A. Important to remember that abdominal pain can be caused by a large number of different disease processes, some of which aren’t gastrointestinal. Organ systems that may be involved in abdominal pain include: esophagus, stomach, intestinal tract, liver, pancreas, spleen, kidneys, male and female genital organs, bladder, as well as referred pain from the chest that can involve the heart, lungs, or pleura. Abdominal pain may also be caused by musculoskeletal problems.

B. There are a number of problems that present with abdominal pain that are life-threatening or may become life-threatening:
   - Myocardial infarction (especially in the diabetic or elderly patient)
   - Perforated stomach, gallbladder, or bowel
   - Gastrointestinal bleeding with pain (ulcers or infection)
   - Alcoholic, gallstone or hemorrhagic pancreatitis
   - Appendicitis
   - Diabetic ketoacidosis
   - Ruptured esophagus (look for chest pain or mediastinal air)
   - Dissecting or ruptured abdominal aortic aneurysm (atraumatic back pain)
   - Certain toxic mushrooms ingestion and other toxic ingestion
   - Ovarian or testicular torsion
   - Ectopic pregnancy

C. Abdominal pain emergencies can lead to death due to blood or fluid loss with resultant shock. There may also be severe electrolyte abnormalities that can cause dysrhythmias.

D. Maintaining adequate blood pressure with abdominal pain is important for patient outcome. Patients who are believed to be suffering from hemorrhage or sepsis should have their systolic BP maintained to ≥ 90 mmHg using IV fluids under permissive hypotension guidelines, the same way we treat trauma patients:
   - Permissive hypotension:
     - BPsys => 90 mmHg
     - Mental status improving
     - Radial pulse present

E. Perform a 12-lead EKG as indicated. Refer to 12-Lead EKG Procedure. In general, have a very low threshold for performing a 12-lead EKG, especially in patients who are elderly, female, diabetic, or those with vague symptoms

Basic EMT

A. Assess and manage airway
   1. Administer oxygen as needed to treat shock and/or respiratory distress
   2. Apply pulse oximeter and treat per pulse oximeter procedure

B. Evaluate patient’s general appearance, relevant history of condition and determine OPQRSTI and SAMPLE. Especially ask about recent surgeries, abnormal ingestion, previous trauma and related medical diseases.
C. Assess additional associated signs and symptoms:

- Nausea / vomiting blood or coffee grounds
- Constipation / diarrhea – black tarry or bloody bowel movement
- Problems with urination
- Menstrual abnormality
- Fever
- Tenderness, rigidity, pain out of proportion to exam (remember children and the elderly can have serious abdominal pathology without frank peritonitis)
- Cardiac-related symptoms – dyspnea, diaphoresis, SOB
- Atraumatic back or shoulder pain, extremity numbness or paresthesias

D. Transport in position of comfort, preferably supine with knees flexed, unless there is respiratory distress; take note of any signs of peritonitis when transporting (e.g. speedbumps)

E. Orthostatic vital signs are often deceptive, falsely negative and generally not useful in the field. Instead rely upon the patient’s own subjective sensation of feeling faint or lightheaded when going from supine to standing as an indication of volume depletion

F. EMTs may not give anything by mouth.

G. If a patient wishes to refuse medical care for their abdominal pain, as with any condition, they must be A.O. x 3 AND clearly understand the risks of refusing care (i.e. worsening of their condition and death). If a patient does not have medical capacity to refuse care (e.g. patient has been drinking) then they must be transported for their own safety. All of this must be thoroughly documented in the ePCR.

Advanced EMT

A. If there is concern about the possibility of blood or fluid loss, start saline lock or IV normal saline at keep open rate. If patient is hypotensive and symptomatic administer normal saline IV bolus:

- 500-1,000 mL for adults
- 20 ml/kg for pediatric patient (cumulative maximum of 60 mL/kg)
- Repeat boluses as needed to maintain blood pressure appropriate for their age

B. Monitor ECG

C. Refer to Pain Management Protocol

D. Consider administration of PO antiemetic for nausea – Ondansetron hydrochloride (Zofran)

- Adult dose: 4 mg PO (oral disintegrating tablet)
- Pediatrics: > 40 kg and > 12 yo: 4 mg PO (oral disintegrating tablet)

Paramedic

A. Consider administration of IV antiemetic for nausea – Ondansetron hydrochloride (Zofran)

- Adult dose: 4 mg slow IVP (over 2-5 minutes) or IM (IM is only an option for adults)
- Pediatrics: > 40 kg dose: 4 mg slow IVP
- Pediatrics weighing < 40 kg dose: 0.15 mg/kg slow IVP (over 2-5 minutes), max 4 mg
- Zofran causes a prolonged QTC interval, so place patient on a cardiac monitor and get an ECG when it is used
- Counsel pregnant women on the very slight risk of cleft palate and cardiac defects in the fetus when Zofran is used. Overall risk to fetus is very low.

B. Refer to Pain Management Protocol.
   1st choice = Fentanyl
   2nd choice = Morphine
   3rd choice = Ketamine – not very effective in abdominal pain and should rarely be used
   If the BP will tolerate it, patients with abdominal pain should receive analgesia without fear of masking the cause of the abdominal pain on subsequent abdominal exams

C. Hypovolemic or hemorrhagic shock:
   Give 20 ml/kg NS IVF bolus in adults and children
   AVOID pressors/Epinephrine in these cases. “Don’t squeeze an empty tank”

D. Septic shock ( => 2 of the qSOFA criteria)
   qSOFA Criteria: RR => 22/minute, altered LOC, BPsys <= 100 mmHg
   Give 30 ml/kg NS IVF bolus in adults and 20 ml/kg NS IVF bolus in children. If the patient is STILL hypotensive despite the fluid bolus, start patient on an Epinephrine drip at 2-10 mcg/min while continuing to give IVFs
   Goal is BPsys > 90 mmHg* or MAP** => 65 mmHg regardless of shock type

   *Or age-appropriate BP threshold
   **MAP = [BPsys + (2 x BP dias)] / 3 for adults
**ABDOMINAL PAIN / NAUSEA VOMITING**

- Assess and manage airway
- Maintain O2 sats >95%
- Evaluate patient condition
- Monitor vital signs
- Obtain medical history
  - Nausea / vomiting
  - Surgery
  - Trauma
- Reassure patient
- EMT’s give nothing by mouth
- Transport in position of comfort

**SUSPECTED SEPSIS**

**Qsofa**

**QUICK SEPSIS-RELATED ORGAN FAILURE ASSESSMENT**

- Resp rate => 22 / minute
- Altered mental status
- Systolic BP <= 100 mmHg

If patient has 2 or more plus a suspected source of infection then they are septic

Treat per shock protocol

**KEY**

| Basic EMT |
| Advanced EMT |
| Paramedic |
| Med Control |

**Pediatric dosages for: Ondansetron (Zofran)**

- Patients > 40 kg: 4 mg slow IV push or 4 mg PO oral disintegrating tablet
- No PO Ondansetron (Zofran) for patients < 12
- Patients < 40 kg: 0.15 mg/kg slow IV push