Airway Obstruction

- Signs of severe airway obstruction:
  - Poor air exchange
  - Increased breathing difficulty
  - Cyanosis
  - Inability to speak/breathe
  - Silent cough

BLS

- Assess V/S, Including SpO₂
- O₂ at appropriate rate if hypoxemic (SpO₂ < 94%) or short of breath
- Suction as needed, be prepared to support ventilation with airway adjuncts

Signs of severe airway obstruction?

NO

Foreign Body (FB)

- Perform abdominal thrusts
- Begin CPR if patient becomes unresponsive
- Check mouth and remove any visible FB, do not perform blind finger sweeps

YES

Infection

- Position of comfort
- Consider humidified O₂
- Assist ventilation with BVM if necessary
- Avoid airway visualization and use of an OPA

Anaphylaxis

- Go to Allergic Reaction/Anaphylaxis Protocol (M-1)

ALS

If continued FB airway obstruction on an unresponsive patient:
- Perform direct laryngoscopy and remove any visible FB with Magill forceps

If inadequate ventilation:
- Consider nebulized epinephrine 1:1,000 – 5 mg (5 mL) HHN, mask, or BVM
- Consider advanced airway

If continued inadequate ventilation, consider needle cricothyrotomy:
- If soft tissue of neck begins to balloon after insertion, remove catheter

ALS

- Cardiac monitor
- Establish vascular access at appropriate time (may bolus up to 1000 mL NS)
- Monitor and reassess
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Phenothiazine/Dystonic Reaction

Assessment:
- History includes possible ingestion of phenothiazine
- Symptoms often mistaken for a seizure disorder or tetany

Signs and Symptoms
- Facial grimaces
- Protruding tongue/jaw muscle spasm
- Oculogyric crisis (circular movement of the eyeballs)
- Spasms of the back muscles, causing the head and legs to bend backward and the trunk to arch up

BLS
- Assess V/S, including SpO₂
- O₂ at appropriate rate if hypoxemic (SpO₂ < 94%)
- Reassure pt, obtain medication Hx and collect home medications

ALS
- Consider vascular access

Diphenhydramine
- 50mg IM or IV/IO

Monitor and reassess
Nausea and vomiting can be symptoms of a multitude of different causes. If possible, the specific underlying cause should be determined and treated. EMS personnel should realize that the use of an antiemetic may relieve symptoms while leaving the cause untreated, and possibly, more difficult to detect. EMS personnel should weigh the benefits of antiemetic use against the possible risk of making an accurate diagnosis more difficult, and the possible side effects of the antiemetic agent.

Treatment of nausea and vomiting is warranted for pts where it may contribute to a worsening of their medical condition, or where the pt’s airway may be endangered.

Providers may consider giving Zofran (Ondansetron) prophylactically, prior to or immediately after opioid administration, for a pt. with a history of nausea/vomiting secondary to opioid administration. Zofran (Ondansetron) may also be administered prior to transport to a pt. with a history of motion sickness.

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**BLS**
- Assess V/S, including SpO₂
- O₂ at appropriate rate if hypoxemic (SpO₂ < 94%)
- Assess/treat underlying cause of nausea/vomiting as appropriate

**ALS**
- Cardiac Monitor
- Consider vascular access (may bolus up to 1000 mL)
- Check blood glucose if hypoglycemia or hyperglycemia suspected, and treat as necessary according to appropriate protocol

**Zofran (Ondansetron)**
Base/modified base hospital consultation is required prior to administration of Zofran (Ondansetron) to any patient < 4 yo or any patient during the first 8 weeks of pregnancy

**Adult Pts (≥ 15 yo)**
- 4 – 8 mg ODT (oral disintegrating tablet), or 4 – 8 mg IM, or 4 – 8 mg slow IV/IO (over 30 seconds)
- May repeat as needed (max total dose = 16 mg)

**Pediatric Pts (4 – 14 yo)**
- 4 mg ODT (oral disintegrating tablet), or 4 mg IM, or 4 mg slow IV/IO (over 30 seconds)
- Additional doses require base/modified base hospital consultation

Monitor and reassess
Sierra – Sacramento Valley EMS Agency Treatment Protocol

Pain Management

Effective: 10/01/2018

Next Review: 09/2021

Approval: Troy M. Falck, MD – Medical Director
Approval: Victoria Pinette – Executive Director

• Whenever feasible, behavioral measurement of pain should be used in conjunction with self-report. Interpretation of pain behaviors and decision-making regarding treatment of pain requires consideration of the context in which the pain behaviors are observed.
• Not all painful conditions require ALS intervention. BLS pain management methods (splinting, positioning, compression, ice, verbal assurance, etc.) are effective in managing pain and may be sufficient for certain pts.
• Multiple factors must be considered in determining the most appropriate analgesic(s) to administer for pain management (medication availability & contraindications, clinical impression, pt. history, etc.).
• IV acetaminophen and/or ketorolac are considered first-line analgesics for pts with mild – moderate pain.
• Opioids or ketamine are considered first-line analgesics for pts with severe pain (pain score typically ≥ 7).
• Continuous cardiac and SpO2 monitoring are required for all pts receiving analgesics.
• Medication doses, pt. response and reason for administration shall be adequately documented in the PCR.

BLS

• Assess V/S including SpO2
• O2 at appropriate rate if hypoxemic (SpO2 < 94%)
• Utilize BLS pain management methods as necessary

Pain From Acute Injuries
• Isolated extremity injuries
• Multi-system trauma
• Burns
• Frostbite/bites/envenomations

Pain managed effectively with BLS methods?

YES

Monitor & reassess

NO

Pain From Acute Injuries

YES

Monitor & reassess

NO

Other Causes of Pain
• Non-acute injuries
• Back pain
• Abdominal pain
• Sickle cell crisis, cancer, etc.

Pain managed effectively with BLS methods?

YES

Communication failure?

NO

IV/IO NS TKO if necessary
(may bolus up to 1000 mL)
Cardiac monitor

Contact base/modified base hospital for pain management consultation

See Page 2 for ALS Pain Management
# ALS Pain Management

## Any Pain Severity Not Effectively Managed With BLS Methods

May administer one or both of the following:

### Acetaminophen
- 1 gram IV/IO infusion over 15 minutes (single dose only)

### Ketorolac
- 15 – 30 mg IV/IO or IM (single dose only)

1. Acetaminophen and/or ketorolac may be administered in addition to opioids or ketamine for pts with severe pain (ketorolac is preferred for pts with suspected kidney stones or chronic back pain)
2. Do not administer acetaminophen to pts with severe hepatic impairment or active liver disease
3. Do not administer ketorolac to pts ≥ 65 yo, or who have any of the following contraindications:
   - Multi-system trauma
   - Active bleeding
   - Current anticoagulation therapy
   - Hx of GI bleeding or ulcers
   - Pregnancy
   - Current steroid use
   - Hx of asthma
   - NSAID allergy
   - Hx of renal disease/insufficiency/transplant

## Severe Pain, Pain Not Effectively Managed With Acetaminophen/Ketorolac, Acetaminophen/Ketorolac Contraindicated, or Acetaminophen/Ketorolac not available

### Fentanyl (opioid)
- 25 – 50 mcg slow IV/IO (over 1 minute) or IM/IN
- May repeat every 5 minutes (maximum cumulative dose = 200 mcg)

### Morphine Sulfate (opioid)
- 2 – 5 mg slow IV/IO (over 1 minute) or IM
- May repeat every 5 minutes (maximum cumulative dose = 20 mg)

### Ketamine (non-opioid)
- 0.3 mg/kg slow IV/IO (over 1 minute, maximum = 30 mg) or 0.5 mg/kg IM/IN (maximum = 50 mg)
- May repeat every 10 minutes (maximum cumulative dose = 100 mg)

1. Do not administer opioids to pts with any of the following contraindications:
   - Systolic BP < 100
   - Hypoxia or RR < 12
   - ALOC or evidence of traumatic brain injury
2. Do not administer ketamine to pts with any of the following contraindications:
   - Pregnancy
   - ALOC
   - Multi-system trauma or active bleeding
3. Do not administer opioids and ketamine to the same pt.
4. If administering fentanyl and morphine to the same pt., maximum cumulative dose = 100 mcg fentanyl and 10 mg morphine
5. Use lower doses of opioids/ketamine when co-administered with acetaminophen and/or ketorolac

## Severe Pain From Acute Isolated Extremity Injuries (including hip and shoulder injuries)

### Midazolam (if pain not effectively managed with opioids/ketamine/acetaminophen/ketorolac)
- 1 mg slow IV/IO
- May repeat x 1 in 5 minutes (max = 2 mg)

1. Do not administer midazolam to pts with any of the following contraindications:
   - Systolic BP < 100
   - Hypoxia or RR < 12
   - ALOC or evidence of traumatic brain injury
2. Use caution when administering opioids or ketamine and midazolam to the same pt.
Suspected Stroke

Suspected stroke for either of the following:
- New onset symptoms with abnormal CPSS
- New onset altered state (GCS < 14) with unidentifiable etiology

If stroke suspected:
- Determine time of onset of symptoms (pt. last known normal)
  - When possible, obtain and relay to the receiving hospital the name/contact information of the individual(s) who can verify the time of onset of symptoms (pt. last known normal)
- Check blood glucose (if glucometer available)
- Transport as soon as possible (scene time should be ≤ 10 minutes)

Cincinnati Prehospital Stroke Scale (CPSS)

<table>
<thead>
<tr>
<th>Test</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial Droop (Ask pt. to show teeth or smile)</td>
<td>Both sides of face move equally</td>
<td>One side of face does not move as well as the other side</td>
</tr>
<tr>
<td>Arm Drift (Ask pt. to close eyes and hold both arms out with palms up)</td>
<td>Both arms move the same, or both arms do not move</td>
<td>One arm does not move, or one arm drifts down compared with the other</td>
</tr>
<tr>
<td>Speech (Ask pt. to say “you can’t teach an old dog new tricks”)</td>
<td>Pt. uses correct words with no slurring</td>
<td>Pt. slurs words, uses the wrong words, or is unable to speak</td>
</tr>
</tbody>
</table>

BLS

- Assess V/S, including SpO2
- O2 at appropriate rate if hypoxemic (SpO2 < 94%) or short of breath
- Perform CPSS assessment

ALS

- Consider advanced airway if GCS ≤ 8 or need for airway protection
- Cardiac monitor, consider 12 Lead (do not delay transport)
- Obtain blood draw if requested by stroke receiving center
- IV/IO NS TKO (may bolus up to 1000 mL)

Are both the following present?
- Onset of symptoms ≤ 24 hrs (including wake-up stroke*)
- ≤ 45 minute transport time to a stroke receiving center

*Wake-up stroke definition: Pt. awakens with stoke symptoms that were not present prior to falling asleep

Transport to closest appropriate hospital
- Contact base/modified base hospital for destination consultation if necessary

Transport to closest stroke receiving center
- Advise of “Stroke Alert” & time pt. last known normal
- Provide pt. identifying information if requested by stroke receiving center

NO

YES
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Sierra – Sacramento Valley EMS Agency Treatment Protocol

Childbirth

Effective: 12/01/2018
Next Review: 07/2021

Approval: Troy M. Falck, MD – Medical Director
Approval: Victoria Pinette – Executive Director

APGAR Score

<table>
<thead>
<tr>
<th>Sign/Score</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Appearance</td>
<td>Blue/Pale</td>
<td>Peripheral cyanosis</td>
</tr>
<tr>
<td>P</td>
<td>Pulse Rate</td>
<td>None</td>
<td>&lt;100</td>
</tr>
<tr>
<td>G</td>
<td>Grimace</td>
<td>None</td>
<td>Grimace</td>
</tr>
<tr>
<td>A</td>
<td>Activity</td>
<td>Limp</td>
<td>Some motion</td>
</tr>
<tr>
<td>R</td>
<td>Respiration</td>
<td>Absent</td>
<td>Slow/irregular</td>
</tr>
</tbody>
</table>

- Assess V/S, including SpO₂
- O₂ at appropriate rate if hypoxemic (SpO₂ < 94%)
- Estimate blood loss
- Consider vascular access at appropriate time (may bolus up to 1000 mL)

Presenting Part

Prolapsed Cord

- Rapid transport & early hospital contact
- Protect umbilical cord
  - Place mother in knee-chest position
  - Insert gloved hand into vagina & gently push presenting part off cord
  - Cover exposed cord with wet saline dressing

Head

- Allow delivery
  - Dry/provide warmth
  - Assure open/clear airway
  - Refer to Neonatal Resuscitation Protocol (P-2) if necessary

Breech or Footling

- Rapid transport & early hospital contact
- Avoid compression of cord by presenting part
- Allow delivery to progress until baby’s waist appears
- Rotate baby to face down position (do not pull)
- If head does not deliver in 3 minutes, insert gloved hand into vagina to create an air passage for infant
- As mother bears down, sweep head out of vagina

After delivery

- Calculate Apgar Score at 1 & 5 minutes after delivery
- Clamp & cut umbilical cord
  - Delay clamping cord for 2 minutes for uncomplicated births not requiring resuscitation
  - Double clamp cord, cut with sterile scissors between clamps, 6” from baby
- Transport, do not wait for placenta delivery
- After delivery of placenta, gently massage fundus until firm

Page 1 of 1
BLS

• Assess V/S, including SpO₂
• O₂ at appropriate rate if hypoxemic (SpO₂ < 94%)
• Attempt to control bleeding with direct pressure

Uncontrolled Bleeding?

NO

Extremity, area amenable to tourniquet placement

• Apply tourniquet proximal to bleeding
• Reassess for bleeding

Continued Bleeding?

NO

Consider placement of 2nd tourniquet proximal to 1st tourniquet

YES

Non-extremity, area not amenable to tourniquet

Consider hemostatic agent application

• Evaluate for TXA administration (pg. 2)
• Monitor and reassess

See page 2 for TXA administration evaluation if appropriate
TXA INCLUSION CRITERIA

- Does pt. meet the following inclusion criteria?
  - Blunt or penetrating traumatic injury with signs and symptoms of hemorrhagic shock (including SBP < 90)
  - Significant hemorrhage (either of the following):
    - Significant blood loss with HR > 120
    - Hemorrhage not controlled by direct pressure, hemostatic agents, or commercial tourniquet application

TXA EXCLUSION CRITERIA

- Does pt. meet any of the following exclusion criteria?
  - < 15 yo
  - Time since injury > 3 hours
  - Isolated traumatic brain injury
  - Thromboembolic event (i.e., stroke, MI, PE) in past 24 hours
  - Traumatic arrest with > 5 minutes of CPR without ROSC
  - Hypotension secondary to suspected cervical cord injury with motor deficit or spinal shock

Tranexamic Acid (TXA) IV/IO

- Mix 1gm TXA in 100mL D₅W or NS and infuse over 10 minutes

Monitor and reassess
Pediatric Pain Management

- Whenever feasible, behavioral measurement of pain should be used in conjunction with self-report. Interpretation of pain behaviors and decision-making regarding treatment of pain requires consideration of the context in which the pain behaviors are observed.
- Not all painful conditions require ALS intervention. BLS pain management methods (splinting, positioning, compression, ice, verbal assurance, etc.) are effective in managing pain and may be sufficient for certain pts.
- Multiple factors must be considered in determining the most appropriate analgesic(s) to administer for pain management (medication availability & contraindications, clinical impression, pt. history, etc.).
- IV acetaminophen and/or ketorolac are considered first-line analgesics for pts with mild – moderate pain.
- Opioids or ketamine are considered first-line analgesics for pts with severe pain (pain score typically ≥ 7).
- Continuous cardiac and SpO2 monitoring are required for all pts receiving analgesics.
- Medication doses, pt. response and reason for administration shall be adequately documented in the PCR.

**BLS**
- Assess V/S including SpO2
- O2 at appropriate rate if hypoxemic (SpO2 < 94%)
- Utilize BLS pain management methods as necessary

**Pain From Acute Injuries**
- Isolated extremity injuries
- Multi-system trauma
- Burns
- Frostbite/bites/envenomations

**Pain managed effectively with BLS methods?**
- YES ▶️ Monitor & reassess
- NO ▶️ Age ≥ 4 yo?
  - NO ▶️ Contact base/modiﬁed base hospital for pain management consultation
  - YES ▶️ ALS

**ALS**
- IV/IO NS TKO if necessary (may bolus up to 20 mL/kg)
- Cardiac monitor

**Other Causes of Pain**
- Non-acute injuries
- Back pain
- Abdominal pain
- Sickle cell crisis, cancer, etc.

**Pain managed effectively with BLS methods?**
- YES ▶️ Monitor & reassess
- NO ▶️ Contact base/modiﬁed base hospital for pain management consultation

See Page 2 for ALS Pain Management
### ALS Pain Management

**Any Pain Severity Not Effectively Managed With BLS Methods**

May administer one or both of the following:

**Acetaminophen**
- 15 mg/kg IV/IO infusion over 15 minutes (maximum = 1000 mg) – single dose only

**Ketorolac**
- 0.5 mg/kg IV/IO or IM (maximum = 15 mg) – single dose only

---

1. Acetaminophen and/or ketorolac may be administered in addition to opioids or ketamine for pts with severe pain
2. Do not administer acetaminophen to pts with severe hepatic impairment or active liver disease
3. Do not administer ketorolac to pts who have any of the following contraindications:
   - Multi-system trauma
   - Active bleeding
   - Current anticoagulation therapy
   - Pregnancy
   - Current steroid use
   - Hx of GI bleeding or ulcers
   - Hx of asthma
   - NSAID allergy
   - Hx of renal disease/insufficiency/transplant

### Severe Pain, Pain Not Effectively Managed With Acetaminophen/Ketorolac, Acetaminophen/Ketorolac Contraindicated, or Acetaminophen/Ketorolac not available

**Fentanyl (opioid)**
- 1 mcg/kg slow IV/IO (over 1 minute) or IM/IN (maximum = 50 mcg)
- May repeat every 5 minutes (maximum = 4 doses)

**Morphine Sulfate (opioid)**
- 0.1 mg/kg slow IV/IO (over 1 minute) or IM (maximum = 5 mg)
- May repeat every 5 minutes (maximum = 4 doses)

**Ketamine (non-opioid)**
- 0.3 mg/kg slow IV/IO (over 1 minute) or IM/IN (maximum = 15 mg)
- May repeat every 10 minutes (maximum = 4 doses)

---

1. Do not administer opioids to pts with any of the following contraindications:
   - Systolic BP < 100
   - Hypoxia or RR < 12
   - ALOC or evidence of traumatic brain injury
2. Do not administer ketamine to pts with any of the following contraindications:
   - Pregnancy
   - ALOC
   - Multi-system trauma or active bleeding
3. Do not administer opioids and ketamine to the same pt.
4. If administering fentanyl and morphine to the same pt., maximum cumulative dose = 4 total doses combined
5. Use lower doses of opioids/ketamine when co-administered with acetaminophen and/or ketorolac
6. Use caution when administering opioids or ketamine and midazolam to the same pt.