1. assess the patient to determine if they meet all of the following indications:
   a. ≥18 years of age;
   b. experience chest pain or equivalent consistent with cardiac ischemia or myocardial infarction;
   c. the time from onset of the current episode of pain <12 hours; and
   d. the 12-lead electrocardiogram (ECG) indicates an acute myocardial infarction/STEMI, as follows:
      i. At least 2 mm ST-elevation in leads V1-V3 in at least two contiguous leads; **OR**
      ii. At least 1 mm ST-elevation in at least two other anatomically contiguous leads; **OR**
      iii. 12-lead ECG computer interpretation of STEMI and paramedic agrees.
2. if the patient meets the criteria listed in paragraph 1 above, assess the patient to determine if they have any of the following contraindications:
   a. The patient is CTAS 1 and the paramedic is unable to secure the patient’s airway or ventilate;
   b. 12-lead ECG is consistent with a Left Bundle Branch Block (LBBB), ventricular paced rhythm, or any other STEMI imitator;
   c. Transport to a hospital capable of performing percutaneous coronary intervention (PCI) ≥60 minutes from patient contact;
   d. The patient is experiencing a complication requiring primary care paramedic (PCP) diversion, as follows:
      i. Moderate to severe respiratory distress or use of continuous positive airway pressure (CPAP);
      ii. Hemodynamic instability (e.g. due to symptomatic arrhythmias or any ventricular arrhythmia) or symptomatic SBP <90 mmHg at any point; or
      iii. VSA without return of spontaneous circulation (ROSC).
   e. The patient is experiencing a complication requiring ACP diversion, as follows:
      i. Ventilation inadequate despite assistance;
      ii. Hemodynamic instability unresponsive to advanced care paramedic (ACP) treatment or not amenable to ACP management; or iii. VSA without ROSC.
3. notwithstanding paragraphs 2(c), 2(d), and 2(e) above, attempt to determine if the interventional cardiology program at the PCI centre will still permit the transport to the PCI centre;
4. if the patient does not meet any of the contraindications listed in paragraph 2 above **OR** the interventional cardiology program permits the transport to the PCI centre as per paragraph 3 above, inform the CACC/ACS of the need to transport to a PCI centre; a. provide the PCI centre the following information as soon as possible:
   b. that the patient is a “STEMI patient”;
   c. the patient’s initials;
   d. the patient’s age;
   e. the patient’s sex;
   f. the paramedic’s concerns regarding clinical stability;
   g. infarct territory and/or findings on the qualifying ECG;
   h. estimated time of arrival; and
   i. catchment area of the patient pickup.
5. upon arrival at the PCI centre, in addition to the requirements listed in the *Transfer of Responsibility for Patient Care Standard*, provide the following information to the PCI centre staff:
   a. time of symptom onset;
   b. time of ROSC, if applicable;
   c. hemodynamic status;
   d. medications given and procedure;
   e. history of acute myocardial infarction/PCI/Coronary artery bypass graft, if applicable;
   f. a copy of the qualifying ECG; and
   g. a copy of the *Ambulance Call Report* in accordance with the *Ontario Ambulance Documentation Standards*.

*Note: Once initiated, continue to follow the STEMI Hospital Bypass Protocol even if the ECG normalizes after the initial assessment.*

**Guideline**

- Once a STEMI is confirmed, the paramedic should apply defibrillation pads due to the potential for lethal cardiac arrhythmias.
- If intravenous access is indicated and established as per the *Advanced Life Support Patient Care Standards*, then the left arm is the preferred site.
- If the ECG becomes STEMI-positive en route to a non-PCI destination, the patient should still be evaluated under this *STEMI Hospital Bypass Protocol*.
- If, in a rare circumstance, the PCI centre indicates that it cannot accept the patient (*e.g.* equipment failure, multiple STEMI patients), then the paramedic may consider transport to an alternative PCI centre as long as they still meet the *STEMI Hospital Bypass Protocol*. 
For Haliburton, Peterborough, Northumberland and City of Kawartha Lakes:

---

**4 County Paramedic Services - PRHC STEMI Bypass Protocol**

This prompt card provides a quick reference for the EMS modified *STEMI Hospital bypass Protocol*. It is only applied when bypassing patients to the PRHC PCI Centre. For those patients where the PRH PCI Centre is not closest, the *EHS STEMI Hospital Bypass Protocol* contained in the BLS PCS must be used. Please refer to the BLS PCS for the full protocol EHS version.

**Indications under the STEMI PRHC Bypass Protocol**

Transport to a PCI Centre will be considered for patients who meet **ALL** of the following:

1. ≥18 years of age.
2. Chest pain or equivalent consistent with cardiac ischemia/myocardial infarction.
3. Time from onset of current episode of pain <12 hours.
4. 12-lead ECG indicates an acute AMI/STEMI*:
   a. At least 2 mm ST-elevation in leads V1-V3 in at least two contiguous leads; **OR**
   b. At least 1mm ST-elevation in at least two other anatomically contiguous leads; **OR**
   c. 12-lead ECG computer interpretation of STEMI and paramedic agrees.

*Once activated, continue to follow STEMI Hospital Bypass Protocol even if ECG normalizes.

**Contraindications under the STEMI Hospital Bypass Protocol**

**ANY** of the following exclude a patient from being transported under the STEMI Hospital Bypass Protocol:

1. CTAS 1 and the paramedic is unable to secure patient’s airway or ventilate.
2. 12-lead ECG is consistent with a LBBB, ventricular paced rhythm, or any other STEMI imitator
3. Transport to a PCI centre ≥60 minutes from patient contact.
4. Patient is experiencing any of the following complications:
   a. Hemodynamic instability unresponsive to treatment
   b. VSA without ROSC
   c. Ventilation inadequate despite assistance.

**STEMI Protocol Communication Procedure:**

1. Call PRHC switchboard directly: **705-876-5067**
2. Identify yourself as Peterborough Paramedics, state: **“Activate Code STEMI”**
3. Patch to the PRHC ED. State **“We are transporting a Code STEMI patient to the cardiac catheter lab”**
4. Notify CACC. They will authorize the transport once notified of the patient’s need for bypass under the STEMI Hospital Bypass Protocol.

**Note:** Apply defibrillation pads to all the patient who have a STEMI
## Opioid Toxicity

### Indications

- Altered LOC **AND**
- Respiratory depression **AND**
- Inability to adequately ventilate **AND**
- Suspected opioid overdose

### Clinical Parameters

- Respiratory rate < 10 breaths/min
- No allergy or sensitivity to Naloxone
- No uncorrected hypoglycemia

### Adult Doses (≥ 18 yrs of age)

<table>
<thead>
<tr>
<th>Medication</th>
<th>Initial Dose</th>
<th>Q</th>
<th>Repeat</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naloxone SC / IM / IN</td>
<td>0.8 mg</td>
<td>10 min</td>
<td>0.8 mg</td>
<td>3 doses</td>
</tr>
<tr>
<td>Naloxone IV*</td>
<td>Up to 0.4 mg</td>
<td>immediate</td>
<td>Up to 0.4 mg</td>
<td>3 doses</td>
</tr>
</tbody>
</table>

### Notes:

- For IV route, consider diluting the medication for more accurate dose control and titrate naloxone only to restore the patient's respiratory status
- The IV condition only applies to PCPs authorized in Autonomous IV
- Where possible, account for 0.12 ml dead space in the intranasal (IN) device for more accurate dosing (ensure the correct amount and volume remain in the syringe after zeroing the MAD adapter)
- Opioid power comparison where Morphine is assigned a strength of 1; Codeine 0.1; Hydromorphone 10; Fentanyl 100; Carfentanil 10,000

### Opioid Toxicity typically presents with:

- Decreased LOA
- Slow respirations
- Pinpoint pupils

### Some Common Opioids:

- Morphine
- Percodan
- MS Contin
- Oxyocet
- Statex
- Oxycontin
- Hydromorphone
- Tylenol #1, #2, #3
- Fentanyl
- Heroin
- Percocet
- Codeine
Death Notification Tips

- Survivors are victims
- Non-verbal communication is important
  - Eye contact without staring
  - Same level as survivor
- Be aware of your appearance (take off PPE)
- Use a ‘D’ word such as ‘dead’ or has ‘died’
- Pauses and silence are okay!
- Avoid clichés
- Never try to talk the survivors out of their grief
- Be compassionate
- Be careful not to impose our personal religious beliefs
- Empower the survivors to take on their own grief and pain
  - Give as much information as possible
  - Listen to them and answer questions as best you can
**Indications**

**Mild – Moderate Pain** (Acetaminophen / Ibuprofen) or

**Mild – Severe Pain** (Ketorolac)

AND one or more of:
- Isolated hip or extremity trauma
- Burns
- Renal colic with a prior history
- Acute musculoskeletal back strain
- Current history of cancer related pain

**Clinical Parameters:**

- ≥ 18 years old
- Unaltered LOA

**Acetaminophen / Ibuprofen**

Trauma patients with isolated hip / extremity trauma only

**Ketorolac**

Normotension

For isolated hip / extremity trauma, restricted to those unable to tolerate oral medications

**Contraindications**

**Acetaminophen:**
- Use within previous 4 hours
- Allergy / sensitivity
- Hx of liver disease
- Active vomiting
- Unable to take oral medications

**Ibuprofen / Ketorolac:**
- NSAID / Ibuprofen use within 6 hours
- Allergy / sensitivity to ASA or NSAIDs
- Patient on anticoagulation therapy
- Current active bleeding
- Hx of peptic ulcer disease or GI bleeds
- Pregnant
- If asthmatic, no prior use of ASA or NSAIDs
- CVA or TBI in previous 24 hours
- Known renal impairment
- **Ibuprofen only** – active vomiting / unable to tolerate oral medications

**Drug**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial Dose</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>960 - 1000 mg</td>
<td>1 dose</td>
</tr>
<tr>
<td>Ibuprofen PO</td>
<td>400 mg</td>
<td>1 dose</td>
</tr>
<tr>
<td>Ketorolac IM</td>
<td>10 - 15 mg (max 15 mg)</td>
<td>1 dose</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Consider co-administration of Acetaminophen / Ibuprofen.
2. If Ketorolac is administered, neither Ibuprofen nor Acetaminophen should be administered.
3. Suspected renal colic patients should be considered for Ketorolac.
Cardiogenic Shock

(ONLY if certified and authorized in Autonomous IV)

Indications
STEMI and Cardiogenic Shock

Clinical Parameters:
- SBP <90

Bolus:
No signs of fluid overload

Adult Doses (≥ 18 years)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial Dose</th>
<th>Q</th>
<th>Repeat Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolus IV</td>
<td>10ml/kg</td>
<td>Reassess q 250ml</td>
<td>N/A</td>
</tr>
</tbody>
</table>