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Rev. 101816 adds Prenatal Guidelines. Rev. 092116 updates prevention of preterm labor, adds peds UTI, Peds Concussion and Peds TB.
# Emergency Department Guidelines

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Patient has severe suspected MRSA abscess with cellulitis and systemic symptoms or high risk condition (see Box 1)

Perform incision and drainage with local and/or systemic anesthesia.
Culture wound and break up loculations.
Place fixed Penrose drain if possible.

Consider Differential Diagnosis:
- Diabetic ulcer
- Necrotizing fasciitis
- Animal bite cellulitis
- Primary cellulitis
- Thrombophlebitis
- Erythema nodosum
- Venous stasis
- DVT
- Toxic shock syndrome
- Herpes zoster
- Fish finger

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)?

Outpatient management with daily follow-up. If outpatient vancomycin is selected, refer to YKHC clinical policy.

Admission with IV antibiotics. (See Box 3.)
If febrile or toxic: collect blood cultures, CBC, basic metabolic panel. Elevation and heating pad. Consider IV fluids. Address pain control. Consider imaging. (See Box 4.)

Consider wound care consult upon admission

Vancomycin:
Adherence to YKHC clinical policy is required if vancomycin is administered on an outpatient basis. (See Document Library or consult Pharmacy.) Remember, no outpatient vancomycin may be prescribed to patients <18 years old.

Pregnant Women: Consult HROB

Consider imaging. (See Box 4.)

Patient improving?

Manage as inpatient until meets criteria for outpatient management

Review culture and sensitivities

Discharge on routine outpatient medications (Septra, doxycycline, clindamycin if sensitive). See Outpatient Boil Management Guidelines for dosing. Consider discharge off antibiotics if cellulitis is resolved.

Bleach Baths
Start bleach baths daily for one week and then 1-2 times per week for all household contacts
- ¼ cup household bleach in a standard sized tub of water
- 1.5 mL household bleach per gallon of water for smaller tubs

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

Box 1:
High Risk Patients:
- Diabetes
- Immunosuppression
- Peripheral vascular disease
- Children <12 months
- Abscess/cellulitis on lower extremity or hand (concern for palmar space infection)
Systemic symptoms:
- Temp > 100.4
- Tachycardia
- Patient feels ill

Box 2: Criteria for Outpatient Management:
- 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

Box 3: Empiric Antibiotic Options
1. Vancomycin:
   • For adults: load with 30 mg/kg IV, then dose 20 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. May consider Clindamycin if sensitivities permit.
4. 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.

Box 4: Imaging
- Ultrasound for fluid pockets
- May consider CT when concern for deep abscess

Severe Abscess/Cellulitis
MSEC reviewed and approved 11/20/13
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: YKHC physician should receive confirmation of medevac activation within 30 minutes.

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

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.

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.
Village to Bethel Collaboration
Village Health Aide collaborates with provider (RMT provider, Night Float provider, or ER Physician) to make decision if medevac is indicated

Activation of Medevac
Activating provider calls LifeMed Dispatch with patient’s name, DOB, village, and diagnosis
LifeMed Dispatch 1-800-478-5433

Transfer Care to ER Physician
Activating provider completes PTO and takes PTO and provider notes to ER Physician who assumes care.

Bethel-Village Collaboration
ER Physician calls village Health Aide to get updates and continues to keep records on the RMT Form for Village to Bethel Medevacs

LifeMed Dispatch
1. LifeMed Dispatch notifies Grant Aviation/Pilot/LifeMed
   If LifeMed cannot launch (weather, runway lights) dispatch notifies ER Physician. Pilot will continue to check weather.
2. ER clerk faxes PTO, health summary, notes to Bethel LifeMed crew quarters
3. LifeMed crew contacts Village Health Aide and ER Physician for additional information prior to flying
4. If there is a prolonged delay (weather) it is crucial that LifeMed crew contacts the ER Physician and Health Aide prior to flying
5. In extenuating circumstances patient may need direct transport to Anchorage from village. After obtaining an accepting physician in Anchorage, YK MD will work with LifeMed for transport logistics.

LifeMed launches
1. Once in village LifeMed calls ER physician to report, establish treatment plan and gives Estimated Time of Arrival (ETA) to Bethel to ER Physician
2. ER Physician keeps Charge Nurse informed of patient status/ETA of Medevac

Arrival in Bethel
1. Patient care is transferred to ER staff and LifeMed gives report to YK MD and nursing staff
2. Completed transport chart placed in patient’s ER chart prior to departure of LifeMed staff

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.

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

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.

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.
**Adult Rapid Sequence Intubation**

- **Prepare**
  - In rapid succession with cricoid pressure held

- **Pre-Oxygenate**
  - 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

- **Premedicate**
  - 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 "prefasciculation dose" in pts with head trauma and possible elevated ICP to avoid the fasciculations associated with succinylcholine.

- **Induction**

- **Paralysis**
  - 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

- **Intubation**
  - 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

- **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)

- **Ongoing sedation/analgesia**

- **Paralysis if needed**

- **Ongoing reevaluation**

---

**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

**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.**
Pediatric Rapid Sequence Intubation

MSEC reviewed and approved 06/22/11

Prepare

Pre-Oxygenate

Premedicate

Induction

In rapid succession with cricoid pressure held

Paralysis

Intubation

Confirmation

Ongoing sedation/ analgesia

Paralysis if needed

Ongoing reevaluation

Choose any as appropriate to your patient:
1. atropine 0.01 mg/kg, (min of 0.1mg & max 0.5 mg) - consider for pts under 5 to decrease risk of bradycardia associated with airway manipulation and succinylcholine; also decreases secretions
2. fentanyl 2 – 4 mcg/kg - consider for pt with headinjury; beware rapid infusion can induce “rigid chest syndrome” always push slowly
3. lidocaine 1.5 mg/kg - consider for pts with head injury who maybe at risk for increased ICP; also consider in pts with asthma
4. rocuronium 0.1 mg/kg - consider a “prefasciculation 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 relevance 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; avoid in sepsis as it can cause cardiac depression
3. propofol 2-3.5 mg/kg – consider as an option especially in status epilepticus; often will cause hypotension, bolus with crystalloid prior to administration

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
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1. visualize tube through cords
2. End tidal CO2 detector turns and remains yellow after 6 breaths
3. fogg 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 (0.05-0.2 mg/kg) or continuous infusion (0.01-0.04 mg/kg/hr)
3. midazolam either as boluses (0.05- 0.4mg/kg) or continuous infusion (0.06-0.12 mg/kg/hr)

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.
Definitions
Sepsis - Suspected infection plus 2 or more of the following
- Temp > 38 (100.4) or temp < 36 (96.8)
- HR > 90 BPM
- RR > 20
- WBC > 12,000 or < 4,000 or > 10% immature cells (bands, meta, etc)

Severe Sepsis - sepsis plus 1 organ system dysfunction
- Acute lung injury
- Coagulation abnormality (INR > 1.5)
- Thrombocytopenia (<100,000)
- Altered mental status
- Renal, liver, or cardiac failure (Cr<2, bili > 2)
- Hypoperfusion with lactic acidosis (lactate > 4 mmol)
- Hypotension with systolic < 90 mm Hg

Septic Shock - hypotension despite crystalloid fluid resuscitation of 20-40 ml/kg

Goals
CVP 8 -12 mm Hg (12-15 if intubated)
MAP >/= 65 mm Hg
Urine output >/= 0.5 mL/kg/hr
Central venous O2 saturation >/= 70%
HGB > 10
Return to normal lactate in 24 hrs

Empiric antibiotics within 1 hour of recognition of severe sepsis/shock (see page 2)

BP unresponsive to pressors or at risk for AI?
See page 2

Aggressive glucose control: BS 80-150; consider insulin drip 0.1 units/kg/hr

Admit vs transfer

References
- Rivers et al. “Early goal directed therapy in the treatment of severe sepsis and septic shock” NEJM vol 345 No 19 Nov 9 2001 pp 1368-1377

This guideline is designated 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.
Empiric Antibiotic Recommendations by Suspected Source of Infection

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<tr>
<td>Unknown Source</td>
<td>vancomycin 15 mg/kg IV q 12 hrs and levofoxacin 750 mg IV q 24 hrs and gentamicin 7 mg/kg IV q 24 hrs</td>
</tr>
<tr>
<td>Community-acquired Pneumonia</td>
<td>vancomycin 15 mg/kg IV q 12 hrs and levofoxacin 750 mg IV q 24 hrs, or vancomycin 15 mg/kg IV q 12 hrs and ceftriaxone 2 gms IV q 24 hrs and azithromycin 500 mg PO/IV q 24 hrs</td>
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<tr>
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<td>consider gentamicin 7 mg/kg IV q 24 hrs if recently hospitalized, NH resident, bronchiectasis or recent antibiotics</td>
</tr>
<tr>
<td></td>
<td>consider clindamycin 900 mg IV q 8 hrs if at risk for aspiration</td>
</tr>
<tr>
<td>Meningitis</td>
<td>dexamethasone 10 mg IV prior to abx, vancomycin 15 mg/kg q 12 hrs and ceftriaxone 2 gms IV q 12 hrs and consider ampicillin 2 gms IV q 6 hrs for elderly and immunocompromized to cover for Listeria</td>
</tr>
<tr>
<td>Urinary tract</td>
<td>ampicillin-sulbactam 3 gms IV q 6 hrs or ceftriaxone 1 gm IV q 24 hrs and gentamicin 7 mg/kg IV q 24 hrs</td>
</tr>
<tr>
<td>Intra-abdominal/pelvic</td>
<td>ampicillin-sulbactam 3 gms IV q 6 hrs and gentamicin 7 mg/kg IV q 24 hrs and consider metronidazole 500 mg IV</td>
</tr>
<tr>
<td>Skin and soft tissue/</td>
<td>vancomycin 15 mg/kg IV q 12 hrs and ampicillin-sulbactam 3 gms IV q 6 hrs and clindamycin 900 mg IV q 8 hrs</td>
</tr>
<tr>
<td>Necrotizing infections</td>
<td>ceftazidime 2 gms IV q 8 hrs and vancomycin 15 mg/kg IV q 12 hrs and consider gentamicin 7 mg/kg IV q 24 hrs</td>
</tr>
</tbody>
</table>

*If concern for pseudomonas substitute piperacillin-tazobactam 3.375 grm IV q 6 hrs for ampicillin-sulbactam
*Gentamicin dosing based on ideal body weight.

Vasopressors

Note: all vasoactive substances should be infused via a central line with the exception of dopamine which can be infused via a peripheral IV at rates less than 10 mcg/kg/min.

1. Norepinephrine is vasopressor of choice in sepsis: 5-20 mcg/min IV infusion
2. Dopamine is an option, but causes more tachycardia: 5-20 mcg/kg/min
3. Phenytoine can be used for refractory hypotension associated with significant tachycardia. Start at 100 mcg/min IV infusion, titrate to goal of 60-200 mcg/min.
4. Vasopressin can be used for refractory hypotension: 0.01-0.04 U/min
5. Dobutamine maybe used for inotropic support if cardiac output is felt to be depressed. Dobutamine 2.5-20 mcg/kg/min IV infusion

Adrenal Insufficiency

The routine use of corticosteroids in sepsis is highly controversial. It is, however, clear that steroids are beneficial in those that are experiencing adrenal insufficiency. Some studies suggest that up to 50% of patients experiencing sepsis have AI. Also controversial is the potential for increased risk of AI with the use of etomidate. Additional persons at risk include: those with Congenital Adrenal Hyperplasia, and those on chronic or recent steroid therapy. In all patients with refractory hypotension consider hydrocortisone 100 mg IV q 6 hrs. Prior to administration, obtain a red top tube for later cortisol level determination.
Patient presents with symptoms suggesting Community Acquired Pneumonia

EXAM: Vital signs, pulse oximetry, Chest exam (Rales, Rhonchi or Crackles)

Obtain CXR especially if patient has ≥ 2 of these signs
Temp. > 100.4, HR > 100/min, Abnormal chest exam, RR> 20/min, O2 Sat <90%, H/O Chronic Lung Disease

CXR shows infiltrate?

Yes

One or more of the following: Comorbid condition or abnormal physical exam findings from PSI or Age ≥ 60?

Yes

Laboratory Findings
1. CBC
2. Comprehensive Metabolic Panel
3. +/- Blood CX x 2 (prior to ABX)
4. +/- Sputum
5. +/- ABG
6. +/- HIV

Outpatient Antibiotics
1. Doxycycline 100 mg po bid x 10 days OR
2. Tmp/Smx DS 1 po bid x 7 -14 days OR
3. Erythromycin 500 mg po qid x 7 – 14 days OR
4. Azithromycin 500 mg daily for Day 1 and 250 mg for Days 2-5

Outpatient Antibiotics
1. Levofloxacin 750mg PO QD x 7 days OR
2. amoxicillin or amoxicillin/clav AND azithromycin or cephalexin AND
3. Erythromycin 500 mg po qid x 7 days

Outpatient Antibiotics
1. Ceftriaxone 1 gm IV q 24 and
Azithromycin 500 mg IV Day 1 and 250 mg IV Days 2-5 AND
Strongly consider MRSA tx = Vanco 25-30 mg/kg IV loading first, then 15-20 mg/kg IV q8-12 hrs

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

PSI ≤ 70

No

PSI 71-90

Yes

Comorbidities or Clinical Status suggest treatment of LRTI?

No

Cough, sputum, dyspnea, pleuritic CP, fever

PSI 71-90

Yes

Outpatient Antibiotics
1. Levofloxacin 750mg PO QD x 7 days OR
2. Ceftriaxone 1 gm IV q 24 and
Azithromycin 500 mg IV Day 1 and 250 mg IV Days 2-5 AND
Strongly consider MRSA tx = Vanco 25-30 mg/kg IV loading first, then 15-20 mg/kg IV q8-12 hrs

Inpatient Antibiotics
1. Levofloxacin 750mg IV q 24 hrs x 7days OR
2. Ceftriaxone 1 gm IV q 24 and
Azithromycin 500 mg IV Day 1 and 250 mg IV Days 2-5 AND
Strongly consider MRSA tx = Vanco 25-30 mg/kg IV loading first, then 15-20 mg/kg IV q8-12 hrs

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 Education
1. Smoking
2. Cessation
3. Immunizations
   * Influenza
   * Pneumovac
4. PPD
5. Follow-up

Pneumonia Severity Index (PSI)
http://pda.ahrq.gov/clinic/psiacalc.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 disease +20
Congestive heart failure +10
Cerebrovascular disease 4 +10
Renal disease 5 +10

Physical Examination Findings
Altered mental status +20
Respiratory rate > 30/minute +20
Systolic BP < 90 mmHg +15
Temperature < 95 degrees F (35C) or > 104F (40C) +15
Pulse >125/minute +10

Laboratory Findings
pH < 7.35 +30
BUN > 20 mg/dl (11 mmol/L) +20
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
Fleural effusion +10

Patient with O2 sat <90%, homelessness, multilobar pneumonia or risk for aspiration may warrant hospitalization despite their risk classification.

1. Neoplastic disease – any cancer, except basal or squamous cell carcinoma of the skin active at the time presentation.
2. Liver disease – clinical or histologic cirrhosis or chronic active hepatitis.
3. CHF – documented with history, physical exam or CXR findings; echo, MUGA; or left ventriculogram.
4. CVD – clinical diagnosis of stroke or TIA; or documented stroke on CT or MR
5. Renal disease – chronic renal disease or abnormal BUN or creatinine.

05-13-11
Acute Ischemic Stroke

MSEC reviewed and approved 06/22/11

Pt presenting with symptoms of acute stroke?

Was the pt seen normal within the last 4.5 hours?

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

Was the pt seen normal within the last 4.5 hours?

Yes

No

Not Eligible for TPA, continue routine care.

Does the pt have hemorrhage?

Yes

No

Not Eligible for TPA, continue routine care

Evidence of large infarct?

Yes

No

Not Eligible for TPA, continue routine care

Is BP > 185/110?

Yes

No

Perform Exclusion check list

Does pt meet criteria?

Yes

No

Not Eligible for TPA, continue routine care

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

Consider consultation with neurologist if available

Perform informed consent with pt and family

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

Uptodate ,www.uptodate.com/contents/reperfusion-therapy-for-acute-stroke>
*NIH Stroke Scale (NIHSS) calculator: <www.mdcalc.com/NIH-stroke-scale-score-nihss>
Protocol for Management of Patients who are held under Title 47

**MSEC approved 9/29/05**

**MSEC reviewed/revised 8/26/09**

**Title 47 Hold**

**Yukon Kuskokwim Health Corporation**

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.

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

2. **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

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

4. **TITLE 47?**
   - **Yes**
     - **DISCHARGE FROM EMERGENCY DEPARTMENT**
       - Once behavioral health plan is in place
   - **No**
     - **Assess (1) degree of suicidality, (2) risk of harm to self/others, or (3) grave disability**

5. **Psychosis present?**
   - **Yes**
     - **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
   - **No**
     - **Assess (1) degree of suicidality, (2) risk of harm to self/others, or (3) grave disability**

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

7. **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

8. **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

9. **Transfer to API, North Star, or Providence?**
   - **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
   - **No**
     - **Proceed with admission if Title 47**

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.
Consult ANMC Cardiology to confirm indication, consider alternative, and need for antiarrythmic 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

Persistent bradycardia with hypotension?

Restoration of sinus rhythm?

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

Yes

Atropine 0.5 mg IV x 2 if needed

Yes

No

Refer to ACLS protocol

No

No

Continued bradycardia or hypotension?

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

Yes

Yes

RESYNCHRONIZE Repeat shock at 100 J

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

RESYNCHRONIZE Repeat shock at 360 J

No

Yes

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

Yes

No

No

No

No

No

Yes

Yes

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

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

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Note
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 pm chest pain
- MSO4 2-4 mg IV, repeat in 5 min for effect

Focused history and physical exam
Focus on fibrinolytic therapy analysis

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

Assess 12 Lead EKG

Non-Diag. EKG

Complete H&P to risk stratify (DM,CAD,CHF)

1st set of markers positive at 0-6 hrs?

Positive markers?

High Risk Patient?

Yes

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

No

Outpatient work-up

No

Yes

ANMC consult

1. Aspirin ec 81-325 mg po q day
2. Consider Metoprolol
3. Consider Enoxaparin 1mg/kg sq q 12 hrs
4. Consider nitroglycerin paste or IV

Yes

ANMC consult - depending on clinical situation, consider inpatient work-up, outpatient work-up, or transfer.

Consult ANMC and transfer

Repeat markers at 6-12 hrs

Yes

Enoxaparin 1mg/kg sq q 12 hrs

Nitroglycerin IV or paste

Consider a glycoprotein 2b3a inhibitor

No

ANMC consultation

High Risk Criteria

ST Depression / T-wave Inversion

If HR>60 and SBP>100 and no signs of pulmonary edema:
- Metoprolol 5 mg IV q 5 min x 3 doses
- Metoprolol 50 mg po x 1dose

Yes

Time from onset < 12 hrs?

Thrombolysis, if no contraindication
- Goal - door to drug < 30 min.

No

Consult ANMC

ST Elevation in 2 contiguous leads or new LBBB

Consider activating medevac

If HR>60 and SBP>100 and no signs of pulmonary edema:
- Metoprolol 5 mg IV q 5 min x 3 doses
- Metoprolol 50 mg po x 1dose

Nitroglycerin 5mcg/min IV and titrate to 200 mcg/min for effect and SBP>90

Enoxaparin 1mg/kg sq q 12 hrs

Persistent chest pain?

Yes

Outpatient work-up

No

ANMC consultation

Continual Monitoring & Assessment
Admit or transfer

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.

Fibrinolytic Therapy Recommendations

<table>
<thead>
<tr>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest pain suggesting MI, ST - segment elevation &gt;0.1 mV (1mm) in 2 or more contiguous ECG leads or new LBBB, time to therapy &lt; 12 hours, age &lt; 75 years (age &gt; 75 years Class Iia), evidence of ongoing ischemia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Absolute contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 (&gt;180/110); terminal illness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent major surgery: cerebrovascular dz; recent GI 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 &gt; 75; currently on oral anticoagulants (Coumadin); recent gp 2b/3a inhibitor; platelet &lt;100,000, conditions where bleeding would be difficult to manage</td>
</tr>
</tbody>
</table>

YUKON-KUSKOKWIM HEALTH CORPORATION

Diagnosis and Treatment of Acute Myocardial Infarction

MSEC approved 1/28/03

MSEC reviewed/revised 8/26/09

Yukon Kuskokwim Health Corporation

Clinical Guidelines • October 2016

For non-native patients, please consult Alaska Cardiology Associates
Spinal Cord Injury

Mechanism of Injuries associated with Spinal Cord Injury
- Motorvehicle Crashes
- Hanging
- Diving Injury
- Falls more than 10 feet

Blunt Spinal Cord Injury Suspected from Mechanism of Injury

Maintain a patent airway with C-spine immobilization

Oxygen via nonrebreather face mask

Place and maintain two large bore IV’s

Does patient require intubation?

Intubate patient while maintaining C-spine precautions

Neurogenic shock present?

Consider Administration of Methylprednisolone

Note: the benefit of steroid therapy in acute spinal cord injury is modest at best with a high incidence of adverse events. Use of steroids should be considered carefully and in consultation with the accepting surgeon on a case by case basis.

1. IV Bolus 30mg/kg over 15 min. x 1
2. Maintain IV with NS at prescribed rate for 45 min.
3. Maintenance dose of Methylprednisolone IV 4mg/kg to run over 23 hours
4. Ranitidine 50 mg IV Q 12 hours

*Entire amount of Methylprednisolone must be given within 24 hours. (if infusion inadvertently stopped, new flow rates should be calculated so that the remaining dose is given within 24 hours)

Consider Administration of Methylprednisolone

Evaluate for side-effects of Methylprednisolone

1. Increased intracranial pressure
2. Peptic ulcer perforation
3. Electrolye & calcium imbalance
4. Hyperglycemia
5. Hypertension

Contraindications for Methylprednisolone Administration

1. Hypersensitivity to Methylprednisolone
2. Systemic fungal infection
3. Renal transplant patient
4. Pregnancy
5. History of TB
6. Peptic ulcer disease

Treat with appropriate vasopressors

Is spinal cord injury due to blunt trauma and is patient within 8 hours of injury?

No

Continue to reassess Airway, Breathing, Circulation and patient status

Yes

1. Place nasogastric tube and foley catheter
2. Monitor and maintain body temperature

Reassess Sensory, Motor, and Glasgow Coma Scale

Medivac patient 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.

Please see Adult RSI Protocol

Yukon Kuskokwim Health Corporation

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.

MSEC reviewed and approved 06/22/11
First Trimester Vaginal Bleeding

Yukon Kuskokwim Health Corporation

MSEC reviewed and approved 06/22/11

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

Remember to give Rhogam if Rh negative

- Obtain labs: CBC, blood type and Rh, quantitative β-HCG
- Perform pelvic exam
- Obtain pelvic ultrasound

Patient followed daily with β-HCG and abdominal exams

β-HCG rising?

No

Yes

High risk for ectopic pregnancy: consult ANMC OB/GYN or HROB for further management

Threatened SAB
Patient to stay in Bethel until bleeding subsides, follow β-HCG every 48 hours until bleeding resolves or pregnancy non viable

Viable pregnancy?

Yes

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

No

If patient elects D&C option:
- Consult HROB
- Dr. Elizabeth Roll is also available for D&C
- Consider office-based D&C (Dr. Roll)
- 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

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 β-HCG to zero (may get labs drawn in village)

If patient elects wait and see option
- Must be reliable patient
- Must stay in Bethel
- Must follow up every 48 hours for repeat β-HCG
- Must follow β-HCG to zero (may get labs drawn in village)

If patient follows daily with β-HCG and abdominal exams

β-HCG > 1500?

No

Yes

Threatened SAB
Patient to stay in Bethel until bleeding subsides, follow β-HCG every 48 hours until bleeding resolves or pregnancy non viable

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.

General Principle:
Patients must stay in Bethel until they have demonstrated that the uterus is empty and there is minimal continued bleeding.
For pediatric patients <12 years of age, please consult Poison Control, 800-222-1222 and Peds on call.

Patient presents with single acute acetaminophen ingestion

If polysubstance overdose or Tylenol PM overdose, contact Poison control

- Intentional overdose?
  - Notify BH on call

Hours post ingestion

- <4 hours
  - 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.

- 4-8 hours
  - Draw acetaminophen blood level, CMP and LFTs

- > 8 hours or unknown
  - Consider consult with Poison Control. Draw acetaminophen blood level, CMP, LFTs, INR, start therapy with acetylcysteine while awaiting results

Below toxicity

- Plot results on nomogram

  - Yes
    - LFTs normal?
      - Yes
        - Discharge home if cleared by Behavioral Health
      - No
        - Consider delayed diagnosis of overdose, other causes of elevated LFTs, hepatitis, etc.

  - No
    - Admit to hospital, see IV and PO acetylcysteine dosing charts

Above toxicity

- Acetylcysteine per protocol – IV or PO

Recheck blood acetaminophen level, CMP, LFTs, INR

- Acetaminophen <10 and normal LFTs
  - Discontinue therapy

- LFTs elevated, or INR > 2 or hepatic encephalopathy
  - Repeat third dose and consult Poison Control

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.

May contact Poison Control 800-222-1222 at any time for assistance or questions.
### Loading dose for oral acetylcysteine

<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>
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<tr>
<td>70-79</td>
<td>154-174</td>
<td>11</td>
<td>55</td>
<td>165</td>
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<tr>
<td>60-69</td>
<td>132-152</td>
<td>10</td>
<td>50</td>
<td>150</td>
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<tr>
<td>50-59</td>
<td>110-130</td>
<td>8</td>
<td>40</td>
<td>120</td>
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<tr>
<td>40-49</td>
<td>88-108</td>
<td>7</td>
<td>35</td>
<td>105</td>
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<tr>
<td>30-39</td>
<td>66-86</td>
<td>6</td>
<td>30</td>
<td>90</td>
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<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.

### Maintenance dose for oral acetylcysteine

| Maintenance Dose* |
|-------------------|------------------|
| (kg)              | (lb)             |
| 100-109           | 220-240          | 7.5 | 37 | 113 | 150    |
| 90-99             | 198-218          | 7   | 35 | 105 | 140    |
| 80-89             | 176-196          | 6.5 | 33 | 97  | 130    |
| 70-79             | 154-174          | 5.5 | 28 | 82  | 110    |
| 60-69             | 132-152          | 5   | 25 | 75  | 100    |
| 50-59             | 110-130          | 4   | 20 | 60  | 80     |
| 40-49             | 88-108           | 3.5 | 18 | 52  | 70     |
| 30-39             | 66-86            | 3   | 15 | 45  | 60     |
| 20-29             | 44-64            | 2   | 10 | 30  | 40     |

*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)

Also go to website [www.acetadote.net](http://www.acetadote.net) and there is a dosing calculator where you can enter the exact weight of the patient and get each of the 3 doses.

---

### 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></td>
<td>Acetadote (mL)</td>
<td>Acetadote (mL)</td>
<td>Acetadote (mL)</td>
</tr>
<tr>
<td>100</td>
<td>75</td>
<td>25</td>
<td>50</td>
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<tr>
<td>90</td>
<td>67.5</td>
<td>22.5</td>
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<td>70</td>
<td>52.5</td>
<td>17.5</td>
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<td>50</td>
<td>37.5</td>
<td>12.5</td>
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<tr>
<td>40</td>
<td>30</td>
<td>10</td>
<td>20</td>
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### 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></td>
<td>Acetadote (mL)</td>
<td>Diluent (mL)</td>
<td>Acetadote (mL)</td>
</tr>
<tr>
<td>30</td>
<td>22.5</td>
<td>100</td>
<td>7.5</td>
</tr>
<tr>
<td>25</td>
<td>18.75</td>
<td>100</td>
<td>6.25</td>
</tr>
</tbody>
</table>

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

<table>
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<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>
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</thead>
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<td></td>
<td>Acetadote (mL)</td>
<td>Diluent (mL)</td>
<td>Acetadote (mL)</td>
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<tr>
<td>20</td>
<td>15</td>
<td>60</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>11.25</td>
<td>45</td>
<td>3.75</td>
</tr>
<tr>
<td>10</td>
<td>7.5</td>
<td>30</td>
<td>2.5</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).*
Clinical Guidelines  • October 2016

Acutely Intoxicated ER Patient

MSEC reviewed and approved 06/22/11

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 a T-47

Patient is an adult with a medical problem

Patient is an adult without a medical problem

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 kept in Emergency Department

Behavioral Health on-call is notified

Admit to inpatient unit

Discharged to home

Transferred to another facility

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 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.

Discharge to sober adult willing to take custody of the patient prior to the patient being sober.
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<td>Ectopic Pregnancy Diagnosis/</td>
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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.

**First Trimester Vaginal Bleeding/Ectopic Pregnancy Diagnosis/Treatment of Non-Viable Early Pregnancy**

- **Patient presents with positive pregnancy test, vaginal bleeding in first trimester**
  - **Hemodynamically stable?**
    - **YES**
      - **Has a previous US showed a viable IUP?**
        - **NO**
          - **Obtain labs: CBC, blood type and Rh, quantitative HCG**
          - **Perform pelvic exam**
          - **Refer to Rhogam policy if Rh negative**
          - **Is Transvaginal US available?**
            - **NO**
              - **Consult HROB for Evaluation and/or transfer.**
            - **YES**
              - **Transvaginal US?**
                - **IUP?**
                  - **NO**
                    - **HCG > 2000?**
                      - **YES**
                        - **Ectopic pregnancy**: consult HROB or ANMC OB/GYN for further management
                      - **NO**
                        - **Viable IUP?**
                          - **NO**
                            - **Threatened SAB**
                              - **SEE PAGE 2**
                          - **YES**
                            - **NONVAILABLE PREGNANCY**
                              - **SEE PAGE 2**
                    - **YES**
                      - **Viable IUP?**
                        - **NO**
                          - **Threatened SAB**
                            - **SEE PAGE 2**
                        - **YES**
                          - **NONVAILABLE PREGNANCY**
                            - **SEE PAGE 2**
                - **YES**
                  - **Ectopic pregnancy**: consult HROB or ANMC OB/GYN for further management

- **All patients with first trimester vaginal bleeding must come to Bethel for evaluation ASAP**
- **All patients with abdominal pain and a positive Urine Qualitative hCG should be assumed to have an ectopic pregnancy until proven otherwise.**
- **Medevac if in village, ABCs and consult HROB if in Bethel**
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?

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

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

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

Return to Village
### 1 Nomenclature
- **Viable** – A pregnancy is viable if it can potentially result in a liveborn baby.
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- Mean sac diameter of ≥25mm and no embryo
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### 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.

---

**Diagram Flowchart**

**Pregnancy of Uncertain Viability**

- Is an intrauterine embryo with a heartbeat present?
  - Yes → Begin Prenatal Care
  - No → Are any findings in #2 present?
    - Yes → NONVIALBLE PREGNANCY SEE PAGE 2
    - No → Is the quantitative hCG > 3000?
      - Yes → Repeat Quantitative hCG daily until >3000 or it decreases
      - No → hCG >3000
        - Yes → IUP?
          - No → NONVIALBLE PREGNANCY SEE PAGE 2
          - Yes → NONVIALBLE PREGNANCY SEE PAGE 2
        - No → HCG falling or Findings from #2?
          - YES → NONVIALBLE PREGNANCY SEE PAGE 2
          - NO → Begin Prenatal Care

**Transfer care to HROB for management plan 98% chance of nonviable pregnancy. Confirm with at least 1 additional US or hCG before treating for ectopic pregnancy.**
**Clinic Guideline for Treatment of Ectopic Pregnancy**

**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?**

- Yes
  - **Adnexal Mass >3cm**
    - Cardiac activity
    - Pregnancy in location other than a tube
      - **No**
        - Consult HROB for immediate surgery or transfer
      - **Yes**
        - Platelets, Kidney and Liver function Normal?
        - **Yes**
          - 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.
            - **YES**
              - **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 nonpregnant 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 nonpregnant hCG levels are reached.
            - **NO**
              - If the hCG >5000?
                - **YES**
                  - If at any time the hCG level rises during the monitoring of weekly hCG levels, consult a GYN Oncologist for further treatment.
                - **NO**

**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 than 3.5cm
- Embryonic cardiac motion

**If at any time the hCG level rises during the monitoring of weekly hCG levels, consult a GYN Oncologist for further treatment.**
Village Health Aide calls with a pregnant patient concern for labor

Obtain patient’s chart and verify dating criteria if available

Patient’s gestational age is >36 completed weeks

Have village health aide assess for frequency and strength of uterine contractions, bleeding, fetal heart tones, uterine tenderness, etc.

Give terbutaline 0.25 mg SQ every 30 minutes for up to 3 doses and rehydrate patient with IV or PO fluids, consider ibuprofen 800 mg PO, consider ceftriaxone 1 gram IM,

Consider consult HROB on call

Contraction stop

Consult HROB and consider medevac activation

Is patient past her Be In Bethel date with signed BIB form?

Yes

If no life-threatening conditions exist or develop in mother or infant, no medevac is indicated.

If patient delivers in village, both mother and infant to OB on first available commercial flight

Observe in clinic for 1-2 hours and to Bethel on first available commercial flight

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.
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 mucous/plug

Fetal Fibronectin in PTL

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

Sterile speculum vaginal exam to assess for cervical dilation and obtain:
- A wet mount for bacterial vaginosis
- A Fetal Fibronectin
- GBS culture

Patient with bacterial vaginosis?

Is cervix dilated ≥ 3 cm?

Positive fetal fibronectin?

Is cervical length > 3cm?

Is patient contracting > 6 times/hour?

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

Refer to Preterm Labor Guide

Routine Care

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

- Limit activity
- No coitus
- Work limitation/cessation
- Keep in Bethel
- Weekly clinic visits

Refer to HROB conference or call HROB on call to discuss plan

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.
First prenatal visit: Screen all women with a HgA1C

<6.4%

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

Screening test: non-fasting Plasma glucose
Value 1 hour post 50 gram glucose load

140 - 179 mg/dL

Oral glucose Tolerance Test: 3 hour 100 gram load scheduled within one week

≥6.4%

≥180 mg/dL

Diagnostic Criteria for IGH/GDM utilizing three hour 100g GTT

Impaired glucose Homeostasis

- Fast glucose > 95 mg/dL

Pregnancy with one of the following levels:

- 1 hour glucose > 180 mg/dL

Gestational Diabetes Mellitus

- 2 hour glucose > 155 mg/dL

Pregnancy with two or more of the following levels:

- 3 hour glucose > 140 mg/dL

Give patient log book to document goals, blood glucose, and food plan.

Dispense glucose meter and strips.

Urine Ketone test if ill, inadequate wt gain/loss, &/or BG>200

Refer to DM educator (543-6133, beeper: #3140)

Patient will record blood glucose levels fasting and 2 hours after 3 meals

Medical nutrition therapy and physical activity goals reviewed

Weekly phone follow up by DM educators

Bimonthly review at high risk OB round

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?

Yes

Initiate Insulin Therapy or oral glyburide/metformin

Consult OB/GYN for dosing assistance

Patient to record SMBG levels before breakfast, 2 hours after start of 3 meals, and occ. at 3:00am if FBS consistently elevated

SMBG targets reached after 1 week?

Yes

No

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

All patients with GDM get tested at the 6 week post-partum visit with 2 hour 75 gram glucose load, normal is <200

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

Risk Factors for GDM

- Pre-existing obesity (BMI>30)

- Macrosomia

- Repetitive glycosuria

- History of GDM

- Diabetes in 1st degree relative

- Infant malformations

- Maternal age >35

- High-risk ethnic group

- Multiple fetal loss

- Use of medication causing hyperglycemia

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.
Clinical Guidelines for Management of Group B Streptococcus (GBS) colonization in Pregnancy

**Yukon Kuskokwim Health Corporation**

MSEC reviewed and approved 06/22/11

---

**Intrapartum Maternal GBS Risk Factors**
- Suspected chorioamnionitis
- Previous infant delivered with invasive GBS
- GBS during pregnancy
- Labor at ≤ 37 weeks gestation
- Ruptured membranes ≥ 18 hours
- Intrapartum temp > 100.4

---

**Flowchart: Intrapartum Maternal GBS Risk Factors**

1. **Patient in Labor?**
   - Yes → **Gestational age > 37 weeks?**
     - Yes → **Negative**
     - No → **Yes**
   - No → **No need for treatment**

2. **No** → **Yes** → **Gestational age > 37 weeks?**
   - Yes → **Negative**
   - No → **Yes**

3. **Negative** → **Genital GBS culture results?**
   - No → **Yes**
   - Yes → **Give maternal Intrapartum Antibiotic Prophylaxis**

4. **Yes** → **Previous infant with GBS invasive disease OR GBS bacturia with this pregnancy?**
   - Yes → **Give maternal Intrapartum Antibiotic Prophylaxis**
   - No → **No further work-up or treatment recommended**

5. **First Line Antibiotic**
   - PenG 5M units IV load, then 2.5 M units q 4 hours until delivery
   - **Second Line Antibiotic**
   - Ampicillin 2g IV load, then 1g q 4 hours until delivery

---

**Intrapartum GBS Prophylaxis**

- **Penicillin Allergy?**
  - Yes → **No**
  - No → **Yes**

- **Patient with a history of any of the following:**
  - Anaphylaxis
  - Angioedema
  - Respiratory distress
  - Urticaria

- **Isolate susceptible to clindamycin and erythromycin?**
  - Yes → **Yes**
  - No → **No**

- **Clindamycin 900mg IV q 8 hours until baby delivered.**

---

**Cefazoline (Ancef) 2gms IV load, then 1 gm IV q 8 hrs until baby delivered.**

**Vancomycin g IV q 12 hrs until delivery.**
High-Resolution OB Ultrasound Referral

MSEC reviewed and approved 06/22/11

Pregnant female between 18-24 EGA

Does the patient have a risk factor requiring referral?

Yes

Refer for genetic counseling with ANMC perinatology

No

Schedule the patient for a YKHC OB U/S at 18-24 wks EGA

Perform OB U/S at YKHC

Are the OB ultrasound results normal per radiology?

No

Refer to ANMC OB or Providence Perinatal Center for high level U/S and definitive treatment plan

Yes

Continue routine prenatal care as prescribed by YKHC practitioner

Risk Factors

- Advanced Maternal Age - ≥35 years of age at due date
- History of autoimmune disease (i.e., Lupus)
- Pre-gestational Diabetes requiring insulin - must have high resolution U/S and fetal echo at 18 weeks
- Positive serum or ultrasound screening for aneuploidy in first or second trimester
- Multiple gestation – Obtain YKHC ultrasound ASAP and refer to HROB for decision to send the patient to ANMC
- Positive antibody screen with identified antibody and titer
- Thrombophilia (protein C or S def, Antithrombin III def, Factor V Leiden and Antiphospholipid Syndrome) - must have U/S every 4-6 weeks to monitor fetal growth, AFI and placental grading
- Polyhydramnios (AFI>25 or pocket >8cm) - must have a HROB consult
- Significant maternal heart disease (i.e., congenital or rheumatic heart disease)
- Maternal Tuberculosis or HIV
- Chronic hypertension with poor control
- Family history of AGS, MLD or other inherited genetic disorders
- Previous fetus with anomaly

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.
C-section Perioperative Care

C-Section called by Physician/High-Risk OB

Stat < 30 minute
Page EMERG. STAT C-SECTION

Stat < 60 minute
Page URGENT C-SECTION

Elective
Call the OR to schedule

Fetal Monitoring
- If fetal scalp electrode, keep attached and monitored until told to remove by surgeon.
- If ultrasonic fetal heart rate monitor, maintain and record in the operating room until the prep is performed.

Prophylactic Antibiotics
- Cefazolin (Ancef) 2 gms IV x 1 dose within 60 minutes of the start of the cesarean section.
- If patient is allergic to Cefazolin: Clindamycin 900 mg IV plus Gentamycin 1.5 mg/kg IV

Fetal Monitoring
- NST during preoperative assessment.
- Fetal Heart Rate after regional anesthetic or before general anesthetic.

Nurse Responsibilities to Prepare for the OR
- Perform preoperative checklist
- Fetal monitoring
- IV access, 18g or larger
- Labs: Type and Screen, CBC
- Ensure that informed consent has been obtained
- Give 30 ml of bicitra orally

Nurse Responsibilities in OR
- Nursing/Anesthesia applies monitors to patients
- Nursing positions patient for anesthesia
- Nursing positions and secures patient for C/S (supine with uterine displacement to left)
- Nursing obtains post anesthesia fetal monitoring record
- Anesthesia monitors anesthesia per standard.
- Circulating nurse performs skin prep with Chloroprep
- Foley Catheter is inserted.
- Patient draped by physicians and scrub tech
- Surgery proceeds.

Patient in PACU - Post C-Section
- The patient receives standard PACU care per PACU protocols.
- Transfer to OB when criteria for discharge is met

Patient returns to OB - Post C-Section
- Abdominal dressing to removed by the surgeon or by order of the surgeon.
- Foley catheter to be removed by order of the surgeon.
2nd Stage of Labor

Vital Signs q15 minutes, temperature q1 hour

Continuous fetal heart rate and contraction monitoring

Primiparous

Delivery completed within 2 hours?

Yes

No

Consult High-Risk OB

Multiparous

Delivery completed within 1 hour?

Yes

No

3rd Stage of Labor

Pitocin IV -20 units/ 1 liter LR at 125cc/hr

Begin infusion immediately after delivery of the anterior shoulder to decrease the risk of postpartum hemorrhage†

Delay cord clamping by up to 2 minutes if clinical situation allows. Place baby on the lower abdomen of the mother and perform initial assessment in that location.†

Obtain cord blood after cutting the umbilical cord, keep constant light pressure on cord until delivery of placenta

Document 3 vessel umbilical cord

Refer to Postpartum Orders

Yes

Placenta delivered within 30 minutes of delivery?

Yes

No

Consider:

- Intraumbilical injection of pitocin (10units)
- Manual extraction of placenta and/or High-Risk OB consult

† This is preferred but can be delayed until placental delivery per provider preference.

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.
Preterm Labor — Bethel

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

**Associated with preterm birth:**
- PPROM
- Chorioamnionitis
- Fetal anomalies
- H/o prior PTL
- Multiple gestation
- Polyhydramnios
- IUFD
- Cervical insufficiency
- Uterine anomalies
- Placenta previa
- Abruptio placentae
- Serious maternal disease (i.e., preeclampsia)
- Cervical conization or LEEP
- Idiopathic
- Domestic violence
- Motor vehicle accident

**BOX 1: Contraindications to tocolysis:**
- IUFD
- Lethal fetal anomaly
- Non-reassuring fetal assessment
- Severe IU GR
- Chorioamnionitis, relative
- Maternal hemorrhage with hemodynamic instability
- Severe preeclampsia or eclampsia

**BOX 2: Contraindications to terbutaline**
- Diabetes
- HTN
- Suspected placental abruption (relative)

---

**Clinical Guidelines** • October 2016

YUKON-KUSKOKWIM HEALTH CORPORATION

MSEC reviewed and approved 06/22/11
Patient arrives on Labor and Delivery for possible labor

Vital signs, wt, urine for protein/glucose, review pregnancy dating

Fetal monitoring x 20 minutes

Reactive strip?

Yes

Notify practitioner immediately

No

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

Yes

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

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

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

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

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

Confirm pathology molar pregnancy, complete or partial

Quantitative βhCG 48 hours after D&C and weekly

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

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 karotype, no fetus, diffuse villous edema and diffuse proliferation.

Partial Mole – a form of aberrant fertilization with proliferation of trophoblastic tissue with triploid karotype, a fetus may be present, focal villous edema and focal proliferation.

Choriocarcinoma – a malignant neoplasm arising from cytotrophoblast

Placental site trophoblastic tumor – a malignant neoplasma 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.

Administer Rhogam if Rh negative

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 be screened for anemia at the first prenatal visit, 24-28 weeks and 36 weeks.

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

- 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
Gestational Hypertension

**Gestational Hypertension (GH) Diagnostic Criteria**
- BP > 140/90 measured with an appropriately-sized cuff occurring after 20 weeks gestation

**Protein/Creatinine Ratio**
- >0.3

**Severe Preeclampsia**
- BP > 160/110, measured on two occasions at least 6 hours apart?
- Proteinuria (>5g/24 hrs) present?

**Mild Preeclampsia**
- Discuss in HROB meeting

**Obtain GH labs**
- NST/AFI or BPP

**Consider inpatient monitoring versus transfer to Anchorage.**

**Outpatient monitoring in Bethel**
- Office visit 1-2 time per week
- NST twice weekly
- AFI and GH labs one time a week
- Ultrasound for growth every 4 weeks.
- Transfer care to NW at 38 weeks for delivery or transfer to Anchorage

**Product/Creatinine Ratio**
- >0.3

**Signs and Symptoms (S/S) of Severe Preeclampsia**
- BP > 160/110
- Proteinuria > 5g/24 hr
- Elevated serum creatinine
  - (suspect if >1.0)
- Seizure activity
- Pulmonary edema
- Oliguria with UO < 500cc/24hr
- Microangiopathic hemolysis
- Thrombocytopenia (plt<100)
- Elevated SGOT > 30 LDH>600
- IUGR or oligohydramnios
  - (AFI<8)
- GH symptoms (headache, visual disturbances, RUQ abdominal and/or epigastric pain)

**GH labs:**
- CBC, creatinine, ALT, AST, uric acid, CCUA, random urine protein to creatinine ratio

**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.
A provider identifies a patient with iron deficiency anemia who can benefit from IV iron therapy.

**Calculate Iron Deficit (ID)**

ID = 3.3(Hemoglobin deficit x blood volume)

ID = 3.3((14 - Hg) x (weight in Kg x 65 ml/Kg)/100))

Example: Pt with Hg of 7 and weight 100 Kg.

ID = 3.3((14-7)(100 x 65)/100))

ID = 1501 mg

Divide the ID to give as 300 – 500mg doses

Provider completes an IV Iron PCC for each planned dose as an outpatient or writes the appropriate orders if the patient is admitted.

Nursing staff complete the infusion and schedule any follow up doses

**Can the patient remain in Bethel?**

- **YES**
  - Give doses weekly until ID corrected.

- **NO**
  - Give doses daily until ID corrected.
Clinical Guidelines  • October 2016

Anti-D Immune Globulin

MSEC reviewed and approved 06/22/11

Screening
All patients will have an ABO Rh and Antibody Screen done at their first visit

Rh Negative?
- No
  - ABO Rh on newborn after birth. No further testing of the patient for blood type.
- Yes

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

Other situations which require anti-D Immune Globulin
- Miscarriage/Abortion
- Ectopic Pregnancy
- Maternal Trauma, obtain KB and 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.

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

On OB in Labor
- Obtain ABO Rh and Antibody Screen on admission

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

Fetus Rh positive?
- No
  - No further workup or treatment
- 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
- No

Give the mother 300 mcg of anti-D Immune Globulin IM
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
  - Collagen-vascular disease
  - Hemoglobinopathies
  - 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: Consult HROB or Anchorage OB to discuss induction, monitoring, or transfer
- No

Is patient term?
- Yes: Repeat US in 4 weeks. Consider weekly fetal monitoring if EFW > 10th percentile but < 25th percentile
- No

Routine Prenatal Care
- Yes: Repeat US in 4 weeks. Consider weekly fetal monitoring if EFW > 10th percentile but < 25th percentile
- No

IUGR?
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?

Consult HROB or Anchorage OB to discuss treatment or diagnostic testing

Is patient term?

Consult HROB or Anchorage OB to discuss further testing, induction or monitoring

Consider oral hydration overnight with 2L H2O and repeat fetal testing

Oligohydramnios?

Consult HROB or Anchorage OB to discuss induction vs. transfer.

Counsel to improve fluid intake and routine care
Post Dates Pregnancy

**Bishops Score**

<table>
<thead>
<tr>
<th>Score</th>
<th>Dilatation</th>
<th>Effacement</th>
<th>Station</th>
<th>Position</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>closed</td>
<td>0 – 30%</td>
<td>-3</td>
<td>posterior</td>
<td>firm</td>
</tr>
<tr>
<td>1</td>
<td>1-2 cm</td>
<td>40 -50%</td>
<td>-2</td>
<td>mid-position</td>
<td>medium</td>
</tr>
<tr>
<td>2</td>
<td>3-4 cm</td>
<td>60 -70%</td>
<td>-1,0</td>
<td>anterior</td>
<td>soft</td>
</tr>
<tr>
<td>3</td>
<td>5+ cm</td>
<td>80+%</td>
<td>+1, +2</td>
<td></td>
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</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 patient’s medical practitioner.**
Induction of Labor

MSEC reviewed and approved 06/22/11

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

Start Pitocin

Follow OB Induction Policy

No

Cervical Ripening

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

Bishop's Score > 8?

No

Contact HROB or ANMC OB to develop plan for delivery.

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

Yes

Discuss and document progress and plan on a regular basis

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

Is progress being made every 2 hours?

No

Delivered?

Yes

Contact HROB or ANMC OB for Advice

Continue to monitor and adjust dose until delivery?

No

Begin active management of 3rd stage

Delivered?

Yes

Induction time frames for Diagnoses:
- Mild Preeclampsia: 39-40 weeks, must be delivered or transferred by due date
- Chronic Hypertension: 39-40 weeks, must be delivered or transferred by due date
- IHCP: 36-37 weeks, must be transferred prior to 37 weeks or induced or transferred immediately if diagnosed after 37 weeks.
- Post Dates: Deliver or transfer by 42 weeks.

Bishop's Score

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</table>
Early Pregnancy: Consider the diagnosis if:
- History of severe itching is past pregnancy
- Unexplained stillbirth
- Hx of IHCP

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’k population
- 5% incidence of Stillbirth
- MUST have elevated bile acids or LFTs
- 40-70% recurrence in subsequent pregnancies

Pruritus Gravidarum:
- Weekly BPP after 32 weeks
- Symptomatic treatment
- Deliver for usual indications
- Recheck Bile Acids and LFTs if symptoms change

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 Phosphotase -> 300 units/L

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.
Diagnostic Criteria
History of hypertension (BP>140/90) prior to pregnancy
or
Persistent hypertension (BP>140/90) prior to 20 weeks gestation
or
Hypertension (BP>140/90) persisting beyond 12 weeks post-partum

First Prenatal Visit with history of Chronic Hypertension
Obtain GH labs†.

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 preeclampsia‡, obtain GH labs†.
3. Aspirin 81 mg daily between 12-37 weeks gestation to prevent complications

Serial fetal U/S every 4 weeks after 28 weeks to evaluate growth.

Superimposed Preeclampsia present?
Yes
Refer to Gestational Hypertension Guideline
No

Third Trimester
1. Monitor BP every two weeks.
2. If patient with symptoms of severe preeclampsia‡, obtain GH labs.
3. NST two times a week and amniotic fluid assessment once a week 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

†GH labs:
CBC, creatinine, ALT, AST, uric acid, Urine Protein/Creatinine Ratio, CCUA

‡Symptoms of Severe Preeclampsia
- Right upper quadrant pain
- Persistent headache
- Severe hypertension
- Visual changes
- Oligohydramnios
- Thrombocytopenia
- Liver function abnormalities

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.
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
  - No: Cervical length US from 16 to 23 week q 2weeks
    - Cervical length <25mm? Yes: Consult HROB immediately for consideration of cerclage
    - No: Continue HROB plan per Alert note

No:
- Screening cervical length ultrasound
  - No: Routine Prenatal Care
  - Yes: Cervical length <20mm? Yes: Begin Progesterone 200mg vaginally qhs, Refer to HROB meeting for additional care plan

* The Obstetrics Case Managers will maintain a patient list in RAVEN to communicate the patients prescribed this intervention.
Unit Structure:
The obstetrics unit of the Yukon Delta Regional Hospital has the capability to perform emergency cesarean sections as part of normal obstetric care during the intrapartum period. The operating room staff, obstetric nurses, North wing physician staff and the high-risk obstetricians (HROB) on call can respond to emergency situations as needed during before or after labor. A family practice perform vaginal births is in the hospital 24 hours a day. Obstetrical nursing is staffed to an appropriate level based on AWHONNN standards. An operating room team including certified nurse anesthetist, scrub nurse and circulating nurse is on-call 24 hours a day. An HROB physician is on-call 24 hours a day to provide obstetrical consultation and surgical services as needed.

Definitions:
- **Labor**: Regular and painful uterine contractions that cause cervical change.
- **Active Labor**: The cervix is 6 cm dilated and there are regular and painful uterine contractions.
- **Adequate Labor**: Contraction every 3 minutes with a 50 torr rise above baseline (internal monitor) or contractions every 3 minutes lasting at least 45 seconds that palpate strong (external monitor).
- **Provider capable of performing a cesarean section**: The HROB physician on-call.
- **Admission**: Occurs when labor has been diagnosed, or when decision is made to deliver the patient. Observation to determine if the patient is in labor is not considered admission.
- **Anesthesia**: Refers to a CRNA who is privileged by the hospital.
- **OR Team**: One person competent to scrub for a cesarean section and one person competent to circulate during a cesarean section. These may be OR technicians, LNA, CNA, LPN, or RN.

Risk Assessment:
- Each patient will be evaluated for risk factors associated with decreased VBAC success and uterine rupture. This will be done at least 3 times during the patient’s prenatal course:
  » During an HROB conference soon after the patient’s first prenatal visit.
  » By the HROB on-call at 36 weeks after the patient’s Be-in-Bethel (BIB) visit.
  » By the HROB upon admission in labor.
- The association of factors related to an increased risk of uterine rupture has not been able to be translated into the reliable prediction of uterine rupture (1, 2). Patients without risk factors may experience uterine rupture.
- There is limited data on outcomes for women with multiple risk factors present. Some studies suggest that even when multiple risk factors are present, VBAC success rates are often at least 50% or higher (3). All patients should receive counseling about the assumed relative risk for VBAC success and uterine rupture. Management plans for these outcomes should be reviewed with the patient.

Low Risk Patient: Risk for uterine rupture approximately 0.3-0.7%.
- 1 or 2 prior low transverse cesarean section(s)
- Spontaneous onset labor
- No need for augmentation
- No repetitive FHR abnormalities
- Patients with a prior successful VBAC are especially low risk. However, their risk status escalates the same as other low risk patients.

Medium Risk Patient: Risk for uterine rupture is likely greater than 0.7%.
- Induction of labor
- Oxytocin augmentation
- < 18 months between prior cesarean section and current delivery.
- 3 or more prior low transverse cesarean sections.

High Risk Patient: Patients who have intra-partum signs or symptoms that may be associated with uterine rupture or failure of vaginal delivery (4).
- Recurrent clinically significant deceleration (variable, late or prolonged fetal heart rate decelerations) not responsive to clinical intervention
- Significant bleeding of uterine origin
- New onset of intense uterine pain
- 2 hours without cervical change in the active phase despite adequate labor

Prenatal Management:
- Records of prior delivery reviewed, including type of uterine incision and method of closure. Evaluate history of previous uterine surgery. Patients will only be approved for VBAC at YDRH if they have a documented transverse lower uterine segment scar that was closed in two layers.
- Appropriate patient education brochure given to patient and reviewed with patient.
- Appropriate VBAC consent reviewed during prenatal care and signed. This will be documented after the 1st prenatal visit, at the BIB visit.
and upon admission in labor.

- Informed consent should include a discussion of the following.
  » A description of the process of risk assessment.
  » The ability of the institution to care for the patient, based on her risk level.
  » The process of transfer of care, should it become necessary based on risk factors.
  » Institutional management plans for uterine rupture.
- Anesthesia consultation/evaluation per institution guidelines.
- If the primary OB provider cannot perform a cesarean section, consultation with provider privileged to perform a cesarean section.

**Basic Intra-partum Care Recommendations for all VBAC Patients:**

- Review with the patient the risks/benefits of proceeding with VBAC on admission. Determine if the patient’s risk level has changed, or patient choice has changed. This review should be documented in the medical record.
- Estimated fetal weight will be documented by the HROB or north wing physician.
- Lab/Blood Bank Preparation
  » CBC and Type and Screen.
- Anesthesia personnel notified of admission.
- Pediatric personnel notified of admission.
- OR Team notified of admission and plan in place if cesarean delivery needed.
  » Does not mean an OR is kept open for patients at low risk.
- In Active Labor (6 cm dilated).
  » Continuous Electronic Fetal Monitoring.
  » Place 18 gauge IV.
  » HROB on-call notified.
- All patients attempting VBAC should have their labor progress monitored carefully to ensure adequate progress. Arrest of labor is associated with decreased VBAC success and uterine rupture.

**Intra-partum Management:**
The laboring patient will be monitored and cared for based on obstetric policy for all laboring patients with the exceptions noted above.

**Low Risk Patient:**

- No additional interventions other than those listed above.
- The HROB may be at home within 1.5 miles of the hospital.
- Cesarean delivery provider may have other acute patient care responsibilities.

**Medium Risk Patient:**

- We recommend that these patients have a cesarean section. In some cases, when delivery is imminent, labor may be allowed to continue with careful counseling.
- The HROB on-call must come to the hospital. Cesarean delivery provider may have other acute patient care responsibilities.
- An open and staffed operating room is available or there is a plan in place if immediate delivery is required. This may be a room where there is adequate lighting, instruments, and general anesthesia can be administered if needed.
- An anesthesia provider is present in the hospital during the active phase of labor.

**High Risk Patient:**

- We recommend that these patients have an immediate cesarean section.

**Caveats:**

- Misoprostil WILL NOT be used in these patients.
- Patients with two prior cesarean sections will NOT be approved for VBAC at the YDRH.
- Patients with a single layer closure of the uterus will NOT be approved for VBAC at the YDRH.
- Patients who present for delivery at YDRH in labor with a previous cesarean and no plan of management will be evaluated by the HROB on-call. A risk assessment will be done and the patient will be counseled. If the risk cannot be adequately assessed, the patient will be offered a repeat cesarean section.

**Proposed Performance Measure:**
The percentage of patients for whom there is documented risk status at the time of admission, and documented change in risk status during labor, should that occur.

### Complication Rates Associated With VBAC and Planned Cesarean Birth
(Includes preterm and term births. (22)

<table>
<thead>
<tr>
<th>Complication</th>
<th>VBAC Attempt</th>
<th>Planned Cesarean Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uterine Rupture</td>
<td>468/100,000</td>
<td>26/100,000</td>
</tr>
<tr>
<td>Maternal Death</td>
<td>4/100,000</td>
<td>13/100,000</td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>No significant difference</td>
<td>No significant difference</td>
</tr>
<tr>
<td>Blood Transfusion</td>
<td>No significant difference</td>
<td>No significant difference</td>
</tr>
<tr>
<td>Maternal Infection</td>
<td>No significant difference</td>
<td>No significant difference</td>
</tr>
<tr>
<td>Infant Infection</td>
<td>Insufficient information</td>
<td>Insufficient information</td>
</tr>
<tr>
<td>Infant Bag and Mask Ventilation Required</td>
<td>5,400/100,000</td>
<td>2,500/100,000</td>
</tr>
<tr>
<td>Transient Tachypnea of the Newborn (TTN)</td>
<td>3,600/100,000</td>
<td>4,200/100,000</td>
</tr>
<tr>
<td>Infant with Brain Injury (HIE)</td>
<td>Insufficient information</td>
<td>Insufficient information</td>
</tr>
<tr>
<td>Infant death in pregnancy or within 7 of birth (Perinatal Death Rate)</td>
<td>130/100,000</td>
<td>50/100,000</td>
</tr>
<tr>
<td>Infant death within 30 days of birth (Neonatal Death Rate)</td>
<td>110/100,000</td>
<td>60/100,000</td>
</tr>
</tbody>
</table>


### References:


Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventative Services Task Force

I Evidence obtained from at least one properly designed randomized controlled trial.

II–1 Evidence obtained from well–designed controlled trials without randomization.

II–2 Evidence obtained from well–designed cohort or case–control analytic studies, preferably from more than one center or research group.

II–3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A—Recommendations are based on good and consistent scientific evidence.

Level B—Recommendations are based on limited or inconsistent scientific evidence.

Level C—Recommendations are based primarily on consensus and expert opinion.
Guidelines for Prenatal Care

**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

**15–21 Weeks**

- Quad screen to be drawn, if desired, must be drawn between 15 and 21 weeks gestation
- Review TB status

**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, 25-OH Vitamin D, 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
## Pediatrics Guidelines

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Infant 0-90 days with recorded or reported rectal temperature ≥100.4°F

Evaluation and management in Bethel

Sick-appearing

Well-appearing with age-appropriate normal vital signs

0-28 days

29-90 days

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

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

Meets all Low Risk Criteria?

No

Yes

Strongly consider performing LP if stable. Consider giving antibiotics (see Treatment box).

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).

Treatment

No febrile infant <90 days should receive antibiotics without an LP.
- 0-28 days: ampicillin 50 mg/kg IV Q6h AND cefotaxime 50 mg/kg IV Q8h
- 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
- If worried about HSV, acyclovir 20 mg/kg IV Q8h with IVF and consult pediatrics.

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.

3. Unsuccessful LP: treat if appropriate and attempt repeat LP in 12-24 hours and determine treatment course based on cell counts. If unsuccessful, either treat for 10 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.

HSV Risk Factors

Seizure
Maternal history of oral or genital HSV in infant <28 days who was delivered vaginally

HSV Work-up:
- CSF HSV PCR
- Blood HSV PCR
- CMP
- Nasopharyngeal, conjunctival, and anal swabs and vesicle fluid for HSV PCR.

HSV Risk Factors

Seizure
Maternal history of oral or genital HSV in infant <28 days who was delivered vaginally

HSV Work-up:
- CSF HSV PCR
- Blood HSV PCR
- CMP
- Nasopharyngeal, conjunctival, and anal swabs and vesicle fluid for HSV PCR.

Normal CSF 0-28 days 29-90 days
WBC <20 <10
Glucose >40 >40
Protein <120 <120

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.

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
- No thrombocytopenia
- U/A with negative nitrates, negative leukocyte esterase, <10 WBC

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 2/10/16
Child less than 5 years of age with concern for UTI

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

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

If RMT from village refer to Bethel for further evaluation.

Ensure urine culture is sent.

Patient appearing toxic?

Yes

Consider empiric treatment with cephalexin 30 mg/kg/dose Q8h x10 days. May defer empiric treatment and await culture sensitivities.

No

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

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

Treat per sensitivities. May narrow coverage.

No

No UTI. Stop antibiotics.

If first UTI, renal ultrasound when available to evaluate anatomy.

Renal abnormality identified.

Second febrile UTI.

VCUG when radiologist in Bethel.

NOTE: DO NOT treat any child under 5 years of age empirically in the village.
- If patient has dysuria, increased frequency, enuresis, and/or abnormal clean catch urinalysis, consider further evaluation in Bethel.
- Do not routinely collect urine via bag.
- Do not treat a UTI without a culture in progress.
- Do not routinely perform a test of cure.
- Do not routinely start UTI prophylaxis.

NOTE: Any infant with a fever <90 days must go to the Emergency Department for evaluation.

Approved by MSEC 9/14/2016.
**Table 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 (Keflex), or Septra for AOM.
- Do not use antibiotic prophylaxis.

**Table 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  
Ciprodex 3-5 drops BID x10 days

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.

**Table 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

**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 reassuring 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 peds as needed.  
  - If afebrile and well-appearing, lab work-up not necessary. May treat with oral or otic antibiotics as appropriate.

**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
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.

Tachypnea
0-2 mo: >60
2-12 mo: >50
12-24 mo: >40

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

Please see Pediatric Community-Acquired Pneumonia Clinical Guideline

Wheezing

Institute SUPPORTIVE MEASURES
Then reassess respiratory distress

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

Obtain CXR

Evidence of pneumonia?
Yes
No

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

- 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?

No

Yes

When Admitting, Use PowerPlan to Order:
- Nasal suction
- IVF
- Prn nebs
- Consider scheduled nebs
- No deep (nasopharyngeal) suctioning
- Respiratory assessments
- Consider hypertonic (3%) saline – may need to use with albuterol

Admit to YKHC Peds Inpatient Unit

After 48-72 hours

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?

Yes

No

Consider:
- Nasal steroids or neosynephrine
- More frequent albuterol/hypertonic saline nebs
- Racemic epi neb

Improvement?
Yes

No

Discharge home with close follow-up within a week

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.

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.

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 2/11/15
Clinical Guidelines • October 2016
Pediatric Community-Acquired Pneumonia (CAP >3 Months)

REMEMBER: If patient is <90 days and febrile, please see fever guidelines.

Cough ± fever

Institute SUPPORTIVE MEASURES
Then reassess respiratory distress

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

Mild or no respiratory distress
Intermittent tachypnea, increased work of breathing, and/or hypoxia

• CXR (PA & lateral)
• CBC, CRP, and blood culture
• RSV and flu if <3 years
• Sputum culture if >5 years and able

Consider CXR if <5 years old given high rates of pneumonia in Alaska Native population.

Pneumonia
No pneumonia

Pneumonia
No pneumonia

Treatment
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

-Requires >2 L supplemental oxygen to prevent hypoxia or improve WOB?
-Requires neb treatments more frequently than Q2-3h for >8 hours?
-Sustained tachycardia, tachypnea, or respiratory distress despite treatment?
-Significant pleural effusion?

Transfer to Anchorage

Admit to YKHC Peds Inpatient Unit, using PED Admission/Respiratory Infection PowerPlan

After 48-72 hours

• 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?

No

Yes

Improvement?

• Consult pediatrics.
• Consider repeating CXR and labs.
• Consider IVF.

No

Yes

Treatment for 10 days
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

• Place PPD if older than 6 months and no PPD in past 6 months.
• Discharge home with follow-up within 48-72 hours.

For PCN allergy: If reaction was non-anaphylactic, may trial amoxicillin with monitoring. If reaction was anaphylaxis, treat with a cephalosporin. If any questions, please obtain a pediatrics consult.

Azithromycin: Do not prescribe azithromycin unless there is evidence of an atypical pathogen and child is >5 years.

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

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.
DDx Stridor
- croup
- foreign body
- tracheomalacia
- angioedema
- tracheitis
- epiglottitis
- abscess

NOTE: Remember that mild croup can present with no stridor. Consider the diagnosis in a toddler with a “barky” or a “seal-bark” cough.

In Village
If no racemic epinephrine available, mix 1 mL of 1:1000 epi with 1 bullet of NS and give via nebulizer. May give up to 5 mL of epi, using dose of 0.5 mL/kg.

NOTE: If at any time, patient develops signs or symptoms of severe croup or impending airway obstruction, activate a medevac without delay.

Clinical Guidelines • October 2016
Pediatric Stridor

Child 6mo-3yrs with stridor

If croup is suspected

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.

Is there stridor at REST?

Yes

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 improvement after 30 minutes?

Yes

Monitor in clinic for 4 hours.

Does patient meet Low-Risk Criteria?

Yes, meets Low-Risk Criteria

- Discharge home with follow-up within 24 hours in same setting.
- May need to re-dose dexamethasone in 24 hours.
- Counsel parents to return for recurrent stridor and/or increased WOB.
- Give PEDS Custom Croup Education Handout.

No, does not meet Low-Risk Criteria OR child worsens during observation period

No

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.

High-Risk Signs
- drooling
- lethargy
- tripod position
- marked retractions
- tachycardia
- cyanosis or pallor

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.

Low-Risk Criteria

Approved by MSEC 12/17/14

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) for Pediatric Patients

Patient with severe sustained retractions or sustained hypoxia <88% not improved with SUPPORTIVE MEASURES (see box) and 2 LPM conventional nasal cannula or infant with apnea responsive to stimulation.

Page respiratory therapist.

Page pediatrician on-call.

• Transfer to ER.
• Activate medevac.
• PREPARE PATIENT (see box).

RT to start high-flow nasal cannula with pediatrician consultation.

Initial Settings
Flow 5 LPM, FiO2 50%, 37°C.
For newborns, consult neonatologist.

Titrated flow by 1 LPM over first 3 minutes until improvement in WOB. If patient is worsening on high flow rates, consider a trial of a lower flow rate.

Titrated FiO2 to maintain sats >92%.

Frequent nasal suction

Reassess at least Q20-30 minutes.

Signs of Clinical Improvement
• ↓RR
• ↓retractions
• ↓irritability
• Improved air movement

If no improvement, consider obtaining blood gas, increasing supportive measures, intubation, etc.

Maintain current settings until medevac arrives.

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 saline

PREPARE PATIENT
• Make patient NPO.
• Ensure reliable IV access.
• Suction nares well.
• Give phenylephrine 0.25% 1-3 sprays to each nostril once.
• 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 car seat or special seat for positioning.
• 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. High-flow cartridge to be used with larger cannula and produces flow rates of 5-40 LPM.

Troubleshooting
• Consider NG/OG-tube for decompression.
• Consider mild sedation in consultation with medical control.
• Consider higher levels of flow to reduce condensation problems and improve washout.

REMEMBER:
• Any 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 patient may be kept at YKDRH on HFNC unless medevac is on weather-hold.

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 2/10/16
First Non-Febrile Seizure

MSEC reviewed and approved 11/12/13

**Seizure lasting >5 minutes**

Yes

Obtain detailed history (See Box 1) and perform focused neurologic exam

No

Perform work-up as appropriate. (See Box 2)

Follow-up with pediatrics to consider EEG, MRI, and/or neurology consult.

At discharge, prescribe Diastat (rectal diazepam gel). No daily antiepileptics are indicated unless:

- Recurrent seizures
- Atypical seizures
- Recommended by neurology consult

**Status Epilepticus:**

1. Call Pediatrics
2. Start treatment per Broselow Weight-Based Critical Care Sheet or Pediatric Critical Care PowerPlan.

**GET BEDSIDE GLUCOSE**

3. If patient is in village, use IV form of diazepam (Valium). Give 0.5 mg/kg RECTALLY. May repeat q5 minutes up to three total doses. Prepare bag and mask prior to giving.

**Box 1: History**

**Associated features:**
- Age
- Family history
- Development
- Health at onset of seizure
- Precipitating factors (trauma, toxins)

**Symptoms during seizure:**
- Abnormal jerking/shaking, eye movements or deviation, head positioning, posturing, stiffening, lip smacking, blinking
- Loss of consciousness or decreased responsiveness
- Irregular respirations or cyanosis
- Abnormal vocalizations
- Drooling, incontinence, vomiting
- Aura

**Post ictal symptoms:**
- Confusion
- Lethargy
- Transient focal weakness (Todd’s paralysis)
- Nausea/vomiting
- Irritability

**Differential Diagnosis of Convulsions:**
- Breath holding
- Syncope
- Arrhythmia

**Underlying Causes of Seizures**
- Hypoglycemia
- Hyponatremia
- Meningitis
- Trauma
- Metabolic disorder
- Infection
- Hypoxia
- Tumor
- Cerebral hemorrhage

**Box 2: Work-up**

**Labs:**
- Obtain bedside glucose and electrolytes, including magnesium

**Consider:**
- Urine drug screen
- Perform LP if persistent altered mental status, meningitis suspected, or < 12 months of age and delayed return to baseline
- Other labs as indicated by history and physical exam

**Radiological studies:**
- Obtain head CT if history of trauma or focal neurological findings

**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 patient’s medical practitioner.
First Febrile Seizure

Does the presentation meet low risk febrile seizure criteria? (See Box 1)

Consult Pediatrics

Obtain bedside glucose and electrolytes, including magnesium. Look for source of fever. Do not routinely obtain head CT.

Meningeal signs present? (See Box 2)

Perform a lumbar puncture

Consider performing a lumbar puncture, given that signs and symptoms of meningitis in a child <18 months may be absent or subtle

LP results abnormal

Start ceftriaxone 100 mg/kg IV Consult Pediatrics

1. Discharge patient with pediatrics follow-up.
2. Educate parents concerning febrile seizure. Give febrile seizure education handout.
3. Treat infection if appropriate.
4. EEG unnecessary.

If bacterial meningitis is suspected by LP and/or history and exam, give dexamethasone 0.15 mg/kg IV BEFORE OR CONCURRENT WITH ANTIBIOTICS.

Box 1
Low risk febrile seizure criteria
1. 6 mo to 3 years of age AND
2. Fever present AND
3. Seizure generalized (nonfocal) AND
4. Seizure duration <15 min AND
5. Child has normal neurologic examination AND
6. Child has no history of previous neurologic or CNS abnormality AND
7. Only one seizure in a 24 hr period.

Box 2
Meningeal Signs
1. Irritability or inconsolability
2. Nuchal rigidity
3. Bulging fontanelle
4. Lethargy or somnolence
5. Focal neurologic findings

Clinical Guidelines • October 2016

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.
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.
Sinusitis in Children > 5 Years Old

**Fever and rhinorrhea in >5 years old**

Consider sinusitis

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

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

**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

**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/day PO 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.

**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 children and are unsafe under 6 years old.

If no improvement

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.

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 4/8/15
Group B Streptococcal (GBS) — Newborn

**Intrapartum Maternal GBS Risk Factors**
- Chorioamnionitis
- Previous infant with invasive GBS disease in past 5 weeks
- GBS colonization status unknown
- GBS colonization during this pregnancy
- Labor at ≤ 37 weeks gestation

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

† Note: If mother receives Clindamycin, Vancomycin, or Erythromycin for GBS prophylaxis, provider may consider a limited work up of the neonate

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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 patient’s medical practitioner.**
Infant Hip Exam Findings

Dislocated or dislocatable hip
Laxity or mild instability
Stable hip and female
Stable hip and male

Repeat exam in 1-2 weeks

Urgent appointment with Orthopedics
Dislocation or persistent instability
Risk Factors: History of breech or positive family history

Yes
No

Refer for imaging (See Box) If positive, refer to Orthopedics.

Imaging
1. Hip ultrasound: at 6-8 weeks, up to 4 months of age. Refer to Alaska Regional.
2. X-ray, AP & Frogleg: over 4 months of age.

Routine exams at WCC

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.

Approved by MSEC 4/8/15
Clinical Guidelines • October 2016
Suspected Child/Adolescent Sexual Abuse Procedure

A suspicion, allegation, disclosure, or confession of child sexual abuse occurs.

No further questioning or examination of child unless medical emergency.

Mandatory reporters must report to:
Office of Children’s Services
AND
AST if incident occurred in village
OR
BPD if incident occurred in Bethel

Law enforcement will contact CAC to arrange interview if indicated and coordinate travel arrangements to Bethel.

Interview will be conducted by CAC forensic interviewer at CAC.

<96 hours since abuse
Call SART on-call phone to see if there is a pediatric-certified SART examiner available. If not, law enforcement will arrange travel to Alaska CARES for acute exam.

>96 hours since abuse
• The CAC will call Scheduling department at 543-6442 during business hours to arrange a one-hour “CAC Follow-up” appointment with a pediatrician during regular clinic hours.
• This will be the next available appointment.
• The Scheduling Manager can assist if problems arise.
• Patient may return in the future for this appointment.

Appointment May Include:
• Pregnancy test
• GC/CT testing and treatment
• HIV and RPR testing
• Hepatitis panel
• Referral to Behavioral Health
• Follow-up in 6 months for repeat HIV testing

If exam reveals concerning findings (e.g., evidence of injuries), please call law enforcement to arrange travel to Alaska CARES for forensic exam.

For emergency medical concerns including active bleeding, copious discharge, or significant pain, AST or BPD will arrange to bring patient to ER for emergent evaluation and treatment.

Mandatory Reporters include:
Medical providers, nurses, health aides, teachers, social workers, law enforcement officers, and mental health professionals.
• Report should be made by the professional who was made aware of the concern.

Phone Numbers
SART on-call phone: 545-4273 (if no answer, ER can page the on-call SART nurse)
Office of Children’s Services (OCS): 543-3141
Alaska State Troopers (AST): 543-2294
Bethel Police Department (BPD): 543-3781
Child Advocacy Center (CAC): 543-3144 or 543-3456

Approved by MSEC 2/10/16

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

**Succinylcholine**

**Absolute contraindications:**
- Family/personal history of malignancy
- Hyperthermia
- Hyperkalemia
- Chronic myopathy or denervating neuromuscular disease (e.g., MLD)
- Post-burn or crush injury

**Relative contraindications:**
- Elevated ICP or intraocular pressure
- Pseudocholinesterase deficiency

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.
Head injury in a child 5-18 years

At time of evaluation:
- GCS = 15
- Normal mental status

No symptoms

History of any of the following:
- headache
- nausea/vomiting
- difficulty concentrating
- amnesia
- LOC < 1 minute
- sleepiness

Consider head CT. Observe in ER 4-6 hours.

Improving

Discharge with outpatient follow-up in 1-3 days.

Not improving

Consider admission for observation of presumed concussion or discharge with follow-up the next day.

Worsening

Perform head CT. Consult trauma specialist. Transfer to Anchorage for observation.

Avoid medications that can worsen somnolence. Consider prescribing acetaminophen, ibuprofen, and ondansetron as needed.

Outpatient Follow-Up
- Complete ACE at every visit.
- Consider balance testing.
- Return to school per CDC Heads Up Protocol. (http://www.cdc.gov/headsup/index.html)
- Return to play per ASAA Guidelines.
- If symptoms persist > 3-4 weeks, consider referral to neurologist, psychologist, physical therapy, etc.

**Severe Mechanism of Injury**
- Fall > 3 feet
- Motor vehicle accident with ejection, rollover, or fatality
- Unhelmed bike/pedestrian vs vehicle
- Struck by high-impact object

Approved by MSEC 9/14/2016.
ACUTE CONCUSSION EVALUATION (ACE)
Emergency Department (ED) Version v1.4
Gerard Gioia, PhD & Micky Collins, PhD
1Children’s National Medical Center
2 University of Pittsburgh Medical Center

Patient Name
DOB: ___________ Age: ___________
Date: ___________ ID/MR#: ___________

---

A. Injury Characteristics

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) __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 __Duration ______

---

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>
<th>Other Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Balance problems</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Dizziness</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Visual problems</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>Numbness/Tingling</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL Total (0-10)</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>COGNITIVE Total (0-4)</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
<tr>
<td>SLEEP Total (0-4)</td>
<td>0 1</td>
<td>0 1</td>
<td></td>
</tr>
</tbody>
</table>

Patient Participation: Full __ Partial __ None __
Reason for Partial/None: Young Age__ Confused__ Inattentive__ Low arousal__ Emotional Upset__ In Pain__ Other_________

---

C. Concussion History:

<table>
<thead>
<tr>
<th>Previous#</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache History:</td>
<td>Prior treatment for headache N ___ Y___ Details________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

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

© Copyright G. Gioia & M. Collins, 2006
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.

- **Patient monitoring in the primary care physician office.**
  - **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.
# Acute Concussion Evaluation (ACE) OP 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_ _Lft Temporal_ _Rt Temporal_ _Lft 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>COGNITIVE Total (0-4)</td>
<td>SLEEP Total (0-4)</td>
</tr>
<tr>
<td>Visual problems</td>
<td>EMOTIONAL (4)</td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>Irritability</td>
<td>0 1</td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>Sadness</td>
<td>0 1</td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td>More emotional</td>
<td>0 1</td>
</tr>
<tr>
<td>Numbness/Tingling</td>
<td>Nervousness</td>
<td>0 1</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></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? <em>Y</em> <em>N</em></th>
<th><em>√</em></th>
<th>Headache History? <em>Y</em> <em>N</em></th>
<th><em>√</em></th>
<th>Developmental History</th>
<th><em>√</em></th>
<th>Psychiatric History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous # 1 2 3 4 5 6+</td>
<td><em>√</em></td>
<td>Prior treatment for headache</td>
<td></td>
<td>Learning disabilities</td>
<td></td>
<td>Anxiety</td>
</tr>
<tr>
<td>Longest symptom duration</td>
<td></td>
<td>History of migraine headache</td>
<td></td>
<td>Attention-Deficit/ Hyperactivity Disorder</td>
<td></td>
<td>Depression</td>
</tr>
<tr>
<td>Days_ Weeks_ Months_ Years__</td>
<td></td>
<td><em>Personal</em> Family_</td>
<td></td>
<td>Sleep disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If multiple concussions, less force</td>
<td></td>
<td>caused reinjury? <em>Yes</em> <em>No</em></td>
<td></td>
<td>Other developmental disorder</td>
<td></td>
<td>Other psychiatric disorder</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*  _Yes_ _No_ _N/A_
- *Looks very drowsy/can’t be awakened*  _Yes_ _No_ _N/A_
- *Can’t recognize people or places*  _Yes_ _No_ _N/A_
- *Neck pain*  _Yes_ _No_ _N/A_
- *Seizures*  _Yes_ _No_ _N/A_
- *Repeated vomiting*  _Yes_ _No_ _N/A_
- *Increasing confusion or irritability*  _Yes_ _No_ _N/A_
- *Unusual behavioral change*  _Yes_ _No_ _N/A_
- *Focal neurologic signs*  _Yes_ _No_ _N/A_
- *Slurred speech*  _Yes_ _No_ _N/A_
- *Weakness or numbness in arms/legs*  _Yes_ _No_ _N/A_
- *Change in state of consciousness*  _Yes_ _No_ _N/A_

## 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_
- _Referral:_
  - _Neuropsychological Testing_
  - _Physician: Neurosurgery_ _Neurology_ _Sports Medicine_ _Physiatrist_ _Psychiatrist_ _Other_
  - _Emergency Department_

ACE Completed by: __________________________ MD RN NP PhD ATC

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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.

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: 2

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 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, multi-tasking 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).4-6

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.8-11

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/clinician should also complete the ACE Care Plan included in this tool kit.)

1. Physician/clinician 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 Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Begin when symptom free for 24 hours. 15 min of light aerobic activity: walk, swim, stationary bike. <strong>NO</strong> resistance training.</td>
<td></td>
</tr>
<tr>
<td>Day 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>Day 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>Day 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>Day 5</td>
<td>Return to Practice, Non-contact Limited Participation: Routine sport-specific drills</td>
<td></td>
</tr>
<tr>
<td>Day 6</td>
<td>Return to Full-Contact Practice</td>
<td></td>
</tr>
<tr>
<td>Day 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: ____________________________
Date: ____________________________
Parent Printed Name: ____________________________
Date: ____________________________
Initiation of ADHD Medications

Yukon Kuskokwim Health Corporation

Schedule 40 minute appointment with pediatrician for initial evaluation for ADHD

Send or fax Vanderbilt ADHD evaluation forms to health aide to get parent and teachers to complete and fax or scan back

Vanderbilt positive for ADHD with comorbid conditions

Can start a trial of stimulants and refer to BH to continue care and/or co-manage*

Vanderbilt negative for ADHD

Address concerns and other referrals as needed

Vanderbilt positive for ADHD

Vanderbilt** forms completed by caregiver and teacher and reviewed and scored by pediatrician before, at or after the appointment.

Start low-dose trial of stimulants

Follow-up ADHD evaluation every 6 months with a pediatrician with Vanderbilt** forms completed preferably prior to appointment

Continued follow-up and medication adjustment until stable effective dose is achieved

**Completed Vanderbilt forms need to be filed in the consult section of the chart

*It is preferable for BH to manage any patients requiring higher dose stimulants or other BH medications

MSEC reviewed and approved 06/22/11
Family calls pharmacy to request refill 14 days prior to needing medication

Regular dose of meds and no other BH meds?

To BH for further medication renewal

No

Med refill request and chart to pediatrician in house

Pediatrician reviews history and medication reconciliation

Yes

Patient has:
1. Had an appointment every 6 months for ADHD
2. Complied with BH evaluation if requested
3. Been taking medication regularly

Pediatrician completes medication refill request for 22 or 30 days with no refills. Pharmacy must have original signature and DEA number in pharmacy

Completed medication refill form filed under pharmacy section

Yes

Needs appointment with pediatrician and re-evaluation

No

Restarting ADHD Medications

Off meds for greater than 2 months

If patient has been off medication for >1 year follow initiation of ADHD meds protocol

Off for school vacation?

Yes

If no prior problems with medication, pediatrician to restart medication at previous dose

No, or no good explanation

40 minute appointment with pediatrician
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.
Outpatient Guidelines

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**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

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
   - 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**

- **MNT-** Medical Nutrition Therapy
- **SMBG-** Self Monitored Blood Glucose
- **PPG-** Postprandial Glucose

---

**Goals Reached at 2-3 months?**

- **Yes**: Monitor using SMBG Targets and Lab Monitoring & continue medication therapy

- **No**: Place referral order in RAVEN “Refer to Diabetes Program Internal”

**Goals Reached at 2-3 months?**

- **Yes**: Place referral order in RAVEN “Refer to Diabetes Program Internal”

- **No**: Place referral order in RAVEN “Refer to Diabetes Program Internal”

---

**YKHC Approach to Starting Insulin**

(Double-click to see reference)

---

**Antihyperglycemic Therapy Chart**

(Double-click to see reference)

---

**Definitions**

- **MNT:** Medical Nutrition Therapy
- **SMBG:** Self Monitored Blood Glucose
- **PPG:** Postprandial Glucose

---

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- **No**: Place referral order in RAVEN “Refer to Diabetes Program Internal”

---

**Antihyperglycemic Therapy Chart**

(Double-click to see reference)

---

**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.
**Clinical Guidelines** • October 2016

**Type 2 Diabetes**

**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.)

- **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%.

- **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 SMGB target reached.
- **For hypo**: Determine and address cause; ↓ corresponding dose by 2-4 U or 10-20%.

- **Add 1 rapid insulin** (insulin aspart; regular insulin) **injection before largest meal**
- **Change to premixed insulin** (insulin protamine aspart/insulin aspart or NPH insulin) **twice daily**
- **If not controlled, consider basal-bolus**
- **Add ≥ 2 rapid insulin injections before meals** (**"basal-bolus"**)
Pus pocket or well-defined, tender, firm, red mass present?

See Severe Abscess/Cellulitis Clinical Guideline

Patient with systemic symptoms or at high risk (see Box 1)?

Perform incision and drainage after anesthetizing with lidocaine and remember to address pain.

Culture wound and break up any loculations if possible

Hot packs/soaks q2-4 hours and rest/elevation if cellulitis present

Boil with cellulitis >10 cm or 1% BSA in child (size of child’s palm)?

Evaluate in Bethel. Consider oral antibiotic therapy (See Box 2) and/or repeat incision and drainage.

Is patient clinically improving after 48 hours?

Follow-up in 24 hours.

Is patient clinically improving?

Daily follow-up until continuous improvement is demonstrated

Start or change antibiotics.

Perform repeat incision and drainage if appropriate. Follow-up daily.

Is patient clinically improving after 24-48 hours?

Admit to inpatient unit and follow Severe Abscess/Cellulitis Clinical Guideline

PREVENTION
- Clean all steambath seating areas in the main steambath AND on the porch with a dilute bleach solution (1:10 dilution).
- Clean steambath frequently if many people are using it.
- Sit on a barrier that is cleaned with bleach after every use.
- Do not take steam baths when skin infection present.

**Box 2: Empiric Oral Antibiotic Therapy**

Adults:
- Septra DS 2 tab PO q12 hours or
- Septra SS 4 tabs PO q12 hours x10 days (Do not give to pregnant women > 32 wks or < 9 weeks)

Children:
- Septra 5-7.5 mg/kg PO q12 hours x10 days.
- Adult with sulfa allergy:
  - Doxycycline 100mg PO q12 hours x10 days.
- Children with sulfa allergy:
  - ≥8 years: Doxycycline 2 mg/kg PO q12 hours x10 days. (Max dose 100 mg/dose.)
  - <8 years: Clindamycin 10 mg/kg PO q8 hours x10 days. (Max dose 300 mg/dose.)

Pregnant Women:
- Clindamycin 300mg PO q8 hours x10 days Consult HROB if not improving in 48 hours

Bleach Baths

Start bleach baths daily for one week and then 1-2 times per week for all household contacts
- ¼ cup household bleach in a standard sized tub of water
- 1.5 mL household bleach per gallon of water for smaller tubs

**Box 1:**

**High Risk Patients:**
- Diabetes
- Immunosuppression
- Peripheral vascular disease
- Children < 12 months
- Abscess/cellulitis on lower extremity or hand (concern for palmar space infection)

**Systemic symptoms:**
- Temp > 100.4
- Tachycardia
- Patient feels ill

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.
Symptoms not consistent w/ GERD
Intolerance, Biliary Colic, PUD
Symptoms, Gastritis Symptoms

Patient presents With symptoms
suggesting GERD
And is examined

Follow-up EGD every
2 yrs with biopsy
Maximize medical therapy
Barrett’s esophagus

Warning Symptoms & Signs
Esophageal Symptoms
Extraesophageal Symptoms
Chronic chest pain, cough, hoarseness, asthma

Warning Symptoms & Signs
Dysphagia, weight loss, bleeding

Endoscopy
(EGD)
Exam & Evaluation
Consider CXR, EKG, CBC
Further work-up needed to exclude other diagnosis

Further work-up consistent with
GERD?
Lifestyle Modification
(referring to education sheet)
Empiric Trial
1. Ranitidine 150-300mg bid x 8 wks if failure to follow therapy
occurs at any time during trial, convert to rabeprazole 20mg po
daily x 8 wks
2. Omeprazole 20mg daily for 8 weeks

Empiric Trial
Symptom relief after 2 weeks of empiric trial?
Yes
Stop meds after 2 months and observe off meds for 2 weeks
No
Consider further work-up and other diagnoses

Continue medication and monitor symptoms
Unable to tolerate meds or desires surgery
Yes
Surgery Consult

Stop meds after 2 months and observe off meds for 2 weeks
Do symptoms recur off medication?
No
Consider further work-up and other diagnoses
Yes
Continue Lifestyle Modification Only
No coffee, no tobacco, weight loss

Place on continuous medical therapy and refer for endoscopy
if greater than 40 years old

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

*Maximum Medical Therapy
Ranitidine 300 mg po QHS
AND
Omeprazole 20 mg po BID

GERD is not an indication to treat or biopsy for
H.pylori. Refer to CDC H.pylori clinical guideline.
Patients with H.pylori and a normal EGD (including
mild gastritis) with GERD symptoms should not be
-treated for H.pylori.
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 >3wks
- 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 ≤ 70: stable for outpatient therapy
PSI 71-90: likely outpatient therapy but may consider inpatient therapy
PSI ≥ 91: advise inpatient therapy

1. Isolate in clinic exam room with surgical face 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.

If Xpert® MTB/RIF result is positive:
1. Discontinue isolation.
2. Do not return to public.
3. Report to PHN for follow-up.

If Xpert® MTB/RIF result is negative:
1. Collect two mornings sputums for AFB.
2. Report to PHN for follow-up.

1. HIV test and liver function tests.
2. Begin 4-drug daily treatment with DOT and report to Public Health.
3. Discharge home with surgical masks 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 observation 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

Active Pulmonary TB for Patients ≥ 14 Years

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

If Xpert® MTB/RIF test is positive:
1. Discontinue isolation unless admitted with high index of suspicion for TB.
2. Treat as CAP or HAP.
3. Collect two mornings sputums for AFB with isolation if admitted.

If Xpert® MTB/RIF test is negative:
1. HIV test and liver function tests.
2. Begin 4-drug daily treatment if RIF negative.
3. Admit and isolate if PSI** ≥ 90.
4. Consider admission if PSI 71-90.
5. Discharge home with surgical masks and PHN oversight if reliable and no air travel.
6. Recommend admission and isolation if patient unreliable and/or history of treatment failure.
7. Discuss with hospital TB control officer and/or State Epidemiology.

Yes
No
Yes
No
Yes
No
Yes
No
Yes
No
Yes
No
Yes
No
Yes
No
Clinical Guidelines for the Management of Hypertension

MSEC reviewed and approved 06/22/11

Hypertension

Measure BP

Normal

Pre-HTN

Observe, assess for diabetes or chronic kidney disease

HTN Stage I

Diagnostic workup of HTN (see Box 1)

HTN Stage II

Lifestyle modifications (see Box 2)

At goal < 140/90 or < 130/80 with diabetes or chronic kidney disease

Not at goal

Initial drug choice

Stage I

Stage II

2 drug combination for most

Thiazide - type diuretic and

ACEI, ARB, BB, CCB

thiazide diuretics may consider

ACEI, ARB, BB, CCB

With compelling indications (see Box 3)

Without compelling indications

Customize therapy or add drugs until adequate BP control is achieved

Abbreviations:

THIAZ thiazide diuretic
ACE-I angiotensin converting enzyme inhibitor
ARB angiotensin receptor blocker
BB beta blocker
CCB calcium channel blocker
Aldo ANT aldosterone antagonist

Diagnostic workup of HTN

Assess risk factors and comorbidities (see Box 4)
Reveal identifiable causes of HTN (see Box 5)
Assess presence of target organ damage
Conduct H & P
Obtain lab tests: UA, blood glucose, hematocrit, lipid panel,
serum potassium, creatinine and calcium
Consider: urine albumin/creatinine ratio
Obtain ECG

Lifestyle Modification Recommendations:

Weight reduction
Healthy eating plan
Dietary sodium reduction
Aerobic physical activity
Moderation of alcohol consumption

Major cardiovascular disease (CVD) risk factors

HTN
Dyslipidemia
Diabetes
Cigarette smoking
Physical inactivity
Microalbuminuria
Age (> 55 for men, > 65 for women)
Family history of premature CVD (men <55, women <65)

Identifiable causes of HTN

Sleep apnea
Drug induced/related
Chronic kidney disease
Primary aldosteronism
Renovascular disease
Cushing’s syndrome or steroid therapy
Pheochromocytoma
Coarctation of aorta
Thyroid/parathyroid disease

Heart failure
Post myocardial Infarction
High CVD risk (Box 4)
Diabetes
Chronic kidney disease
Recurrent stroke prevention

Compelling Indication

Initial Therapy

THIAZ, BB, ACEI, ARB, Aldo, ANT
BB, ACEI, Aldo ANT
THIAZ, BB, ACEI, CCB
THIAZ, BB, ACEI, ARB, CCB
ACEI, ARB
THIAZ, ACEI

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.
Colorectal Cancer Screening

MSEC reviewed and approved 06/22/11

Start

Symptoms Present?

Yes → Diagnostic Procedure, guideline does not apply

No →

≥ 50 Years old and no flexible sigmoidoscopy in last 5 yrs or colonoscopy in last 10 years

Yes → Colonoscopy at age 40 or 10 years before relative’s Colorectal Cancer diagnosed

No → Flexible Sigmoidoscopy

Positive Family History (First degree relative)?

Yes → Colonoscopy

No →

Colorectal screening at 50 years old

Positive?

No → Follow-up 5 years

Yes →

Number of first degree relatives?

One → Relative’s age of diagnosis?

< 60 yo → Follow up colonoscopy @ 5 years

≥ 60 yo → Follow up colonoscopy @ 10 years

Two or more → Follow up colonoscopy @ 5 years

Colorectal Cancer, Adenomatous Polyp or Ulcerative Colitis found?

Yes → Colonoscopy

No → Follow-up 5 years

Colorectal Symptoms

-Hematochezia
-Melena
-Abdominal pain
-Unexplained iron deficiency anemia
-Change in bowel habits

NOTE:
1. Fecal occult blood test is not indicated in Native population due to high false positives.
2. Flexible sigmoidoscopy screening used because of inability to do barium enema at this bush site and need to do high volume screening
3. For patients > 75 years old or with comorbid conditions, screening options will be decided between the provider and patient

Colorectal Cancer

Follow up per colonoscopy recommendations

Adenomatous polyp

Colonoscopy every 3 years until negative findings then every 5 years

Surgical referral

Follow-up per colonoscopy recommendations

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

Yukon Kuskokwim Health Corporation

Colorectal Cancer Symptoms

- Hematochezia
- Melena
- Abdominal pain
- Unexplained iron deficiency anemia
- Change in bowel habits

NOTE:
1. Fecal occult blood test is not indicated in Native population due to high false positives.
2. Flexible sigmoidoscopy screening used because of inability to do barium enema at this bush site and need to do high volume screening
3. For patients > 75 years old or with comorbid conditions, screening options will be decided between the provider and patient
Chronic Pain Narcotics Eligibility

Has the patient had **chronic pain** for > 6 Months?
And is interfering with his/her daily habits, Subsistence living, and or job??

Has the patient done ALL of the following?
- Seen Impact for ¼ 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

Is Patient > 45 years old?

Do they have these Previous conditions?
- Orthopedic Surgery
- Rheumatoid Arthritis
- Severe Spinal Stenosis

Perform All Comprehensive Assessments below:
- History Assessment
- Physical
- Previous record Review
- Negative Tox Screens
- Opioid Risk Assessment
- Brief Pain Inventory
- Pain Diary

Patient is Eligible

Reviewed date Jan 2015
Chronic Pain Non Narcotics Treatment - p.1

Neuropathic Pain *
(Nerve compression, nerve damage, nerve traction, migraine, reflex, sympathetic dystrophy)
i.e. radiculopathy, complex regional pain syndrome

Nociceptive Pain *
(muscle, joint, or visceral)
i.e. strain, tension HA, osteoarthritis, low back pain, chronic cystitis, Myo facial pain

Idiopathic Pain *
i.e. fibromyalgia

What type of pain is it?

A

A

B

C

*Treatment Options for all types of pain:
Sleep Hygiene, Yoga, Meditation
A

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, Imitrex, 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, NSIADS, 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

Please refer to Chronic Narcotics Eligibility Guidelines
Follow up and reevaluation:

1. Behaviors of concern: As determined by the patient's medical practitioner
2. Follow up and reevaluation of opioid or benzodiazepine
3. Follow up and reevaluation of pain
4. Monitor compliance tools (e.g., pill audits/UDS)
5. Review at pain review
6. Evaluate strikes
7. Consider referral to pain specialist, behavioral health, addiction therapy or other as indicated

Reevaluate diagnosis, goals, tx

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

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

If significant efforts of treatment have not resulted in sufficient improvement of pain:
1. Reconsider referral to specialty services (e.g., pain clinic)
2. Reconsider treatment plan
3. Comprehensive follow up at 6-month intervals

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.

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.

If significant efforts of treatment have not resulted in sufficient improvement of pain:
1. Contact case manager for evaluation of goals
2. Reconsider referral to specialty services (e.g., pain clinic)
3. Reconsider treatment plan
4. Comprehensive follow up at 6-month intervals

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.
Post Acute Myocardial Infarction (AMI)

Risk stratification and Plan developed by cardiologist at discharge

Appt made at Regional Area Hospital at discharge or w/in 1-2 wks of discharge

Modify Guideline based on Heart Failure Regimen

Congestive Heart Failure?

Yes

No

Pt underwent stent placement?

Yes

No

ASA ec 325mg po qd

and

Clopidogrel 75mg po qd

x 1 month then

ASA alone

*stented pts may need

3-6 months of

combined treatment

ASA Allergy?

Yes

ASA ec 81-325mg po qd

No

Beta Blocker

Atenolol 25-100mg po qd or Metoprolol 25-200mg po qd

ACE I - Ramipril 2.5-10mg po qd or Lisinopril 5-40mg po qd

AHA Step 2 Diet

Smoking cessation counseling

Maximize dosage until patient has side effects and to maintain SBP> 90 and HR > 55

Hypertension?

Yes

HDL < 40?

Yes

Recommend exercise and Consider Niacin as tolerated

No

Add:

1. Atrvastatin 10-80mg po qd OR

2. Simvastatin 20-80mg po qd

No

Treat for goal of BP <130/85,

<120/80 if LVD

6 weeks follow-up with Primary Care Provider

1. Baseline EKG

2. Discuss Code Status

3. Chemistry Panel (if on ACE or diuretic)

4. LFT’s (if on a statin)

3 month follow-up with Primary Care Provider

1. Lipids

2. LFT’s (if on a statin)

6 month follow-up with Primary Care Provider

1. LFT’s (if on a statin)

Follow-up Cardiology Clinic Regional Area Hosptal or ANMC within 6 months

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 qd 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.
A provider identifies a patient with Iron deficiency anemia who can benefit from IV Iron therapy.

**Calculate Iron Deficit (ID)**

\[ \text{ID} = 3.3 \times (\text{Hemoglobin deficit} \times \text{blood volume}) \]

\[ \text{ID} = 3.3 \times ((14 - \text{Hg}) \times (\text{weight in Kg} \times 65 \text{ml/Kg})/100) \]

**Example:** Pt with Hg of 7 and weight 100 Kg.

\[ \text{ID} = 3.3 \times ((14-7) \times (100 \times 65)/100) \]

\[ \text{ID} = 1501 \text{ mg} \]

Divide the ID to give as 300 – 500mg doses.

Provider completes an IV Iron PCC for each planned dose as an outpatient or writes the appropriate orders if the patient is admitted.

Nursing staff complete the infusion and schedule any follow up doses.

**Can the patient remain in Bethel?**

YES ➔ Give doses weekly until ID corrected.

NO ➔ Give doses daily until ID corrected.
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.
This guideline assumes the last 3 screening tests for cervical cancer were normal and the patient does not have the following medical conditions: HIV positive, a transplant taking anti-rejection drugs or a history of DES exposure.

An abnormal appearing cervix should be biopsied regardless of the result of the PAP. If you cannot biopsy the lesion at the time of the patient’s appointment, refer for colposcopy.

Patient is at least 21 years of age and has had at least 3 normal PAP smears

What test do I order?

21-45 years of age

ThinPrep with reflex HPV if ASC-US

>45 years of age

ThinPrep with HPV reflex if ASC-US or LSIL

>65 years

Stop screening if last 3 screening tests were normal and she has not had CIN in last 20 years

PAP smear results

Normal

Specimen is adequate AND Negative for intraepithelial lesion or malignancy

If no endocervical cells

We have to assess the patient’s risk status. Patients with 2 previous normal screening exams should not worry about the lack of endocervical cells, but should have a repeat exam with a high risk HPV in 1 year. Patients with a history of CIN in the past 20 years should return for a repeat PAP and HPV test in 6 month or less, but no sooner than 6 weeks.

PAP smear

Needs follow up NO colposcopy

1. Atypical Squamous Cell of Undetermined Significance (ASC-US) with a negative High Risk HPV test
2. If menopausal, Low-Grade Squamous Intraepithelial Lesion with a negative High Risk HPV

Refer for colposcopy

1. Atypical squamous cells cannot exclude HSIL (ASC-H)
2. Atypical Glandular Cells (AGS)
3. Low-Grade squamous intraepithelial lesions (LSIL)
4. High-grade squamous intraepithelial lesions (HSIL)
5. Squamous cell carcinoma

Follow:

See attachment for when you should deviate from the published ASCCP guideline

You should stop screening in women 65 years of age or older if the last three screening tests were normal and she has not had cervical intraepithelial neoplasia (CIN) in the last 20 years.

You should stop screening in women who have a total hysterectomy (cervix is removed) for benign disease and no history of CIN in the last 20 years.

Every patient should be screened annually for high risk sexual behavior. If screening has been stopped for a reason above, screening for cervical cancer can if new high risk behavior occurs. Screening for sexually transmitted infections should continue as needed independent of cervical cancer screening.
3/26/2013

YKHC providers follow ASCCP Updated Consensus Guidelines from March 2013 except where deviations are clinically indicated and documented. In this revision, the cytology and histology guidelines have been merged and labeled using a tab system. Some of these pages give options for treatment, often labeling them as preferred or acceptable. The following algorithm pages have options defined as the standard for YKHC.


**ASC-US**: Management of women with atypical squamous cells of undetermined significance (ASC-US)

The recommended action for women with a Pap test result of ASC-US is to obtain a reflex high risk HPV test. This is the right side of the algorithm. A negative HPV test will result in a one year follow up and a positive test requires a colposcopy.

**LSIL**: Management of women with Low-grade Squamous Intraepithelial Lesions (LSIL)

LSIL with a negative HPV test should be followed with repeat contesting in 1 year.

**LSIL Pregnant Woman**: Management of Pregnant Women with Low-grade Squamous Intraepithelial lesion (LSIL)

A colposcopy should be performed on all of these patients unless the patient presents for care after 28 weeks. The colposcopy should be performed after delivery in that case.

**Other**: There are a few other areas where options are equally presented. The colposcopist will discuss these options with the patient to determine a course of action. In women who desire further child bearing, the least invasive option is usually the best option.

3/25/13

Women should continue to get regular health examinations regardless of cervical cancer screening intervals.

An abnormal appearing cervix should be biopsied regardless of the result of the PAP. If you cannot biopsy the lesion at the time of the patient’s appointment, refer for colposcopy.

This guideline assumes that the patient does not have the following medical conditions: HIV positive, a transplant taking anti-rejection drugs or a history of DES exposure.

How often do I screen for cervical cancer?

- <21 years old - None
- 21-29 – Cytology alone every 3 years
- 30 - 65 years old – Co-testing every 5 years

What to order for these patients:

- 21-29 years old - ThinPrep with reflex HPV if ASC-US
- 30 - 65 years old - Co-testing with ThinPrep cytology and HPV testing.

When do I stop screening for cervical cancer?

You should stop screening in women 65 years of age or older if the last three screening tests were normal and she has not had cervical intraepithelial neoplasia (CIN) II or higher in the last 20 years. Do not restart testing for any reason.*

You should stop screening in women who have a total hysterectomy (cervix is removed) for benign disease and no history of CIN II or higher in the last 20 years. Do not restart testing for any reason.*.

How often should a patient be screened after CIN II or higher is resolved?

These patients remain at risk for 20 years, so screening should continue for 20 years after the CIN II or higher resolves spontaneously or with treatment. Testing reverts to the routine listed above after the follow up of the abnormality is completed.

The following test results are NORMAL.

- Specimen adequacy: Satisfactory AND
- Negative for intraepithelial lesion or malignancy,

The following results are ABNORMAL and should be referred for colposcopy.

- Atypical squamous cells of Undetermined Significance (ASC-US), with a positive HPV test for high risk HPV subtypes.
- Atypical squamous cells cannot exclude HSIL (ASC-H)
- Atypical glandular cells (AGS)
- Low-grade squamous intraepithelial lesions (LSIL)
- High-grade squamous intraepithelial lesions (HSIL)
- Squamous cell carcinoma

What do I do with an unsatisfactory due to a lack of endocervical cells or transformation zone components (EC/TZ)?

See updated ASCCP guideline from 2013. The HPV result is the key to the decision. If HPV negative, continue routine screening. If HPV unknown and 30 years or older, rescreen in 3 years. In women ages 21-29, continue routine screening.

What do I do with an unsatisfactory result?

See updated ASCCP guideline from 2013. Repeat cytology only in 2-4 months. The patient’s age and HPV status does not matter.

* See ASCCP, March 2013 and ACOG, November 2012 recommendations for details.
Pre-Anesthesia Testing

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<th>AGE</th>
<th>Hb/Hct</th>
<th>Coags</th>
<th>Lytes</th>
<th>Bun/Cr</th>
<th>Gluc</th>
<th>LFT’s</th>
<th>EKG</th>
<th>CXR</th>
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<td>0 - 59</td>
<td>No routine testing needed in this age group.</td>
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<th>LFT’s</th>
<th>EKG</th>
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</table>

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 patient 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 anesthsia.
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 4. Estimated Energy Requirements for Various Activities, Based on Duke Activity Status Index*

<table>
<thead>
<tr>
<th>1 MET</th>
<th>Can you...</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>take care of yourself?</td>
</tr>
<tr>
<td></td>
<td>eat, dress, or use the toilet?*</td>
</tr>
<tr>
<td></td>
<td>walk indoors around the house?</td>
</tr>
<tr>
<td></td>
<td>walk 1 or 2 blocks on level ground at 2-3 mph (3.2 - 4.8 KPH)?</td>
</tr>
<tr>
<td>&lt;4 METs</td>
<td>Can you...</td>
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<td></td>
<td>do light work around the house, such as dusting or washing dishes?</td>
</tr>
<tr>
<td>≥4 METs</td>
<td>Can you...</td>
</tr>
<tr>
<td></td>
<td>climb a flight of stairs or walk up a hill?</td>
</tr>
<tr>
<td></td>
<td>walk on level ground at 4 mph (6.4 kph)?</td>
</tr>
<tr>
<td></td>
<td>run a short distance?</td>
</tr>
<tr>
<td></td>
<td>do heavy work around the house, such as scrubbing floors or lifting or moving furniture?</td>
</tr>
<tr>
<td>≥10 METs</td>
<td>Can you...</td>
</tr>
<tr>
<td></td>
<td>participate in moderate recreational activities, such as golf, bowling, dancing, doubles tennis, or throwing a baseball or football?</td>
</tr>
<tr>
<td></td>
<td>participate in strenuous sports, such as swimming, singles tennis, football, basketball, or skiing?</td>
</tr>
</tbody>
</table>

* MET = metabolic equivalent.
Adapted from J AM Coll Cardiol, with permission from Elsevier.
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?

Yes

Older child or Adult

- **Consider Active TB. See Tuberculosis Guideline**
- **Infant or child unable to do sputum (<6years)**

Infant or child unable to do sputum (<6years)

- **Obtain sputums for AFB Smear/Culture x 3 if not already done.**
- **Start 4 drug therapy for active TB – See Tuberculosis Guideline.**

No

**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**

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

- **If negative smears – can start a LTBI treatment regimen – see box. If hx of INH resistance in the village – consider Rifampin treatment.**
- **Public Health completes monthly symptom and medication side effects screens.**
- **Consider following LFTs if alcohol use is an issue.**
- **Await AFB Cultures.**

**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.**

**See Tuberculosis guideline.**