECAUTIONS.....Liver/kidney dx, photoreactivity rash
(vi) OPERATIONAL STATUS? .....Operational
(vii) SIDE EFFECTS .....GI upset, nausea/vomiting, diarrhea
(viii) INTERACTIONS .....
(ix) DOSAGE.....Per MD/DO

(i) Mupirocin topical ointment (Bactroban)
(i) AVAILABILITY.....2% topical ointment
(ii) ACTION.....Other antibiotic
(iii) INDICATIONS .....Per MD/DO—infectious exposures
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Avoid eyes, limit prolonged use
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS .....Local irritation, GI discomfort
(viii) INTERACTIONS .....
(ix) DOSAGE.....Per MD/DO

(j) Emtricitabine and tenofovir (Truvada) (high-risk post-exposure management)
- (i) AVAILABILITY.....Tablet containing tenofovir DF 300 mg; emtricitabine 200 mg
- (ii) ACTION.....Antiretroviral
- (iii) INDICATIONS.....Per MD/DO—infectious exposures
- (iv) CONTRAINDICATIONS.....Known hypersensitivity
- (v) PRECAUTIONS.....Liver/kidney dx
- (vi) OPERATIONAL STATUS?.....Operational
- (vii) SIDE EFFECTS.....GI upset, nausea/vomiting, diarrhea
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....Per MD/DO

(5) Steroids

(a) Prednisone (PO)
- (i) AVAILABILITY.....PO; 1/5/10/20/50 mg tablets
- (ii) ACTION.....Corticosteroid, anti-inflammatory
- (iii) INDICATIONS.....Allergic reaction, auto-immune condition; per MD/DO
- (iv) CONTRAINDICATIONS.....Known hypersensitivity
- (v) PRECAUTIONS.....PUD/GERD/GI bleed history; aL CC [a]+
- (vi) OPERATIONAL STATUS?.....Operational
- (vii) SIDE EFFECTS.....GI upset/nausea
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....40 mg to 60 mg once daily; per MD/DO

(b) Dexamethasone (Decadron) (IV/IM and/or PO)
- (i) AVAILABILITY.....PO or IV/IM; tablets
- (ii) ACTION.....Corticosteroid, anti-inflammatory
- (iii) INDICATIONS.....Allergic reaction, auto-immune condition; per MD/DO
- (iv) CONTRAINDICATIONS.....Known hypersensitivity
- (v) PRECAUTIONS.....PUD/GERD/GI bleed history, aL CC [a]-
- (vi) OPERATIONAL STATUS?.....Operational
- (vii) SIDE EFFECTS.....GI upset/nausea
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....10 mg once daily; per MD/DO

(6) Analgesics/Anesthetics

(a) Acetaminophen (PO)
- (i) AVAILABILITY.....Tablet: 325 and 500mg
- (ii) ACTION.....Pain medication
- (iii) INDICATIONS.....Mild to moderate pain
- (iv) CONTRAINDICATIONS.....Known hypersensitivity, liver disease, PUD/GERD/GI bleed history
- (v) PRECAUTIONS.....aL CB [a]+
- (vi) OPERATIONAL STATUS?.....Operational
- (vii) SIDE EFFECTS.....GI upset
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....650–1,000 mg / 6 hours

(b) Ibuprofen (Motrin/Advil)

(i) AVAILABILITY.....200 mg tablet (OTC) and 100mg/5mL suspension; 600 mg and 800 mg tablets
(ii) ACTION.....Non-steroidal anti-inflammatory pain medication
(iii) INDICATIONS.....Mild to moderate pain
(iv) CONTRAINDICATIONS.....Known hypersensitivity, renal insufficiency (not failure), PUD/GERD/GI bleed history
(v) PRECAUTIONS.....Do not use with other NSAIDs; caution with concomitant steroid use; aL CB (D in 3rd trimester) [a]+
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....GI upset/nausea, GI bleeding risk
(viii) INTERACTIONS.....
(ix) DOSAGE.....400–600 mg / 4–6 hours or 600–800 mg / 6–8 hours

(c) Naproxen (Aleve/Naprosyn) (PO)

(i) AVAILABILITY.....Tablet: 220/375/500 mg PO tablets
(ii) ACTION.....Non-steroidal anti-inflammatory pain medication
(iii) INDICATIONS.....Mild to moderate pain
(iv) CONTRAINDICATIONS.....Known hypersensitivity, renal insufficiency (not failure), PUD/GERD/GI bleed history
(v) PRECAUTIONS.....Do not use with other NSAIDs; caution with concomitant steroid use; aL CB (D in 3rd trimester)
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....GI upset/nausea, GI bleeding risk
(viii) INTERACTIONS.....
(ix) DOSAGE.....220–500 mg every 12 hours

(d) Tramadol (Ultram) (PO)

(i) AVAILABILITY.....50 and 100 mg PO tablets
(ii) ACTION.....Pain medication
(iii) INDICATIONS.....Moderate to moderately severe pain
(iv) CONTRAINDICATIONS.....Known hypersensitivity, seizure Disorder, SSRI/TCA/MAOI use, renal or hepatic insufficiency (adjust dose)
(v) PRECAUTIONS.....Caution with concomitant opioid use; aLiver CC [a]?
(vi) OPERATIONAL STATUS?.....Operational (if no side effects reported)
(vii) SIDE EFFECTS.....Potential dizziness/nausea
(viii) INTERACTIONS.....Antidepressants, antipsychotics, Warfarin, Digoxin, Tegretol, Quinidine
(ix) DOSAGE.....50–100 mg every 4–6 hours; 400 mg per day maximum

(e) Ketamine

Formulary per General Patient Care Protocols

(f) Naloxone (Narcan) (IN and/or IV)

Formulary per General Patient Care Protocols

(g) Lidocaine (transdermal for muscular relief, or IM/SQ for stapling as temporizing measure only, alternate dosing regimen)

(i) AVAILABILITY.....1% (10mg/mL) ampules/vials
(ii) ACTION.....Injectable anesthetic
(iii) INDICATIONS.....Local pain/injury
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Should not exceed 4 mg/kg or 300 mg
(vi) OPERATIONAL STATUS.....Operational
(vii) SIDE EFFECTS.....With high doses: seizures, lightheadedness, ringing in ears
(viii) INTERACTIONS.....
(ix) DOSAGE.....Topical application to site of dental pain

(h) Fentanyl Transmucosal (PO)

(i) AVAILABILITY.....Lozenge / lollipop 800 mcg
(ii) ACTION.....Opioid analgesic
(iii) INDICATIONS.....Severe pain/injury
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Controlled substance. Patient should not bite or chew the lozenge, but rather allow it to dissolve slowly in the mouth.
(vi) OPERATIONAL STATUS?.....NON-OPERATIONAL
(vii) SIDE EFFECTS.....Patient must be monitored for CNS/ respiratory depression
(viii) INTERACTIONS.....
(ix) DOSAGE.....Oral application for patient directed analgesia; patient should remove the lollipop once pain is controlled

(i) Clove oil (for topical dental analgesia)

(i) AVAILABILITY.....Topical liquid (OTC)
(ii) ACTION.....Topical (dental) anesthetic
(iii) INDICATIONS.....Dental pain/injury
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Penetrating/open intra-oral wounds
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....
(viii) INTERACTIONS.....
(ix) DOSAGE.....Topical application to site of dental pain

(j) Ketorolac (Toradol) (injectable)
- (i) AVAILABILITY.....30 mg/mL IV/IM
- (ii) ACTION.....Non-steroidal anti-inflammatory pain medication
- (iii) INDICATIONS.....Mild to moderate pain
- (iv) CONTRAINDICATIONS .....Known hypersensitivity, renal insufficiency (not failure), PUD/GERD/ GI bleed history
- (v) PRECAUTIONS.....Do not use with other NSAIDs; caution with concomitant steroid use; aPlasma CC (D 3rd trimester) [a]?
- (vi) OPERATIONAL STATUS?.....Operational
- (vii) SIDE EFFECTS.....GI upset/nausea; GI bleeding risk
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....15–30 mg IM/IV every 6–8 hours

(7) Sleep/Wake

(a) Caffeine (No-Doz)
- (i) AVAILABILITY.....200 mg tablet
- (ii) ACTION.....Enhances alertness
- (iii) INDICATIONS.....Suspected caffeine withdrawal headache; to facilitate functioning with limited rest periods
- (iv) CONTRAINDICATIONS .....Known hypersensitivity
- (v) PRECAUTIONS .....aL CB [a]?
- (vi) OPERATIONAL STATUS?.....Operational
- (vii) SIDE EFFECTS.....Insomnia
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....200 mg / 3–4 hours as needed

(b) Zaleplon (Sonata) (sleeper)
- (i) AVAILABILITY.....10 mg capsule
- (ii) ACTION.....Anxiolytic/hypnotic; shortest t-1/2 of agents available
- (iii) INDICATIONS.....Facilitate rest during non-operational periods in prolonged deployment/ transportation; minimum 4-hour block required for usage (6 hours preferred)
- (iv) CONTRAINDICATIONS .....Known hypersensitivity, unsecure location, lack of assured 4-hour non-operational period
- (v) PRECAUTIONS.....May not drive/operate machinery/use weapons for minimum 4 hours post-administration; aL CC [a]-
- (vi) OPERATIONAL STATUS?.....NON-OPERATIONAL (x 4 hours after administration)
- (vii) SIDE EFFECTS.....Sedation

(viii) INTERACTIONS.....Alcohol/other sedatives potentiate effect
(ix) DOSAGE.....10–20 mg with assured 4-hour non-operational block, as approved by MD/DO and Team Commander

(c) Modafinil (Provigil)
(i) AVAILABILITY.....200 mg tablet
(ii) ACTION.....Enhances alertness/concentration
(iii) INDICATIONS.....To facilitate functioning with limited rest periods
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....aL CC [a]?
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....Insomnia, mild blood pressure elevation
(viii) INTERACTIONS.....
(ix) DOSAGE .....200 mg once daily

(8) Wound Management

(a) Cyanoacrylate tissue adhesive (Dermabond)
(i) AVAILABILITY.....Single use ampoules
(ii) ACTION.....Tissue adhesive
(iii) INDICATIONS.....Minor trauma
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Avoid near eyes
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....Transient local discomfort
(viii) INTERACTIONS .....N/A
(ix) DOSAGE .....As required for wound closure, 2–4 layered applications

(b) Topical hemostatic dressing
(i) AVAILABILITY.....Individual use packages
(ii) ACTION.....Promotes blood clotting
(iii) INDICATIONS.....Hemorrhage
(iv) CONTRAINDICATIONS.....Known hypersensitivity
(v) PRECAUTIONS.....Standard/universal precautions for wound care
(vi) OPERATIONAL STATUS?.....NON-OPERATIONAL
(vii) SIDE EFFECTS.....N/A
(viii) INTERACTIONS .....N/A
(ix) DOSAGE.....Single or multiple dressings applied to bleeding wound

(c) Steri-strips
(i) AVAILABILITY.....Individual use packages
(ii) ACTION.....Facilitates closure of wounds
(iii) INDICATIONS.....Superficial wounds
(iv) CONTRAINDICATIONS.....Known hypersensitivity to adhesive

(v) PRECAUTIONS.....Standard/universal precautions for wound care
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....N/A
(viii) INTERACTIONS.....N/A
(ix) DOSAGE.....Single or multiple dressings applied for wound closure; per MD/DO

(d) Staples
(i) AVAILABILITY.....Individual use staple dispensers
(ii) ACTION.....Facilitates closure of wounds
(iii) INDICATIONS .....Wounds
(iv) CONTRAINDICATIONS .....Contaminated wounds, wounds with foreign body material
(v) PRECAUTIONS.....Standard/universal precautions for wound care
(vi) OPERATIONAL STATUS?.....Operational
(vii) SIDE EFFECTS.....N/A
(viii) INTERACTIONS.....N/A
(ix) DOSAGE .....Single or multiple dressings applied for wound closure; per MD/DO

(9) ACLS/Resuscitation

(a) Albuterol MDI
(i) AVAILABILITY.....0.83 mcg metered dose inhaler
(ii) ACTION .....Bronchodilator
(iii) INDICATIONS .....Respiratory distress/bronchospasm
(iv) CONTRAINDICATIONS .....Known hypersensitivity
(v) PRECAUTIONS.....Standard/universal precautions for respiratory patient
(vi) OPERATIONAL STATUS?.....NON-OPERATIONAL (without MD/DO consult)
(vii) SIDE EFFECTS.....N/A
(viii) INTERACTIONS.....N/A
(ix) DOSAGE.....2 puffs, may be repeated two additional times. Additional doses per MD/DO

(10) Anti-hypoglycemics

(a) Oral glucose

Formulary per General Patient Care Protocols

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L. TRANSPORT TO FREESTANDING EMERGENCY MEDICAL FACILITY AT BULLE ROCK (BASE STATION)

1. PURPOSE

To define the type of patient an EMS service may transport to a MIEMSS-designated freestanding medical facility.

2. INDICATIONS

A jurisdiction may allow transport of a patient, who meets one or more of the following indications, to a freestanding emergency medical facility.

a) A stable Priority 2, 3, or 4 patient as outlined in *The Maryland Medical Protocols for EMS Providers* who does not need a time-critical intervention
b) Priority 1 patient with an unsecured airway or in extremis, who requires stabilization beyond the capability of the EMS crew (e.g., cardiac or respiratory arrest)
c) If the freestanding emergency medical facility is a MIEMSS-designated Acute Stroke Ready Facility, patients of all priority that meet stroke criteria may be transported to the Acute Stroke Ready Facility, as long as the transport time to a Primary Stroke or Comprehensive Stroke Center is greater than 15 additional minutes.

3. CONTRAINDICATIONS

Except as provided in Indications, above, the following patients shall not be transported to a freestanding emergency medical facility.

a) Any patient meeting the criteria for transport to a Trauma Center or Specialty Referral Center as defined in The Maryland Medical Protocols for EMS Providers
b) A pregnant patient complaining of abdominal pain or a patient who is in active labor
c) Any patient in need of time-critical intervention that can be provided only at a hospital-based emergency department

4. PROCEDURE

The EMS provider shall consult with a designated Base Station at the freestanding emergency medical facility, or the nearest Base Station if the freestanding emergency medical facility is not a designated Base Station, prior to arrival on all Priority 1 and 2 transports as provided in Indications and when otherwise unclear of the appropriate destination. The designated Base Station shall direct the provider to the appropriate destination.

5. SPECIAL CONSIDERATIONS

None

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M. ON-SCENE PROTOCOL AND ALTERNATIVE DISPATCH PROTOCOL DURING DECLARED PUBLIC HEALTH EMERGENCY FOR PANDEMIC INFLUENZA

This protocol is designed to be implemented only when there is a significant infectious disease that has impacted the health care system to the extent that all hospital beds are full, the EMS/Dispatch work force is significantly depleted due to absenteeism, and the calls for EMS support overwhelm resources to manage all calls. MIEMSS, in collaboration with DHMH and Local health officers, would activate this protocol to provide authorization for the adjustment in the prehospital standard of care.

MANAGING ARRESTS

If the patient is in cardiac arrest, CPR for 5 cycles, than apply AED. Shock and continue to shock with 5 cycles CPR if indicated.

1) If a pulse returns, initiate patient transport as quickly as possible to a higher level of medical care (the ED or rendezvous with ALS, whichever has a shorter ETA).
2) If no shock is indicated and there is no return of pulse, consult medical direction to withdraw care and leave patient on scene.

Follow normal *Maryland Medical Protocol for EMS Providers* and conduct General Patient Care assessment; make sure you are using appropriate universal precautions.

Follow the sequential steps below:

1) If patient has an obvious **non-flu related illness or injury**, apply appropriate *Maryland Medical Protocol for EMS Providers,* then treat and transport appropriately.
2) If patient has **Critical Vital Signs (Table #1)**, transport patient to ED.
3) If patient has **Normal Vital Signs (Table #1)**, then go to Case Definition Signs and Symptoms for Flu (Table #2).
    a) If the patient has **three or more Case Definition Signs or Symptoms for Flu**, transport patient to Alternate Care Facility.
    b) If the patient has **two or less Case Definition Signs or Symptoms for Flu**, EMS provider shall call for Medical Consult (state central resource physician) to determine if EMS provider can leave the patient on scene, and advise the patient to self-quarantine and call a nurse/public health hotline for further assistance.

Table 1. Assess Patient's Vital Signs

	Critical Adult Vital Signs	***Critical Pediatric Vital Signs***	**Normal Adult Vital Signs**	***Normal Pediatric Vital Signs***
	Transport to ED		**Consider Alternate Care**	
Pulse/***Perfusion***	Equal or Greater than 130	***CRT greater than 2 seconds***	Less than 130	***CRT less than or equal to 2 seconds***
RR/***Distress***	Equal or Greater than 30	***Greater than 45 or increased work of breathing Neonate: Less than 30 Infant: Less than 20 Child: Less than 15***	Less than 30	***Unlabored breathing or Neonate: 30–45 Infant: 20–45 Child: 15–45***
Systolic BP	Less than 90	***Neonates: Less than 60 Infants: Less than 70 Children under 10 years of age: Less than 70 + (2 x years)***	Equal or Greater than 90	***Neonates: Equal or greater than 60 Infants: Equal or greater than 70 Children under 10 years of age: Equal or greater than 70 + (2 x years)***
Pulse Ox	Less than 92 on room air	***Less than 92 on room air***	Equal or Greater than 92	***Equal or Greater than 92***
AVPU	Pain or Unresponsive	***Pain or Unresponsive***	Alert or Verbal	***Alert or Verbal***
Lung sounds	Rales/Wheezing	***Rales/Wheezing***	Clear	***Clear***

Table 2. Case Definition Signs and Symptoms for FLU

1. Difficulty breathing with exertion
2. Has doctor-diagnosed flu
3. Cough
4. Fever
5. Shaking chills
6. Chest pain (pleuritic)
7. Sore throat (no difficulty breathing or swallowing)
8. Nasal congestion
9. Runny nose
10. Muscle aches
11. Headache

Maximize the Use of Limited Resources Alternative Dispatch Protocols				
Dispatch Priority Level (match vendor or call center based dispatch protocol/tiered algorithm)	**Response** (Standard Operating Mode)	Level 1(A) Activation of Card 36 and ONLY for use in 6, 10, 18, and 26 DSS1 BELOW IS BACK UP STRATEGY FOR EMD WITHOUT CARD 36	Level 2(B) Implement Declining Response / Configuration CAD Table (Moderate) + Card 36 (6,10,18 & 26) DSS2	Level 3(C) Implement Declining Response / Configuration CAD Table (Severe) + Card 36 (6,10,18 & 26) DSS 3
Classification 1 (*Echo) Confirmed Cardiac Arrest (Not Breathing, Unresponsive per 911 call) (MPD cards - 2, 6, 9, 11,15, 31)	Closest AED Unit and Closest 1st Responder and Closest ALS Ambulance	Closest AED Unit and Closest 1st Responder and Closest BLS Ambulance if available	-Closest AED Unit and -Closest 1st Responder if available	- Closest AED Unit if available - If no unit available, no response
Classification 2 (*Delta) Life Threatening Emergency/Potentially Life Threatening/Confirmed Unstable Patient(s)	Closest 1st Responder and Closest ALS Ambulance	- Closest 1st Responder and Closest ALS Ambulance if available; - BLS ambulance if ALS unit not available	Closest 1st Responder and Closest Ambulance available (ALS or BLS)	- Closest 1st Responder and - Closest Ambulance if available (ALS or BLS)
Classification 3 (*Charlie) Non-Critical/Currently Stable Patient(s) Requiring ALS Assessment	Closest ALS Ambulance	Closest Ambulance available (ALS or BLS)	Closest Ambulance available (ALS or BLS)	- Closest 1st Responder if available or - Closest stand-in responder unit
Classification 4 (*Bravo) BLS Assessment for unknown/possibly dangerous scenes	Closest 1st Responder and Closest BLS Ambulance	Closest 1st Responder and Closest BLS Ambulance if available	Closest 1st Responder	- Trauma Closest 1st Responder - Medical Referral to Nurse or Health Department Advice Phone service if available; or self-transport to Alternate Care Site
Classification 5 (*Alpha) BLS Treatment	BLS Ambulance	Alternate Care Referral	Alternate Care Referral	Alternate Care Referral
Classification 6 (*Omega) Non-Ambulance Care	Alternate care such as Poison Control Center; Police/Fire service call, etc.	Alternate care such as Poison Control Center; Police/Fire service call, etc.	Alternate care such as Poison Control Center; Police/Fire service call, etc.	Alternate care such as Poison Control Center; Police/Fire service call, etc.

N. AIRWAY MANAGEMENT: VIDEO LARYNGOSCOPY FOR OROTRACHEAL INTUBATION

1. PURPOSE

Endotracheal intubation using video laryngoscopy involves visualizing the glottic opening using specialized technology to view "around the corner" and pass the endotracheal tube, under optimal visualization, into the trachea. The purpose is to provide airway and ventilatory support for apnea, hypoxia, hypoventilatory respiratory failure, or respiratory insufficiency.

The video laryngoscope device must have the following features:

a) Color monitor
b) Anti-fog mechanism
c) Video recording device
d) Appropriately-sized blade for the patient being intubated

2. INDICATION

Video laryngoscopy and orotracheal intubation is indicated for patients who meet one or more of the following criteria and for whom appropriately-sized equipment is available:

a) Apnea or agonal respirations
b) Airway reflex compromised
c) Ventilatory effort compromised
d) Injury or illness involving the airway
e) Potential for airway or ventilatory compromise

3. CONTRAINDICATIONS

Lack of an appropriately-sized laryngoscope blade for the patient being intubated.

4. POTENTIAL ADVERSE EFFECTS/COMPLICATIONS

a) Trauma to the mouth, pharynx, larynx, trachea, esophagus
b) Right mainstem bronchus intubation
c) Vomiting
d) Secondary brain injury resulting from hypoxia and/or hypotension
e) Displacement of a properly placed endotracheal tube
f) Esophageal intubation

5. PRECAUTIONS

a) Attempt visualization and endotracheal intubation up to two times. If additional attempts are indicated, consult medical direction and consider what changes would result in improved visualization and success at endotracheal placement of the ET tube.
b) Confirm placement of the endotracheal tube in the trachea as described in AIRWAY MANAGEMENT: OROTRACHEAL INTUBATION.

6. PROCEDURE

a) Insert the Video Laryngoscope Device midline into the pharynx.

b) Advance the Video Laryngoscope Device midline to center the vocal cords on the video screen.

c) Pass the endotracheal tube between the vocal cords, remove the stylet, and advance the tube to the desired depth.

d) Secure the endotracheal tube and verify correct placement.

7. TRAINING AND DOCUMENTATION

a) Providers must complete didactic and practical training.
   (1) Description of technique
   (2) Demonstration of device (features, operation, troubleshooting)
   (3) Documentation requirements
   (4) Mannequin scenarios
   (5) *In vivo* practice

b) Providers must complete the Video Laryngoscopy Procedure Form after each patient encounter in which the Video Laryngoscopy Device is used.

c) Program Medical Directors must review each patient encounter in which the Video Laryngoscope Device is used and provide a quarterly report to the Office of the Medical Director on the approved video laryngoscopy QA form.

O. TRANSPORT TO FREESTANDING EMERGENCY MEDICAL FACILITY (BASE STATION OR NON–BASE STATION)

1. PURPOSE

The purpose of this protocol is to define the type of patient an EMS service may transport to a MIEMSS-designated freestanding emergency medical facility.

2. INDICATIONS

A jurisdiction may allow transport of a patient, who meets one or more of the following indications, to a freestanding emergency medical facility.

a) A stable Priority 2, 3, or 4 patient as outlined in *The Maryland Medical Protocols for EMS Providers* who does not need a time-critical intervention
b) Priority 1 patient with an unsecured airway or in extremis, who requires stabilization beyond the capability of the EMS crew (e.g., cardiac or respiratory arrest)

3. CONTRAINDICATIONS

Except as provided in INDICATIONS, above, the following patients shall not be transported to a freestanding emergency medical facility.

a) Any patient meeting the criteria for transport to a Trauma Center or Specialty Referral Center as defined in *The Maryland Medical Protocols for EMS Providers*
b) A pregnant patient complaining of abdominal pain or a patient who is in active labor
c) Any patient in need of time-critical intervention that can be provided only at a hospital-based emergency department

4. PROCEDURE

The EMS provider shall consult with a designated Base Station at the freestanding emergency medical facility, or the nearest Base Station if the freestanding emergency medical facility is not a designated Base Station, prior to arrival on all Priority 1 and 2 transports as provided in INDICATIONS and when otherwise unclear of the appropriate destination. The designated Base Station shall direct the provider to the appropriate destination.

5. SPECIAL CONSIDERATIONS

None

P. ADULT SURGICAL CRICOTHYROIDOTOMY

1. Initiate General Patient Care.

2. Presentation
   Patients must have reached their 15th birthday and may present with any of the following conditions:
   a) Inability to oxygenate despite having tried BVM with oropharyngeal/nasopharyngeal airway, ET placement, and supraglottic airway (if not contraindicated)
   b) Inability to place ET in the setting of life-threatening upper airway hemorrhage
   c) Completely obstructing upper airway foreign body that cannot be removed via BLS maneuvers or Magill forceps with direct visualization

3. Equipment:

PROVIDERS MAY USE PRE-ASSEMBLED EQUIPMENT OR AN FDA-APPROVED KIT, AS PRESCRIBED BY THE PROGRAM MEDICAL DIRECTOR.

4. Procedure:
   a) Providers must use a designated technique and procedure for establishing the airway through the cricothyroid membrane that has been approved by the program medical director as part of this pilot.
   b) Upon completion of the skill (or at an appropriate time during the sequence of patient care) the provider will obtain medical direction and also notify the receiving physician/emergency department with the following information:
      (1) Patient condition
      (2) Reason for surgical cricothyroidotomy
      (3) Complications arising from procedure (if any)
      (4) Patient response to treatment

5. Surgical Cricothyroidotomy Quality Assurance Process
   a) Individual Paramedic Approval
      (1) Persons participating in this jurisdictional optional protocol will have completed all of the following:
         (a) Classroom lecture **AND**
         (b) Successful placement of device using pig trachea **OR**
         Substitute instruction and demonstration of skill proficiency maybe approved by the program medical director on an individual basis.

b) Ongoing Demonstration of Proficiency
   (1) During bi-annual recertification classes, each paramedic will repeat the classroom lecture and placement of the device using the pig's trachea. **OR** Substitute instruction and demonstration of skill proficiency may be approved by the program medical director on an individual basis.
   (2) Surgical Cricothyroidotomy Pilot Program providers who participate in the continuing education program for the RSI pilot will satisfy this requirement.**)**
c) Review of Each Call
   (1) Documentation:
      (a) The provider will thoroughly document the following on their Patient Care Report (PCR):
         (i) Indications that led to performing cricothyroidotomy
         (ii) Complications that arose from procedure
         (iii) Patient response to treatment
   (2) Notifications:
      (a) Immediate notification of EMS Supervisor following transfer of care to the receiving facility
      (b) Notification of the EMSOP Quality Assurance Section within 24 hours of the event
      (c) Notification of the Program Medical Director within 24 hours of the event
   (3) Individual Event Review
      (a) Each use of this Jurisdictional PILOT Protocol will be reviewed by the EMSOP for correct application and technique.
   (4) The EMSOP will maintain a detailed surgical cricothyroidotomy procedure database and will provide an annual report to the State EMS Medical Director.

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R. VASCULAR DOPPLER DEVICE

1. PURPOSE
When pulses are difficult to detect, or when a blood pressure cannot be measured using a stethoscope, a vascular Doppler device can be utilized.

2. INDICATION
Inability to palpate a pulse.

3. CONTRAINDICATIONS
Patients who have not yet reached their 18th birthday.

4. POTENTIAL ADVERSE EFFECTS/COMPLICATIONS
None

5. PRECAUTIONS
When utilizing a Doppler device, avoid applying to much pressure with the device over the artery, this may obliterate the pulse you are attempting to detect.

6. PROCEDURE
a) Identify the appropriate artery (e.g., carotid, brachial, radial, femoral, dorsalis pedis).
b) A large dollop of gel is applied to the site and to the device.
c) The device is held gently over the artery (too much pressure may obliterate the pulse), and the volume adjusted to hear the pulsation.
d) If the pulse is located, the area should be wiped clean, and the exact site should be marked with a pen or marker.
e) If blood pressure is being taken, the provider finds the pulse and listens as the cuff is inflated. When the pulse sound disappears, you have identified the systolic pressure.
f) If no pulse is found, then sliding the device around the appropriate area or changing the angle of the device slightly may identify the location of the pulse. Be careful not to apply to much pressure on the skin.

7. TRAINING AND DOCUMENTATION
a) Providers must complete practical training.
b) Description of technique
c) Demonstration of device (features, operation, troubleshooting)
d) Documentation requirements (eMEDS®)
e) Scenario

S. PREHOSPITAL ULTRASOUND

1. PURPOSE

a) Many high-impact, high-mechanism trauma patients do not exhibit signs and/or symptoms of internal bleeding in the first hour of the event. Utilizing prehospital ultrasound technology allows an additional non-invasive exam to increase survival and decrease morbidity and mortality from internal hemorrhage. A FAST exam will be completed in the following order with at least a six-second recording of each exam. In addition, patients who have the possibility of abdominal aortic aneurysm can benefit from the prehospital ultrasound exam. Finally, anytime the Termination of Resuscitation Protocol is being utilized and prehospital ultrasound is available, it gives an additional non-invasive exam to confirm and record provider's suspicion of the absence of cardiac activity.

b) For patients presenting with torso or abdominal pain or who present with high-impact, high-mechanism trauma, a prehospital FAST exam will be performed.
   (1) Morison's perihepatic view
   (2) Pelvic view
   (3) Perisplenic view
   (4) Cardiac view

c) For patients who have a high clinical suspicion for abdominal aortic aneurysm, an abdominal ultrasound will be completed.

d) Before termination of resuscitation, a cardiac ultrasound will be completed.

2. INDICATIONS

a) When a patient presents with either obvious or possible high-impact, high-mechanism torso or abdominal trauma

b) To confirm the presence or absence of wall motion in the cardiac arrest patient

c) When a patient exhibits severe abdominal pain with radiation to the back, flank, and/or groin area.

3. CONTRAINDICATIONS

a) Patients who have not reached their 15th birthday

4. PROCEDURE

a) Initiate General Patient Care.

b) Initiate appropriate trauma and or medical emergency protocol including all BLS/ALS interventions.

c) The trained provider will complete the appropriate prehospital ultrasound exam recording for at least six seconds.

ALERT: AT NO TIME SHOULD A PREHOSPITAL FAST EXAM DELAY PATIENT TRANSPORT.

d) Exam will be interpreted and relayed to the consulting hospital. In some cases, for example trauma patients for whom time and distance play a significant factor (category Charlie and Delta), the consulting physician may change the hospital destination based on the results of the prehospital ultrasound exam.

e) Continue patient care as appropriate for either medical and or traumatic emergency.
f) Assure exam is transmitted to the receiving facility through closed, secure network with patient care report.

5. PREHOSPITAL ULTRASOUND QUALITY ASSURANCE PROCESS

a) Requirements for paramedics participating in prehospital ultrasound pilot participation:
   (1) Successful completion of small group six-hour didactic training.
   (2) Successful completion of small group six-hour clinical rotation and direct observation by physician in one of the receiving facility emergency rooms. A minimum of ten ultrasounds must be successfully completed.
   (3) Yearly continuing education will be completed to include at least four hours of either didactic, clinical, and/or use of ultrasound education and/or technology.
b) Ongoing Demonstration of Proficiency
   A verification of prehospital ultrasound education and competence shall be reviewed by the Jurisdictional Medical Director or by his or her designee at any time requested. Although ultrasound is a non-invasive procedure, awareness and clinical interpretation must be maintained.
c) Review of each call
   (1) Mechanism for follow-up of each call will be in accordance with the Quality Review Procedure for Pilot Programs of *The Maryland Medical Protocols for EMS Providers*.
   (2) Immediate notification to the jurisdictional Quality Assurance Officer
   (3) Jurisdictional Medical Director evaluation of all prehospital ultrasounds within twelve hours of incident

T. STABILIZATION CENTER

1. Initiate General Patient Care

2. Presentation

Patients eligible for entry into the Stabilization Center must be without an acute medical or traumatic complaint. If the patient is not requesting evaluation for an emergency medical condition and substance use is suspected, including suspected opioid patients who have improved with naloxone, patient must consent to be evaluated and transported to the Stabilization Center. Then the Paramedic must complete the Stabilization Inclusion Checklist.

3. Treatment

Initiate patient screening. All answers must be "NO" for the referral protocol to continue. For any "YES" answers, consultation with an adult Base Station is required.

Patient with acute medical or traumatic complaint	YES	NO
Pediatric patient (Age less than 18)	YES	NO
Systolic BP greater than 220 or less than 80 mm Hg	YES	NO
Diastolic BP greater than 120 or less than 50 mm Hg	YES	NO
Pulse greater than 110	YES	NO
Pulse less than 50	YES	NO
Respiratory rate greater than 22	YES	NO
Respiratory rate less than 10	YES	NO
Blood glucose greater than 300 mg/dl	YES	NO
Blood glucose less than 70 mg/dl	YES	NO
Pulse oximetry less than 92% and/or supplemental oxygen required	YES	NO
GCS less than 13	YES	NO
Patient refuses transport to stabilization center?	YES	NO
Evidence of significant head or truncal trauma ?	YES	NO
Evidence of new head trauma (ecchymoses, hematomas)	YES	NO
Evidence of uncontrolled bleeding?	YES	NO
Patient requires more than minimal assistance with ambulation →Assistive devices (cane, walker permitted) →Assistance/stabilization of more than one limb required	YES	NO

4. **Medical consultation is required for any "YES" response.**
5. **If all answers are "NO" or medical consultation approves if a "YES" occurs, the patient shall be transported to the Stabilization Center.**

U. STROKE PATIENT ONLINE NEUROLOGIST CONSULT PROCESS

1. PURPOSE

Reduce the amount time from medical recognition of stroke symptoms to advanced treatment at a stroke center, thus reducing the "first medical/EMS contact to needle time," which has been shown to improve the outcome for stroke patients. In an effort to improve on the current Maryland EMS stroke system of care, the on-call 24/7 stroke neurologist for the receiving hospital will be patched into the EMS-to-base station consult, thus allowing the stroke neurologist to hear the EMS report and receive a family member's contact information from the EMS provider. Upon the conclusion of the EMS consult and while the EMS unit is transporting, the stroke neurologist will call the family member to gather important medical information that would normally take valuable minutes at the hospital.

Prior to submission of the pilot protocol application to the state EMS medical director, jurisdictions must obtain the following:

a) Verification that MIEMSS and EMRC/SYSCOM is able to facilitate the logistics required to assure proper communication among EMS providers, the receiving facility, and the on-call stroke neurologist
b) Agreement with a MIEMSS-designated primary stroke center (herein "approved primary stroke center")

2. INDICATIONS

a) Adult patient who presents with stroke symptoms and meets the requirements for a STROKE Alert.
   (1) Positive Cincinnati Stroke Scale
   (2) Last know well time of less than 20 hours
   AND
b) Based on geography, the intended destination is the approved primary stroke center that maintains an agreement with the EMS jurisdiction per 1. b), above.

3. CONTRAINDICATIONS

a) Patients who have not yet reached their 18th birthday
b) Patients outside of the catchment area of the approved primary stroke center

4. PROCEDURE

a) No change in current EMS dispatch process with ALS
b) No change to current EMS initial assessment (vital signs, physical assessment, and application of Stroke: Neurological Emergency Protocol to include "last known well time") and treatment as directed by the *Maryland Medical Protocols for EMS Providers*.
c) EMS provider will ask the patient's family, if present, for a telephone number, which will be relayed to the stroke neurologist during the EMS consult.

d) For patients meeting "STROKE Alert" criteria who are to be transported to the approved primary stroke center, EMS will call EMRC and state "UNIT NUMBER WITH STROKE ALERT FOR (name of approved primary stroke center) HOSPITAL." EMRC will patch that call to the approved primary stroke center and simultaneously link the 24/7 cell phone maintained by the on-call stroke neurologist. The stroke neurologist will then listen to the EMS-to-base station (approved primary stroke center) consult.

e) Patient will be transported to the approved primary stroke center, and the standard hospital stroke/brain attack process will be followed.

f) During the transport, the stroke neurologist will call a member of the patient's family on the telephone number obtained per 4. c) above to gather important medical information in an effort to reduce "first medical/EMS contact to needle time."

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V. ALTERNATIVE DESTINATION PROGRAM

1. PURPOSE

To provide quality care in a more timely fashion, with potential for cost savings for patients, and a rapid return to service for EMS units. This program may also allow patients to receive care within their HMO services, where their medical records and physicians are readily available.

Any Maryland EMS Operational Program (EMSOP) may establish an alternative destination program tailored to the needs of its community, if the program meets all the requirements set forth in this protocol. Montgomery County Fire and Rescue Services (MCFRS) conducted a pilot alternative destination program in FY 2017, which is detailed below beginning with "b) Start Point."

a) Background
   (1) Emergency departments across the country spend a disproportionate share of staff and financial resources providing non-urgent care to patients who often would have been better served in a primary care setting. According to a 2010 study by the RAND Corporation, between 14% and 27% of all ED visits are for non-urgent care and could take place in a different setting, such as a doctor's office, after-hours clinic, or retail clinic with a potential cost savings of $4.4 billion annually. A 2010 study published in the Annals of Emergency Medicine found that frequent users comprise 4.5% to 8.0% of all ED patients, yet account for 21% to 28% of all visits.
   (2) Montgomery County Alternative Destination Pilot Program
      (a) In 2014 MCFRS received 80,000 EMS calls and performed 65,000 transports. Of the 65,000 transports, 60% were BLS (low-acuity) and 40% were ALS. The EMS growth rate is unsustainable. At current rates, MCFRS would need to add an ambulance each year to service the needs of residents in the county. In an effort to encourage appropriate use of 9-1-1 services and disposition to an emergency department, and to better serve the state under the new Medicare All Payer System (waiver), Holy Cross Health, Kaiser Permanente, and MCFRS piloted the alternative destination program (ADP) protocol to optimize EMS resource use and assure appropriate patient care.
      (b) Through a joint release, all entities involved provided a general notice to the population being serviced under the pilot for Phase 2.
      (c) Montgomery County identified a highly-qualified "pilot triage expert" to consistently apply the Provider Quick Form, consent the patient, and make the destination determination. The designated expert was a state-certified EMT for Montgomery County who also is a registered nurse, and who was previously an ALS provider. Using a highly-qualified pilot triage expert not only reduces risks to the patient, but also requires special skills that are not necessarily applicable to all EMTs across Maryland.
      (d) The objective of this quality improvement pilot was to assess the accuracy and safety of triaging dispatch-identified "IAED Alpha determinate code" BLS patients to either Holy Cross Hospital Express Care (co-located with Holy Cross's emergency department) or Kaiser Permanente's Clinical Diagnostic Unit (CDU) by applying the Provider Quick Form.

b) Start Point
Due to changing federal and state health care delivery systems, Montgomery County is seeking to develop a process for improving the management of the EMS and health care delivery system for stable, low-priority patients.

c) Quality Improvement Design
A literature review reveals there are multiple strategies to match the right patient with the right clinical resources. This is a modification of current practices, amended by the addition of the Kaiser CDU, ensuring access to the patient's own insurance and personal medical records, as well as improved continuity of care, in Phase 2.

d) Benefits
As emergency department off load times have increased, the alternative destination process may improve the EMS resource utilization. It is designed to improve patient satisfaction by providing patient cost savings and time savings while matching patients to the appropriate resource and continuity of care.

e) Risks
(1) As the EMS Operational Program will be dispatching the normal resources to the patient with the addition of the "pilot triage expert," and the patient will be voluntarily participating in the ADP pilot and destination determination, there is no increased risk.
(2) There are multiple safety checks incorporated in this ADP pilot, so no patient is placed at increased risk. These include:
(a) The use of an EMS unit response for all patients, as would routinely occur
(b) The use of the Internal Association of Emergency Dispatchers (IAED) Medical Priority Dispatch (MPD) standard public service access point screening and dispatch algorithm, which is highly accurate at determining low-acuity patients.
(c) The use of the pilot triage expert, who has both EMS and nursing training and experience
(d) Medical director oversight group access and review of all ADP medical records through Holy Cross and Kaiser Permanente, with an objective State EMS Medical Director review
(e) If at any time a patient at an alternative destination is identified to need a higher level of care, Holy Cross Express Care will immediately transfer the patient to the Holy Cross Hospital Emergency Department (same building) and Kaiser Permanente CDU will call MCFRS, who will dispatch the appropriate EMS resource to transport the patient to the appropriate emergency department.

f) End Points
(1) The ADP pilot metrics are designed to assess the benefit to the system of using the Provider Quick Form and the ADP pilot protocol.
(2) If, at any time, a patient has been identified as being placed at risk.
(a) A review demonstrates that the patient required admission to the hospital or observation unit, following under-triage to an alternative destination with proper use of the Provider Quick form, or a truly untoward outcome were to occur.
(3) If there has been no demonstrated benefit to the delivery of EMS services, such as extended EMS unit cycle time or availability.
(4) If the costs of delivering this program exceed benefit gained in EMS service to the community, as determined by MCFRS.

g) Analysis
The ADP metrics will be compared before and after the implementation of this pilot protocol to determine if system improvement occurred. The Provider Quick Form will be reviewed and compared for accuracy and safety.

h) Adoption of Results
As the proposed is using a pilot triage expert with both EMS provider and nursing experience and training, the results of the ADP pilot cannot be generalized to all EMTs or other EMS providers. If demonstrated to be accurate, safe, and reliable, the Provider Quick Form screening tool and the ADP pilot protocol could be considered for EMS provider trials with the goal of improving the delivery of EMS care.

i) The patient satisfaction survey may demonstrate positive customer service.

j) Phases
   (1) The ADP pilot protocol will be implemented in two phases. All of the indications, contraindications, procedures, quality assurance, the Provider Quick Form, eMEDS®, and consent form will be consistent in both Phase 1 and Phase 2. The Phase 2 documents will include the Kaiser CDU as an additional destination option.
      (a) Phase 1 will use one alternative destination: Holy Cross Hospital Express Care in Silver Spring, Maryland. This will assure that all patients will have access to the full array of diagnostic services and a full-service emergency department in case of under-triage. This will also allow for comprehensive follow up on all patients seen and straightforward evaluation of the Provider Quick Form. In an effort to implement an additional safety net for these patients in the pilot, Montgomery County will be using a very small group of EMS providers that are specially-authorized by the MCFRS medical director as the pilot triage experts for MCFRS services. These providers have decades of EMS experience and also many years of experience as registered nurses.
      (b) Phase 1 will be conducted for 60 days from the start date. Upon the conclusion of this phase, or earlier if untoward events have arisen or MCFRS terminates the pilot protocol, there will be a summary report generated to MIEMSS using the metrics outlined in the quality assurance section of this protocol. MIEMSS will review the summary report and metrics and, with Montgomery County, will evaluate the feasibility of moving the pilot into Phase 2. During this evaluative period, Phase 1 will continue unless the pilot is ceased due for any reason.
      (c) After reviewing the results of Phase 1, the participants in this pilot, including MIEMSS, will determine the feasibility of implementing Phase 2 of the project. Phase 2 will allow for the addition of one alternative destination (Kaiser Permanente Gaithersburg Medical Center Clinical Decision Unit), assuming the conditions listed below are met.
      (d) The addition of this second alternative destination will demonstrate how to program functions under a different cost structure. The destination added in Phase 2 of the pilot will have the following minimum patient care capabilities:
         (i) 12-lead EKG
         (ii) UA
         (iii) Urine Pregnancy
         (iv) Minor Suturing

(e) Phase 2 will be conducted for 60 days. Upon the conclusion of Phase 2, or earlier if untoward events have arisen or MCFRS terminates the pilot protocol, there will be a summary report generated to MIEMSS using the metrics outlined in the quality assurance section of this protocol.

(2) This ADP pilot protocol cannot be extended or modified, including its timeline, without the approval of MIEMSS and the EMS Board.

2. INDICATIONS

Certain low-acuity Priority 3 patients who match the ADP pilot protocol criteria, within the geographic boundaries and available hours of the pilot, will be offered transportation to an appropriate receiving facility. The receiving facility will be offered based on the medical needs of the patient, the corresponding capabilities of the receiving facility, and Kaiser Permanente patients based on receiving facility coverage. The ADP pilot protocol (Phases 1 and 2) will be run during the pilot hours on weekdays.

a) Receiving facilities Phase 1:
   (1) Holy Cross Hospital Express Care, located at 1500 Forest Glenn Rd, Silver Spring, Maryland, will be the receiving facility for all included patients.

b) Receiving facilities Phase 2:
   (1) Kaiser Permanente Gaithersburg Medical Center CDU, located at 655 Watkins Mill Road in Gaithersburg, Maryland, will be a receiving facility for Kaiser Permanente patients.
   (2) Holy Cross Hospital Express (see location above) will be a receiving facility for other insured or uninsured patients who select this alternative destination and who need to be seen after clinic hours or require diagnostic imaging services.

3. CONTRAINDICATIONS

a) Patients who have not yet reached their 18th birthday
b) Patients who are 60 years of age or greater
c) Patients who do not meet the criteria for the MIEMSS-approved inclusion/ exclusion checklist
d) Patients who are not able to communicate with pilot triage expert provider, including non-English speaking patients
e) Patient who are not able to understand the consent process
f) Patients who refuse to participate in pilot

4. PROCEDURE

a) This pilot protocol may only be used by MCFRS EMS providers who are identified as pilot triage experts and specifically authorized to do so by the MCFRS medical director.
b) General Patient Care Protocol
c) Under the ADP pilot protocol, all patients will be offered an appropriate definitive care destination.
d) For inclusion in the ADP pilot protocol, the patient must agree and must have:
   (1) No chief complaint consistent with a comprehensive evaluation that would traditionally need the capabilities of a full service emergency department
      (a) High-risk chief complaints are currently defined as dyspnea, AMS, syncope, chest pain, focal neurological deficits, unexplained back or abdominal pain, seizures, and sometimes fever.

(2) No physical findings consistent with time-dependent needs for assessment or stabilization
   (a) Signs on exam that indicate a threat to airway, breathing, circulation, circulation to an extremity, disability (deficit) or deformity, as well as severe tenderness (ABCDE, etc.)
(3) No reasonably foreseeable signs or suspicion of any deterioration of condition (eg, airway or hemodynamic compromise)
(4) No requirement for either ALS monitoring or ALS interventions
(5) All affirmative answers on the ADP consent form

e) In order to include the patient in the ADP pilot protocol, the authorized MCFRS EMS pilot triage expert must obtain a complete set of vital signs, a complete history, and a signed pilot consent, and they also must complete the Provider Quick Form.

f) If the patient does not agree to be included in the pilot, the consent form will have the "declination" box checked and the patient will be transported to the emergency department per normal MCFRS practice.

g) If patient is stable, has met the inclusion criteria of the ADP pilot protocol and Provider Quick form, and has a disease/injury process that can be safely treated by a primary care or urgent care practitioner:
   (1) Phase 1
      (a) The consented patient will be transported to Holy Cross Express Care.
      (b) If patient refuses to participate, patient condition deteriorates, or changes their mind during transport and declines to participate, the patient will be taken to nearest full service emergency department.
   (2) Phase 2
      (a) Determine if the patient has Kaiser Permanente health insurance.
         (i) If they are a Kaiser patient, they may be transported to the Kaiser CDU in Gaithersburg.
      (b) If patient has other health insurance or is uninsured, or select this alternative destination, they should be transferred to Holy Cross Hospital Express Care in Silver Spring.
      (c) Contact the proposed receiving facility and discuss patient with receiving licensed health care professional (MD/DO, NP, or RN) and ensure that the facility is willing to accept the patient. This contact must be made on a recorded line. Upon arrival, have the receiving health care professional sign off on the MCFRS pilot consent form.

h) The MCFRS ambulance crew will transport the patient to the alternative destination and provide both a written and verbal report to the receiving health care professional.

i) If patient refuses to participate, patient condition deteriorates, or changes their mind during transport and declines to participate, or the receiving facility refuses the patient, the patient will be transported to nearest appropriate full service emergency department without argument or delay.

j) The transporting unit and the MCFRS specially-authorized EMS provider will complete an eMEDS® report, which will include a sign-off from the receiving licensed health care professional.

5. QUALITY ASSURANCE

a) The overall pilot is under the shared medical direction of MCFRS EMS medical director, who will collaborate with the physician designee from Holy Cross Health Center, Silver Spring; medical director for Holy Cross Hospital Emergency Department; and physician assigned by Kaiser Permanente, to ensure that triage protocols are safe and effective for each receiving facility. Upon beginning the pilot, the local site medical directors will be accountable for ensuring adherence to pilot protocols, communication, and training. This group, along with MIEMSS' state EMS medical director, will meet or hold a teleconference weekly during the pilot to review all cases evaluated by the pilot triage expert and evaluate emergent trends, ensure the pilot protocols are not leading to suboptimal triage, and evaluate any sentinel events as necessary.

b) In addition, the medical directors and MCFRS operational leadership will meet weekly to review and a report to the state EMS medical director within three days of the conclusion of these meetings. The report will include:
   (1) Report on PILOT METRICS (below)
   (2) Patient satisfaction survey results
   (3) Unscheduled reentry of patient into health care system within 72 hours of transport
   (4) Any untoward events or formal patient complaints with detailed explanation
   (5) Any deviation or challenges regarding the pilot triage experts' implementation of the ADP pilot protocol or Provider Quick Form.

c) Pilot Metrics
   (1) Each patient transported to and treated at any of the alternative destinations must have a discharge diagnosis. Data for any patients who are secondarily transported to another facility must also be captured.
   (2) Number and type of upgrades from alternative destination (specific signs/ symptoms on presentation, where slipped though inclusion/exclusion criteria, and final diagnosis)
   (3) Number of patients who qualified, the number who accepted transport to an alternative destination, and the number who refused (ideally with reason for refusal)
   (4) The number of patients who were screened but failed one or more items on the Provider Quick Form checklist
   (5) Any patients who failed to be accepted at one of the alternative facilities and reason for refusal
   (6) Any identified problems by the pilot triage expert to comply with or apply the pilot protocol
   (7) EMS average "arrival destination to back in service" time (turnaround time) for Holy Cross and the alternative facilities
   (8) EMS "first unit notification time until transport unit is back in service" time (total call duration time)
   (9) Patient standardized satisfaction survey results
      (a) Did patient have additional unscheduled reentry into urgent care, PMD, or emergency department within 72 hours of alternative destination?
      (b) Was patient satisfied with choice?
      (c) Rate EMS care on scale of 1-5
      (d) Rate destination care on scale of 1-5
      (e) Any complications or complaints associated with care decision?
   (10) What are their pre-implementation performance measures (above) for the units in the pilot area?

Montgomery County Alternative Destination Program Protocol
Provider Quick Form

	Yes	No
1. Patient is an Alpha MPD dispatch and meets MIEMSS triage and treatment category Priority 3.	❑	❑
2. Patient is between the age of 18 and 59 years of age	❑	❑
3. **Criterion 1:** Vital Signs are within these limits a. Respirations 12–18 b. Blood Pressure: 100–140 systolic 60–100 diastolic c. Pulse: 60–100 d. Temperature: less than 101 F and greater than 96 F	❑	❑
4. **Criterion 2:** High-risk indications are <u>Absent</u> a. Severe Pain b. Chest or Abdominal Pain c. Shortness of breath or respiratory distress d. Altered Mental Status or new neurologic deficit e. Unable to walk (if able to walk before illness) f. Patient high-risk condition 1. Active malignancy 2. HIV 3. Immunosuppressive therapy 4. Transplant	❑	❑
5. **Criterion 3:** Physical exam performed to assure patient does not have exclusion criteria.	❑	❑
6. **Criterion 4:** Criterion 4: Patient has one or more of the non-emergency chief complaints (refer to back).	❑	❑
7. EMS provider is able clearly communicate with patient and the patient is able to communicate with EMS.	❑	❑
8. Patient is able to understand the consent process.	❑	❑
9. Patient has read and signed the **MCFRS Alternative Destination Pilot Consent Form.**	❑	❑
10. Paperwork is completed for Alternative Destination Case Review a. eMEDS® b. Original **MCFRS Alternative Destination Pilot Consent Form** c. Provider Quick Form	❑	❑

Criterion 4: Non-Emergency Chief Complaints

1. Allergy or hay fever
2. Back pain, mild; able to walk without assistance
3. Contusions or abrasions, minor
4. Cough, mild; without hemoptysis or respiratory impairment
5. Non-traumatic dental problems
6. Diarrhea, without dizziness or other signs of dehydration
7. Dizziness, chronic (recurrent or known history)
8. Dysuria, mild; female
9. Ear pain
10. Ingrown toenails
11. Itching without systemic rash
12. Eye irritation without signs of active infection, minor
13. Fracture, distal extremity (forearm, lower leg), isolated injury, not open, With neuro/vascular intact
14. Headache, minor without neurological impairment
15. Injury follow-up (minor injury, treated previously)
16. Joint pain
17. Mouth blisters
18. Muscle aches
19. Nausea, vomiting
20. Neck pain (no history of acute trauma)
21. Nosebleed (resolved)
22. Painless urethral discharge
23. Physical exam requests (except patients with diabetes, CHF, kidney failure, cancer)
24. Plantar warts
25. Rectal pain/itching, minor
26. Sexual disease exposure
27. Simple localized rash
28. Sinusitis, chronic
29. Skin infection or sores, minor
30. Sore throat without stridor
31. Sunburn (localized without blisters)
32. Vaginal discharge
33. Vaginal bleeding (Hx non-pregnant, not postpartum, and requires less than one pad in 5 hours)
34. Upper respiratory infection
35. Work release or disability
36. Wound checks

Draft MCFRS Alternative Destination Pilot Consent Form

(Method for copy to each: One patient, One MCFRS and ONE receiving)

I have called 9-1-1 to seek medical treatment. After assessment by and discussion with the Montgomery County Fire and Rescue Services (MCFRS) EMS provider, I have been offered transportation by the MCFRS to one of the following destinations:

PHASE 1:
- o Holy Cross Hospital Express Care in Silver Spring
- o I DECLINE TO PARTICIPATE in the pilot and want to go to Holy Cross Emergency Department or nearest appropriate emergency department

PHASE 2:
- o Kaiser Permanente Clinical Decision Unit in Gaithersburg
- o Holy Cross Hospital Express Care in Silver Spring
- o I DECLINE TO PARTICIPATE in the pilot and want to go to Holy Cross Emergency Department or nearest appropriate emergency department

I understand that the choice of where to receive medical care is my decision and that I can decide to be transported to a hospital emergency department or one of the destinations listed above.

I understand that if I have an emergency medical condition, a hospital emergency department is required under federal law to provide me a screening exam and stabilization regardless of my health insurance, and I further understand if I am a member of an HMO, under Maryland law an out-of-network hospital emergency department cannot balance bill me for treatment for an emergency medical condition.

I understand that I may revoke this decision and request transportation to a hospital emergency department at any time.

I understand that I may need to be transferred to the nearest appropriate emergency department if my illness or injury is found to be too serious to be managed at the alternative destination.

I understand that because of my participation in this pilot and transport to an alternative destination, MCFRS will not bill me for ambulance transport to the initial alternate destination.

At this time I wish to be transported to the destination checked above.

I also understand that this transportation and care choice arises out of a time-limited pilot project that has been authorized by MCFRS and by the State EMS Board. I understand that if I call 9-1-1 in the future, this pilot may be over and my transportation and care choice may be limited to only emergency departments. I also understand that other MCFRS patients may not be offered the same choices due to factors that may exclude them from the pilot program.

PILOT PROGRAM
ALTERNATIVE DESTINATION PROGRAM

Name:_____

Signature:_____ Date: _____

Patient Phone Number for Survey:_____

Witness Name and Relationship:_____

Signature:_____ Date: _____

MCFRS Pilot Triage Expert Provider: _____

Signature:_____

Upon delivery to alternative destination and after the patient has been screened and accepted:

Name of receiving staff (MD/DO/NP/RN):_____

Signature of receiving staff:_____

W. NALOXONE "LEAVE BEHIND" PROTOCOL

1. PURPOSE

Naloxone is a prescription medication indicated for the reversal of respiratory depression or unresponsiveness due to opioid overdose. Increasing the accessibility and availability of naloxone to family members, close friends, or the public, specifically those at risk for an opioid overdose, may reduce the chance of a prolonged hypoxic event or eventual cardiac arrest

MARYLAND EMS PROVIDERS APPROVED TO PARTICIPATE IN THIS PILOT PROTOCOL DO SO IN ACCORDANCE WITH THE MARYLAND DEPARTMENT OF HEALTH ORDER OF JUNE 1, 2017, "MARYLAND OVERDOSE RESPONSE PROGRAM STATEWIDE NALOXONE STANDING ORDER," AND COMAR 13.3101.

2. INDICATIONS

a) Following an administration of naloxone prior to arrival of EMS or as described by the *Maryland Medical Protocols for Emergency Medical Providers* or
b) Following evaluation by a crisis intervention team at a fire/EMS station (e.g., Safe Station for opioid treatment referral) that has identified an opioid dependent individual when immediate placement cannot occur and the individual is released

3. CONTRAINDICATIONS

a) "Leave Behind" naloxone shall not be dispensed to anyone who has not yet reached their 18th birthday.

4. PROCEDURE

a) Following completion of all general patient care, which may include a patient-initiated refusal of care, naloxone hydrochloride(s) and necessary paraphernalia that has been approved by the EMS Operational Program in accordance with Maryland Department of Health Guidelines may be issued.
b) Document the distribution of naloxone in the patient care report as required by the EMS Operational Program.

5. REPORTING

a) Jurisdictions shall collect documentation on all distributions of naloxone hydrochloride(s) and necessary paraphernalia in this MIEMSS-approved method.
b) Jurisdictions shall submit quarterly reports to the State EMS Medical Director to include jurisdictional incident numbers and the number of doses of naloxone hydrochloride distributed for each occurrence.

X. MINOR DEFINITIVE CARE NOW, BALTIMORE CITY FIRE DEPARTMENT (NEW '19)

Note: This document does not contain all of the material approved by the EMS Board. For the entire text of the protocol, contact the Office of the Medical Director

1. PURPOSE

The objective of this pilot program is to assess the impact, accuracy and safety of providing low-acuity patients, identified as Alpha patients by IAED criteria (Basic Life Support), with immediate on-scene care by a two-person team composed of a BCFD Minor Definitive Care Now (MDCN) paramedic provider, and one of the following Advanced Level Providers (ALP): a UMMC Nurse Practitioner (NP), a Maryland-licensed physician affiliated with UMMC with board certification in emergency medicine ("Physician"), or UMMC Physician Assistant (PA). This will be referred to as the MDCN Team.

2. INDICATIONS

a) Low-acuity patients, identified by the IAED™ MPDS® protocol as an 'Alpha determinant code Basic Life Support,' who meet additional criteria outlined in the MDCN protocol below; AND
b) Patients with an incident address that falls within the geographic boundaries of the UMMC, Midtown Campus or Bon Secours catchment areas; AND
c) Patients who consent to participate in the MDCN Pilot Program.

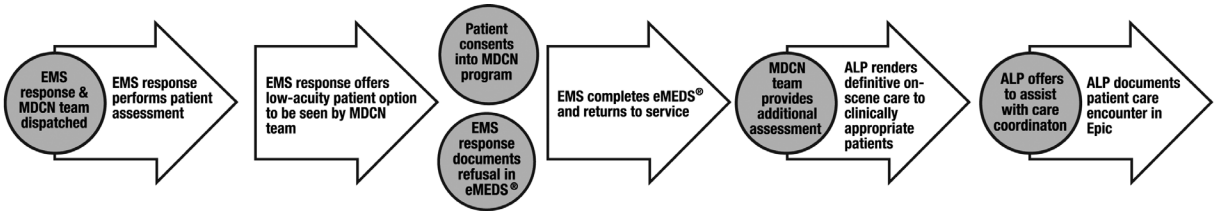
3. CONTRAINDICATIONS

a) Patients who decline enrollment in MDCN Pilot Program;
b) Patients who are deemed clinically inappropriate for on-scene treatment by the MDCN Team following assessment;
c) Individuals who refuse participation by revoking written consent, verbal refusal of care at time of visit;
d) Patients who possess a language or communication barrier that inhibits the MDCN Team's ability to appropriately address the patient's needs at the scene;
e) Patients who are not able to or lack the capacity to understand the informed consent process; and
f) Patients who have not yet reached their 18th birthday.

4. GENERAL PROCEDURES

a) When a 911 call response for EMS service is dispatched, the MDCN Team will respond to the scene concurrently with the typical BCFD EMS response unit to Alpha-level calls within the UMMC, Midtown Campus and Bon Secours patient catchment areas.
b) If a patient refuses EMS care and transport, a patient refusal form and eMEDS should be completed per MIEMSS Protocols while on scene.
c) If the patient is determined to be a low acuity candidate for MDCN program (as defined in Section VI below), the BCFD EMS response personnel will offer the patient the option to be seen by the MDCN Team.
d) The MDCN Team will request patient consent (see MDCN Consent Form) to provide minor definitive treatment on scene.

e) Once consent is provided, patient information, including information collected by the EMS response personnel can be shared with the ALP.
f) The EMS response personnel will return to service. If the MDCN Team determines that the patient needs to be transported and the patient decides they want to be transported, or if for any reason, the patient decides they want to be transported, the MDCN Paramedic will radio PSAP for an EMS transport unit. After requesting the unit, the BCFD MDCN Paramedic will perform any advanced life support skills, as defined by the MIEMSS Protocols for EMS Providers, to provide all necessary care within their scope of practice, until additional EMS providers arrive on scene and assume patient care and transport to the closest appropriate hospital. Any care rendered under the MIEMSS Protocols will be documented in eMEDS.
g) The MDCN Team performs any additional assessment and if indicated, the ALP will render treatment (see 12. Formulary, below). The MDCN Paramedic may assist with patient assessment (e.g., vital signs, pulse oximetry), the ALP will provide treatment associated with the MDCN Pilot Program.
h) The ALP may also offer to assist patients with setting up clinic appointments. The Operations Center, located at UMMC, may call and connect patients to appropriate care, either inside or outside of the University of Maryland Medical System (UMMS), depending on need, preference, and insurance status of the patient.
i) The MDCN Team documents the patient care encounter in the UMMC electronic health record system ("Epic"). If at any time during the encounter the patient refuses further assessment or treatment, the refusal must be documented in Epic.



j) The UMMC ALP and BCFD MDCN Paramedic providers will be restricted to their respective scopes of practice set by the Maryland Board of Nursing, Maryland Board of Physicians and MIEMSS.

5. ADVANCED LEVEL PRACTITIONER PROCEDURES

a) This protocol may only be used by the Advanced Level Practitioner (ALP).
b) MDCN Paramedics will follow MIEMSS Protocols for EMS Providers.
c) Under the MDCN Pilot Program, all eligible patients will be offered the choice to "opt in" to receive on-scene definitive care. Participation in this pilot program is voluntary and will require patients to provide signed, informed consent. The on-scene treatment provided by the ALP will be in accordance with the medication and procedure list detailed in 12. Formulary and 13. Supply List, below.
d) Inclusion Criteria: the patient must provide consent and must not have any of the following exclusion criteria:

(1) A chief complaint consistent with evaluation that would indicate a need for the capabilities of a full service ED
   (a) High risk chief complaints are currently defined as dyspnea, altered mental status, syncope, chest pain, focal neurological deficits, unexplained back or abdominal pain, seizures, and sepsis (see vital sign criteria listed in 8. Medical Consultation, below).
(2) Physical findings consistent with time-dependent needs for emergent assessment or stabilization
   (a) Signs on exams that indicate a threat to airway, breathing, circulation, circulation to an extremity, disability (deficit) or deformity, as well as severe tenderness (as indicated by an assessment of airway, breathing, circulation, disability, exposure (ABCDE), etc.).
(3) Reasonably foreseeable signs or suspicion of any deterioration of condition (e.g. airway, breathing, hemodynamic or neurologic compromise)
(4) Any requirement for any advance life support (ALS) monitoring or ALS interventions

e) In order to include the patient in the MDCN Pilot Program, the MDCN Team will obtain a complete set of vital signs, medical history, and the ALP will obtain a signed MDCN Pilot Program Consent Form.
f) If the patient is stable and deemed by the ALP to meet the criteria of the MDCN protocol, and has an injury or disease process, which can be safely treated on scene:
   (1) The consenting patient will receive definitive on-scene care by the ALP member of the MDCN Team.
   (2) If the patient refuses to participate in the MDCN Pilot Program, the patient's condition deteriorates, or while on scene the patient changes their mind and declines to participate, the patient will be taken to the closest appropriate ED via ambulance. See 4. General Procedures above for response steps.
g) The MDCN Team will provide discharge instructions for each patient who participates in the MDCN Pilot Program.
h) In the event that the MDCN Team evaluates the consented patient and recommends ED transfer but the patient refuses, see 4. General Procedures for appropriate actions.

6. MEDICATION MANAGEMENT

The ALP is authorized to manage drugs and devices under the following protocols:

a) The management of drugs or devices includes evaluating, initiating, altering, discontinuing, furnishing and ordering of prescriptive and over-the-counter medications.
b) Medication evaluation includes assessment of:
   (1) Other medications being taken
   (2) Prior medications used for current condition
   (3) Medication allergies and contraindications, including appropriate labs and exams

c) The drug or device is appropriate to the condition being treated, and:
   (1) Accepted dosages per references.
   (2) Generic medications are ordered if appropriate.
d) A plan for follow-up is written in the patient's chart and provided to the patient.
e) The prescription must be written in patient's Epic chart including name of drug, strength, instructions and quantity, and signature of the ALP.

7. DISPENSING MEDICATIONS

The ALP may dispense prescription drugs and devices, under the following protocols:

a) They have current prescriptive authority, including Maryland CDS registrations.
b) All drugs and devices ordered are limited to the Formulary, OR are per the recommendations in the Resources listed in this document.
c) The drugs and devices ordered are consistent with the ALP's educational preparation or for which clinical competency has been established and maintained.
d) The drug or device ordered is appropriate to the condition being treated.
e) Patient education is given regarding the drug or device.
f) The name, title, and licensing number of the ALP is written on the transmittal order.
g) A physician affiliated with the MDCN Pilot Program is available during hours of operation for in person or telephone medical consultation.
h) The drug or device utilizes required pharmacy containers and labeling.
i) All appropriate record keeping practices of the dispensary are performed.
j) All other applicable Standardized Procedures in this document are followed during health care management.
k) All General Policies regarding Review, Approval, Setting, Education, Evaluation, Patient Records, Supervision and Consultation in these Standardized Procedures are in force.

8. MEDICAL CONSULTATION

While it is the intent of MDCN Pilot Program to respond to low-acuity calls, if immediate patient deterioration should occur, EMS transport resources shall be utilized.

MDCN Medical Director notification and/or emergent ALS transport to the closest appropriate ED with the following being examples of patients and scenarios that shall generate ALS transport:

a) Acute myocardial infarction (AMI) or symptoms consistent with AMI
b) Acute central nervous system or focal neurologic deficits
c) Severe CHF
d) Severe respiratory distress
e) O_2 Saturation < 90% on room air, if acute
f) Hypotension
g) Acute altered mental status, unless intoxicated
h) Adult heart rate > = 140
i) Emergency hypotension
j) Moderate to severe CHF

k) SBP > = 240 or DBP > = 140 at presentation (asymptomatic) with preexisting hypertension history
l) Adult heart rate > = 110 at time of disposition
m) The MDCN Team responds in < 14 days for same acute complaint *Does not apply to chronic recurrent complaints unless there is a change in the complaint*
n) Elevated BP or heart rate in pregnancy or < = 6 weeks post-partum
o) Pregnancy complications
p) Chest pain (potentially consistent with angina or angina equivalent symptoms)
   (1) Nonspecific chest pain age > = 30 with history of:
      - Hypertension
      - Diabetes
      - Smoking
      - Coronary artery disease
      - Hyperlipidemia
      - Family history of coronary artery disease by age of 60; OR

      Nonspecific chest pain age > = 50 without risk factors
      - Abdominal pain
      - Requiring analgesic

      Nonspecific chest pain age > = 70
      - Diabetic
      - Uncertain diagnosis

   (2) Lab Criteria:
      - D-Stick –low less than70 or greater than300
      - O2 Sat 2% less than chronic levels

   (3) Vital sign and age consult criteria
      - Heart rate/minute
        - Adult heart rate > = 110
      - Hypertension
        - Adult asymptomatic hypertension of SBP > 220 or DBP > 120 at time of disposition with history of hypertension
        - Adult asymptomatic SBP > 195 or DBP > 115 at disposition without history of hypertension

9. DOCUMENTATION AND DATA COLLECTION

The MDCN Paramedic will document signed patient initiated refusals in eMEDS®. The MDCN ALP will document patient assessment and care data in UMMC's electronic health record system ("Epic"). If emergent management and transport is required, the MDCN ALP will document the time and reason of 911 system activation in the Epic System note. The MDCN Paramedic will document patient information in eMEDS® per MIEMSS protocol.

10. QUALITY ASSURANCE/QUALITY IMPROVEMENT

The MDCN Pilot Program is operating under the medical direction of the Jurisdictional Deputy Medical Director, upon the designation by and under the supervision and direction of the Jurisdictional Medical Director, who will ensure that triage protocols are safe and effective for each patient who participates in the MDCN

Pilot Program. The Jurisdictional Deputy Medical Director and BCFD Deputy Chief of EMS, will provide oversight for adherence to pilot protocols, communication and training. The MDCN QA/QI committee (MDCN QA/QI) will meet or hold weekly teleconferences during the duration of the MDCN Pilot Program to review cases, discuss emergent trends, ensure that pilot protocols are not leading to suboptimal triage and identify areas for improvement. Any time there is an unscheduled reentry of a MDCN patient into emergency health care system, within 72 hours of receiving on scene care, this will trigger an automatic review. The MDCN QA/QI will report MDCN Pilot Program metrics to the State EMS Medical Director on a quarterly basis.

a) The internal quality improvement process will be managed by BCFD Office of QA/QI MDCN QA/QI Committee.
b) Pilot Metrics: key metrics include, but are not limited to, the following:
    (1) Number and type of upgrades from on-scene care through the MDCN Pilot Program to 911 emergency transport (with information on specific signs/ symptoms, presentation, type of treatment rendered, and final diagnosis)
    (2) Number of patients that qualified for MDCN Pilot Program, the number of patients that qualified and consented to receive MDCN services, the number of patients that qualified and refused to receive in MDCN services (including reason for refusal if available)
    (3) Time from when EMS transport units and suppression units are first notified until back in service (Total call duration time – Cycle Time) for MDCN calls
    (4) Time from when MDCN units consent until back in service (Total call duration time – Cycle Time) for MDCN calls
    (5) Listing of the ALP diagnosis, treatment interventions, disposition and destination/referral and re-entry into the health care system (associated with original EMS complaint) within 72 hours.
    (6) Patient satisfaction survey results:
        (i) Was patient satisfied with the choice to receive services through MDCN Pilot Program? (Y/N)
        (ii) How does the patient rate the MDCN Pilot Program on a scale of 1-5 with 1 being the lowest and 5 being the highest
        (iii) Did the patient experience any complications associated with the care received through the MDCN Pilot Program? In the event a patient reports a complication, the Ops Center will offer to assist the patient in coordinating appropriate follow-up care.
        (iv) Did the patient have any complaints with the care the patient received from the MDCN Pilot Program?
        (v) Did the patient report satisfaction with the care received from MDCN Pilot Program?
        (vi) Did the patient report re-entry into the health care system?
        (vii) Did the patient have additional unscheduled re-entry into the health care system (associated with original EMS complaint) within 72 hours?
        (viii) What are the pre-implementation performance measures (above) for the units in the MDCN Pilot Program area?

(ix) Any untoward events or formal patient complaints with detailed explanation
(x) Any deviation or challenges of the ALP's implementation of the MDCN protocol
(xi) Average Midtown, UMMC ED and Bon Secours wait time changes related to implementation of the MDCN Pilot Program.

11. FORMULARY

- Acetaminophen 500MG
- Amoxicillin 500MG
- Amoxil/Clav 875MG
- Antipyrine & Benc OTIC 10ML 5.4%-1.4%
- Azithromycin 250MG 1X6 tab single card
- Bacitracin
- Benzonatate 100MG
- Cephalexin 500MG
- Cyclobenzaprine HCL 10MG
- Cerumenex ear drops
- Diphenhydramine 25MG
- Diphenhydramine Spray (topical)
- Doxycycline 100MG
- Erythromycin optho ointment .5%
- Famotidine 20MG
- Ibuprofen 600MG
- Ketorolac (intramuscular)
- Levofloxacin
- Lidocaine INJ 1%
- Lidocaine VISC 2%
- Loratadine 10MG
- Meloxicam 7.5MG
- Ondansetron 4MG ODT
- Penicillin VK 500MG
- Piperocaine (ophthalmic)
- Polymyxin B (topical)
- Prednisone 10MG
- Promethazine 25MG
- Silver sulfadiazine cream
- Tramadol HCL 50MG
- Triamcinolone cream 0.1% 15GM
- Ventolin HFA 90 MCG 8 GM/60 inhaler
- TDAP INJ

12. SUPPLY LIST

In addition to the full BCFD Advance Life Support equipment, the following supplies will be added:

- Syringes and needles for local irrigation and wound infiltration
- Irrigation splash guard

- Glucometer
- Single-use medical procedure trays and kits
- Eye Shield
- Ear syringes
- Ear wicks
- Ear wax removers
- Alligator forceps
- Clinical swabs, applicators, specimen collectors, sponges, pads, tongue depressors, wooden spoons, cotton balls, or cotton rolls
- Antiseptic wipes
- Splints
- Crutches
- Orthopedic supports, braces, wraps, shoes, boots, or pads
- Medical bandages, gauze, dressings, tape, swabs, sponges, and burn dressings
- Surgical sutures and staples; and removal kits
- Tourniquet
- Thermometer
- Clinical basin
- Medical bags for medical supplies and equipment; including pre-packed bags
- Medical linens (e.g., blankets, sheets, pillow cases, towels, washcloths, drapes, covers)
- Stool, stand
- Privacy screen
- Adhesive tape
- Spirometer
- Disposable nitrile gloves
- Eyechart
- Sharps container
- Waste bin
- Headlamp
- Saline for irrigation
- Oto/ophthalmoscope
- Scalpels
- Stitch/staple removal set
- Lodoform packing - 1/4 inch x 5 yards
- Dermabond
- Irrigation splash field
- Fluorescein eye
- Woods Lamp

MINOR DEFINITIVE CARE NOW, BALTIMORE CITY FIRE DEPARTMENT CONSENT FORM

Informed Consent for
Minor Definitive Care Now

The Baltimore City Fire Department ("BCFD") and the University of Maryland Medical Center ("UMMC") are collaborating to offer you the opportunity to participate in the Minor Definitive Care Now ("MDCN") Program. If you are receiving this Consent form, it means that the EMS team has determined you might benefit from the MDCN Program. The MDCN Team consists of either a UMMC Nurse Practitioner, UMMC Physician Assistant or UMMS Physician (a "UMMC Provider"), and a BCFD Paramedic. The MDCN Team can provide on-site minor care to you.

Please read this Consent carefully. Ask questions about anything that is not clear at any time.

- Receiving a medical assessment and care from the MDCN Team is completely voluntary – your choice.
- If you decide to receive a medical assessment and care from the MDCN Team, you can still stop at any time.
- No one can promise that the additional medical assessment and care will help you.
- Treatment provided on an emergency basis is not intended to be comprehensive in scope and it may be necessary for you to seek care from another physician for further diagnosis and continuation of treatment.
- Do not consent unless all of your questions are answered.

This Consent will:

- Describe the medical assessment and types of minor care that can be provided, including what services and benefits may be available to you as a participant;
- Describe how your personal health information will be treated as a participant in the Program; and
- Describe whether receiving medical assessment and care could involve any cost to you.

The Program. The MDCN Program is a community-based, cost-effective health care solution designed to provide effective and efficient care outside of the hospital.

Goals. A goal of the MDCN Program is to improve minor definitive care in the out-of-hospital setting, specifically for patients like you, with minor conditions.

Receiving a medical assessment and treatment requires your agreement. A UMMC Provider and BCFD Paramedic will perform additional medical assessment and discuss the findings before asking you whether you want treatment. They will also discuss your medications, physical, social and mental health history and answer any related questions. You will not be charged for the minor care provided onsite by the MDNC Team. The services of the BCFD EMS for transportation should you decide to go to a hospital, any other services provided by the BCFD EMS or to you at a hospital or as the result of a referral to another health care provider; however, may be billed to you and/or your insurance provider.

Primary Care Provider. Receiving medical assessment and treatment for minor care is not a substitute for seeing your primary care provider (PCP) for regular appointments. If you do not have a regular PCP, we can find one for you. This intervention is not meant to take the place of the care you receive from any other provider, including your regular PCP.

Photography and/or Video Record. Your UMMC Provider may need to photograph and/or record you to document a medical condition and/or help with the diagnosis and/or treatment of a condition. Photographs and/or recordings taken for these clinical reasons do not require your written permission.

Your Health Information. The UMMC Provider and BCFD Paramedic providing medical assessment and care to you will maintain the privacy of your health care information in compliance with Maryland and federal laws and regulations.

Questions. If you have any questions at any time, you can call: (410) 328-4321

Consent to Participate. BY SIGNING THIS CONSENT BELOW, YOU ARE CONFIRMING THAT YOU HAVE VOLUNTARILY CHOSEN TO RECEIVE MEDICAL ASSESSMENT AND CARE FROM THE MDCN TEAM PROVIDERS DESCRIBED ABOVE AND THAT YOU HAVE READ THIS CONSENT AND FULLY UNDERSTAND IT.

IN CONSIDERATION FOR RECEIVING MEDICAL ASSESSMENT AND CARE FROM THE MDCN TEAM DESCRIBED ABOVE, YOU HEREBY WAIVE ANY CLAIM OR CAUSE OF ACTION OF ANY NATURE THAT YOU HAVE, OR MAY HAVE IN THE FUTURE, AGAINST ANY AND ALL INDIVIDUALS OR ORGANIZATIONAL PARTICIPANTS IN THE MINOR DEFINITIVE CARE NOW PROGRAM, INCLUDING BUT NOT LIMITED TO THE UNIVERSITY OF MARYLAND MEDICAL SYSTEM CORPORATION AND ITS AFFILIATES, AND THE MAYOR AND CITY COUNCIL OF BALTIMORE, ITS BALTIMORE CITY FIRE DEPARTMENT AND ITS OFFICERS, AGENTS OR EMPLOYEES; AND FURTHER, YOU AGREE TO RELEASE AND HOLD HARMLESS ANY AND ALL MEMBERS OF THE PROGRAM TEAM FROM AND AGAINST ALL DAMAGES OF ANY KIND, TO PERSONS OR PROPERTY, GROWING OUT OF OR RESULTING FROM THE MEDICAL ASSESSMENT AND CARE.

Signature: _____ Date: _____

Print Name: _____

Street Address: _____

City, State, Zip: _____

Daytime Phone: _____ Evening Phone: _____

Person Obtaining Consent. By signing below, I confirm that I have explained this form to the above-named participant and answered all of the participant's questions to the best of my ability.

Signature: _____ Date: _____

Print Name: _____ Time: _____