Emergency Department Guidelines

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**Skin and Soft Tissue Infection**

**MSEC approved 07-12-17**

**Clinical Guidelines  • June 2019**

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**Skin and Soft Tissue infection identified**

- **Cutaneous abscess**
  - Yes: Perform incision and drainage with local anesthesia. Culture wound and break up loculations. Place fixed Penrose drain if possible. Hot packs/soaks q2-4 hours and rest/elevation if on extremity.
- **Abscess present?**
  - Yes: Purulent drainage or exudate?
    - Yes: Purulent cellulitis
    - No: Non-purulent cellulitis
  - No: Cellulitis >10 cm or >1% BSA in child (size of child’s palm)

**BOX 2: Criteria for Outpatient Management**
- Afebrile and non-toxic
- Ambulatory and able to commute to hospital for outpatient treatment
- Able to care for self
- Tolerating PO fluids
- Pain controlled with oral pain meds
- Doesn’t require hospitalization for elevation of extremity

**Empiric oral Antibiotic Therapy**

**Adults**
- Septra DS 1-2 tabs PO q12 hours (do not give to pregnant women)

**Children**
- Septra 4-6 mg/kg PO q12 hours (based on TMP component)

**Adults with sulfa allergy:**
- Doxycycline 100 mg PO q12 hours

**Children with sulfa allergy:**
- ≥8 years: Doxycycline 2 mg/kg PO q12 hours x 10 days (max 100 mg/dose)
- <8 years: Clindamycin 10-13 mg/kg PO q8 hours

**Pregnant or breastfeeding women:**
- Clindamycin 450 mg PO TID

*Antibiotic duration 5-7 days
*Septra and doxycycline do NOT cover strep pyogenes

**BOX 3: Empiric Antibiotic Options**

1. **Vancomycin:**
   - Strongly consider inpatient admission if vancomycin is considered
   - Remember, no outpatient vancomycin may be prescribed to patients <18 years old.

2. **Linezolid 600 mg IV/PO q12 hours.**
   - Restricted to known MRSA resistance or vancomycin allergy.

3. **In children with rapidly progressing cellulitis/abscess or associated systemic symptoms (fever, listlessness, lethargy, etc.) consider covering Haemophilus influenzae type A/B with ceftriaxone 75 mg/kg IV/IM q24 hours in addition to above.**

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**DO NOT use guideline for the following:**
- Diabetic ulcer
- Vascular ulcer
- Necrotizing fasciitis
- Human or animal bite cellulitis
- Thrombophlebitis
- Erythema nodosum
- DVT
- Toxic shock syndrome
- Herpes zoster
- Fish finger
- Bacteremia
- Periorbital or orbital cellulitis
- IV drug use
- Perineal/vulvar/perianal infections

If considering an above diagnosis, management must be individualized, and this guideline may not apply.

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**Outpatient management with daily follow up until continuous improvement is demonstrated**

**Vancomycin:**
- Strongly consider inpatient admission if vancomycin is considered
- Remember, no outpatient vancomycin may be prescribed to patients <18 years old.

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**Patient improving?**
- Yes: Consider empiric oral antibiotic therapy
- No:
  - Review culture and sensitivities
  - Consider imaging.
  - Consider repeat incision and drainage

---

**Management as inpatient until meets criteria for outpatient management**

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**BOX 2: Criteria for Outpatient Management**

- Admission with IV antibiotics. (See Box 3.)
- Recommend blood cultures, CBC, basic metabolic panel.
- Elevation and heating pad.
- Consider IV fluids.
- Address pain control.
- Consider imaging.
- If patient meets criteria for sepsis, follow sepsis guideline

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**Vancomycin:**
- For adults: load with 30 mg/kg IV, then dose 15 mg/kg q8 or q12 hours.
- For patients <18 years: 20 mg/kg IV q6 hours. If patient is obese, consider dosing based on ideal body weight.

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**Linezolid 600 mg IV/PO q12 hours.**
- Restricted to known MRSA resistance or vancomycin allergy.

---

**In children with rapidly progressing cellulitis/abscess or associated systemic symptoms (fever, listlessness, lethargy, etc.) consider covering Haemophilus influenzae type A/B with ceftriaxone 75 mg/kg IV/IM q24 hours in addition to above.**
Does patient meet all criteria for outpatient management (see Box 2)?

Non-purulent cellulitis present

Yes

Empiric oral antibiotic:
Adults:
Amoxicillin 500 mg PO TID
PCN allergy (non Type 1):
Cephalexin 500-1000 mg PO TID
For Type 1 PCN allergy or cephalosporin allergy:
Clindamycin 450 mg PO TID

Children:
Amoxicillin 45 mg/kg/dose PO BID
PCN allergy (non Type 1):
Cephalexin 25 mg/kg/dose PO QID
For Type 1 PCN allergy or cephalosporin allergy:
Clindamycin 10-13 mg/kg/dose PO TID

*Antibiotic duration 5-7 days

No

Yes

Clinically improved in 2-3 days

Consider undrained focus of infection
For non-purulent cellulitis, consider change to IV vancomycin
Consider ID consult

Manage as inpatient until meets criteria for outpatient management

Empiric IV Antibiotics:
Adults:
Cefazolin 2 gram IV q8hours
For Type1 PCN or cephalosporin allergy:
Clindamycin 600 mg IV q8 hours

Children:
Cefazolin 25 mg/kg/dose IV q8 hours
For Type1 PCN or cephalosporin allergy:
Clindamycin 10 -13 mg/kg/dose IV q8 hours

BOX 2: Criteria for Outpatient Management:
- Afebrile and non-toxic
- Ambulatory and able to commute to hospital for outpatient treatment
- Able to care for self
- Tolerating PO fluids
- Pain controlled with oral pain meds
- Doesn’t require hospitalization for elevation of extremity

Non-purulent cellulitis present

Does patient meet all criteria for outpatient management (see Box 2)?

Yes

No
Medevac Activation—Bethel to Anchorage

**MSEC approved 06/22/11**

**YKHC provider obtains accepting ANMC Pediatric, OB/Perinatology or adult physician**

**YES**

Is patient a beneficiary?

**NO**

**YKHC provider obtains appropriate accepting physician**

**YKHC activates LifeMed**

1-800-478-5433

Sys speed #96

If patient is going to a different hospital, contact ANMC for contract health approval then contact accepting provider at appropriate facility

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.

**Note:** Accepting Physician for Elmendorf must either be a Military or VA Physician

**Note:** ER to ER transport you must notify ER physician of receiving site and put their name on the PTOS as receiving physician

**Note:** YKHC physician should receive confirmation of medevac activation within 30 minutes.

**Lifemed Dispatch will determine the availability of aircraft and/or need for alternative transport. If alternate transport needed, Lifemed Dispatch will assist in these arrangements.**

The Emergency Department physician at YKHC will be made aware of all medevac transports in the YK delta for purposes of centralized control and triage.

**The YK provider will give report to the Lifemed medical control physician and transport team.**

**Lifemed Dispatch will notify YK provider regarding ETA and/or delays.**

Upon arrival of the transport team, the YK provider will work in conjunction with the team and their medical control physician for stabilization and transport orders.

**Transport Team contacts Medical Control, accepting physician and receiving facility nursing station for Report.**

Transfer orders, PTOS, radiology studies and transfer summary or ER chart must be completed by the YKHC provider and accompany the patient.
Medevac Activation – Village to Bethel
MSEC approved 06/22/11

NOTE: In the event of multiple medevacs, the ER Physician in collaboration with LifeMed must make decision regarding priority.

In the event that a medevac is cancelled (patient deemed stable to come in on scheduled flight), LifeMed dispatch must be notified by the ER Physician immediately.

Centralized medical control is critical. If for any reason, the ER Physician requests an activating provider maintain control, the ER Physician must be kept up to date on patient and medevac status.

Consider Ramp Transfer Direct to Anchorage under these circumstances:
1. Obvious need for acute surgical intervention
2. Hemodynamically stable intubated patients
3. Hemodynamically stable acute MI patients
4. Other extenuating circumstances.

*Under extenuating circumstances, the LifeMed team may be unable to complete the transport chart prior to departure from ED.

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.
Intubation – Adult

MSEC approved 06/22/11

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.

Prepare

Pre-Oxygenate

Premedicate

Induction

Paralysis

Intubation

Confirmation

Ongoing sedation/ analgesia

Paralysis if needed

Ongoing reevaluation

May use one or more as indicated:
1. fentanyl 2 – 4 mcg/kg - consider for pt with head injury; avoid rapid infusion which can induce "rigid chest syndrome"
2. lidocaine 1.5 mg/kg - consider for pts with head injury who may be at risk for increased ICP; also consider in pts with asthma
3. rocuronium 0.1 mg/kg - consider a "prefasicculation dose" in pts with head trauma and possible elevated ICP to avoid the fasciculations associated with succinylcholine.

Choose one:
1. etomidate 0.3 mg/kg – first line induction agent; does not cause hypotension; may cause myoclonic jerking; beware may cause adrenal suppression especially in sepsis however, clinical affect unknown
2. ketamine 2 mg/kg – consider as an option in asthmatic/bronchospastic pts; relative contraindication in elevated intraocular pressure and possibly with elevated ICP
3. propofol 2 mg/kg – consider as an option, particularly in status epilepticus; often will cause hypotension

Choose one:
1. succinylcholine 1-2 mg/kg – see list of contraindications below – time to onset 1 minute; duration 3-5 min
2. rocuronium 1 mg/kg – consider as an alternative – time to onset 1-1.5 min; duration 30-45 minutes

Succinylcholine

Absolute contraindications
Family/personal history of malignant hyperthermia
Hyperkalemia
Chronic myopathy or denervating neuromuscular disease
48 – 72 hrs post burn, crush injury, or acute denervating event

Relative contraindications
Elevated ICP or elevated intraocular pressure
Pseudocholinesterase deficiency

1. visualize tube through cords
2. End tidal CO2 detector turns and remains yellow after 6 breaths
3. fogging in tube
4. bilateral breath sounds with lack of noise over epigastrium
5. chest x-ray confirmation

1. fentanyl either as boluses (1-2 mcg/kg) or continuous infusion (1-4 mcg/kg/hr)
2. morphine either as boluses (0.1-0.2 mg/kg) or continuous infusion (0.1-0.4 mg/kg/hr)
3. midazolam either as boluses (0.01-0.05 mg/kg) or continuous infusion (0.02-0.1 mg/kg/hr)

1. vecuronium as bolus (0.1 mg/kg) or continuous infusion (0.05-0.1mg/kg/hr).
Be aware that continuous paralysis may obscure ongoing seizure activity and makes neurologic examination impossible. Consider increasing analgesia and sedation prior to initiation of continuous paralysis.
Sepsis – Adult

MSEC approved 7/12/17

YES

NO

Airway stable?

Large bore IV x 2

LABS INCLUDING LACTATE, PCT & BLOOD CULTURES
START FLUID RESUSCITATION immediately: Give 1 L NS or LR bolus with target at least 30 ml/kg within 1-3 hr

START EMPIRIC ABX (see guidelines) within 1 hr of recognition of sepsis/septic shock

REASSESS FREQUENTLY
Assess for adequacy of fluid resuscitation or complications from fluid therapy

Monitor vital signs, UOP, shock index (HR/SBP > 0.7), mental status and clinical exam

Use more than one method to assess resuscitation adequacy and use dynamic variables if possible

CONSIDER CONSULT/TRANSFER if unstable or not improving and ACTIVATE MEDEVAC EARLY if needed

Yes

No

Is MAP < 65 after 3L of IVF or is patient having complications from volume therapy?

If initial lactate is > 2:

RECHECK LACTATE 1-2 hrs after starting resuscitation

GUIDE RESUSCITATION TO normalize LACTATE
Primary goal should be to achieve a relative lactate clearance of at least 10% in 1-2 hours

Lactate > 4 may indicate hypoperfusion and the need for aggressive/continued fluid resuscitation

GET SOURCE CONTROL and obtain additional cultures PRN

Continue to reassess frequently while awaiting admission or transfer

SEPSIS 3 & ACEP NOTES

4-6L of total IVF is often needed during the first 6 hrs, after 2L of NS consider switch to LR, remember that if the patient fails to respond after the first 2-3 L, pressures should be considered.

In pts with concern for fluid overload (hx CHF, renal or liver failure) or complications from fluid resuscitation, use less total fluid or smaller boluses with more frequent reassessment of volume status, but DO NOT DELAY FLUID AND VASOPRESSOR TREATMENT

Persistence of elevated lactate, even in the absence of hypotension, is associated with poor outcomes

CRP and procalcitonin may be elevated but can not effectively guide ED sepsis care — CHECK (and RECHECK) LACTATE

in the absence of extenuating circumstances (MI, severe hypoxia, acute blood loss, etc) transfusion is no longer recommended unless Hgb < 7

Consider insulin if 2 consecutive blood glucose levels are > 180

Sodium bicarbonate is not recommended to improve hemodynamics or decrease vasopressor requirements in pts with hypoperfusion induced lactic acidemia with pH >= 7.15

gSOFa – 2 or more of the following:
RR > 22
altered mental status (GCS<15)
SBP < 100

YES

ET intubation

target tidal volume 6 mL/kg for pts without ARDS

Does pt meet criteria for sepsis or septic shock?

YES

Village Management

• Aggressive hydration, PO if you can’t get an IV and the patient is alert enough to drink
• Supplemental oxygen via nasal cannula
• Consider Ceftriaxone 2 grams IM
• Activate medevac
• Consider VTC

START NOREPI NEPHRINE or other vasopressor (see guidelines) and TITRATE fluids and pressors to MAP >65

Place a central line ASAP but do NOT delay pressors — a well secured large bore peripheral IV may be used to initiate tx

Consider intubation to facilitate appropriate volume resuscitation

Consider hydrocortisone (see guidelines) only for septic shock not responsive to adequate fluid resuscitation and vasopressors
<table>
<thead>
<tr>
<th>Source of infection</th>
<th>Medication</th>
<th>Dose</th>
<th>Maximum Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>unknown</td>
<td>vancomycin&lt;sup&gt;1&lt;/sup&gt;</td>
<td>25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs</td>
<td>2 grams OR 600 mg IV Q12 hrs</td>
</tr>
<tr>
<td></td>
<td>linezolid</td>
<td>600 mg IV Q12 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>piperacillin-tazobactam&lt;sup&gt;2&lt;/sup&gt;</td>
<td>4.5 grams IV Q8 hrs</td>
<td>4.5 grams OR 2 grams IV Q8 hrs if in shock</td>
</tr>
<tr>
<td></td>
<td>cefepime</td>
<td>2 grams IV Q8 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gentamicin or tobramycin&lt;sup&gt;3&lt;/sup&gt;</td>
<td>7 mg/kg IV Q24 hrs</td>
<td>Consult pharm OR 750 mg IV Q24 hrs</td>
</tr>
<tr>
<td></td>
<td>levofloxacin</td>
<td>750 mg IV Q24 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>community acquired pneumonia</td>
<td>ceftriaxone</td>
<td>1 gram IV Q24 hrs (2 gm if &gt; 80 kg)</td>
<td>2 grams OR 3 gm Q6 hrs</td>
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<tr>
<td></td>
<td>ampicillin-sulbactam</td>
<td>3 gm Q6 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>levofoxacin</td>
<td>750 mg IV Q24 hrs</td>
<td>750 mg OR 500 mg PO/Iv IV Q24 hrs</td>
</tr>
<tr>
<td></td>
<td>azithromycin</td>
<td>500 mg PO/Iv IV Q24 hrs</td>
<td>if at risk for aspiration CONSIDER</td>
</tr>
<tr>
<td>hospital acquired pneumonia OR high risk for MDR organisms</td>
<td>vancomycin&lt;sup&gt;1&lt;/sup&gt;</td>
<td>25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs</td>
<td>2 grams OR 600 mg IV Q12 hrs</td>
</tr>
<tr>
<td></td>
<td>linezolid</td>
<td>600 mg IV Q12 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>piperacillin-tazobactam&lt;sup&gt;2&lt;/sup&gt;</td>
<td>4.5 grams IV Q6 hrs</td>
<td>4.5 grams OR 2 grams IV Q8 hrs</td>
</tr>
<tr>
<td></td>
<td>cefepime</td>
<td>2 grams IV Q8 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>levofoxacin</td>
<td>750 mg IV Q24 hrs</td>
<td>750 mg OR 750 mg IV Q24 hrs</td>
</tr>
<tr>
<td></td>
<td>gentamicin or tobramycin&lt;sup&gt;3&lt;/sup&gt;</td>
<td>7 mg/kg IV Q24 hrs</td>
<td>Consult pharm OR 750 mg IV Q24 hrs</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>meningitis</td>
<td>dexamethasone</td>
<td>10 mg IV PRIOR TO ABX</td>
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<tr>
<td></td>
<td>vancomycin&lt;sup&gt;1&lt;/sup&gt;</td>
<td>25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs</td>
<td>2 grams OR 2 grams IV Q12 hrs</td>
</tr>
<tr>
<td></td>
<td>ceftriaxone</td>
<td>2 grams IV Q6 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ampicillin</td>
<td>2 grams IV Q6 hrs</td>
<td></td>
</tr>
</tbody>
</table>

*If possible, 1st dose of antibiotics should be administered as a 30 min infusion to reduce time to therapeutic concentration*
<table>
<thead>
<tr>
<th>Location</th>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary Tract</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ceftriaxone: 1 gm IV Q24 hrs (2 gm if &gt; 80 kg)</td>
</tr>
<tr>
<td></td>
<td><strong>AND consider</strong></td>
</tr>
<tr>
<td></td>
<td>gentamicin: 7 mg/kg IV Q24 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>levofloxacin: 750 mg IV Q24 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>If urological interventions or MDR risk factors CONSIDER</strong></td>
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<tr>
<td></td>
<td>pipercillin-tazobactam: 3.375 grams IV Q6 hrs</td>
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<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>cefepime: 1 gram IV Q6 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>If ESBL add</strong></td>
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<tr>
<td></td>
<td>Meropenem: 500 mg IV Q8 hrs</td>
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<tr>
<td>Intra-abdominal/pelvic</td>
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<tr>
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<td>pipercillin-tazobactam: 3.375 grams IV Q6 hrs</td>
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<tr>
<td></td>
<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>cefepime: 1 gram IV Q6 hrs</td>
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<tr>
<td></td>
<td><strong>AND</strong></td>
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<tr>
<td></td>
<td>metronidazole: 500 mg IV Q6 hrs</td>
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<tr>
<td></td>
<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>ciprofloxacin: 400 mg IV Q12 hrs</td>
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<td><strong>AND</strong></td>
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<tr>
<td></td>
<td>metronidazole: 500 mg IV Q8 hrs</td>
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<tr>
<td>Skin and Soft Tissue/Necrotizing Infections</td>
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<tr>
<td></td>
<td><strong>IF PURULENT</strong></td>
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<tr>
<td></td>
<td>vancomycin: 25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>IF NONPURULENT</strong></td>
</tr>
<tr>
<td></td>
<td>cefazolin: 2 grams IV Q8 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>ceftriaxone: 1-2 grams IV Q24 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>ampicillin-sulbactam: 3 grams Q6 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>IF NECROTIZING ADD</strong></td>
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<tr>
<td></td>
<td>pipercillin-tazobactam: 3.375 grams IV Q6 hrs</td>
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<tr>
<td></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td>clindamycin: 900 mg IV Q8 hrs</td>
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<tr>
<td></td>
<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>ceftriaxone: 2 grams IV Q12 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td>metronidazole: 500 mg IV Q6 hrs</td>
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<tr>
<td>Neutropenic Cancer Patients (ANC &lt; 500)</td>
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<tr>
<td></td>
<td>pipercillin-tazobactam: 4.5 grams IV Q6-8 hrs</td>
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<td></td>
<td><strong>OR</strong></td>
</tr>
<tr>
<td></td>
<td>cefepime: 1 gram IV Q6 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td>vancomycin: 25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs</td>
</tr>
<tr>
<td></td>
<td><strong>is suspected/confirmed HSV or VZV CONSIDER</strong></td>
</tr>
<tr>
<td></td>
<td>acyclovir: 10 mg/kg Q8 hrs</td>
</tr>
</tbody>
</table>

**MSEC approved 07/12/17**
# VASOPRESSORS

<table>
<thead>
<tr>
<th>medication</th>
<th>dose</th>
<th>notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>norepinephrine</td>
<td>8-12 mcg/min IV initial infusion rate</td>
<td>1st line vasopressor of choice in sepsis</td>
</tr>
<tr>
<td>epinephrine</td>
<td>1-10 mcg/min initially, titrated to effect</td>
<td>may be added to or used in place of norepinephrine to maintain adequate BP</td>
</tr>
<tr>
<td>dopamine</td>
<td>2-20 mcg/kg/min</td>
<td>2nd line option in highly select patients as it causes more tachycardia</td>
</tr>
<tr>
<td>phenylephrine</td>
<td>100-180 mcg/min IV initial infusion until stabilized, titrate to goal of 60-200 mcg/min (max dose range 80-360 mcg/min)</td>
<td>can be used as salvage therapy for refractive hypotension associated with tachycardia</td>
</tr>
<tr>
<td>vasopressin</td>
<td>0.03-0.04 units/min</td>
<td>may be added to norepinephrine to increase MAP or decrease norepinephrine dose – DO NOT use as a single agent</td>
</tr>
<tr>
<td>dobutamine</td>
<td>2-20 mcg/kg/min IV infusion</td>
<td>may be used for inotropic support in the presence of severe myocardial dysfunction or hypoperfusion with depressed cardiac output</td>
</tr>
</tbody>
</table>

*ALL vasoactive medications should be infused via central line with the exception of dopamine, which can be infused via a peripheral IV at rates less than 10 mcg/kg/min*
Patient presents with signs/symptoms of acute cystitis and a urinalysis suggestive of UTI. If complicated or catheter associated see below...

**Acute onset of dysuria, urinary frequency or urinary urgency, don’t forget to test for STI if appropriate**

**Patient associated with fever, chills, back/flank pain, suprapubic pain**

1. Nitrofurantoin 100 mg PO BID for 5 days OR
2. Cephalexin 500 mg PO BID for 7 days (use first for patients >65)
If no other options exist:
3. Ciprofloxacin 250 mg PO BID for 3 days

**Signs or symptoms of acute pyelonephritis?**

-Always obtain culture and sensitivities
-Consider blood cultures if ill/septic

1. Ceftriaxone 1 gram IV daily OR
2. Levofloxacin 750 mg IV/PO daily

**Able to be treated as outpatient?**

-If old culture results available use empirically while awaiting new culture and sensitivities
-Definitive treatment when culture available.
-If no old culture results, use outpatient pyelonephritis treatment above
-Duration of therapy as for outpatient

Give a single dose of either:
Ceftriaxone 1 gram IV/IM OR
Gentamycin 3 mg/kg IV/IM
AND one of the following oral options:
1. Cephalexin 1 gram PO BID for 14 days OR
2. Levofloxacin 750 mg PO daily for 5 days
TMP/SM DS PO BID for 14 days is acceptable if culture is sensitive

**Complicated UTI/ Catheter associated UTI**

**Obtain culture and sensitivities**

-Obtain imaging studies if critically ill
-If no risk for MDRO:
1. Ceftriaxone 1 gram IV q24h OR
2. Levofloxacin 750 mg IV q24h
If risk for MDRO:
1. Cefepime 1 gram IV q8h extended infusion OR
2. Pip/Tazo 3.375 gram IV q6h or Q8h extended infusion +/- gentamycin 3 mg/kg IV q24h
3. Consider adding MRSA coverage if septic shock is present (get blood cultures from 2 sites)
If known ESBL
Meropenem 500 mg IV Q6h

**MDRO: Multi-Drug Resistant Organism**
MRSA: Methicillin-Resistant Staph Aureus
ESBL: Extended Spectrum Beta Lactam
Patient presents with symptoms suggesting Community Acquired Pneumonia: Cough, sputum, dyspnea, pleuritic chest pain, fever.

Obtain CXR especially if patient has ≥ 2 of these signs:
- Temp. > 100.4, HR > 100/min, Abnormal chest exam, RR > 20/min, 02 Sat <90%, history of chronic lung disease
- Pneumonia

If patient is in a village and CXR isn’t available, OR the patient refuses to travel for CXR, consider using doxycycline as the YK Delta still has good pneumococcal coverage with doxycycline.

One or more of the following: Comorbid condition or abnormal physical exam findings from:
- PSI or Age ≥ 60?
- Labs:
  1. CBC with diff
  2. Comprehensive Metabolic Panel
  3. +/- Blood culture x 2 (prior to ABX)
  4. +/- Sputum
  5. +/- ABG
  6. +/- HIV
  7. Procalcitonin

If yes, consider:
- Consider Procalcitonin to differentiate bacterial causes of symptoms
- If multiple TB risk factors, see Adult TB guideline.

CXR shows infiltrate?
- No
- Chronic lung disease?
  - No
  - Consider using doxycycline as pneumococcal coverage with pneumococcal pneumonia has good coverage with doxycycline.

Outpatient Antibiotics:
1. Amoxicillin 1000 mg PO TID for 5-7 days
2. Azithromycin 500 mg PO daily for 3 days
3. Doxycycline 100 mg PO BID for 5-7 days
4. Levofloxacin 750 mg PO daily for 5 days

If anaphylaxis to PCN:
1. Ceftriaxone 1gram IV daily
2. Azithromycin 500 mg IV/PO daily x 3 days
3. Levofloxacin 750 mg PO daily for 5 days

Probable outpatient treatment. Management to be based on clinical judgement as above.

Inpatient Antibiotics:
1. Ceftriaxone 1gram IV daily
2. Azithromycin 500 mg IV/PO daily x 3 days
3. Levofloxacin 750 mg IV/PO daily for 5 days

Suspect Aspiration:
- ampicillin-sulbactam 3 grams IV Q6hrs OR
- Ceftriaxone 1 gram IV Q24hrs AND metronidazole 500 mg IV every 8 hours

Suspect early onset HAP: within first 4 days of hospitalization, treat as CAP
- Suspect late onset HAP or VAP: Vancomycin IV dosed per protocol AND Cefepime 1 gram IV Q 8 hours, extended infusion

Suspect VAP = Ventilator Associated Pneumonia

Patient Education:
- Smoking
- Cessation
- Immunizations
  - Influenza
  - Pneumovax
- PPD
- Follow-up

A. Patient Education
B. Rational for no antibiotics
C. Follow-up if patient worsens
D. Treat bronchospasm if present
E. Verify TB and HIV status

Pneumonia Severity Index (PSI)
http://pda.ahrq.gov/clinic/psi/psicalc.asp
Score = Total points accumulated below

Demographic Factors
- Age of Males in years age (year) -10
- Age of Female in years age (year) -10
- Nursing home resident +10

Comorbid Illnesses
- Neoplastic disease1 +30
- Liver disease2 +20
- Congestive heart failure3 +10
- Cerebrovascular disease4 +10
- Renal disease5 +10

Physical Examination Findings
- Altered mental status +20
- Respiratory rate > 30/minute +20
- Systolic BP < 90 mmHg +10
- Temperature < 95 degrees F (35C) or > 104F (40C) +10
- Pulse >125/minute +10

Laboratory Findings
- pH < 7.35 +30
- BUN > 20 mg/dl (11 mmol/L) +10
- Sodium < 130 mEq/L +20
- Glucose > 250 mg/dl (14 mmol/L) +10
- Hgb < 9 gm (Hematocrit < 30 %) +10
- PO2< 60, Sp 02 sat < 90%(room air ) +10
- Pleural effusion +10

Patient with 02 sat <90%, homelessness, multilobar pneumonia or risk for aspiration may warrant hospitalization despite their risk classification.
- Neoplastic disease – any cancer, except basal or squamous cell carcinoma of the skin active at the time presentation.
- Liver disease – clinical or histologic cirrhosis or chronic active hepatitis.
- CHF – documented with history, physical exam or CXR findings; echo, MUGA; or left ventriculogram.
- CVD – clinical diagnosis of stroke or TIA; or documented stroke on CT or MR
- Renal disease – chronic renal disease or none.

Remember to order a follow up chest x-ray in 6-8 weeks to ensure resolution of infiltrate.
Acute Pulmonary TB Adult Guideline (using rapid TB diagnostics)

Active Pulmonary TB Adult & Adolescent Guideline (using rapid TB assay)

Guideline for Active Pulmonary TB for Patients ≥ 14 Years (Using Rapid TB Assay)

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.

**Village Clinic Patient (no CXR) with > 4 Risk Factors for TB**

**Risk Factors for TB**

- persist cough > 3 wks
- fever
- night sweats
- weight loss
- hemoptysis
- immunosuppression (HIV/DM/other)
- atypical CXR
- foreign born from endemic area
- prior active or latent TB infection
- household contact of active TB
- persistent pneumonia
- born before 1960 and long-term resident of western Alaska or other endemic area

**PSI**<www.mdcalc.com/psi-port-score-pneumonia-severity-index-adult-cap/>

- PSI ≤ 70 stable for outpatient therapy
- PSI 71-90 likely outpatient therapy but may consider inpatient
- PSI ≥ 91 advise inpatient therapy

1. Isolate in clinic exam room with surgical mask.
2. Send sputum to hospital lab for Xpert® MTB/RIF.
3. Send sputum to hospital lab for AFB sendout.
4. TST or IGRA if no prior history of positive test.

**Xpert® MTB/RIF result**

1. Discontinue isolation.
2. Evaluate in hospital or travel to hospital.
3. Collect two morning sputums for AFB.
4. Report to PHN nursing for follow-up.

**1. Draw HIV test and LFTs.**
2. Begin 4-drug daily treatment with DOT and report to Public Health.
3. Discharge home with surgical mask and PHN oversight.
4. After 2 weeks and if AFB negative, may travel by air to hospital for CXR and evaluation.
5. Discuss with hospital TB control officer and/or State Epidemiology.

### Abbreviations

- AFB: acid-fast bacilli
- CA: cancer
- CAP: community-acquired pneumonia
- CXR: chest x-ray
- DM: diabetes mellitus
- DOT: direct observational therapy
- ER: emergency room
- HIV: human immunodeficiency virus
- IGRA: interferon-gamma release assay
- PHN: public health nurse
- PSI: pneumonia severity index
- SRC: subregional clinic
- RIF: rifampin resistance
- TB: tuberculosis
- TST: tuberculin skin test

*Approved by MSEC 4/13/16*
Ischemic Stroke – Acute

Pt presenting with symptoms of acute stroke?

Was the pt seen normal within the last 4.5 hours?

Yes

1. ABC as appropriate
2. Oxygen 2-4 L N/C
3. Bedside glucose
4. CV monitor
5. Order non-contrast head CT (page 911)
6. Place 2 IVs (at least one 18g)
7. Draw labs: CBC, Comp, INR/PTT, T&C, Troponins
8. IV fluids (consider bolus unless fluid overloaded)
9. Perform NIH stroke scale (NIHSS)
10. STAT radiologist interpretation of head CT

Perform Exclusion check list

Does the pt have hemorrhage?

Yes

Not Eligible for TPA, continue routine care

No

Evidence of large infarct?

Yes

Not Eligible for TPA, continue routine care

No

Is BP > 185/110

Yes

Perform Exclusion check list

No

Is BP > 185/110

Yes

Not Eligible for TPA, continue routine care

No

Perform Informed consent with pt and family

Consider consultation with neurologist if available

Administer ACTIVASE

Total dose of 0.9 mg/kg IV, max dose of 90 mg
Give 10% of total dose over 1 min,Give remaining 90% over 1 hour
See administration table

Medevac patient to appropriate ICU

If pt develops new severe headache, emesis, hypertension or worsening of neurologic exam suspect Intracranial hemorrhage. Stop ACTIVASE. Order STAT repeat head CT.

Exclusion criteria

Any hemorrhage on CT
BP > 185/110
NIHSS* < 4 or rapidly improving exam
Hx suggestive of SAH even with normal CT
INR > 1.7 or on heparin with elevated PTT
Platelets < 100,000
Seizure at onset of symptoms
History of any of the following:
intracranial hemorrhage
intracranial Neoplasm or AVM
major surgery <14 days
head trauma in last 3 months
arterial puncture at non-compressible site < 7 days
GI or GU hemorrhage <21 days
LP in last 24 hrs
Glucose <50 or >400 (may continue if symptoms persist after glucose corrected)
Presumed septic emboli

Additional 3-4.5 hr Exclusion Criteria

- age >80 yrs old
- NIHSS* >25
- Prior stroke + DM
- anticoagulation regardless of IHR

Consult ANMC Cardiology to confirm indication, consider alternative, and need for antiarrhythmic drugs prior to procedure

Ensure that patient had no solid food x 6 hours and no clear liquids x 3 hours

1. Obtain Chem 8 and Magnesium, CBC, PT/PTT (Patient should have no significantly abnormal lytes, decompensated COPD or active infections)
2. Digoxin Level – if applicable (Procedure may be done on patient with therapeutic dig level and no evidence of toxicity)

Obtain consent for procedure

Anesthesia present with full ACLS setup, including meds and temporary pacer. Anesthesia obtains consent for sedation/anesthesia

Position conductive pads or paddles with adequate gel (pads preferred)

Set defibillator to SYNCHRONIZED shock. Verify that device is correctly synchronizing on the QRS complex.

Administer anesthesia/sedation

Deliver synchronized shock at 50 J

Try to deliver all shocks during expiration

Persistent bradycardia with hypotension?

Yes

Atropine 0.5 mg IV x 2 if needed

No

Continued bradycardia or hypotension?

Yes

Dopamine 5-10 µg/kg per minute for vasopressor dose

No

Severe bradycardia (<20 bpm) or asystole >10 sec?

No

Yes

Restoration of sinus rhythm?

Yes

RESYNCHRONIZE Repeat shock at 100 J

No

RESYNCHRONIZE Repeat shock at 100 J, consider increase to 200 J

Severe bradycardia (<20 bpm) or asystole >10 sec?

Yes

Set defibillator to PACE mode

No

Begin with 80 mA And increase every 5 sec until Ventricular capture obtained

RESYNCHRONIZE Repeat shock at 100 J, consider increase to 200 J

Restoration of sinus rhythm?

Yes

RESYNCHRONIZE Repeat shock at 360 J

No

RESYNCHRONIZE Repeat shock at 360 J

Yes

Patient with a new or changed prescription for an antiarrhythmic drug?

Yes

Monitor pt. for 48hrs and consult ANMC cardiology for further future treatment plan

No

Move anterior pad to left parasternal, RESYNCHRONIZE and repeat shock at 360 J

* A total of 4 shocks will be given before the procedure is declared unsuccessful

This guideline is designed for general use for most patients but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s provider
Patient presents with chest pain suggestive of MI
Substernal/Left sided chest pain, shortness of breath, diaphoresis, nausea

Immediate treatment within 10 min.
- Oxygen 4L NC
- Aspirin 162-325 mg po x 1 (Clopidogrel 300 mg po if ASA allergy)
- Nitroglycerin SL q 5 min prn chest pain
- MSO4 2-4 mg IV, repeat in 5 min for effect

Immediate lab assessment within 10 min.
- CK-MB, Troponins, CBC, Lytes, BUN, glucose, magnesium, PT/PTT, EKG & CXR

Fibrinolytic Therapy Recommendations

**Indications**
- Chest pain suggesting MI, ST - segment elevation >0.1 mV (1mm) in 2 or more contiguous ECG leads or new LBBB, time to therapy < 12 hours, age < 75 years (age > 75 years Class Iia), evidence of ongoing ischemia

**Absolute contraindications**
- H/O CVA; intracranial or intraspinal surgery/trauma w/in 3 wks; intracranial neoplasm, AVM, or aneurysm; active internal bleeding (menses excluded) w/in 2-4 wks; known bleeding diathesis; severe uncontrolled HTN (>180/110); terminal illness

**Cautions**
- Recent major surgery: cerebrovascular dz; recent Gl bleeding, recent trauma; high likelihood of left heart thrombus; acute pericarditis; subacute bacterial endocarditis, renal or hepatic dysfunction; pregnancy; diabetic hemorrhagic retinopathy; septic thrombophlebitis; occluded AV cannula; advanced age > 75; currently on oral anticoagulants (Coumadin); recent gp 2b/3a inhibitor; platelet <100,000, conditions where bleeding would be difficult to manage

**High Risk Criteria**
- Hypotension
- Persistent CP suggestive of MI
- 2 or more episodes of rest angina in previous 24 hours
- History of 3 or more cardiac risk factors
- History of Diabetes Mellitus
- Known CAD
- Age 65 years or greater
- Congestive heart failure
- New ST deviation > 0.5mm
- New pathological Q waves
- Sustained ventricular tachycardia
- Elevated cardiac makers

*For non-native patients, please consult Alaska Cardiology Associates*
This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.

**Village Referral**
- Transportation plan and pre-hospital communication plan per Behavioral Health

**Emergency Department Triage**
- Police/ VPSO or physician to complete form MC-105 (official Title 47)
- Notify behavioral health clinician
- One to one observation, patient undresses and belongings secured
- Behavioral health may assist with obtaining mental health records

**ER Physician Evaluation**
- Assess (1) degree of suicidality, (2) risk of harm to self/others, or (3) grave disability

**TITLE 47?**
- No: Discharge from Emergency Department once behavioral health plan is in place
- Yes: Discuss with admitting physician; may transfer to Anchorage directly from ER if necessary
  - Complete standardized orders
  - Consider chemical sedation if agitated:
    - Haloperidol 2.5 mg - 12 mg IM/PO titrate to effect
    - Lorazepam 2 mg - 5 mg IM/PO titrate to effect
  - Consider physical restraints
  - Intoxicated patients require repeat evaluation of suicidality once sober
  - Conduct lab tests (Utox, tylenol/aspirin levels, EKG)

**Psychosis present?**
- No: Proceed with admission if Title 47
- Yes: Prevent harm and control disturbed behavior
  - Consider consultation and/or antipsychotic medication
    - Olanzapine 5 mg - 10 mg Po q 24 hours
    - Haloperidol 5 mg IM/PO and lorazepam 2 mg IM/PO titrate to effect
  - If first diagnosis of psychosis consider referral for CT/MRI.
  - Conduct lab tests (CBC, Chem 8, LFT, TSH, RPR, Utox, HIV)

**Admit to NorthWing**
- Close observation with behavioral health attendant
- Patient undresses, belongings secured
- Admission to observation room with standardized orders, complete observation/seclusion form
- Understand and anticipate elopement protocols

**Admitting physician to determine treatment setting and plan of treatment; complete H&P within 24 hours**
**Collaboration with behavioral health clinician is essential for plan of care**
**Address substance use disorders**
**Establish a multiaxial diagnosis**

**Transfer to API, North Star, or Providence?**
- No: Establish outpatient treatment and follow-up plan in conjunction with Behavioral Health
- Yes: Discuss case with accepting physician
  - Complete H&P with transfer plan
  - Completed transfer packet
  - Consider chemical sedation in transport
  - Establish outpatient treatment and follow-up plan
Patient presents with single acute acetaminophen ingestion

- Intentional overdose?
  - Notify BH on call

- Hours post ingestion
  - <4 hours
    - If patient in village and toxicity is at all possible, start treatment with oral acetylcysteine and draw blood at 4 hours post ingestion. Transport patient and blood work to Bethel on next available commercial flight.
  - 4-8 hours
    - Draw acetaminophen blood level, CMP and LFTs.
  - > 8 hours or unknown

- If history is complete and toxicity is likely, start treatment with acetylcysteine per protocol, and draw acetaminophen blood level and LFTs at 4 hours post ingestion.

- <4 hours

- > 8 hours or unknown

- Draw acetaminophen blood level, CMP and LFTs

- Plot results on nomogram

- Below toxicity
  - Discharge home if cleared by Behavioral Health
  - Acetylcysteine per protocol – IV or PO

- Above toxicity
  - Consider consult with Poison Control. Draw acetaminophen blood level, CMP, LFTs, INR, start therapy with acetylcysteine while awaiting results

- For pediatric patients <12 years of age, please consult Poison Control, 800-222-1222 and Peds on call

- If polysubstance overdose or Tylenol PM overdose, contact Poison control

- Acetaminophen <10 and normal LFTs
  - Discontinue therapy

- Acetaminophen >10 or elevated LFTs
  - Admit to hospital, see IV and PO acetylcysteine dosing charts
  - Recheck blood acetaminophen level, CMP, LFTs, INR Q 6 hours

- LFTs elevated, or INR>2 or hepatic encephalopathy
  - May contact Poison Control 800-222-1222 at any time for assistance or questions

- This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.
<table>
<thead>
<tr>
<th>Body Weight</th>
<th>grams Acetylcysteine</th>
<th>mL of 20% Acetylcysteine Solution</th>
<th>mL of Diluent</th>
<th>Total mL of 5% Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>(kg)</td>
<td>(lb)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-109</td>
<td>220-240</td>
<td>15</td>
<td>75</td>
<td>225</td>
</tr>
<tr>
<td>90-99</td>
<td>198-218</td>
<td>14</td>
<td>70</td>
<td>210</td>
</tr>
<tr>
<td>80-89</td>
<td>176-196</td>
<td>13</td>
<td>65</td>
<td>195</td>
</tr>
<tr>
<td>70-79</td>
<td>154-174</td>
<td>11</td>
<td>55</td>
<td>165</td>
</tr>
<tr>
<td>60-69</td>
<td>132-152</td>
<td>10</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>50-59</td>
<td>110-130</td>
<td>8</td>
<td>40</td>
<td>120</td>
</tr>
<tr>
<td>40-49</td>
<td>88-108</td>
<td>7</td>
<td>35</td>
<td>105</td>
</tr>
<tr>
<td>30-39</td>
<td>66-86</td>
<td>6</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>20-29</td>
<td>44-64</td>
<td>4</td>
<td>20</td>
<td>60</td>
</tr>
</tbody>
</table>

*If patient weighs less than 20 kg (usually patients younger than 6 years), calculate the dose of acetylcysteine. Each mL of 20% acetylcysteine solution contains 200 mg of acetylcysteine. The loading dose is 140 mg per kilogram of body weight. The maintenance dose is 70 mg/kg. Three (3) mL of diluent are added to each mL of 20% acetylcysteine solution. Do not decrease the proportion of diluent.
### IV dosing of Acetadote (IV acetylcysteine)

**Table 1. Three-Bag Method Dosage Guide by Weight, patients ≥ 40 kg**

<table>
<thead>
<tr>
<th>Body Weight (kg)</th>
<th>LOADING Dose 150 mg/kg in 200 mL diluent over 60 min</th>
<th>SECOND Dose 50 mg/kg in 500 mL diluent over 4 hours</th>
<th>THIRD Dose 100 mg/kg in 1000 mL diluent over 16 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>75 Acetadote (mL)</td>
<td>25 Acetadote (mL)</td>
<td>50 Acetadote (mL)</td>
</tr>
<tr>
<td>90</td>
<td>67.5 Acetadote (mL)</td>
<td>22.5 Acetadote (mL)</td>
<td>45 Acetadote (mL)</td>
</tr>
<tr>
<td>80</td>
<td>60 Acetadote (mL)</td>
<td>20 Acetadote (mL)</td>
<td>40 Acetadote (mL)</td>
</tr>
<tr>
<td>70</td>
<td>52.5 Acetadote (mL)</td>
<td>17.5 Acetadote (mL)</td>
<td>35 Acetadote (mL)</td>
</tr>
<tr>
<td>60</td>
<td>45 Acetadote (mL)</td>
<td>15 Acetadote (mL)</td>
<td>30 Acetadote (mL)</td>
</tr>
<tr>
<td>50</td>
<td>37.5 Acetadote (mL)</td>
<td>12.5 Acetadote (mL)</td>
<td>25 Acetadote (mL)</td>
</tr>
<tr>
<td>40</td>
<td>30 Acetadote (mL)</td>
<td>10 Acetadote (mL)</td>
<td>20 Acetadote (mL)</td>
</tr>
</tbody>
</table>

**Table 2. Three-Bag Method Dosage Guide by Weight, patients > 20 < 40 kg**

<table>
<thead>
<tr>
<th>Body Weight (kg)</th>
<th>LOADING Dose 150 mg/kg over 60 minutes</th>
<th>SECOND Dose 50 mg/kg over 4 hours</th>
<th>THIRD Dose 100 mg/kg over 16 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>22.5 Acetadote (mL)</td>
<td>7.5 Acetadote (mL)</td>
<td>15 Acetadote (mL)</td>
</tr>
<tr>
<td>25</td>
<td>18.75 Acetadote (mL)</td>
<td>6.25 Acetadote (mL)</td>
<td>12.5 Acetadote (mL)</td>
</tr>
</tbody>
</table>

**Table 3. Three-Bag Method Dosage Guide by Weight, patients ≤ 20 kg**

<table>
<thead>
<tr>
<th>Body Weight (kg)</th>
<th>LOADING Dose 150 mg/kg over 60 minutes</th>
<th>SECOND Dose 50 mg/kg over 4 hours</th>
<th>THIRD Dose 100 mg/kg over 16 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>15 Acetadote (mL)</td>
<td>5 Acetadote (mL)</td>
<td>10 Acetadote (mL)</td>
</tr>
<tr>
<td>15</td>
<td>11.25 Acetadote (mL)</td>
<td>3.75 Acetadote (mL)</td>
<td>7.5 Acetadote (mL)</td>
</tr>
<tr>
<td>10</td>
<td>7.5 Acetadote (mL)</td>
<td>2.5 Acetadote (mL)</td>
<td>5 Acetadote (mL)</td>
</tr>
</tbody>
</table>

Acetadote is hyperosmolar (2600 mOsm/L) and is compatible with 5% Dextrose (D5W), ½ Normal Saline (0.45% Sodium Chloride Injection, ½ NS), and Water for Injection (WFI).
BOX 1
Indications for rabies prophylaxis:
1. The bite was from a fox, bat, coyote, skunk, woodchuck, or wolf and this animal is not available to test.
2. The bite was from a dog who was behaving abnormally.
3. The bite was from a dog not available for quarantine.
4. If not sure, call State section of epidemiology 907-269-8000 or 800-478-0084 after hours.

Patient reports animal bite (or exposure to brain tissue) from animal who is a possible reservoir for rabies (dog, fox, bat, wolf)

Does the patient require rabies post-exposure prophylaxis (see BOX 1)

Yes or maybe

Patient in village?

Yes

1. Health Aide completes visit in RAVEN
2. Ad hoc form "Rabies Investigation Report" is started
3. Patient is reported to RMT provider

RMT provider orders the vaccine for HAND CARRY to village clinic – 3 doses

Day 0 of series given in village clinic

Day 3 vaccine and immunoglobulin given in Bethel OP clinic unless it is the weekend (then patient goes to ED)
- Assess wound
- Infiltrate the immunoglobulin directly into wound site

Day 7 & 14 vaccine given in village

No

Provide usual wound treatment

Yes

If patient needs wound care, recommend travel to ED for treatment.

1. Patient presents to ED or outpatient clinic.
2. Ad hoc form "Rabies Investigation Report" is started

Patient is given Day 0 vaccine and the wound is infiltrated with immunoglobulin

Appointment is made for the outpatient clinic for Days 3, 7, 14
- If any of these fall on a weekend, patient is seen in the ED

Animals in Alaska that have tested positive for rabies:
1. Arctic fox
2. Caribou
3. Cat
4. Coyote
5. Dog
6. Keen’s myotis bat
7. Little brown bat
8. Red fox
9. Reindeer
10. River otter
11. Wolf
12. Wolverine

http://dhss.alaska.gov/dph/Epi/id/Pages/rabies
Or open google and type in "rabies state of Alaska"
Flow of Acutely Intoxicated Patient in the Emergency Department

**Mode of Arrival:**
1. Bethel Police Department
2. Community Service Patrol
3. Alaska State Troopers
4. Walked in
5. Emergency Medical Services

- Patient arrives in Emergency Department
  - Vital signs taken
  - Provider Assesses Patient

  **Patient is a minor**
  - Patient is kept in Emergency Department
    - Discharged to home when a sober adult relative is located
    - Once sober, if no sober adult available to take custody, then OCS notified and will take custody of patient if they cannot locate a guardian.

  **Patient is a T-47**
  - Patient is kept in Emergency Department
    - Behavioral Health on-call is notified

  **Patient is an adult with a medical problem**
  - Patient is kept in Emergency Department
    - Medical tests are ordered and interpreted, patient is treated for medical condition and stabilized.
    - Admit to inpatient unit
    - Discharged to home
    - Transferred to another facility

  **Patient is an adult without a medical problem**
  - Patient is kept in Emergency Department
    - Discharged to home when a sober adult relative is located

- Patient is taken to jail after medical screening exam
  - If jail is full, patient remains in the Emergency Department until clinically sober
  - Discharge to sober adult willing to take custody of the patient prior to the patient being sober.

- Patient is discharged to home when a sober adult relative is located

MSEC approved 06/22/11
Frostbite

Patient identified as having potential frostbite

Immediate Emergent Treatment

STABILIZE PATIENT
Airway, Breathing, Circulation

Assess for and treat hypothermia

RAPID REWARMING of affected area using warm water bath at 98.6-102.2° F

Consideration should be given for thrombolitics in the first 24 hours, consult with ANMC orthopedics

1. LABS: CBC, CMP
2. IV Fluids for hydration and pain control with IV Morphine

Consider Photos
1. Initials, Date and time with tape measure
2. Post Debridement for monitoring

DEBRIDEMENT
1. Clear Bulla may be debrided or aspirated at time of admission or initial treatment.
2. Leave hemorrhagic blister and bulla intact as that indicates deeper, more vascular tissue damage.

TOPICAL TREATMENT:
1. Aloe Cream (Dermaide) Q 6 hours
2. Unless infection is strongly suspected do not use topical antibiotics
3. If infection is suspected, use bacitracin
4. For exposed skin layers, use adaptic to prevent adhesion and then use Kerlex fluff roll gently wrapped around affected area to protect.
5. Soaking with mild bleach bath: 10-15 min BID – 1.5 mL of 6% sodium hypochlorite per gallon of bath water (60 mL for the 40 gallon tub)

REFERRALS AND CONSULTS:
1. Behavioral Health referral for severe frostbite or if alcohol is involved.
2. Nutrition consult
3. Tobacco cessation referral
4. Wound care referral upon admission

NURSING ORDERS:
1. Elevate area
2. Non weight-bearing – this includes blankets
   AVOID ANY PRESSURE

MEDICATION:
1. Pain management
2. Ibuprofen 400 mg QID
3. Protein Supplement, if indicated
4. Vitamin C 500 mg daily
5. Multivitamin one daily
6. Stool softener

LONG TERM CONSIDERATIONS:
1. Neurontin for nerve pain – start with 300 mg TID
2. Grief counseling if loss of body part at appropriate time
3. Physical Therapy for rehabilitative care
4. Referrals as needed for surgery (3 months)
5. DME for supplies.

Note: people in crises such as frostbite have lots of time to think and are open to change. ETOH, Nicotine, and behavior modification counseling are very effective during these times.
This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner. Approved by MSEC 7/12/17.

If comments about this guideline, please contact Tara_Lathrop@ykhc.org.
Nomenclature

- **Viable** – A pregnancy is viable if it can potentially result in a liveborn baby.
- **Nonviable** – A pregnancy is nonviable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are nonviable.
- **Intrauterine pregnancy of uncertain viability** – A woman is considered to have this if a transvaginal US shows an intrauterine gestational sac with no embryonic heartbeat and no findings of definite pregnancy failure.
- **Pregnancy of unknown location** – A woman is considered to have this if she has a positive urine or serum pregnancy test and no intrauterine or ectopic pregnancy on transvaginal US.

Findings diagnostic of Pregnancy Failure

- Crown-rump length of >7mm and no heartbeat
- Mean sac diameter of >25mm and no embryo
- Absence of embryo with heartbeat ≥14 days after an US that showed a gestational sac without a yolk sac
- Absence of embryo with a heartbeat ≥11 days after an US that showed a gestational sac with a yolk sac

Comments

- In a woman with a positive urine or serum pregnancy test, an intrauterine fluid collection with rounded edges containing no yolk sac is most likely a gestational sac; it is certain to be a gestational sac if it contains a yolk sac or embryo.
- Transabdominal imaging without transvaginal scanning may be sufficient for diagnosing early pregnancy failure when an embryo whose crown-rump length is 15mm or more has no visible cardiac activity.
**First Trimester Vaginal Bleeding: Ectopic Pregnancy Diagnosis & Treatment of Non-Viable Early Pregnancy**

**MSEC approved 07/12/17**

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s medical practitioner.

**Threatened SAB**
- MUST remain in Bethel until bleeding improves.
- MUST be seen by a provider at least weekly with ultrasound.
- No further hCG levels are needed.

**Viable pregnancy?**
- YES → Return to Village
- NO → NONViable PREGNANCY

**NONViable PREGNANCY**
- Consult HROB for management plan
- No further US or Quantitative HCG are necessary

**Options:**
1. D&C
2. Misoprostol
3. Wait and see

**Following hCG to negative**
- A provider or case manager MUST be responsible for this.
- Contact GYN CM at 543-6557 or communicate in RAVEN for assistance and instruction
- Patient can be discharged from care when ectopic pregnancy is ruled out by falling hCG values and normal exam

---

**If patient elects wait and see option**
- Must be reliable patient
- Must stay in Bethel
- Must be followed up every 48 hours for repeat hCG
- Must follow hCG to negative

**If patient elects Misoprostol option:**
- Consult HROB
- Must be reliable patient
- Must stay in Bethel
- Dose is 800 mcg placed in posterior fornix of vagina (may consider 400 mcg buccally but not as efficacious)
- Patient is followed every 24 hours until uterus is empty and bleeding subsides
- Offer ibuprofen for cramping
- Dose can be repeated in 24 hours if uterus is not empty
- Must follow hCG to negative

**If patient elects D&C option:**
- Consult HROB
- Dr. Elizabeth Roll is also available for D&C
- Consider office-based D&C
- If during daytime hours and HROB agrees, call 6177 to schedule procedure
- If on weekend, have patient remain NPO after midnight on Sunday and provider to call 6177 at 8am on Monday morning to schedule procedure
1. **Nomenclature**

- **Viable** – A pregnancy is viable if it can potentially result in a liveborn baby.
- **Nonviable** – A pregnancy is nonviable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are nonviable.
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- Absence of embryo with a heartbeat ≥11 days after an US that showed a gestational sac with a yolk sac

**Comments**

- In a woman with a positive urine or serum pregnancy test, an intrauterine fluid collection with rounded edges containing no yolk sac is most likely a gestational sac; it is certain to be a gestational sac if it contains a yolk sac or embryo.
- Transabdominal imaging without transvaginal scanning may be sufficient for diagnosing early pregnancy failure when an embryo whose crown-rump length is 15mm or more has no visible cardiac activity.

---

**Pregnancy of Uncertain Viability**

- **Is an intrauterine embryo with a heartbeat present?**
  - **Yes**
    - Begin Prenatal Care
    - No further hCG tests
    - If other concerns, repeat US.
  - **No**
    - **Are any findings in #2 present?**
      - **Yes**
        - **Is the quantitative hCG > 3000?**
          - **Yes**
            - Repeat Quantitative hCG daily until >3000 or it decreases
          - **No**
            - **HCG falling or Findings from #2?**
              - **No**
              - **hCG >3000**
                - **Yes**
                  - IUP?
          - **Yes**
            - **NONVIAL PREGNANCY SEE PAGE 2**
      - **No**
        - **HCG falling or Findings from #2?**
          - **No**
          - **hCG >3000**
            - **Yes**
              - IUP?
          - **Yes**
            - **NONVIAL PREGNANCY SEE PAGE 2**
          - **No**
            - **NONVIAL PREGNANCY SEE PAGE 2**
### Procalcitonin (PCT) in Adult Lower Respiratory Tract Infections

#### Initial Values (Baseline)

<table>
<thead>
<tr>
<th>PCT Value</th>
<th>&lt;0.1 ng/mL</th>
<th>0.1-0.24 ng/mL</th>
<th>0.25-0.5 ng/mL</th>
<th>&gt;0.5 ng/mL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antibiotic</strong> START <strong>Recommendation</strong></td>
<td>Initiation Strongly discouraged</td>
<td>Initiation Discouraged</td>
<td>Initiation Encouraged</td>
<td>Initiation Strongly Encouraged</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Hold on giving antibiotics</td>
<td>Consider alternative diagnosis</td>
<td>Repeat PCT in 6-12 hours if antibiotics not initiated and no clinical improvement</td>
<td>If clinically unstable, immunosuppressed or high risk consider overruling (PSI Class IV-V, CURB-65 &gt;3)</td>
</tr>
</tbody>
</table>

#### Follow-Up (Repeat PCTs q48-72 hours)

<table>
<thead>
<tr>
<th>PCT Value</th>
<th>&lt;0.1 ng/mL or ↓ by &gt;90%</th>
<th>0.1-0.24 ng/mL or ↓ by &gt;80%</th>
<th>0.25-0.5 ng/mL</th>
<th>&gt;0.5 ng/mL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antibiotic</strong> STOP <strong>Recommendation</strong></td>
<td>Cessation Strongly Encouraged</td>
<td>Cessation Encouraged</td>
<td>Cessation Discouraged</td>
<td>Cessation Strongly Discouraged</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Stop antibiotics</td>
<td></td>
<td></td>
<td>Continue antibiotics</td>
</tr>
<tr>
<td></td>
<td>Consider continuing if clinically unstable</td>
<td></td>
<td></td>
<td>If PCT rising or not adequately decreasing, consider possible treatment failure and evaluate for need for expanding antibiotic coverage or further diagnostic evaluation</td>
</tr>
</tbody>
</table>

### PCT in Adults for Sepsis without a Source

#### Follow-Up (Repeat PCTs q24 hours or with AM labs daily x3 days)

<table>
<thead>
<tr>
<th>PCT Value</th>
<th>&lt;0.25 ng/mL</th>
<th>0.25-0.49 ng/mL or ↓ by &gt;80%</th>
<th>≥0.5 ng/mL AND rising or stable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antibiotic</strong> STOP <strong>Recommendation</strong></td>
<td>Cessation Strongly Encouraged</td>
<td>Cessation Encouraged</td>
<td>Cessation Discouraged</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Stop antibiotics</td>
<td></td>
<td>Continue antibiotics</td>
</tr>
<tr>
<td></td>
<td>Consider continuing if clinically unstable</td>
<td>A PCT value which is rising or not declining at least 10% per day is a poor prognostic indicator and suggests infection is not controlled</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consider expanding antibiotic coverage or further diagnostic evaluation</td>
<td></td>
</tr>
</tbody>
</table>
Emergency Department Protocols
Use of Consultants at YKHC .......................................................... 31
Use of Consultants at YKHC

MSEC approved 11/8/17 Updated 3/7/19

If you’re an SRC provider, you do not have the luxury of paging the provider STAT to bed, for the purposes of this protocol, the SBAR case presentation and the documentation requirements apply.

Remember: Unless you transfer care of the patient, YOU are responsible for orders, documentation and notifying the patient and family of the plan of care.

Provider requesting consult must document consultant’s advice in the medical record. Include date, time, first and last name of consultant and a summary of the advice given.

At any time in the process, if the primary provider wants support at the bedside, page the consultant and ask them to come to bedside and provide support.

Clear role delineation must occur establishing who is the primary managing provider.

SBAR:

Situation: a concise statement of the problem, a “one-liner”

“This is a 3 year old otherwise healthy girl with a fever…”
“My patient is a 20 year old G3P2 at 26 weeks with vaginal bleeding…”
“I’m taking care of a 21 year old male with fever and abdominal pain…”

Background: pertinent and brief information related to the situation

“The labs are normal and CXR shows no infiltrate but her pulse is elevated…”
“I have performed a sterile speculum exam and there is frank blood in the vault…”
“The patient’s CT show appendicitis and the patient is vomiting all intake…”

Assessment: analysis and consideration of options, what you found/think

“I think she needs a fluid bolus but I am wondering if she also needs a UA…”
“I think this patient might have an active abruption…”
“I think this patient has appendicitis and needs to be transferred to ANMC…”

Recommendation: action requested, what you want

“I want your opinion on how much fluid and the need for a UA…”
“I want you to come in and assess this patient in person…”
“I would like to transfer this patient via medevac to ANMC…”

Phone Numbers
ANMC: Consult: *97 or (907) 563-2662
Transfer: (907) 729-2337
PICU Cell for urgent consults: (907) 297-8809
Provider: ED for on-call specialist: (907) 212-3111
Trauma: (907) 212-2525
Alaska Regional Hospital Access Center: (844) 880-5522
VA/JBER: MD consult number (907) 580-5556
Admissions 24/7 (907) 580-6423
Operator: (907) 552-1110
Harborview Seattle (burns): (888) 731-4791

Page the appropriate provider in Anchorage
1. ANMC for beneficiaries
2. Providence Hospital or Alaska Regional Hospital for non-beneficiaries
3. Alaska Regional for prison inmate
4. VA or JBER (Joint Base Elmendorf/Richardson) for veterans

Once speaking with the appropriate provider be able to:
1. State your name, title and department
   (i.e. ER physician, outpatient NP, second year resident, etc)
2. State purpose of call (i.e. quick question, possible admission, management advice.)
3. Provide name, MRN, age, DOB. If the patient is pregnant, give gravity and parity and gestational age in initial sentence, if the patient is a child, give the age in the initial sentence.
4. Be able to use the SBAR method to communicate patient details (see box below)
5. Ask a specific question about management.
6. Let accepting physicians know whether you think that the patient can travel by commercial flight or will require air medevac
7. If there is a problem getting an accepting physician for a medevac/transfer or with patient management decisions, see NOTE below

Document consultant advice in the medical record, include date, time, first and last name of consultant and a summary of the advice given.

Provider needs consultation about patient at YKHC

Consult provider is located in Bethel?

Yes

Patient is critically ill and the consultant is required at bedside?

Yes

Page provider STAT to come to bedside and assist in management.

If on-going management is required, a decision must be made immediately and communicated about who will be the primary managing provider giving orders and documenting in the medical record.

Once patient is stabilized, discussion will occur between the primary provider and the consultant regarding documentation of the patient’s medical care in the record and ongoing management.

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NOTE:
If there is a disagreement regarding the management of a patient between the consultant and the primary provider, the primary provider will advise the consultant as to the reason for the disagreement. If a consensus cannot be reached, a third opinion shall be obtained. This can either be from a YK based provider or from a provider from another facility. At any time the Clinical Director on call can also be notified.

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Pediatric Emergency Guidelines

(For Pediatric Critical Care Weight-Based Guide, see https://yk-health.org/wiki/File:Pediatric_critical_care_guide.pdf)

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<th>Page</th>
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<td>Head Injury/Concussion &lt;18 Years</td>
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<tr>
<td>Amoxicillin Allergy Trials</td>
<td>45</td>
</tr>
</tbody>
</table>
Call pediatric hospitalist for all potentially critical pediatric patients.

Critical pediatric patient (including patients on HFNC, with suspected sepsis, in status epilepticus, with PEWS ≥8, etc.)

Pediatric hospitalist (or other physician in consultation with pediatric hospitalist) can call ANMC PICU consultant for advice, management, and accepting physician. (907) 297-8809

YK provider activates LifeMed. *96 or (800) 478-5433

ANMC PICU consultant stays available to support pediatric hospitalist with ongoing patient management as needed. Pediatric hospitalist may request that ANMC PICU consultant update LifeMed Medical Control if able.

YKHC provider remains in control of management until patient leaves facility.

Pediatric patient requires medevac.

Trauma, Surgical, Orthopedic Emergency

ER provider calls ANMC for accepting physician via ANMC operator. *97 or (907) 563-2662

For all pediatric trauma cases and surgical cases in children >3 years, call the ANMC general surgeon on call. For surgical cases in children ≤3 years, call the pediatric surgeon on call through the ANMC operator or their office at (907) 717-9871.

Use the Pediatric Critical Care Guide and ED Peds Critical Care PowerPlan.

Critical Care and Medevac Guide – Pediatric

MSEC Approved 9/13/17

Remember: non-beneficiary patients are transferred to Providence Alaska Medical Center. Call their PICU at (907) 212-3133 to obtain accepting physician (PICU or hospitalist). Inquire about medevac insurance coverage.

Noncritical: for bed space, diagnostic or specialty services not available at YKHC, etc.

ER provider calls ANMC pediatrician for accepting physician via ANMC operator. *97 or (907) 563-2662

Please remember to update the pediatric hospitalist for any CPP patient being transferred.

YK provider activates LifeMed. *96 or (800) 478-5433

ER provider updates LifeMed Medical Control as needed.
Intubation – Pediatric
MSEC approved 07/12/17

Prepare
Page pharmacist. Page RT. Prepare several doses of all medications, including an extra dose of paralytic and boluses of post-intubation sedation.

Pre-oxygenate

Premedicate
Atropine – onset <1 minute. Use for younger than 12 months. Consider using in any patient at risk for bradycardia associated with airway manipulation, shock, hypoxia, acidosis, or severe electrolyte abnormalities.

Induce
Midazolam and fentanyl

Paralyze
Rocuronium – onset ~45 seconds. Duration up to 30 minutes. DO NOT USE SUCCINYLCHOLINE.

Intubate
1. Direct visualization of tube through cords.
2. CO2 detector turns yellow and remains yellow after six breaths.
4. Bilateral equal breath sounds with lack of noise over epigastrium.
5. CXR.

Confirm placement

Initiate sedation/analgesia
• Fentanyl continuous infusion with boluses Q15 minutes prn. Give bolus prior to starting drip.
CONSIDER:
• Midazolam boluses if needed. Consider continuous infusion if needed. Watch for hypotension.

Place on ventilator
• For ventilator dysynchrony, give rocuronium boluses as needed.
• Use end-tidal CO2 monitoring.

Continuously reevaluate

REMEMBER:
Helpful resources include:
• Pharmacist on-call
• Respiratory therapist
• CRNA on-call
• Difficult Airway Drawer with laryngeal mask airway (LMA)
• GlideScope®
Always place NG/OG tube for decompression.

Use the Pediatric Critical Care Guide and ED Peds Critical Care PowerPlan for all medication dosing.

Note: Secure tube with cloth tape. Do not use a commercial tube holder device for tubes 5.0 and smaller.

Page pharmacist. Page RT. Prepare several doses of all medications, including an extra dose of paralytic and boluses of post-intubation sedation.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
**High-Flow Nasal Cannula (HFNC) — Pediatric**

**Flow Rates**
- Titrate flow to 0.5-2 LPM/kg.
  - Children <5 kg often require 1-2 LPM/kg.
  - Children 5-10 kg often require 1.5-1.5 LPM/kg.
  - Children >10 kg often require 0.5-1 LPM/kg.

Listen to lungs with each adjustment. If child is unable to easily exhale or complete an expiration, decrease flow rate until expiration is adequate.

**Troubleshooting**
- Consider NG/OG-tube for decompression.
- Use a pacifier to keep the patient’s mouth closed and prevent loss of pressure.
- Consider mild sedation in consultation with medical control.
- Consider higher levels of flow to improve washout.

**Initial Settings**
See Flow Rates box to left.
- For newborns, consult neonatologist.
- FIO2 50%, 37°C.

**Titrating Flow**
- Titrate flow by 1 LPM increments over first 3 minutes until improvement in WOB.
- If patient is worsening on high flow rates, consider a lower flow rate.

**Titrating FiO2**
- Titrate FiO2 to maintain sats >92%.

**Signs of Clinical Improvement**
- ↓RR
- ↓retractions
- ↓irritability
- improved air movement

**If no improvement, consider obtaining ANMC PICU consult, checking blood gas, increasing supportive measures, intubation, etc.**

**REMEMBER:**
- Any pediatric patient on HFNC must be transferred to the ER except for newborns, who may stay in the nursery.
- Maintain patient on HFNC until medevac crew arrives.
- No pediatric patient may be kept at YKDRH on HFNC unless medevac is on weather-hold.

**Page respiratory therapist.**

**Page pediatrician on-call.**

**Transfer to ER.**

**Activate medevac.**

**PREPARE PATIENT**
- Make patient NPO.
- Ensure reliable IV access.
- Suction nares well.
- Choose a nasal cannula with prongs that do not occlude more than 50% of the nares.
- Optimal patient position is semi-recumbent, not supine or upright. Consider using special blue seat (found in ER storage between trauma and ambulance bays) with adjustable angle. Use blanket rolls to support position and ensure patient is not slumping over.
- To prevent condensation causing problems, place patient at a higher level than unit and clip tubing to patient’s clothing.

**NOTE:**
- Low-flow cartridge to be used with neonatal/infant cannula and produces flow rates of 1-8 LPM. This should only be used in the nursery.
- High-flow cartridge to be used with larger cannula and produces flow rates of 5-40 LPM. In the ER, always start with the high-flow cartridge.

**SUPPORTIVE MEASURES**
- Control fever, as it can be an independent cause of respiratory distress.
- Nasal suction.
- IV hydration.
- Back-to-back nebs with albuterol or normal saline.
- Consider phenylephrine ophthalmic form 1-2 drops to each nostril once.
- Consider hypertonic saline nebs q6h.

**PREPARE PATIENT**
- Make patient NPO.
- Ensure reliable IV access.
- Suction nares well.
- Choose a nasal cannula with prongs that do not occlude more than 50% of the nares.
- Optimal patient position is semi-recumbent, not supine or upright. Consider using special blue seat (found in ER storage between trauma and ambulance bays) with adjustable angle. Use blanket rolls to support position and ensure patient is not slumping over.
- To prevent condensation causing problems, place patient at a higher level than unit and clip tubing to patient’s clothing.

**NOTE:**
- Low-flow cartridge to be used with neonatal/infant cannula and produces flow rates of 1-8 LPM. This should only be used in the nursery.
- High-flow cartridge to be used with larger cannula and produces flow rates of 5-40 LPM. In the ER, always start with the high-flow cartridge.
### Shock Criteria

2 or more of the following:
- Temp <96.8 or >100.4
- Abnormal WBC count (<5 or >15)
- Abnormal HR
- Abnormal RR

AND

Signs of End-Organ Involvement:
- Altered mental status
- Delayed cap refill
- Cold/mottled extremities
- Weak pulses
- Difference between central and peripheral pulses
- Significantly decreased UOP
- Hypotension
- Bounding/brisk pulses with rapid cap refill

### Continuing Management

- VS (including BP) at least Q15min.
- Blood glucose Q30 min.
- Maintenance IVF with D5NS.
- Consider Foley.

### Goals

- Cap refill <2 sec
- Normal BP for age
- Normal pulses
- Warm extremities
- UOP > 1 mL/kg/hour
- Normal mental status

### Empiric Antibiotic Choice

**≤28 days**
- Ampicillin 100 mg/kg + cefotaxime 50 mg/kg
- If concerned about HSV or neurologic impairment, add acyclovir 20 mg/kg

**>28 days**
- Ceftriaxone 100 mg/kg (max 2000 mg)
- AND vancomycin 20 mg/kg (max 2000 mg)
- If CVL in place, immunocompromised, or significant Hx antibiotics in past 30 days
- Cefepime 50 mg/kg (max 2000 mg)
- AND vancomycin 20 mg/kg (max 2000 mg)
- If allergic to PCN
- Meropenem 15 mg/kg (max 500 mg)
- AND vancomycin 20 mg/kg (max 2000 mg)

### Use the Pediatric Critical Care Guide and ED Peds Critical Care PowerPlan for all medication dosing.

### Sepsis – Pediatric

MSEC approved 07/12/17

<table>
<thead>
<tr>
<th>Age</th>
<th>HR (beats/minute)</th>
<th>RR (breaths/minute)</th>
<th>Hypotension (sBP in mmHg)</th>
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<td>&gt;200</td>
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<td>1 week – 1 month</td>
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<td>6 – 13 years</td>
<td>&lt;80</td>
<td>&gt;120</td>
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</tr>
<tr>
<td>13 – 18 years</td>
<td>&lt;60</td>
<td>&gt;110</td>
<td>&lt;20</td>
</tr>
</tbody>
</table>

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Pediatric patient presents with resolved seizure-like activity.

Bedside glucose STAT if seizure occurred <4 hours ago or mental status not at baseline

Obtain detailed history. (See Box 1.)
Perform neurologic exam.

Strong suspicion that event was a seizure?

Yes

No

Does patient have history of seizures?

Yes

No

History of fever?

Yes

No

Patient meets ALL low-risk criteria (see Box 2)?

Look for source of fever. Do not routinely perform head CT.

Age ≥18 months

Age <18 months

Diagnose simple febrile seizure.

Consider performing LP, given that signs and symptoms of meningitis may be absent or subtle in this age group.

Labs: CBC, CRP, BMP, magnesium, phosphate, blood culture, UA, urine culture. Perform LP.

LP results

Normal

Abnormal

Discharge patient if reassuring neurologic status. Educate parents concerning febrile seizure and give febrile seizure education handout. Treat infection and fever if appropriate. EEG unnecessary. Update Problem List. Prescribe Diastat for all seizure patients ≥6 months old. Consult pediatrics with any questions.

Suspect meningitis: Consult pediatrics. Start meningitic dose of ceftriaxone and consider vancomycin, acyclovir, and dexamethasone per Pediatric Critical Care Guide. Strongly consider medevac to Anchorage.

Village Management
- Always check blood glucose.
- Patients <18 months with first-time febrile seizure or any patient with first-time non-febrile seizure should come to Bethel by commercial flight.
- Patients ≥18 months meeting all low-risk febrile seizure criteria with identified low-risk source of infection (eg AOM) may stay in village until outpatient appointment available. Ensure close village follow-up.
- Strongly consider medevac if child is not back to baseline, has signs of meningitis, had an atypical seizure, or presented in status epilepticus.

If patient is actively having a seizure, go to Pediatric Seizure Treatment guideline.

If this seizure is similar to child’s regular seizures, child is back to neuro baseline, and reliable caregiver, may discharge home. Review antiepileptic drug regimen and compliance. Do parents have unexpired Diastat in the home? Review seizure precautions. Consult pediatrics with any questions.

Box 1: Detailed History
- When/where did it occur? Awake or asleap?
- What proceeded the event (eg head trauma, crying, etc.)?
- How long did it last?
- Type of movement and what part of body? Symmetric?
- Interventions?
- Incontinence?
- Behavior after event? How long till back to baseline?

HPI
- Intercurrent illness/fvers
- Medications
- Recent intake, including free water and diluted formula
- Ingestions
- Trauma

PMH
- Prior history of seizures
- History of breathholding

Family Hx: Seizures, febrile seizures, breathholding, etc.

Box 2: Low risk febrile seizure criteria
1. 6 months to 4 years of age.
2. Fever present.
4. Seizure duration <5 minutes.
5. Child has normal neurologic examination.
6. Child has no history of previous neurologic or CNS abnormality.
7. Only one seizure in a 24 hour period.
8. Child has returned to baseline.
9. No meningeal signs:
   - Irritability or inconsolability
   - Nuchal rigidity
   - Bulging fontanelle
   - Lethargy or somnolence
   - Focal neurologic findings
10. Child has NOT received antibiotics in the past 72 hours.

Box 3: Work-up
- Bedside glucose
- EKG for first event
- BMP, magnesium, phosphate
- Urine drug screen
- Perform LP if persistent altered mental status, meningitis suspected, or <18 months of age and delayed return to baseline.

Radiological studies:
- Obtain head CT prior to LP if concerning neurologic status, persistently altered mental status, history of trauma, or focal neurological findings.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner. Approved by MSEC 5/8/19.
Indications for Admission or Transfer:
- Status epilepticus
- Cluster of seizures
- Increased intracranial pressure
- CNS infection
- Structural lesion
- Patient does not return to baseline mental status

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.

Approved by MSEC 5/8/19.

If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.
Fever – Infants 0-90 days

MSEC Approved 5/8/19

**Village Management**
- If well-appearing, send to Bethel on next commercial flight.
- If travel to Bethel will be delayed, infant must have recheck with health aide within 12 hours and be followed closely until seen in Bethel.
- If infant is not well-appearing, consult peds to discuss treatment options.
- If giving ceftriaxone IM in the village, DO NOT say “ceftriaxone per CHAM.” Give the health aide the exact dose.

**Special Circumstances**
1. Immunizations within 24 hours of fever <101 and well-appearing: no work-up necessary but must follow-up in village or Bethel within 12-24 hours. If fevers persist or infant is not well-appearing, perform work-up as above.
2. Pre-treatment with antibiotics with no focal bacterial infection: infant must be observed a full 48 hours off antibiotics. This may require staying in Bethel for 48 hours of antibiotics followed by another 48 hours of observation off antibiotics with daily follow-up. Consider ordering CSF Multiplex PCR, a send-out test.
3. Unsuccessful LP: treat if appropriate and consider a repeat LP in 12-24 hours and determine treatment course based on cell counts. If repeat LP not performed or unsuccessful, either treat for 10-14 days with meningitic dosing of IV antibiotics or stop antibiotics at 48 hours and observe infant for an additional 48 hours off antibiotics. Consider admission.

**Low Risk Criteria**
- Well-appearing
- Previously healthy
- Full term >37 weeks
- No focal bacterial infection, such as pneumonia or UTI.
- WBC count 5-15
- Absolute band count <1500
- Procalcitonin <0.5
- No thrombocytopenia
- U/A with negative nitrites, negative leukocyte esterase, <10 WBC/HPF

**No febrile infant <90 days should receive antibiotics without an LP**
- 0-7 days: please consult a pediatrician, pharmacist, or Neofax.
- 8-28 days:
  - If well-appearing and low suspicion for meningitis: ampicillin 50 mg/kg IV Q8h AND gentamicin 4 mg/kg IV Q24h
  - If well-appearing and any suspicion for meningitis: ampicillin 75 mg/kg IV Q6h AND cefepime 50 mg/kg IV Q12h
    - If ill-appearing and/or positive CSF Gram stain: please consult a pediatrician and/or a pharmacist.
- 29-90 days: ceftriaxone 75 mg/kg IV/IM Q24h OR if worried about meningitis 100 mg/kg IV once then 50 mg/kg IV Q12h
  - Continue IV/IM antibiotics until cultures are negative and patient is clinically stable x48-72 hours or until specific organism and sensitivities are available to direct therapy.
  - If known HSV exposure, seizures, or severe illness: acyclovir 20 mg/kg IV Q8h with IVF, perform HSV work-up (see box), and consult pediatrics.

**Risk-Stratification Resource:**
- Kaiser Neonatal Sepsis Calculator

**Treatment Instructions-PEDS**

**CSF Results**

<table>
<thead>
<tr>
<th>Normal CSF</th>
<th>0-28 days</th>
<th>29-90 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC</td>
<td>&lt;20</td>
<td>&lt;10</td>
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<tr>
<td>Glucose</td>
<td>&gt;40</td>
<td>&gt;40</td>
</tr>
<tr>
<td>Protein</td>
<td>&lt;100</td>
<td>&lt;75</td>
</tr>
</tbody>
</table>

Absence of neutrophils (polys) makes bacterial meningitis unlikely. CSF neutrophils (polys) >75% increases likelihood of bacterial meningitis. Do not use correction formulas for traumatic LPs.

**Evaluation and management in Bethel**

**Admit or medevac, as appropriate. Give antibiotics (see Treatment Box).**

**Perform full work-up, including:**
- CBC with manual differential
- CRP
- Procalcitonin
- Blood culture
- U/A, urine culture
- CXR
- LP if stable
- RSV, flu nasal swabs

**Perform partial work-up:**
- CBC with manual differential
- CRP
- Procalcitonin
- Blood culture
- U/A, urine culture
- Consider CXR

**Meets all Low Risk Criteria (see box)?**

- **No**
  - Strongly consider performing LP if stable.
  - Consider giving antibiotics (see Treatment box).

- **Yes**
  - Observe in Bethel with no antibiotics with daily follow-up until cultures are negative at 48 hours.
  - Inform family of plan.
  - Patient Education Handout is available (Fever Follow-Up Instructions-PEDS).

**Kaiser Neonatal Resource:**
- Risk-Stratification
- Sepsis Calculator
- HSV Work-up
  - CSF HSV PCR
  - Blood HSV PCR
  - CMP
  - Nasopharyngeal, conjunctival, and anal swabs and vesicle fluid for HSV PCR.

**This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.**

Approved by MSEC 5/8/19.

If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.
Croup/Stridor: Evaluation & Treatment

MSEC Approved 7/12/17

Do not routinely obtain CXR or airway imaging.

Dexamethasone 0.6 mg/kg by least invasive method possible. (Max dose 10 mg.)

May use IV/IM form (10 mg/mL) orally (with flavoring or sugar) to minimize volume needed.

Give nebulized racemic epinephrine:
- <10 kg: 0.25 mL mixed with 3 mL NS
- >10 kg: 0.5 mL mixed with 3 mL NS
Monitor pulse during and after administration.

Is there stridor at REST?

Yes

Monitor for 30-60 minutes.

No

Is there improvement after 30 minutes?

Yes

Monitor for 4 hours.

No

Does patient meet Low-Risk Criteria?

No

In Village
- If no racemic epinephrine available, mix 1 mL of 1:1000 epi with 1 bullet of NS and give via nebulizer.

- If in village, bring to Bethel by fastest means possible.
- If in ER, consider another racemic epinephrine, budesonide neb, admission, transfer, etc.
- Consult PICU, consider intubation.
- Consider alternate diagnoses (see DDx box above).

Low-Risk Criteria
- No stridor at rest
- Normal pulse-oximetry
- Good air exchange
- Normal color
- Normal mental status
- Tolerating PO
- Caregivers understand to return to clinic for recurrent stridor and/or increased WOB.

Yes

Be prepared for possible intubation:
- Activate medevac if in village.
- Page CRNA.
- Page pediatrician on-call.
- Obtain IV access x2.
- Prepare ET tubes 0.5 and 1.0 sizes smaller than what the Critical Care Guide recommends.

Signs of Impending Airway Compromise
- drooling
- lethargy
- tripod position
- marked retractions
- tachycardia
- cyanosis or pallor
- rapid progression of symptoms

Important Supportive Measures
1. Keep child upright.
2. May take child outside for cool air.
3. Minimize invasive measures – keep child CALM!
4. Do NOT give albuterol; this can worsen croup.

DDx Stridor
- croup (most common in ages 6 months to 3 years)
- foreign body
- tracheomalacia
- angioedema
- tracheitis
- epiglottitis
- abscess

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Clinical Guidelines • June 2019

Bronchiolitis / Wheezing – 3-24 Months

MSEC Approved 5/8/19

NOTE: If <3 months or history of prematurity, keep patient in Bethel and have low threshold for admission. RSV increases risk of apnea in these patients. If patient is <90 days and febrile, please see fever guidelines.

NOTE ABOUT STEROIDS: National guidelines recommend against systemic steroids as the potential harm is generally greater than the potential benefit. If considering starting steroids, please consult a pediatrician.

Supportive Measures

• Control fever, as it can be an independent cause of respiratory distress and tachycardia.
• Nasal suction with nasal bulb syringe and olive tip plus saline.
• Hydration by IV or enteral (including NG and G-tube).
• Gentle P&P/D/CPT if helpful.
• Saline neb (either 0.9% or hypertonic 3%).
• Consider albuterol trial even if no wheezing heard, especially in Alaska Native patients as they have high rates of RAD.

Moderate to severe respiratory distress
Sustained tachypnea, increased work of breathing, and/or hypoxia

Mild respiratory distress
Intermittent tachypnea, increased work of breathing, and/or hypoxia

Obtain CXR
Evidence of pneumonia?

Yes
No

See Pediatric Community-Acquired Pneumonia Clinical Guideline

• Requires >2 L supplemental oxygen to prevent hypoxia or improve WOB?
• Requires neb treatments more frequently than Q3-4h for >8 hours?
• Has sustained tachycardia, tachypnea, or respiratory distress despite treatment?

When Admitting, Use Power Plan to Order:
• IVF
• Nasal suction
• Nebs pm
• Consider scheduled nebs
• No deep (nasopharyngeal) suctioning
• Respiratory assessments
• Consider hypertonic (3%) saline – may need to use with albuterol

Consider:
• Nasal steroids (Pred-Forte 1 spray each nostril BID x5 days) and/or Neo-Synephrine (1 spray each nostril BID x3 days). More frequent albuterol/hypertonic saline nebs. Racemic epinephrine neb.

When Admitting, Use Power Plan to Order:

• Pulse-Oximetry Monitoring:
  • Pulse-ox may be ordered Q4h (not continuously) if age >6 months and patient is stable.
  • Being on oxygen does not mandate continuous pulse-oximetry if patient is stable.

NOTE:
• Transfer to Anchorage. Consider high flow nasal cannula.

Admit to YKHC Peds Inpatient Unit with IV fluids.

After 48-72 hours

Improvement?

Yes
No

• Patient improving with increased appetite and activity, less WOB, and decreasing fever curve?
• No hypoxia on room air?
• Tolerating home therapy with competent caregivers?
• Immunizations UTD?

Discharge home with close follow-up within a week

Village Management

• Institute SUPPORTIVE MEASURES, especially fever control, nasal suction, IV or PO hydration, and several albuterol nebs.
• Have low threshold to refer to Bethel for further evaluation if no improvement with supportive measures or any concerns.
• If no improvement after 2-3 days of village management, refer to Bethel for further care.
• If unable to bring to Bethel and worsening, consult a pediatrician and consider systemic steroids.

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If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.
**Clinical Guidelines • June 2019**

**Pneumonia – Pediatric > 3 Months**

**REMEMBER**:
- If patient is <90 days and febrile, please see fever guidelines.
- Pneumonia is a clinical diagnosis and does not require X-ray findings.

**Hypoxia**
- <90% while awake
- <88% while asleep
- Sustained for >10 minutes

**Pulse-Oximetry Monitoring**
- Pulse-ox may be ordered Q4h (not continuously) if age >6 months and patient is stable.
- Being on oxygen does not mandate continuous pulse-oximetry if patient is stable.

**Improvement?**
- Patient improving with increased appetite and activity, less WOB, and decreasing fever curve?
- No hypoxia on room air?
- Tolerating home therapy with competent caregivers?
- Immunizations UTD?
- Negative PPD?

**Treatment**

**Outpatient**
1st line: amoxicillin 45 mg/kg/dose PO BID
2nd line: Augmentin 45 mg/kg/dose PO BID
3rd line: cefdinir 7 mg/kg/dose PO BID

**Inpatient**
1st line: ampicillin 50 mg/kg/dose IV Q6h
2nd line: Unasyn 50 mg/kg/dose IV Q6h
3rd line: ceftriaxone 75 mg/kg/dose IV Q24h

*If not fully immunized, suspicion for H influenzae, or complicated pneumonia (pleural effusion, multilobar involvement, concern for bacteremia, etc.)*: Start with ceftriaxone. When improving, complete 10 day course with narrower spectrum oral antibiotic, as appropriate.

**For H influenzae type A**: At least one dose of ceftriaxone or four days of rifampin is necessary for decolonization. Remainder of course may be completed with a penicillin, if sensitive.

**For PCN allergy**: If reaction was non-anaphylactic, may trial amoxicillin with monitoring. If reaction was anaphylaxis, treat with a cephalosporin.

**Azithromycin**: Do not prescribe azithromycin unless there is evidence of an atypical pathogen and child is >5 years. Must be prescribed in addition to primary treatment above.

**RUL infiltrate**: consider starting with Augmentin/Unasyn to cover for oral anaerobes. Consider thickener.

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Approved by MSEC 5/8/19.

If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.
Suspected Child Sexual Abuse Procedure

Mandatory Reporters include: Medical providers, nurses, health aides, teachers, social workers, law enforcement officers, and mental health professionals.

Report should be made by every mandated reporter who has a concern - even if you think a report has already been made. This helps keep reports up to date with new information.

Laboratory Testing for Occult Injuries
All Patients ≤ 7 years or >7 if clinically indicated
- CBC
- CMP
- Amylase/Lipase
- UA
- Fractures
  - Above labs and Magnesium & Phosphorous
  - Bruising or Intracranial Hemorrhage
    - Above labs plus PT/PTT
    - If patient needs blood, obtain vWF (von Willebrand) antigen and activity, Factor VII and IX
  - Altered Mental Status/Drug Ingestion
    - Urine Drug Screen
    - Ethanol level
    - Tylenol level
    - Aspirin level

Obtain Skeletal Survey For:
Children 0-24 months if concerns for child abuse or any of the following are present:
- History of confessed abuse
- Injury occurred during domestic violence
- Report of impact from toy/object causing fracture
- Delay in seeking care >24 hours in child with signs of distress
- Additional injuries unrelated to chief complaint (i.e. bruising, burns)
- No history of trauma to explain fracture. However, it is not necessary to get skeletal survey in ambulatory patients >12 months with distal buckle fracture of radius/ulna or distal spiral or buckle fracture of the tibia/fibula

ALL children 0-11 months with any type of fracture except the following:
- Distal radial/ulna fracture or spiral fracture of the tibia/fibula (Toddler fracture) in a cruising child > 9 months with history of fall
- Linear, unilateral skull fracture in child >6 months with history of significant fall (fall from height > 3 feet or fall with caregiver landing on child)
- Clavicle fracture likely attributed to birth (acute fracture in infants <22 days old or healing fracture in infant <30 days old)

Children 0-24 months with any of the following fractures:
- Rib fracture
- Complex or ping pong skull fracture
- Humeral fracture with epiphyseal separation attributed to short fall (< 3 feet)
- Femur diaphyseal fracture attributed to fall from any height
Head injury in a child <18 years.

Low Risk
GCS=15
AND
No risk factors (see Intermediate and High Risk boxes)

Discharge with head injury education and competent caregiver

Intermediate Risk
GCS=15
AND one or more of the following:
• Occipital, parietal, or temporal scalp hematoma
• Loss of consciousness > 5 seconds
• Not acting normal per parent
• Severe mechanism of injury**
• If older than 2: vomiting or severe headache
• Amnesia

Factors to consider when deciding to observe vs perform head CT:
• Provider experience
• Multiple vs isolated findings
• Worsening signs/symptoms
• Age <3 months
• Parental preference

Observation
• Observe in the ER 4-6 hours post-injury. or
• If presenting >4 hours post-Injury AND not improving per caregiver, observe 4 hours.

CT Scan
Perform noncontrast head CT with spinal motion restriction

Discharge with head injury education and competent caregiver.

High Risk
One or more of the following:
• GCS≤14
• Altered mental status*
• Signs of skull fracture
• Focal neurological deficits
• Seizure
• Loss of consciousness > 1 minute

Factors to consider when deciding to observe vs perform head CT:
• Provider experience
• Multiple vs isolated findings
• Worsening signs/symptoms
• Age <3 months
• Parental preference

Observation
• Observe in the ER 4-6 hours post-injury. or
• If presenting >4 hours post-Injury AND not improving per caregiver, observe 4 hours.

CT Scan
Perform noncontrast head CT with spinal motion restriction

Discharge with head injury education and competent caregiver.

**Severe Mechanism of Injury
• Fall: >3 feet if younger than 2 years, >5 feet if older than 2 years
• Motor vehicle accident with ejection, rollover, or fatality
• Unhelmeted bike/pedestrian vs vehicle
• Head struck by high-impact object

If GCS ≤ 8, intubate and refer to PALS stabilization algorithms.

Village Management
• If Low Risk: discharge home with head injury education and competent caregiver.
• If Intermediate Risk: consider medevac vs observation with Q1h VS and neuro checks.
If any worsening, activate medevac.
If not improving over 4 hours, activate medevac.
If High Risk: activate medevac.
Plain films of the skull are not recommended.

Concussion Management
• Complete Acute Concussion Evaluation at every visit.
• Follow-up in outpatient clinic in 1-2 weeks.
• Consider balance testing.
• Avoid medications that can worsen somnolence.
• If symptoms persist >3-4 weeks, consider referral to neurologist, psychologist, physical therapy, etc.
• Return to school per CDC Heads Up Protocol.
• Return to play per ASAA Guidelines.
• Complete Acute Concussion Evaluation at every visit.
• Follow-up in outpatient clinic in 1-2 weeks.
• Consider balance testing.
• Avoid medications that can worsen somnolence.
• If symptoms persist >3-4 weeks, consider referral to neurologist, psychologist, physical therapy, etc.
• Return to school per CDC Heads Up Protocol.
• Return to play per ASAA Guidelines.

In all pediatric trauma, consider further evaluation for non-accidental trauma (skeletal survey, dilated eye exam, etc.)

Pediatric Glasgow Coma Scale (GCS)

<table>
<thead>
<tr>
<th>Infant</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Spontaneous</td>
</tr>
<tr>
<td>To speech</td>
<td>To speech</td>
</tr>
<tr>
<td>To pain</td>
<td>To pain</td>
</tr>
<tr>
<td>No response</td>
<td>No response</td>
</tr>
<tr>
<td>Oriented, appropriate</td>
<td>Confused</td>
</tr>
<tr>
<td>Inappropriate words</td>
<td>Incomprehensible sounds</td>
</tr>
<tr>
<td>No response</td>
<td>No response</td>
</tr>
</tbody>
</table>

**Altered Mental Status
• agitation/irritability
• inconsolability
• somnolence/lethargy
• slow response
• repetitive questions

C-spine Imaging
• Spinal motion restriction should be continued in neurologically abnormal patients until spinal column or cord injury has been excluded.
• See Nexus Criteria for C-spine imaging protocol.

If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.

Approved by MSEC 5/8/19.

If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.
**Background**
- Only 4-9% of those...labeled [penicillin-allergic] are currently allergic. It is important to identify those who are not allergic, because children mislabeled as penicillin-allergic have more...comlications.¹
- Up to 10% of children develop rashes while receiving antibiotics. Most are diagnosed...as allergic to the implicated antibiotic, and most continue to avoid the suspected antibiotic in favor of alternatives, which may be less effective, more toxic, and more expensive.²
- Do not label a patient as allergic to penicillin/amoxicillin unless he or she has true hives, anaphylaxis, or a life-threatening reaction. Please include...rashes in RAVEN.
- Please consult a pediatrician with any questions.

---

### Anaphylaxis
- Acute onset – several minutes to hours from exposure.
- Generalized hives, pruritis or flushing, swelling of lips/tongue/uvula, and at least one of the following:
  - Dyspnea, bronchospasm, stridor
  - Hypotension
  - Evidence of hypoperfusion of end-organs
  - Persistent crampy abdominal pain and/or vomiting

### Hives vs Viral Rash
- True hives are raised, itchy, larger than dime-sized, come and go, move around the body, and change shape and size.
- Keep in mind that many parents refer to any rash as “hives.” Get a description every time.
- A viral exanthem is typically diffuse, fine, pinpoint red dots and can be dense, coalesced, larger raised lesions. The rash typically covers the face and chest but can cover the whole body. The rash typically worsens and takes days to clear.

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### Amoxicillin Allergy Trials

#### Procedure
1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine available.

<table>
<thead>
<tr>
<th>Epinephrine (1 mg/mL)</th>
<th>0.01 mg/kg (or 0.01 mL/kg)</th>
<th>IM q5-15 minutes.</th>
</tr>
</thead>
</table>
| Per AAP recommendations:
  - ≥ 7.5-25 kg: use EpiPen Jr (0.15 mg)
  - ≥ 25 kg: use EpiPen (0.3 mg) |
2. Calculate weight-based dose of amoxicillin. Give patient 10% of that dose.
3. Place patient in nearby room and instruct caregiver to notify staff of any changes in status.
4. If no reaction by 20 minutes, give patient remaining 90% of weight-based dose of amoxicillin.
5. Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
7. Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose “cancel.” On the “reason” drop-down menu, choose “OK on Retrial.”

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### References

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**Clinical Guidelines • June 2019**

**History**
- Chart review:
  - Review notes in allergy alert. Find date allergy was added, and then review notes from that day.
  - Look in Multimedia Manager for photos.
  - Has patient received a drug of the same class since the allergy was reported?
- History from patient/family:
  - What was the reaction?
  - Vomiting and/or diarrhea?
  - Rash?
  - Age? Time from first dose?
  - Hives? (See box.)
  - Photos from family?
  - Trouble breathing?
  - Swelling of tongue/lips?

**Amoxicillin Allergy Trials**

<table>
<thead>
<tr>
<th>MSEC approved 5/8/19</th>
</tr>
</thead>
</table>

**Amoxicillin Trial Procedure²**

- Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine available.
- Epinephrine (1 mg/mL): 0.01 mg/kg (or 0.01 mL/kg) IM q5-15 minutes.
- Per AAP recommendations:
  - ≥ 7.5-25 kg: use EpiPen Jr (0.15 mg)
  - ≥ 25 kg: use EpiPen (0.3 mg)
- Calculate weight-based dose of amoxicillin. Give patient 10% of that dose.
- Place patient in nearby room and instruct caregiver to notify staff of any changes in status.
- If no reaction by 20 minutes, give patient remaining 90% of weight-based dose of amoxicillin.
- Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
- Give patient and family amoxicillin trial education sheet.
- Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose “cancel.” On the “reason” drop-down menu, choose “OK on Retrial.”

---

**Patient labeled with a penicillin/amoxicillin allergy.**

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine available.

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5. Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
7. Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose “cancel.” On the “reason” drop-down menu, choose “OK on Retrial.”

---

**Background**
- Only 4-9% of those...labeled [penicillin-allergic] are currently allergic. It is important to identify those who are not allergic, because children mislabeled as penicillin-allergic have more medical visits, receive more antibiotic prescriptions, and have longer hospitalizations with more antibiotic-related complications.¹
- Up to 10% of children develop rashes while receiving antibiotics. Most are diagnosed...as allergic to the implicated antibiotic, and most continue to avoid the suspected antibiotic in favor of alternatives, which may be less effective, more toxic, and more expensive.²
- Do not label a patient as allergic to penicillin/amoxicillin unless he or she has true hives, anaphylaxis, or a life-threatening reaction. Please include photos of rashes in RAVEN.
- Please consult a pediatrician with any questions.
Pediatric Outpatient Guidelines

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Child less than 5 years of age with concern for UTI

Obtain catheterized or true clean catch urine sample for urinalysis (UA) AND culture.

Empiric antibiotic treatment:
ceftriaxone 75mg/kg/day IV/IM

Ensure urine culture is sent.

Once clinically improved and sensitivities established, switch to oral antibiotics

Positive urine culture with single species ≥50,000 CFU/mL in a catheterized sample or ≥100,000 CFU/mL in a clean catch sample?

Yes

Begin empiric treatment and narrow coverage per sensitivities.

If first UTI, renal ultrasound at first opportunity to evaluate anatomy.

Renal abnormality identified.

• If mild pelviectasis identified, repeat ultrasound in 3 months.
• If any other anomaly identified, consult pediatrics.

No UTI. Stop antibiotics.

UA positive for leukocyte esterase and/or nitrates and/or microscopy >5 WBC/HPF.

Patient appearing toxic?

Yes

Consider empiric treatment with cephalxin 20 mg/kg/dose Q8h x10 days. May defer empiric treatment and await culture sensitivities.

No

Symptomatic Care
• If dysuria, irritation, etc. recommend A+D ointment and instruct family to do soaks/baths with warm water and no soap.
• May consider baking soda ¼ cup per tub.

Village Management
• Do not treat any child under 5 years of age empirically in the village.
• If patient has dysuria, increased frequency, new-onset enuresis, and/or abnormal clean catch urinalysis, consider further evaluation in Bethel.
• Consider symptomatic care (see box) for possible vulvovaginitis.

DO NOT ...
• treat any child under 5 years of age empirically in the village.
• routinely collect urine via bag.
• treat a UTI without a culture in progress.
• routinely perform a test of cure.
• routinely start UTI prophylaxis.
• perform suprapubic taps.
• routinely obtain bloodwork for uncomplicated UTI.
• add UTI to Problem List until confirmed by culture.

NOTE: Any infant with a fever <90 days must go to the Emergency Department for evaluation.
See the Fever in Infants 0-90 Days Guideline.

Indications for VCU:
• Recurrent UTI in child <6 years. Note: study available in Bethel 1-2 times per year when radiologist in-house.
• Major anomaly on ultrasound. Consult pediatric urologist and consider obtaining VCU in Anchorage.
Otitis Media 3 Months–12 Years

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.

**Box 1: AOM Decision-Making Principles**
- Try not to give antibiotics if observation is warranted.
- Always treat pain.
- If patient has not received amoxicillin within 30 days, start with amoxicillin to treat new infection.
- For AOM with otorrhea, use otic drops if >6 months. Do not use oral antibiotics unless the other ear is infected without perforation.
- Do not treat fluid that develops after AOM if child is asymptomatic – observe up to 3 months.
- Do not use azithromycin, erythromycin, cephalexin (Keeflex), or Septra for AOM.
- Do not use antibiotic prophylaxis.
- Do not send ear drainage for culture.

**Box 2: Eligibility for Observation for 48-72 hours**
- 6-24 month old with mild, uncertain, or unilateral AOM
- >24 month old with mild/moderate (non-bulging) AOM
- Caregiver comfortable withholding antibiotics
- Follow-up assured
- Antibiotics can be started promptly if symptoms persist or worsen
- No fever >102°F and only mild otalgia

**Box 3: AOM Treatment**
1st line: amoxicillin 45 mg/kg/dose PO BID for 10 days
2nd line: Augmentin 45 mg/kg/dose PO BID for 10 days
3rd line: cefdinir 7 mg/kg/dose PO BID for 10 days
4th line: ceftriaxone 75 mg/kg IV/IM QD for 3 days

**Otitis-conjunctivitis syndrome**
Augmentin 45 mg/kg/dose PO BID for 10 days

**Try to avoid using cephalosporins.** They are less effective at treating the most common organisms that cause OM. Additionally, cefdinir takes 3-5 days to reach the villages.

**For PCN allergy:** Please obtain a pediatrics consult.

**For ruptured TM/tube drainage:**
Wick ears prior to giving drops.
Ofloxacin 3-5 drops BID x10 days
Ciproflox 3-5 drops BID x10 days

**When to Refer to ENT**
- 3 episodes of AOM in 6 months
- 4 episodes of AOM in 12 months
- OME or otorrhea for ≥3 months
- Hearing loss >20 dB

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**AOM ≥3 months**
- Acute onset of:
  - Fever and ear pain
  - Bulging TM and decreased mobility
- See Box 1.

**Always address pain:**
- acetaminophen if >3 months old
- acetaminophen and/or ibuprofen if >6 months old

**Condition**
- Child is observed for 48-72 hours with follow-up

**Is observation appropriate?**
- Yes
- No

**Start antibiotics per Box 3.**

**Did patient improve within 48-72 hours?**
- Yes
- No

**Follow-up as appropriate.**

**Is diagnosis of AOM confirmed?**
- Yes
- No

**Assess for other causes of illness and manage appropriately.**

**Consider Otitis Media with Effusion (OME)** if no acute symptoms but decreased TM mobility. Non-infected fluid may persist for 3 months after AOM. If present ≥3 months, evaluate hearing and refer to ENT.

**AOM <3 Months Old**
- If suspecting AOM <3 months old, patient must be seen by provider within 24 hours.
- ≤28 days old: patient must be seen in the ER for full lab work-up including LP and treatment with IV antibiotics.
- ≥29-60 days old with or without fever, patient must be seen in the ER for full lab work-up including LP.
  - If febrile, follow fever < 90 days clinical guideline.
  - If afebrile and reassured work-up, may treat with oral antibiotics as appropriate.
- >61-90 days old:
  - If febrile, follow fever < 90 days clinical guideline.
  - If afebrile and sick-appearing, perform work-up as clinically appropriate. May consult pediatrics as needed.
  - If afebrile and well-appearing, lab work-up not necessary. May treat with oral or otic antibiotics as appropriate.

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**Box 1: AOM Decision-Making Principles**
- Try not to give antibiotics if observation is warranted.
- Always treat pain.
- If patient has not received amoxicillin within 30 days, start with amoxicillin to treat new infection.
- For AOM with otorrhea, use otic drops if >6 months. Do not use oral antibiotics unless the other ear is infected without perforation.
- Do not treat fluid that develops after AOM if child is asymptomatic – observe up to 3 months.
- Do not use azithromycin, erythromycin, cephalexin (Keeflex), or Septra for AOM.
- Do not use antibiotic prophylaxis.
- Do not send ear drainage for culture.
This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.

Persistent Illness
Nasal discharge and daytime cough for >10 days with no improvement

Observe for 3 days. Follow-up by phone or by appointment.

Fever and rhinorrhea in >5 years old

Consider sinusitis

Worsening Course
One week of worsening nasal discharge, daytime cough, and fever after initial improvement

Severe Onset
Fever >102 and purulent nasal discharge for >3 consecutive days

If no improvement

Sinus Development in Children

- Maxillary: present at birth, fully developed at 12 years
- Ethmoid: present at birth, fully developed at 12 years
- Frontal: present at 3 years, fully developed at 18-20 years
- Sphenoid: present at 8 years, fully developed at 12-15 years

Sinusitis > 5 Years

MSEC Approved 4/26/18

Differential Diagnosis
- Foreign body
- Seasonal/environmental allergies
- Recurrent/back-to-back viral rhinitis or nasopharyngitis

Imaging
Do not routinely obtain imaging studies in suspected sinusitis unless there is concern for a complication like orbital or CNS involvement.

Do not treat sinusitis, in the absence of symptoms, if it is an incidental finding on an imaging study.

Adjuvant Therapies
- Saline nasal spray
- Steam
- Oral hydration
- Tylenol and ibuprofen
- Do not routinely give decongestants and antihistamines (especially Benadryl). They have been proven ineffective in

Treatment
1st line High-dose amoxicillin 45 mg/kg/dose PO BID for 14 days
2nd line High-dose Augmentin 45 mg/kg/dose PO BID for 14 days
3rd line Cefdinir 14 mg/kg/dose PO daily for 14 days

Try to avoid using cephalosporins. They are less effective at treating the most common organisms that cause sinusitis. Additionally, cefdinir takes 3-5 days to reach the villages.

For PCN allergy: Please obtain a pediatrics consult. Do not prescribe azithromycin or Septra. The most common pathogens in pediatric sinusitis have high resistance rates to these antibiotics.

Follow-up by phone or by appointment at 3 days. If no improvement, consider broadening to next line of treatment.

Follow-up 10-14 days after starting treatment. If still symptomatic, consider lengthening course to total 21-28 days of treatment.

If considering the diagnosis of sinusitis in a child younger than 5, please consult a pediatrician.
Concern raised by caregiver or teacher for Attention Deficit Hyperactivity (ADHD) in child aged 6-17 years

Distribute initial Vanderbilt evaluation forms for caregiver and teacher to complete.

Schedule appointment with provider trained in ADHD evaluation and management.

Initial Vanderbilt evaluation forms completed by caregiver and teacher. Forms reviewed by provider before, at, or after appointment. Provider conducts medical evaluation at appointment.

Vanderbilt positive for ADHD with comorbid psychiatric conditions

Address any medical issues (sleep, etc.). Refer to Dr. Karen Jackman (child psychiatrist) for further evaluation and management.

Vanderbilt positive only for ADHD and physical/situational/organic conditions excluded.

Start trial of low-dose stimulants for one month and refer to Behavioral Health for concurrent counseling to achieve optimal results.

Vanderbilt negative for ADHD

Address any medical issues (sleep, etc.). Consider referral to Behavioral Health for counseling or to Dr. Sarah Angstman (child psychologist) for psychiatric testing as indicated.

Distribute follow-up Vanderbilt evaluation forms to be completed by caregiver and teacher after two weeks of new medication.

Follow-up Vanderbilt forms indicate acceptable control of ADHD symptoms with reasonable side effect profile.

May refill stimulant prescription for up to three months at a time once on a stable dose.

Follow-up ADHD appointment for medication review (with completed Vanderbilt evaluation forms) every 6 months. May refill one additional month while awaiting an appointment if necessary.

1. Scan completed Vanderbilt forms into MultiMedia Manager under “Continuity of Care.”
2. Use “Refer to Peds Psychiatry Internal” order. Dr. Jackman may be contacted at (907) 230-3765 or jackman@alaska.net. Her case manager is Patricia Sipary at ext 6466.
3. Use “Refer to Other External” order and send a message to the case manager to process the referral. Dr. Angstman may be contacted at (907) 545-5330.
4. Write three separate 30 day prescriptions. In the Special Instructions box of the two additional prescriptions, enter the earliest date the prescription may be filled (e.g. “Fill on/after 2/1” and “Fill on/after 3/1”). Bring the two additional prescriptions to case manager to be held until refill is requested by caregiver.

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This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
**Seizure Evaluation – Pediatric**

**Box 1: Detailed History**
- When/where did it occur? Awake or asleep?
- What proceeded the event (e.g., head trauma, crying, etc.)?
- How long did it last?
- Incontinence?
- Behavior after event?
- Interventions?
- Type of movement and what part of body? Symmetric?
- Inconsolable?
- Behavior after event?
- How long did it last?
- When/where did it occur? Awake or asleep?

**Box 2: Low-risk febrile seizure criteria**
1. 6 months to 4 years of age.
2. Fever present.
4. Seizure duration <5 minutes.
5. Child has normal neurologic examination.
6. Child has no history of previous neurologic or CNS abnormality.
7. Only one seizure in a 24-hour period.
8. Child has returned to baseline.
9. No meningeeal signs.
10. Child has NOT received antibiotics in the past 72 hours.

**Box 3: Work-up**
- Bedside glucose STAT if seizure occurred <4 hours ago or mental status not at baseline
- Obtain detailed history (See Box 1.)
- Perform neurologic exam.
- Strong suspicion that event was a seizure?
- Does patient have history of seizures?
- History of fever?
- Yes
- History of breathholding
- Family History
- Yes
- No
- Yes
- Age ≥18 months
- Age <18 months
- Diagnose simple febrile seizure.
- Consider performing LP, given that signs and symptoms of meningitis may be absent or subtle in this age group.
- Labs: CBC, CRP, BMP, magnesium, phosphate, blood culture, U/A, urine culture. Perform LP.
- LP results
- Normal
- Abnormal
- Suspect meningitis: Consult pediatrics.
- Start meningitic dose of ceftriaxone and consider vancomycin, acyclovir, and dexamethasone per Pediatric Critical Care Guide.
- Strongly consider medevac to Anchorage.
- Follow-up with pediatrics to consider EEG, MRI, and/or neurology consult.
- At discharge, prescribe Diastat for all seizure patients ≥6 months old.
- Discharge patient if reassuring neurologic status. Educate parents concerning febrile seizure and give febrile seizure education handout. Treat infection and fever if appropriate. EEG unnecessary. Update Problem List. Prescribe Diastat for all seizure patients ≥6 months old. Consult pediatrics with any questions.

**Village Management**
- Always check blood glucose.
- Patients <18 months with first-time febrile seizure or any patient with first-time non-febrile seizure should come to Bethel by commercial flight.
- Patients ≥18 months meeting all low-risk febrile seizure criteria with identified low-risk source of infection (e.g., AOM) may stay in village until outpatient appointment available. Ensure close village follow-up.
- Strongly consider medevac if child is not back to baseline, has signs of meningitis, had an atypical seizure, or presented in status epilepticus.

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- Bedside glucose STAT if seizure occurred <4 hours ago or mental status not at baseline
- Obtain detailed history (See Box 1.)
- Perform neurologic exam.
- Strong suspicion that event was a seizure?
- Yes
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- History of breathholding
- Family History
- Yes
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- Diagnose simple febrile seizure.
- Consider performing LP, given that signs and symptoms of meningitis may be absent or subtle in this age group.
- Labs: CBC, CRP, BMP, magnesium, phosphate, blood culture, U/A, urine culture. Perform LP.
- LP results
- Normal
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- Suspect meningitis: Consult pediatrics.
- Start meningitic dose of ceftriaxone and consider vancomycin, acyclovir, and dexamethasone per Pediatric Critical Care Guide.
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- Follow-up with pediatrics to consider EEG, MRI, and/or neurology consult.
- At discharge, prescribe Diastat for all seizure patients ≥6 months old.
- Discharge patient if reassuring neurologic status. Educate parents concerning febrile seizure and give febrile seizure education handout. Treat infection and fever if appropriate. EEG unnecessary. Update Problem List. Prescribe Diastat for all seizure patients ≥6 months old. Consult pediatrics with any questions.

**Box 1: Detailed History**
- History of previous seizures
- History of breathing difficulty
- Family History
- Seizures, febrile seizures, breathholding, etc.

**Box 2: Low-risk febrile seizure criteria**
1. 6 months to 4 years of age.
2. Fever present.
4. Seizure duration <5 minutes.
5. Child has normal neurologic examination.
6. Child has no history of previous neurologic or CNS abnormality.
7. Only one seizure in a 24-hour period.
8. Child has returned to baseline.
9. No meningeeal signs:
   - Irritability or inconstancy
   - Nuchal rigidity
   - Bulging fontanelle
   - Lethargy or somnolence
   - Focal neurologic findings
10. Child has NOT received antibiotics in the past 72 hours.

**Box 3: Work-up**
- Bedside glucose
- EKG for first event
- BMP, magnesium, phosphate
- Urine drug screen
- Perform LP if persistent altered mental status, meningitis suspected, or <18 months of age and delayed return to baseline.

**Radiological studies:**
- Obtain head CT prior to LP if concerning neurologic status, persistently altered mental status, history of trauma, or focal neurologic findings.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
**Definitions**

- Bronchiectasis is a lung condition with chronic wet cough and lung infections and is diagnosed by CT scan. Use ICD10 code J47 – “Bronchiectasis.”
- Bronchiectasis risk is defined as ≥3 episodes of wet cough >4 weeks in the past 2 years, often in a setting of persistent infiltrates and recurrent pneumonia. Use ICD10 code J41.1 – “Chronic purulent bronchitis.”

**Comorbidity Management**

- Aspiration: trial thickener if <3 years, feed with swaddling in side-lying position at 45 degrees with slow-flow nipple, consider speech therapy.
- TB: place PPD, send sputum/gastric aspirates if indicated (see Pediatric TB Evaluation & Treatment guideline).
- Asthma: bronchodilators, inhaled steroids.
- CF: confirm that negative on newborn screen.

**Maintenance Management**

- Follow-up with pulmonology clinic Q3-6mo and pediatrician or health aide Q2-3mo to check symptoms and medications.
- Annual PFTs if >5 years.
- Annual flu vaccine.
- Pneumococcal vaccine.
- Treat dental caries.
- Optimize environmental health with woodstove safety, vents, irritant reduction, smoking cessation, etc.
- Airway clearance: P&PD/chest PT, consider acapella.
- Consider allergy testing.
- Ensure good transition to family medicine/adult pulmonology at age 18 with CT prior to transition.

**Acute Management**

- Persistent infiltrate >6 weeks or
- Chronic wet cough ≥4 weeks or
- Fever, increased wet cough, dyspnea, etc.

Treat with Augmentin 45 mg/kg/dose BID or cefdinir 14 mg/kg/dose daily for at least 2 weeks. Chest physiotherapy TID. Recheck after two weeks. Consider systemic steroids if significant bronchospasm.

**Improved**

- Stop antibiotics.
- Follow-up in 2-3 months.
- Restart antibiotics for additional 2 week course if cough recurs.

**Not improved**

- Continue antibiotics and recheck after two more weeks.
- Consult pulmonologist.
- Do sputum culture (via RT in Bethel) and adjust antibiotics per sensitivities.
- Consider repeat CXR.

**Chronic Management**

- Follow-up with pulmonology clinic Q3-6mo and pediatrician or health aide Q2-3mo to check symptoms and medications.
- Annual PFTs if >5 years.
- Annual flu vaccine.
- Pneumococcal vaccine.
- Treat dental caries.
- Optimize environmental health with woodstove safety, vents, irritant reduction, smoking cessation, etc.
- Airway clearance: P&PD/chest PT, consider acapella.
- Consider allergy testing.
- Ensure good transition to family medicine/adult pulmonology at age 18 with CT prior to transition.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
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Lead Evaluation – Pediatrics
MSEC approved 12/13/17

RAVEN Orders
- Capillary lead level: order “Lead, State”
- Venous lead level: order “Lead Level, Blood Peds”

Perform capillary lead screening:
- on all children at 1st and 2nd year well check
- if child <5 years with no prior screening or has unexplained developmental delays
- consider in anemia evaluation

Note: This guideline is for asymptomatic patients only. If patient is symptomatic, please consult pediatrics.

Capillary level <5 mcg/dL but detectable
- Educate family on lead sources.
- Retest annually with capillary test until 6 years old.

Capillary level 5-15 mcg/dL
- Educate family on lead sources.
- Check venous level in 1-3 months.

Capillary level 15-44 mcg/dL
- Educate family on lead sources.
- Bring patient to Bethel and check venous level within 1 month.

Capillary level ≥45 mcg/dL
- Educate family on lead sources.
- Bring patient to Bethel and check venous level within 24-48 hours.
- Begin management for venous level >45 while awaiting venous result.

Venous level <5 mcg/dL but detectable
- Contact State Environmental Public Health at (907) 269-8000.
- Check venous level in all children <5 years in same home.
- Repeat venous level in 3 months.

Venous level 5-14 mcg/dL
- Contact State Environmental Public Health at (907) 269-8000.
- Check venous level in all children <5 years in same home.
- Repeat venous level in 1 month.

Venous level 15-44 mcg/dL
- Contact State Environmental Public Health at (907) 269-8000.
- Check venous level in all children <5 years in same home.
- Obtain abdominal X-ray to rule-out ingestion.
- Refer family to YKHC OEH for home survey.

Venous level ≥45 mcg/dL
- Contact State Environmental Public Health at (907) 269-8000.
- Check venous level in all children <5 years in same home.
- Consider abdominal X-ray to rule-out ingestion.
- Offer family YKHC OEH consult.

Is level decreasing?
No
- Consider abdominal X-ray to rule-out ingestion.
- Offer family YKHC OEH consult.

Yes
- Check venous level Q3mo until level is <5, then annually until age 6 years.

Consult pediatrics to consider inpatient management at YKHC or elsewhere for chelation. Contact Poison Control for advice.

Is level decreasing?
No
- Check venous level Q3mo until level is <5, then annually until age 6 years.

**To consult YK Office of Environmental Health (OEH), email Jennifer_Dobson@ykhc.org with patient’s name and DOB, lead levels, and parent’s contact information. OEH can review environmental risk factors with family and offer a home visit if appropriate.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Pediatric patient presents with tender cervical lymph node with fever, redness, and/or warmth of the neck

Look for infectious source to explain reactive lymphadenopathy, including pharyngitis, otitis, mastoiditis, etc. Treat as appropriate. Consider TB testing.

Size < 2 cm and no fluctuance
- Recheck in 10-14 days. If no improvement, consider work-up in Box 1.

Size 2-6 cm and no fluctuance
- Unilateral
  - Consider CBC with diff, CRP, blood culture.
  - Treat empirically with 10 day course of Augmentin 45 mg/kg/dose BID or clindamycin 10 mg/kg/dose TID.
  - Follow-up in 48-72 hours or sooner if worse.

  - Improvement
    - Complete full 10 day course of antibiotics.
    - Follow-up if not resolved in 4-6 weeks.

  - No improvement
    - Consult ENT.
    - Consider repeat bloodwork/further testing (see Box 1), broadening antibiotic coverage, imaging, etc.

Size > 6 cm and/or any size with fluctuance
- Bilateral and symmetric
  - Test for Group A Strep. Treat if positive.
  - Consider Monospot testing if age > 13 years.
  - Consider CBC with diff, CRP, blood culture.
  - Supportive care
  - Follow-up if no better in 2-4 weeks.
  - Consider further work-up at this time. See Box 1.

- Village Management
  - Work-up per flow.
  - Send to Bethel for evaluation if bloodwork, imaging, or consultation are indicated.

**Box 1: Further Work-up**
- Perform careful exam for lymphadenopathy of other locations. For any child with nontender lymphadenopathy or lack of improvement after specified period, consider, as appropriate:
  - PPD/TB work-up
  - CBC
  - CRP
  - LFTs
  - Blood culture
  - HIV testing
  - RPR
  - Toxoplasmosis testing
  - Bartonella testing
  - EBV, CMV titers
  - LDH, uric acid
  - CXR
  - Hematology/oncology consult
  - Infectious disease consult

**Most Common Causes**
- Reactive lymphadenopathy due to local infection (may take 4-6 weeks to resolve).
- Unilateral: *Staph aureus*, Group A Strep, Group B Strep, anaerobes, TB/MAC
- Bilateral: respiratory viruses (enterovirus, adenovirus, influenza, etc.), Group A Strep, HSV (primary), EBV, CMV, *Mycoplasma*, *Arcanobacterium*, TB

**Less Common Causes to Consider**
- Kawasaki disease; periodic fever with aphthous stomatitis, pharyngitis, and adenitis (PFAPA); leukemia; lymphoma

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
### Background
- Only 4-9% of those labeled [penicillin-allergic] are currently allergic. It is important to identify those who are not allergic, because children mislabeled as penicillin-allergic have more medical visits, receive more antibiotic prescriptions, and have longer hospitalizations with more antibiotic-related complications.1
- Up to 10% of children develop rashes while receiving antibiotics. Most are diagnosed...as allergic to the implicated antibiotic, and most continue to avoid the suspect antibiotic in favor of alternatives, which may be less effective, more toxic, and more expensive.2
- Do not label a patient as allergic to penicillin/amoxicillin unless he or she has true hives, anaphylaxis, or a life-threatening reaction. Please include photos of rashes in RAVEN.
- Please consult a pediatrician with any questions.

### Anaphylaxis
- Acute onset – several minutes to hours from exposure.
- Generalized hives, pruritis or flushing, swelling of lips/tongue/uvula, and at least one of the following:
  - Dyspnea, bronchospasm, stridor
  - Hypotension
  - Evidence of hypoperfusion of organs
  - Persistent crampy abdominal pain and/or vomiting

### Hives vs Viral Rash
- True hives are raised, itchy, larger than dime-sized, come and go, move around the body, and change shape and size.
- Keep in mind that many parents refer to any rash as “hives.” Get a description every time.
- A viral exanthem is typically diffuse, fine, pinpoint red dots and can be dense, coalesced, larger raised lesions. The rash typically covers the face and chest but can cover the whole body. The rash typically worsens and takes days to clear.

### Amoxicillin Allergy Trials

#### Patient labeled with a penicillin/amoxicillin allergy.

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine available.
2. Per AAP recommendations:
   - 7.5-25 kg: use EpiPen Jr (0.15 mg)
   - ≥ 25 kg: use EpiPen (0.3 mg)
4. If no reaction by 20 minutes, give patient remaining 90% of weight-based dose of amoxicillin.
5. Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
7. Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose “cancel.”

#### Review history. (See box.)

- What was the reaction?
  - Rash
  - Vomiting and/or diarrhea without any other S/Sx
  - Other

#### Amoxicillin Trial Procedure

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine available.
2. Epinephrine (1 mg/mL): 0.01 mg/kg (or 0.01 mL/kg) IM q5-15 minutes.
3. Per AAP recommendations:
   - 7.5-25 kg: use EpiPen Jr (0.15 mg)
   - ≥ 25 kg: use EpiPen (0.3 mg)
5. Place patient in nearby room and instruct caregiver to notify staff of any changes in status.
6. If no reaction by 20 minutes, give patient remaining 90% of weight-based dose of amoxicillin.
7. Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
9. Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose “cancel.”

### References
Pediatric Neonatal Guidelines

Neonatal Resuscitation Summary ............................................................... 58
Newborn GBS & Infection Evaluation and Treatment .................. 59
Jaundice – Neonatal Evaluation & Treatment ................................. 60
Neonatal Glucose Screening Evaluation and Treatment ............... 61
### Gestational Age (weeks)

<table>
<thead>
<tr>
<th>Estimated Weight (grams)</th>
<th>24</th>
<th>26</th>
<th>28</th>
<th>30</th>
<th>32</th>
<th>34</th>
<th>36</th>
<th>38</th>
<th>40</th>
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<tr>
<td></td>
<td>700</td>
<td>900</td>
<td>1100</td>
<td>1350</td>
<td>1650</td>
<td>2100</td>
<td>2600</td>
<td>3000</td>
<td>3500</td>
</tr>
</tbody>
</table>

### Equipment/Supplies:
- NG/OG Tube = 5F
- UVC <32 wks = 3.5F OR >32 wks = 5F
- UAC = 3.5F
- Chest Needle = 18g

### ETT Size (mm)
- 24-26 weeks: 2.5
- 28 weeks: 2.5-3.0
- 30-32 weeks: 3
- 34 weeks: 3
- 36-38 weeks: 3-3.5
- 40 weeks: 3.5

### Laryngoscope Blade
- 24-26 weeks: 00
- 28 weeks: 00
- 30-32 weeks: 0
- 34 weeks: 0
- 36-38 weeks: 0
- 40 weeks: 0

### ETT Depth lip to tip (cm)
- Place at T2 above the carina
- 6.5–7 cm

### UVC insertion (cm)
- Place just above diaphragm. Must add additional umbilical stump length.
- Insertion: 6.5, 6.9, 7.2, 7.5, 8, 8.7, 9.4, 10

### UAC insertion (cm)
- High line = T6-T9 preferred. Must add additional umbilical stump length.
- Low line = L3-L4 Must add additional umbilical stump length.

### Chest Tube
- 8F

### Vitals: Heart Rate 120-160 | Respiratory Rate 30-60 | Mean Blood Pressure = Gestational age in weeks

**Initial Ventilator Settings**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive End Expiratory Pressure (PEEP) cmH2O</td>
<td>4-6</td>
<td>4-6</td>
<td>4-6</td>
<td>4-6</td>
<td>4-6</td>
<td>4-6</td>
<td>4-6</td>
<td>4-6</td>
</tr>
<tr>
<td>Inspiratory Time (seconds)</td>
<td>0.3-0.35</td>
<td>0.3-0.35</td>
<td>0.3-0.35</td>
<td>0.3-0.35</td>
<td>0.3-0.35</td>
<td>0.3-0.35</td>
<td>0.3-0.35</td>
<td>0.3-0.35</td>
</tr>
<tr>
<td>Respiratory Rate (per minute)</td>
<td>30-45</td>
<td>30-45</td>
<td>30-45</td>
<td>30-45</td>
<td>30-45</td>
<td>30-45</td>
<td>30-45</td>
<td>30-45</td>
</tr>
<tr>
<td>Saturation Goal after 10 min.</td>
<td>88-95%</td>
<td>88-95%</td>
<td>88-95%</td>
<td>88-95%</td>
<td>88-95%</td>
<td>88-95%</td>
<td>95-98%</td>
<td>95-98%</td>
</tr>
</tbody>
</table>

### Medications

- **Epinephrine IV/IO**: 0.1mg/mL
  - 0.1–0.3 ml/kg. May repeat every 3 minutes for asystole.
  - 0.1-0.2ml
  - 0.1-0.3ml
  - 0.1-0.4ml
  - 0.2-0.4ml
  - 0.3-0.8ml
  - 0.3-0.9ml
  - 0.4-1ml

- **Epinephrine ET ONLY**: 0.1mg/mL
  - 0.1–0.3 ml/kg. May repeat every 3 minutes for asystole.
  - 0.7ml
  - 0.9ml
  - 1.1ml
  - 1.3ml
  - 1.6ml
  - 2.1ml
  - 2.6ml
  - 3ml
  - 3.5ml

- **Curosurf (poractant alfa 80 mg/ml)**
  - 2.5 ml/kg divided into two doses. Give curosurf <26 wks OR 26–29 wks and needs ≥ 40% O2 OR > 29 wks with CXR proven RDS
  - 1.8ml
  - 2.3ml
  - 2.8ml
  - 3.4ml
  - 4.1ml
  - 5.3ml
  - 6.5ml
  - 7.5ml
  - 8.8ml

- **FOR HYPOGLYCEMIA**: Give D10 Bolus 2ml/kg IV/IO at 1ml/min. Increase D10 maintenance fluid rate (see below) by 1ml/hr for <2kg or 2ml/hr >2kg.
  - 1.4ml
  - 1.8ml
  - 2.2ml
  - 2.7ml
  - 3.3ml
  - 4.2ml
  - 5.2ml
  - 6ml
  - 7ml

- **Ampicillin (Dilute to 100 mg/ml)**
  - 50mg/kg IV/IM
  - 1mg/kg. May use IM.
  - 35mg
  - 45mg
  - 55mg
  - 68mg
  - 83mg
  - 105mg
  - 130mg
  - 165mg
  - 210mg

- **Gentamicin (1mg/1ml)**
  - <29wks=5mg/kg IV; 30-34wks=4.5mg/kg IV; ≥35wks=4mg/kg IV. Give IV dose over 30 min. May use IM.
  - 3.5mg
  - 4.5mg
  - 5.5mg
  - 6mg
  - 7.5mg
  - 9.5mg
  - 10.5mg
  - 12mg
  - 14mg

- **Phenobarb (130mg/ml)**
  - 10mg/kg IV, IO, IM, PR
  - May give additional 10mg/kg dose.
  - 7mg
  - 9mg
  - 11mg
  - 13.5mg
  - 16.5mg
  - 21mg
  - 26mg
  - 30mg
  - 35mg

**Volume Expanders**: NS or albumin – 10 mL/kg IV or IO.

**D10 Maint Fluids**: <750gm=90-100ml/kg/24hr >750gm=80ml/kg/24hr. (goal blood glucose is 50-110mg/dl)

- 3ml/hr
- 3ml/hr
- 3.7ml/hr
- 4.5ml/hr
- 5.5ml/hr
- 7ml/hr
- 8.7ml/hr
- 10ml/hr
- 12ml/hr

Reviewed and updated by YKHC Pediatrics, OB Nursing, and Pharmacy Services in conjunction with Providence NICU staff. Approved by MSEC Pending
Newborn GBS & Infection Evaluation and Treatment

Signs of Neonatal Sepsis
- Temp ≥ 100.4
- Irritability
- Poor Feeding
- Hypoglycemia
- Hypothermia
- Tachypnea
- Tachycardia
- "not acting right"

Intrapartum Maternal GBS Risk Factors
- Chorioamnionitis
- Previous infant with invasive GBS disease
- GBS during current pregnancy
- GBS status unknown
- Labor at < 37 weeks gestation
- Rupture of membranes ≥ 18 hours
- Intrapartum temperature > 100.4
- GBS bacteriuria

1. CBC, blood culture, CRP, chest X-ray, and consider LP
2. Ampicillin and gentamicin (dosing per Neonatal Resuscitation Summary)
3. Medevac to Anchorage

Note: If mother receives "inadequate prophylaxis" (eg. clindamycin, vancomycin, or erythromycin) for GBS status, provider may consider a limited work up of the neonate.
This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Pediatric Protocols/Reference

Pediatric Induced Sputum Collection ........................................... 63
Pediatric Hip Exam and Surveillance Protocol ............................. 64
Acute Concussion Evaluation (Ace) ED Version ....................... 65
Acute Concussion Evaluation (ACE) OP Version ............................ 67
ASAA Healthcare Provider Release and Return to Play Protocol ... 69
Use of Consultants at YKHC ....................................................... 71
POLICY: To obtain sputum samples safely and effectively in pediatric patients

PROCEDURE: Induced Sputum Collection in Pediatric Patients

1. Premedicate with albuterol 2.5 mg/3mL (0.083%) solution – 3 mL via nebulizer to induce bronchodilation and better facilitate delivery of hypertonic saline. This can help prevent the development of bronchospasm during delivery of hypertonic saline. An MDI with a mask and spacer is also an acceptable substitution.

2. Give 5 mL of 3% hypertonic saline solution via nebulizer over period of at least 10 minutes as prolonged administration has been shown to yield better samples.

3. If patient has copious nasal secretions, consider nasal suction with olive tip.

4. Obtain mucus specimen trap with suction catheter appropriate for patient size. Measure from tip of nose to the tragus for depth of catheter insertion and obtain sample via suction of the nasopharynx. The goal is to induce a gag and then a cough. Sample is expected to be blood-tinged.

5. Place specimen in appropriate collection container for desired test.
   a. For r/o pulmonary tuberculosis, collect 3 induced sputum samples at least 8 hours apart – one must be first morning sample. Send for Acid Fast Bacilli Smear and Culture. Sample must be a minimum of 5 ml, may add sterile water to achieve desired volume.
   b. Standard sputum cultures do not have a minimum volume and can be placed in a sterile specimen cup.

*Contraindications to above procedure: oxygen saturation of <92% despite supplemental oxygen therapy, inability to protect the airways, severe bronchospasm, or designation as inappropriate by the clinician for another reason (eg, midface trauma). After exclusion or resolution of these conditions, sputum induction can be considered.
Pediatric Hip Exam and Surveillance Protocol

MSEC approved 4/26/18

Infant Hip Exam

- **Positive Barlow or Ortolani Test:** dislocated or dislocable hip
  - Urgent orthopedics consult and referral.
- **Equivocal hip exam:** click, laxity or and/or mild thigh fold asymmetry
  - Repeat exam in 1-2 weeks.
  - Routine referral to orthopedics.
- **Stable hip**
  - Routine exams at WCC
  - Risk Factors: History of breech in third trimester or positive family history
    - Yes: Refer for imaging (See Box). If positive, refer to Orthopedics.

**Imaging**

1. **Hip ultrasound:** at 6 weeks to 4 months of age.
   - Performed at Alaska Regional Hospital
   - Place order for "Refer to Pediatric Clinic External (MRI / EEG / VFSS / Hip US)" with brief history.
   - Send a RAVEN Communication to Chronic Peds Case Manager Pool about the referral and level of importance.
2. **X-ray, AP & Frogleg:** over 4 months of age.
   - Performed at YKHC
   - Place a future order for "Bilateral Hip Complete X-ray" and put in comments "AP and frog leg views to rule-out hip dysplasia."
   - Send a RAVEN Communication to Chronic Peds Case Manager Pool stating the order was placed and requesting an appointment for this with a pediatric provider in Bethel.

**Orthopedics Consults & Referrals**

1. **Consultation:**
   - Native patients: contact ANMC orthopedic surgeon on call at (907) 563-2662 (*97).
   - Non-native patients: contact Ken Thomas at Anchorage Fracture & Orthopedics at (907) 563-3145.
2. **Referral:**
   - Place an order for "Refer to Orthopedics External" with brief history. Note the orthopedist who was consulted. Indicate where the referral should be sent.
   - Send a RAVEN Communication to Chronic Peds Case Manager Pool about the referral and level of importance.

The Barlow test is an attempt to dislocate the hip. If positive, you will feel the hip sublux or dislocate. The Ortolani test is the maneuver to reduce a dislocated hip. If positive, you will feel a clunk.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
**Acute Concussion Evaluation (ACE) ED Version**

### A. Injury Characteristics

**Date/Time of Injury**

**Reporter:** __Patient __Parent __Spouse __Other__

1. **Injury Description**

   ________________________________________________________________________

   ________________________________________________________________________

   ________________________________________________________________________

   ________________________________________________________________________

   ________________________________________________________________________

   ________________________________________________________________________

   ________________________________________________________________________

   ________________________________________________________________________

   ________________________________________________________________________

1a. Is there evidence of a forcible blow to the head (direct or indirect)? __Yes  __No  __Unknown

1b. Is there evidence of intracranial injury or skull fracture? __Yes  __No  __Unknown

1c. Location of Impact: __Frontal __Lt Temporal __Lt Temporal __Rt Parietal __Rt Parietal __Occipital __Neck __Indirect Force

2. **Cause:** __MVC  __Pedestrian-MVC  __Fall  __Assault  __Sports (specify)  __Other__

3. **Amnesia Before (Retrograde)** Are there any events just BEFORE the injury that you/ person has no memory of (even brief)? __Yes  __No  __Duration__

4. **Amnesia After (Anterograde)** Are there any events just AFTER the injury that you/ person has no memory of (even brief)? __Yes  __No  __Duration__

5. **Loss of Consciousness:** Did you/ person lose consciousness? __Yes  __No  __Duration__

6. **EARLY SIGNS:** __Appears dazed or stunned __Is confused about events __Answers questions slowly __Repeats Questions __Forgetful (recent info)

7. **Seizures:** Were seizures observed? No__ Yes__ Detail__

### B. Symptom Check List *

Since the injury, has the person experienced any of these symptoms any more than usual today or in the past day? **Indicate presence of each symptom (0=No, 1=Yes).** *(Lovell & Collins, 1998 JHTR)*

<table>
<thead>
<tr>
<th>PHYSICAL (10)</th>
<th>COGNITIVE (4)</th>
<th>SLEEP (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>Feeling mentally foggy</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>Nausea</td>
<td>Feeling slowed down</td>
<td>Sleeping less than usual</td>
</tr>
<tr>
<td>Vomiting</td>
<td>Difficulty concentrating</td>
<td>Sleeping more than usual</td>
</tr>
<tr>
<td>Balance problems</td>
<td>Difficulty remembering</td>
<td>Trouble falling asleep</td>
</tr>
<tr>
<td>Dizziness</td>
<td><strong>COGNITIVE Total (0-4)</strong>, SLEEP Total (0-4)__</td>
<td></td>
</tr>
<tr>
<td>Visual problems</td>
<td><strong>EMOTIONAL (4)</strong>, SLEEP Total (0-4)__</td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td><strong>Irritability</strong>, SLEEP Total (0-4)__</td>
<td></td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td><strong>Sadness</strong>, SLEEP Total (0-4)__</td>
<td></td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td><strong>More emotional</strong>, SLEEP Total (0-4)__</td>
<td></td>
</tr>
<tr>
<td>Numbness/Tingling</td>
<td><strong>Nervousness</strong>, SLEEP Total (0-4)__</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL Total (0-10)__</td>
<td>EMOTIONAL Total (0-4)__</td>
<td></td>
</tr>
<tr>
<td>(Add Physical, Cognitive, Emotion, Sleep totals)</td>
<td>Total Symptom Score (0-22)__</td>
<td></td>
</tr>
</tbody>
</table>

**Other Observations**

| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |
| ________________________________________________________________________ |

**Patient Participation:** __Full__ __Partial__ __None__

**Reason** for Partial/None: Young Age__ Confused__ Inattentive__ Low arousal__ Emotional Upset__ In Pain__ Other__________

### C. Concussion History:

**Previous #** 0 1 2 3 4 5 **Date(s)**

**Headache History:** __Prior treatment for headache N__ __Y__ __Details__

### D. Diagnosis (ICD):

__Concussion w/o LOC 850.0  __Concussion w/ LOC 850.1  __Concussion (Unspecified) 850.9 __Other (854)__

__No diagnosis__

### E. Follow-Up Action Plan

- √ Referral to PCP for Office Monitoring  MD Name___________________________
- Neuropsychological Testing (recommended for Return to Sport decisions and academic/ behavioral management)
- Physician: Neurosurgery__ Neurology__ Sports Medicine__ Physiatry__ Psychiatry__
- Other__________________________

**ACE-ED Completed by:** ____________________________ MD RN NP DO

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A concussion is an injury to the brain as a result of a force or jolt applied directly or indirectly to the head, which produces a range of possible symptoms, and may or may not involve a loss of consciousness. It is a complex pathophysiologic process affecting the brain, induced by traumatic biomechanical forces secondary to direct or indirect forces to the head. Disturbance of brain function is related to neurometabolic dysfunction, rather than structural injury, and is typically associated with normal structural neuroimaging findings (i.e., CT scan, MRI). Concussion may or may not involve a loss of consciousness (LOC). Concussion results in a constellation of cognitive, somatic, emotional and sleep-related symptoms. Duration of symptoms are variable and may last for as short as several minutes and last as long as several days, weeks, months or even longer in some cases.

ACE ED Instructions

A. Injury Characteristics
1. Injury Description: Ask for description of events resulting in the injury; how the injury occurred, type of force, location on head.
2. Cause: Indicate the cause of injury or write in Other cause.
3/4. Amnesia: Determine whether child was not registering memories (amnesia) – before (retrograde) and after (anterograde) injury. Estimate length of time for each (Retrograde amnesia “What is the last thing you remember before your injury?” Anterograde amnesia “What is the first thing you remember after your injury?”)
5. Loss of consciousness (LOC) - If occurs, determine length of LOC.
6. Early signs observed by others, Ask the individuals who know the patient (parent, spouse, friend, etc.) about signs of the concussion/ mTBI that they may have observed. Signs are typically observed early after the injury.
7. Seizures: Inquire whether seizures were observed or not.

B. Symptom Check List:
• Ask patient (and/or parent, if child) to report presence of the 4 categories of symptoms since injury. It is important to assess all listed symptoms as different parts of the brain control different functions. One or all symptoms may be present depending upon mechanisms of injury. If the symptom is not present, circle “0” on the scale. Circle “1” if present.
• Note: Most sleep symptoms are only applicable after a night has passed since the injury. If not applicable, circle N/A. Drowsiness may be present on the day of injury.
• Since symptoms can be present premorbidly/ at baseline (e.g., inattention, headaches, sleep, sadness), it is important to assess change from its typical presentation. For any symptom - if Patient/ Parent indicates “I/ He usually has that problem/symptom” – Ask “Are you/ they experiencing this symptom more than usual or in a different manner than usual?” If “Yes” circle “1”.

Scoring: Sum total number of symptoms present per area, and sum all 4 areas into Total Symptom Score. (Note: Most sleep symptoms are only applicable after a night has passed since the injury. Drowsiness may be present on the day of injury.) If symptoms are new and present, there is no lower limit symptom score. Any score > 0 indicates positive symptom history.

• General Impression: Ask how different the person is acting than usual. Circle 0 (No difference) to 6 (Major) to rate degree.
• Patient Participation: Indicate the extent to which the patient is able to participate in the evaluation and, if less than fully, give reason for Partial or No participation.

C. Concussion history: Assess the number and date(s) of prior concussions. History of prior concussions, especially recent (within past several weeks or months) would suggest the need for more conservative decision-making regarding Return to Play, and general post-injury management.

Headache history: Assess personal history of diagnosis/treatment for headaches. Recent research indicates headache (migraine in particular) can result in protracted recovery from concussion.

D. Diagnosis: Assign the most appropriate diagnosis given the following:
850.0 (Concussion, with no loss of consciousness) – Positive Injury Description (A1), i.e., forcible direct/ indirect blow to the head; plus evidence of active symptoms (B) of any type and number related to the trauma; no evidence of LOC (A5), skull fracture, or other intracranial injury.
850.1 (Concussion, with brief loss of consciousness < 1 hour) - Positive Injury Description (A1), i.e., forcible direct/ indirect blow to the head; plus evidence of active symptoms (B) of any type and number related to the trauma; positive evidence of LOC (A5); no skull fracture, or other intracranial injury.
850.9 (Concussion, unspecified) - Positive Injury Description (A1), i.e., forcible direct/ indirect blow to the head; plus evidence of active symptoms (B) of any type and number related to the trauma; unclear/unknown injury details; unclear evidence of LOC (A5), no skull fracture, or other intracranial injury.

NOTE: If there is evidence of skull fracture of structural intracranial injury to the brain, consider 854 (Intracranial injury of other and unspecified nature; 854.0 Without mention of open intracranial wound, 854.1 With open intracranial wound). Avoid using nonspecific Head injury NOS (959.01) whenever possible.

E. Follow-Up Action: Determine a plan of action for follow-up of symptomatic patients. Serial evaluation of the concussion is critical as symptoms may resolve, worsen, or ebb and flow depending upon a variety of factors (e.g., cognitive/ physical exertion, comorbidities). Referral to a specialist can be particularly valuable to help manage certain aspects of the patient’s condition.
(a) Patient monitoring in the primary care physician office.
(b) Referral to a specialist: particularly valuable to help manage certain aspects of the patient’s condition.
  • Neuropsychological Testing is particularly relevant for cognitive and/or behavioral dysfunction affecting school, home or work activities, for purpose of treatment planning. Testing is also recommended when a patient may be returning to sports or other at-risk activities.
  • Physician Evaluation is particularly relevant for medical evaluation and management of concussion. Also, critical for evaluation and management of focal neurologic, sensory, vestibular, and motor concerns. May be useful for medication management (e.g., headaches, sleep disturbance, depression) if post-concussive problems persist.
A. Injury Characteristics

Date/Time of Injury ___________________________ Reporter: __Patient __Parent __Spouse __Other __

1. Injury Description ____________________________________________________________________________

1a. Is there evidence of a forcible blow to the head (direct or indirect)? ___Yes ___No ___Unknown
1b. Is there evidence of intracranial injury or skull fracture? ___Yes ___No ___Unknown
1c. Location of Impact: ___Frontal ___Lft Temporal ___Rt Temporal ___Lft Parietal ___Rt Parietal ___Occipital ___Neck ___Indirect Force

2. Cause: ___MVC ___Pedestrian-MVC ___Fall ___Assault ___Sports (specify) ____________________________

3. Amnesia Before (Retrograde) Are there any events just BEFORE the injury that you/ person has no memory of (even brief)? __Yes ___No __Duration

4. Amnesia After (Anterograde) Are there any events just AFTER the injury that you/ person has no memory of (even brief)? __Yes ___No __Duration

5. Loss of Consciousness: Did you/ person lose consciousness? ___Yes ___No __Duration

6. EARLY SIGNS: ___Appears dazed or stunned ___Is confused about events ___Answers questions slowly ___Repeats Questions ___Forgetful (recent info)

7. Seizures: Were seizures observed? No ___Yes ___Detail ______________________________________________________________________

B. Symptom Check List* Since the injury, has the person experienced any of these symptoms any more than usual today or in the past day? Indicate presence of each symptom (0=No, 1=Yes). *Lovell & Collins, 1998 JHTR

<table>
<thead>
<tr>
<th>PHYSICAL (10)</th>
<th>COGNITIVE (4)</th>
<th>SLEEP (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>Feeling mentally foggy</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>Nausea</td>
<td>Feeling slowed down</td>
<td>Sleeping less usual</td>
</tr>
<tr>
<td>Vomiting</td>
<td>Difficulty concentrating</td>
<td>Sleeping more usual</td>
</tr>
<tr>
<td>Balance problems</td>
<td>Difficulty remembering</td>
<td>Trouble falling asleep</td>
</tr>
<tr>
<td>Dizziness</td>
<td>COGNITIVE Total (0-4)</td>
<td>SLEEP Total (0-4)</td>
</tr>
<tr>
<td>Visual problems</td>
<td>EMOOTIONAL (4)</td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>Irritability</td>
<td>0</td>
</tr>
<tr>
<td>Nervousness</td>
<td>Sensitivity to noise</td>
<td>0</td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Numbness/Tingling</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL Total (0-10)</td>
<td>EMOOTIONAL Total (0-4)</td>
<td></td>
</tr>
<tr>
<td>(Add Physical, Cognitive, Emotion, Sleep totals)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exertion: Do these symptoms worsen with:

- Physical Activity ___Yes ___No ___N/A
- Cognitive Activity ___Yes ___No ___N/A

Overall Rating: How different is the person acting compared to his/her usual self? (circle)

Normal 0 1 2 3 4 5 6 Very Different

C. Risk Factors for Protracted Recovery (check all that apply)

<table>
<thead>
<tr>
<th>Concussion History? Y ___ N __</th>
<th>Headache History? Y ___ N __</th>
<th>Developmental History</th>
<th>Psychiatric History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous # 1 2 3 4 5 6+</td>
<td>Prior treatment for headache</td>
<td>Learning disabilities</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Longest symptom duration Days__ Weeks__ Months__ Years__</td>
<td>History of migraine headache</td>
<td>Attention-Deficit/ Hyperactivity Disorder</td>
<td>Depression</td>
</tr>
<tr>
<td>If multiple concussions, less force caused reinjury? Yes <em>No</em></td>
<td>Personal ___ Family ______</td>
<td>Sleep disorder</td>
<td></td>
</tr>
</tbody>
</table>

List other comorbid medical disorders or medication usage (e.g., hypothyroid, seizures)

D. RED FLAGS for acute emergency management: Refer to the emergency department with sudden onset of any of the following:

- **Headaches that worsen**
- **Looks very drowsy/ can’t be awakened**
- **Can’t recognize people or places**
- **Neck pain**
- **Seizures**
- **Repeated vomiting**
- **Increasing confusion or irritability**
- **Unusual behavioral change**
- **Focal neurologic signs**
- **Slurred speech**
- **Weakness or numbness in arms/legs**
- **Change in state of consciousness**

E. Diagnosis (ICD): __Concussion w/o LOC 850.0 __Concussion w/ LOC 850.1 __Concussion (Unspecified) 850.9 __Other (854) __No diagnosis

F. Follow-Up Action Plan Complete ACE Care Plan and provide copy to patient/family.

- **No Follow-Up Needed**
- **Physician/Clinician Office Monitoring:** Date of next follow-up ____________
- **Referral:**
  - Neuropsychological Testing
  - Physician: Neurosurgery ___ Neurology ___ Sports Medicine ___ Physiatrist ___ Psychiatrist ___ Other ______
  - Emergency Department

ACE Completed by: ___________________________ MD RN NP PhD ATC © Copyright G. Gioia & M. Collins, 2006

This form is part of the "Heads Up: Brain Injury in Your Practice" tool kit developed by the Centers for Disease Control and Prevention (CDC).
A concussion (or mild traumatic brain injury (MTBI)) is a complex pathophysiologic process affecting the brain, induced by traumatic biomechanical forces secondary to direct or indirect forces to the head. Disturbance of brain function is related to neurometabolic dysfunction, rather than structural injury, and is typically associated with normal structural neuroimaging findings (i.e., CT scan, MRI). Concussion may or may not involve a loss of consciousness (LOC). Concussion results in a constellation of physical, cognitive, emotional, and sleep-related symptoms. Symptoms may last from several minutes to days, weeks, months or even longer in some cases.

**ACE Instructions**

The ACE is intended to provide an evidence-based clinical protocol to conduct an initial evaluation and diagnosis of patients (both children and adults) with known or suspected MTBI. The research evidence documenting the importance of these components in the evaluation of an MTBI is provided in the reference list.

**A. Injury Characteristics:**

1. **Obtain description of the injury** – how injury occurred, type of force, location on the head or body (if force transmitted to head). Different biomechanics of injury may result in differential symptom patterns (e.g., occipital blow may result in visual changes, balance difficulties).

2. **Indicate the cause of injury.** Greater forces associated with the trauma are likely to result in more severe presentation of symptoms.

3/4. **Amnesia:** Amnesia is defined as the failure to form new memories. Determine whether amnesia has occurred and attempt to determine length of time of memory dysfunction – before (retrograde) and after (anterograde) injury. Even seconds to minutes of memory loss can be predictive of outcome. Recent research has indicated that amnesia may be up to 4-10 times more predictive of symptoms and cognitive deficits following concussion than is LOC (less than 1 minute).1

5. **Loss of consciousness (LOC)** – If occurs, determine length of LOC.

6. **Early signs,** if present, ask the individuals who know the patient (parent, spouse, friend, etc) about specific signs of the concussion that may have been observed. These signs are typically observed early after the injury.

7. Inquire whether **seizures** were observed or not.

**B. Symptom Checklist:**

1. Ask patient (and/or parent, if child) to report presence of the four categories of symptoms since injury. It is important to assess all listed symptoms as different parts of the brain control different functions. One or all symptoms may be present depending upon mechanisms of injury.2 Record “1” for Yes or “0” for No for their presence or absence, respectively.

2. For all symptoms, indicate presence of symptoms as experienced within the past 24 hours. Since symptoms can be present premorbidly/at baseline (e.g., inattention, headaches, sleep, sadness), it is important to assess change from their usual presentation.

3. **Scoring:** Sum total number of symptoms present per area, and sum all four areas into Total Symptom Score (score range 0-22). (Note: Most sleep symptoms are only applicable after a night has passed since the injury. Drowsiness may be present on the day of injury.) If symptoms are new and present, there is no lower limit symptom score. Any score > 0 indicates positive symptom history.

4. **Exertion:** Inquire whether any symptoms worsen with physical (e.g., running, climbing stairs, bike riding) and/or cognitive (e.g., academic studies, multitasking at work, reading or other tasks requiring focused concentration) exertion. Clinicians should be aware that symptoms will typically worsen or re-emerge with exertion, indicating incomplete recovery. Over-exertion may protract recovery.

5. **Overall Rating:** Determine how different the person is acting from their usual self. Circle “0” (Normal) to “6” (Very Different).

**C. Risk Factors for Protracted Recovery:** Assess the following risk factors as possible complicating factors in the recovery process.

1. **Concussion history:** Assess the number and date(s) of prior concussions, the duration of symptoms for each injury, and whether less biomechanical force resulted in re-injury. Research indicates that cognitive and symptom effects of concussion may be cumulative, especially if there is minimal duration of time between injuries and less biomechanical force results in subsequent concussion (which may indicate incomplete recovery from initial trauma).4-8

2. **Headache history:** Assess personal and/or family history of diagnosis/treatment for headaches. Research indicates headache (migraine in particular) can result in protracted recovery from concussion.9-11

3. **Developmental history:** Assess history of learning disabilities, Attention-Deficit/Hyperactivity Disorder or other developmental disorders. Research indicates that there is the possibility of a longer period of recovery with these conditions.12

4. **Psychiatric history:** Assess for history of depression/mood disorder, anxiety, and/or sleep disorder.13-16

**D. Red Flags:** The patient should be carefully observed over the first 24-48 hours for these serious signs. Red flags are to be assessed as possible signs of deteriorating neurological functioning. Any positive report should prompt strong consideration of referral for emergency medical evaluation (e.g. CT Scan to rule out intracranial bleed or other structural pathology).17

**E. Diagnosis:** The following ICD diagnostic codes may be applicable.

- **850.0 (Concussion, with no loss of consciousness)** – Positive injury description with evidence of forcible direct/ indirect blow to the head (A1a); plus evidence of active symptoms (B) of any type and number related to the trauma (Total Symptom Score >0); no evidence of LOC (A5), skull fracture or intracranial injury (A1b).

- **850.1 (Concussion, with brief loss of consciousness < 1 hour)** – Positive injury description with evidence of forcible direct/ indirect blow to the head (A1a); plus evidence of active symptoms (B) of any type and number related to the trauma (Total Symptom Score >0); positive evidence of LOC (A5), skull fracture or intracranial injury (A1b).

- **850.9 (Concussion, unspecified)** – Positive injury description with evidence of forcible direct/ indirect blow to the head (A1a); plus evidence of active symptoms (B) of any type and number related to the trauma (Total Symptom Score >0); unclear/unknown injury details; unclear evidence of LOC (A5), no skull fracture or intracranial injury.

**Other Diagnoses** – If the patient presents with a positive injury description and associated symptoms, but additional evidence of intracranial injury (A1b) such as from neuroimaging, a moderate TBI and the diagnostic category of 854 (Intracranial injury) should be considered.

**F. Follow-Up Action Plan:** Develop a follow-up plan of action for symptomatic patients. The physician/clinician may decide to (1) monitor the patient in the office or (2) refer them to a specialist. Serial evaluation of the concussion is critical as symptoms may resolve, worsen, or ebb and flow depending upon many factors (e.g., cognitive/physical exertion, comorbidities). Referral to a specialist can be particularly valuable to help manage certain aspects of the patient’s condition. (Physician/Physician should also complete the ACE Care Plan included in this tool kit.)

1. **Physician/Physician serial monitoring** – Particularly appropriate if number and severity of symptoms are steadily decreasing over time and/or fully resolve within 3-5 days. If steady reduction is not evident, referral to a specialist is warranted.

2. **Referral to a specialist** – Appropriate if symptom reduction is not evident in 3-5 days, or sooner if symptom profile is concerning in type/severity.
   - **Neuropsychological Testing** can provide valuable information to help assess a patient’s brain function and impairment and assist with treatment planning, such as return to play decisions.
   - **Physician Evaluation** is particularly relevant for medical evaluation and management of concussion. It is also critical for evaluating and managing focal neurologic, sensory, vestibular, and motor concerns. It may be useful for medication management (e.g., headaches, sleep disturbance, depression) if post-concussive problems persist.
ASAA HEALTHCARE PROVIDER RELEASE AND RETURN TO PLAY PROTOCOL (RTP)

Student Name: __________________________________________________________
Sport: _______________________________ School: ___________________________  Birthdate: ____________
Date of Injury: ______________________ Description: ________________________________________________

**IMPORTANT NOTE TO HEALTHCARE PROVIDER**

Per AS 14.30.142, as amended, a student who has been removed from participation in a practice or game for suspicion of concussion may not return to play until the student has been evaluated and cleared for participation by an Athletic Trainer OR by a qualified person who verifies that he or she is currently trained in the evaluation and management of concussions. **“Qualified person”** means either:

1) A health care provider licensed in Alaska, or exempt from licensure under Alaska law (AS 08.64.370(1), (2), or (4), OR
2) a person acting at the direction and under the supervision of a physician licensed in Alaska, or exempt from licensure.

As interpreted by ASAA, Athletic Trainer means a Certified Athletic Trainer. As interpreted by ASAA, “Trained” means that the provider:

1) Has completed the online CDC Concussion Course for Clinicians (www.preventingconcussions.org) in the last two years, AND
2) Has **a)** completed 2 hours of CME in Sports Concussion Management in the last 2 years, or **b)** has completed a one-year Sports Medicine Fellowship, a Certificate of Added Qualifications in Sports Medicine, or a Residency in Neurology or Neurosurgery.

**IF YOU DO NOT MEET THESE CRITERIA, PLEASE REFER THE STUDENT ATHLETE TO A HEALTHCARE PROVIDER WHO DOES**

If an athlete is removed from participation in an activity because of a suspected concussion:

BUT is found **not to have a concussion**, the athlete’s return to play should be determined by the athlete’s medical provider in accordance with the provider’s assessment of the athlete’s condition and readiness to participate;

AND is determined to **have sustained a concussion**, the athlete’s readiness to return to participation should be assessed in accordance with the Alaska School Activities Association’s graduated Return to Play (RTP) protocol. All student athletes with a concussion must successfully complete an appropriate RTP Protocol that lasts a minimum of six days before resuming full athletic activity. The Return to Play protocol recommended by ASAA’s Sports Medicine Advisory Committee is described below.

Students should begin with a period of complete rest in which they avoid cognitive and physical exertion. As symptoms diminish, and the athlete feels able, he/she can begin trials of cognitive work, e.g. reading, texting, computer, TV, school. The introduction of cognitive work should be in short increments which increase progressively in length and intensity so long as concussion symptoms do not recur or worsen. When several hours of cognitive work are well tolerated at home, then attendance at a half day of school is appropriate. When a full day of school is tolerated, then homework may be added. Academic accommodations may be necessary for student athletes as they return to school following a concussion. If cognitive work at any time provokes or exacerbates symptoms, then the work should be discontinued, additional cognitive work should be minimized until symptoms regress, and the student can attempt to advance cognitive work again on the following day.

Only when the concussion symptoms have been entirely absent for 24 hours, does Day 1 of the progressive return to physical activity begin. The **Return To Play Protocol** is to take place over a **minimum of six days, with at least 24 hours between each step**. The rate of progression through the steps in the program should be individualized. Factors which may slow the rate are young age, history of previous concussions, number/severity/duration of concussion symptoms, medical risk factors, and the concussion risk of the sports to which the athlete will return. Physical or cognitive activity that provokes recurrence of concussive symptoms will delay recovery and increase the risk of future concussion. Therefore, if symptoms recur at any step, then physical activity should stop until 24 hours after resolution of the symptoms, and then resume at the previous step.
### SYMPTOMATIC STAGE:

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity Level</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Begin when symptom free for 24 hours.</td>
<td>15 min of light aerobic activity: walk, swim, stationary bike. <strong>NO</strong> resistance training.</td>
</tr>
<tr>
<td>2</td>
<td>30 min light-moderate aerobic activity: jog, more intense walk, swim, stationary bike. <strong>NO</strong> resistance training. START PE class at previous day's activity level. As RTP Protocol activity level increases, PE activity level remains 1 day behind.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>30 min mod-heavy aerobic activity: run, swim, cycle, skate, Nordic ski. <strong>NO</strong> resistance training.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30 min heavy aerobic activity: hard run, swim, cycle, skate, Nordic ski. 15 min Resistance Training: push-up, sit-up, weightlifting</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Return to Practice, Non-contact Limited Participation: Routine sport-specific drills</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Return to Full-Contact Practice</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Medically Eligible for Competition after completing RTP Protocol and is cleared by Healthcare Professional. ASAA Eligibility Criteria must be met before return to competition.</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 1: THE CONCUSSED ATHLETE - to be completed by Healthcare Provider

- [ ] Student has sustained a concussion and is not yet ready to begin the Return to Play Protocol.
- [ ] Student is cleared to begin ASAA’s Return to Play Protocol with any modifications noted below. **This clearance is no longer effective if student’s symptoms return and persist.**
- [ ] Student is entirely free of concussion symptoms and has completed the ASAA Return to Play Protocol as described above. The athlete is medically eligible to return to competition.

Please note any additional modifications to ASAA’s Return to Play Protocol below [attach more pages if needed]:

### SECTION 2: THE NON-CONCUSSED ATHLETE - to be completed by Healthcare Provider

- [ ] Student has **NOT** sustained a concussion. The **Medical Diagnosis** which explains his/her symptoms is: This is **REQUIRED** if checking the first box: __________________________
- [ ] Student is cleared to return to full sports participation. Medical Dx: __________________________
- [ ] Student is cleared for limited participation with the following restrictions [attach more pages if needed]:

### SECTION 3: HEALTHCARE PROFESSIONAL ATTESTATION

By signing this form, I attest that I am a Qualified Healthcare provider authorized under AS 14.30.142 and that I meet the ASAA definition of “Currently Trained” in the evaluation and management of concussion, as explained above. I do hereby take responsibility for the daily monitoring and decision making in managing this student athlete’s concussion.

Healthcare Provider Signature: __________________________
HCP Printed Name: __________________________
AK License Number: __________________________
Date: __________________________

### SECTION 3: ATHLETE AND PARENT CONSENT

The Return to Play Protocol incorporates an internationally recognized process by which concussed athletes are returned to athletic participation as safely as possible. Participation in athletics is accompanied by the risk of injury, permanent disability, and death. Having recently sustained a concussion, an athlete is at more risk for another head injury with risk of permanent disability or death. By signing this form, the athlete and the parent indicate their understanding that the completion of the Return to Play Protocol is not a guarantee of safe return to athletic participation. The parent accepts the risk of additional injury in requesting and consenting to the athlete's return to athletic participation.

Student Athlete Signature: __________________________
Date: __________________________
Parent Signature: __________________________
Date: __________________________

Student Athlete Printed Name: __________________________
Parent Printed Name: __________________________
Provider needs consultation about patient at YKHC

Consult provider is located in Bethel?

Patient is critically ill and the consultant is required at bedside?

Page provider STAT to come to bedside and assist in management.

If on-going management is required, a decision must be made immediately and communicated about who will be the primary managing provider giving orders and documenting in the medical record.

Once patient is stabilized, discussion will occur between the primary provider and the consultant regarding documentation of the patient’s medical care in the record and ongoing management.

Page the appropriate provider. Have ready the following information:

1. State your name, title and department (i.e. ER physician, outpatient NP, second year resident, etc)
2. State purpose of call (i.e. quick question, possible admission, management advice.)
3. Provide name, MRN, age, DOB. If the patient is pregnant, give gravity and parity and gestational age in initial sentence, if the patient is a child, give the age in the initial sentence.
4. Be able to use the SBAR method to communicate patient details (see box below)
5. Ask a specific question about management.

Be able to use the SBAR method to communicate patient details

**SBAR:**

**Situation:** a concise statement of the problem, a “one-liner”
- “This is a 3 year old otherwise healthy girl with a fever…”
- “My patient is a 20 year old G3P2 at 26 weeks with vaginal bleeding…”
- “I’m taking care of a 21 year old male with fever and abdominal pain…”

**Background:** pertinent and brief information related to the situation
- “The labs are normal and CXR shows no infiltrate but her pulse is elevated…”
- “I have performed a sterile speculum exam and there is frank blood in the vault…”
- “The patient’s CT show appendicitis and the patient is vomiting all intake…”

**Assessment:** analysis and consideration of options, what you found/think
- “I think she needs a fluid bolus but I am wondering if she also needs a UA…”
- “I think this patient might have an active abruption…”
- “I think this patient has appendicitis and needs to be transferred to ANMC…”

**Recommendation:** action requested, what you want
- “I want your opinion on how much fluid and the need for a UA…”
- “I want you to come in and assess this patient in person…”
- “I would like to transfer this patient via medevac to ANMC…”

**Document consultant advice in the medical record, include date, time, first and last name of consultant and a summary of the advice given**

**Provider requesting consult must document consultant’s advice in the medical record. Include date, time, first and last name of consultant and a summary of the advice given**

**At any time in the process, if the primary provider wants support at the bedside, page the consult and ask them to come to bedside and provide support**

**Clear role delineation must occur establishing who is the primary managing provider.**

**NOTE:**

If there is a disagreement regarding the management of a patient between the consultant and the primary provider, the primary provider will advise the consultant as to the reason for the disagreement. If a consensus cannot be reached, a third opinion shall be obtained. This can either be from a YK based provider or from a provider from another facility. At any time the Clinical Director on call can also be notified.
OB Guidelines

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1 Nomenclature
- **Viable** – A pregnancy is viable if it can potentially result in a liveborn baby.
- **Nonviable** – A pregnancy is nonviable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are nonviable.
- **Intrauterine pregnancy of uncertain viability** – A woman is considered to have this if a transvaginal US shows an intrauterine gestational sac with no embryonic heartbeat and no findings of definite pregnancy failure.
- **Pregnancy of unknown location** – A woman is considered to have this if she has a positive urine or serum pregnancy test and no intrauterine or ectopic pregnancy on transvaginal US.

2 Findings diagnostic of Pregnancy Failure
- Crown-rump length of ≥7mm and no heartbeat
- Mean sac diameter of ≥25mm and no embryo
- Absence of embryo with heartbeat ≥14 days after an US that showed a gestational sac without a yolk sac
- Absence of embryo with a heartbeat ≥11 days after an US that showed a gestational sac with a yolk sac

Comments
- In a woman with a positive urine or serum pregnancy test, an intrauterine fluid collection with rounded edges containing no yolk sac is most likely a gestational sac; it is certain to be a gestational sac if it contains a yolk sac or embryo.
- Transabdominal imaging without transvaginal scanning may be sufficient for diagnosing early pregnancy failure when an embryo whose crown-rump length is 15mm or more has no visible cardiac activity.

---

**Guideline for First Trimester Bleeding, Ectopic Pregnancy Diagnosis and Treatment of Non-Viable Early Pregnancy**

**NONViable PREGNANCY SEE PAGE 2**

**UNKNOWN VIABILITY SEE PAGE 3**

**Threatened SAB SEE PAGE 2**

Patient presents with positive pregnancy test, vaginal bleeding in first trimester

- Hemodynamically stable?
  - NO Medevac if in village, ABCs and consult HROB if in Bethel
  - YES
    - Has a previous US showed a viable IUP?
      - NO
        - Obtain labs: CBC, blood type and Rh, quantitative HCG
        - Perform pelvic exam
      - YES
        - Refer to Rhogam policy if Rh negative
          - Is Transvaginal US available?
            - NO Consult HROB for Evaluation and/or transfer.
            - YES IUP?
              - NO HCG > 2000?
                - YES Ectopic pregnancy: consult HROB or ANMC OB/GYN for further management
                - NO
              - YES
                - NO Viable IUP?
                  - NO
                    - NO
                    - NO
                    - NO
                    - NO
                    - NO
This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.

### Threatened SAB

- MUST remain in Bethel until bleeding improves.
- MUST be seen by a provider at least weekly with ultrasound.
- No further hCG levels are needed.

### Viable pregnancy?

- **YES**
  - Return to Village

- **NO**
  - NONVIABLE PREGNANCY
    - Consult HROB for management plan
    - No further US or Quantitative hCG are necessary

### Options:

1. D&C
2. Misoprostol
3. Wait and see

### Following hCG to negative*

- A provider or case manager MUST be responsible for this.
- Contact GYN CM at 543-6557 or communicate in RAVEN for assistance and instruction
- Patient can be discharged from care when ectopic pregnancy is ruled out by falling hCG values and normal exam

### If patient elects wait and see option

- Must be reliable patient
- Must stay in Bethel
- Must be followed up every 48 hours for repeat hCG
- Must follow hCG to negative*

### If patient elects Misoprostol option:

- Consult HROB
- Must be reliable patient
- Must stay in Bethel
- Dose is 800 mcg placed in posterior fornix of vagina (may consider 400mcg buccally but not as efficacious)
- Patient is followed every 24 hours until uterus is empty and bleeding subsides
- Offer ibuprofen for cramping
- Dose can be repeated in 24 hours if uterus is not empty
- Must follow hCG to negative*

### If patient elects D&C option:

- Consult HROB
- Dr. Elizabeth Roll is also available for D&C
- Consider office-based D&C
- If during daytime hours and HROB agrees, call 6177 to schedule procedure
- If on weekend, have patient remain NPO after midnight on Sunday and provider to call 6177 at 8am on Monday morning to schedule procedure

---

**NONVIABLE PREGNANCY**

- Consult HROB for management plan
- No further US or Quantitative hCG are necessary

---

**First Trimester Vaginal Bleeding: Ectopic Pregnancy Diagnosis & Treatment of Non-Viable Early Pregnancy, p.2**

MSEC approved 07/12/17
**Nomenclature**

- **Viable** – A pregnancy is viable if it can potentially result in a liveborn baby.
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**Findings diagnostic of Pregnancy Failure**

- Crown-rump length of > 7mm and no heartbeat
- Mean sac diameter of > 25mm and no embryo
- Absence of embryo with heartbeat > 14 days after an US that showed a gestational sac without a yolk sac
- Absence of embryo with a heartbeat > 11 days after an US that showed a gestational sac with a yolk sac

**Comments**

- In a woman with a positive urine or serum pregnancy test, an intrauterine fluid collection with rounded edges containing no yolk sac is most likely a gestational sac; it is certain to be a gestational sac if it contains a yolk sac or embryo.
- Transabdominal imaging without transvaginal scanning may be sufficient for diagnosing early pregnancy failure when an embryo whose crown-rump length is 15mm or more has no visible cardiac activity.
Clinical Guidelines • June 2019

Ectopic Pregnancy – Treatment
MSEC approved 07/12/17

D&C Prior to Methotrexate?
This is NOT necessary prior to treatment with Methotrexate (MTX) for a plateau or abnormally rising HCG level. MTX will treat an abnormal pregnancy in the uterus or any other location.

Typical side effects of MTX.
Less than 30% of patients will experience side effects from the medication and those are minor and self limited. These include: nausea, mouth ulcers GI cramps. Most patients have some lower abdominal pain on the 3-6th day after treatment. This is not a problem if ibuprofen or acetaminophen relieves the pain.

Contraindication to MTX.
Absolute contraindications
Breast Feeding
Overt or Laboratory evidence of immunodeficiency
Alcoholism, alcoholic liver disease, or other chronic liver disease
Preexisting blood dyscrasias, such as bone marrow hypoplasia, leukopenia, thrombocytopenia or significant anemia
Known sensitivity to MTX
Active pulmonary disease
Peptic ulcer disease
Hepatic, renal or hematologic dysfunction

Relative contraindications
Gestational sac larger that 3.5cm
Embryonic cardiac motion

Single-dose regimen
- Single dose MTX 50mg/m2 IM day 1
- Measure hCG level on post treatment days 4 and 7
- Check for 15% hCG decrease between days 4 and 7
- Then measure hCG level weekly until reaching the nonpregnant level
- If results are less than the expected 15% decrease, readminister MTX 50mg/m2 and repeat hCG measurement on days 4 and 7 after second dose.

Two-dose regimen
- Administer 50 mg/m2 on day 0.
- Repeat 50mg/m2 on day 4.
- Measure hCG levels on days 4 and 7, and expect a 15% decrease between days 4 and 7.
- If the decrease is greater than 15%, measure hCG levels weekly until reaching non pregnant level.
- If less than a 15% decrease in hCG levels, readminister MTX 50mg/m2 on days 7 and 11, measuring hCG levels.
- If hCG levels decrease 15% between days 7 and 11, continue to monitor weekly until non pregnant hCG levels are reached.

If at any time the hCG level rises during the monitoring of weekly hCG levels, consult a GYN Oncologist for further treatment.

Ectopic Pregnancy diagnosed after consultation with HROB or OB/GYN
Obtain:
- Quantitative HCG
- Type and Screen
- CBC
- Comp Chem.
- Transvaginal Pelvic Ultrasound (US)

Hemodynamically stable?

Consult HROB for immediate surgery or transfer

Adnexal Mass
- >3cm Cardiac activity
- Pregnancy in location other than a tube

Yes

Platelets, Kidney and Liver function Normal?

No

Is the hCG >5000?

No

YES

Yes

No
Village Health Aide or SRC Provider calls urgent RMT with a patient having contractions

RMT physician reviews the record

Is the patient past her Be In Bethel (BIB) date?

Yes

Is there a problem that will be a threat to the patient or newborn’s life if left in the village?

No

No Medivac. RMT provider assists by phone or VTC with the birth

No

RMT provider determines if the patient could be in labor

Yes

RMT provider determines if the patient could be in labor

Yes

Complete evaluation per CHAM and RMT guidance

No

Complete evaluation per CHAM and RMT guidance

Send the patient on the next commercial flight to Bethel for full evaluation

Start IV and hydrate with 1 L of IV fluid
Give terbutaline 0.25mg SQ,
Ibuprofen 800mg PO,
consider Dexamethasone 6mg IM and ceftriaxone 1gm IV.

Did the contractions stop?

Yes

Send the mother and newborn to Bethel on the next commercial flight

No

Reassess every 30 minutes for up to 3 doses of Terbutaline

Did the contractions stop?

Yes

Give Dexamethasone and Ceftriaxone if not already given

No

Contact HROB, Pediatrician and activate a Medivac

Yes

Complete evaluation per CHAM and RMT guidance. Observe in clinic at least 1 hour

Yes
All pregnancies will be screened for a history of prior preterm birth at the 1st Prenatal Visit.

Is there a history of ANY preterm birth?

Yes

Review case at HROB Conference

Prophylaxis indicated?

Yes

17-Hydroxy Progesterone 250mg IM weekly* from 16 weeks until 36 weeks

Cervical length US from 16 to 23 week q 2weeks

Cervical length <25mm

No

Continue HROB plan per Alert note

Yes

Consult HROB immediately for consideration of cerclage

No

Screening cervical length ultrasound

Cervical length <20mm?

Yes

Begin Progesterone 200mg vaginally qhs, Refer to HROB meeting for additional care plan

No

Routine Prenatal Care

No

Routine Prenatal Care

* The Obstetrics Case Managers will maintain a patient list in RAVEN to communicate the patients prescribed this intervention.
Preterm Labor – Evaluation

**Sterile speculum vaginal exam to assess for cervical dilation and obtain:**
- a wet mount for bacterial vaginosis
- A Fetal Fibronectin, GC/CT, GBS culture and cervical exam.

**Definition of Preterm Labor**
- Regular uterine contractions after 20 weeks gestation and before 37 weeks gestation which lead to a progressive cervical change

**Antibiotic Treatment**
- 1. Metronidazole 500mg po bid x 7 days
- 2. Clindamycin 300mg po bid x 7 days

**Preterm Labor Symptoms**
- Increased vaginal discharge
- Blood tinged mucus
- Low backache
- Pelvic pressure
- Menstrual-like cramps
- Intestinal cramping with or without diarrhea
- “Not feeling right”
- Loss of cervical mucus/plug

**Patient presents with signs and symptoms of preterm labor at 24 – 34 weeks gestation**

**Yes**
- Follow up on next clinic day for cervical length US
- Preterm Labor Present?
  - Yes
    - Give Betamethasone 12mg IM
    - Treat Preterm Labor per policy
    - Stay in Bethel for 1 week with clinic follow up
  - No
    - Routine Care

**No**
- Refer to Treatment of Preterm Labor Guide

**Is cervical length > 2.5 cm?**
- Yes
  - Routine Care
- No
  - Follow up on next clinic day for cervical length US
  - Preterm Labor Present?
    - Yes
      - Refer to Treatment of Preterm Labor Guide
    - No
      - Refer to Treatment of Preterm Labor Guide

**Is Ultrasound available?**
- Yes
  - Is cervical length > 2.5 cm?
    - Yes
      - Follow up on next clinic day for cervical length US
    - No
      - Routine Care
- No
  - Is Ultrasound available?
    - Yes
      - Is cervical length > 2.5 cm?
        - Yes
          - Follow up on next clinic day for cervical length US
        - No
          - Routine Care
    - No
      - Refer to Treatment of Preterm Labor Guide

**Is cervix dilated ≥ 3 cm?**
- Yes
  - Is Ultrasound available?
    - Yes
      - Is cervical length > 2.5 cm?
        - Yes
          - Follow up on next clinic day for cervical length US
        - No
          - Routine Care
    - No
      - Refer to Treatment of Preterm Labor Guide
- No
  - Fetal Fibronectin Result?
    - Positive
      - Refer to Treatment of Preterm Labor Guide
    - Negative
      - Is Ultrasound available?
        - Yes
          - Is cervical length > 2.5 cm?
            - Yes
              - Follow up on next clinic day for cervical length US
            - No
              - Routine Care
        - No
          - Refer to Treatment of Preterm Labor Guide

**Refer to Treatment of Preterm Labor Guide**

There is no need to treat contractions with tocolytics in the absence of cervical change

This guideline is designed for general use for most patients but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s provider.
**Definition of Preterm Labor**
- Regular uterine contractions after 20 weeks gestation and before 37 weeks gestation which lead to a progressive cervical change.

**Contraindications to tocolysis:**
- IUFD
- Lethal fetal anomaly
- Non-reassuring fetal assessment
- Severe IUGR
- Chorioamnionitis, relative
- Maternal hemorrhage with hemodynamic instability
- Severe pre-eclampsia or eclampsia
- PPROM

**Contraindications to terbutaline**
- Diabetes
- HTN
- Suspected placental abruption (relative)

**Diagnosis of Preterm Labor**
- Consider HROB Consult

**Review Dates**
- <20 weeks or >34 weeks

**Assess fetal heart rate and uterine activity, start IV fluids**

**Contraindication for tocolysis?**
- Yes

**Cautions**
- DO NOT over hydrate. Fluid do not stop preterm labor

**Tocolysis is generally not indicated.**
- May consider tocolysis for transfer as indicated

**Contraindications for tocolysis?**
- No

**Nifedipine**
- 30mg po then 20mg every 90 minutes as needed for 2 doses
- Betamethasone 12 mg IM repeat in 24 hours
- GBS prophylaxis

**Ketorolac**
- 30 mg IV

**Consider terbutaline 0.25 mg sq for up to 4 doses, if needed longer term, consult OB/GYN**
- Consider ketorolac 30 mg IV

**Contracted resolved in 30 minutes**
- Yes

**Option 1: discharge with follow up in clinic (preferred)**
**Option 2: Admit for observation**

**Cervical Change or cervix dilated >2cm?**
- Yes

**Strongly consider ketorolac**
- Consider Transfer to Anchorage

**This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.**
First prenatal visit: Screen all women with a HgbA1C

If the first prenatal screen is before 24-28 weeks and is negative, at 24-28 weeks screen below

Screening test: fasting or fed Plasma glucose Value 1 hour post 50 gram glucose load

140 - 179 mg/dL

Fasting 2 hour Oral glucose Tolerance Test: 75 gram load scheduled within one week

Diagnostic Criteria for GDM utilizing two hour 75g GTT

Gestational Diabetes Mellitus

Pregnancy with one or more of the following levels:

- Fasting ≥ 92 mg/dL
- 1 hour glucose ≥ 180 mg/dL
- 2 hour glucose ≥ 153 mg/dL

- Add appropriate diagnosis to problem list i.e. GDM or pre-gestational diabetes
- Give patient log book to document goals, blood glucose, and food plan.
- Dispense glucose meter and supplies
- Refer to DM educator (543-6133) for education and Medical Nutrition Therapy
- Consider referral to diabetes department for Continuous Glucose Monitor placement
- Patient will record blood glucose levels fasting and 2 hours after 3 meals
- Nutrition and physical activity goals reviewed

75% of Self-Monitoring Blood glucose (SMBG) Targets

(fasting glucose < 95 mg/dL and 2 hour post-prandial glucose < 120 mg/dL) within target range after 1-2 weeks?

Non-Adherent Patients

- Send letter after 2 weeks of not sending in sugar logs or 2 weeks of <25 % of expected readings
- Consider Northwing admission to monitor blood sugars
- Consider transfer of care to ANTHC at 32 weeks

Patient to record SMBG levels before breakfast and 2 hours after start of 3 meals. Weekly follow-up by DM educators and Weekly review at HROB rounds

SMBG targets reached after 1 week?

Yes

Initiate Medical Therapy

Consult OB/GYN for assistance Refer to Anchorage for delivery

No

Reassess medication dose and choice and consult DM education team/OBGYN

Yes

Add diagnosis of diabetes

≥6.5%

≥180

Go direct to SMBG or offer GTT if patient resists testing

Weekly phone follow up by DM educators
- Weekly review at high risk OB (HROB) rounds
- HROB team will change testing and treatment plans as needed.

All patients with GDM get tested at the 6 week post-partum visit with two hour 75g GTT. A1C can be performed as an alternative at >12 weeks post-partum.

Fetal Monitoring

- Diet-controlled: kick counts at 28 weeks Normal labor management
- Diet-poor control: kick counts at 28 weeks Biweekly NST and weekly AFI after 32 weeks Consult OB and consider induction at 38 weeks
- Insulin-controlled:kick counts at 28 weeks Biweekly NST and AFI after 32 weeks Consult OB for induction at 38 weeks

Yes
GBS Prophylaxis of the Mother at Term

Use the GBS App
to determine need for prophylaxis and antibiotic of choice for GBS prevention
Web version: https://www2a.cdc.gov/vaccines/m/gbs3/gbs.html
Or
Download for your smartphone
Molar Pregnancy

Suspect Molar Pregnancy: no intrauterine embryo or ultrasound suspicious for Molar Pregnancy.

Testing:
- CBC, CMP, PT/PTT, Blood type and Rh factor,
- Quantitative HCG, pelvic ultrasound, chest x-ray,
- consider TSH, Free T4 if signs/symptoms of hyperthyroidism

- Quantitative βhCG >100,000
- Vaginal bleeding
- Hyperemesis
- Cystic enlargement of ovaries

Administer Rhogam if Rh negative

Signs or symptoms of medical complications, hyperthyroid, severe anemia, coagulopathy, PIH

Yes

Stabilize, consult with ANMC OB/GYN service and transfer to ANMC via medevac

No

Suction D&C, consider transfer if uterus is >16 week size due to increase risk of complications

Confirm pathology molar pregnancy, complete or partial

Yes

Quantitative βhCG 48 hours after D&C and weekly

Plateau ± 10%
- over 3 weeks rise ≥ 10% over 2 weeks
- Quantitative HCG + at 6 months

Yes

Post molar GTN
- CT chest, CBC, PT/PTT, CMP, Consult GYN ONC in Anchorage

No

Weekly Quantitative βhCG until negative x3 (<5)

Monthly Quantitative βhCG for 6 months

Contraception:
- Encourage Depo Provera, Implanon, Mirena

Definitions

GTN = gestational trophoblastic neoplasm
Complete Mole – a form of aberrant fertilization with proliferation of trophoblastic tissue with a normal karyotype, no fetus, diffuse villous edema and diffuse proliferation.
Partial Mole – a form of aberrant fertilization with proliferation of trophoblastic tissue with triploid karyotype, a fetus may be present, focal villous edema and focal proliferation.
Choriocarcinoma – a malignant neoplasm arising from cytotrophoblast
Placental site trophoblastic tumor – a malignant neoplasm arising from intermediate trophoblast
Post Molar GTN – persistent hCG detection after the treatment of a complete or partial molar pregnancy.
Invasive Mole – Detection of tumors within the uterus on imaging.
Malignant GTN = post molar gestational trophoblastic neoplasm
Metastatic GTN – post molar GTN with imaging evidence of distance metastasis. The most common sites are vagina, lung and brain.

This guideline is designed for general use for most patients but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s provider.
All pregnant patients at YKHC will receive prophylactic iron therapy with at least 325mg of ferrous sulfate once daily.

Assess all patients at every prenatal visit for compliance with prophylactic therapy and change therapy as necessary to overcome barriers to compliance.

Is Hg < 6 mg/dL

Is Hg < 9

Is Hg < 10

Is MCV < 80

- Order Iron Studies, Ferritin, B12, Folate and Hg Electrophoresis to evaluate for other causes of anemia
- Consult HROB

- Assume Iron deficiency and increase treatment dosage to BID ferrous sulfate or ferrous gluconate.
- Add Vitamin C 500 mg po with each dose of iron
- Repeat Hg in 2 weeks

Yes

Yes

Yes

Yes

No

No

No

No

Yes

Page HROB On Call for assessment and possible transfusion

- Note compliance
- Order Fe Panel (YK), Ferritin (YK), Anemia Pregnancy Panel (B12, Folate and Hg Electrophoresis, CBC at Lab Corp)
- Refer to HROB conference

Consider IV Iron therapy for: Hg less than 7 or Hg less than 9 and no response to therapy and other risk factors

Continue Routine Prenatal Care
Anti-D Immune Globulin

Reference Lab Policy
Rh Immune Globulin Work-up
Fetal Screen

Other situations which require anti-D Immune Globulin
- Miscarriage/Abortion
- Ectopic Pregnancy
- Maternal Trauma, consult OB/GYN.
- Threatened abortion
- Maternal hemorrhage in 2nd or 3rd trimester
- External cephalic version
- Amniocentesis

The dose is always 300mcg at YKDRH due to blood bank stocking.

Screening
All patients will have a Blood Type and Antibody Screen done at their first visit

Rh Negative?
Yes

Rh Negative?
No

At the time of Diagnosis
- Note Diagnosis on problem list.
- Educate the patient.

Third Trimester
- Obtain Blood Type and Antibody screen at 28 weeks.
- Give 300 mcg anti-D Immune Globulin IM at 28 weeks after antibody screen

On OB in Labor
- Obtain Blood Type and Antibody Screen on admission

On OB after delivery.
- Obtain ABO Rh on newborn
- Obtain Fetal Screen on mother

Fetus Rh positive?
Yes

Fetal Screen positive?
Yes

Give two, 300 mcg doses of anti-D Immune Globulin
- Send Kleinhauer-Betke (KB) test
- Consult OB/GYN
- Give additional doses as needed based on KB results

Give the mother 300 mcg of anti-D Immune Globulin IM

No further workup or treatment
Intrauterine Growth Restriction (IUGR)

Risk Factors for Intrauterine Growth Restriction

- Maternal medical conditions
- Hypertension
- Renal disease
- Restrictive lung disease
- Diabetes (with microvascular disease)
- Cyanotic heart disease
- Antiphospholipid syndrome
- Auto-immune disease
- Smoking and substance use and abuse
- Severe malnutrition
- Primary placental disease
- Multiple gestation
- Infections (viral, protozoal)
- Genetic disorders
- Exposure to teratogens

IUGR is suspected by physical examination (fundal height 3cm or more smaller that dates) and/or risk factors

Definition of IUGR

Estimated Fetal Weight by ultrasound < 10th percentile by gestational age

Obtain an US:

- Include all growth measurements with EFW and percentile
- Include reflex Doppler parameters:
  - Systolic to diastolic ratio of umbilical artery (S/D-UA)
  - Pulsatility index of the umbilical artery (PI-UA)

IUGR?

Yes

Gestational age < 24 weeks?

Yes

Refer to Perinatology for DAFUS, consider NIPT (See Box 1)

No

Routine Prenatal Care

Yes

Is patient term?

Yes

No

Repeat US in 4 weeks.
Consider weekly fetal monitoring with BPP if EFW > 10th percentile but < 25th percentile

IUGR?

Yes

No

Consult HROB or Anchorage OB to discuss induction, monitoring, or transfer

Box 1

NIPT – Non-invasive prenatal testing is a way to detect Fetal chromosome abnormalities from a maternal blood draw. Our current test is the InformaSeq from LabCorp.
Clinic Guideline for Oligohydramnios

Patient is identified with Oligohydramnios

Perform a complete evaluation:
- Assess for PROM with history and speculum examination
- Review dating
- Obtain OB ultrasound (US) for growth, anatomy (if indicated) and BPP
- Assess fetal anatomy or review previous US
- Assess for gestational hypertension
- Perform NST
- Perform cervical exam and calculate a Bishop’s score

Is the reason for oligohydramnios known or suspected?

Yes → Consult HROB or Anchorage OB to discuss treatment or diagnostic testing

No → Is patient term?

No → Consult HROB or Anchorage OB to discuss further testing, induction or monitoring

Yes → Consider oral hydration overnight with 2 liters of H2O and repeat fetal testing

Oligohydramnios? → Yes → Consult HROB or Anchorage OB to discuss induction vs. transfer.

No → Is patient term?

Yes → Counsel to improve fluid intake and routine care

Differential Diagnosis by Trimester

First
- Aneuploidy
- Fetal Anomaly

Second
- Aneuploidy
- Fetal Anomaly
- Preterm premature rupture of membranes (PPROM)
- Placental abruption
- Fetal growth restriction
- Amniocentesis
- Elevated maternal serum alpha fetoprotein

Third
- Preterm premature rupture of membranes
- Placental abruption
- Fetal growth restriction
- Utero-placental insufficiency
- Preeclampsia
- Maternal vascular diseases
- Fetal anomaly
- Post-term
- Suboptimal maternal hydration

Definition of Oligohydramnios

Amniotic Fluid Volume (AFI) < 5 at term or Single Vertical Pocket < 2cm

MSEC approved 07/12/17
Post-Dates Pregnancy

Patient identified as 41 0/7 weeks

Clinic Staff Transfers Care of the patient to the Ward physician. Ward physician coordinates clinical decision making with OB nursing staff to begin the induction or transfer the patient.

Bishops Score

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<th>Score</th>
<th>Dilatation</th>
<th>Effacement</th>
<th>Station</th>
<th>Position</th>
<th>Consistency</th>
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<td>0</td>
<td>closed</td>
<td>0 - 30%</td>
<td>-3</td>
<td>posterior</td>
<td>firm</td>
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<tr>
<td>1</td>
<td>1-2 cm</td>
<td>40 -50%</td>
<td>-2</td>
<td>mid-position</td>
<td>medium</td>
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<td>3-4 cm</td>
<td>60 -70%</td>
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<tr>
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<td>5+ cm</td>
<td>80+%</td>
<td>+1,+2</td>
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</tr>
</tbody>
</table>

No

Offer Induction vs Observation

Inform patient of options through the informed consent process

Patient chooses induction

Proceed to Induction Guideline

Yes

Bishops Score > 7?

Yes

Recommend Induction

Inform patient of options through the informed consent process

Patient chooses induction

Proceed to Induction Guideline

No

Observe Patient for UP TO 1 week

- NST/AFI on date of decision
- NST in 3 days
- BPP at 42 weeks if undelivered
- Transfer if induction refused at 42 weeks

Yes

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s medical practitioner.
Induction of Labor

Bishop’s Score

Score | Dilatation | Effacement | Station | Position | Consistency
---|---|---|---|---|---
0 | closed | 0 - 30% | -3 | posterior | firm
1 | 1-2 cm | 40 - 50% | -2 | mid-position | medium
2 | 3-4 cm | 60 - 70% | -1.0 | anterior | soft
3 | 5+ cm | 80+% | +1, +2 |

Induction time frames for Diagnoses:
- Preeclampsia or Gestational Hypertension: 38 weeks, must be delivered or transferred by due date
- Preeclampsia or Gestational Hypertension with severe features: Medical Evacuation to Anchorage
- Chronic Hypertension: 39 weeks, must be delivered or transferred by due date
- IHCP Mild: 39 weeks,
- IHCP Severe: must be transferred prior to 37 weeks or induced or transferred immediately if diagnosed after 37 weeks.
- Post Dates: 41 weeks. Consult HROB if patient declines induction.
- History of Stillbirth: 38 weeks

Options:
- Foley Bulb, preferred as outpatient
- Vaginal or oral Misoprostol

Start Pitocin

Follow OB Induction Policy

Delivered?

Options include:
- Pitocin
- Foley Bulb
- Vaginal Misoprostol
- Cesarean Section
- Transfer to Anchorage

Contact HROB or ANMC OB for Advice

Continue to monitor and adjust dose until delivery?

Begin active management of 3rd stage

Begin active management of 3rd stage

Is progress being made every 2 hours?

Yes

No

Delivered?

Yes

No

Discuss and document progress and plan on a regular basis

Contact HROB or ANMC OB to develop plan for delivery.

Options include:
- Pitocin
- Foley Bulb
- Vaginal Misoprostol
- Cesarean Section
- Transfer to Anchorage

Documentation of progress will be made in the patient’s record every 2 hours.

Patient identified for induction

Clinic Staff Transfers Care of the patient to the Ward physician. Ward physician coordinates clinical decision making with OB nursing staff to begin the induction or transfer the patient.

Bishop’s Score > 8?

Yes

No

Bishop’s Score > 6?

Yes

No

Bishop’s Score ≥ 6?

Yes

No

Bishop’s Score ≥ 8?

Yes

No

No

Yes

No

Yes

No

Yes

No
Intrahepatic Cholestasis of Pregnancy (IHCP)

- Abnormal Bile Acids (BA) metabolism in pregnancy resulting in severe pruritus without rash
- Mostly genetic etiology
- 5% incidence in Yup'ik population
- 5% incidence of Stillbirth
- MUST have elevated bile acids or LFTs
- 40-70% recurrence in subsequent pregnancies

Early Pregnancy: Consider the diagnosis if:
- History of severe pruritus in past pregnancy
- Unexplained stillbirth
- Hx of IHCP

2nd or 3rd Trimester with pruritus

Are the pruritus severe?

Yes
- Is the pruritus severe?
- Stop Ursodiol if started
- Repeat BA & LFT in 2 weeks

No
- Are the Bile Acids and LFTs Normal?
- Yes
- Stop Ursodiol if started
- Repeat BA & LFT in 2 weeks

- No

IHCP:
- Begin Ursodiol 15mg/kg/day
- Increase to 25mg/kg/day in one week if still itching
- Antihistamines for sleep
- Eucerin cream for itching

Are the Bile Acids and LFTs Normal?

Yes
- Stop Ursodiol if started
- Repeat BA & LFT in 2 weeks

No
- Are the Bile Acids and LFTs Normal?
- Yes
- Stop Ursodiol if started
- Repeat BA & LFT in 2 weeks

- No

HROB meeting referral & Begin Fetal Surveillance at 32 weeks
- BPP weekly, may stay in village and return weekly
- Fetal Kick Counts 3X per day

Are TBA >40?

Yes
- SEVERE IHCP
- Transfer to Anchorage for Delivery at 37 weeks.

No
- Pruritus Gravidarum:
  - Weekly BPP after 32 weeks
  - Symptomatic treatment
  - Deliver for usual indications
  - Recheck Bile Acids and LFTs weekly

Abnormal Lab levels
- Total Bile Acids (TBA) -> 10 µmol/L
- Cholic Acid -> 3 µmol/L
- AST/ALT -> 40 units/L
- Bilirubin -> 1 mg/dl
- Alkaline Phosphatase -> 300 units/L
Diagnostic Criteria

- History of hypertension (BP > 140/90) prior to pregnancy
- Persistent hypertension (BP > 140/90) prior to 20 weeks gestation
- Hypertension (BP > 140/90) persisting beyond 12 weeks post-partum

First Prenatal Visit with history of Chronic Hypertension
Obtain GH labs†. Refer to HROB meeting for discussion.

First Trimester
1. Monitor BP every 2-4 weeks.
2. Fetal ultrasound to confirm EDC prior to 14 weeks gestation.

Second Trimester
1. Monitor BP every 2-4 weeks.
2. If patient with symptoms of severe features of preeclampsia‡, obtain GH labs†
3. Aspirin 81 mg daily between 12-37 weeks gestation to prevent complications

Third Trimester
1. Monitor BP every two weeks.
2. If patient demonstrates severe features of preeclampsia‡, obtain GH labs.
3. BPP weekly after 34 weeks gestation.
4. NST/AFI anytime patient is in Bethel between 28-36 weeks.

Severe HTN, renal, cardiac, or connective tissue disorders?
- Yes, refer to ANMC OB Service.
- No, consult OB/GYN at 37 weeks for timing of delivery. MUST be delivered by the EDC or transferred to Anchorage.

Refer to Gestational Hypertension Guideline

Superimposed Preeclampsia present?*
- Yes, refer to ANMC OB Service.
- No, consult OB/GYN at 37 weeks for timing of delivery. MUST be delivered by the EDC or transferred to Anchorage.

Any patient with hypertension in pregnancy should have blood pressure monitored for at least 2 weeks post partum.

GH labs: CBC, creatinine, ALT, AST, uric acid, Urine Protein/ Creatinine Ratio, CCUA

† Severe Features of Preeclampsia
- Severe hypertension (160/110)
- Thrombocytopenia (<100K)
- Impaired liver function
- Progressive renal insufficiency
- Pulmonary edema
- New onset cerebral or visual disturbances
- Oligohydramnios

‡ Signs/Symptoms of Superimposed Preeclampsia
- Any signs/symptoms of severe features
- Worsening proteinuria
- Worsening hypertension

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s medical practitioner.
Gestational Hypertension

Gestational Hypertension (GH) Diagnostic Criteria
BP > 140/90 measured on two occasions at least 6 hours apart (See Box 1)
Only 1 elevated blood pressure is needed to proceed with Guideline

Full maternal/fetal evaluation including:
GH labs, Test for Fetal Wellbeing, Ultrasound for growth

Any signs or symptoms from Box 1

Protein/Creatinine Ratio >0.3*

Gestational Hypertension

Consider inpatient monitoring versus transfer to Anchorage.

Outpatient monitoring in Bethel
- Daily Kick Counts
- Office visit 1-2 time per week
- NST twice weekly
- AFI and GH labs one time a week
- Ultrasound for growth every 3 weeks.
- Transfer care to NW at 38 weeks for delivery or transfer to Anchorage

If patient < 20 weeks, refer to Chronic Hypertension in Pregnancy Guideline

Box 1
Severe Features of Preeclampsia
- BP > 160/110
- Renal insufficiency
- Pulmonary edema
- Thrombocytopenia (platelets<100K)
- Impaired liver function
- IUGR
- Cerebral or visual symptoms

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.

*Prot/Creat Ratio >0.15 <0.3 Obtain 24 hour urine protein

†How to take a BP
Patient should be seated for 15 minutes and calm. They should not chew or smoke.
The appropriate sized BP cuff should be used.

GH labs:
CBC, creatinine, ALT, AST, uric acid, CCUA, random urine protein to creatinine ratio
Preterm Premature Rupture of Membranes

Patient presents to care with complaint of leaking fluid from vagina with pregnant

Perform a sterile speculum exam, GC/CT, GBS, Wet Prep. Ferning Test or Amnisure US OB Growth & AFI

Box 1
Signs & Symptoms of ROM
- Pool of fluid in vagina on exam
- Leak of fluid with valsalva
- Positive Ferning test
- Positive Amnisure test
- Oligohydramnios

Consult HROB Consider observation and repeat exam vs. Indigo Carmine test

ROM? See Box 1

Yes

Gestational Age <22 weeks?

Yes

Pre-viable
Consult HROB for discussion and plan of management. Expectant Management or immediate delivery

No

Routine Prenatal Care

Yes

Gestational Age >37 weeks?

Yes

Recommend Delivery Team will discuss best location (Bethel or Anchorage)

No

Routine Prenatal Care

Yes

AFI normal?

Yes

Admit to OB and prepare for transfer to Anchorage.
Betamethisone 12mg IM
GBS prophylaxisis per guideline
Notify Pediatrician if delivery in Bethel likely
No tocolysis except to facilitate transport
HSV prophylaxis as needed
Magnesium Sulfate for Neuroprotection per Policy

No

Gestational Age <34 weeks?

Yes

Ampicillin 2grams IV q6hours + Erythromycin 25mg IV q6hours For 48 hours Erythromycin only if Penicillin allergic

No

Routine Prenatal Care
Vaginal Birth After Cesarean

**Patient is pregnant and had a previous Cesarean Section**

- Refer to HROB meeting for review
- Schedule an appointment with Dr. Compton ASAP
  
  **Does the patient meet the criteria for delivery in Bethel?**

  - Yes: Ok to deliver in Bethel, complete pre-labor consent
  - No: Write and order for Transfer of Care at 36 weeks.

  **Continue routine prenatal care**

  **Labor begins**

  - Notify HROB on-call
  - Obtain VBAC consent
  - Notify OR team
  - Notify Pediatrician on-call

  **Routine Labor care**
  - Must have IV in place
  - Must have continuous electronic fetal monitoring in active labor
  - CBC and Type and Screen

  **Does the labor progress normally with Category I tracing?**

  - Yes: Proceed to Cesarean Section
  - No: Notify team after the delivery

  **Routine labor & delivery management**

  **Is the tracing Category III?**

  - Yes: Proceed to Cesarean Section
  - No: Contact the team to be present on OB for the remainder of the labor.
OB Protocols

Antepartum Patient.................................................................96
Prenatal Care Guidelines ......................................................97
Use of Consultants at YKHC .................................................98
Patient arrives on Labor and Delivery for possible labor

Vital signs, wt, urine for protein/glucose, review pregnancy dating

Fetal monitoring x 20 minutes

Yes

Reactive strip?

No

Notify practitioner immediately

Yes

Vaginal bleeding, SROM, <36 weeks gestation?

No

Nurse or medical practitioner to perform initial vaginal exam

Review chart for CBC, Blood Type, RH factor, RPR, Rubella, 1 hr GST, GC/CT, HIV, HBsAg, PPD and group B strep status

Notify practitioner of patient arrival and discuss disposition

No

No vaginal exam

Notify practitioner immediately for further evaluation

Medical practitioner to evaluate if ferning present in order to confirm diagnosis of SROM

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.
**BASICS**

- Review the chart EVERY visit for incomplete lab or other required testing.
- Review the problem list EVERY visit for needed testing or intervention items.
- Patient should see a Bethel provider or CHA/P monthly from first visit to 32 weeks.
- Patient should see a Bethel Provider or CHA/P every 2 weeks after 32 weeks and then weekly at 36 weeks.
- If there is any question of EDC, see guideline or refer to HROB meeting for decision.

---

**First Prenatal**

**NURSING/CASE MANAGER**

- Order First Trimester Transvaginal OB Ultrasound (>6weeks) for dating
- Patient to initiate paperwork
  - Residential Information sheet
  - Pregnancy Verification Sheet—use LMP if no EDC from ultrasound
  - Quad screen consent form
  - FAS & Drug assessment screening questionnaire
  - 36wk BIB/Medevac Policy
- Review TB screening status—Patient MUST HAVE a negative Quantiferon or PPD prior to 36 weeks to stay at Prematernal Home. Place PPD if needed.
- Send patient for labs: Urinalysis with reflex, Blood type and screen, HbsAg, CBC, Rubella titer, RPR, HIV testing, HgA1C, 25-OH Vitamin D.
- Set up room for pelvic to do PAP (only do a PAP if it is due), Wet Prep, GC/CT (with verbal consent)
- Routine patient handouts: WIC handout

**PROVIDER**

- Prenatal H&P and Prenatal Education
- Chart review
- Offer Flu vaccine October through the end of the flu season
- Discuss and sign BIB/Medevac Policy contract
- Update the Problem List and include EDC and gravidity/para in one problem
- Refer to HROB meeting if needed
- Ask about S/S of IHCP, if positive, add Bile acids and LFTs to lab draw

**PATIENT**

- Go to the Medicaid office to file for Medicaid
- Go to the WIC office to file for WIC

---

**20 Weeks**

- Ultrasound to screen for anomalies, US OB anatomy and cervical length
  - only one is needed no matter where it is done
  - Aim for 20 weeks
  - If anatomy incomplete, order a US OB follow-up for the next visit to complete the anatomy exam

**24–28 Weeks**

**NURSING**

- Labs: GST, CBC, 25-OH Vitamin D
- Tdap, after 24 weeks
- GST-50g (1/2 bottle or 5 oz)
  - If result >140mg/dl schedule 3 hour GTT ASAP.
  - If the result >179, no GTT, refer directly to diabetes education
- Attempt to keep the patient until the results of the GST are back.
- Review TB status. Send to lab for Quantiferon if failed to have PPD read.

**PROVIDER**

- After 28 weeks ask about preeclampsia symptoms
- After 24 weeks ask about PTL symptoms and IHCP symptoms?
  - Back pain
  - Sudden increase in vaginal discharge
  - Pelvic Pressure
  - Cramps/contractions
- Educate patient on fetal movement count

---

**36-week/ BIB date**

- Labs: CBC, RPR, Pelvic exam with GBS culture, GC/CT, wet mount if concerns.
- Review TB status. Send to lab for Quantiferon if status unknown.
- Schedule appointments to be seen each week by Bethel provider through 41 weeks
- Complete Pre-maternal Home/Medical clearance paper
- Ask about any symptoms of:
  - Rupture of membranes
  - Preeclampsia
  - labor
  - itching
SBAR: a concise statement of the problem, a “one-liner”

**Situation:** This is a 3 year old otherwise healthy girl with a fever...

My patient is a 9 year old G3P2 at 26 weeks with vaginal bleeding...

I’m taking care of a 21 year old male with fever and abdominal pain...

**Background:** pertinent and brief information related to the situation

The labs are normal and XFR shows no infiltrate but her pulse is elevated...

I have performed a sterile speculum exam and there is frank blood in the vault...

The patient’s CT show appendicitis and the patient is vomiting all intake...

**Assessment:** analysis and consideration of options, what you found/think

“I think she needs a fluid bolus but I am wondering if she also needs a UA…”

“I think this patient might have an active abruption…”

“I think this patient has appendicitis and needs to be transferred to ANMC…”

**Recommendation:** action requested, what you want

“I want your opinion on how much fluid and the need for a UA…”

“I want you to come in and assess this patient in person…”

“I would like to transfer this patient via medevac to ANMC…”

Document consultant advice in the medical record, include date, time, first and last name of consultant and a summary of the advice given.

At any time in the process, if the primary provider wants support at the bedside, page the consultant and ask them to come to bedside and provide support.

Clear role delineation must occur establishing who is the primary managing provider.

If there is a disagreement regarding the management of a patient between the consultant and the primary provider, the primary provider will advise the consultant as to the reason for the disagreement. If a consensus cannot be reached, a third opinion shall be obtained. This can either be from a YK based provider or from a provider from another facility. At any time the Clinical Director on call can also be notified.
Outpatient Guidelines

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UTI – Adult ........................................................................................... 112
Latent Tuberculosis Bacterial Infection (LTBI) ................................. 113
Skin and Soft Tissue Infection

Skin and Soft Tissue infection identified

Cutaneous abscess

Yes

Perform incision and drainage with local anesthesia. Culture wound and break up loculations. Place fixed Penrose drain if possible. Hot packs/soaks q2-4 hours and rest/elevation if on extremity

No

Abscess present?

Yes

Purulent drainage or exudate?

Yes

Purulent cellulitis

See Page 2

No

Purulent cellulitis

Cellulitis >10 cm or >1% BSA in child (size of child’s palm)

Yes

Consider empiric oral antibiotic therapy

No

Does patient meet all criteria for outpatient management (see Box 2)?

Yes

Outpatient management with daily follow up until continuous improvement is demonstrated

No

Non-purulent cellulitis

Vancomycin:

Strongly consider inpatient admission if vancomycin is considered

Remember, no outpatient vancomycin may be prescribed to patients <18 years old.

BOX 2: Criteria for Outpatient Management:

- Afebrile and non-toxic
- Ambulatory and able to commute to hospital for outpatient treatment
- Able to care for self
- Tolerating PO fluids
- Pain controlled with oral pain meds
- Doesn’t require hospitalization for elevation of extremity

Manage as inpatient until meets criteria for outpatient management

BOX 3: Empiric Antibiotic Options

1. Vancomycin:
   - For adults: load with 30 mg/kg IV, then dose 15 mg/kg q8 or q12 hours.
   - For patients <18 years: 20 mg/kg IV q6 hours. If patient is obese, consider dosing based on ideal body weight.
2. Linezolid 600 mg IV/PO q12 hours. Restricted to known MRSA resistance or vancomycin allergy.
3. In children with rapidly progressing cellulitis/abscess or associated systemic symptoms (fever, listlessness, lethargy, etc.) consider covering Haemophilus influenzae type A/B with ceftriaxone 75 mg/kg IV/IM q24 hours in addition to above.

Empiric oral Antibiotic Therapy

Adults

Septra DS 1-2 tabs PO q12hours (do not give to pregnant women)

Children:

Septra 4-6 mg/kg PO q 12 hours (based on TMP component)

Adults with sulfa allergy:

Doxycycline 100 mg PO q12 hours

Children with sulfa allergy:

>/>=8 years: Doxycycline 2 mg/kg PO q12 hours x 10 days (max 100 mg/dose)

<8 years: Clindamycin 10-13 mg/kg PO q8 hours

Pregnant or breastfeeding women:

Clindamycin 450 mg PO TID

*Antibiotic duration 5-7 days

*Septra and doxycycline do NOT cover strep pyogenes

Does patient meet all criteria for outpatient management (see Box 2)?

Yes

Admission with IV antibiotics. (See Box 3.)

- Recommend blood cultures, CBC, basic metabolic panel.
- Elevation and heating pad.
- Consider IV fluids.
- Address pain control.
- Consider imaging.
- If patient meets criteria for sepsis, follow sepsis guideline

No

Consider repeat incision and drainage

Patient improving?

Yes

Consider review culture and sensitivities.

Consider repeat imaging.

Manage as inpatient until meets criteria for outpatient management

No

DO NOT use guideline for the following:

- Diabetic ulcer
- Vascular ulcer
- Necrotizing fasciitis
- Human or animal bite cellulitis
- Thrombophlebitis
- Erythema nodosum
- DVT
- Toxic shock syndrome
- Herpes zoster
- Fish finger
- Bacteremia
- Periorbital or orbital cellulitis
- IV drug use
- Perineal/vulvar/perianal infections

If considering an above diagnosis, management must be individualized, and this guideline may not apply.
Does patient meet all criteria for outpatient management (see Box 2)?

**BOX 2: Criteria for Outpatient Management:**
- Afebrile and non-toxic
- Ambulatory and able to commute to hospital for outpatient treatment
- Able to care for self
- Tolerating PO fluids
- Pain controlled with oral pain meds
- Doesn’t require hospitalization for elevation of extremity

**Empiric oral antibiotic:**
**Adults:**
- Amoxicillin 500 mg PO TID
- PCN allergy (non Type 1):
  - Cephalexin 500-1000 mg PO TID
- For Type 1 PCN allergy or cephalosporin allergy:
  - Clindamycin 450 mg PO TID

**Children:**
- Amoxicillin 45 mg/kg/dose PO BID
- PCN allergy (non Type 1):
  - Cephalexin 25 mg/kg/dose PO QID
- For Type 1 PCN allergy or cephalosporin allergy:
  - Clindamycin 10-13 mg/kg/dose PO TID

*Antibiotic duration 5-7 days*

**Empiric IV Antibiotics:**
**Adults:**
- Cefazolin 2 gram IV q8 hours
- For Type 1 PCN or cephalosporin allergy:
  - Clindamycin 600 mg IV q8 hours

**Children:**
- Cefazolin 25 mg/kg/dose IV q8 hours
- For Type 1 PCN or cephalosporin allergy:
  - Clindamycin 10-13 mg/kg/dose IV q8 hours

**Clinically improved in 2-3 days**
- Yes
  - Manage as inpatient until meets criteria for outpatient management
- No
  - Consider undrained focus of infection
  - For non-purulent cellulitis, consider change to IV vancomycin
  - Consider ID consult
Men and Women aged 50-70, all non-pregnant adults with DM

- Recent ulcer, recent bleed, life expectancy < 5yr?

  - Yes: Exit algorithm, discuss with GI or cardiology. Consideration could be given to initiate if the event is > 30 days ago

  - No:

    - History of ASCVD or ACS?

      - Yes: Recent stent?

        - Yes: Advise aspirin 81 mg daily AND clopidogrel 75 mg daily. Duration of Plavix is 12 months

        - No:

          - Age <60 and 10 yr risk >10%?

            - Yes: Advise aspirin 81 mg daily

            - No: 10 yr risk 5-10% or age 60-69 and 10 yr risk >10%?

              - Yes: Shared decision making results in initiation of aspirin?

                - Yes: Mediterranean diet plus positive lifestyle changes for all

                - No: Routine monitoring and follow up, including for adverse drug effects

              - No: Positive lifestyle changes, optimize comorbid conditions

              - Mediterranean diet plus positive lifestyle changes for all

              - Routine monitoring and follow up, including for adverse drug effects

- No:

  - Calculate 10 yr CVD risk, measure lipid levels and BP, assess risk factors and medications.

  - Age <60 and 10 yr risk >10%?

    - Yes: Mediterranean diet plus positive lifestyle changes for all

    - No: Routine monitoring and follow up, including for adverse drug effects

  - 10 yr risk 5-10% or age 60-69 and 10 yr risk >10%?

    - Yes: Mediterranean diet plus positive lifestyle changes for all

    - No: Routine monitoring and follow up, including for adverse drug effects

- Yes:

  - Mediterranean diet plus positive lifestyle changes for all

  - Routine monitoring and follow up, including for adverse drug effects

USPSTF gives the following recommendation a B grade: Initiation of low dose aspirin for the primary prevention of cardiovascular disease (CVD) and colorectal cancer (CRC) in adults aged 50-59 years who have a 10% or greater 10 yr CVD risk, are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years.

USPSTF gives the following recommendation a C grade: The decision to initiate low-dose aspirin use for the primary prevention of CVD and CRC in adults age 60-69 years who have a 10% or greater 10 year CVD risk should be an individual one. Persons who are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin for at least 10 years are most likely to benefit. Persons who place a higher value on the potential benefits than the potential harms may choose to initiate low-dose aspirin.
Type 2 Diabetes

MSEC approved March, 2015

Diagnostic Criteria
Hemoglobin A1c ≥ 6.5 *
or
Fasting glucose (FPG) ≥126 mg/dl *
or
One random glucose (RPG) ≥200 mg/dl with classic symptoms of hyperglycemia or hyperglycemic crisis or
2 hour 75 g OGTT (oral glucose tolerance test) ≥200 mg/dl *

* In the absence of unequivocal signs of hyperglycemia, results should be confirmed by repeat testing

1. Consider completing Powernote Note Pathway “Diabetes, Type 2” and include: WT, HT, BP, Tobacco & ETOH Hx, perform foot exam, discuss mental health & sexuality, add diagnosis to Problem List in RAVEN

2. Consider completing Diabetes Powerplan and order A1c, lipids (fasting or non-fasting), CMP, CCUA & Urine Microalbumin, EKG if not obtained in the last 5 yrs, update immunizations, including PPD, and refer to optometry & dental internal

3. Establish treatment goals with patient† ǂ

4. Consider Statin, ASA, ACE or ARB

5. Consider ordering glucometer and strips

6. Refer to Diabetes Program
   - By calling 543-6133 or cell 545-2649 for same day counseling appointments
   AND
   - By placing referral order in RAVEN “Refer to Diabetes Program Internal”

7. Place future lab orders (A1C in 3 months)

8. Place “Bethel Follow-Up” or “village name Follow-Up” order in RAVEN

References (double-click to see reference)
References

1. ADA 2014 Guidelines; Metformin: Preferred initial therapy (if tolerated and not contraindicated)
2. ADA 2014 Guidelines; Add second oral agent, GLP-1 receptor agonist, or insulin if non-insulin monotherapy at maximum tolerated dose does not achieve or maintain A1c target over 3 mos.
3. ADA 2014 Guidelines; Consider insulin therapy with or without other agents at outset in newly diagnosed patients with markedly symptomatic and/or elevated BG levels or A1C
4. ADA 2015 Standards of Care; Summary of glycemic recommendations for nonpregnant adults with diabetes
   † More or less stringent glycemic controls may be appropriate for individual patients. Goals should be individualized based on duration of diabetes, age/life expectancy co-morbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations. (See Glycemic Targets Chart on the Document Library)
   ‡ Postprandial glucose may be targeted if A1c goals are not met despite reaching preprandial glucose goals.
Basal Insulin
(usually with metformin +/- other noninsulin agent)

- **Start:** Insulin glargine 10 U/day or 0.1-0.2 U/kg/day.
- **Adjust:** 10-15% or 2-4 U once-twice weekly to reach FBG target.
- **For hypo:** Determine and address cause; ↓ dose by 4 U or 10-20%.

If not controlled after FBG target is reached (or if dose >0.5 U/kg/day), treat PPG excursions with mealtime insulin. (Consider initial GLP-1-RA (exenatide) trial.)

Add 1 rapid insulin (insulin aspart; regular insulin) injection before largest meal

- **Start:** 4 U, 0.1 U/kg, or 10% basal dose. If A1C <8%, consider ↓ basal by same amount.
- **Adjust:** ↑ dose by 1-2 U or 10-15% once-twice weekly until SMBG target reached.
- **For hypo:** Determine and address cause; ↓ corresponding dose by 2-4 U or 10-20%.

Add ≥ 2 rapid insulin injections before meals (“basal-bolus”)

- **Start:** 4 U, or 0.1 U/kg, or 10% basal dose/meal. If A1C <8%, consider ↓ basal by same amount.
- **Adjust:** ↑ dose by 1-2 U or 10-15% once-twice weekly until SMBG target reached.
- **For hypo:** Determine and address cause; ↓ corresponding dose by 2-4 U or 10-20%.

Change to premixed insulin (insulin protamine aspart/insulin aspart or NPH insulin) twice daily

- **Start:** Divide current basal dose into 2/3 AM, 1/3 PM or ½ AM, ½ PM.
- **Adjust:** ↑ dose by 1-2 U or 10-15% once-twice weekly until SMBG target reached.
- **For hypo:** Determine and address cause; ↓ corresponding dose by 2-4 U or 10-20%.

If not controlled, consider basal-bolus

- **Start:** Insulin glargine 10 U/day or 0.1-0.2 U/kg/day.
- **Adjust:** 10-15% or 2-4 U once-twice weekly to reach FBG target.
- **For hypo:** Determine and address cause; ↓ dose by 4 U or 10-20%.

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- **Adjust:** ↑ dose by 1-2 U or 10-15% once-twice weekly until SMBG target reached.
- **For hypo:** Determine and address cause; ↓ corresponding dose by 2-4 U or 10-20%.

Add ≥ 2 rapid insulin injections before meals (“basal-bolus”)

- **Start:** 4 U, or 0.1 U/kg, or 10% basal dose/meal. If A1C <8%, consider ↓ basal by same amount.
- **Adjust:** ↑ dose by 1-2 U or 10-15% once-twice weekly until SMBG target reached.
- **For hypo:** Determine and address cause; ↓ corresponding dose by 2-4 U or 10-20%.
Concern for Congestive Heart Failure

Are risk factors present?

Yes

Monitor for signs/symptoms:
- Shortness of breath
- Activity intolerance
- Orthopnea
- Frothy sputum
- Peripheral edema
- Sudden weight gain >2-3 lb
- Nocturia
- Altered mental status
- Hypoxemia
- Chest pain

BOX 1
Initiate education for Health Seeking Behaviors:
- No smoking, limit alcohol, avoid illicit drug use
- Eat a low saturated fat diet, rich in fruits and vegetables
- Educate regarding risk factors
- Keep BMI < 25
- Encourage physical activity 120-180 min/week
- Limit sugar sweetened beverages

Are positive findings present?

Yes

Seek to exclude CHF as diagnosis/cause of symptoms:
- ECG (acute ischemic findings, new LBBB)
- BNP

CHF unlikely cause of symptoms, consider CXR, CT chest, venous doppler, etc

Both normal?

Yes

Follow plan of care for diagnosis/management of CHF

No

See Page 2 for Heart Failure Management

No

Concern for Congestive Heart Failure

Are risk factors present?

No

Consider urgent/emergent evaluation in ED if last three symptoms are present

BOX 2
Plan of care for CHF patients
- Encourage patient to collaborate with provider to treat known risk factors
- Evaluate patient at regular intervals for signs/symptoms of heart failure
- Teach patient to report weight gain >2-3 lbs and changes in heart rhythm
- Instruct patient to comply with LV function testing
- Encourage medication compliance, especially with ACEI/ARB
- Patient education from Box 1

Transfer to ED if signs/symptoms of acute coronary syndrome are present

- CXR, CBC, CMP, thyroid function testing, Hg A1C, Lipids, spirometry, microalbumin
- Refer for echocardiogram
- Lifestyle management with Box 1 and 2
**Stage A**
At high risk for heart failure without structural heart disease or symptoms

- Hypertension
- Atherosclerotic disease
- DM
- Obesity
- Metabolic syndrome
- Patients on cardiotoxins
- Patients with FH of cardiomyopathy

**Stage B**
Structural heart disease but without signs or symptoms of heart failure

- Previous MI
- LV remodeling including LVH and low EF
- Asymptomatic valvular disease

**Stage C**
Structural heart disease with prior or current symptoms of heart failure

- Known structural heart disease AND
- Signs and symptoms of heart failure

**Stage D**
Refractory heart failure

- Marked heart failure symptoms at rest

**Goals:**
- Heart healthy lifestyle
- Prevent coronary and vascular disease
- Prevent LV structural abnormalities

**Drugs:**
- ACEI or ARB +/- thiazide
- Statins as appropriate
- Aspirin as appropriate

In selected patients:
- ICD
- Revascularization or valvular surgery as appropriate

**Goals:**
- Prevent heart failure symptoms
- Prevent further cardiac remodeling

**Drugs:**
- ACEI or ARB
- Beta blockers as appropriate
- Thiazide diuretics
- Statins as appropriate
- Aspirin as appropriate

In selected patients:
- ICD
- Revascularization or valvular surgery as appropriate

**Calcium channel blocker contraindicated in Stage C**

**Options:**
- Heart transplant
- Chronic inotropes
- Temporary or permanent mechanical circulatory support
- Experimental surgery or drugs
- Palliative care/hospice
- ICD deactivation

**Aldosterone antagonists:**
- Use for estimated creatinine clearance > 30 and potassium <5
- Check BMP at baseline, then day 2, day 7, monthly for 3 months, then every 3 months for 12 months, then every 6 months

**Stage D**
Refractory heart failure

- Marked heart failure symptoms at rest

**Goals:**
- Control symptoms
- Improve quality of life
- Prevent hospitalization
- Prevent mortality
- Improve quality of life

**Drugs:**
- Diuretics
- ACEI or ARB
- Beta blockers
- Aldosterone antagonists**
- Statins as appropriate
- Aspirin as appropriate

For selected patients:
- Hydralazine/isosorbide dinitrate
- Digoxin
- Cardiac resynchronization therapy
- ICD
- Revascularization or valvular surgery

**Options:**
- Heart transplant
- Chronic inotropes
- Temporary or permanent mechanical circulatory support
- Experimental surgery or drugs
- Palliative care/hospice
- ICD deactivation

**Calcium channel blocker contraindicated in Stage C**

**Stage D**
Refractory heart failure

- Marked heart failure symptoms at rest

**Goals:**
- Control symptoms
- Improve quality of life
- Reduce hospital readmissions
- Establish patient’s end-of-life goals

**Options:**
- Heart transplant
- Chronic inotropes
- Temporary or permanent mechanical circulatory support
- Experimental surgery or drugs
- Palliative care/hospice
- ICD deactivation

**Calcium channel blocker contraindicated in Stage C**
Dyspepsia – H. Pylori
MSEC approved 4/26/18

**Background Information:**
- 75% of the AN/AI population is colonized with H. Pylori (range 61-84%).
- Screening or testing for H. Pylori for routine evaluation of dyspepsia or other GI symptoms is not clinically useful or supported by evidence for high prevalence populations.
- For routine clinical practice, there is **insufficient evidence-based data** to support community-wide eradication as a mechanism for gastric cancer prevention.
- Current literature **DO NOT** support a test and treat method with noninvasive tests.

**Pediatrics:**
- Goal is to determine underlying cause of symptoms, not solely the presence of H pylori infection.
- Principles of testing and treatment are the same as for adults.
- Diagnostic testing is NOT recommended with functional abdominal pain or iron-deficiency anemia.
- Consult pediatrics if considering this diagnosis.

**Pregnancy and Lactation:**
- Delay treatment until after pregnancy
- DO NOT use in Pregnancy: bismuth and tetracycline
- DO NOT use in lactation: bismuth, metronidazole, levofloxacin

H. Pylori identified by histology and/or CLO test from EGD **AND**

Endoscopy reveals the following:
- Duodenal ulcers
- Gastric ulcer
- MALT lymphoma
- Intestinal metaplasia

****All treatment is for 14 days**

**Adult Dosing**
**Preferred Treatment:**
- Metronidazole 500 mg PO QID
- Amoxicillin 1000 mg PO BID
- Omeprazole 20 mg PO BID
- Bismuth subsalicylate 524 mg PO QID

**PCN allergic (anaphylactic):**
- Metronidazole 500 mg PO QID
- Doxycycline 100 mg PO BID
- Omeprazole 20 mg PO BID
- Bismuth subsalicylate 524 mg PO QID

**Recurrence/Failure:**
- Metronidazole 500 mg PO QID
- Doxycycline 100 mg PO BID
- Omeprazole 20 mg PO BID
- Bismuth subsalicylate 524 mg PO QID
- OR
- Amoxicillin 1000 mg PO BID
- Levofloxacin 500 mg PO daily (FDA Black Box)
- Omeprazole 20 mg PO BID

**Pediatric Dosing**
- Metronidazole 10 mg/kg PO BID
- Amoxicillin 45 mg/kg PO BID
- Omeprazole 1 mg/kg PO BID
- Bismuth subsalicylate
  - <10 years: 262 mg PO QID
  - >10 years: 524 mg PO QID

**Eradication Testing:**
- Urea Breath Test for Test of Cure is necessary to determine need for retreatment. It can be performed on children as young as 3. The stool antigen test available at YKHC is not recommended for test of cure.
- 10-35% of individuals will fail treatment.
- Serologic testing is not recommended due to prolonged antibody persistence beyond date of cure and false positive results.
- Must be off PPI for ≥ 2 weeks prior to Urea Breath Test.
Hypertension

Initial monitoring:
- EKG
- Hg A1C
- TSH
- CMP
- Pregnancy
- Microalbumin

Strategy | Description
--- | ---
A | Start one drug, titrate to maximum dose, and then add a second drug
B | Start one drug, then add a second drug before achieving max dose of first
C | Begin 2 drugs at same time, as separate pills or combination pill. Initial combination therapy is recommended if BP is > 20/20 mm Hg above goal

Lifestyle Changes:
- Smoking cessation
- Control blood glucose and lipids
- Diet
  - DASH diet recommended
  - Moderate alcohol consumption
  - Reduce sodium intake to no more than 2400 mg/day
  - Limit alcohol to 2 drinks/day for men and 1 drink per day for women
- Physical activity
  - Moderate-to-vigorous activity for 120-180 min/week

Initial Drugs of Choice for Hypertension
- ACE Inhibitor (ACEI)
- Angiotensin receptor blocker (ARB)
- Thiazide diuretic
- Calcium channel blocker (CCB)
- Beta blocker NOT first line except in pregnancy or women who may become pregnant

Age >/= 18 years, non-pregnant with hypertension. Implement lifestyle modifications
Set BP goal, initiate BP lowering medication based on algorithm

General Population
- No Diabetes or CKD

Diabetes or CKD present

All ages and races
- CKD present with or without diabetes

BP goal < 140/90

BP goal < 150/90

All ages
- Present
- No CKD

Age >/= 60 years
Age <60 years

BP goal <140/90

BP goal <140/< 90

Nonblack
Black

Consider compelling indications

Initiate thiazide, ACEI, ARB, or CCB, alone or in combination

Initiate thiazide or CCB, alone or in combination

Initiate ACEI or ARB, alone or combo with another class

At blood pressure goal?

No

Reinforce lifestyle and adherence
Titrate medications to maximum doses or consider adding another medication (ACEI, ARB, CCB, Thiazide)

At blood pressure goal?

Yes

No

Reinforce lifestyle and adherence
Add a medication class not already selected (i.e. beta blocker, aldosterone antagonist, others and titrate above medications to max

At blood pressure goal?

Yes

No

Reinforce lifestyle and adherence
Titrate meds to max doses, add another med and/or refer to hypertension specialist

Check BMP or CMP in 2 weeks except for CCB

Yes

No

Continue treatment and monitoring.

- Annual CMP, A1C, lipids
- Microalbumin every 1-3 years
Myocardial Infarction (AMI) – Post Discharge Care

Risk Stratification:
A. Invasive (catheterization) workup
   1. Full revascularization done
      a. medical therapy (per algorithm)
      b. stress test at 6 weeks post MI
   2. Without full revascularization
      a. medical therapy
      b. stress test at 4-6 week post MI
B. Noninvasive workup
   1. High risk patient
      a. medical therapy
      b. scheduled invasive workup and revascularization
   2. Low risk patient
      a. medical therapy
      b. repeat stress test 4-6 week post MI
C. No stratification
   a. medical therapy
   b. consider invasive workup for refractory symptoms

Heart Failure Regimen (LVEF < 45 %)
Week 2 - Uptitrate ACE, same B-Blocker dose
   (Toprol XL 12.5 mg or Coreg 3.125 bid)
Week 3 - Uptitrate ACE
   (Ramipril 5-10mg po qd or Lisinopril 20-40mg po qd),
   same B-Blocker, recheck BMP
Week 4 - Uptitrate B-Blocker
   (Toprol XL 25mg po qd or Coreg 6.25mg po bid),
   recheck BMP
Week 6 - Uptitrate B-Blocker
   (Toprol XL 50mg po qd or Coreg 12.5mg po bid),
   recheck BMP
Week 8 - Uptitrate B-Blocker
   (Toprol XL 100mg po qd or Coreg 25mg po bid),
   recheck BMP
Week 10 -Uptitrate B-Blocker
   (Toprol XL 150-200mg po qd or
    for large people Coreg 50mg po bid),
   recheck BMP
Week 12 - Add spironolactone 12.5-25mg po qd if K<4 & creat<1.5

This guideline designed for general use for most patients but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s provider.
Clinical Breast Exam Screening Recommendations:
1. Breast self-examination: at provider’s discretion
2. Clinical breast examination: at provider’s discretion
3. Mammography: start age 45
   screen every 2 years
   end screening at age 70, based on health status

This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient’s medical practitioner.
Patient presents with signs/symptoms of acute cystitis and a urinalysis suggestive of UTI. If complicated or catheter associated see below.

Acute onset of dysuria, urinary frequency or urgency, don't forget to test for STI if appropriate.

UTI associated with fever, chills, back/flank pain, suprapubic pain.

- Always obtain culture and sensitivities
- Consider blood cultures if ill/septic

1. Nitrofurantoin 100 mg PO BID for 5 days OR
2. Cephalexin 500 mg PO BID for 7 days (use first for patients >65)

If no other options exist:
3. Ciprofloxacin 250 mg PO BID for 3 days

1. Ceftriaxone 1 gram IV daily OR
2. Levofloxacin 750 mg IV/PO daily

- Narrow therapy when culture data allows
  - If not improving within 48-72 hours, consider imaging to rule out obstruction or other complications
  - Duration of therapy as for outpatient

Give a single dose of either:
Ceftriaxone 1 gram IV/IM OR
Gentamycin 3 mg/kg IV/IM
AND one of the following oral options:
1. Cephalexin 1 gram PO BID for 14 days OR
2. Levofloxacin 750 mg PO daily for 5 days

TMP/SM DS PO BID for 14 days is acceptable if culture is sensitive

Complicated UTI/ Catheter associated UTI

Obtain culture and sensitivities

- Obtain imaging studies if critically ill

- If no risk for MDRO:
  1. Ceftriaxone 1 gram IV q24h OR
  2. Levofloxacin 750 mg IV q24h

- If risk for MDRO:
  1. Ceftiraxone 1 gram IV q8h extended infusion OR
  2. Pip/Tazo 3.375 gram IV q6h or Q8h extended infusion +/- gentamycin 3 mg/kg IV q24h
  3. Consider adding MRSA coverage if septic shock is present (get blood cultures from 2 sites)

If known ESBL: use nitrofurantoin first (not for complicated ESBL or for age >65) If sensitive: TMP/SMZ, fluoroquinolone. If allergic to susceptible antibiotics may use Fosfomycin 3 g PO q48h x 3 doses

UTI with coexisting functional anomalies of urinary tract: BPH, calculi, obstruction, neurogenic bladder, chronic catheter transplant, neutropenia

- Narrow therapy when culture data allows and patient is clinically improved
  - Duration of therapy: 5-14 days depending on agent and rapidity of response
  - If nidus of infection (stone, catheter) will need longer treatment
  - Prostatitis may require as long as 6 weeks of oral therapy.
Latent Tuberculosis Bacterial Infection (LTBI) Guideline

**High Risk for TB**
1. Exposure to a Active TB pt
2. HIV+
3. Immunosupressed
4. Prednisone dependent on 15 mg a day or more.
5. Suspicious CXR
6. Under 6 months of age

**+ PPD**
- At least 10 mm of induration **OR** > 5 mm induration (not redness) for patients who are High Risk for TB – See box on Left.
  - Needs to be read at 48-72 hours after placement for a true negative.
  - If positive the induration will remain up to 7 days and it can be read until then.

**Schedule 40 min Clinic appt.**
- Notify Public Health Clinic – fax them PEF or PCC
- Can have patient do a 3 Sputums for AFB Smear/Culture in village or Bethel while waiting for appt date.

Examine patient and perform symptom review: Cough > 3 weeks, sputum, weight loss, sweats, fever, cough not resolving on antibiotics, fatigue

Get CXR/LFTs, HIV on all patients. Consider STI screening - RPR/GC/CT.
Order 3 AFB Smear/AFB Cx to be done – 1st in the office now, other two at home 1st AM samples if not already done.

If concerned about False + PPD, consider getting QFT-gold.

**CXR normal? Symptom review normal?**

1. Hold on LTBI meds while obtaining sputum samples
2. Ensure follow-up if medication deferred.
3. Have discussion with PHNs.
4. Send PCCs and med order to PHN

**Infant or child unable to do sputum (<6years)**

1. Treat as LTBI
   - See regimens and select with PHN discussion.
   - Use pills and a crusher- mixing it in pudding or applesauce.
   - See Q 3 months for follow up. Can check LFTs but not needed.
   - Send PCC/Med Rec to PHNs.

2. Public Health Nursing Contact Information
   - (PHN) – Public Health Nurses
   - Phone – 543-2110
   - Fax – 543-0435
   - ALL DOT- (Directly Observed Therapy) WILL BE SET UP BY PHNs

3. Consider Active TB. See Tuberculosis Guideline


**If culture is positive – stop LTBI therapy and start 4 drug Active TB therapy.** Consult YKHC TB Officer. See Tuberculosis guideline.

**LTBI Treatment Meds**
1. Isoniazid 300 mg Qday for 9 months – Adult, Peds 20 mg/kg max 300mg
2. Isoniazid 900 mg 2x a week for 9 months – Peds – 30 mg/kg max 900mg. **ONLY DOT**
3. For 12 and up – Isoniazid wt based/Rifapentine wt. based Q week x 12 weeks. Not for pregnant, nursing, HIV+ on retrovirals, or LTBI with presumed INH or Rifampin resistance. **ONLY DOT**
4. If INH resistant – Rifampin QDay 10 mg/kg- 4 months adult. Peds- 10-20 mg/kg Qday- 6 months.
Outpatient Protocols

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Use of Consultants at YKHC

**Consult provider is located in Bethel?**

- **Yes**
  - **Patient is critically ill and the consultant is required at bedside?**
    - **Yes**
      - Page provider STAT to come to bedside and assist in management.
    - **No**
      - If on-going management is required, a decision must be made immediately and communicated about who will be the primary managing provider giving orders and documenting in the medical record.

- **No**
  - Document consultant advice in the medical record, include date, time, first and last name of consultant and a summary of the advice given.

**Provider needs consultation about patient at YKHC**

- **No**
  - Page the appropriate provider. Have ready the following information:
    - 1. State your name, title and department (i.e. ER physician, outpatient NP, second year resident, etc)
    - 2. State purpose of call (i.e. quick question, possible admission, management advice.)
    - 3. Name, MRN, age, DOB. If the patient is pregnant, give gravity and parity and gestational age in initial sentence, if the patient is a child, give the age in the initial sentence.
    - 4. Be able to use the SBAR method to communicate patient details (see box below)
    - 5. Ask a specific question about management.

**SBAR:**

**Situation:** a concise statement of the problem, a "one-liner"

- "This is a 3 year old otherwise healthy girl with a fever..."
- "My patient is a 20 year old G3P2 at 26 weeks with vaginal bleeding..."
- "I’m taking care of a 21 year old male with fever and abdominal pain..."

**Background:** pertinent and brief information related to the situation

- "The labs are normal and XFR shows no infiltrate but her pulse is elevated..."
- "I have performed a sterile speculum exam and there is frank blood in the vault..."
- "The patient’s CT show appendicitis and the patient is vomiting all intake..."

**Assessment:** analysis and consideration of options, what you found/think

- "I think she needs a fluid bolus but I am wondering if she also needs a UA..."
- "I think this patient might have an active abrasion..."
- "I think this patient has appendicitis and needs to be transferred to ANMC..."

**Recommendation:** action requested, what you want

- "I want your opinion on how much fluid and the need for a UA..."
- "I want you to come in and assess this patient in person..."
- "I would like to transfer this patient via medevac to ANMC..."

**Provider requesting consult must document consultant’s advice in the medical record. Include date, time, first and last name of consultant and a summary of the advice given.**

**Page provider STAT to bedside.**

At any time in the process, if the primary provider wants support at the bedside, page the consultant and ask them to come to bedside and provide support.

Clear role delineation must occur establishing who is the primary managing provider.

**Remember:** Unless you transfer care of the patient, YOU are responsible for orders, documentation and notifying the patient and family of the plan of care.

**NOTE:**

If there is a disagreement regarding the management of a patient between the consultant and the primary provider, the primary provider will advise the consultant as to the reason for the disagreement. If a consensus cannot be reached, a third opinion shall be obtained. This can either be from a YK based provider or from a provider from another facility. At any time the Clinical Director on call can also be notified.
When to Screen

Perform a Colon Cancer Risk Assessment

- Personal history of colon cancer or polyps?
  - Yes: Refer to “Adult Surgery Internal – YK Colonoscopy” for a plan
  - No: Start screening at age 40

- Family History?
  - No: Start screening at age 40, whichever is earlier.
  - Yes: Start screening 10 years before diagnoses or at age 40, whichever is earlier.

How to Screen

Refer to “Adult Surgery Internal – YK Colonoscopy”

- Is the patient willing and/or able to come in for a colonoscopy?
  - No: FIT Test Annually in Village
  - Yes: Does the patient meet criteria for screening in Bethel?
    - No: Colonoscopy in Anchorage
    - Yes: Colonoscopy in Bethel

- Positive FIT Test
  - Yes: Refer to “Adult Surgery Internal – YK Colonoscopy” for a DIAGNOSTIC COLONOSCOPY
  - No: FIT Test Annually in Village
This guideline is designed to establish a standard for starting contraception in all cases.

Was the first day of the LMP <5 days ago?

Yes

Initiate Contraception today

No

Do a urine pregnancy test.
If result is negative:
- Initiate contraception today.
- Advise condom use for one week, as back-up.
- Provide Emergency Contraception if patient has had unprotected sex in the past 5 days.
- Repeat pregnancy test in 2 weeks

- Urge condom use to protect against HIV and other STIs
- Provide at least 3-month supply of pills, rings, or patches.
- Patient should return for pregnancy test:
  - In 2 weeks after starting Depo Provera
  - If no period at the end of the first pill, patch or ring cycle.
Has the patient had chronic pain for > 6 Months? And is interfering with his/her daily habits, subsistence living, and or job??

Yes

Has the patient done ALL of the following?
- Seen Impact for ½ hour evaluation?
- Seen PT and continuing home exercises?
- Tried 3 types of NON-Narcotic Meds?
- Recommend to attend 1 Behavioral Health Talking Circle or Lunch group

No

Refer to pain committee

Yes

Is Patient > 45 years old?

No

Refer to pain committee

Yes

Do they have these Previous conditions?
- Orthopedic Surgery
- Rheumatoid Arthritis
- Severe Spinal Stenosis

No

Refer to pain committee

Yes

Perform All Comprehensive Assessments below:
- History Assessment
- Physical
- Previous record Review
- Negative Tox Screens
- Opioid Risk Assessment
- Brief Pain Inventory
- Pain Diary

No ALL are not completed

Refer to pain committee

Yes ALL are completed

Patient is Eligible
What type of pain is it?

A

Nociceptive Pain *
(muscle, joint, or visceral)
i.e. strain, tension HA, osteoarthritis, low back pain, chronic cystitis, Myo facial pain

A

Neuropathic Pain *
(Nerve compression, nerve damage, nerve traction, migraine, reflex, sympathetic dystrophy)
i.e. radiculopathy, complex regional pain syndrome

B

Idiopathic Pain *
i.e. fibromyalgia

C

*Treatment Options for all types of pain:
Sleep Hygiene, Yoga, Meditation
Nociceptive Pain (muscle, joint, or visceral) i.e. strain, tension HA, osteoarthritis, low back pain, chronic cystitis, myofacial pain

Determine appropriate evaluation/treatment

Muscle: Hx, PE, NSAIDS, PT, Creams

Joint: Hx, PE, Xray, NSAIDS, Exercise, Yoga/meditation

Visceral: Hx, PE, diagnostic tests: treatment varies

Suggested Medications: NSAIDS, Other: Tylenol, Trigger Point or Joint injections, capsaicin cream, lidocaine patch/cream

Please refer to Chronic Narcotics Eligibility Guidelines
Neuropathic Pain
(Nerve compression, nerve damage, nerve traction, migraine, reflex, sympathetic dystrophy)
i.e. radiculopathy, complex regional pain syndrome

Determine appropriate evaluation/treatment

Nerve Compression:
Hx, PE, EMG's/MRI, consider surgical decompression

Nerve Damage:
Hx, PE, labs, EMG's, antidepressants, Gabapentin

Nerve Traction:
Hx, PE, EMG's, NSAIDS, PT, Yoga/Meditation

Migraine:
Hx, PE, NSAIDS, triptans, prophylactic drugs

Reflex, Sympathetic Dystrophy:
Hx, PE, Lidocaine patches

Suggested Medications:

Antidepressants:
First line TCAs, duloxetine

Gabapentin, NSAIDS

Migraine Specific:
Cafegot, dihydroergotamine, Midrin, Immitrex, beta blockers, other prophylactic medications

Please refer to Chronic Narcotics Eligibility Guidelines
Chronic Pain — Non Narcotics Treatment

A. Nociceptive Pain (muscle, joint, or visceral)

i.e. strain, tension HA, osteoarthritis, low back pain, chronic cystitis, myofacial pain

Muscle:

Hx, PE, NSAIDS, PT, Creams

Visceral:

Hx, PE, diagnostic tests: treatment varies

Joint:

Hx, PE, Xray, NSAIDS, Exercise, Yoga/Meditation

Determine appropriate evaluation/treatment

B. Neuropathic Pain

(Nerve compression, nerve damage, nerve traction, migraine, reflex, sympathetic dystrophy)

i.e. radiculopathy, complex regional pain syndrome

Nerve Compression:

Hx, PE, EMG’s/MRI, consider surgical decompression

Nerve Traction:

Hx, PE, EMG’s, NSAIDS, PT, Yoga/Meditation

Nerve Damage:

Hx, PE, labs, EMG’s, antidepressants, Gabapentin

Determine appropriate evaluation/treatment

C. Idiopathic Pain

i.e. fibromyalgia

Fibromyalgia:

Hx, PE, exercise, antidepressants, avoid opioid analgesics, Yoga/Meditation, sleep hygiene

Suggested Medications:

Antidepressants: duloxetine

Migraine:

Hx, PE, NSAIDS, triptans, prophylactic drugs

Reflex, Sympathetic Dystrophy:

Hx, PE, Lidocaine patches

Suggested Medications:

Antidepressants: First line TCAs, duloxetine Gabapentin, NSAIDS

Migraine Specific:

Cafegot, dihydroergotamine, Midrin, Imitrex, beta blockers, other prophylactic medications

Suggested Medications:

NSAIDS, Other: Tylenol, Trigger Point or Joint injections, capsaicin cream, lidocaine patch/cream

*Treatment Options for all types of pain:

Sleep Hygiene, Yoga, Meditation

Please refer to Chronic Narcotics Eligibility Guidelines
Follow up and reevaluation: Assess for:
1. functionality
2. adverse effects
3. achievement of goals
4. analgesia
5. behaviors of concern: see flow sheet

Were goals achieved?
Reassess q 6 months, review agreement, revisit goals, taper as indicated

Yes
Reevaluate diagnosis, goals, tx

No

Assess goal failure:
1. Opioid non-responsive pain
2. Incorrect diagnosis
3. Psychiatric illness
4. Unrealistic goal setting
5. secondary gain (e.g. litigation)
6. Diversion and/or abuse
7. Consider Behavioral Health Consult

Behaviors of concern?
Consider Toxicology screen

No

Yes

Patient showing behaviors of concern?
1. ETOH abuse
2. poly drug abuse
3. Cocaine abuse (+tox screen)
4. Forgery
5. Stealing. Buying from the street
6. Negative tox screen for prescribed opioid/benzodiazepine
7. Hospitalization related to substance abuse
8. Drug overdose
9. Injection oral medications
10. Visit to ED with intoxication
11. Specific opioid/benzodiazepine (by name) request
12. Multiple unsanctioned opioid/benzodiazepine dose escalations
13. Recurring loss/stolen opioid/benzodiazepine prescriptions

Yes
Change treatment/agreement
Consider referral to pain specialist, behavioral health, addiction therapy
Refer to Pain Committee via order

If significant efforts of treatment are not successful with patients
consider stopping outpatient opiates while under review

Monitor Compliance Tools (e.g. pill audits/UDS)
Review at pain review
Evaluate strikes

For terminal cancer patients (with life expectancy less than or equal to 6 months) who have previously demonstrated good compliance with Chronic Medication agreement, documentation of titration for pain control as appropriate is acceptable without requiring new agreement.
Continue to monitor for achievement of goals/behaviors of concern
This guideline is designed for the general use of most patients, but may need to be adapted to meet special needs of a specific patient as determined by the patient's medical practitioner.

3 strikes cancel contract
Reassess with patient's request letter
If significant efforts of treatment consider restart agreement
Coming Soon
Pre-Anesthesia Testing

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**Other**

**Urine HCG:** Needed within 48 hours of surgery in women of childbearing age (13–50).

**Drug Levels:** Level drawn on all patients on Digoxin and Dilantin.

**CXR:** Recent change in sputum quality or color, pneumonia in past 3 months, chronic home O2 use, planned intrathoracic surgery, or if exam reveals rales, rhonchi, or wheezes.

**Surgical Risk Screening Protocol Orders**

1. Patients who are not to be scheduled at YKHC:
   a. Patients with BMI > 45 (Up to BMI of 45 is acceptable if no significant, unstable CV, respiratory, or endocrine Pathology is present)
      - English BMI Formula = (Weight in pounds / (Height in inches) x (Height in inches)) x 703
      - Metric BMI Formula = (Weight in Kilograms / (Height in Meters) x (Height in Meters))
   b. Obstructive Sleep Apnea Perioperative Risk Score of 5 or 6.

2. Preventive antibiotic therapy will be administered within one hour prior to skin incision per protocol pre-operatively, based on procedure type and patients allergies, unless otherwise ordered by physician.

3. DVT/VTE prevention methods will be implemented using SCIP Mechanical Prophylaxis Protocol unless contraindicated or otherwise documented in orders by physician.

**Diabetes Management**

1. Discontinue all oral agents the evening prior to surgery, except Metformin which can be taken the evening prior to surgery but not to day of surgery.
2. Discontinue insulin after midnight for AM surgeries.
3. Take 1/2 usual dose of insulin the AM of surgery if surgery is scheduled to start at noon or later.
4. Take 100% of Lantus insulin up to time of surgery.
5. Consume apple or cranberry juice up till 2 hours prior to arrival to surgery if insulin was used.
6. For insulin pumps, set to basal rate and continue throughout pre-operative period.
7. Arrival to Holding Area, Glucose will be obtained. Results treated by anesthesia.

continued on next page.
NPO Guidelines:

The pre-operative nurse will instruct all patients to be NPO after midnight and to follow the surgeon’s instructions if they differ from these. The surgeon who gives different instructions will be responsible for thorough patient instruction of anything other that these guidelines.

1. All patients are equal with regard to NPO guidelines (i.e. gastric emptying time, obesity)
2. Clear liquids may be consumed up to 2 hours prior to scheduled arrival time.
3. Clear liquids are water, black coffee, and beverages not cloudy and can be seen through. Sugar and artificial sweeteners are acceptable. All broths are NOT acceptable.
4. Patient may brush their teeth, but should not swallow tooth paste.
5. Gum and candy of any type are not allowed.
6. All patients will be allowed to eat a full, regular diet (solid) up to 8 hours prior to surgery. Patient going to the OR at 0730 who were NPO after midnight are considered to meet this standard.
7. Infants up to 24 months of age will be allowed breast milk up to 4 hours prior to the arrival to the hospital. Infant formula will be considered a solid.

<table>
<thead>
<tr>
<th>Table 4. Estimated Energy Requirements for Various Activities, Based on Duke Activity Status Index*</th>
</tr>
</thead>
<tbody>
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<td>1 MET</td>
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<tr>
<td>≥10 METs</td>
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* MET = metabolic equivalent.

Adapted from J AM Coll Cardiol, with permission from Elsevier.