EMT
1. Manage airway as appropriate, see Blue 3 & Blue 5
2. If shock present, refer to Medical Shock protocol, Gold 12
3. If anaphylaxis identified, assist administration of patient's own EPINEPHrine auto-injector, administer an adult or pediatric (as applicable) auto-injector, or provide EPINEPHrine through the Maine EMS Check and Inject program in the anterolateral thigh if the service is authorized and the personnel so trained:
   a. Adult: EPINEPHrine 0.3 mg IM [0.3 mL of 1mg/mL (1:1,000)] in anterolateral thigh, or
   b. Pediatric dose of EPINEPHrine which is as follows: < 25 kg, 0.15 mg IM [0.15mL of 1mg/mL (1:1,000)], > 25 kg, 0.3 mg IM [0.3 mL of 1mg/mL (1:1,000)] IM in anterolateral thigh
4. Request ALS if available
5. Consider local measures to prevent absorption

ADVANCED EMT
6. If anaphylaxis identified:
   a. Adult: EPINEPHrine 0.3 mg IM [0.3 mL of 1mg/mL (1:1,000)] in anterolateral thigh, or
   b. Pediatric dose of EPINEPHrine which is as follows: < 25 kg, 0.15 mg IM [0.15mL of 1mg/mL (1:1,000)], > 25 kg, 0.3 mg IM [0.3 mL of 1mg/mL (1:1,000)] IM in anterolateral thigh
7. IV en route
8. Cardiac monitor
9. If shock present, perform fluid bolus

10. Contact OLMC for Repeated IM EPINEPHrine doses every 5-15 min, call for a Paramedic and notify OLMC of incoming critical patient.
11. If wheezing persists 5-15 minutes after first dose of EPINEPHrine contact OLMC for consideration of Albuterol.

For patients with minor symptoms only or resolution of symptoms with a single dose of EPINEPHrine the AEMT, in consultation with OLMC, may consider activating the ALS Cancellation Policy.

PARAMEDIC
12. Consider glucagon 1 mg IV q 5 minutes for patients taking beta-blockers and not responsive to EPINEPHrine
13. Diphenhydramine (Benadryl)
   a. Adult: 25-50 mg IV/IO/IM
   b. Pediatric: 1-2 mg/kg IV/IO/IM (max single dose of 50 mg)
14. Consider one of the following; may repeat x 1
   a. Albuterol 2.5 mg by nebulization;-
      -OR-
   b. 1 mL of 1mg/mL (1:1,000) EPINEPHrine nebulized with 2 mL of NS-
      -OR-
   c. 0.5 mL of 2.25% racemic EPINEPHrine solution nebulized with 2.5 mL NS

(Continued)
15. Contact OLMC for repeat **IM** EPINEPHrine every 5 minutes and/or **EPINEPHrine IV infusion** for shock or cardiovascular compromise, which may typically be dosed the following way:

**Preparation** - Add 1mL (1mg) EPINEPHrine 1mg/mL \((1:1000)\) to 250 mL bag NS. This results in a 1 mg/250 mL = 4 mcg/mL mix.

**Dose** - Start at 0.05 mcg/kg/min. Titrate by 0.05 mcg/kg/min every 5 min. Titrate to desired **blood-pressure-desired effect** which may include resolution of respiratory symptoms, SPB of \(> 90 \text{ mmHg}\) and/or MAP \(> 65 \text{ mmHg}\).

**Usual dose** is 0.05-0.5 mcg/kg/min. Absolute maximum dose is 0.5 mcg/kg/min. This must be performed **under with OLMC and only with a pump**.

---

**PEARLS for Allergy/Anaphylaxis**

Children with a known recent exposure to common triggers of allergic reactions (peanuts, medications, bee stings) should be considered at risk for having an allergic reaction or anaphylaxis.

Children with asthma should be considered high risk for a severe reaction.

Severity should be differentiated between anaphylaxis and non-anaphylaxis (ie: Allergic reaction only). Only patients with anaphylaxis (as defined in **Gold 3**) should receive EPINEPHrine.

Anaphylaxis in children should be treated for those exhibiting hypotension after exposure to a known allergen, respiratory compromise with acute onset of skin or mucosal involvement, or two or more of the following after exposure to a likely allergen: gastrointestinal symptoms, skin/mucosal involvement, respiratory compromise, or hypotension.

Evidence does not support the routine use of cardiac monitoring for patients who receive one dose of EPINEPHrine.
**PEARLS for Allergy/Anaphylaxis:**

1. Anaphylaxis is highly likely when any ONE of the following 3 criteria is fulfilled: Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (eg, generalized hives, pruritus or flushing, swollen lips-tongue-uvula) AND at least ONE of the following:
   a. Respiratory compromise (eg, dyspnea, wheezing-bronchospasm, stridor, reduced Peak Expiratory Flow (PEF), hypoxia)
   b. Reduced BP or associated symptoms of end-organ dysfunction (eg, hypotonia [collapse], syncope, incontinence)

   **OR**

2. TWO or more of the following that occur rapidly after exposure to a likely allergen for that patient (minutes to several hours):
   a. Involvement of the skin-mucosal tissue (eg, generalized hives, itch-flush, swollen lips, tongue-uvula)
   b. Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced PEF, hypoxia)
   c. Reduced BP or associated symptoms (eg, hypotonia [collapse], syncope, incontinence)
   d. Persistent gastrointestinal symptoms (eg, crampy abdominal pain, vomiting) several hours:

   **OR**

3. Reduced BP after exposure to known allergen for that patient (minutes to several hours)
   a. Infants and children: low systolic BP (age specific) or greater than 30% decrease in systolic BP*
   b. Adults: systolic BP of less than 90 mmHg or greater than 30% decrease from that person’s baseline

2. In every case when anaphylaxis is identified, EPINEPHrine should be provided. The best route of administration is via the **IM** route in the anterolateral thigh

3. Patients may require repeated doses EPINEPHrine. **Typically,** these repeated doses are also provided via the **IM** route

4. When errors occur EPINEPHrine delivery, it is commonly due to providers failing to check that they are using the proper concentration of EPINEPHrine. Be careful to recheck when using EPINEPHrine and ensure that the desired concentration is being utilized **DO NOT** administer **IM** EPINEPHRine concentration (1mg/1mL) via the **IV** route.
IV EPINEPHrine infusion drip, utilizing a pump, should be started for patients unresponsive to IM EPINEPHrine administration in either of the following settings:

- Cardiovascular collapse (hypotension with altered mental status, pallor, diaphoresis, or delayed capillary refill)

  **OR**

- Hypotension that is unresponsive to a total of 60 mL/kg (3 x 20 mL/kg boluses) isotonic fluid boluses and repeat doses of IM EPINEPHrine

Evidence does not support the prophylactic use of EPINEPHrine in the asymptomatic patient, after exposure to a known allergen.

Children experiencing cutaneous signs of an allergic reaction with no systemic symptoms should be evaluated by a medical provider.

Children experiencing anaphylaxis in the prehospital setting who receive EPINEPHrine require EMS transport.
Adult Coma
(Decreased Level of Consciousness)

Assess for trauma, drugs, diabetes, breath odor, needle tracks, medical alert tags, suspected seizure. Refer to appropriate protocol for specific suspected conditions.

Consider SCENE SAFETY as there may be an environmental or toxicologic cause, especially if more than one patient has decreased level of consciousness.

EMT
1. Immobilize spine if indicated
2. Manage airway as appropriate, see Blue 3 & Blue 5
3. Request ALS if available
4. If shock present, refer to Medical Shock protocol, Gold 12 & Pink 14
5. Perform finger stick to measure blood glucose, if so trained. If blood glucose is less than 60 mg/dL, refer to Gold 6 & Pink 13
6. If respirations less than 12 per minute AND narcotic overdose suspected, refer to Antidotes for Specific Toxins: Opiates protocol, Yellow 5

***Never administer naloxone to a neonate***

ADVANCED EMT/PARAMEDIC
7. IV en route
8. Cardiac monitor

<table>
<thead>
<tr>
<th>Differential Diagnosis of Coma</th>
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</thead>
<tbody>
<tr>
<td><strong>A</strong> Alcohol (and other drugs), Acidosis (hyperglycemic coma/DKA)</td>
</tr>
<tr>
<td><strong>E</strong> Electrolyte abnormality, Endocrine problem, Epilepsy</td>
</tr>
<tr>
<td><strong>I</strong> Insulin (diabetes/hypoglycemic shock)</td>
</tr>
<tr>
<td><strong>O</strong> Oxygen (hypoxia), Overdose (or poisoning)</td>
</tr>
<tr>
<td><strong>U</strong> Uremia (renal failure/insufficiency)</td>
</tr>
<tr>
<td><strong>T</strong> Trauma, Temperature (hypothermia, heat stroke)</td>
</tr>
<tr>
<td><strong>I</strong> Infection (meningitis, encephalitis, sepsis)</td>
</tr>
<tr>
<td><strong>P</strong> Psychogenic</td>
</tr>
<tr>
<td><strong>S</strong> Stroke, Space occupying lesions, Seizure, Shock</td>
</tr>
</tbody>
</table>
EMT
1. Manage airway as appropriate
2. Request ALS if available
3. **If trained**, perform finger stick to measure blood glucose
   a. If blood glucose is less than 60 mg/dL, and patient is conscious and able to
      swallow, give glucose orally
4. **If not trained** to perform and patient is a known diabetic, has a known low blood
   sugar, or has an altered mental status, and if the patient is conscious and able to
   swallow, give glucose orally

Glucose paste is to be administered as soon as possible, if the patient is
conscious and able to swallow, and presenting with the signs/symptoms of
diabetic emergency

ADVANCED EMT
5. IV en route
6. If blood glucose is less than 60 mg/dL
   a. If patient is conscious and able to swallow, give glucose **orally**
   b. Administer dextrose 25 gm (50 mL of 50% solution IV or 250 mL of 10% D10W
      solution IV).
   c. If IV unavailable, DO NOT PLACE IO
      i. Administer glucagon 1 mg **IM**.
7. If blood glucose greater than 300 mg/dL, give NS fluid bolus
8. Repeat glucose measurement in 5 minutes
9. Cardiac monitor

PARAMEDIC

10. Contact OLMC for OPTION of repeating dextrose, repeating glucagon, or
    placing an IO. If IO placed, administer dextrose 25 gm (250 mL of D10W via IO)

Pearls for Diabetes/Hypoglycemic Emergencies

- The definition of hypoglycemia has been changed from 80 mg/dL to 60 mg/dL
  based upon current literature which suggests most patients will experience
  adrenergic symptoms under 60 mg/dL and CNS symptoms under 50 mg/dL. If a
  patient's finger stick glucose measurement is above 60 mg/dL and
  hypoglycemia remains a concern, contact OLMC for options of treatment.

- Goal of fluid bolus in hyperglycemia is to treat hypotension/signs of
  hypoperfusion as well as decrease blood glucose to less than 300 mg/dL.

- Hypoglycemic patients on sulfonylurea class medications (glipizide
  (Glucotrol), glyburide (Diabeta), etc.) may have refractory hypoglycemia and
  all require transport, glucose monitoring and hospital evaluation.
**PEARLS for Seizures:** Most seizures are self-limited. Unless a specific underlying condition exists (i.e. diabetes with hypoglycemia), treatment of a seizure or multiple seizures with a total duration of less than 5 minutes should focus on patient protection and oxygenation.

**EMT**
1. Manage airway as appropriate, see Blue 3
2. Spinal immobilization if indicated. Refer to Spine Assessment protocol, Green 6
3. Left lateral recumbent position and protect patient from injury
4. Request ALS if available
5. Perform finger stick to measure blood glucose, if so trained. If blood glucose is less than 60 mg/dL, refer to Gold 6

**ADVANCED EMT**
6. Cardiac monitor
7. IV en route
8. If shock present, refer to Medical Shock protocol, Gold 12

**PARAMEDIC**
9. If the patient has a single seizure lasting greater than 5 minutes OR recurrent seizure activity without recovery/return to baseline between seizures, status-epilepticus; administer IM midazolam if no IV is established. If an IV is established, administer midazolam via the IV route
   a. Intramuscular dosing – midazolam 10 mg **IM**
   b. Intravenous/Intraosseous dosing - midazolam 5 mg **IV/IO**
   c. If Seizures continue, repeat midazolam 5 mg **IV/IO/IM** q 5 min until resolution of seizure, or a total of 3 doses of midazolam have been provided (15 mg **IV** total, 20 mg **IM** total)

   i. Contact OLMC if additional midazolam is necessary

   ii. Monitor oxygenation and ventilation with O₂ saturation and **E**nd-tidal capnography, especially if providing repeated doses of midazolam

   iii. Manage the patient’s airway as necessary
14. For patients visibly pregnant or less than 2 weeks postpartum
   a. Magnesium sulfate 4 gm IV/IO over 10 minutes
      i. If IV/IO not available, magnesium sulfate 8 gm IM (4 gm in each buttock)

15. Contact OLMC for the following OPTIONS:
   a. If repeated doses of midazolam necessary, unable to stop seizure activity, or if therapy beyond these protocols are necessary

PEARLS for Seizures:
- First dose of midazolam should be given IM unless an IV has already been established; do not delay treatment to start an IV.
- Contact OLMC for any patient requiring 3 or more doses of midazolam independent of the route provided.
- For patients with Vagus Nerve Stimulator who are having repeated/continuous seizure activity, consider activation of the Vagus Nerve Stimulator, if not already attempted, by holding the patients hand-held magnet over the Vagus Nerve Stimulator.
Adult Stroke #1

Stroke should be suspected if any of the following have appeared in the last few hours or days: weakness on one side of face, weakness in one arm or leg, abnormal speech (slurred, incoherent, absent).

Refer to the next page for early hospital notification process for patients who are potential stroke patients.

See Adult Coma protocol, Gold 5, if warranted.

See Adult Diabetic/Hyperglycemic Emergencies protocol, Gold 6, if warranted.

### Northern New England Stroke Screening Tool

**Time Last Known Well:** *(if patient awoke with symptoms, last time known to be at baseline)*

**Witness Name and Best Contact Number:**

**Prehospital Stroke Scale Examination**

**Facial Droop:** *Have the patient smile and show teeth.*

- **Normal:** Both sides of the face move equally well.
- **Abnormal:** One side of the face does not move as well as the other.

**Arm Drift:** *Have the patient close their eyes and hold arms extended.*

- **Normal:** Both arms move the same, or both arms don’t move at all.
- **Abnormal:** One arm doesn’t move, or one arm drifts down compared to the other.

**Speech:** *Ask the patient to repeat a phrase such as “You can’t teach an old dog new tricks”.*

- **Normal:** Patient says the words without slurring.
- **Abnormal:** Patient slurs words, says the wrong word, or is unable to speak.

**Blood Glucose:**

YES NO

---

**Stroke Alert Criteria - Please check Yes or No:**

- **Time from onset of symptoms is known to be less than 24 hours?**
- **Blood glucose is or has been corrected to greater than 60 mg/dL?**
- **Any abnormal finding on Prehospital Stroke Scale examination?**
- **Deficit unlikely due to head trauma or other identifiable cause?**

**Stroke Alert Criteria - if YES to all criteria, contact receiving hospital and report a CODE STROKE.**

**If Patient Scenes Positive for Stoke Based on Facial Droop, Arm Drift or Speech Abnormalities,**

**Proceed to Next Page for Large Vessel Occlusion Screening**
All patients who screen positive for stroke by presence of facial droop, speech abnormalities, or drift of the upper extremity should be screened for Large Vessel Occlusive stroke. These specific types of strokes may benefit from therapies in addition to IV tPA. Screening should be performed by all scopes of practice by using the Field Assessment Stroke Triage for Emergency Destination (FAST-ED) Screening Tool.

<table>
<thead>
<tr>
<th></th>
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<th>0</th>
<th>1</th>
<th>2</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Facial palsy</td>
<td>Normal or mild facial asymmetry</td>
<td>Obvious droop of one side of the mouth</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Arm weakness</td>
<td>Extend the weak arm with palm facing down to 90° (if sitting) or 45° (if supine) and ask them to hold it there for 10 seconds</td>
<td>No drift down x 10 seconds</td>
<td>Drifts, but not all the way down</td>
<td>Drifts all the way down or no movement at all</td>
</tr>
<tr>
<td>S</td>
<td>Speech changes</td>
<td>Note spontaneous speech; ask the patient to name 3 common items; ask them to show you 2 fingers without demonstrating this visually to the patient</td>
<td>Normal speech</td>
<td>Impaired but comprehensible speech, and/or unable to name any of the items, and/or unable to follow the command</td>
<td>Incomprehensible speech and/or complete lack of understanding or mute</td>
</tr>
<tr>
<td>T</td>
<td>Time*</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Time LKW:</td>
</tr>
<tr>
<td>E</td>
<td>Eye deviation</td>
<td>Observe the patients horizontal eye movements</td>
<td>Normal eye movements</td>
<td>Eyes tend to only move to one side</td>
<td>Eyes both forced over to one side</td>
</tr>
<tr>
<td>D</td>
<td>Denial/Neglect</td>
<td>Touch the patient on both arms at the same time and ask if they feel both sides. Show the patient the hand on the side where there are symptoms of weakness and ask them “Whose hand is this?”</td>
<td>Able to sense touch on both sides at the same time and recognizes the weak hand as their own</td>
<td>Unable to feel one side of the touch but can recognize their weak hand as their own</td>
<td>Unable to feel one side of touch and does not recognize their weak hand as their own</td>
</tr>
</tbody>
</table>

*Time is documented for decision making purposes and is not scored. A score of greater than or equal to 4 has a sensitivity of 0.61 and a specificity of 0.89 for LVO (PPV 0.72)

**Destination Support Guidance for Possible LVO Stroke Patients:**

- **Identification of Possible LVO**
- **Establish tPA Eligibility**
- **Establish Distance from Endovascular Capable Hospital**
- **Destination**

3tPA ?’s refers to the tPA screening questions on Gold 12. If ALL are answered negative and time criteria are met, the patient is considered tPA eligible. If ANY are answered positive, the patient is tPA ineligible. LKW refers to the time the patient was Last Known Well and without the presenting stroke symptoms.
EMT
1. Manage airway as appropriate, see Blue 3
2. Maintain O₂ saturation between 94 - 99%
3. Elevate head of stretcher to 30 degrees (unless patient requires spinal motion restriction)
4. Request ALS if available. Do not delay transport for ALS intercept. When operationally and medically feasible, limit scene time to 10 minutes or less.
5. Perform finger stick to measure blood glucose, if so trained. If blood glucose is less than 60 mg/dL, refer to Gold 6
6. As early as possible, alert the receiving hospital of a "Code Stroke"
   a. Relay the following information:
      i. Patient age and gender
      ii. Identify the patient as a potential stroke patient
      iii. The patient’s neurologic deficits and the findings of the Cincinnati Prehospital Stroke Scale and FAST-ED Scale
      iv. The "Time Last Known Well"
      v. The patient’s mental status
      vi. The patient’s vital signs and finger stick blood glucose results
      vii. ETA
7. Transport to the most appropriate facility based on regional resources

ADVANCED EMT/PARAMEDIC
8. Cardiac monitor
9. IV en route
10. Perform 12-lead ECG en route

PEARLS for Stroke:
• Consider transporting a witness, family member or caregiver with the patient to verify the time of stroke symptoms onset. If the witness can not come with you, obtain the witness’ best phone number and relate to receiving hospital staff.
• **Time Last Known Well** is the last time the patient was noted to be neurologically normal. If the patient was sleeping and wakes up with symptoms, time last known well is the last time the patient was seen to be normal. Check if the patient had gotten up and been at baseline during the night.
• **Suspect stroke** in patients with any of the following new symptoms or complaints: acute visual disturbance, altered mental state, difficulty with balance or coordination, difficulty with speech or understanding, severe headache, weakness or numbness on one side. Stroke should be suspected whenever a person has a sudden change in neurological function. More common symptoms of stroke are weakness or loss of sensation of the face, a limb or a side of the face and body, abnormal speech production (slurred or inappropriate use of words) or comprehension, dizziness/vertigo, uncoordinated movements of a limb, gait disturbance, loss of vision in one eye or one side of vision and/or sudden onset severe headache for no obvious reason.
• Consider **stroke mimics** including: migraine, hypoglycemia, seizures, intoxication, sepsis.
• The management of LVO stroke is a COMBINATION of rapid provision of tPA AND endovascular therapies when a patient screens positive for an LVO stroke that is amenable for therapy. At present, BOTH therapies should be performed in as rapid as possible manner, highlighting the role of ALL hospitals in the care of stroke patients.

This protocol was developed in collaboration with the Northern New England Protocol Group.
Acute Stroke #4
Stroke Checklist

Time of symptom onset/Time Last Known Well: __________

Yes No

- **Has the patient had any recent trauma, surgeries or procedures in the last 3 months?**
  - If Yes, what was the procedure and when did it occur? **Including:**
    1) Severe head trauma within the past 3 months
    2) Intracranial or spinal surgery within the past 3 months
    3) Major non-cranial surgery or trauma within 14 days with uncontrollable bleeding (e.g. internal organs)

- **Has the patient had any bleeding problems in the past?**
  - If Yes, what was the bleeding problem and when did it occur? **Including:**
    1) History of spontaneous (non-traumatic) intracranial hemorrhage
    2) GI malignancy or GI bleed within the past 21 days

- **Is the patient taking any anticoagulants, including oral or injectable medications?**
  - If Yes, clarify what the medication is and when it was last administered. See below lists of common anticoagulants

This list represents a simplified approach to contraindications to tPA and should be inquired of all patients with suspected stroke. These are important to hospital providers determining eligibility for tPA AND when determining entry destination for possible LVO Strokes (referred to in the algorithm as 3tPA ?’s)

Please present these findings to the Emergency Medicine Staff at the receiving hospital. The patient’s Last Known Well and the answers to these three questions identify the vast majority of ABSOLUTE contraindications for tPA. However, a positive answer to these questions does not absolutely rule out the ability to provide tPA.

**PEARLS for Anticoagulants:**
Patients may recognize their anticoagulants as "blood thinners". Inquire about traditional anticoagulants including warfarin (Coumadin or Jantoven) and Heparin (IV/IM - including Lovenox) as well as other oral novel anticoagulants, including dabigatran (Pradaxa), rivaroxaban (Xarelto), apixaban (Eliquis), betrixaban (Bevyxxa) or edoxaban (Savaysa).
Please note, medication manufacturers are producing new anticoagulants frequently. Please note all medications the patient identifies as an anticoagulant and pass on to receiving hospital staff.
Medical Shock #1

See Cardiogenic Shock, Red 17 if appropriate
See Hypovolemic Hemorrhagic Shock, Green 12 if appropriate
See Allergy and Anaphylaxis, Gold 1 if appropriate
See Adult Airway Algorithm, Blue 3 if appropriate
See Pediatric Medical Shock, Pink

IDENTIFICATION OF POSSIBLE SEPSIS
- Suspected infection?
- Evidence of sepsis criteria? Includes two or more of the following:
  - Temperature less than 96.8 degrees F or greater than 101 degrees F
  - Heart rate greater than 90 bpm
  - Respiratory rate greater than 20 bpm
  - Systolic blood pressure less than 90 mmHg or Mean Arterial Pressure (MAP) less than 65 mmHg
  - New onset altered mental status OR increasing mental status change with previous altered mental status.
  - Serum lactate (if available) greater than 2 mmol/L

1. Attempt to identify cause (i.e. allergic reaction)
   a. Hemorrhagic Shock, see Green 12
   b. Cardiogenic Shock, see Red 17
   c. Anaphylactic Shock, see Gold 1
2. Manage airway as appropriate, see Blue 3
3. Request ALS intercept
4. Perform finger stick to measure blood glucose if so trained
   a. If blood glucose less than 60 mg/dL, refer to Adult Diabetic/ Hypoglycemic Emergencies, Gold ***
5. Transport

ADVANCED EMT
6. For Severe Sepsis
   a. Assess for acute pulmonary edema. If present, refer to Cardiogenic Shock, Red ***
   b. Administer up to 30 cc/kg fluid bolus. Monitor closely during resuscitation. Goals of resuscitation in shock and sepsis are to treat hypotension and/or signs of hypoperfusion.
   c. If point of care lactate monitor available, perform lactate measurement.
      Communicate these findings to receiving hospital.
   d. Notify receiving hospital that the patient is a “Code Sepsis”
PARAMEDIC

6. For medical or presumed septic shock
   a. If no response to initial treatment:
      i. Contact medical control to discuss additional fluid bolus versus initiating
         NOREPInephrine IV infusion. NOREPInephrine infusions in adults and
         pediatrics must be administered via a Maine EMS approved medication
         pump.
         A. Preparation – mix NOREPInephrine 8 mg in 250 mL NS [32 mcg/mL]
         B. Dosing - Starting dose is NOREPInephrine 0.03 mcg/kg/min. Titrate by
            0.03 mcg/kg/min every 3-5 minutes. Usual dose is 0.03-0.25 mcg/kg/min.
            Usual max dose is 0.6 mcg/kg/min. Absolute max dose is 3 mcg/kg/min.
         C. Titrate to maintain SBP greater than 90 mmHg and/or MAP > 65 mmHg

7. Additionally, if the patient is found to have Adrenal Insufficiency (via medic alert
   bracelet, patient records, or family/staff reports), administer dexamethasone
   as follows:
   a. Adults – dexamethasone 10 mg IV/IM, or IO x 1 dose
   b. Pediatrics - 0.6 mg/kg with max single dose of 10 mg IV/IM or IO x 1 dose
   c. May provide patient’s own dose of hydrocortisone (Solu-cortef) at the
      patient’s physician’s prescribed dose if patient provided medications are
      available

PEARLS for Sepsis:
• Sepsis is a systemic inflammatory response due to infection, often resulting in
  significant morbidity and mortality.
• Septic shock has a 50% mortality rate and must be treated aggressively.
• Treatment consisting of IV fluid administration and early antibiotic administration
  reduces mortality in septic patients.
• Please alert the receiving hospital with patients identified as septic.
• Current evidence suggests there may be a benefit from use of Ringers in critically ill
  patients with shock. Consider using Ringers preferentially if available.
• When initiating NOREPInephrine, make sure that the IV flushes easily and that there
  is NO extravasation.

This protocol was developed in collaboration with the Northern New England Protocol
Many diseases cause abdominal pain. While it is almost impossible to diagnose the cause of abdominal pain in the EMS environment, it is important to be prepared for the patient to suddenly become very ill. If the patient is in shock, refer to the medical shock protocol.

**EMT**
1. Manage airway as appropriate, see Blue 3
2. If evidence of shock, refer to the Medical Shock protocol, Gold 12

**ADVANCED EMT**
3. Establish IV
4. Perform 12-lead ECG (If so trained) under the following circumstances:
   1) The patient has a history of cardiac disease or risk factors for cardiac disease, or
   2) based on the provider’s discretion

**PARAMEDIC**
5. Perform pain-rating score on 1-10 scale
6. For non-traumatic abdominal pain in a stable patient with a normal level of consciousness:
   a. If appropriate, administer fentanyl 1 mcg/kg IV/IN for a maximum dose of 100 mcg
      
      i. If repeated doses necessary, contact OLMC

   b. For nausea or vomiting, refer to Nausea and Vomiting protocol, Gold 15
Nausea and vomiting are symptoms of some other illness. Therefore, this is a supplemental protocol to be used in addition to other relevant protocols

**EMT**
1. Manage airway as appropriate, see Blue 3
2. Transport in position of comfort

**ADVANCED EMT**
3. Perform 12-lead ECG (if so trained) under the following circumstances:
   a. The patient has a history of cardiac disease or risk factors for cardiac disease, or
   b. based on the provider's discretion
4. Ondansetron 4 mg ODT PO x 1 (Do not administer if patient has history of long QT syndrome)
5. Establish IV Access
6. Consider fluid bolus if active vomiting

**PARAMEDIC**
7. Adults, administer ondansetron 4 mg IV or ondansetron 4 mg ODT tablet PO
   a. May repeat once after 15 minutes as needed.
8. For Pediatric Patients, refer to Pediatric Nausea and Vomiting Protocol, Pink 2

Contact On-line Medical Control for dosage question, abnormal vital signs, or coincident drug use (including alcohol) by patient.

**PEARLS for Management of Nausea and Vomiting:**
A small percentage of patients receiving ondansetron experience adverse cardiac reactions including QT prolongation. For this reason, patients should be questioned about preexisting QT prolongation, which is a contraindication to receiving ondansetron. In these conditions, patients SHOULD NOT receive ondansetron. There are also many medications which may cause a prolonged QT interval and ondansetron should be withheld in these cases. For more information on drugs that cause cause long QT, consider reading: https://www.uspharmacist.com/article/drug-induced-qt-prolongation