



## CLINICAL GUIDELINES

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Adult Critical Care Guide:

[https://yk-health.org/images/9/98/Adult\\_Critical\\_Care\\_Guide.pdf](https://yk-health.org/images/9/98/Adult_Critical_Care_Guide.pdf)

Pediatric Critical Care Weight-Based Guide:

[https://yk-health.org/images/5/5d/Pediatric\\_critical\\_care\\_guide.pdf](https://yk-health.org/images/5/5d/Pediatric_critical_care_guide.pdf)

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### Phone Numbers

ANMC: Consult \*97 or (907) 563-2662  
 Transfer: (907) 729-2337  
 PICU Cell for urgent consults: (907) 297-8809  
 Providence: ED for on-call specialist: (907) 212-3111  
 Trauma: (907) 212-2525  
 Alaska Regional Hospital Access Center: (844) 880-5522  
 VA/JBER: ED: MD consult number (907) 580-5556  
 Transfer: (907) 580-6420  
 Admissions 24/7: (907) 580-6423  
 Operator: (907) 552-1110  
 Harborview Seattle (burns): (888) 731-4791

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

SRC and village itinerant providers do not have the luxury of paging the provider STAT to bedside. However, the SBAR case presentation and the documentation requirements listed on this protocol still apply.

Page the appropriate provider:

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

Provider needs consultation about patient at YKHC

Consulting provider located in Bethel?

No

Yes

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

No

Yes

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

Be prepared with the following information:

1. State your name, title, and department (e.g. ED physician, outpatient NP, second year resident, etc.)
2. State purpose of call (e.g. quick question, possible admission, management advice, etc.)
3. Provide name, age, DOB, and location of patient. If the patient is pregnant, give gravity and parity and gestational age in initial sentence. If the patient is a child, give the age in the initial sentence.
4. Use SBAR (see box).
5. Ask a **specific question** about management.
6. If patient is to be transferred, state whether you think that the patient can travel by commercial flight or will require air medevac.
7. If there is a problem getting an accepting physician for a medevac/transfer or with patient management decisions, see NOTE below.

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

Page the appropriate provider. Be prepared with the following information:

1. State your name, title, and department (e.g. ED physician, outpatient NP, second year resident, etc.)
2. State purpose of call, including if you want a formal consult (e.g. quick question, possible admission, management advice, etc.)
3. Name, MRN, age, DOB. If the patient is pregnant, give gravity and parity and gestational age in initial sentence. If the patient is a child, give the age in the initial sentence.
4. Use SBAR (see box).
5. Ask a **specific question** about management.

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

Note: consultants are encouraged to document their recommendations in a separate note or as an addendum to the provider note. If done, this note does not obviate the initial provider's documentation requirements.

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

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

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

Once patient is stabilized, discussion will occur between the primary provider and the consultant regarding further documentation and ongoing management.

### SBAR

**Situation:** a concise statement of the problem, a "one-liner"

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

**Background:** pertinent and brief information related to the situation

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

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

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

**Recommendation:** action requested, what you want

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

### Note about Disagreements

If there is a disagreement regarding the management of a patient and a consensus cannot be reached, a third opinion shall be obtained. This can either be from another YKHC provider or from a provider from another facility. At any time, the Clinical Director on call can also be notified to assist.

This protocol 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 Clinical Guideline Committee 8/23/23.  
 Click [here](#) to see the supplemental resources for this guideline.  
 If comments about this protocol, please contact  
 Ellen\_Hodges@ykhc.org.



### EMERGENT Consults

- Need a call back immediately.
- Examples: Child is in status epilepticus or impending respiratory failure.
- Send priority message via Tiger Connect to Peds Wards on Duty using format below.

### URGENT Consults

- Need a call back within one hour.
- Examples: Advice on antibiotic choice or questions about a rash.
- Send message via Tiger Connect to Peds Wards on Duty using format below.

### NOT URGENT Consults

- Question can wait until the end of the day/next morning.
- Examples:
  - "Noted that weight percentile has decreased by >2 major percentiles on weight growth chart. Forwarding note to pediatrician for recommendations on further work-up and management for failure to thrive."
  - "During this WCC, reviewed PMH and noted child has not seen neurologist in several years and is off anti-epileptics. Forwarding note to pediatrician for recommendations on further management of seizure disorder."
- Do not send a message via Tiger Connect.
- Complete note and forward to "Chronic Peds, RMT" box via Message Center. Note MUST include a specific question for the pediatrician in the plan.
- Note reviewed by inpatient pediatrician, who will addend the note with recommendations and send it back. It will be addressed with the same triage principles we use to prioritize RMT. Goal will be response by the end of the day, but if there is critical care, the night pediatrician will address it by the next morning.

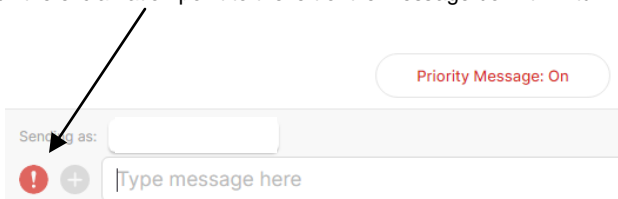
### Tiger Connect Message Format for EMERGENT and URGENT Consults

1. Urgency of consult: need call back ASAP or within one hour.
2. Name of provider, location, role, and phone number.
3. Name and MRN/DOB of patient.
4. One-liner about patient. Here are some examples:
  - "4 yo girl with h/o seizures here for prolonged seizure."
  - "3 month old boy with h/o respiratory failure requiring ICU care here with increased work of breathing."
5. Specific question. Here are some examples:
  - (**EMERGENT**) "The seizure is now >5 minutes and needs medication to stop it. What drug and dose should I give?"
  - (**EMERGENT**) "This child has a RR of 80 and hasn't improved with albuterol or nasal suction. I would like to discuss if a medevac is appropriate."
  - (**URGENT**) "I think this child needs antibiotics, and I'd like to discuss an appropriate choice."
  - (**URGENT**) "This child may require further evaluation in Bethel, and there is a commercial flight landing in two hours. I'd like to discuss whether the child should be sent to Bethel on that flight."

**NOTE: If true emergency, limit message to #2 and #4.**

### How to Send a Priority Message in Tiger Connect

Click the exclamation point to the left of the message box. It will turn red.



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Approved by Clinical Guideline Committee 8/23/23.  
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If comments about this protocol, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).

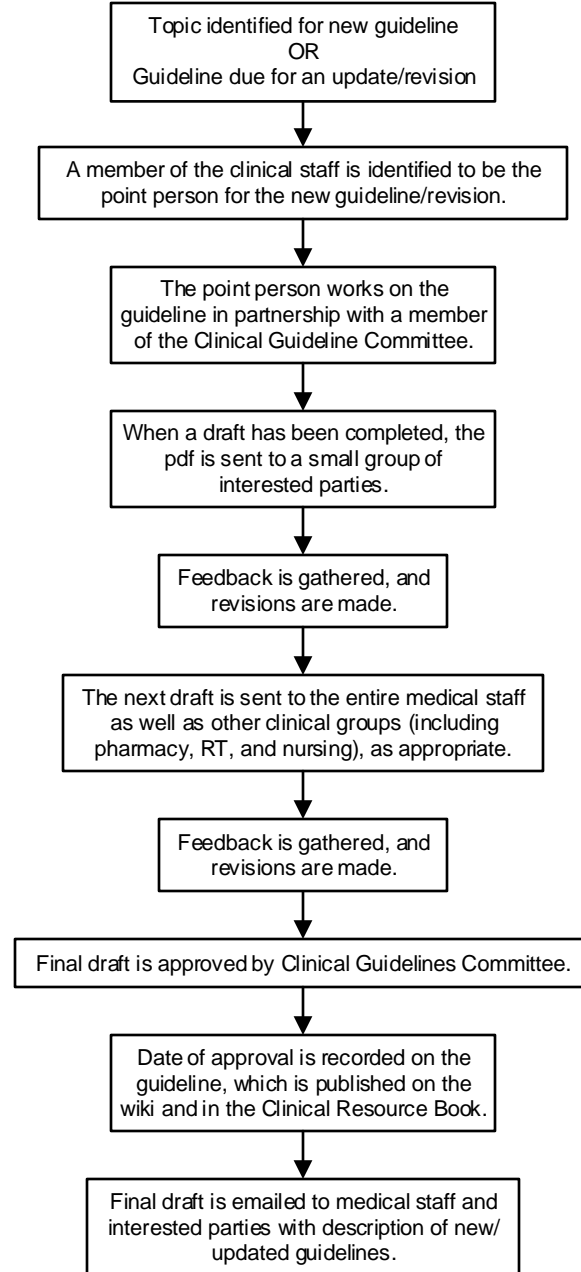


### Miscellaneous

- Goal is guidelines are to be reviewed every two years with revisions and updates as appropriate. Updates may happen sooner as needed.
- If a guideline has not been reviewed in the past five years, it will be decommissioned until it is revised.
- Deadlines for feedback will generally be a period of two weeks.
- At any time, anyone may send feedback on a guideline. This feedback will be saved for the next guideline revision.
- Minor changes including (but not limited to) correction of typos, changes in test names, small additions, updating hyperlinks, and changes in contact information may be made and published without committee approval.

### Wiki Supplements

- The long-term goal for the guidelines is for every guideline to have a corresponding supplement page on the wiki.
- The guideline will be information needed to take care of a patient in the moment.
- The wiki supplement will include references, resources, historical background, past versions, and other information.

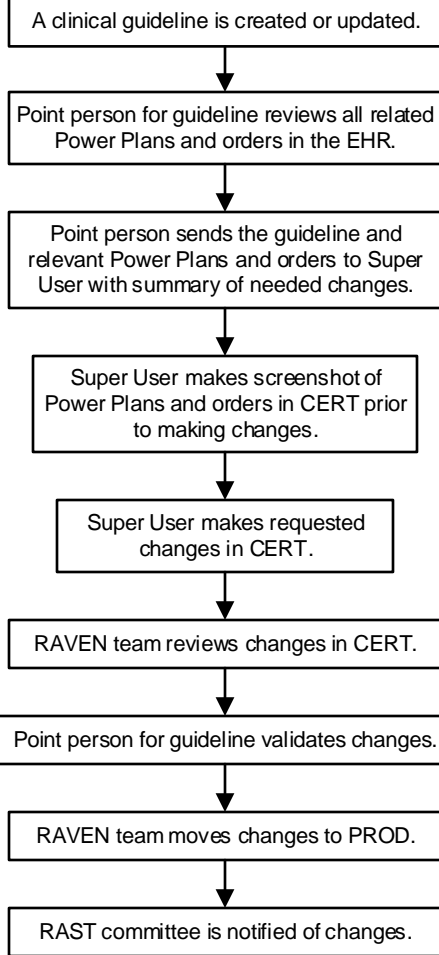


This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.  
Approved 6/6/22.  
If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



#### Contact

If any members of the medical staff identify orders that are discrepant with an approved clinical guideline, they should email [Clinical\\_Guidelines@ykhc.org](mailto:Clinical_Guidelines@ykhc.org). The Clinical Guideline Committee will review the request and begin the process outlined here.



#### Rationale

- The YKHC Clinical Guidelines are the agreed-upon standard of care for the YKHC medical staff.
- This standard of care should be reflected in the available orders and Power Plans in the EHR.
- As such, if orders in the EHR do not match a clinical guideline, these orders may be changed without getting approval from the RAST committee. The RAST committee will be notified of these changes.
- This guideline outlines the process by which EHR changes based on updates in clinical guidelines may be made.

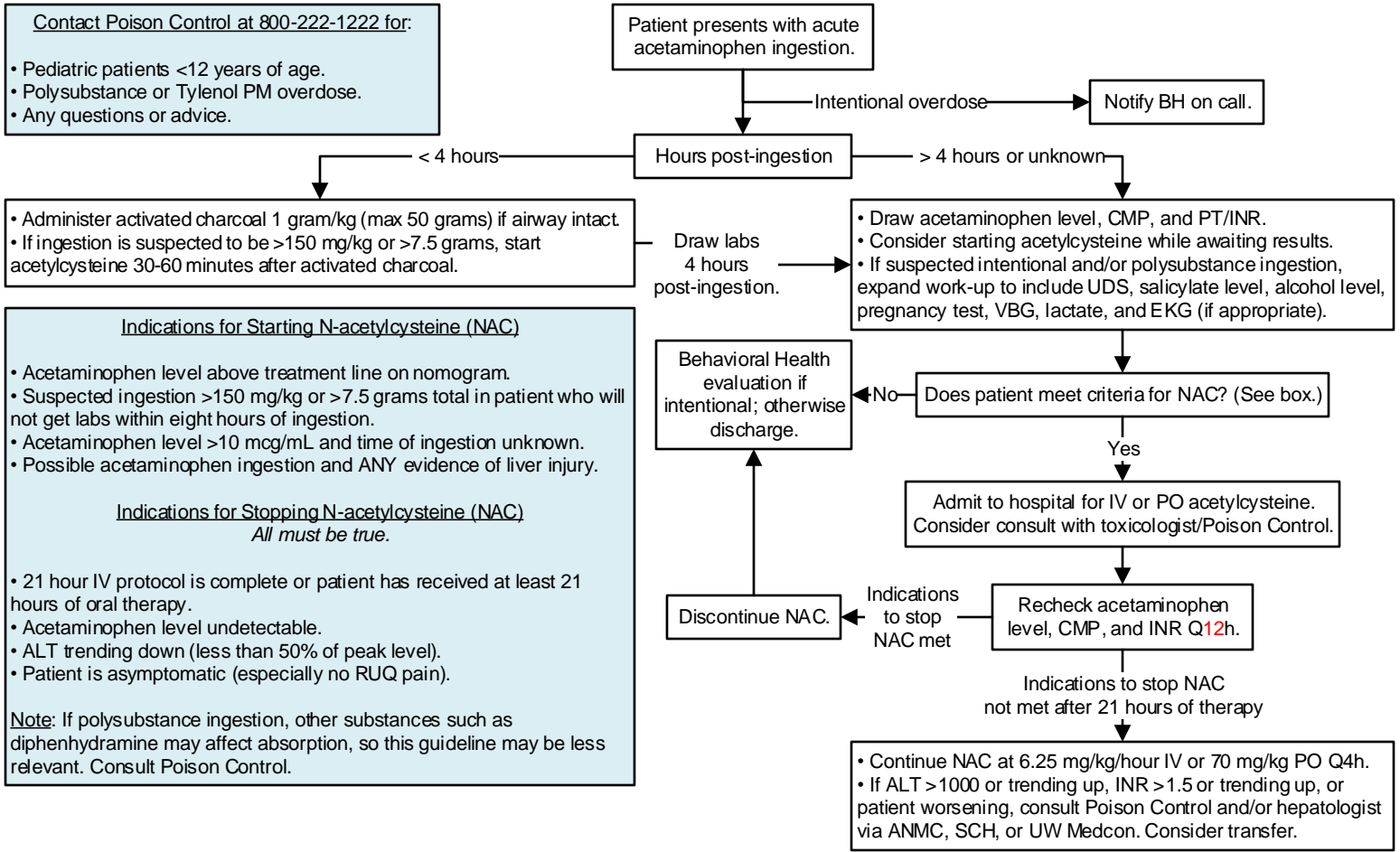
#### Definitions

- CERT: domain for testing changes to the EHR.
- PROD: Live domain used by staff to access the EHR.

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 Clinical Guideline Committee 3/24/23.

**If comments about this guideline, please contact [Clinical\\_Guidelines@ykhc.org](mailto:Clinical_Guidelines@ykhc.org).**



**Indications for Starting N-acetylcysteine (NAC)**

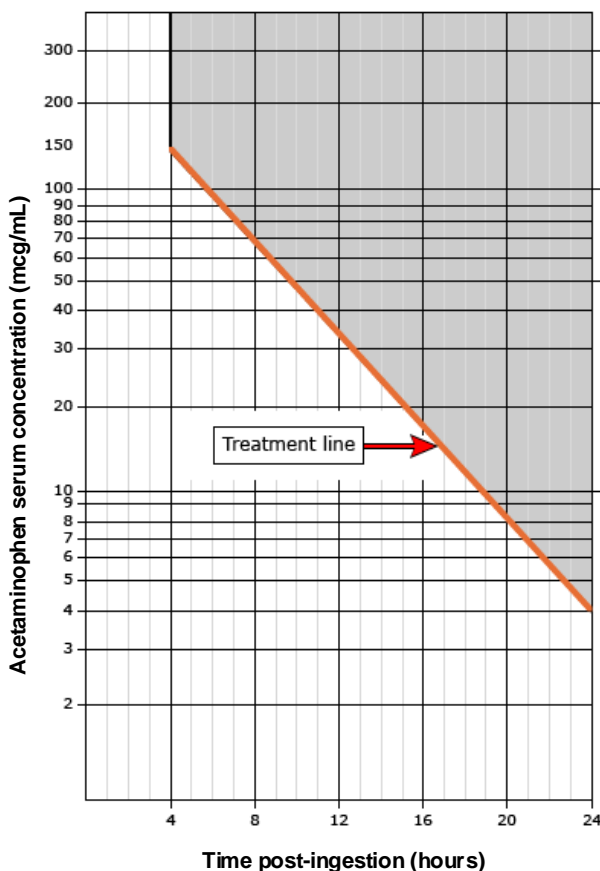
- Acetaminophen level above treatment line on nomogram.
- Suspected ingestion >150 mg/kg or >7.5 grams total in patient who will not get labs within eight hours of ingestion.
- Acetaminophen level >10 mcg/mL and time of ingestion unknown.
- Possible acetaminophen ingestion and ANY evidence of liver injury.

**Indications for Stopping N-acetylcysteine (NAC)**  
*All must be true.*

- 21 hour IV protocol is complete or patient has received at least 21 hours of oral therapy.
- Acetaminophen level undetectable.
- ALT trending down (less than 50% of peak level).
- Patient is asymptomatic (especially no RUQ pain).

**Note:** If polysubstance ingestion, other substances such as diphenhydramine may affect absorption, so this guideline may be less relevant. Consult Poison Control.

**Rumack-Matthew Nomogram for Single Acute Acetaminophen Poisoning**



**Village Management**

- Administer activated charcoal 1 gram/kg (max 50 grams) if airway intact and <4 hours since ingestion.
- If patient in village and toxicity is at all possible, start treatment with oral acetylcysteine and draw blood at 4 hours post ingestion. Instruct health aide to draw 2 mL (minimum 200 microliters) in a gold/SST or green top tube.
- Transport patient and blood work to Bethel on next available commercial flight, if stable.

**For vomiting:**

- If within one hour of NAC dose, repeat full dose.
- May give ondansetron or metoclopramide.

**N-Acetylcysteine (NAC) Administration Protocols**

- IV 21 Hour Protocol:** Dose is 150 mg/kg (max 15 grams) over 60 minutes immediately followed by 50 mg/kg (max 5 grams) over 4 hours immediately followed by 100 mg/kg (max 10 grams) over 16 hours (6.25 mg/kg/hour). Dilute with D5W or ½ NS. See [Dose Calculator](#) for details on dose and dilution, especially in children under 40 kg. Note: calculator defaults to pounds.
- PO 72 Hour Protocol:** Dilute with strongly-flavored juice or soda. Mix one part medication with three parts juice/soda. Loading dose is 140 mg/kg. Maintenance dose of 70 mg/kg Q4h for up to 72 hours. The villages carry vials of inhalation/oral solution that is 200 mg/mL in 30 mL vials. See [this resource](#) for details on dosing, including diluent and dosing volumes for weight.

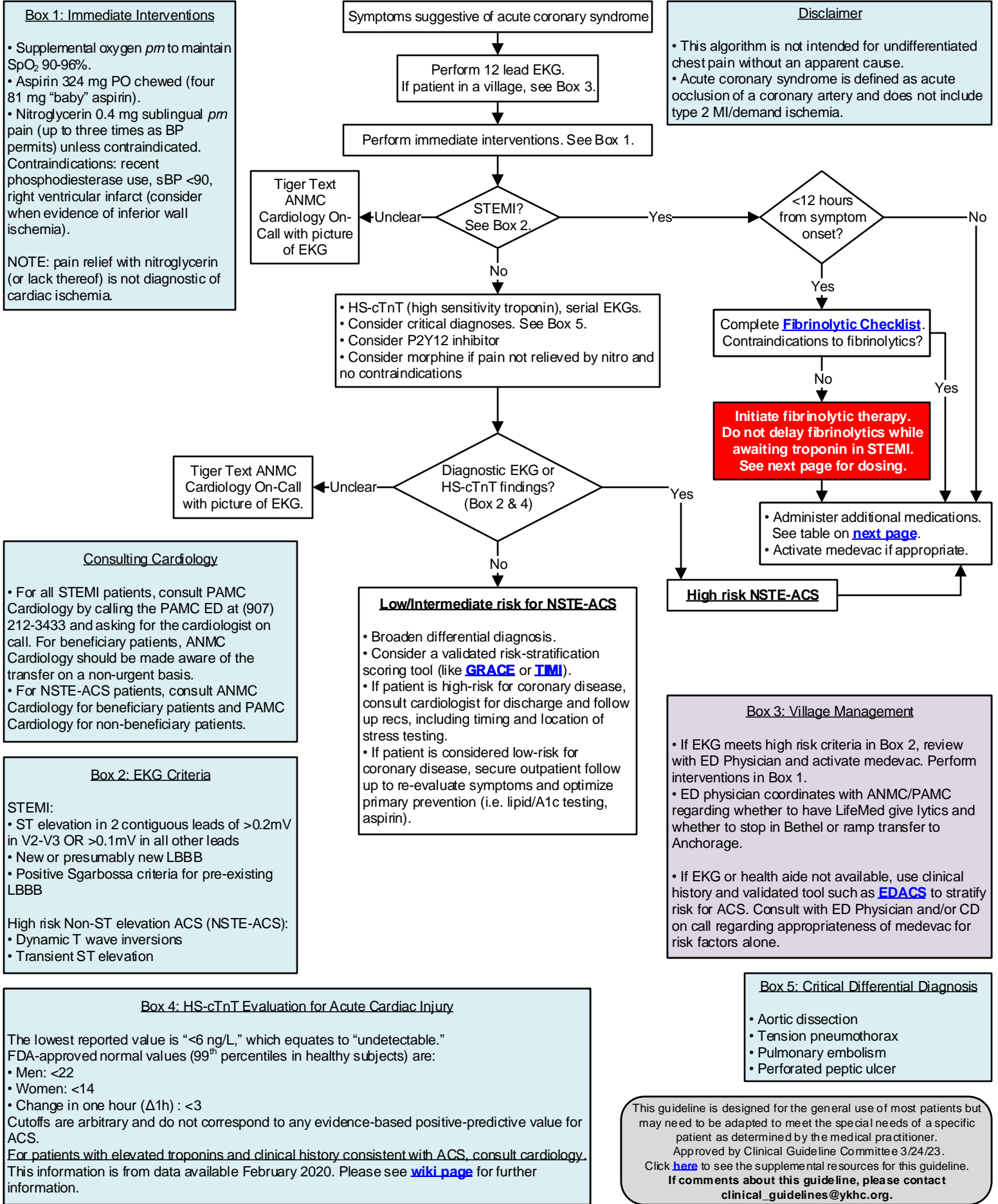
This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.  
Approved by Clinical Guideline Committee 4/28/23.  
Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



# Yukon-Kuskokwim HEALTH CORPORATION

## Clinical Guideline

### Acute Coronary Syndrome (ACS) Management



**Disclaimer**

- This algorithm is not intended for undifferentiated chest pain without an apparent cause.
- Acute coronary syndrome is defined as acute occlusion of a coronary artery and does not include type 2 MI/demand ischemia.

**Box 1: Immediate Interventions**

- Supplemental oxygen *pm* to maintain SpO<sub>2</sub> 90-96%.
- Aspirin 324 mg PO chewed (four 81 mg “baby” aspirin).
- Nitroglycerin 0.4 mg sublingual *pm* pain (up to three times as BP permits) unless contraindicated. Contraindications: recent phosphodiesterase use, sBP <90, right ventricular infarct (consider when evidence of inferior wall ischemia).

NOTE: pain relief with nitroglycerin (or lack thereof) is not diagnostic of cardiac ischemia.

**Consulting Cardiology**

- For all STEMI patients, consult PAMC Cardiology by calling the PAMC ED at (907) 212-3433 and asking for the cardiologist on call. For beneficiary patients, ANMC Cardiology should be made aware of the transfer on a non-urgent basis.
- For NSTEMI-ACS patients, consult ANMC Cardiology for beneficiary patients and PAMC Cardiology for non-beneficiary patients.

**Box 2: EKG Criteria**

**STEMI:**

- ST elevation in 2 contiguous leads of >0.2mV in V2-V3 OR >0.1mV in all other leads
- New or presumably new LBBB
- Positive Sgarbossa criteria for pre-existing LBBB

**High risk Non-ST elevation ACS (NSTEMI-ACS):**

- Dynamic T wave inversions
- Transient ST elevation

**Box 4: HS-cTnT Evaluation for Acute Cardiac Injury**

The lowest reported value is “<6 ng/L,” which equates to “undetectable.” FDA-approved normal values (99<sup>th</sup> percentiles in healthy subjects) are:

- Men: <22
- Women: <14
- Change in one hour (Δ1h) : <3

Cutoffs are arbitrary and do not correspond to any evidence-based positive-predictive value for ACS.

**For patients with elevated troponins and clinical history consistent with ACS, consult cardiology.** This information is from data available February 2020. Please see [wiki page](#) for further information.

**Box 3: Village Management**

- If EKG meets high risk criteria in Box 2, review with ED Physician and activate medevac. Perform interventions in Box 1.
- ED physician coordinates with ANMC/PAMC regarding whether to have LifeMed give lytics and whether to stop in Bethel or ramp transfer to Anchorage.
- If EKG or health aide not available, use clinical history and validated tool such as **EDACS** to stratify risk for ACS. Consult with ED Physician and/or CD on call regarding appropriateness of medevac for risk factors alone.

**Box 5: Critical Differential Diagnosis**

- Aortic dissection
- Tension pneumothorax
- Pulmonary embolism
- Perforated peptic ulcer

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Approved by Clinical Guideline Committee 3/24/23.

Click [here](#) to see the supplemental resources for this guideline.

**If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).**





**Nitroglycerin (NTG)**  
 • **Contraindications:** PDE-inhibitor use, cardiogenic shock, RV infarct, sBP<90, marked tachycardia or bradycardia.  
 • **Sublingual dosing:** 0.4 mg SL Q5 minutes up to three doses  
 • **IV dosing:** start at 10-20 mcg/min, titrate Q3-4 minutes to typical range 60-100 mcg/min

**Beta-Blockers**  
 • No evidence of benefit from routine immediate beta-blocker.  
 • Indicated for HTN and/or ongoing ischemia refractory to NTG.  
 • **Contraindications:** cardiogenic shock, RV infarct, symptomatic asthma.  
 • **Cautions:** risk for cardiogenic shock (bradycardia, HR>110, sBP<120, age>70, increased time since STEMI onset), inferior MI, controlled asthma.

Emergency Department Medication Summary				
	STEMI <12 hours	STEMI >12 hours	NSTE-ACS	
Oxygen	Maintain SpO <sub>2</sub> 90-96%	Maintain SpO <sub>2</sub> 90-96%	Maintain SpO <sub>2</sub> 90-96%	
Nitrates ( <i>prn</i> pain, HTN)	Sublingual or drip	Sublingual or drip	Sublingual or drip	
Fibrinolytic	Tenecteplase See below.	Not indicated	Not indicated	
Antiplatelet agents	Aspirin	Aspirin 324 mg PO chewed (four 81 mg "baby" aspirin)	Aspirin 324 mg PO chewed (four 81 mg "baby" aspirin)	Aspirin 324 mg PO chewed (four 81 mg "baby" aspirin)
	P2Y <sub>12</sub> receptor blocker	Clopidogrel Age ≤75: 300 mg PO Age >75: 75 mg PO	Clopidogrel 600 mg PO	Consult cardiology.
Anticoagulation	Enoxaparin (see table for dose)	Enoxaparin (see table for dose)	Enoxaparin (see table for dose)	
Beta-blocker	Metoprolol 5 mg IV <i>pm</i> Q5 minutes (max 15 mg)	Metoprolol 5 mg IV <i>pm</i> Q5 minutes (max 15 mg)	Metoprolol 5 mg IV <i>pm</i> Q5 minutes (max 15 mg)	
Morphine	No longer routinely given; associated with increased mortality. Reserve for significant pain refractory to NTG and beta-blocker.			

At time of Dx unless contraindicated

### Fibrinolytic Therapy (Tenecteplase)

Goal: administer ≤ 30 minutes from arrival.  
Rapidly complete the fibrinolytic checklist and consent.

#### Dosing:

- <60 kg: tenecteplase 30 mg IV bolus
- ≥60 kg to <70 kg: tenecteplase 35 mg IV bolus
- ≥70 kg to <80 kg: tenecteplase 40 mg IV bolus
- ≥80 kg to <90 kg: tenecteplase 45 mg IV bolus
- ≥90 kg: tenecteplase 50 mg IV bolus

Administer concurrent aspirin, clopidogrel, and anticoagulant therapy, per table above.

Enoxaparin Dosing			
	Age <75 years and STEMI	Age ≥75 years and STEMI	Any age and NSTE-ACS
Creatinine clearance ≥30 mL/min	30 mg IV + (1 mg/kg SC now then Q12h) Max dose 100 mg	0.75 mg/kg SC Q12h Max dose 75 mg	1 mg/kg SC now then Q12h
Creatinine clearance <30 mL/min	30 mg IV + (1 mg/kg SC now then Q24h) Max dose 100 mg	1 mg/kg SC Q24h Max dose 100 mg	1 mg/kg SC now then Q24h

NOTE: Enoxaparin and unfractionated heparin are NOT dialyzable; ESRD/dialysis patients should receive fondaparinux, which is not on the YKHC formulary. Discuss with cardiologist if appropriate.

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

Approved by Clinical Guideline Committee 3/24/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact Megan\_Young@ykhc.org and Andrew\_Swartz@ykhc.org.



## Fibrinolytic Checklist

### INDICATIONS (initial yes or no)

YES	NO	
		Presentation consistent with acute coronary syndrome (coronary artery occlusion)
		<p><b>AND</b> at least one of the following:</p> <ul style="list-style-type: none"> <li>• 1 mm J-point elevation in two contiguous leads (other than V<sub>2</sub>-V<sub>3</sub>)</li> <li>• In leads V<sub>2</sub>-V<sub>3</sub> <ul style="list-style-type: none"> <li>Men ≥ 40 years: ≥ 2 mm J-point elevation</li> <li>Men &lt;40: ≥ 2.5 mm J-point elevation</li> <li>Women: ≥ 1.5 mm J-point elevation</li> </ul> </li> </ul>

### ABSOLUTE CONTRAINDICATIONS (initial yes or no)

YES	NO	
		History of <u>any</u> intracranial hemorrhage
		History of prior ischemic stroke, significant closed head injury or facial trauma, or intracranial or spinal surgery in the previous three months
		Presence of a cerebral vascular malformation
		Presence of a primary or metastatic intracranial malignancy
		Symptoms or signs suggestive of an aortic dissection
		Any bleeding diathesis
		Any active bleeding that is severe or has high potential for life-threatening blood loss; this does not include menstrual bleeding
		sBP > 180 and/or dBP >110 at presentation in patient at low risk of cardiac death (age < 55, no prior MI, and <b>Killip class I</b> ).
		Terminal illness, defined as end of life care or documented/expressed patient wish to abstain from high risk or invasive procedures

### RELATIVE CONTRAINDICATIONS (initial yes or no) – If any of below are present, used shared decision making with patient.

YES	NO	
		Age 65-74 (ICH relative risk 3.12 [2.54-3.83]); Age ≥ 75 years (ICH relative risk 5.40 [4.40-6.63])
		History of chronic severe poorly controlled HTN
		sBP > 180 and/or dBP >110 at presentation in patient at high risk of cardiac death (age ≥ 55, Hx prior MI, or <b>Killip class ≥ II</b> ).
		History of ischemic stroke more than three months ago
		Dementia OR any known intracranial disease that is not an absolute contraindication
		Traumatic or prolonged (>10 minutes) cardiopulmonary resuscitation
		Major surgery in the previous three weeks
		Internal bleeding in the previous 2-4 weeks
		Active peptic ulcer
		Non-compressible vascular punctures
		Pregnancy
		Current warfarin therapy (the risk of bleeding increases as the INR increases)

*This checklist is advisory for clinical decision-making and may not be all-inclusive. Risks and benefits will need to be assessed individually.*

Physician signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Place patient ID sticker here.



### PROCEDURE CONSENT

I hereby authorize \_\_\_\_\_ and such assistants as he/she may designate, to perform the following operation or procedure:

<b>TECHNICAL DESCRIPTION</b>	Intravenous thrombolytic therapy for acute STEMI (ST-elevation myocardial infarction).
<b>LAY DESCRIPTION</b>	Give clot-dissolving medication through an IV to dissolve the clot which is causing a heart attack.
_____ has discussed with me the information briefly summarized below:	
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• When PCI is not available within two hours, thrombolytic medication is the "standard of care" for achieving coronary reperfusion within 12 hours of acute STEMI onset.</li> <li>• When administered within 6 hours of pain onset, about 1 in 40 persons will have their life saved.</li> <li>• When administered between 6-12 hours after pain onset, about 1 in 60 persons will have their life saved.</li> <li>• Decreased risk of developing heart failure.</li> <li>• A STEMI patient who receives thrombolytic medication is about 3-5 times more likely to have their life saved than to have brain bleeding (see below).</li> </ul>
<b>RISKS</b> <i>(some, but not all)</i>	<ul style="list-style-type: none"> <li>• About 1 in 100 persons will experience non-life-threatening bleeding.</li> <li>• About 1 in 100-250 persons will experience bleeding into the brain which usually results in either death or significant disability.</li> </ul>
<b>RISKS OF NOT HAVING THE PROCEDURE</b>	<ul style="list-style-type: none"> <li>• Higher risk of death.</li> <li>• Higher risk of developing heart failure.</li> </ul>
<b>ALTERNATIVE TREATMENTS</b>	None are available at this facility.

Patient signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Witness signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Physician signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Witness signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Place patient ID sticker here.



**Severe Criteria**

- Circumferential burns
- Burns across joints
- Burns of face, neck, or groin
- Electrical/chemical burns
- Inhalation injuries/respiratory distress
- Trauma (refer to ATLS)
- Any full-thickness (3<sup>rd</sup> degree) burns

**Disposition Considerations/Criteria**

**Village:** *wound care by health aides over RMT, consider PT by telehealth.*

- Pain controlled on PO regimen.
- No sign of wound infection.
- Unlikely to require further debridement.
- Patient/caregiver/health aide able to perform dressing changes.

**Outpatient** (ED/Outpatient Clinic/PT): *daily follow-up for wound management and ROM exercises.*

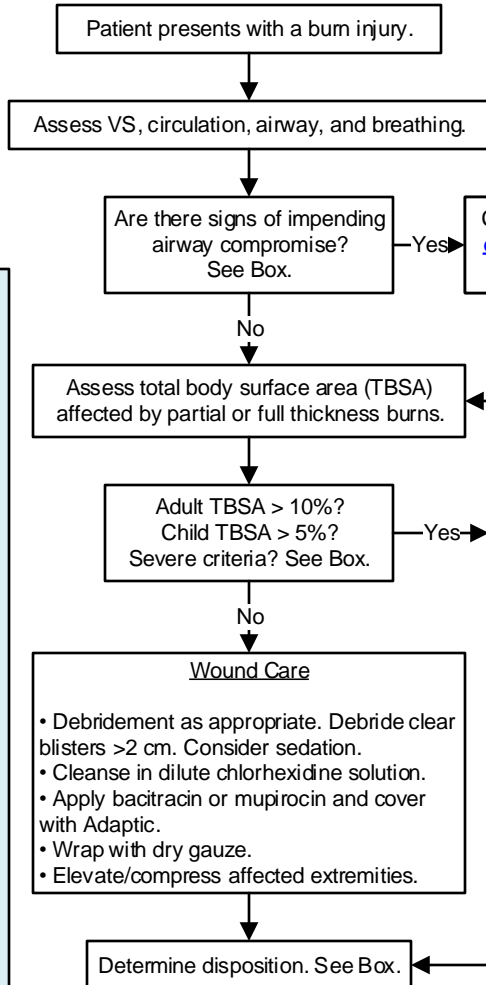
- Wound infection improving on PO antibiotic regimen.
- Debridement not more than once/day.
- Dressing changes not more than twice/day.
- Need for PT assessment not more than twice/week.

**Inpatient YKHC:**

- Pain uncontrolled on oral medications.
- Dressing changes more than twice/day.
- Wound infection requiring IV antibiotics.
- Nonambulatory (including wounds on both feet).

**Inpatient ANMC:**

- Critical illness.
- Wound requiring operative debridement or grafting.
- Surgeon recommends higher level of care.
- Child with severe criteria.
- If expected wound care exceeds currently available resources at YKHC.



**Signs of Impending Airway Compromise**

- History of enclosed space fire (including house fire)
- Burn injury or soot in oropharynx
- Stridor or wheezing
- Circumferential burn of neck

**Village Management**

For any burn that warrants travel to Bethel, instruct health aides to apply bacitracin and NOT silvadene to avoid painful cleaning of wounds in Bethel.

- IV access
- Analgesia
- Labs: CBC with diff, CMP, UDS, EtOH, CK, coags.
- If inhalation injury, add ABG, carboxyhemoglobin.
- If TBSA >15%, give IVF per Consensus Formula in box.

**Findings Concerning for Abuse**

- Delay in seeking care
- Variations in history
- Injuries inconsistent with history
- Immersion injuries
- Uniform depth
- Well-demarcated burn margins
- Geometric pattern/object imprint

*If any concern for abuse, send a message to Child Abuse on Call by Tiger Connect.*

**Lund and Browder Chart to Estimate TBSA in Adults and Children**

Age	0	1	5	10	15	Adult
Front or back half (%)	(%)	(%)	(%)	(%)	(%)	(%)
I (Head)	9½	8½	6½	5½	4½	3½
II (Thigh)	2¼	3¼	4	4¼	4½	4¼
III (Leg)	2½	2½	2¼	3	3¼	3½

**Consensus Formula (Brooke/Parkland)**  
*Only used if TBSA >15%.*

(weight in kg) x 2-4 mL x %TBSA = total fluid to be given over 24 hours  
Do not convert %TBSA to a decimal. For example, 15% TBSA would be 15.

Give half in first eight hours from time of burn. Give other half over the next sixteen hours.  
If delayed presentation, begin at initial calculated 8 hour rate; do not "catch up" with fluid boluses.  
Goal UOP 0.5-1 mL/kg/hour.

Use LR used for adults unless mitigating circumstances. For pediatric patients <30 kg, add D5.

**Classification of Burns by Depth**

*Burns evolve over time; initial TBSA and depth classification can change and often the difference between deep partial thickness and full thickness can only be determined operatively.*

- Superficial (1<sup>st</sup> degree): epidermis only, dry, red, blanches with pressure, no blisters, painful.
- Superficial partial-thickness (2<sup>nd</sup> degree): epidermis and part of dermis, blisters, moist, red, weeping, blanches with pressure, painful.
- Deep partial-thickness (2<sup>nd</sup> degree): epidermis and deep dermis, blisters, wet or waxy dry, patchy white to red, does not blanch, pressure sensation only.
- Full-thickness (3<sup>rd</sup> degree): epidermis and entire dermis, waxy white to leathery gray to charred/black, dry and inelastic, does not blanch, sensation to deep pressure only, may be defined as 4<sup>th</sup> degree with extension into underlying fascia, muscle, or bone.

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 Clinical Guideline Committee 4/28/23. Click [here](#) to see the supplemental resources for this guideline.  
**If comments about this guideline, please contact Travis\_Nelson@ykhc.org.**



### Immediate Management (in village, en route, or upon arrival)

- Consider ASA 81 mg (PO or PR) if no headache or vomiting.
- Blood glucose.
- EKG, if possible.
- Place two large-bore IVs.
- Notify radiology tech and radiologist.
- Have appropriate staff on standby.
- Have tenecteplase ready.
- Transport directly to CT, if stable.
- COVID screen/BINAX.
- Calculate [NIHSS](#).

### General Care for Strokes

- Supportive care for airway, breathing, circulation
- VS including weight
- Telemetry
- Appropriate neurologic status documentation and repeat checks
- Glucose goal 140-180; repeat glucose checks if NPO.
- Maintain normothermia (eg acetaminophen PR as needed)
- NPO until swallow study
- BP control (see box)

### BP Control

#### BP Goals

- Acute ischemic stroke or TIA: <220/120 mm Hg
- Acute ischemic stroke s/p thrombolytics: <185/110 mm Hg
- Intracerebral hemorrhage: <180/90 mm Hg
- Subarachnoid hemorrhage: <140-160/90 mm Hg

*Patient eligible for reperfusion therapy except if BP >185/110; lower BP by below regimen, then proceed*

- Nicardipine 5 mg/hour IV, titrate up by 2.5 mg/hour every 5 to 15 minutes, max 15 mg/hour; adjust to maintain proper BP (nicardipine is preferred)

OR

- Labetalol 10 to 20 mg IV over 1 to 2 minutes, may repeat x1
- OR
- Hydralazine or enalaprilat may also be considered.

If blood pressure is not maintained at or below 185/110 mmHg, do **not** administer tenecteplase.

*During and after reperfusion therapy to maintain BP <180/105*

- Labetalol 10 mg IV then continuous infusion 2 to 8 mg/min
- Nicardipine 5 mg/hour IV, titrate to desired effect by 2.5 mg/hour every 5 to 15 minutes, max 15 mg/hour

### Phone Numbers

- Providence Transfer Center: (907) 212-7363, press 1 for STEMI/stroke
- ANMC Transfer Center: (907) 729-BEDS or Tiger Connect the Transfer Center
- ANMC Neurology: Tiger Connect

Patient arrives in ED with symptoms concerning for stroke.

→ Patient unstable → Provide care per ACLS.

Patient stable

Perform noncontrast CT head STAT.

→ Evidence of hemorrhage →

- If beneficiary, consult ANMC Neurology and Neurosurgery.
- If non-beneficiary, consult PAMC Neurology and Neurosurgery.
- Prepare to transfer.
- Initiate BP control. (See box.)

No evidence of hemorrhage

Perform CTA head and neck.

NIHSS ≥6

OR  
Disabling symptoms

NIHSS <6

AND  
No disabling symptoms

Has it been ≤ 24 hours since onset of symptoms?

→ No →

- If beneficiary, consult ANMC Neurology.
- If non-beneficiary, consult PAMC Neurology.
- Determine disposition of care.

→ Yes →

Is there a lesion on CTA that could be accounting for symptoms (see box)?

→ Yes →

- If beneficiary, contact ANMC to request transfer to PAMC.
- Call PAMC Transfer Center to arrange transfer for thrombectomy.

→ No →

<4.5 hours since symptom onset

≥4.5 hours since symptom onset

- Prepare to give thrombolytics, in consultation with accepting team.
- Complete [thrombolytic checklist](#) with patient, family, and neurologist.

Consult neurology.

### Disabling Symptoms

- Field cut
- Aphasia
- Neglect

### Thrombolytics at YKHC

- Tenecteplase is the only thrombolytic stocked in the ED at YKHC. Dose for CVA is 0.25 mg/kg IV once (max 25 mg).
- Alteplase must come from the pharmacy, if desired.

### If giving thrombolytics

- Goal time from door to drug: <60 minutes.
- Attempt to place all lines and tubes (ETT, Foley, NG) prior to administering drug.
- Monitor until transfer: frequent VS and neuro checks.
- BP control per box.
- If any neurologic worsening, repeat head CT.

### Criteria for Possible Thrombectomy

- <24h since last well
- NIHSS ≥ 6 or disabling symptoms such as aphasia, neglect, field cut
- Good previous function
- [ASPECTS](#) >6
- Lesion in carotid, M1, M2, basilar, P1, or A1 arteries

### Note about Disposition

- Most patients with stroke should be transferred, either for intervention at PAMC or for work-up and therapy.
- Consider NOT transferring:
  - Patients who decline transfer.
  - Patients with resolved symptoms. (Calculate [Canadian TIA](#) or [ABCD<sup>2</sup>](#) score).
- **You may need to advocate for your patients to receive the standard of care.**

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 2/1/22. Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [EPeek\\_Ehlinger@ykhc.org](mailto:EPeek_Ehlinger@ykhc.org) or [Jeremy\\_Wood@ykhc.org](mailto:Jeremy_Wood@ykhc.org).



### Thrombolytic Checklist

#### INDICATIONS (initial yes or no)

YES	NO	
		Less than 4.5 hours since onset of symptoms or last known normal.
		NIHSS greater than 5 (or less than 5 with disabling symptoms).
		Symptoms are NOT rapidly improving.
		Symptoms are NOT due to untreated hypoglycemia (BG<50).

#### ABSOLUTE CONTRAINDICATIONS (initial yes or no)

YES	NO	
		CT evidence of hemorrhage OR extensive area of hypodensity (irreversible injury).
		GI/GU bleed in the last 21 days.
		Severe, uncontrolled, hypertension >185/110.
		Current intracranial neoplasm.
		Active internal bleeding or known aortic dissection.
		Any bleeding diathesis.
		Presentation suggestive of SAH or endocarditis (not septic emboli).
		History of intracranial hemorrhage.
		Anticoagulation (warfarin or DOAC in the last 48 hours or therapeutic-dosed heparinoids).
		Any of the following in the last three months: ischemic stroke, intracranial surgery, intraspinal surgery, or serious head trauma.

#### RELATIVE CONTRAINDICATIONS (initial yes or no) – If any of the following relative contraindications are present, consider expert consultation prior to giving thrombolytic and/or consider these with consent and shared decision-making.

YES	NO	
		History of GI or GU hemorrhage.
		Arterial puncture in a non-compressible site in the last seven days.
		Seizure at onset with postictal neurologic impairment.
		Major surgery in the last 14 days.
		Pregnancy.
		Onset 3-4.5 hours with NIHSS >25 (higher bleeding risk) or age >80 (higher bleeding risk).
		Untreated AVM or aneurysm.
		Systemic malignancy.
		History of arterial dissections.
		Blood glucose greater than 400 (associated with worse outcomes).

*This checklist is advisory for clinical decision-making and may not be all-inclusive. Risks and benefits will need to be assessed individually.*

Physician signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Place patient ID sticker here.



### PROCEDURE CONSENT

I hereby authorize \_\_\_\_\_ and such assistants as he/she may designate, to perform the following operation or procedure:

**TECHNICAL DESCRIPTION**

Intravenous thrombolytic therapy for acute ischemic stroke.

**LAY DESCRIPTION**

Give clot-dissolving medication through an IV to dissolve the clot which is causing a stroke.

\_\_\_\_\_ has discussed with me the information briefly summarized below:

**BENEFITS**

- Thrombolytic medication is a treatment that may restore blood flow to the brain.
- In studies, if these drugs were given less than three hours after the stroke started, 33% of patients given thrombolytic drugs had a good outcome. In patients who did not get thrombolytic drugs, 23% got better. Ten people would have to get the drug to help one person have a better outcome.
- If these drugs were given between three and four and a half hours after the stroke started, 35% of patients given thrombolytic drugs had a good outcome, and 30% of patients who didn't get the drug also got better. Twenty people would have to get the drug to help one person have a better outcome.
- Patients who receive this drug within three hours of the stroke starting have a 10% increase in chance of disability-free survival.
- Patients who receive this drug between three and four and a half hours from the stroke starting have a 5% increase in chance of disability-free survival.

**RISKS**  
(some, but not all)

- In a large study of stroke patients, 6.8% of them had bleeding in their brain after receiving thrombolytic drugs for stroke, compared to 1.3% of those stroke patients who did not receive the drug. If we give this drug 18 times, it will probably make one person have bleeding in their brain.
- Among all people given this drug, 2% die from a hemorrhage.

**RISKS OF NOT HAVING THE  
PROCEDURE**

- Higher risk of developing permanent, disabling stroke symptoms.

**ALTERNATIVE TREATMENTS**

No other treatments available at this facility. Only monitoring symptoms and rehabilitation.

Patient signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Witness signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Physician signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Witness signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Place patient ID sticker here.



Patient with serious illness with expected death.

### Preparation

#### In hospital:

- Complete [Physician Orders for Life-Sustaining Treatment \(POLST\)](#) order form. Review with patient and family regularly.
- Review DNR/DNI status at least once an admission. Remember, all decisions regarding end-of-life care may be modified at any time per patient and family wishes.
- Place DNR/DNI order in RAVEN. Update code status on RAVEN banner by going to Ad hoc → Code Status form.
- When discharging home, ensure all support is in place, including family care plan, comfort meds (consider sublingual morphine and lorazepam), incontinence supplies, etc.

#### In village:

- Discuss and document goals of care, code status, wishes for medevac/hospitalization with patient and family. Update code status in RAVEN as above.
- Complete [Expected Home Death](#) form and send to AST/BPD.
- Place on RAVEN banner by going to AdHoc → Patient Registries and check off "Expected Home Death."
- Communicate with village health aides.

### After a home death has occurred

- Medical providers can pronounce death remotely after speaking with a qualified representative, which includes health aides. Representative must ascertain that there is no heart beat or spontaneous breathing.
- Send [Expected Home Death](#) form to the State Medical Examiner and AST/BPD. If this form was not completed prior to death but would have been indicated, it is acceptable to fill it out after death. This will expedite things for the family.

If this is an expected neonatal death, go to [page 3](#).

### Required Notifications

Ensure you have next of kin's name and phone number prior to making these calls.

#### In hospital:

- Bethel Police Dept 907-543-3781 Even if Expected Death form has been completed.
- Life Alaska 888 543-3287. Required by CMS for all hospital deaths.
- State Medical Examiner 888 332-3273. Please review page 3 for ME notification requirements.

#### In village:

- Alaska State Troopers 800 478-9112
- State Medical Examiner 888 332-3273 Please review page 3 for ME notification requirements.
- Optional: Life Alaska 888 543-3287. Deceased individuals in villages may still be candidate for tissue donation.

### Documentation

- Death Note in RAVEN should be an Alert Note using autotext ".death" which fulfills all documentation requirements.
- Forward death note to Chief of Staff and designated Medical Records representative.
- Complete highlighted portions of Death Certificate and place in Medical Records basket.
- If death occurred in the hospital, complete [Notification of Death](#) form.

### Helpful Forms

Note: Copies of the death packet are also kept on the inpatient unit.

- [Physician Orders for Life-Sustaining Treatment \(POLST\)](#)
- [Expected Home Death](#)
- [Death Certificate Worksheet](#)
- [Notification of Death](#)

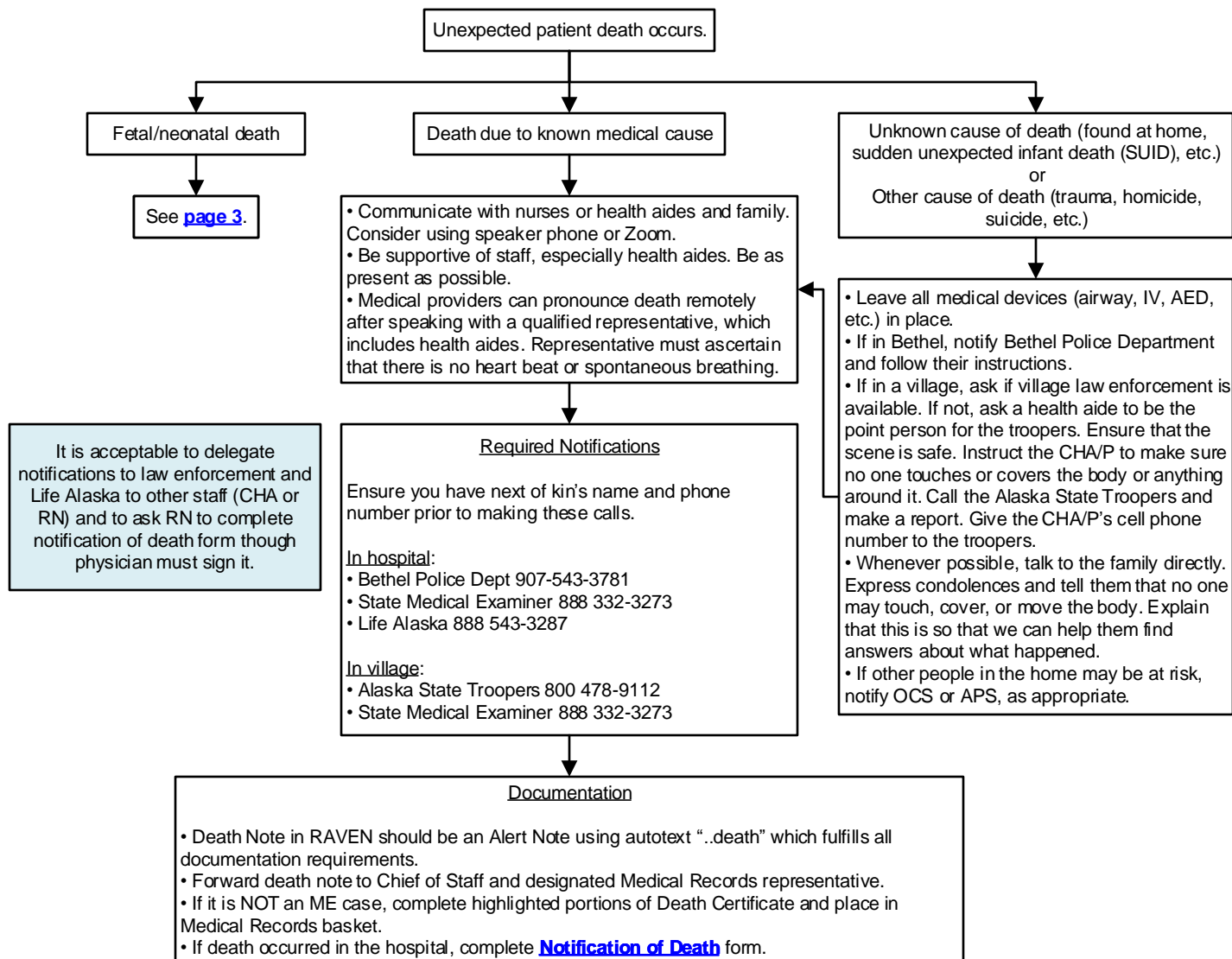
This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.

Approved by Clinical Guideline Committee 7/14/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).





### Regarding Life Alaska

It is a CMS and TJC requirement to notify designated organ donation organization (Life Alaska) for all in hospital deaths. We are not mandated to contact Life Alaska for village deaths; however, individuals who die in villages may still be candidates for tissue donation. Additionally, if the death will become an ME case, Life Alaska must be notified.

### Helpful Phone Numbers

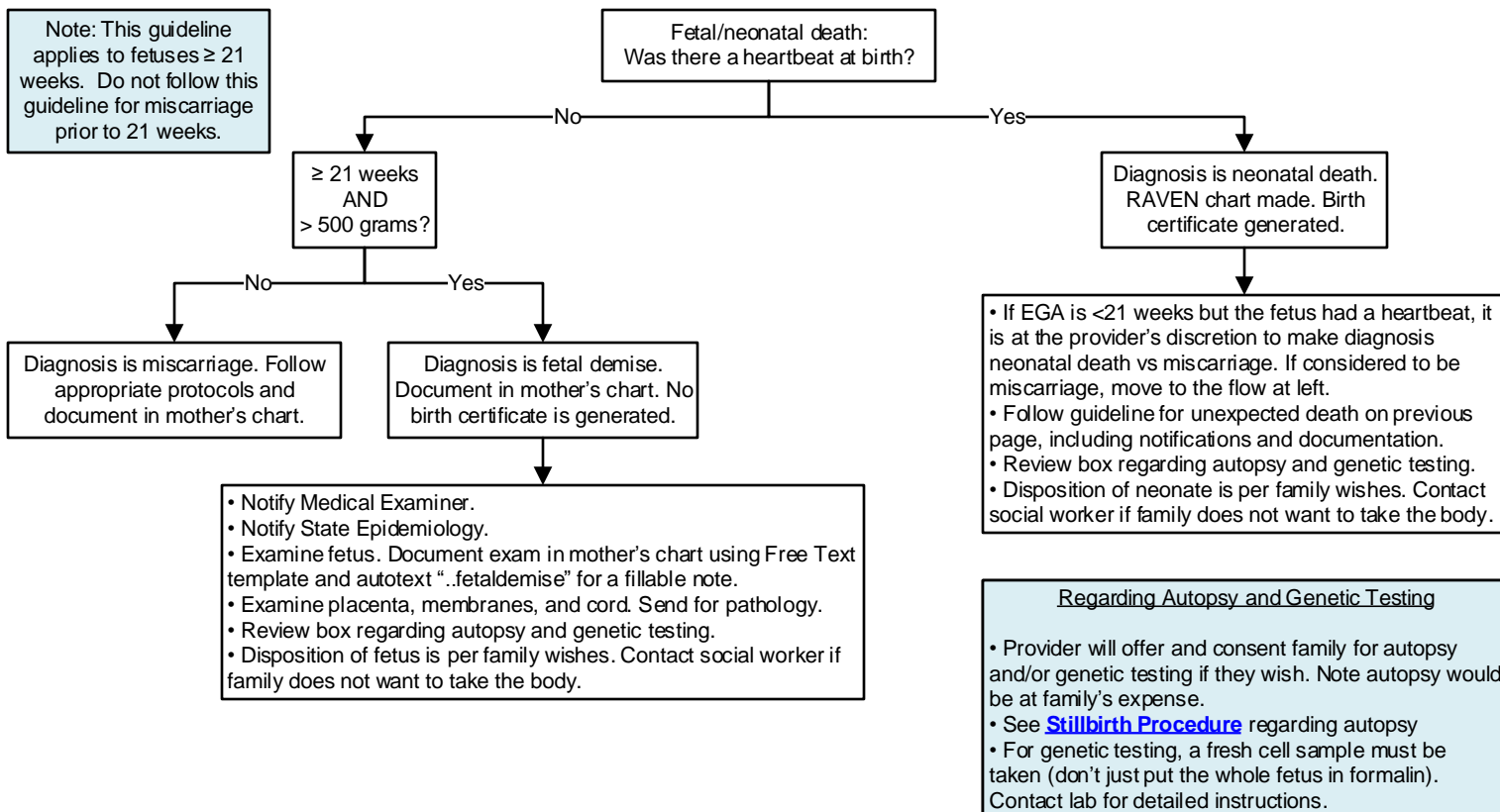
- Alaska State Medical Examiner: 888 332-3273
- Life Alaska: 907 562-5433
- Alaska State Troopers (AST): 800 478-9112
- Bethel Police Department (BPD): 543-3781
- State Epidemiology: 907 269-8000
- OCS Intake (for reports): 800 478-4444
- APS Intake (for reports): 800 478-9996

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Approved by Clinical Guideline Committee 7/14/23.

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If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).



### Medical Examiner Notification

Per YKHC and State of AK policy, the Medical Examiner must be notified when the death appears to have:

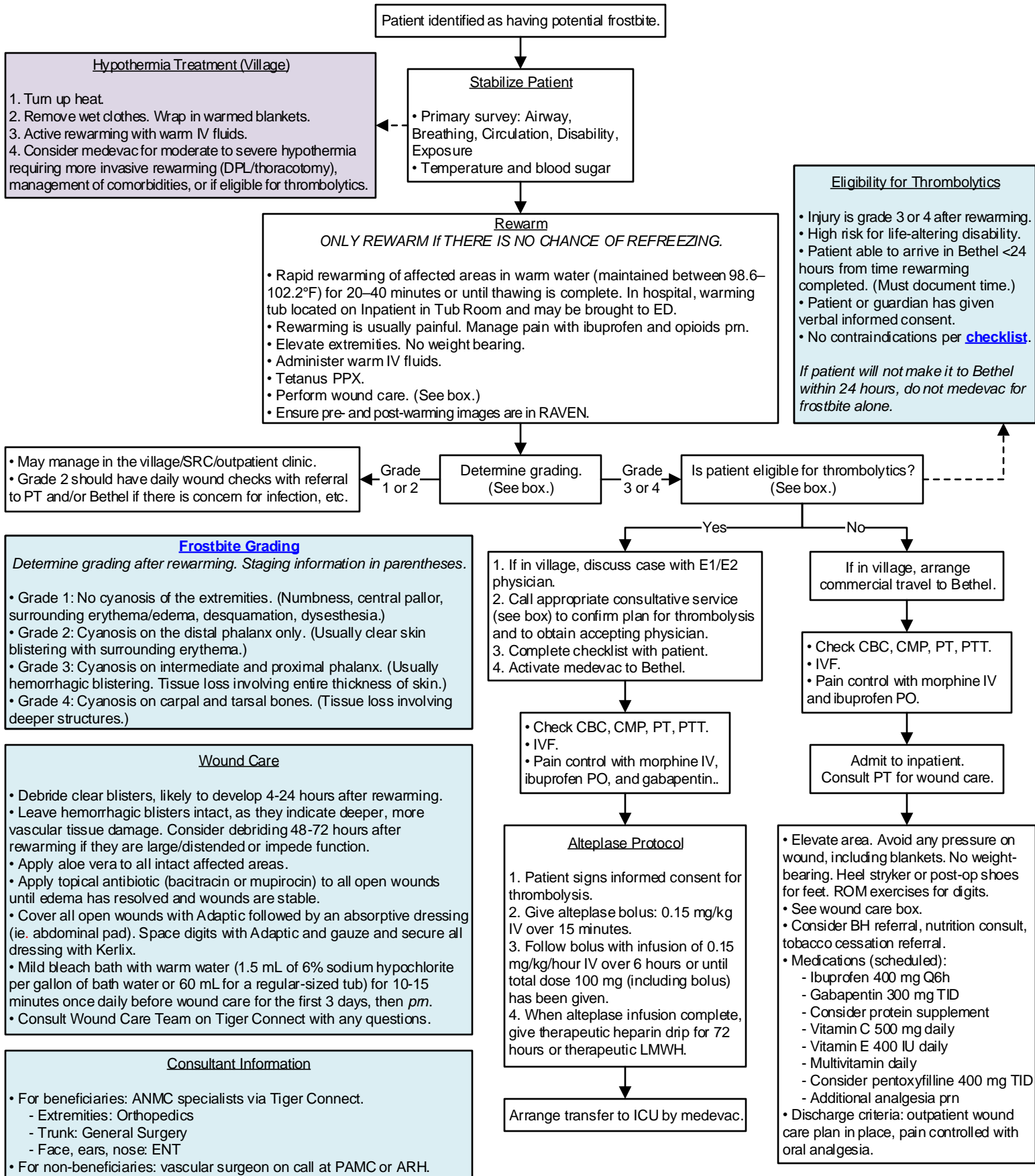
1. Been caused by unknown or criminal means, during the commission of a crime, or by suicide, accident, or poisoning.
2. Occurred under suspicious or unusual circumstances or occurred suddenly when the decedent was in apparent good health.
3. Been unattended by a practicing physician or occurred less than 24 hours after the deceased was admitted to a medical facility.
4. Been associated with a diagnostic or therapeutic procedure.
5. Resulted from a disease that constitutes a threat to public health.
6. Been caused by a disease, injury, or toxic agent resulting from employment.
7. Occurred in a jail or corrections facility owned or operated by the state or a political subdivision of the state or in a facility for the placement of persons in the custody or under the supervision of the state.
8. Occurred in a foster home.
9. Occurred in a mental institution or mental health treatment facility.
10. Occurred while the deceased was in the custody of, or was being taken into the custody of, the state or a political subdivision of the state or a public officer or agent of the state or a political subdivision of the state
11. Been of a child under 18 years of age or under the legal custody of the Department of Health and Human Services, unless the child's death resulted from a natural disease process and was medically expected and the child was under supervised medical care during the 24 hours before the death.

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 Clinical Guideline Committee 7/14/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).



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 Clinical Guideline Committee 3/24/23. Click [here](#) to see the supplemental resources for this guideline. If comments about this guideline, please contact Shawn\_Vainio@ykhc.org.

Note: people in crises such as frostbite have time to think and are open to change. Alcohol, nicotine, and behavior modification counseling are very effective during these times.



### Alteplase Checklist

#### INDICATIONS (initial yes or no)

YES	NO	
		Grade 3 or 4 frostbite.
		High risk for life-altering disability.
		Patient able to arrive in Bethel <24 hours from time rewarming complete.
		Patient or guardian able to give informed consent.

#### ABSOLUTE CONTRAINDICATIONS (initial yes or no)

YES	NO	
		Prior intracranial hemorrhage.
		Known structural cerebral vascular lesion.
		Known malignant intracranial neoplasm.
		Ischemic stroke within three months.
		Suspected aortic dissection.
		Active bleeding or bleeding diathesis (excluding menses).
		Significant closed-head trauma or facial trauma within three months.

#### RELATIVE CONTRAINDICATIONS (initial yes or no) – If any of the following relative contraindications are present, consider expert consultation prior to giving thrombolytic and/or consider these with consent and shared decision-making.

YES	NO	
		History of chronic, severe, poorly controlled hypertension.
		Severe uncontrolled hypertension on presentation (SBP >180 mmHg or DBP >110 mmHg)
		History of ischemic stroke more than three months prior
		Traumatic or prolonged (>10 minute) CPR or major surgery less than three weeks
		Recent (within two to four weeks) internal bleeding or recent invasive procedure or serious trauma.
		Noncompressible vascular punctures.
		Pregnancy.
		Active peptic ulcer GI malignancy, GI hemorrhage in previous 21 days, h/o GI bleed.
		Pericarditis or pericardial fluid.
		• Therapeutic LMWH. • Current use of any anticoagulant that has produced an elevated INR >1.7 or PT >15 seconds or abnormal PTT.
		Age >75 years.
		Diabetic retinopathy.
		Platelet count <100,000.

*This checklist is advisory for clinical decision-making and may not be all-inclusive. Risks and benefits will need to be assessed individually.*

Physician signature: \_\_\_\_\_

Printed name: \_\_\_\_\_ Date and time: \_\_\_\_\_

Place patient ID sticker here.



YKHC follows the statewide “Guidelines for the Management of Acute Blunt Head Trauma in Alaska,” found [here](#).

If concern for spinal injury, see YKHC [Spinal Cord Injury Management](#) guideline.

#### Village Management of Isolated Head Trauma

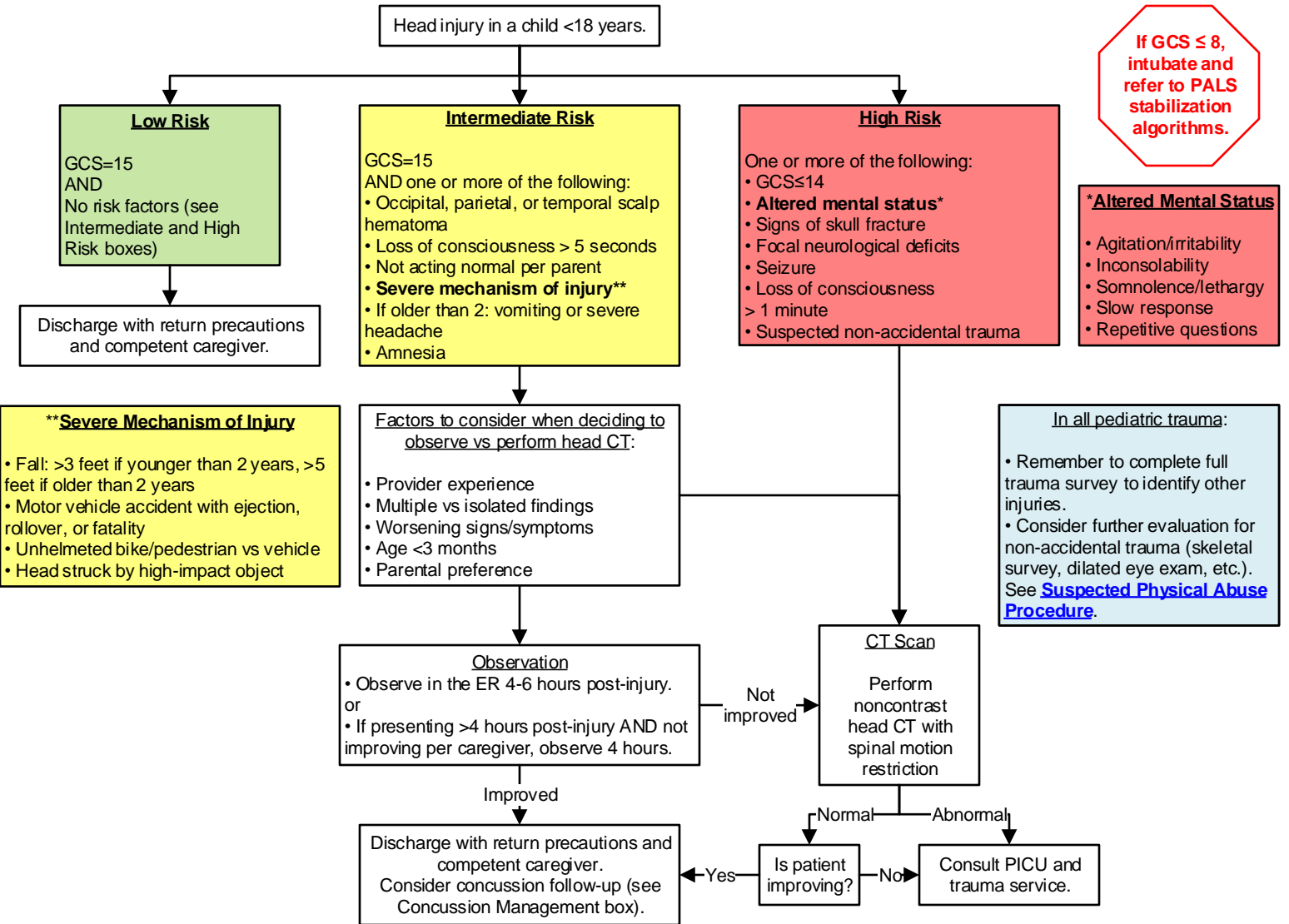
- See [Canadian CT Head Injury/Trauma Rule](#).
- If GCS 14-15 and no high risk criteria met, observe in clinic for two hours. If worsening or no improvement, consider transfer to Bethel in consultation with ED physician.
- If GCS 9-13 or 14-15 with high-risk criteria, consult Emergency RMT provider or ED physician.
- If GCS  $\leq$ 8, activate medevac and support airway per ATLS.

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 Clinical Guideline Committee 11/21/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Clinical\\_Guidelines@ykhc.org](mailto:Clinical_Guidelines@ykhc.org).



#### Village Management

- If Low Risk: Discharge with competent caregiver with clear return precautions. Do not send to Bethel unless otherwise indicated.
- If Intermediate Risk: Consider medevac vs observation with Q1h VS and neuro checks. If any worsening or no improvement over 4 hours, activate medevac.
- If High Risk: Activate medevac.

Plain films of the skull are not recommended.

#### Concussion Management

- Complete [Acute Concussion Evaluation](#) at every visit.
- Follow-up in outpatient clinic in 1-2 weeks.
- Consider [Sport Concussion Assessment Tool \(SCAT\)](#) at follow-up.
- Consider balance testing.
- Avoid medications that can worsen somnolence.
- If symptoms persist >3-4 weeks, consider referral to neurologist, psychologist, physical therapy, etc.
- Return to school per [CDC Heads Up Protocol](#).
- Return to play per [ASAA Guidelines](#).

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Approved by Clinical Guideline Committee 5/15/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Clinical\\_Guidelines@ykhc.org](mailto:Clinical_Guidelines@ykhc.org).

#### C-spine Injury

Please see the [YKHC Spinal Cord Injury Management guideline](#) for pediatric C-spine resources.

#### Pediatric Glasgow Coma Scale (GCS)

	Infant	Child	
Eye opening	Spontaneous	Spontaneous	4
	To speech	To speech	3
	To pain	To pain	2
	No response	No response	1
Best verbal response	Coos, babbles	Orientated, appropriate	5
	Irritable cry	Confused	4
	Cries to pain	Inappropriate words	3
	Moans to pain	Incomprehensible sounds	2
Best motor response	No response	No response	1
	Moves spontaneously	Obeys commands	6
	Withdraws to touch	Localizes painful stimulus	5
	Withdraws to pain	Withdraws to pain	4
	Flexion to pain	Flexion to pain	3
	Extension to pain	Extension to pain	2
	No response	No response	1

**REMEMBER:**

- No pediatric patient may be kept at YKDRH on HFNC unless medevac is on weather-hold.
- Maintain patient on HFNC until medevac arrival.
- Requirements for HFNC:
  - The patient must have 1:1 nursing care until he/she has stabilized. After stabilization, nursing care may be 2:1 until medevac arrival.
  - The patient must have a respiratory therapist at bedside until stabilized.
- All newborns on HFNC must remain in the nursery.

**Apnea**

If patient has apnea with poor or worsening response to stimulation, prepare for intubation.

**Flow Rates**

Titrate flow to 0.5-2 LPM/kg. Younger patients often require higher flow rates per kilogram. Consult the PICU for any patient requiring >1 LPM/kg. Listen to lungs with each adjustment. If child is unable to easily exhale or complete an exhalation, decrease flow rate until exhalation is adequate.

**Troubleshooting**

- Consider NG/OG-tube for decompression.
- Use a pacifier to keep the patient's mouth closed and prevent loss of pressure. Consider Sweet-Ease.
- Try environmental changes to comfort a fussy baby: caregiver may hold patient in semi-recumbent position, patient may be swaddled, patient may be fanned if hot, lights may be dimmed, etc.
- Consider mild anxiolysis in consultation with medical control.
- Consider higher levels of flow to improve washout.

Patient with moderate to 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. (See box.)

- Page respiratory therapist.
- Page pediatric hospitalist.

- Activate medevac.
- **PREPARE PATIENT.** (See box.)

- RT to start high-flow nasal cannula with pediatrician consultation.
- **Low-flow cartridge** to be used with neonatal/infant cannula and produces flow rates of 1-8 LPM. This should only be used in patients ≤ 4 kg.
- **High-flow cartridge** to be used with larger cannula and produces flow rates of 5-40 LPM.

**Initial Settings**

See Flow Rates box to left.  
FiO2 50%, 37°C.  
For newborns, consult neonatologist.

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

Titrate FiO2 to maintain sats >92%.

Frequent gentle nasal suction as needed.

Reassess at least every 20-30 minutes.

**Signs of Clinical Improvement**

- ↓RR
- ↓retractions
- ↓irritability
- improved air movement
- decreased apnea

Maintain current settings until medevac arrives.

**SUPPORTIVE MEASURES**

- Control fever, as it can be an independent cause of respiratory distress.
- Nasal suction ± nasal saline or saline nebs.
- IV hydration.
- Consider back-to-back or continuous albuterol.
- Consider phenylephrine 0.25%, 1 spray to each nostril once.

**PREPARE PATIENT**

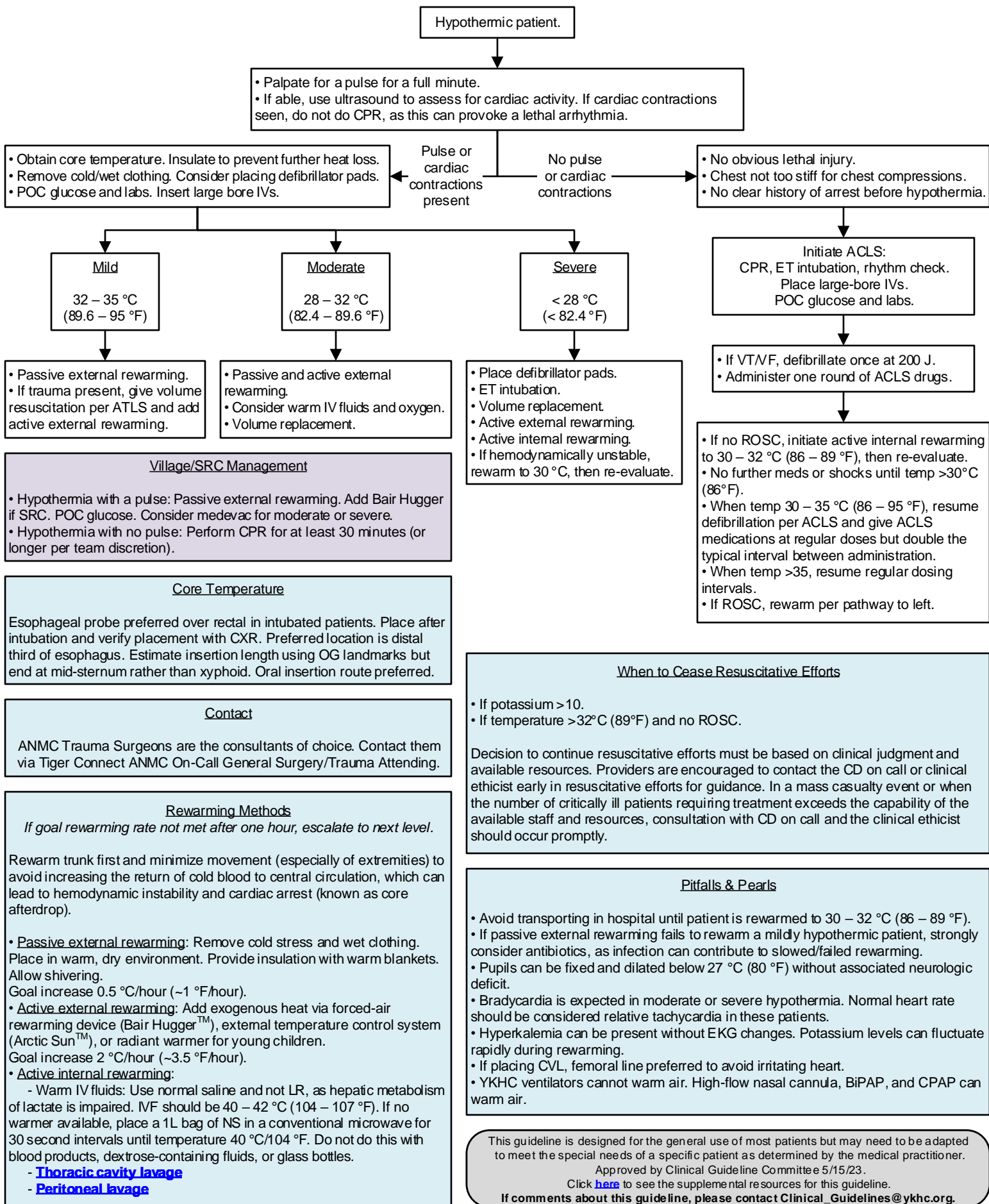
- Make patient NPO.
- Ensure reliable IV access.
- Suction nares well.
- Choose a nasal cannula with prongs that do not occlude more than 50% of the nares.
- Position patient: optimal patient position is semi-recumbent, not supine or upright. Consider using blue seat (stored in the ED) with adjustable angle. Use blankets and towels for shoulder rolls and to support position and ensure patient is not slumping over. Caregivers may hold the child if it helps keep him/her calm as long as the child is at a ~45 degree angle.
- To prevent condensation causing problems, place patient at a higher level than unit and clip tubing to patient's clothing.

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Click [here](#) to see the supplemental resources for this guideline.

Approved by Clinic Guidelines Committee 11/27/22.

If comments about this guideline, please contact  
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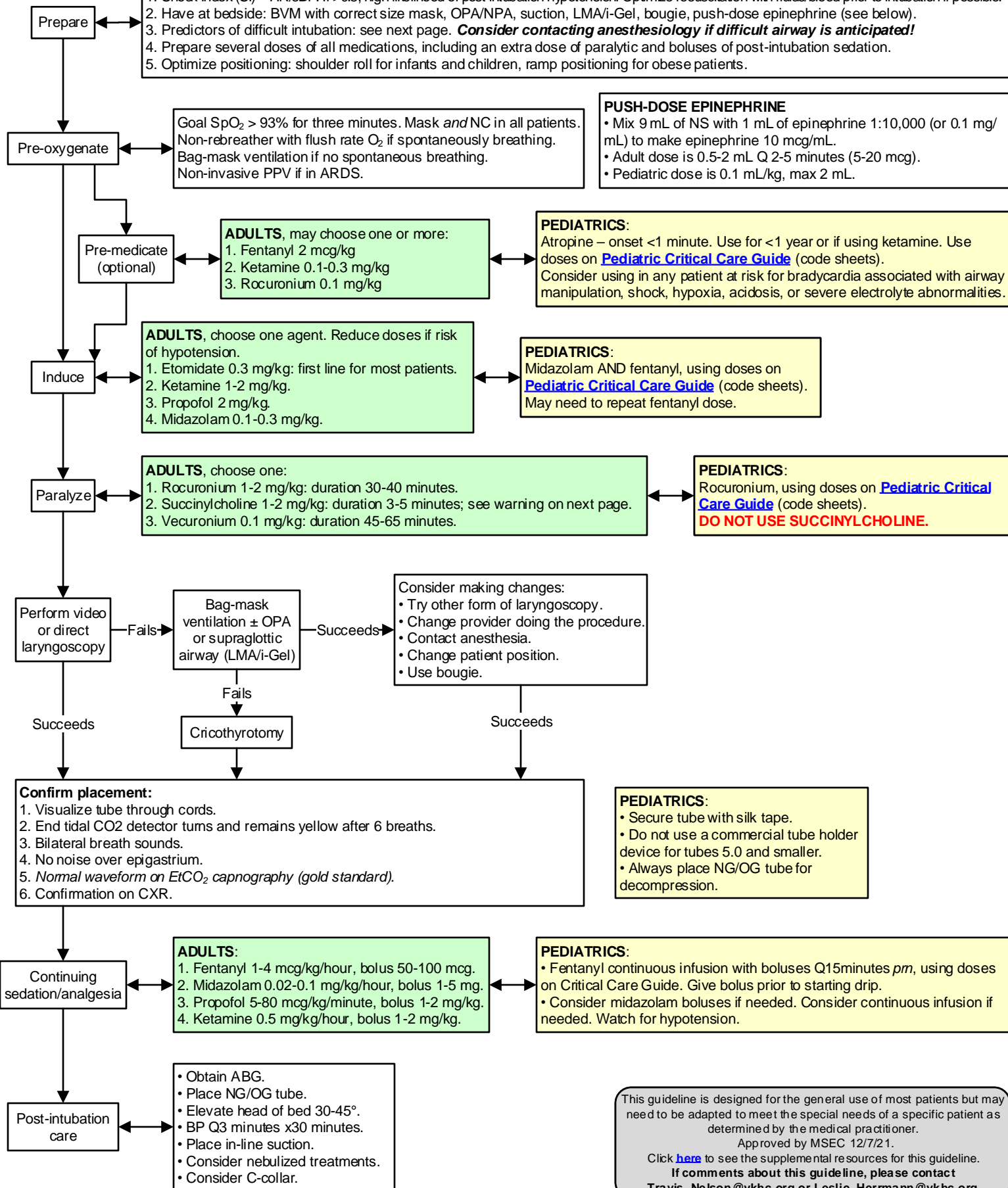






### Predict difficult airway and post-intubation hypotension (See below for Push-Dose Epinephrine):

1. Shock Index (SI) = HR/sBP. If >0.8, high likelihood of post-intubation hypotension. Optimize resuscitation with fluids/blood prior to intubation if possible.
2. Have at bedside: BVM with correct size mask, OPA/NPA, suction, LMA/i-Gel, bougie, push-dose epinephrine (see below).
3. Predictors of difficult intubation: see next page. **Consider contacting anesthesiology if difficult airway is anticipated!**
4. Prepare several doses of all medications, including an extra dose of paralytic and boluses of post-intubation sedation.
5. Optimize positioning: shoulder roll for infants and children, ramp positioning for obese patients.





## Predictors of Difficult Intubation

### Predictors of Difficult Intubation

- Mallampati grade 3 or 4
- Cormack & Lehane grade 3 or 4
- Wilson score of > 2
- LEMON system; objective/subjective scoring

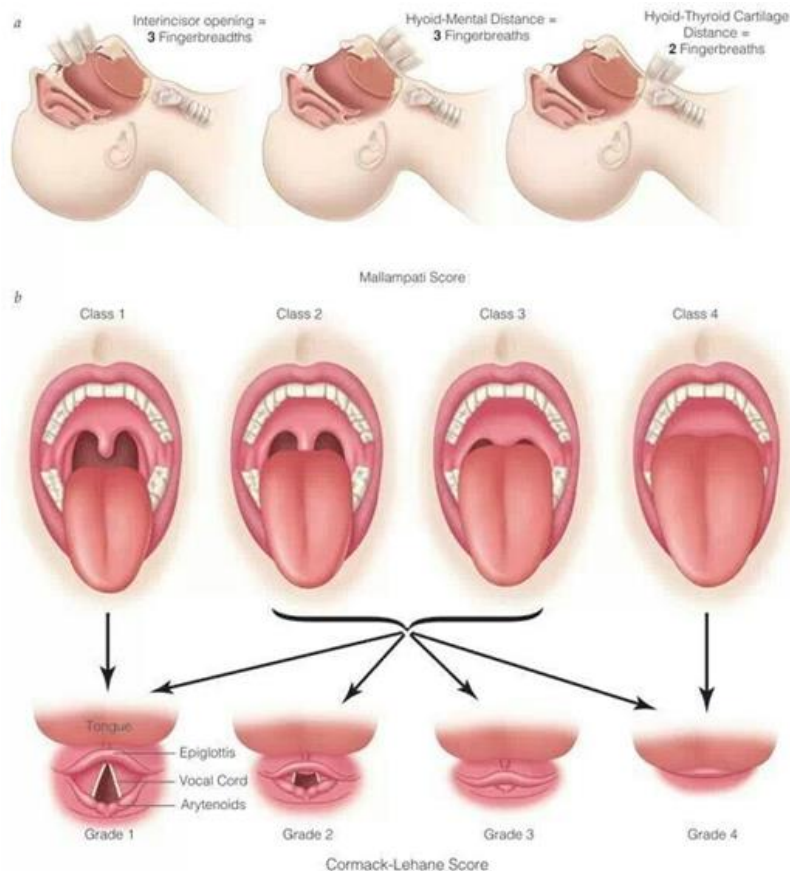
### Wilson Score

	0	1	2
Weight (kg)	< 90	90-110	> 110
Head and neck movement	> 90°	~ 90°	< 90°
• Inter-incisor gap (cm) • SL (maximum forward protrusion of lower incisors beyond uppers)	> 5 > 0	= 5 = 0	< 5 < 0
Receding mandible	None	Moderate	Severe
Buck teeth	None	Moderate	Severe

### LEMON System

<b>L</b>	Look: trauma, large tongue
<b>E</b>	Evaluate 3:3:2 rule.
<b>M</b>	Mallampati score $\geq 3$
<b>O</b>	Obstruction
<b>N</b>	Neck mobility (limited)

Helpful Resource: [the Difficult Airway App](#)



## Use of Succinylcholine

### Absolute contraindications:

Family / personal history of malignant hyperthermia  
Hyperkalemia; if unknown K, obtain EKG for peaked T's  
Upper motor neuron injury, denervating neuromuscular disease  
Use after acute phase of burns, major trauma, crush injury

### Relative contraindications:

Elevated ICP  
Pseudocholinesterase deficiency

### Treatment of malignant hyperthermia:

Dantrolene 2.5 mg/kg IV, redosing based on expert guidance

## Difficulty with BVM

### Predictors of Difficulty with BVM

<b>R</b>	Radiation/Restriction
<b>O</b>	Obstruction/Obesity/OSA
<b>M</b>	Mask seal/Male/Mallampati $\geq 3$
<b>A</b>	Aged
<b>N</b>	No teeth

### Options if having difficulty with BVM

- 2-hand technique with 2 providers
- Oral/nasal airways
- Positioning
- Consider no paralytics

Resources: Guideline adapted from Strayer Airway Algorithm, Austin Hospital Airway Algorithm, Difficult Airway Course  
Predictors of Difficult Intubation: <http://medind.nic.in/iad/t05/i4/iadt05i4p257.pdf>

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Approved by MSEC 12/7/21.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact  
Travis\_Nelson@ykhc.org.



## **ADULTS: ARDS/Protective Ventilation Protocol (appropriate for most patients without indication for alternate ventilation)**

### **Initial Ventilator Settings:**

(1) Set Tidal volume (Vt) = 6-8 mL/kg using Ideal Body Weight. See [MDCalc Tidal Volume Calculator](#).

(2) Reduce Vt by 1 mL/kg every 1-2 hours until Vt 6 mL/kg.

(3) Set initial rate to 18-35 bpm based on pre-intubation rate.

*Obstructive lung disease:* Consider lower RR to maximize expiratory phase.

(4) Set initial PEEP at 5 cm H<sub>2</sub>O.

• If BMI > 30, set PEEP to 8 cm H<sub>2</sub>O.

• If BMI > 40, set PEEP to 10 cm H<sub>2</sub>O.

(5) Set initial FiO<sub>2</sub> at 30-40%; adjust to SpO<sub>2</sub> 88-95%.

(6) Set inspiratory flow rate 60-80 lpm.

*Obstructive lung disease:* Consider inspiratory flow rate 80-100 lpm

Adjust settings based on patient status, blood gases, CXR, and expert consultation.

**Oxygenation goal:** PaO<sub>2</sub> 55-80 mmHg or SpO<sub>2</sub> 88-95%.

Use a minimum PEEP of 5 cm H<sub>2</sub>O. Consider use of incremental FiO<sub>2</sub>/PEEP combinations such as shown below (not required) to achieve goal.

## **PEDIATRICS: Suggested Starting Ventilator Settings**

1. Set FiO<sub>2</sub> to 1.0 and titrate to maintain SpO<sub>2</sub> 92-94%. Goal is to decrease FiO<sub>2</sub> to <0.5 if possible.

2. Set Tidal Volume (Vt) at 8-10 mL/kg. If concern for ARDS, set Vt to 6-8 mL/kg.

3. Goal is inspiratory plateau pressures <30 cm H<sub>2</sub>O.

4. Set respiratory rate by age, increasing or decreasing based on disease process:

Adolescents 12-15 breaths/minute

Children 15-20 breaths/minute

Infants 20-25 breaths/minute

Neonates 25-30 breaths/minute

5. Set PEEP to 5 cm H<sub>2</sub>O to optimize alveolar recruitment

6. Set inspiratory time by age:

Adolescents 1.0 second

Children 0.7 second

Infants/neonates 0.5 second

7. If using pressure support, set at 5-10 cm H<sub>2</sub>O.

8. Get a blood gas ~30 minutes after any changes to ventilator settings.

**Call PICU at (907) 297-8809 immediately to help troubleshoot any problems.**

## **For All Modes of Ventilation**

- Initial vent setting are based on patient presentation.
- Vent settings are adjusted based on patient tolerance of mechanical ventilation and ABG results.  
For high PCO<sub>2</sub>: increase rate and Tidal Volume  
For low PO<sub>2</sub>: increase FiO<sub>2</sub> and PEEP
- Obtain ABG prior to intubation, 30 minutes following intubation, and 30 minutes after vent changes.
- Goal plateau pressure < 30 cm H<sub>2</sub>O; decrease Vt to lower plateau pressure.  
Obese patients may require higher plateau pressure.
- Target pH > 7.30; increase RR to control hypercapnia.
- Avoid intubation if possible in patients with obstructive lung disease; maximize use of NIPPV.

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Approved by MSEC 12/7/21.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact

Travis\_Nelson@ykhc.org or Leslie\_Herrmann@ykhc.org.



### What You Need

SpaceLab™ Monitor



Masimo Airway Adaptor (front and back of infant/neonatal package shown here)



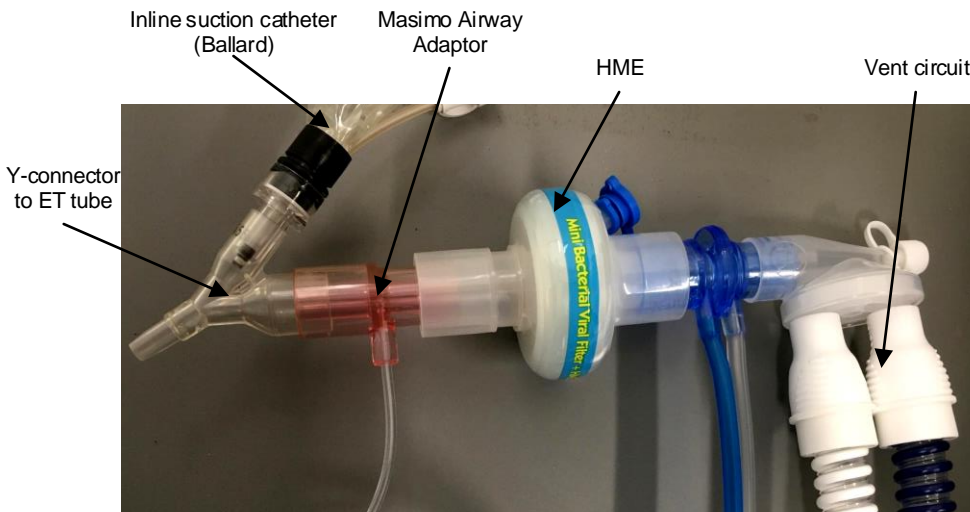
Heated Moisture Exchanger (HME)



Vent Circuit



### How to Set it Up



Plug into cartridge on back of monitor.



### Troubleshooting: Things to Try if Unable to Get Reading

- Swap the cartridge on the back of the monitor with one from another room. (See photo to right.) Some monitors are not defaulted to monitor CO<sub>2</sub> and must be set up: (1) After plugging cartridge in, screen will show “NO SAMPLING LINE – Check system.” (2) Press “GAS.” (3) Press “SETUP.” (4) Press “RESUME CO<sub>2</sub>.”
- Try new Masimo Airway Adaptor.
- Calibrate the monitor by pressing “cal” → “gas.”
- Make sure there is no moisture in the adaptor.
- Check that all connections fit tightly.

Cartridge



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 Approved by Clinical Guidelines Committee 11/27/22.  
 If comments about this resource, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



### What You Need

Zoll™ Monitor with this cable



#### Zoll Airway Adaptor

- Neonatal/Pediatric adaptor (shown) is purple and is for ETT sizes 4.0 or smaller.
- Pediatric/Adult adaptor is clear and is for ETT sizes larger than 4.0.



Heated Moisture Exchanger (HME)



Vent Circuit



Plug cable into back of monitor.

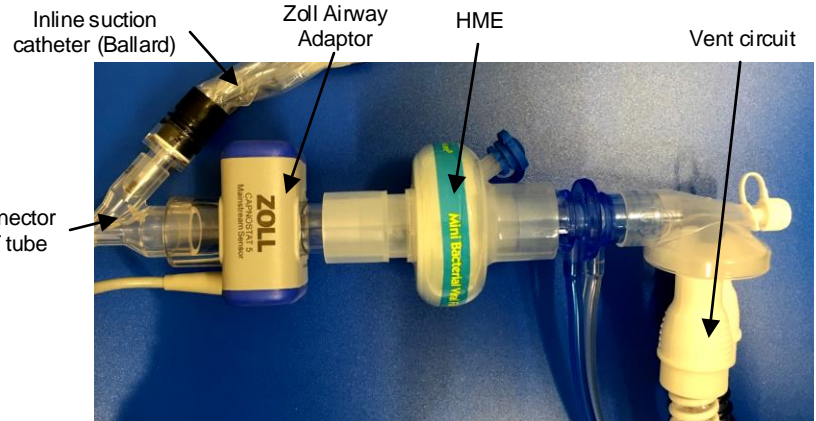


Allow two minutes for monitor to warm up.

### How to Set it Up



Y-connector to ET tube



### Troubleshooting: Things to Try if Unable to Get Reading

- Make sure the Zoll has had two minutes to warm up.
- Try new Zoll Airway Adaptor.
- Make sure there is no moisture in the adaptor.
- Check that all connections fit tightly.

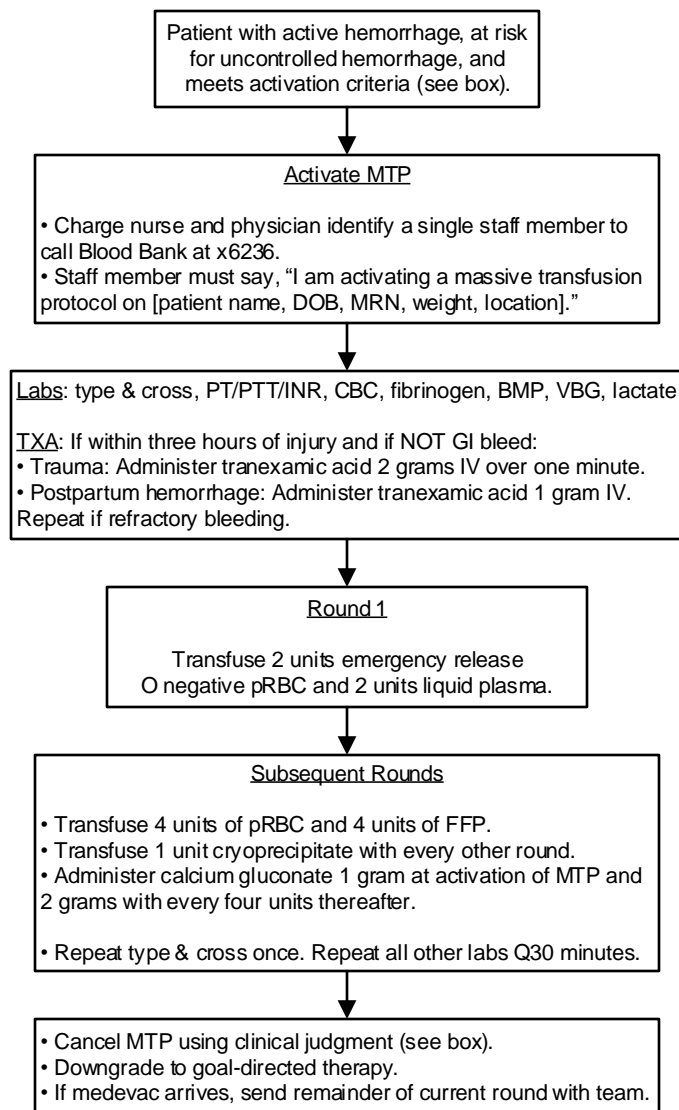
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# Yukon-Kuskokwim HEALTH CORPORATION

## Treatment Protocol

### Massive Transfusion Protocol (≥14 years)



#### Criteria for Activation (any)

- Patient has required ≥3 units pRBC in 1 hour
- Shock Index of HR/sBP > 1
- pH < 7.24 or base deficit ≤ -10
- ABC Score: ≥2 of the following
  - Penetrating mechanism (+) FAST exam
  - Systolic BP < 90
  - Heart rate > 120
- RABT Score: ≥2 of the following
  - Penetrating mechanism (+) FAST exam
  - Shock index > 1
  - Pelvic fracture

#### Factors to Consider for Cancellation of the MTP

- Bleeding is controlled or significantly improved.
- Hemodynamic status is improving
  - Stable or decreasing HR
  - Stable or increasing BP
  - Stable or increasing UOP
  - Decreasing vasopressor requirement
- Labs improving:
  - Hgb > 8
  - PT < 18
  - PTT < 42
  - Platelets > 50
  - Fibrinogen > 150
  - Lactate < 3
- Recognition of medical futility of further resuscitative efforts.

#### Risks of Massive Transfusion

Non-fatal complications in 50% of patients transfused >5 units of blood:

- Coagulopathy
- Thrombosis
- ARDS: adult respiratory distress syndrome
- TACO: transfusion-associated circulatory overload
- TRALI: transfusion-related acute lung injury
- Hemolytic reaction

#### Tips

- Avoid crystalloids to prevent dilution
- Acidosis predicts mortality. Treatment is to optimize resuscitation. No clear benefit to bicarb but may be considered if pH persistently < 7.2 despite resuscitation.
- Avoid hypothermia; keep core temperature > 36°C.
- pRBC should be transfused with a mass transfuser and blood warmer.
- Utilize ED technician to transport blood products during an MTP.

#### Availability of Blood Products at YKHC

Blood type	Quantity (units)	Rounds**
O negative	10	2-3
O positive	16	4-5
A positive	10	6-7
B positive	6	5-6
AB	none	7-8

#### Anticoagulation Reversal Agents at YKHC

- DOA/warfarin: Kcentra 2000 units or 25-50 units/kg at ~3 units/kg/minute
- Warfarin: Vitamin K 2.5-10 mg IV over 10-20 minutes
- Dabigatran: PraxBind® 2.5 grams IV Q5 minutes x2
- Heparin: Protamine 0.5-1 mg IV over 10 minutes

\*\*Per lab policy, the blood bank cannot dispense all units to a single patient in case of other emergencies. May discuss with Clinical Director on call.

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Approved by Clinical Guideline Committee 11/21/23.  
Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Travis\\_Nelson@ykhc.org](mailto:Travis_Nelson@ykhc.org).



### Indications for medevac:

- Patient is in danger of losing:
  - Life
  - Limb
  - Eyesight
- Preterm labor

NOTE: In the event of multiple medevacs, the ED physician in collaboration with medevac dispatch prioritizes the medevacs.

Occasionally, a charter may be able to fly when a medevac cannot. Consider this option if on weather-hold.

May also consult [Military Transport for Emergencies](#) guideline.

### Preterm Labor

1. See the [Labor Patient in a Village](#) and [Village Deliveries](#) guidelines.
2. Notify pediatrician. Take "go bag" from L&D with surfactant.
3. Remember to notify ED physician and OB charge RN.
4. If appropriate, consider contacting facilities in Anchorage to discuss suitability of ramp transfer.
5. Hospitalist remaining at YK will cover all emergency RMT for adults and peds, AND continue managing the preterm labor patient. Ask for help if needed (E1/E2, experienced clinic providers, CD on call, etc.).

In the event that a medevac is cancelled (patient deemed stable to come in on scheduled flight) medevac dispatch and receiving department must be notified by the managing physician immediately.

Health Aide or Provider in village consults Wards Hospitalist/Emergency RMT for initial management and possible medevac of critically ill patient.

Hospitalist consults ED Doctor on Duty to confirm appropriateness.

### Activation of Medevac

Activating provider calls medevac dispatch with patient's name, DOB, village, and diagnosis. If applicable, dispatch will ask for escort's name and weight.

**LifeMed Dispatch 1-800-478-5433**

Complete the Patient Transport Order (PTO) and ensure it is faxed to **5-543-1262 and x6099.**

### Village Management:

Explicitly clarify whether ED Physician or Hospitalist will continue managing the patient with the health aide. (Typically this will be the ED physician)

Managing physician calls village Health Aide for updates, continues active management of the patient, and documents in EMR.

Managing physician updates ED physician & charge RN.

### Dispatch Process

1. Selected medevac dispatch notifies their medevac team.  
*If medevac cannot launch (weather, runway lights, etc.) dispatch will notify managing physician. Pilot will continue to check weather.*
2. Receiving unit clerk faxes PTO and face sheet to medevac crew.
3. Medevac crew contacts health aide and managing physician as needed.
4. If there is a prolonged delay, medevac crew will contact the managing physician and health aide.

### Medevac launches

1. Once in village, medevac crew calls managing physician to give report, establish treatment plan, and give ETA in Bethel.
2. Managing physician keeps receiving charge nurse informed of patient status/ETA of medevac.

### Arrival in Bethel

Patient care is transferred to receiving unit and medevac crew gives report to staff.

Notify pediatric hospitalist when activating a medevac for any child <12 years old.

If patient is NOT a beneficiary, ask if they have a preferred medevac company. If not, suggest they [register for LifeMed insurance online.](#)

### Blood Products

If appropriate, consider sending LifeMed crew with blood products. If this is anticipated:

1. Notify dispatch of plan, confirm whether LifeMed has available blood at hangar.
2. If no blood at hangar, contact YK bloodbank to request 2 units of "emergency release" blood to be prepared immediately.

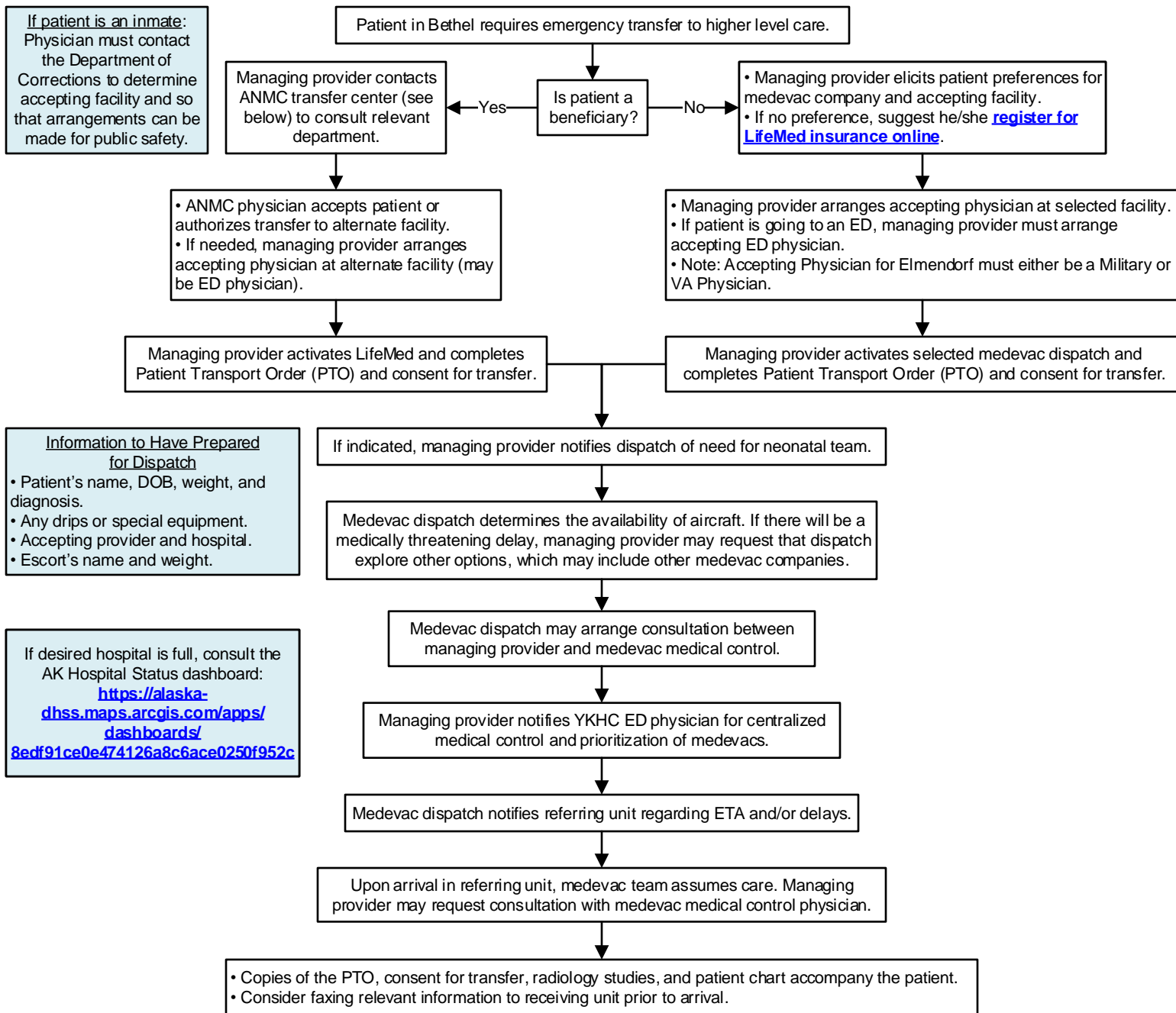
### Consider Medevac Direct to Anchorage

Indications:

1. Obvious need for acute surgical intervention (e.g. hip fracture)
  2. STEMI, obvious acute CVA
  3. Intubated in field
- MUST also be hemodynamically stable (not require stabilization at YK before transfer)

Notify LifeMed Dispatch immediately if considering.  
Discuss with receiving facility specialist (e.g. orthopedics, ICU) and ER if needed.  
Consult LifeMed regarding logistics of ramp transfer.

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Approved by Clinical Guideline Committee 10/21/22.  
If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).



### Phone Numbers

- LifeMed Dispatch: \*96 or (800) 478-5433
- Alaska Native Medical Center: Main operator: \*97 or (907) 563-2662  
Transfer Center: (907) 729-2337 or Tiger Text ANMC Transfer Center Coordinator  
ED: (907) 729-1729
- Providence Alaska Medical Center: Main operator: (907) 562-2211  
Transfer Center: (907) 212-7363  
Trauma on call: (907) 212-2525  
ED: (907) 212-3111
- Alaska Regional Hospital: Main operator: (907) 276-1131  
Transfer Center: (844) 880-5522
- Fairbanks Memorial Hospital: Main operator: (907) 452-8181  
House supervisor pager: (800) 607-3974
- Mat-Su Regional Medical Center: Main operator: (907) 861-6000  
Transfer Center: (907) 861-6440
- Joint Base Elmendorf Richardson Hospital:  
ED: (907) 580-5556  
House supervisor: (907) 580-6413
- Department of Corrections On Call: (844) 751-4588

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Approved by Clinical Guideline Committee 10/21/22.  
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Medevac has been activated for a sick patient in a village, but LifeMed cannot accept the flight.

Is the patient in danger of losing life, limb, or eyesight (LLE)?

Yes

No

### Explore other options:

- Ask health aides about transport to SRC or other villages with more resources or better accessibility.
- Explore if chartering a plane is an option.
- See if travel by boat, snow machine, or ATV is possible.
- Ask LifeMed dispatch to talk to the local crew about other creative ideas.
- Discuss with seasoned YK providers to ask for ideas.
- Discuss options with ER physician.

No other option is viable

- Notify Clinical Director (CD) on call and discuss transport options.
- Is activating the Rescue Coordination Center (RCC) appropriate?

Yes

Call the RCC at (800) 420-7230 to begin the process of activating military transport.

Call LifeMed Dispatch to ask if LifeMed crew will be able to go with the military on the flight.  
**DO NOT CALL THE CREW DIRECTLY.**

Can LifeMed crew go?

Yes

Communicate with LifeMed per usual procedures.

No

Ask RCC about medical capabilities of the anticipated crew.  
**GET DETAILS.**

Do arrangements sound appropriate to deliver the necessary level of care?

Yes

Proceed with plan per RCC. Communicate appropriately.

No

- Discuss with CD on call.
- Consider sending YKHC clinical staff.
- If approved, ask for volunteers with appropriate backgrounds.
- Strongly consider calling local LifeMed crew to help assess the risk and safety of the plan.

- Make a plan with the health aides to provide appropriate care for the patient until a regular transport can be safely arranged.
- Plan for frequent reassessments.
- Prepare to change the plan if the patient's status deteriorates.

### Things to Consider

The local LifeMed team can sometimes go on a military flight. This decision is up to the local team and their administration and depends on many factors.

If the transport team is all military:

- Will military transport inappropriately lower the level of care the patient is receiving?
- What are the capabilities of the military team? Are they pararescue jumpers (PJs), paramedics, EMTs, etc.?
- What kind of equipment will the military team have?
- Does the military team have pediatric experience and equipment, if applicable?

If you are sending a team from YK:

- Will sending a team of YK employees impact the normal operations of the hospital? (You should avoid sending anyone scheduled to work the current or next shift.)
- An ideal YK team includes an ER RN and/or paramedic. Transport/EMS experience is a must.
- **A YK team must be entirely voluntary.**
- Ensure the team will have all appropriate drugs, weight-based equipment, monitors, pumps, stretchers/backboards, etc.
- Make a plan to keep the patient warm – the military will usually not supply blankets, Doctor Downs, etc.
- **If military transport is used, no YK trainees (residents, students, visitors, etc.) or other “ride-alongs” are allowed to go.** Ride-alongs may only go on LifeMed transports with the local team on their fixed wing aircraft.

### Things to Know

- The RCC coordinates military missions. They will connect you with the appropriate people from the branch responding, which may be the National Guard, the Coast Guard, or the Air Force.
- You may have to retell the story to several people, including people with minimal medical knowledge. It helps to involve another provider to help coordinate the many phone calls without negatively impacting patient care.
- **The process often takes 6-8 hours or more.** If the Blackhawk and a full crew are not physically in Bethel, the military may have to send aircrafts from elsewhere in Alaska, which can lengthen the process to 10-12 hours.

### Definitions

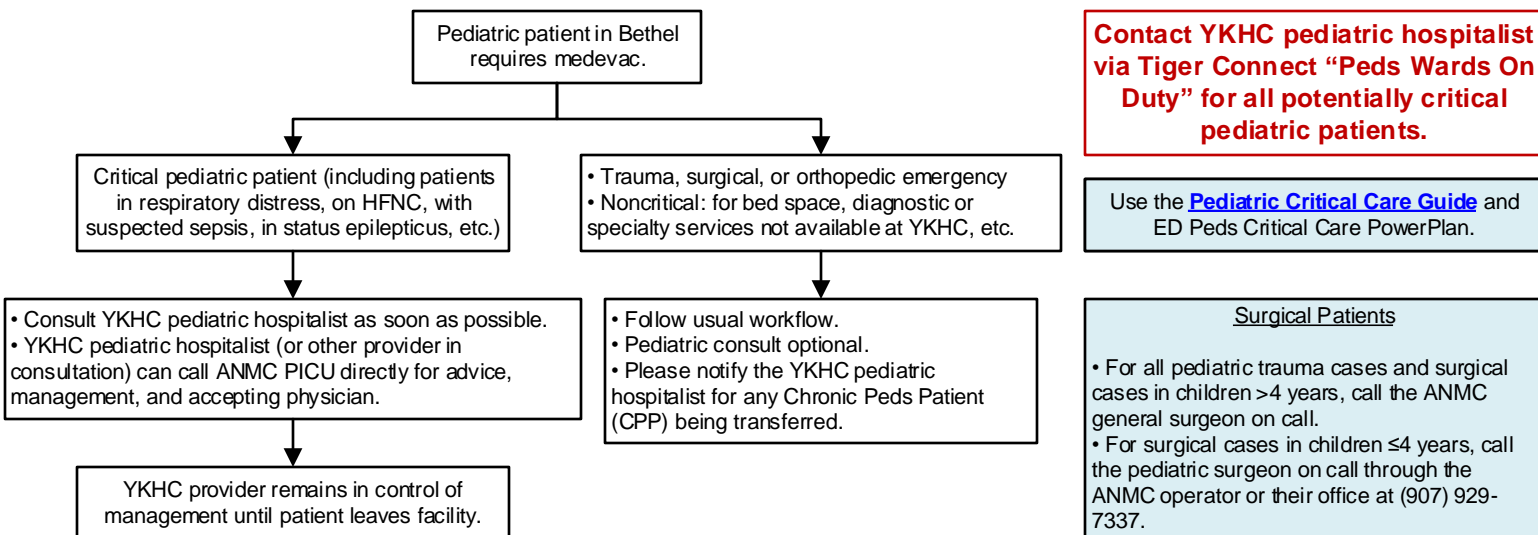
LLE: life, limb, or eyesight in danger  
 CD: clinical director  
 RCC: Rescue Coordination Center  
 PJ: pararescue jumpers. These are military medics with ACLS and ATLS training who are not trained to provide further critical care. (For example, neonatal care, ventilator management, and infusion of medications are not typically part of their scope of practice.)

The form to activate the RCC can be found [here](#).

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 Clinical Guideline Committee 1/19/24.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Ellen\\_Hodges@ykhc.org](mailto:Ellen_Hodges@ykhc.org).



### Non-beneficiary Patients

- Non-beneficiary patients are transferred to Providence Alaska Medical Center via the PAMC Transfer Center. If you are told there is no bed, ask to speak to the physician (hospitalist or PICU). Arrangements can often be made to accept a patient even if a bed is not immediately available.
- Ask about medevac insurance coverage. May suggest family [register for LifeMed insurance](#) online, which can be done just prior to activation.

### Neonatal Transfers

Contact PAMC neonatologist at (907) 212-3614 for advice, management recommendations, etc.

Notify ANMC pediatric hospitalist on-call for any beneficiary infant transferred to PAMC NICU.

After obtaining accepting physician, YKHC physician is responsible for activating Lifemed and discussing patient with neonatologist, if needed.

#### When to Transfer to PAMC NICU:

- GA <32 weeks
- BW <1500 grams
- Any newborn who required intubation
- Newborns requiring prompt surgical or medical subspecialty care
- No beds available at ANMC or non-beneficiary infant requiring transfer
- Discretion of NNP

#### When to Transfer to ANMC NICU:

- GA ≥32 weeks
- BW ≥1500 grams
- Any baby who meets criteria for transfer per the [Late Preterm guideline](#)
- Term or early term babies with temperature instability, respiratory distress, supplemental O<sub>2</sub> requirement, hypoglycemia requiring IV treatment, need for IV antibiotics, etc.

### Contact

- ANMC PICU (physician or NP): (907) 297-8809 – may request to speak with physician.
- ANMC Transfer Center: (907) 729-2337 or Tiger Connect Transfer Center Coordinator.
- LifeMed: \*96 or (800) 478-5433
- PAMC Transfer Center: (907) 212-7363
- PAMC PICU: 212-3133
- PAMC NICU: (907) 212-3614
- Alaska Pediatric Surgery: (907) 929-7337

LifeMed is the preferred medevac company for children younger than 3 years old. If any difficulty, call CD on call to discuss.

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Approved by Clinical Guideline Committee 6/1/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



**Indications for Procedural Sedation**  
Any procedure that cannot be accomplished with patient's current level of cooperation or pain tolerance.

**Examples:**

- Nonemergent chest tube placement
- Cardioversion
- I&D
- Laceration repair
- Fracture or joint dislocation reduction
- Pediatric foreign body removal
- Imaging

**Airway Risk Assessment**  
See [Intubation guideline](#) for resources.

### High-Risk History

- Stridor
- Obstructive sleep apnea
- Hx Trisomy 21
- Dysmorphic facial features
- Active respiratory tract infection
- Hx of difficult intubation
- Hx of cervical spine pathology

### Exam

- Check that patient can open mouth fully and that TMJ function is normal.
- Look for micrognathia, loose teeth, dental appliance, and craniofacial abnormalities.
- Check that patient is able to extend neck >70°.
- Determine Mallampati Score and check 3-3-2 rule (in adults).

**Expected Sedation Risk Level**  
Airway Risk Assessment combined with expected depth of sedation should guide level of rescue preparation.

- 1. No risk factors present:** No high risk findings in airway assessment and exam, ASA I-II.  
Plan: standard monitoring and equipment, including:
  - Cardiopulmonary monitor (three lead ECG & RR)
  - Pulse-oximetry
  - Supplemental oxygen should be prepared but not given unless otherwise indicated.
  - BVM in room.
  - Suction.
  - End-tidal CO<sub>2</sub> monitor
  - Reversal agents in room.

- 2. Risk factors present:** some concern for airway status based on airway assessment and exam, but patient not expected to decompensate, and benefits of sedation outweigh risks.

Plan: discuss risks with patient/caregiver. In addition to standard monitoring and personnel, the following must also be present:

- A healthcare provider dedicated to airway management (preferably an RT)
- Oral airway – correct size open and at bedside
- Nasal trumpet – correct size open and at bedside
- BVM with appropriately-sized mask should be open and prepared at bedside

Note: Consider CRNA at bedside.

Does provider have privileges for procedural sedation?

Seek out colleague with privileges or Page CRNA on call.

Yes

Patient has a condition that meets indications.

### Contraindications

- Patient or caregiver refusal
- Hemodynamic instability
- Respiratory distress

Note: if benefits of procedure outweigh risk despite contraindications, refer to higher level of care or consult a local airway expert and discuss risks with patient/caregiver.

There are no contraindications.

Perform Airway Risk Assessment. See box. Determine Expected Sedation Risk Level and plan accordingly. See box.

Discuss risks and benefits of procedural sedation with patient/guardian. Obtain written consent.

Note: Per ACEP, NPO times should not affect decision-making about moderate sedation. If deep sedation is required, non-emergent procedures may need to be delayed. Consider consult to CRNA to discuss further.

Ensure all equipment is present for Expected Sedation Risk Level. (See box.)

Choose appropriate sedation medication. See page 2. Calculate appropriate dose and confirm with team.

Perform time out:  
• Correct patient  
• Correct procedure  
• Correct site

Administer medication.

RN documents medication administration time and effect and patient assessments on flowsheet.

Perform procedure.

- Monitor patient through recovery.
- RN remains at bedside until patient is fully alert.
- Provider documents in note using autotext “..procsedationoutsideOR.”

### Levels of Sedation

- **Moderate sedation:** patient responds to light tactile stimulation. Spontaneous ventilation is adequate. An IV is required only if IV medication is to be given. (For example, if ketamine is to be given IM with no IV agents planned, an IV is not necessary.)
- **Deep sedation:** noxious stimuli are required to elicit a response. Spontaneous ventilation and ability to maintain airway may be impaired. Not routinely performed in the ED outside of life-threatening situations.

### Other Scenarios

Use of a single agent is not always considered sedation. This protocol does not apply to the following:

- Anxiolysis with a benzodiazepine: patient may be drowsy but responds appropriately to verbal commands. Example: midazolam 0.2 mg/kg IN up to max dose 6 mg in <5 years and 10 mg in >5 years.
- Analgesia with opioids: pain control with intact decision-making.
- Ketamine at analgesic dosing (see next page).

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Approved by Clinical Guidelines Committee 9/25/23. Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact John\_Nelson@ykhc.org.



Agent	Bolus Dose	Titration Dose	Onset	Duration	Reversal Agent	Comments	
<b>Etomidate</b>	<p><u>Patients &gt;10 years:</u> 0.2 mg/kg</p> <p><u>Patients ≤10 years:</u> 0.2 mg/kg (0.1-0.3 mg/kg) Slow IV push over 30-60 seconds.</p>	0.05 mg/kg Q3-5 min	30-60 seconds	3-5 minutes	Time	<ul style="list-style-type: none"> <li>No analgesic effect.</li> <li>Use IBW if BMI&gt;30.</li> <li>Consider lower dose (0.1 mg/kg) for age &gt;60 years, concurrent opioids, or if recent alcohol use.</li> <li>Administer via larger vessel. (antecubital or larger).</li> <li>Precautions: 30% have myoclonus with transient skeletal/eye movements.</li> </ul>	
<b>Ketamine for sedation</b>	<p><u>Adults:</u> 1-2 mg/kg IV over 1-2 min</p> <p>4-5 mg/kg IM</p> <p><u>Children &gt;3 mo:</u> 1-2 mg/kg IV over 1 min</p> <p>4-5 mg/kg IM</p> <p>5 mg/kg PO</p>		30 seconds	10-20 min	<ul style="list-style-type: none"> <li>Time</li> <li>For laryngospasm: Succinylcholine 0.25-0.5 mg/kg IV or 3-4 mg/kg IM</li> </ul>	<ul style="list-style-type: none"> <li>Local anesthetic (eg. lidocaine) can increase effective duration.</li> <li>Consider lower dose range for &gt;60 years, concurrent opioids/alcohol.</li> <li>Consider dosing by adjusted body weight if BMI&gt;30.</li> <li>Precautions: emergence reactions (treat with benzodiazepines), nausea/vomiting (pre-treat with ondansetron), transient increase in salivation.</li> <li>Contraindications: pregnancy, age &lt;3 months.</li> </ul>	
<b>Ketamine for analgesia</b>	<p>0.1-0.4 mg/kg IV</p> <p>0.4-1.0 mg/kg IM</p>		30 seconds	10-20 min	<ul style="list-style-type: none"> <li>Time</li> <li>For laryngospasm: Succinylcholine 0.25-0.5 mg/kg IV or 3-4 mg/kg IM</li> </ul>	<ul style="list-style-type: none"> <li>Local anesthetic (eg. lidocaine) can increase effective duration.</li> <li>Consider lower dose range for &gt;60 years, concurrent opioids/alcohol.</li> <li>Consider dosing by adjusted body weight if BMI&gt;30.</li> <li>Precautions: emergence reactions (treat with benzodiazepines), nausea/vomiting (pre-treat with ondansetron), transient increase in salivation.</li> <li>Contraindications: pregnancy, age &lt;3 months.</li> </ul>	
<b>Propofol</b>	<p><u>Patients &gt;2 yrs:</u> IV load 0.5-1 mg/kg</p> <p><u>Children 6 mos – 2 yrs:</u> IV load 1-2 mg/kg</p>	<p>Repeat 0.1-0.3 mg/kg Q30-60 seconds</p> <p>Repeat 0.1-0.3 mg/kg Q30-60 seconds</p> <p>Max cumulative dose 3 mg/kg</p>	30-60 seconds	3-10 min	Time	<ul style="list-style-type: none"> <li>No analgesia.</li> <li>Consider low dose for age &gt;60, concurrent opioids/alcohol.</li> <li>Consider dosing by adjusted body weight if BMI&gt;30.</li> <li>Separate administration of opioid and propofol by &gt;20 minutes to decrease respiratory depression.</li> <li>Pre-oxygenate with high flow supplemental oxygen at least 3 minutes prior to procedure.</li> <li>Precautions: burning sensation during administration, hypotension, ↓CO, or bradyarrhythmias.</li> <li>High risk of respiratory depression/failure.</li> <li>Contraindications: allergies to egg, soybean, fat emulsion.</li> </ul>	
<b>Morphine</b>	<p><u>Adults:</u> 1-4 mg IV</p> <p>10 mg PO</p> <p><u>Pediatrics:</u> 0.05-0.1 mg/kg IV Max 4 mg</p>		5-10 min IV	3-5 hours	Naloxone 0.1 mg/kg IV. May repeat Q2 minutes.	<ul style="list-style-type: none"> <li>Reduce dose when combining with a benzodiazepine.</li> <li>As opioids provide sedation and analgesia, administer them prior to benzodiazepines.</li> </ul>	
<b>Fentanyl</b>	<p><u>Adults:</u> 0.5 mcg/kg if given with other sedatives</p> <p>0.5-1 mcg/kg Max 100 mg</p> <p><u>Pediatrics:</u> 1 mcg/kg IV up to 50 mcg/dose</p>	May repeat dose Q2min until desired sedation and analgesia achieved	<1 min	3-5 min	30-60 min	Naloxone 0.1 mg/kg IV. May repeat Q2 minutes.	<ul style="list-style-type: none"> <li>Reduce dose when combining with a benzodiazepine.</li> <li>As opioids provide sedation and analgesia, administer them prior to benzodiazepines.</li> </ul>

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Agent	Bolus Dose	Titration Dose	Onset	Duration	Reversal Agent	Comments
<b>Midazolam</b>	<p><u>Adults:</u> 2-5 mg IV</p> <p><u>Pediatrics (6 mos- 12 yrs):</u> 0.2-0.3 mg/kg/dose IN</p> <p>0.05 mg/kg IV</p>	<p>May repeat dose Q2min until adequate sedation. Max 0.3 mg/kg.</p> <p>May repeat dose Q5min until max dose of 0.5 mg/kg is reached. Age &lt;5 max 6 mg; age &gt;5 max 10 mg.</p>	3-5 min	15-20 min	<p>Flumazenil 0.01 mg/kg (up to 0.2 mg) IV over 15 seconds. May repeat Q1 minute.</p>	<ul style="list-style-type: none"> <li>• No analgesia.</li> <li>• Consider lower dose range for &gt;60 years, concurrent opioids/alcohol.</li> <li>• Watch for dose-related hypotension.</li> </ul>
<b>Dexmedetomidine (Precedex™)</b>	<p><u>Adults:</u> Bolus 0.5-1 mcg/kg – infuse over 10 minutes.</p> <p><u>2-18 years:</u> Bolus 2 mcg/kg -infuse over 10 minutes.</p> <p><u>1 month to &lt; 2 years:</u> Bolus 1.5 mcg/kg – infuse over 10 minutes.</p> <p><u>Intranasal for &lt;10 years</u> 2 mcg/kg IN x1, max dose 200 mcg.</p>	<p>Infusion 0.2-1 mcg/kg/hour.</p> <p>Infusion 1.5 mcg/kg/hour (titrate up to 2 mcg/kg/hour).</p> <p>Infusion 1.5 mcg/kg/hour (may titrate up to 2 mcg/kg/hour).</p>	Onset 5-10 minutes.	<p>Duration 60-240 minutes post discontinuation of infusion</p> <p>Duration 30-70 minutes post discontinuation of infusion</p> <p>Duration 30-70 minutes post discontinuation of infusion.</p>		<ul style="list-style-type: none"> <li>• Sedative with modest analgesia and minimal respiratory depression.</li> <li>• No amnestic properties – consider midazolam if amnesia desired.</li> <li>• Biggest side effects: bradycardia and hypotension – generally dose/rate dependent.</li> <li>• Relative contraindications: inadequate hydration, reduced cardiac output, elevated LFTs.</li> <li>• Absolute contraindications: digoxin, cardiac conduction abnormalities.</li> </ul>



### PROCEDURE MONITORING

HR, RR, SpO<sub>2</sub>, LOC (level of consciousness), and Modified Aldrete Score to be monitored and recorded Q5 minutes until fifteen minutes after last administration of sedating medication, then Q15 minutes x1 hour, then Q1h until returned to pre-sedation baseline. Respiratory status should be monitored continuously.

### PRESENT IN ROOM (NAME AND ROLE)


### TIME OUT PERFORMED

- Correct patient
- Correct procedure
- Correct site

Time \_\_\_\_\_ Initials \_\_\_\_\_

### EQUIPMENT READINESS

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>In room:</li> <li><input type="checkbox"/> Cardiopulmonary monitor with three lead ECG, RR, and BP cuff</li> <li><input type="checkbox"/> Pulse-oximeter</li> <li><input type="checkbox"/> Supplemental oxygen</li> <li><input type="checkbox"/> BVM</li> <li><input type="checkbox"/> Suction</li> <li><input type="checkbox"/> End-tidal CO<sub>2</sub> monitoring</li> </ul> | <ul style="list-style-type: none"> <li>Readily accessible:</li> <li><input type="checkbox"/> Crash cart</li> <li><input type="checkbox"/> Reversal agents</li> </ul> |
|--|--|

### RESPIRATORY EFFORT QUALITY

N = normal	L = labored
S = shallow	R = regular
D = deep	I = irregular

### PRE-SEDATION IV ACCESS

IVF \_\_\_\_\_ Site \_\_\_\_\_

Gauge \_\_\_\_\_ Rate \_\_\_\_\_

### POST-SEDATION EVALUATION

- VS and SpO<sub>2</sub> stable and patient has returned to pre-sedation baseline.
- LOC at pre-sedation baseline.
- Airway protective reflexes intact or at pre-sedation baseline.
- Patient tolerates oral intake.
- Ambulation at baseline.

### LOC SCALE

5 = awake and alert  
 4 = sleeping intermittently  
 3 = asleep but responds to voice  
 2 = responds to painful stimuli  
 1 = unresponsive

### OUTCOMES AND MONITORING

- Check all that apply:
- Apnea > 15 seconds.
  - Intubation or positive pressure ventilation.
  - Desaturation with SpO<sub>2</sub> <90% for >90 seconds.
  - Vomiting.
  - HR, CP, or RR change 30% from baseline.
  - Emergency consultation with CRNA after start of procedure.
  - No complications.

### PROCEDURE SUMMARY

Date of procedure: \_\_\_\_\_  
 Procedure start time: \_\_\_\_\_  
 Procedure end time: \_\_\_\_\_  
 Time last sedating medication was given: \_\_\_\_\_  
 Deepest level of sedation achieved: \_\_\_\_\_  
 IVF received (type and total volume): \_\_\_\_\_

### MODIFIED ALDRETE SCORE

<b>Activity</b>	
Able to move four extremities voluntarily on command.	2
Able to move two extremities voluntarily on command.	1
Unable to move.	0
<b>Respiration</b>	
Able to breathe deeply and cough freely.	2
Dyspnea or limited breathing.	1
Apnea.	0
<b>Circulation</b>	
BP and HR ± 20% of pre-sedation level.	2
BP and HR ± 20-50% of pre-sedation level.	1
BP and HR ± 50% of pre-sedation level.	0
<b>Consciousness</b>	
Fully awake and able to answer questions.	2
Arousable only to calling.	1
Unresponsive.	0
<b>Oxygenation</b>	
SpO <sub>2</sub> >90% on room air.	2
Requires supplemental oxygen to maintain SpO <sub>2</sub> >90%.	1
SpO <sub>2</sub> <90% despite supplemental oxygen.	0

### SIGNATURES

Provider performing sedation: \_\_\_\_\_

Monitoring RN: \_\_\_\_\_

Provider performing procedure: \_\_\_\_\_

Place patient ID sticker here.



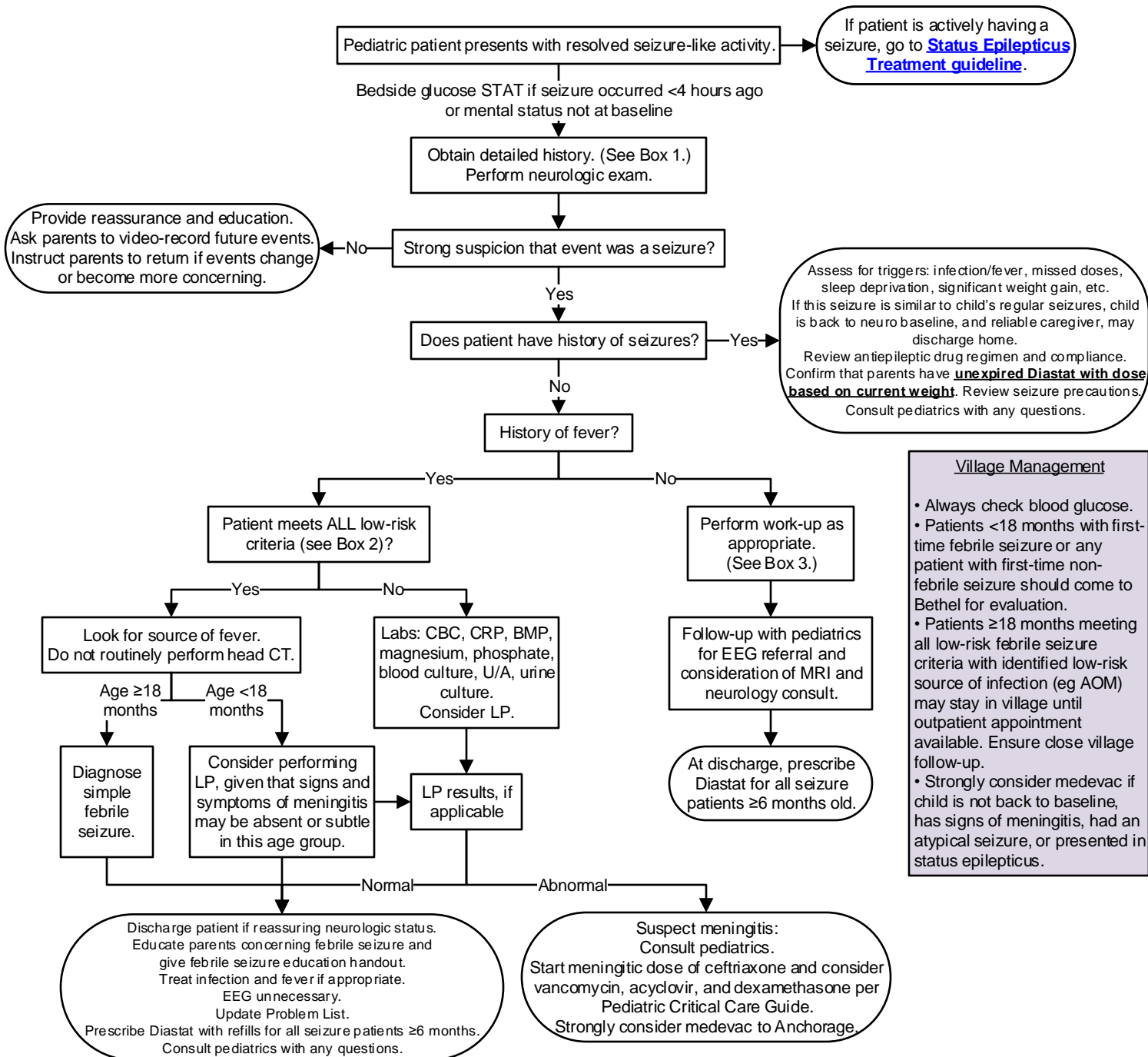
TIME	BP	HR	RR	RESPIRATORY EFFORT QUALITY	SpO <sub>2</sub>	OXYGEN (L/min)	LOC	MODIFIED ALDRETE SCORE	MEDICATION AND DOSE	COMMENTS	INITIALS

**SIGNATURES**

Monitoring RN(s): \_\_\_\_\_

\_\_\_\_\_

Place patient ID sticker here.



### Box 1: Detailed History

- When/where did it occur? Awake or asleep?
  - What preceded the event (eg head trauma, crying, etc.)?
  - How long did it last?
  - Ask caregiver to recount, step-by-step, what happened.
  - Type of movement and what part of body? Symmetric?
  - Interventions?
  - Incontinence?
  - Behavior after event? How long till back to baseline?
- HPI**
- Intercurrent illness/fevers
  - Medications
  - Recent intake, including free water and diluted formula
  - Ingestions
  - Trauma – consider child abuse.
- PMH**
- Prior history of seizures
  - History of breathholding
- Family Hx:** Seizures, febrile seizures, breathholding, etc.

### Box 2: Low risk febrile seizure criteria

- 6 months to 5 years of age.
- Fever present.
- Seizure generalized (nonfocal).
- Seizure duration <15 minutes.
- Child has normal neurologic examination.
- Child has no history of previous neurologic or CNS abnormality.
- Only one seizure in a 24 hour period.
- Child has returned to baseline.
- No meningial signs:
  - Irritability or inconsolability
  - Nuchal rigidity
  - Bulging fontanelle
  - Lethargy or somnolence
  - Focal neurologic findings
- Child has NOT received antibiotics in the past 72 hours.

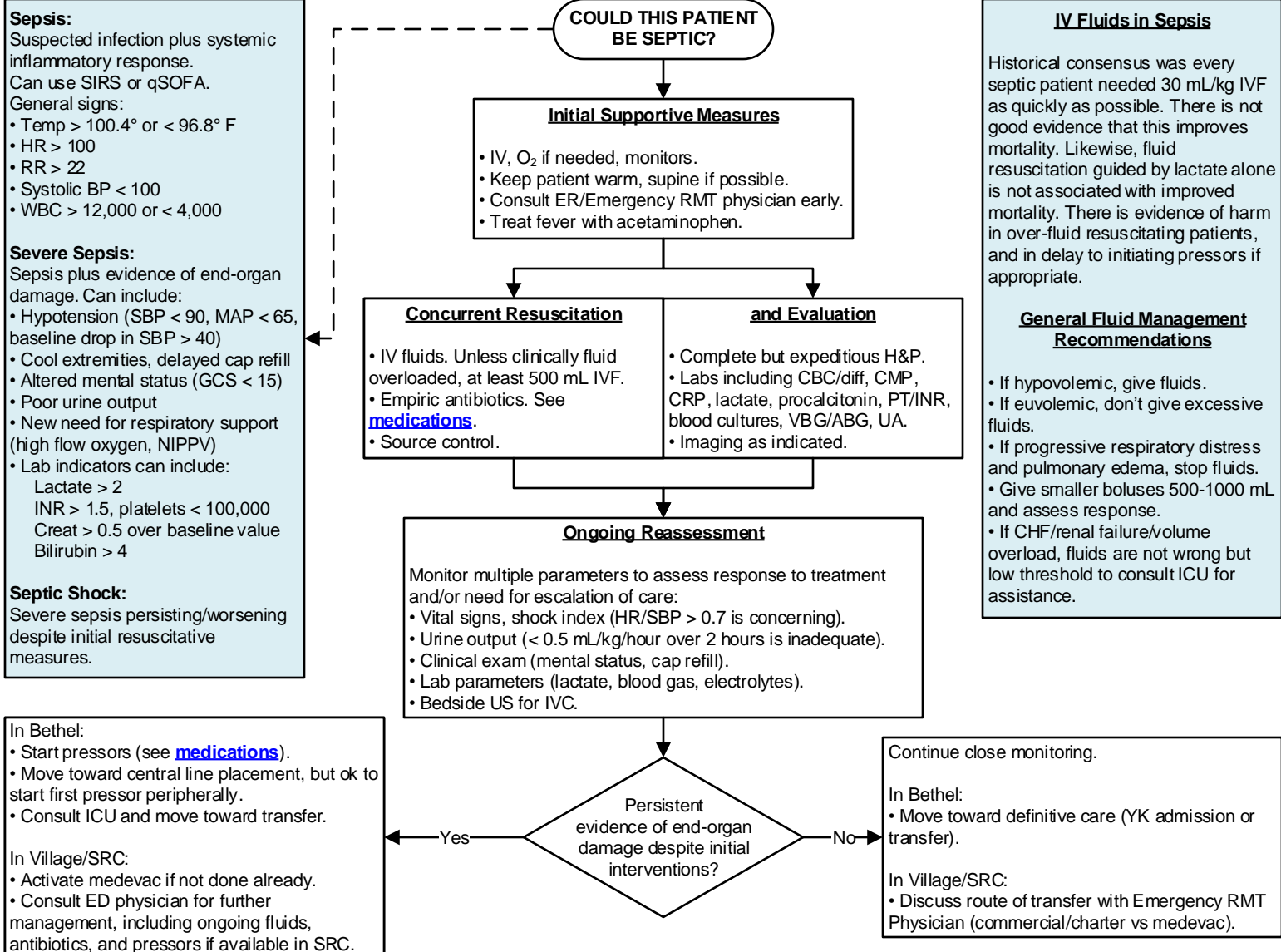
### Box 3: Work-up

- Bedside glucose
  - EKG for first event
  - CBC, BMP, magnesium, phosphate
  - Urine drug screen
  - Perform LP if persistent altered mental status, meningitis suspected, or <18 months of age and delayed return to baseline.
- Radiological studies:**  
Obtain head CT without contrast prior to LP if concerning neurologic status, persistently altered mental status, history of trauma, focal neurological findings, or focal seizure.

Consider using the **Bacterial Meningitis Score for Children** to help rule-out meningitis.

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Approved by Clinical Guideline Committee 2/9/24. Click [here](#) to see the supplemental resources for this guideline.  
**If comments about this guideline, please contact Amy\_Carson-Strnad@ykhc.org.**





### Intubation in Sepsis

- Higher risk for peri-intubation arrest due to hypotension, acidosis, etc.
- Strive for fluid resuscitation and/or pressors before intubation.
- Consider lower dose of induction agent (consult pharmacy or ICU).
- Vent settings: TV 6 mL/kg IBW, plateau pressures < 30.

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Approved by Clinical Guideline Committee 3/13/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).

### Medications Outside Bethel

#### Village formulary:

- Ceftriaxone 1-2 grams IM (for most cases)
- Metronidazole 500 mg PO (abdominal source, necrotizing SSTI, other need for anaerobic coverage)
- Azithromycin 500 mg PO (CAP)
- Clindamycin 900 mg PO (for anaerobic coverage, toxins in necrotizing infections)

#### SRC formulary:

- Ceftriaxone 1-2g IV/IM (for most cases)
- Levofloxacin 750mg IV (for pseudomonas coverage)
- Clindamycin 900 mg IV (for anaerobic coverage, toxins in necrotizing infections)
- Vancomycin 25 mg/kg or 2.5 g max IV (for MRSA)
- Pressors: epinephrine – consult pharmacist if considering.



### Empiric Antibiotic Recommendations by Source of Infection

If possible, first dose of antibiotics should be administered as a 30 minute infusion to reduce time to therapeutic concentration.

#### Unknown Source

**Vancomycin**<sup>1</sup> Load 25 mg/kg using IBW.  
Max dose 2500 mg.  
OR  
**Linezolid**<sup>2</sup> 600 mg IV Q12h.

AND

**Cefepime** 2 grams IV Q8h.

#### Community-Acquired Pneumonia

**Ceftriaxone** 1-2 grams IV Q24h.  
OR  
**Ampicillin-sulbactam** 3 grams IV Q6h.

AND

**Azithromycin** 500 mg IV Q24h.  
OR  
**Doxycycline** 100 mg IV Q12h.

If at risk for  
aspiration,  
consider  
adding:

**Metronidazole** 500 mg IV Q8h  
if not on Unasyn.

#### Hospital-Acquired Pneumonia or High Risk for Multi-Drug Resistant (MDR) Organisms

**Vancomycin**<sup>1</sup> Load 25 mg/kg using IBW.  
Max dose 2500 mg.  
OR  
**Linezolid**<sup>2</sup> 600 mg IV Q12h.

AND

**Cefepime** 2 grams IV Q8h.

#### Meningitis

**Dexamethasone** 10 mg IV  
prior to antibiotics.

AND

**Vancomycin**<sup>1</sup> Load 25 mg/kg using IBW.  
Max dose 2500mg.

AND

**Ceftriaxone**  
2 grams IV Q12h.

If >50  
years,  
ADD

**Ampicillin**  
2 grams IV Q6h.

#### Urinary Tract Infection

**Ceftriaxone**  
1-2 grams IV Q24h.

If urological interventions or MDR risk  
factors, consider adding:  
**Vancomycin**<sup>1</sup> Load 25 mg/kg using IBW.  
Max dose 2500 mg.  
OR  
**Cefepime** 2 gram IV Q8h.

If at risk of ESBL, ADD:  
**Meropenem**<sup>3</sup>  
500 mg IV Q8h.

#### Intra-abdominal or Pelvic Infection

**Piperacillin-tazobactam**  
4.5 grams IV Q6h.

OR

**Cefepime** 2 grams IV Q8h.  
AND  
**Metronidazole** 500 mg IV Q6h.

OR

**Ciprofloxacin** 400 mg IV Q12h.  
AND  
**Metronidazole** 500 mg IV Q8h.

#### Skin and Soft Tissue or Necrotizing Infections

**IF PURULENT:**  
**Vancomycin**<sup>1</sup> Load 25 mg/kg using IBW.  
Max dose 2500 mg.  
OR  
**Linezolid**<sup>2</sup> 600 mg IV Q12h.

**IF NON-PURULENT:**  
**Cefazolin** 2 grams IV Q8h.  
OR  
**Ceftriaxone** 1-2 grams IV Q24h.  
OR  
**Ampicillin-sulbactam** 3 grams IV Q6h.

**IF NECROTIZING:**  
**Vancomycin**<sup>1</sup> Load 25 mg/kg using IBW.  
Max dose 2500mg.  
AND  
**Piperacillin-tazobactam** 4.5 grams IV Q6h.  
AND  
**Clindamycin** 900 mg IV Q8h.

#### Neutropenic Cancer Patients (ANC <500)

**Cefepime** 2 grams IV Q8h.  
OR  
**Piperacillin-tazobactam**  
4.5 grams IV Q6-8h.

AND

**Vancomycin**<sup>1</sup> Load 25 mg/kg using IBW.  
Max dose 2500 mg.  
OR  
**Linezolid**<sup>2</sup> 600 mg IV Q12h.

If concerned  
for HSV or  
VZV,  
consider  
adding:

**Acyclovir**  
10 mg/kg Q8h.  
Consult pharmacy for max dosing.

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Approved by Clinical Guideline Committee 3/13/23.

If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org)

<sup>1</sup> Consult pharmacy for subsequent dose/schedule.

<sup>2</sup> Linezolid may be substituted for vancomycin in patients with relative contraindication to vancomycin for high risk for acute kidney injury. Pharmacy consult required.

<sup>3</sup> Pharmacy consult required.



### Vasopressors

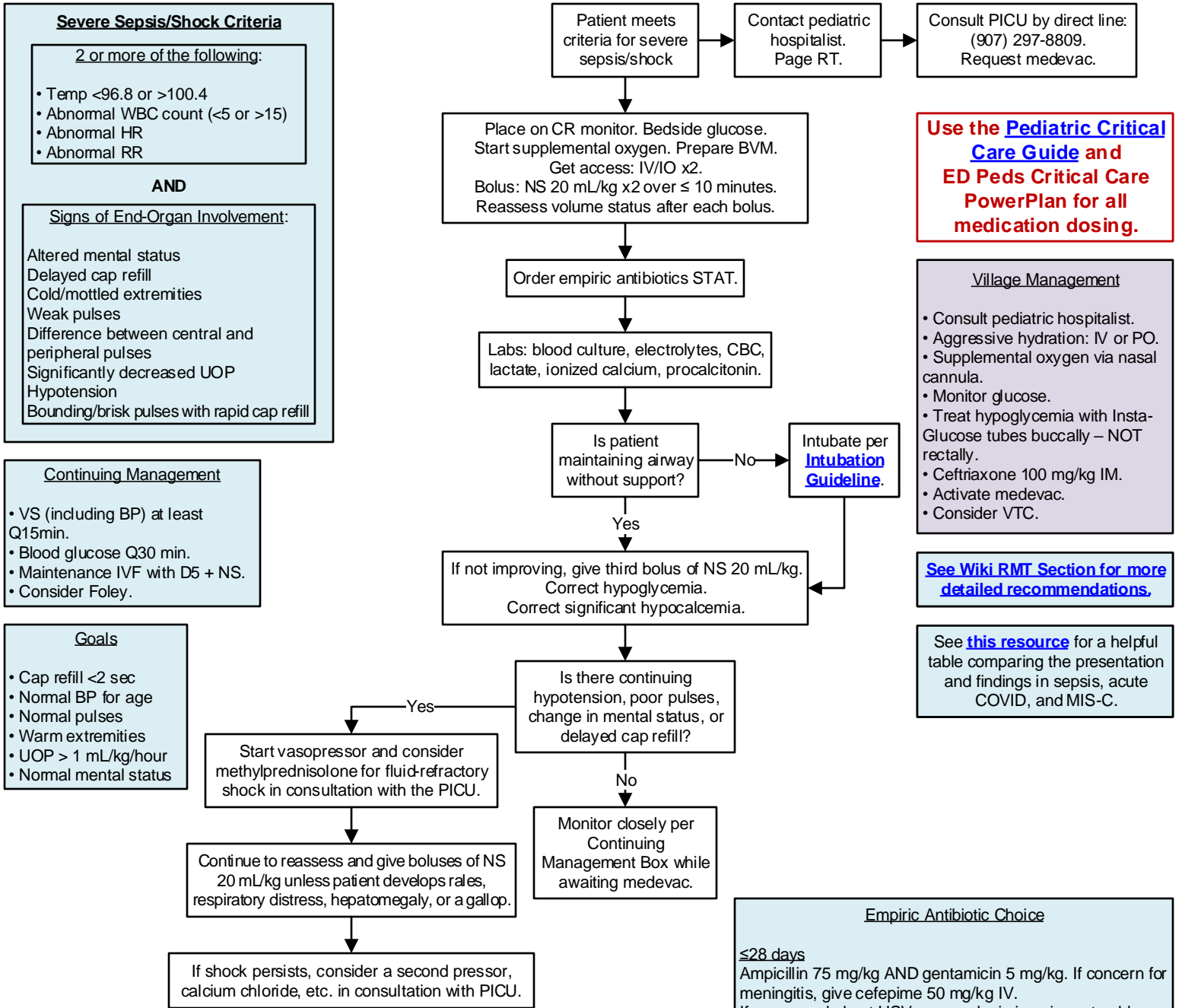
Central venous access is preferred for administration of vasopressors, but these may be administered through peripheral IV if unable to obtain central access. If in an SRC, pressors may be available. Consult ED physician.

- |   |  |
|---|--|
| • Norepinephrine 2-80 mcg/min IV initial infusion rate.   | First-line vasopressor of choice in sepsis.  |
| • Vasopressin 0.03-0.04 units/min.  | May be added to norepinephrine to increase MAP or decrease norepinephrine dose. DO NOT use as a single agent.                      |
| • Epinephrine 1-40 mcg/min initially, titrated to effect.   | May be added or used in place of norepinephrine to maintain adequate BP.   |
| • Dopamine 2-20 mcg/kg/min.   | Second-line option in highly select patients as it causes more tachycardia.  |
| • Phenylephrine 40-160 mcg/min IV initial infusion until stabilized.<br>Titrate to usual range of 20-400 mcg/min. | Can be used as salvage therapy for refractive hypotension associated with tachycardia.   |
| • Dobutamine 2-20 mcg/kg/min IV infusion.   | May be used for inotropic support in the presence of severe myocardial dysfunction or hypoperfusion with depressed cardiac output. |

### Corticosteroids

Corticosteroids should NOT be administered for the treatment of sepsis in the absence of shock.

If considering use of corticosteroids for septic shock refractory to pressors after euvoemia and appropriate antibiotic therapy achieved, consult ICU. The exception is giving dexamethasone prior to first dose of antibiotics for meningitis.



**Vital Signs for Age**  
(Source: Harriet Lane Handbook)

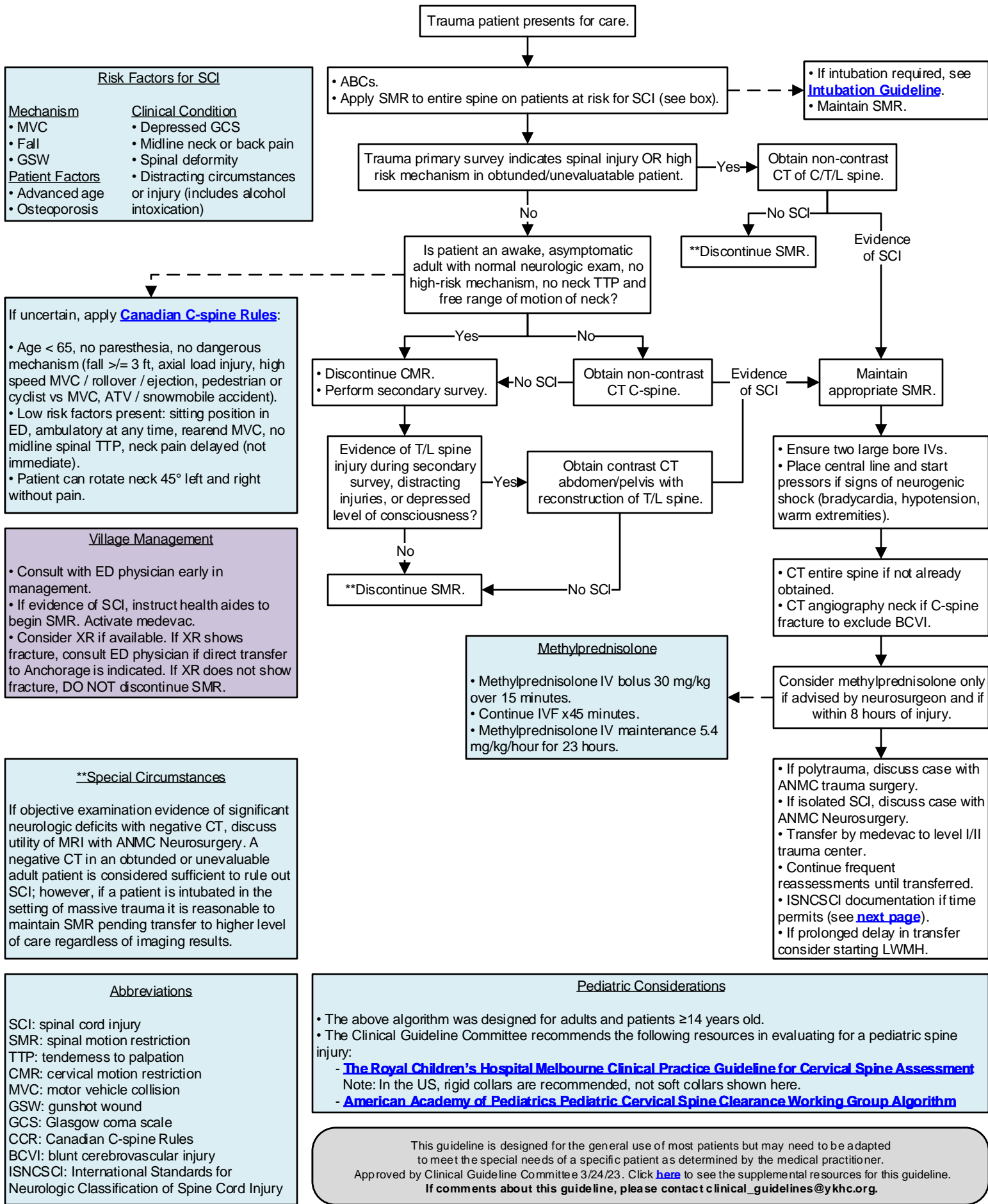
Age	Heart Rate (beats/min)	Respiratory Rate (breaths/min)	Blood Pressure (mm Hg)	Mean Arterial BP (mm Hg)
0-3 months	110-160	30-60	65-85 / 45-55	50 <sup>th</sup> percentile 55 + (age x 1.5)
3-6 months	100-150	30-45	70-90 / 50-65	
6-12 months	90-130	25-40	80-100 / 55-65	
1-3 years	80-125	20-30	90-105 / 55-70	5 <sup>th</sup> percentile 40 + (age x 1.5)
3-6 years	70-115	20-25	95-110 / 60-75	
6-12 years	60-100	14-22	100-120 / 60-75	
>12 years	60-100	12-18	100-120 / 70-80	

**Empiric Antibiotic Choice**

**≤28 days**  
Ampicillin 75 mg/kg AND gentamicin 5 mg/kg. If concern for meningitis, give cefepime 50 mg/kg IV.  
If concerned about HSV or neurologic impairment, add acyclovir 20 mg/kg.

**>28 days**  
Ceftriaxone 100 mg/kg (max 2000 mg) AND vancomycin 20 mg/kg (max 2000 mg)  
If CVL in place, immunocompromised, or significant Hx antibiotics in past 30 days  
Cefepime 50 mg/kg (max 2000 mg) AND vancomycin 20 mg/kg (max 2000 mg)  
If allergic to PCN  
Meropenem 15 mg/kg (max 500 mg) AND vancomycin 20 mg/kg (max 2000 mg)  
If suspecting Staph or Strep  
Consider adding clindamycin 13 mg/kg IV for anti-toxin effect.

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Approved by MSEC 2/1/22.  
Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact Amy\_Carson-Strnad@ykhc.org.





# Yukon-Kuskokwim HEALTH CORPORATION

## Clinical Guideline

# Spinal Cord Injury (SCI) Management



Patient Name \_\_\_\_\_ Date/Time of Exam \_\_\_\_\_  
 Examiner Name \_\_\_\_\_ Signature \_\_\_\_\_

### RIGHT

**MOTOR**  
KEY MUSCLES

**SENSORY**  
KEY SENSORY POINTS  
Light Touch (LTR) Fin Prick (PPR)

Elbow flexors	C5	C2
Wrist extensors	C6	C3
Elbow extensors	C7	C4
Finger flexors	C8	
Finger abductors (little finger)	T1	
T2		
T3		
T4		
T5		
T6		
T7		
T8		
T9		
T10		
T11		
T12		
L1		

Comments (Non-key Muscle? Reason for NT? Par?):

**UER**  
(Upper Extremity Right)

**LER**  
(Lower Extremity Right)

Hip flexors	L2
Knee extensors	L3
Ankle dorsiflexors	L4
Long toe extensors	L5
Ankle plantar flexors	S1
S2	
S3	
S4-5	

(NAC) Voluntary Anal Contraction (Yes/No)

**RIGHT TOTALS**  
(MAXIMUM)

NER  + UER  = NEMS TOTAL (50)

MAX (25) (25)

**MOTOR**  
KEY MUSCLES

**SENSORY**  
KEY SENSORY POINTS  
Light Touch (LTR) Fin Prick (PPR)

Elbow flexors	C5	C2
Wrist extensors	C6	C3
Elbow extensors	C7	C4
Finger flexors	C8	
Finger abductors (little finger)	T1	
T2		
T3		
T4		
T5		
T6		
T7		
T8		
T9		
T10		
T11		
T12		
L1		

Comments (Non-key Muscle? Reason for NT? Par?):

**UEL**  
(Upper Extremity Left)

**LEL**  
(Lower Extremity Left)

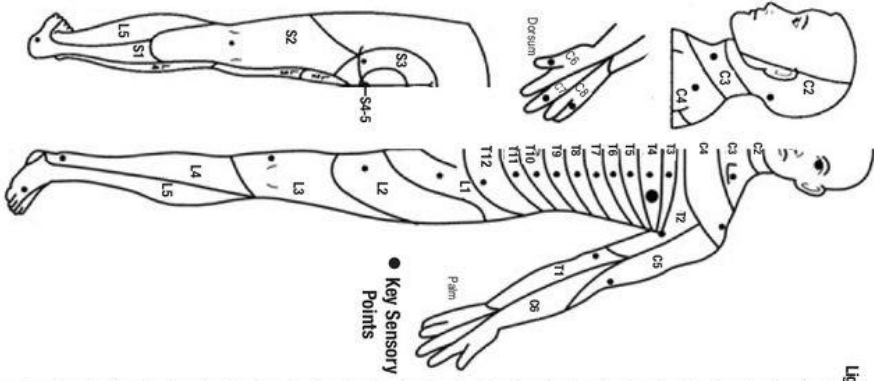
Hip flexors	L2
Knee extensors	L3
Ankle dorsiflexors	L4
Long toe extensors	L5
Ankle plantar flexors	S1
S2	
S3	
S4-5	

(DAP) Deep Anal Pressure (Yes/No)

**LEFT TOTALS**  
(MAXIMUM)

LTR  + LTL  = LTTOTAL (56)

MAX (56) (56)



**(SCORING ON REVERSE SIDE)**

0 = total paralysis  
 1 = palpable or visible contraction  
 2 = active movement, gravity eliminated  
 3 = active movement, against gravity  
 4 = active movement, against some resistance  
 5 = active movement, against full resistance  
 5+ = normal corrected for pain/disuse  
 NT = not testable

**(SCORING ON REVERSE SIDE)**

0 = absent  
 1 = altered  
 2 = normal  
 NT = not testable

**NEUROLOGICAL LEVELS**  
Steps 1-5 for classification as on reverse

1. SENSORY  R  L

2. MOTOR  R  L

3. NEUROLOGICAL LEVEL OF INJURY (NLI)

4. COMPLETE OR INCOMPLETE?

Incomplete = Any sensory or motor function in S4-5

5. ASIA IMPAIRMENT SCALE (AIS)

(In complete injuries only)  
**ZONE OF PARTIAL PRESERVATION** Most caudal level with any innervation

PPR  + PPL  = PP TOTAL (112)

MAX (56) (56)

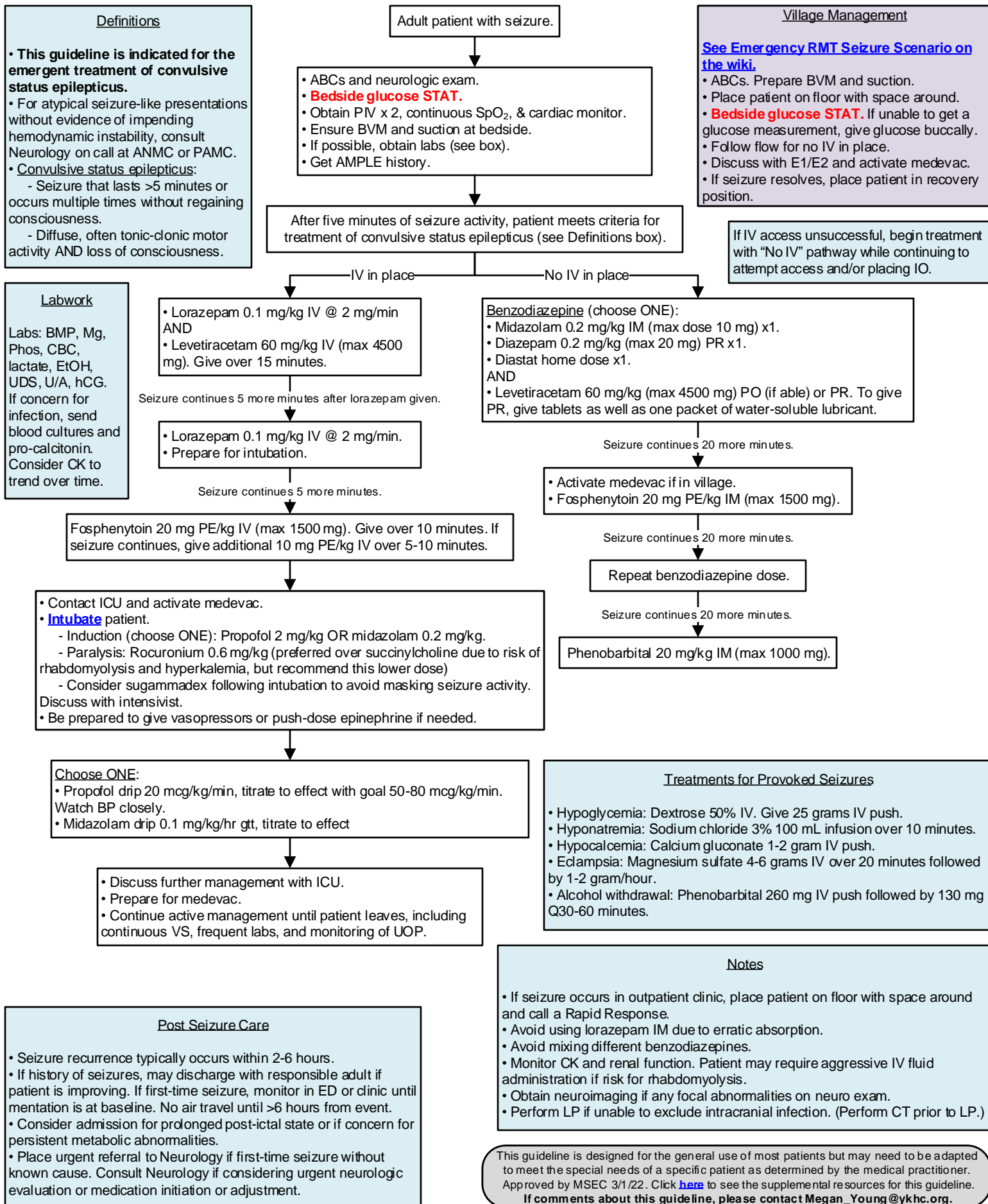
SENSORY MOTOR  R  L

This form may be copied freely but should not be altered without permission from the American Spinal Injury Association.

REV 11/15

If time allows, please print this, complete it, scan it into the patient's MultiMedia Manager, and send with patient at time of transfer.

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 Clinical Guideline Committee 3/24/23. Click [here](#) to see the supplemental resources for this guideline. If comments about this guideline, please contact Travis\_Nelson@ykhc.org.





**Use the [Pediatric Critical Care Guide](#) and [ED Peds Critical Care PowerPlan](#) to check all medication dosing.**

- ABCs. Ensure BVM at bedside and pediatric code cart within reach.
- **Bedside glucose STAT.**
- Obtain IV. Start supplemental oxygen.
- Consult pediatrics.
- Obtain brief history.
- Prepare first-line medication. If in the ED or NW, get the Peds Seizure Kit (see box).

Village Management

[See Emergency RMT Seizure Scenario on the wiki.](#)

- ABCs.
- **Bedside glucose STAT.**
- If unable to get a glucose measurement, give glucose buccally.
- Get BVM with appropriate sized mask to bedside.
- Follow flow to the left, using these drugs with dosing found on Pediatric Critical Care Guide:
  - Diastat home dose PR if available or midazolam 0.2 mg/kg intranasal (max dose 10 mg) or diazepam 0.5 mg/kg (max 10 mg) IV solution given RECTALLY.
  - Phenobarbital or fosphenytoin (kept refrigerated) IM. If giving either second-line drug, consult pediatrics and strongly consider activating a medevac.
- Consider placing IV and giving NS bolus 20 mL/kg.
- Low threshold to activate medevac for atypical or prolonged seizure.

Go to [Pediatric Post-Seizure Evaluation](#) guideline.

Seizure lasting ≥3 minutes  
OR  
More than one seizure in 24 hours without return to baseline.

**Benzodiazepine** (choose ONE and give up to two doses Q5-10 minutes)

- Midazolam 0.2 mg/kg IN/IM (max dose 10 mg)
- Lorazepam 0.1 mg/kg IV/IO (max dose 4 mg)
- Diastat home dose

**Peds Seizure Kit**

- In the ED and Peds NW Pyxis.
- Type "seizure" and override.
- Includes:
  - Midazolam 10 mg/2 mL
  - Levetiracetam
  - Phenobarbital 130 mg/mL
  - Dosing cards from the pediatric critical care guide

Seizure continues 5 more minutes.

Age ≤ 2 months

**Consult ANMC PICU at (907) 297-8809.**

Age >2 months

Phenobarbital 20 mg/kg IV/IM.  
If IV, give over 15 minutes or 1 mg/kg/minute (max 60 mg/min).

Levetiracetam 60 mg/kg IV/IM.  
Max dose 4500 mg.  
If IV, give over 10 minutes.

Seizure continues 5 minutes after infusion complete.

Seizure continues 5 minutes after infusion complete.

Continuous Infusions

In all ages, in consultation with the PICU, consider preparing for intubation and continuous infusion after second-line drug has been given. Continue giving medications as detailed in the flow while infusion is being prepared.

If giving midazolam, make drip of 1 mg/mL and start at rate 0.1 mg/kg/hour.

Consider preparing infusion (see box).  
Phenobarbital 10 mg/kg IV/IM.  
If IV, give over 15 minutes or 1 mg/kg/minute (max 60 mg/min).

Consider preparing infusion (see box).  
Fosphenytoin 20 mg PE/kg IV.  
Max dose 1000 mg.  
Give over 10 minutes.

Seizure continues 5 minutes after infusion complete.

Seizure continues 5 minutes after infusion complete.

Levetiracetam 40 mg/kg IV/IM.  
If IV, give over 10 minutes.

Fosphenytoin 10 mg PE/kg IV.  
Max dose 1000 mg.  
Give over 5-10 minutes.

Seizure continues 5 minutes after infusion complete.

Seizure continues 5 minutes after infusion complete.

Levetiracetam 20 mg/kg IV/IM.  
If IV, give over 10 minutes.

Phenobarbital 20 mg/kg IV or IM.  
Max dose 1000 mg.  
If IV, give over 15 minutes.

Seizure continues 5 minutes after infusion complete.

Seizure continues 5 minutes after infusion complete.

Start midazolam or propofol infusion with PICU consultation.

Phenobarbital 10 mg/kg IV or IM.  
Max dose 1000 mg.  
If IV, give over 15 minutes.

Seizure continues 5 minutes after infusion complete.

Start midazolam or propofol infusion with PICU consultation.

In all ages, if hemodynamic instability or myocardial dysfunction, avoid phenobarbital and use alternate agents.

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.
- New focal neurological deficit requires further work-up (often MRI) even if CT is normal.

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Approved by Clinical Guideline Committee 2/9/24. Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Amy\\_Carson-Strnad@ykhc.org](mailto:Amy_Carson-Strnad@ykhc.org).





### Goals

1. Evaluate carotid and vertebral arteries for injuries.
2. Evaluate bony/cartilaginous and neck soft tissue structures.
3. Evaluate brain for anoxic injury.

**Note:** Life-threatening injuries can be present up to one year after strangulation event.

### Helpful Links

- S/Sx strangulation in [adults](#) and [children](#)
- Physiological consequences [timeline](#)

Patient presents with concern for strangulation

Are ANY of the following present?

- Airway: subcutaneous emphysema (can be a sign of tracheal or laryngeal rupture)
- Neurological: loss of consciousness, seizures, mental status changes, amnesia, cortical blindness, movement disorders, stroke-like symptoms
- HEENT:
  - Visual changes: spots, flashing lights, tunnel vision, etc.
  - Facial, intra-oral, or conjunctival petechial hemorrhage
  - Odynophagia
- Neck:
  - Ligature mark, neck contusion, soft tissue injury, swelling, carotid tenderness, etc.
  - Dysphonia/aphonia, hematoma, laryngeal fracture, recurrent laryngeal nerve injury
- Bladder or bowel incontinence
- Pulmonary: dyspnea, phrenic nerve injury

Yes to ANY

No to ALL

### Rule Out Life-Threatening Injuries

- If GFR  $\geq 30$ : CT angio of carotid/vertebral arteries. This is the gold standard for evaluation of vessels and bony/cartilaginous structures but is not very sensitive for soft tissue trauma.
- If GFR  $< 30$ : non-contrast CT of neck. This study is less sensitive than CT angio for vessel injury but gives good visualization of bony and cartilaginous structures.

Injury identified

- Consult trauma surgery and plan to transfer.
- Consider ENT consult for laryngeal trauma with dysphonia.

No injury identified

How recent was event?

$\geq 48$  hours ago

$< 48$  hours ago

Observe in ED or admit to inpatient until 48 hours post-event based on severity of symptoms.

Is there reliable home monitoring AND a safe place to go to?

Yes

No

- Discharge home with detailed instructions to return to ED if any neurological signs/symptoms, dyspnea, dysphonia, odynophagia dysphagia, or voice changes occur or worsen.
- Give custom Strangulation Patient Education handout.

- Consider discharge to TWC.
- May call TWC Crisis Line (543-3456) for assistance with safe shelter.
- Also may call SART on call at 545-4238 for further assistance.

### Tundra Women's Coalition (TWC)

- Crisis Line: 543-3456
- Main office: 543-3444
- On-call advocate: 545-4328

### Services Provided by TWC

- Emergency shelter
- Hospital accompaniment
- Information about community resources
- Legal advocacy
- Violent crime compensation
- Funds for emergency air or cab transportation

If patient would like to report incident:

- If occurred in a village: Alaska State Troopers 543-2294
- If occurred in Bethel: Bethel Police Department 543-3781

Use the following autotexts in your documentation:

- ..hpiStrangulation
- ..physStrangulation

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 If comments about this guideline, please contact [Jennifer\\_Prince3@ykhc.org](mailto:Jennifer_Prince3@ykhc.org).



### Box 1: If responding to scene

- Do not risk safety of medical staff under any circumstance.
- If scene is compromised by combative patient or unsafe bystanders, leave scene immediately and do not return until scene secured by law enforcement.
- If CPR in progress, stay on-scene; CPR is often interrupted or lowered in quality by transport.
- Otherwise, prioritize transport to clinic. Aggressive medical interventions in field delay definitive care.

### Trauma patient outside Bethel

- Identify mechanism.
- Transfer to clinic with Spinal Motion Restriction (SMR) if indicated.
- See Box 1.

### Box 2: Common conditions which warrant emergent transport

- Physiologic instability: MAP <70, RR >30, GCS <10 if not intoxicated.
- Anatomic injuries: *penetrating* wounds to head, neck, torso, eye.
- Crushed/deglowed/mangled extremity.
- Non-digital amputation.
- Pelvic fracture.
- Open/depressed skull fracture.
- Paralysis.

### Trauma Primary Survey: **ABCDE**

- **Airway:** Loss of airway, stridor, expanding neck/submental swelling, impending airway compromise
- **Breathing:** Hypoxia, marked tachypnea, flail chest, absent breath sounds
- **Circulation:** Absent pulses, pulsatile bleeding
- **Deficit:** *Objective* neurologic deficit
- **Exposure:** Undress patient, eval for occult injuries

### Box 3: Contents of Focused HPI

Age, sex, mechanism of injury (MOI)

Details by MOI:

1. Penetrating trauma:
  - Knife: Type, length, depth.
  - GSW: Caliber, distance from victim, entrance/exit.
2. Blunt trauma:
  - MVC: Vehicle type, speed, ±LOC, ±ambulatory afterwards, ±restraint, ±helmet.
  - Fall: Distance, ±LOC, ±ambulatory afterwards.
3. Environmental
  - Cold Exposure: Temperature, time of exposure.
  - Heat Exposure: Structure/materials involved.

Additional important information:

- Anticoagulants
- Pregnancy
- Presence of burns
- Ability to void since injury

Emergent findings in Primary Survey  
AND/OR  
Any condition in Box 2?

Yes

- Contact Emergency RMT/Wards Doctor STAT.
- Stabilize and evaluate. See Box 4.
- Proceed to [secondary survey](#) after patient is stabilized.

No

Proceed to focused HPI (Box 3) and  
and [secondary survey](#).

Findings on secondary survey warrant  
transfer to higher level of care.

No

- Discharge with thorough return precautions.
- Feel free to contact RMT provider if questions.

Yes

Patient is cognitively intact,  
hemodynamically stable, and ambulatory.

No

- Likely to require medevac.
- Contact Emergency RMT/Wards Doctor.

Yes

- Likely candidate for commercial transfer.
- Contact RMT provider to notify.

### \*\*Contact

- To reach Wards Doctor, send message via Tiger Connect to "Yukon Wards Doctor (Emergency RMT)" or "Kusko Wards Doctor (Emergency RMT)."
- If this is not practical, call the ED at (907) 543-6395 and ask for the wards doctor to be paged.

Please use this guideline as well as ATLS principles in all trauma cases, including for delayed presentation to care. Although delayed presentations are often less emergent, these principles still apply, and this process should be followed.

If health aide present, consider asking them to look up and follow CHAM section on Major Trauma.

### Abbreviations

MAP: mean arterial pressure  
GCS: Glasgow coma scale  
SMR: spinal motion restrictions  
LOC: loss of consciousness  
MOI: mechanism of injury

### Box 4: Interventions

1. Stabilization
  - Two 18g (or largest bore available) PIV
  - Spinal motion restrictions (SMR) if indicated
  - Pressure dressing to briskly bleeding wounds
  - Pelvic wrap/binder if indicated
  - Splinting of fractures
  - Do not apply a tourniquet without input from RMT or ED provider.
2. Diagnostics
  - CXR, AP Pelvis
  - Glucose POC, CBC, CMP

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### Secondary Survey Checklist

Document in your note using autotext “..traumasurvey”

	<b>Mental Status:</b> <b>GCS</b>
	<b>Scalp:</b> <ul style="list-style-type: none"> <li>• Lacerations / swelling</li> <li>• Evidence of skull fracture</li> </ul>
	<b>Eyes:</b> <ul style="list-style-type: none"> <li>• Visual Acuity</li> <li>• Pupil size/reactivity</li> <li>• Globe integrity</li> <li>• Extraocular muscle movement</li> </ul>
	<b>Ears:</b> <ul style="list-style-type: none"> <li>• Hemotympanum</li> <li>• TM rupture</li> </ul>
	<b>Face:</b> <ul style="list-style-type: none"> <li>• Nose: Epistaxis, septal hematoma, fracture</li> <li>• Mouth: Midline, symmetric jaw, able to open and close.</li> </ul>
	<b>Neck:</b> <ul style="list-style-type: none"> <li>• Swelling / soft tissue injury</li> <li>• TTP over cervical spine</li> </ul>
	<b>Chest:</b> <ul style="list-style-type: none"> <li>• Ecchymoses, swelling, flail chest</li> <li>• TTP, crepitus, displaced ribs</li> <li>• Bilateral lung sounds</li> </ul>
	<b>Abdomen:</b> <ul style="list-style-type: none"> <li>• TTP, distension, absent bowel sounds</li> </ul>
	<b>Pelvis/GU:</b> <ul style="list-style-type: none"> <li>• Stability to pressure at the anterior superior iliac spine</li> <li>• TTP of femoral head</li> <li>• Testicular swelling</li> <li>• Blood at urethral meatus</li> </ul>
	<b>Back:</b> <ul style="list-style-type: none"> <li>• TTP along T/L spine</li> </ul>
	<b>Long bones:</b> <ul style="list-style-type: none"> <li>• Deformity/TTP</li> <li>• Lacerations over fractures (should be treated as open fractures)</li> <li>• Limitations in active ROM</li> </ul>
	<b>Integument (all sites):</b> <ul style="list-style-type: none"> <li>• Cold, pale, cap refill &gt;3 seconds</li> <li>• Lacerations: <i>If not over vascular area, explore with sterile glove</i></li> <li>• Hematomas (watch for expansion)</li> <li>• Burns</li> </ul>

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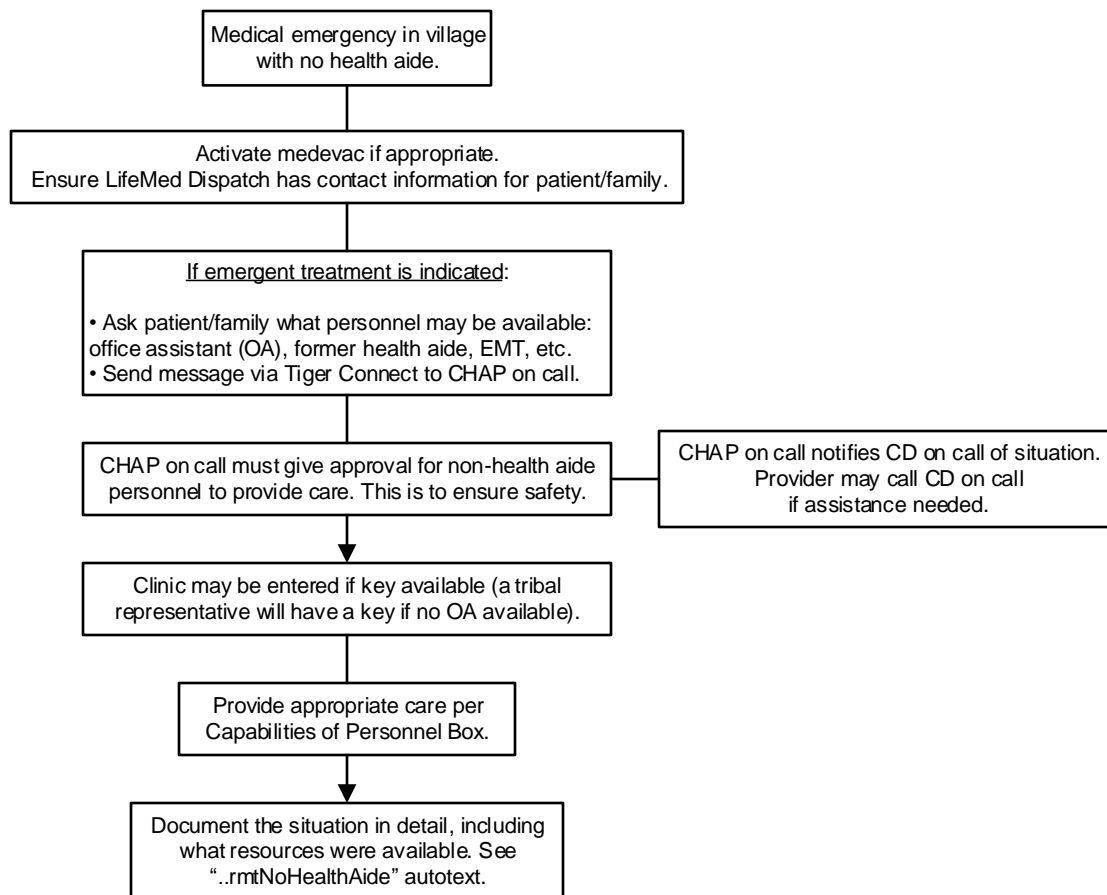
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The top priority is to ensure the safety of all involved.

- This includes staff, bystanders, and former health aides.
- CHAP on call is often privy to information about safety and may overrule a plan in the interest of keeping everyone safe.
- Bringing personnel from another village may be an option, but safety must be carefully considered, as trails are often unsafe, especially in bad weather.
- In these situations, emotions often run high. Please be careful not to coerce or strongly urge personnel to do something if they feel unsafe.



**Note:** If unable to reach CHAP on call, consult the VHAC Excel spreadsheet and call the numbers at the top. The ER techs all have access to the VHAC.

### Capabilities of Personnel

Personnel may need instructions but are permitted to do the following with phone support from provider.

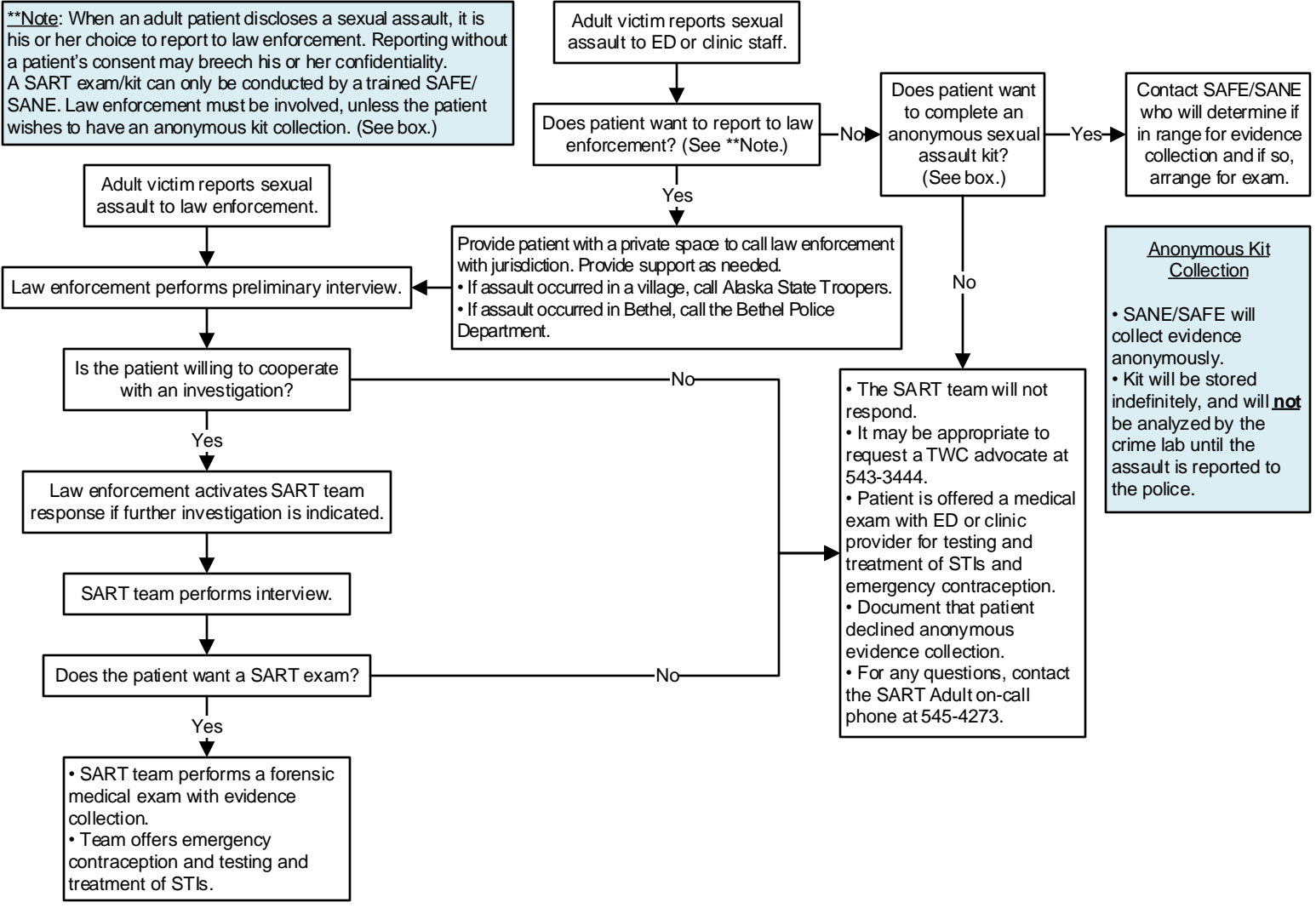
- **Office Assistant:**
  - CAN check VS
  - CAN give supplemental oxygen
  - CAN give OTC meds or patient's own meds
  - CAN help set up a nebulizer if patient supplies meds
  - CAN set up Zoom
  - CANNOT give prescription medications
- **Lay Rescuers:**
  - CAN do all of the above except access Zoom
- **Former Health Aide:**
  - CAN perform all tasks that were part of previous level of training as a health aide
  - CAN access med room if key is available
  - CANNOT access controlled substances
  - CANNOT access computer system, including Zoom

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Approved by Clinical Guideline Committee 3/13/23.

If comments about this guideline, please contact [Ellen\\_Hodges@ykhc.org](mailto:Ellen_Hodges@ykhc.org).



**\*\*Note:** When an adult patient discloses a sexual assault, it is his or her choice to report to law enforcement. Reporting without a patient's consent may breach his or her confidentiality. A SART exam/kit can only be conducted by a trained SAFE/SANE. Law enforcement must be involved, unless the patient wishes to have an anonymous kit collection. (See box.)



**Anonymous Kit Collection**

- SANE/SAFE will collect evidence anonymously.
- Kit will be stored indefinitely, and will **not** be analyzed by the crime lab until the assault is reported to the police.

If patient is <18 years, please see [Pediatric Sexual Abuse Procedure](#).

**SART Team Members**

- Law enforcement
- SANE/SAFE (Sexual Assault Nurse Examiner/Sexual Assault Forensic Examiner)
- TWC advocate

**Contact Information**

- **Tundra Women's Coalition:**  
Business Line: (907) 543-3444  
Crisis Line: (907) 543-3456  
Toll Free: (800) 478-7799
- **Law Enforcement:**  
Bethel Police Department: (907) 543-3781  
Bethel Post of Alaska State Troopers: (907) 543-2294  
Aniak Post of Alaska State Troopers: (907) 675-4459  
Emmonak Post of Alaska State Troopers: (866) 949-1303  
St. Mary's Post of Alaska State Troopers: (907) 438-2019
- **National Sexual Assault Helpline:**  
(800) 656-4673  
Available 24 hours a day, 7 days a week.
- **YKHC SAFE/SANE:**  
Tiger Connect: SART Adult On Call  
(907) 545-4273

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If comments about this guideline, please contact [Jennifer\\_Prince3@ykhc.org](mailto:Jennifer_Prince3@ykhc.org).



**Indicators of Abuse: History**

- No/vague explanation of significant injury
- Important details of explanation change dramatically
- Explanation of injury is inconsistent with the child's physical and/or developmental capabilities
- Injury occurred as a result of inadequate supervision
- Delay in seeking medical care without reasonable explanation
- Children with injuries resulting from family/ domestic violence incident
- Previous history of inflicted injury
- Inappropriate caretaker behavior that places child at risk

**Indicators of Abuse: Physical Exam**

- Bruising**
- Bruising in infants < 6months of age or non-ambulatory infants
  - Bruising in unusual locations in any age child: ear pinna, neck, under chin, torso, buttock
  - Pattern Bruises: loop marks, hand print, subgaleal hematoma due to hair pulling
- Bite Marks**
- Semi-circular/oval pattern
  - May have associated bruising
- Burns**
- Pattern contact burns
  - Cigarette burns
  - Stocking/glove pattern
  - Mirror image burns on extremities
  - Symmetrical burns on buttock
  - Immersion burns
- Facial Injury**
- Unexplained torn frenulum in non-ambulatory child
  - Unexplained oral injury
  - Ear injury

**Injuries Suggestive of Abuse**

- Skeletal**
- Rib fractures
  - Multiple fractures
  - Long bone fractures in < 6 months
  - Any fracture (including femur) in non-ambulatory child
  - Scapular fracture
  - Sternum fracture
  - Fractures of hands and feet
- Head**
- Subdural hematoma with or without skull fracture
  - Unexplained intracranial injury (Note: Infants with intracranial injuries frequently have no or non-specific symptoms)
- Poisoning**
- Any illegal drug exposure, prescribed controlled substance, ethanol, or marijuana

Suspicion, allegation, disclosure, or confession of child physical abuse.  
**Please see Indicators of Abuse AND Injuries Suggestive of Abuse.**

Treat acute issues as appropriate. If patient is in village and stable please arrange to have patient sent to ED via next commercial flight. If unstable then activate medevac.

Mandatory reporters must report via phone to: **OCS AND** law enforcement (**AST** if incident occurred in village or **BPD** if incident occurred in Bethel).

- Complete appropriate work-up (see table). Use Child Abuse Power Plan.
- Take photos of any injury visible on exam, especially bruising. Take photos at a distance AND close-up to establish relative size and landmarks. Include ruler to establish scale.

Send RAVEN communication to Child Abuse Pool detailing reports made to Law Enforcement and **OCS**. May contact **Child Abuse On-Call** via Tiger Connect if any questions or concerns.

If unable to reach a discharge plan with OCS that YOU think is safe, then consider admission for safety and send message to **Child Abuse On-Call** to help reach a safe discharge plan.

**Contacts**

- Child Abuse On-Call via Tiger Connect. May email ChildAbuse@ykhc.org with nonurgent questions.
- Office of Children's Services (**OCS**): (800) 478-4444 or reportchildabuse@alaska.gov (CC Child Abuse team).
- Alaska State Troopers (**AST**): (907) 543-2294
- Bethel Police Department (**BPD**): (907) 543-3781
- Alaska CARES: (907) 561-8301

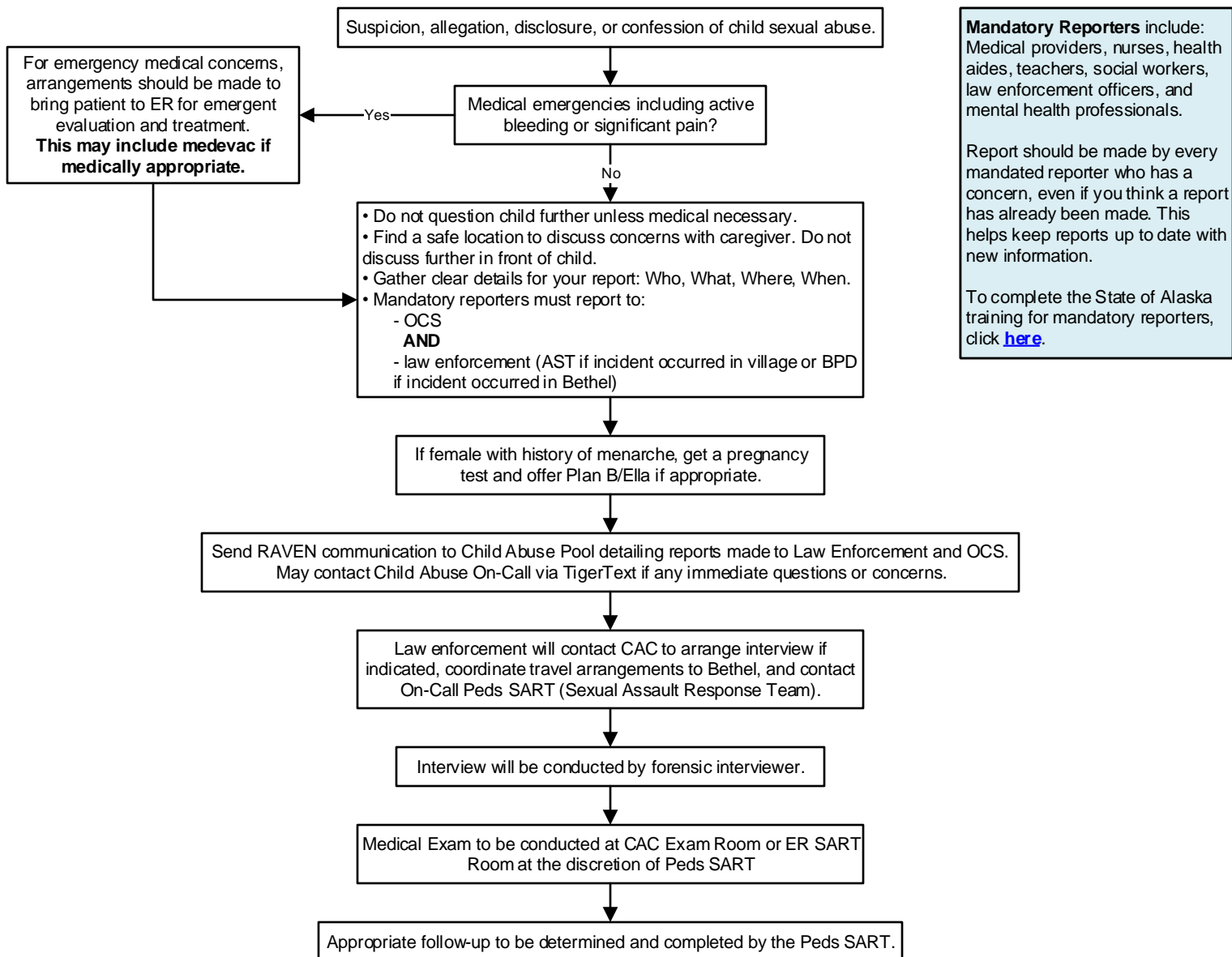
- Mandatory Reporters** include: Medical providers, nurses, health aides, teachers, social workers, law enforcement officers, and mental health professionals.
- Report should be made by every mandated reporter who has a concern, even if you think a report has already been made. This helps keep reports up to date with new information.
  - Always document date and time of call, name of OCS representative, and what was reported.
  - To complete the State of Alaska training for mandatory reporters, click [here](#).

**Note:** Minor injuries (single bruise on forehead, occasional bruises on shins, minor oral trauma, etc.) in a child able to cruise or sit independently can be part of normal development. Always ask caregivers for story behind injuries. If history does not match injury or child's observed developmental level, strongly consider child abuse injury surveillance.

**Child Abuse Injury Surveillance Table (Use Child Abuse Power Plan.)**

	<6 months	6-24 months	2-5 years	>5 years
Full exam	Yes	Yes	Yes	Yes
<b>Skeletal survey</b> Including oblique rib films	Yes	Yes	If highly suspicious of severe abuse	If highly suspicious of severe abuse
<b>Head CT</b> Request 3D reconstruction and 3 mm slices	Yes	If neurological exam abnormal	If neurological exam abnormal	If neurological exam abnormal
<b>Abdominal labs</b> AST, ALT, lipase, bag or CC U/A	Yes	Yes	Yes	If abdominal trauma
<b>Bone labs</b> Calcium, magnesium, phosphorus, alkaline phosphatase, intact PTH, 25-OH	If fracture	If fracture	If fracture	If fracture
<b>Coagulation studies</b> PT/INR, PTT, factor VIII & IX activity levels, VWF activity & antigen, CBC with diff. Consider CK if significant bruising. <b>If head trauma</b> PT/INR, PTT, thrombin time, fibrinogen, D-dimer	If bruising	If concerning bruising	If concerning bruising	If concerning bruising
Head circumference	Yes	Yes	N/A	N/A
Urine drug screen ± expanded state screen (contact Child Abuse On Call if considering expanded screen)	Consider	Consider	Consider	No
Optometry consult (within 24 hours)	If head injury	If head injury	If head injury	N/A

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 Clinical Guideline Committee 7/14/23. Click [here](#) to see the supplemental resources for this guideline. **If comments about this guideline, please contact Jennifer\_Prince3@ykhc.org.**



### Contacts

- On-Call Peds SART: (907) 444- 8643 or TigerText On-Call Peds SART.
- Child Abuse On-Call via TigerText. May email ChildAbuse@ykhc.org with nonurgent questions.
- Office of Children's Services (OCS): (800) 478-4444 or reportchildabuse@alaska.gov.
- Alaska State Troopers (AST): (907) 543-2294
- Bethel Police Department (BPD): (907) 543-3781
- Child Advocacy Center (CAC): (907) 543-3144 or (907) 545-1178

### Alaska Age of Consent

- The age of consent is 16, provided the older partner is not in a position of authority (example: teacher, coach, minister).
- Any two people who are over the age of 16 can consent to sex in Alaska, but if one of the partners is under 16, and there is at least a 3 year age difference between the partners, it is illegal for them to have sex and must be reported.

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 3/1/22. Click [here](#) to see the supplemental resources for this guideline. **If comments about this guideline, please contact Jennifer\_Prince3@ykhc.org.**



Source: ADA guidelines for treatment [here](#) and the abbreviated version [here](#).

Screen all overweight or obese adults with one or more other [risk factors](#) and all adults >35 years for type 2 diabetes mellitus.

### Comorbidities and ASCVD Risk

Comorbidities must be evaluated at every visit. Document in chart and address Assessment and Plan where appropriate.

- ASCVD/CHF
- Hypertension
- Hyperlipidemia
- CKD
- Obesity
- Sleep apnea
- Tobacco and alcohol use
- NAFLD
- Hemoglobinopathies (including anemia)
- Major depressive disorder/general anxiety disorder
- Diabetes distress

### Diagnostic Criteria

Unequivocal symptoms of hyperglycemia (thirst, polyuria, weight loss, and blurry vision) and either any one of the following OR any two of the following. (Take confirmatory test as close as possible to initial lab value to avoid treatment delays.)

- FPG\*  $\geq$  126mg/dl
- 2 hour PG  $\geq$  200mg/dl during OGTT
- Hgb A1c  $\geq$  6.5
- RPG  $\geq$  200mg/dl and symptoms of hyperglycemia or hyperglycemic crisis

Order CBC and iron profile if needed, as anemia can affect the accuracy of Hgb A1c.

Note: Fasting is defined as no caloric intake for at least 8 hours.

See diagnostic criteria.

Confirm diagnosis and add to problem list in RAVEN.

- Refer all new diagnoses of diabetes to the Diabetes Department.
- In RAVEN, type "Refer to Diabetes Internal" and select "DSMES (Diabetes Self Management Education and Support)," "MNT (Medical Nutrition Therapy)," and provider.
- Refer to Wellness Center for exercise education.

Schedule follow up appointment for 1-2 weeks and coordinate with diabetes department if possible.

### At initial and annual diabetes visits:

- Review and complete health maintenance:
  - Foot exam
  - Labs
  - Immunizations
  - Mental health screening
- Encourage lifestyle changes (see box).
- Set [A1c target](#) based on age and risk factors or complication risk.
- Encourage purposeful blood glucose monitoring.
- Discuss family planning/sexual health.
- Refer to optometry, dental, audiology if needed, physical therapy if needed.

Remember: language matters.  
See this [ADA resource](#).

### For Optometry Referrals

- Either provider or patient must call Optometry at x6336 to schedule appointment.
- Provider must state in note that patient is to be referred to Optometry for a diabetic eye exam. This is necessary for travel to be arranged.

### Abbreviations/Acronyms

ADA = American Diabetes Association  
 ASCVD = Arteriosclerotic cardiovascular disease  
 BH = Behavioral Health  
 CGM = Continuous glucose monitoring  
 CKD = Chronic kidney disease  
 CMP = Complete Metabolic Profile  
 DM = Diabetes mellitus  
 DSMES = Diabetes self management, education, and support  
 FPG = Fasting Plasma Glucose  
 Hgb A1c or A1c for short = Hemoglobin A1c or glycosylated hemoglobin  
 HTN = Hypertension  
 MNT = Medical nutrition therapy  
 OGTT = Oral Glucose Tolerance Test  
 OSA = Obstructive sleep apnea  
 PG = Plasma Glucose  
 RPG = Random Plasma Glucose  
 SMART = Specific, Measurable, Achievable, Realistic, Time-limited

### Lifestyle Changes

- Advise 7-10% weight loss.
- Advise minimum 150 minutes of exercise per week.
- Advise traditional native diet with minimal carbs.
- Encourage [PLATE](#) method.
- Advise  $\geq$ 7-8 hours of sleep per night.
- Encourage DSMES participation.
- Limit alcohol consumption: one drink per day for females and two drinks per day for males.

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 Clinical Guideline Committee 8/23/23.

If comments about this guideline, please contact  
Elizabeth\_Tressler@ykhc.org.





**Primary Treatment Goal of DM 2 is ASCVD risk reduction.**

### ABC's of DM 2 Care

- A1c: [individualized goal](#)
- BP  $\leq$ 130/80 (see antihypertensive box)
- Cholesterol (see lipids box)

### Antihypertensives

(in order of preference)

1. ACE/ARB
2. CCB/diuretic
3. Mineralocorticoid

Avoid beta-blockers unless necessary.

### Lipids

- Any age with diabetes and h/o ASCVD: high-intensity statin recommended.
- Age 40-75 with ASCVD: moderate intensity statin recommended.
- Age 20-39 with ASCVD/risk factors: consider statin.
- Age 40-75 with ASCVD/risk factors: recommend high intensity statin.
- Age  $\geq$ 75 discuss risk/benefit.

If not at goal with statin therapy, consider adding ezetimibe or PCSK-9 inhibitor.

Medication selection is based on comorbidities and patient centered goals.

Always begin with lifestyle interventions. These are essential as medication response is often dependent on lifestyle measures.

Metformin: generally first-line unless true allergy, CKD, CHF, or ASCVD. Remember to use extended release and titrate.

Indicators of high-risk for ASCVD or established ASCVD, CKD, or HF?

Yes

No

Consider using a SGLT2i or GLP-1 RA independent of baseline A1c or A1c target. SGLT2i for CKD or HF and GLP-1 RA if ASCVD predominates.

Using shared decision making with patient, choose from any of the four classes: GLP-1 RA, SGLT2i, DPP-4i, TZD. Use GLP-1 RA or SGLT2i if weight loss/maintenance a goal.

Follow-up in 1-3 months.

If not achieving targets, continue to add classes of medications with the following suggestions:

- > Minimize hypoglycemia <  
DPP-4i, GLP-1 RA, SGLT2i  
For SU or basal insulin, consider agents with lower risk of hypoglycemia
- > Minimize weight gain/promote weight loss <  
GLP-1 RA OR SGLT2i
- > Consider cost and access <  
Certain insulins available at lower generic cost, SU

Shared decision making includes an educated and informed patient and their family/caregiver, patient preference, motivational interviewing, goal setting, ensuring access to DSMES, and empowering the patient.

### Indications/Qualifications for CGM

- A1c  $\geq$  9 and/or prescribed insulin
- All CGM Rx for GDM patients must be prescribed by Compton
- All CGM Rx for non-pregnant patients must be prescribed by Nelson FNP

Follow up visits 1 month after adding new meds, OR every 3 months if stable, until lifestyle and A1c goals achieved.

If not achieving A1c goals, consider using CGM, revise SMART goals, utilize DSMES, DM support group, screen for Diabetes Distress or other psychosocial issues.

- If not achieving A1c goals and on four classes of medication including basal insulin, consider referral to ANMC Diabetes program and/or multidisciplinary discussion with diabetes team.
- Add prandial insulin as needed and ensure insulin teaching, self-management goals, and that patient is performing appropriate monitoring
- Continue to utilize a patient centered approach with shared decision making. Revisit lifestyle behaviors, patient specific motivators, psychosocial factors, and address medical comorbidities.
- To avoid therapeutic inertia, reassess and modify treatment regularly (3-6 months)

Diabetes Distress refers to negative psychological reactions to the emotional burden and patient worries specific to their experience of managing a complicated and demanding chronic disease. See ADA [position statement](#).

### Abbreviations

- DPP-4i = dipeptidyl peptidase 4 inhibitor or gliptins. YKHC formulary saxagliptin (Onglyza).
- GLP-1 RA = glucagon-like peptide-1 receptor agonist. YKHC formulary liraglutide (Victoza).
- SGLT2i = sodium-glucose co-transporter-2 inhibitor. YKHC formulary empagliflozin (Jardiance).
- SU = sulfonylureas. YKHC formulary glipizide.

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Approved by Clinical Guideline Committee 8/23/23.  
If comments about this guideline, please contact  
[Elizabeth\\_Tressler@ykhc.org](mailto:Elizabeth_Tressler@ykhc.org).



Our pediatric endocrinologist, Dr. Rachel Lescher, has created the following protocols to aide us in managing patients with endocrinologic disorders. Please follow these recommendations.

As always, contact the pediatric hospitalist on call with any questions via the Tiger Connect role, "Peds Wards on Duty." We have access to the endocrinologist call/coverage schedule and can help direct consults as needed.

### Endocrine Emergencies

Protocols for managing the following:

- Severe hypoglycemia
- Adrenal insufficiency/crisis (including patients with CAH)
- Hypercalcemia
- Hypocalcemia
- Thyrotoxic crisis (thyroid storm)

### Diabetic Ketoacidosis

- Definitions and formulae
- Management
- Monitoring parameters
- Discussion and management of cerebral injury
- Prevention
- Sick day plans

### Routine Follow-up of Endocrine Disorders

Protocols for managing the following:

- Congenital adrenal hyperplasia
  - Congenital hypothyroidism/Hashimoto thyroiditis/goiter
  - Hypopituitarism/septo-optic dysplasia/optic nerve hypoplasia
  - Short stature work-up
  - Growth hormone injections
- Insulin resistance/obesity
- Diabetes mellitus (type 1 and type 2)

These files were written by pediatric endocrinologist Rachel Lescher.

This is 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 Clinical Guideline Committee 9/25/23.

If comments about this protocol, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



### Congenital Sucrase-Isomaltase Deficiency (CSID)

- This condition leads to an inability to digest sucrose (table sugar).
- Signs/symptoms:
  - Watery diarrhea after food containing sucrose
  - Abdominal pain/distension
  - Malnutrition, poor growth, FTT
- The condition is seen in Alaska Native people but is often under-diagnosed because patients unknowingly manage it with a traditional diet.

If you are considering this diagnosis, please consult a pediatrician. There are many more resources in the Pediatrics Folder on the vault, including sucrose content of medications and formulas.

CSID suspected

- Consult a YKHC pediatrician.
- Consult the [ANMC CSID Guideline](#) for details on testing.

- After CSID has been confirmed, treat with sacrosidase enzyme replacement (Sucraid). Sucraid is not covered by Medicaid, so there are many necessary steps.
- To obtain Sucraid:
  1. Go to: [Sucraid.com](http://Sucraid.com) → [How to Order](#).
  2. Click Physician Prescription Form.
  3. Fill out the information in the form with CSID as the diagnosis with 11 refills. (Must fill out this form annually.)
  4. Fax this form to the number at the top.
  5. Instruct family to fill out HIPAA form, found [here](#). This is the form to get the Sucraid for free via the financial assistance program.
  6. Fax this form to the number at the top.
  7. Get a reliable phone number for the family and tell them they must answer their phone when the company calls. They will need to give more information over the phone.
  8. Call the company to confirm everything has been arranged: 1-833-800-0122.

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 Clinical Guideline Committee 6/1/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



### Background Information

- 75% of the ANAI population is colonized with *H. Pylori* (range 61-84%).
- Screening or testing for *H. Pylori* for routine evaluation of dyspepsia or other GI symptoms is not clinically useful or supported by evidence for high prevalence populations.
- For routine clinical practice, there is **insufficient evidence-based data** to support community-wide eradication as a mechanism for gastric cancer prevention.
- Current literature **DO NOT** support a test and treat method with noninvasive tests.

### Pediatrics

- Goal is to determine underlying cause of symptoms, not solely the presence of *H. pylori* infection.
- Diagnostic testing is NOT recommended with functional abdominal pain.
- Consult pediatrics if considering this diagnosis.
- Urgent referral for endoscopy for: occult blood in stool, weight loss, vomiting/hematemesis, melena, or clinical suspicion for gastric or duodenal peptic ulcer disease.
- Consider referral for: iron deficiency that is unexplained and refractory to treatment, malnutrition without other cause, chronic immune thrombocytopenia.

### Pregnancy and Lactation

- Delay treatment until after pregnancy.
- DO NOT use in Pregnancy: bismuth and tetracycline.
- DO NOT use in lactation: bismuth, metronidazole, levofloxacin.

*H. Pylori* identified by histology and/or CLO test from EGD

### AND

Endoscopy reveals the following:

- Duodenal ulcers
- Gastric ulcer
- MALT lymphoma
- Gastric intestinal metaplasia

Treat for *H. Pylori* with antibiotics

### Adult Dosing (14 day course)

#### Preferred Treatment:

Metronidazole 500 mg PO QID  
Amoxicillin 1000 mg PO BID  
Omeprazole 20 mg PO BID  
Bismuth subsalicylate 524 mg PO QID

#### PCN allergic (anaphylactic):

Metronidazole 500 mg PO QID  
Doxycycline 100 mg PO BID  
Omeprazole 20 mg PO BID  
Bismuth subsalicylate 524 mg PO QID

#### Recurrence/Failure:

Metronidazole 500 mg PO QID  
Doxycycline 100 mg PO BID  
Omeprazole 20 mg PO BID  
Bismuth subsalicylate 524 mg PO QID  
OR  
Amoxicillin 1000 mg PO BID  
Levofloxacin 500 mg PO daily (FDA Black Box)  
Omeprazole 20 mg PO BID

### Pediatric Dosing (14 day course)

Metronidazole 10 mg/kg PO BID  
Amoxicillin 25 mg/kg PO BID  
Omeprazole 1 mg/kg PO BID  
Bismuth subsalicylate  
<10 years: 262 mg PO QID  
>10 years: 524 mg PO QID

See [ANMC Helicobacter pylori Pediatric Treatment Guideline](#).

### Endoscopy Referrals

- Adults: Criteria for YKHC found [here](#). Use orders "Refer to Adult Surgery Internal – YK EGD" or "Refer to Adult Surgery External (only EGD/CS)."
- Pediatrics: "Refer to Peds Gastroenterology External" or "Refer to Peds Surgery External."

Other causes of dyspepsia that antibiotics will NOT help, EVEN IF *H. Pylori* is detected:

- GERD
- Irritable Bowel Syndrome
- Mild/moderate gastritis
- Excessive/chronic NSAID use
- Heavy alcohol use
- Poor gastric mobility

### Symptomatic Relief Medications

#### Adults:

Famotidine 10 mg PO BID  
Omeprazole 20 mg PO BID

#### Children:

Famotidine 0.5 mg/kg PO BID

### After Treatment

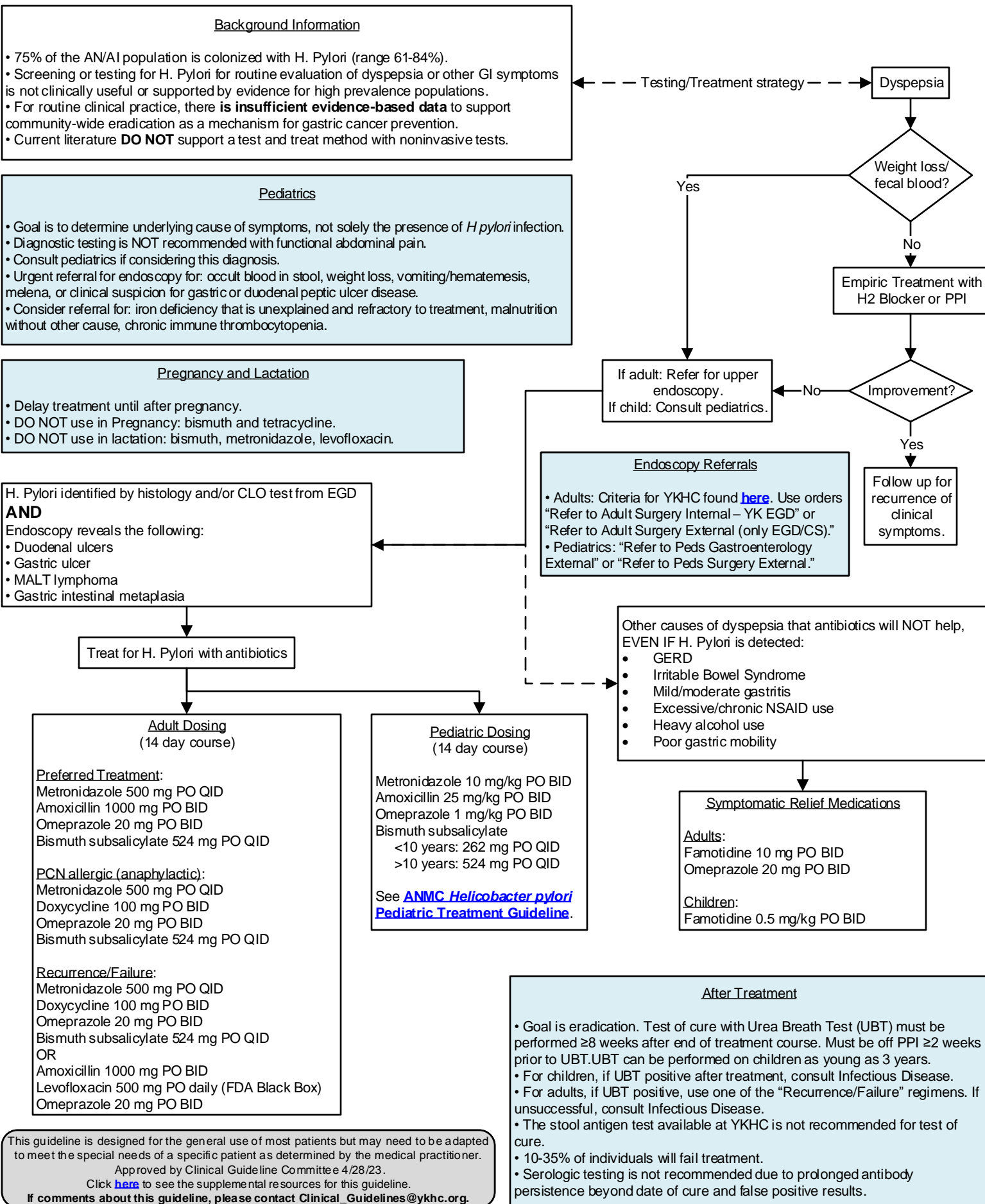
- Goal is eradication. Test of cure with Urea Breath Test (UBT) must be performed  $\geq 8$  weeks after end of treatment course. Must be off PPI  $\geq 2$  weeks prior to UBT. UBT can be performed on children as young as 3 years.
- For children, if UBT positive after treatment, consult Infectious Disease.
- For adults, if UBT positive, use one of the "Recurrence/Failure" regimens. If unsuccessful, consult Infectious Disease.
- The stool antigen test available at YKHC is not recommended for test of cure.
- 10-35% of individuals will fail treatment.
- Serologic testing is not recommended due to prolonged antibody persistence beyond date of cure and false positive results.

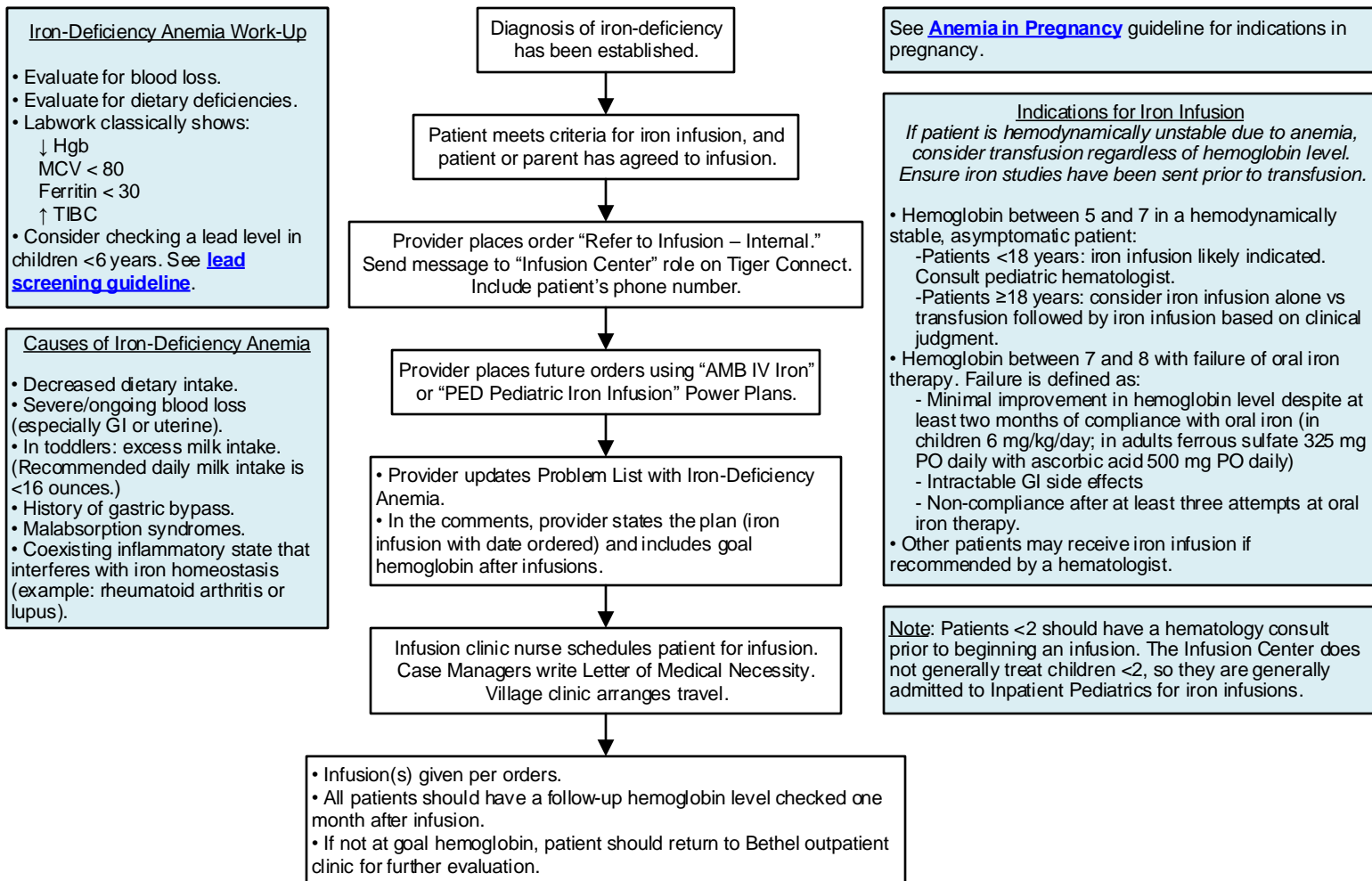
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Approved by Clinical Guideline Committee 4/28/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Clinical\\_Guidelines@ykhc.org](mailto:Clinical_Guidelines@ykhc.org).





### Iron Replacement Dose Calculation

$$\text{Total Iron Replacement Dose (in mg)} = 0.6 \times \text{weight} \times \left[ 100 - \left( \frac{\text{actual hemoglobin}}{\text{desired hemoglobin}} \right) \times 100 \right]$$

#### For pediatric patients:

- Using iron sucrose, this dose should be given in aliquots of 5-7 mg/kg until the full replacement dose has been given. Max dose is 100 mg for initial dose and 300 mg for repeat doses.
- Per Pediatric Hematology, may give children two iron sucrose doses 24 hours apart and then repeat in 1-2 weeks. Giving more frequent dosing or more than two daily doses in a row results in decreased absorption and increased side effects in children.

#### For adult patients:

- Dose is typically iron sucrose 300 mg IV daily x3 doses.

### Side Effects/Reactions

Efficacy and safety have been evaluated in adults and children older than two years. Consult pediatric hematologist for children younger than two years.

#### Specific reactions (rare):

- Hypersensitivity, including anaphylaxis and angioedema. Stop infusion immediately and treat as anaphylaxis.
- Hypotension (related to high total doses or rapid infusions). Stop infusion and treat with IVF, as appropriate.
- Infection: avoid administering if active systemic infection.
- For IV infiltrates, place cold pack.

### Resources

- Consult Peds Wards On Duty by Tiger Connect.
- A pediatric hematologist can be reached for further questions at Alaska Pediatric Oncology at (907) 929-3773.
- ANMC Adult Hematology Oncology can be reached at (907) 729-1180.

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Approved by Clinical Guideline Committee 8/23/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Leslie\\_Hermann@ykhc.org](mailto:Leslie_Hermann@ykhc.org)



## Background

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

## Anaphylaxis

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

## Hives vs Viral Rash

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

NOTE: If amoxicillin is needed to treat a life threatening infection, consult Allergy & Immunology to discuss possible desensitization. Alaska Asthma, Allergy, & Immunology can be reached at (907) 562-6228.

## References

1. Kelso JM. "Provocation challenges to evaluate amoxicillin allergy in children." JAMA Pediatrics 2016;170(6):e160282.
2. Mill C, et al. "Assessing the diagnostic properties of a graded oral provocation challenge for the diagnosis of immediate and nonimmediate reactions to amoxicillin in children." JAMA Pediatrics. 2016;170(6):e160033.

Patient labeled with a penicillin/amoxicillin allergy.

Review history. (See box.)

Was the reaction anaphylaxis (see box) or other life-threatening reaction (eg Stevens-Johnson syndrome, etc.)?

Yes

- Do not give drug or perform trial.
- Update chart, including the Problem List and a comment on the allergy.
- Refer to Allergy & Immunology at 5.

No

What was the reaction?

Rash

Vomiting and/or diarrhea without any other S/Sx anaphylaxis

Other

True hives, skin blistering/peeling, or mucous membrane involvement

Viral-appearing rash or other type of rash

- Do not give drug or perform trial.
- Update chart, including the Problem List and a comment on the allergy.
- Refer to Allergy & Immunology at 5.

- Not a true allergy.**
- Educate and perform Amoxicillin Trial (see box).
  - If patient/family refuses trial, update Problem List.
  - Offer future trial or refer to Allergy & Immunology at age 5 for amoxicillin allergy testing.

- Not a true allergy.**
- Educate and perform Amoxicillin Trial (see box).
  - If patient/family refuses trial, update Problem List.
  - Offer future trial or refer to Allergy & Immunology at age 5 for amoxicillin allergy testing.

Get more history. Consider pediatric consult.

This guideline is designed for patients that are extremely unlikely to be allergic to amoxicillin. There is no upper or lower age limit. Consult pediatrics with any questions.

## Amoxicillin Trial Procedure<sup>2</sup>

Use AMB Amoxicillin Trial Power Plan.

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine. Epinephrine (1 mg/mL): 0.01 mg/kg (or 0.01 mL/kg) IM Q5-15 minutes.  
Per AAP recommendations:
  - 7.5-25 kg: use EpiPen Jr (0.15 mg)
  - ≥ 25 kg: use EpiPen (0.3 mg)
2. Calculate weight-based dose of amoxicillin. Give patient 10% of that dose.
3. Place patient in nearby room and instruct caregiver to notify staff of any changes in status.
4. If no reaction by 20 minutes, give patient remaining 90% of weight-based dose of amoxicillin.
5. Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
6. Give patient and family amoxicillin trial education sheet.
7. Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose "cancel." On the "reason" drop-down menu, choose "OK on Retrial."

## Notes:

- If patient is on a beta-blocker, stop this for 24 hours prior to procedure, if possible. Beta-blockers can interfere with treatment for anaphylaxis, if it occurs.
- Ensure that patients with asthma have optimal control prior to this procedure.

## History

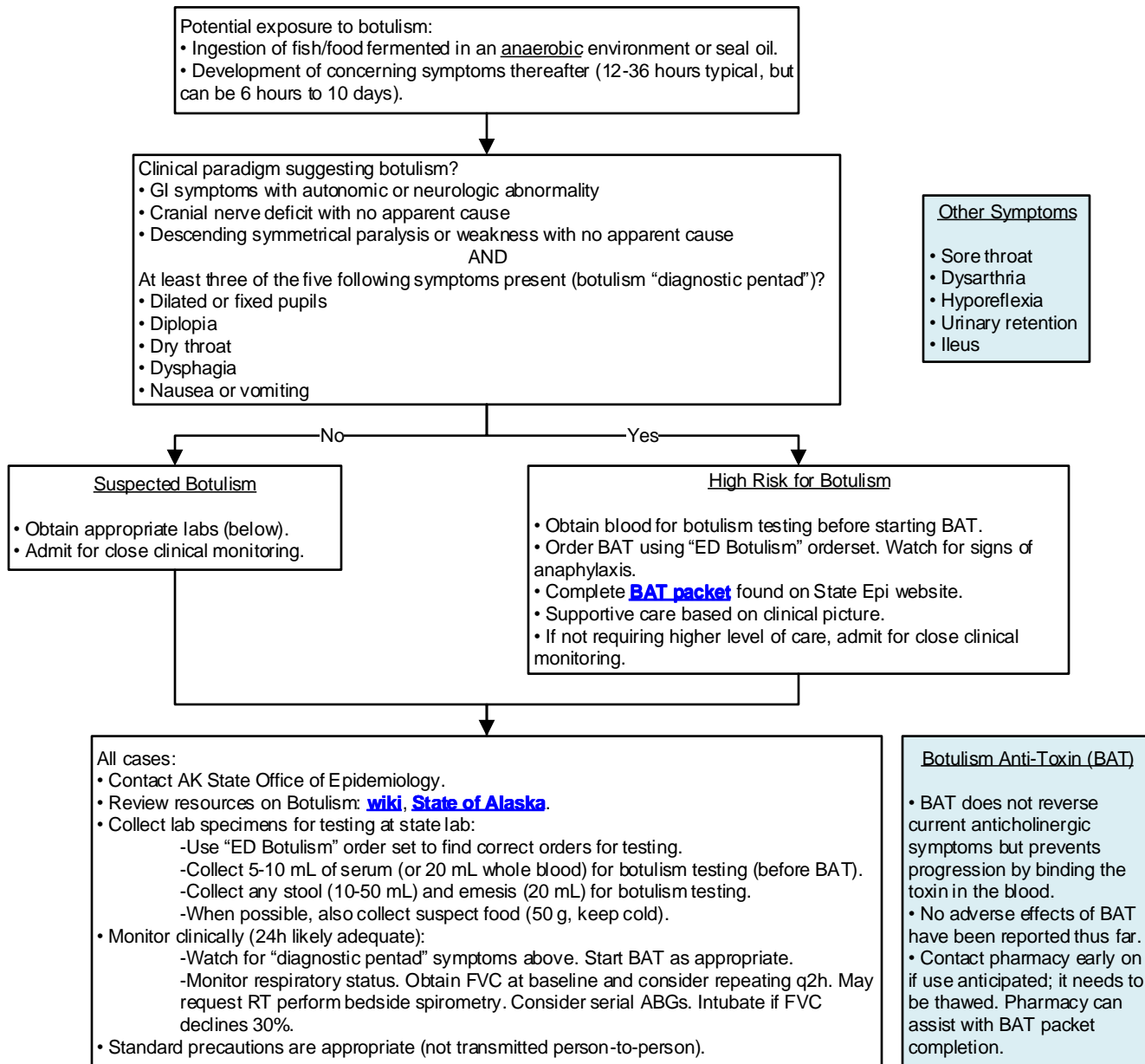
### Chart review:

- Review notes in allergy alert. Find date allergy was added, and then review notes from that day. Was ED visit or hospital admission required?
- Review Multimedia Manager photos.
- Were steroids or other treatment given?
- Has patient received a drug of the same class since the allergy was reported? Was it tolerated? Were there symptoms?

### History from patient/family:

What was the reaction?

- Vomiting and/or diarrhea?
- Rash?
  - Age? Time from first dose?
  - Hives? (See box.) Was it itchy?
  - Blistering or peeling?
  - Photos from family?
- Trouble breathing?
- Swelling of tongue/lips?
- Joint swelling or fever?
- Mucous membrane involvement?



**Note:** Botulism toxin only causes flaccid paralysis. Patients are awake, alert, and aware. Procedures should be explained and appropriate pain control and sedation for intubated patients should be provided.

### Infant Botulism:

This is rare, with only 5 reported cases in AK in the past 65 years. If suspected, see Epi Procedure Manual, Botulism at State website.

### Resources

- AK State Office of Epidemiology [Website](#):  
-907-269-8000 (M-F, 8-5) and 800-478-0084 (after hours)
- State Lab [Website](#):  
-1-855-222-9918
- Division of Public Health Healthcare Provider [Checklist](#)

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 Clinical Guidelines Committee 3/13/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).



## Definitions

• Bronchiectasis is a lung condition with chronic wet cough and lung infections and is diagnosed by CT with contrast.

Use ICD10 code J47 – “Bronchiectasis.”

• Bronchiectasis risk is defined as  $\geq 3$  episodes of wet cough  $>4$  weeks in the past 2 years, often in a setting of persistent infiltrates and recurrent pneumonia.

Use ICD10 code J41.1 – “Chronic purulent bronchitis.”

• All patients with either diagnosis should be made CPP and referred to pediatric pulmonology.

## Stable Chronic Management

### Comorbidities

• Aspiration: Trial thickener if  $<3$  years, feed with swaddling in side-lying position at 45 degrees with slow-flow nipple, consider speech therapy.

• TB: Place PPD, send sputum/gastric aspirates if indicated (see [Pediatric TB Evaluation & Treatment guideline](#)).

• Asthma: Bronchodilators, inhaled steroids.

• Immunodeficiencies: Consider referral to Alaska Asthma, Allergy, & Immunology for work-up.

• CF: Confirm screen negative on newborn screen.

### Maintenance Management

• Follow-up with pulmonology clinic Q3-6mo and pediatrician or health aide Q2-3mo to check symptoms and medications. At every visit:

- Patient and caregiver should verbalize diagnosis.
- Review plan for exacerbations.
- Check that Problem List is up-to-date with plan.

• Annual PFTs if  $>5$  years.

• Annual sputum culture if chronic productive cough.

• Annual flu and COVID vaccines.

• Pneumococcal vaccines: PCV-13 series followed by one dose of PPSV-23 (Pneumovax) at  $\geq 2$  years.

• Treat dental caries.

• Optimize environmental health with woodstove safety, vents, irritant reduction, smoking cessation, etc.

• Airway clearance: P&PD/chest PT, consider acapella.

• Consider allergy testing.

## Transition of Care

• Review diagnosis and management with patient and caregiver at each visit. Patient and caregiver should verbalize diagnosis, treatment, and exacerbation plan.

• At age 17, a pediatrician should review chart and refer patient to pediatric pulmonology for chest CT, treatment plan, and handoff visit.

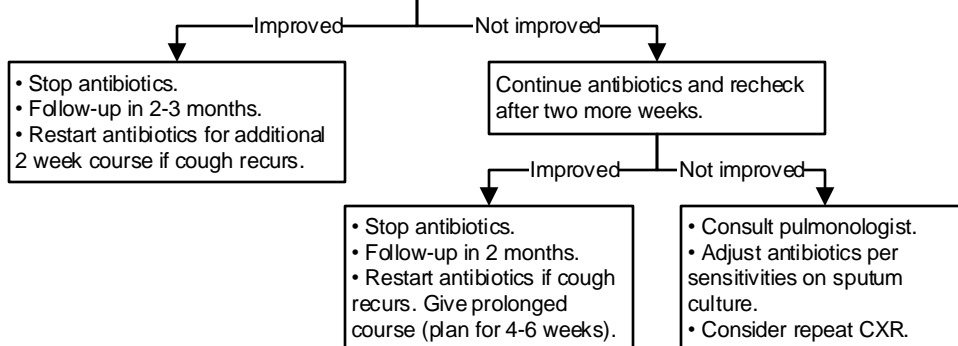
• By age 18, a pediatrician should schedule a transition of care appointment with family medicine, write an Alert Note that includes a summary of medical history and current treatment plan, and refer to adult pulmonologist.

## Exacerbation Management

Consider if:

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

- Treat with Augmentin 45 mg/kg/dose BID or cefdinir 14 mg/kg/dose daily for at least 2 weeks.
- Consider probiotics.
- If able, do sputum culture (via RT in Bethel). If patient cannot produce sputum, use method described in [Induced Sputum Collection Checklist](#).
- Ask screening questions for dysphagia and have low threshold to thicken feeds.
- Chest physiotherapy TID.
- Recheck after two weeks.
- Consider systemic steroids if significant bronchospasm.







**NOTE:**

- If <3 months or history of prematurity, keep patient in Bethel and have low threshold for admission.
- If patient is <90 days and febrile, please see [fever guideline](#).

**Risk Factors for Apnea**

- RSV
- Post-conceptual age <48 weeks
- Low birth weight
- Tachypnea or bradypnea
- Decreased oxygen saturation on room air

**Risk Factors for Severe Disease**

- Age <3 months
- History of prematurity
- History of cardiopulmonary disease
- Exposure to tobacco smoke

**Hypoxemia**

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

**Pulse-Oximetry Monitoring**

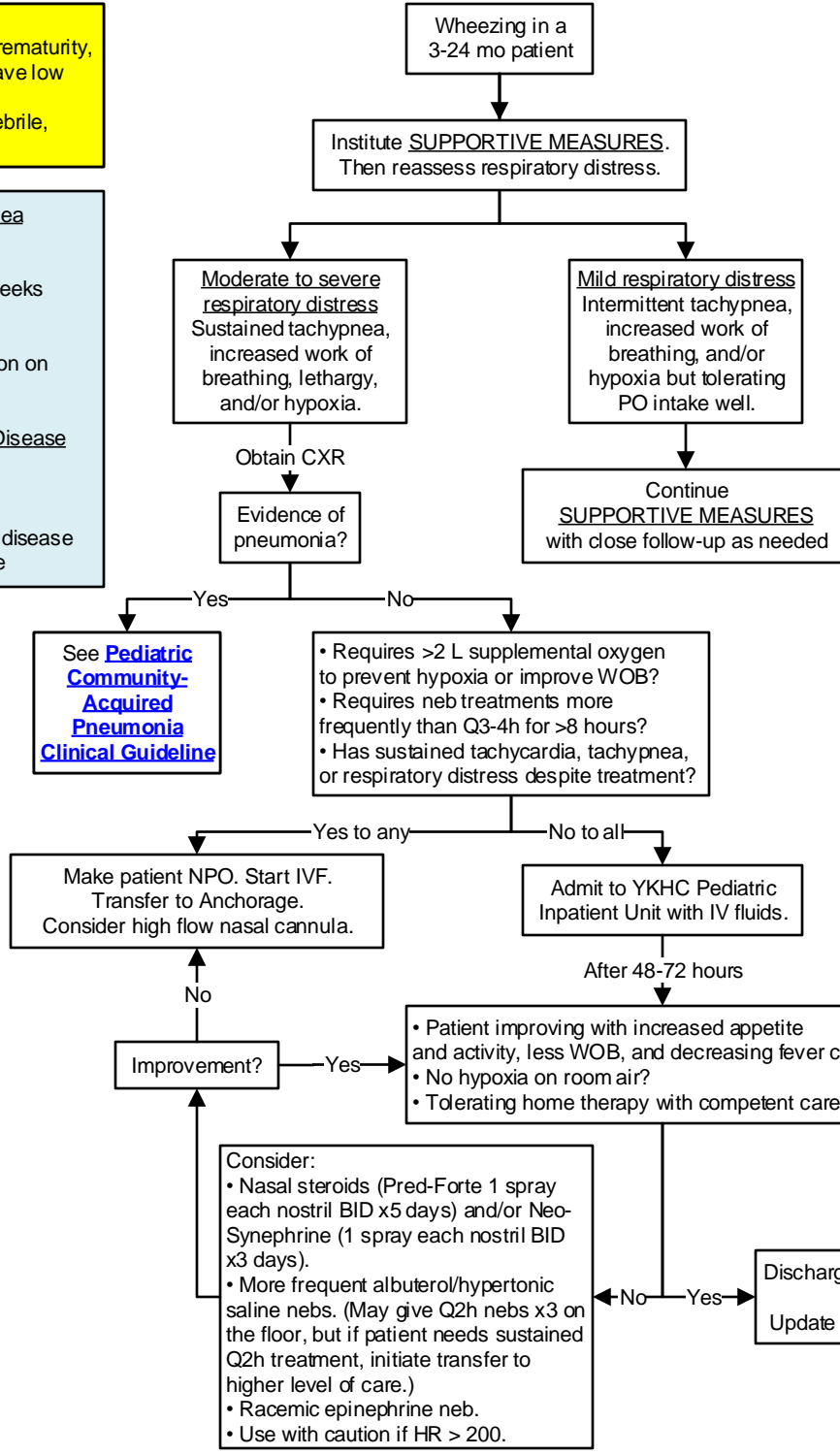
- Pulse-ox may be ordered Q4h (not continuously) if patient >6 months and stable.
- Being on oxygen does not mandate continuous pulse-oximetry if patient is stable.

**When Admitting, Use Power Plan to Order**

- IVF
- Nasal suction
- Nebs pm
- Consider scheduled nebs
- No deep (nasopharyngeal) suctioning
- Respiratory assessments
- Consider hypertonic (3%) saline – may need to use with albuterol

**Prevention**

- Hand washing
- Encourage breastfeeding
- Tobacco cessation
- Palivizumab for high-risk infants



**SUPPORTIVE MEASURES**

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

**Village Management**

- Institute SUPPORTIVE MEASURES, especially fever control, nasal suction, IV or PO hydration, and several albuterol and/or saline (0.9%) nebs.
- Have low threshold to refer to Bethel for further evaluation if no improvement with supportive measures or any concerns.
- If no improvement after 2-3 days of village management, refer to Bethel for further care.
- If Hx recurrent wheezing with viral illnesses, start budesonide 1 mg by nebulizer twice daily for 7 days.
- If unable to bring to Bethel and worsening, consult a pediatrician and consider systemic steroids.

**Respiratory Viral Panel**

- Send nasal swab for RSV, flu, and COVID.
- If flu positive, consider treatment with oseltamivir per [influenza guideline](#), if appropriate.

**Steroids**

- Recent national guidelines recommend that children <4 with recurrent wheezing with viral illnesses should be given a 7-10 day course of inhaled steroids like budesonide or fluticasone.
- National guidelines recommend against systemic steroids as the potential harm is generally greater than the potential benefit.

If considering starting systemic steroids, please consult a pediatrician.

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Approved by MSEC 11/2/21. Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org) or [Jennifer\\_Hampton@ykhc.org](mailto:Jennifer_Hampton@ykhc.org).



### Molnupiravir

- Mechanism: The oral prodrug of a ribonucleoside with activity against RNA viruses.
- Regimen: 800 mg PO twice daily for five days. Initiate within five days of symptom onset.
- Main concerns: Risk of fetal toxicity.

Patients may request molnupiravir directly from the pharmacy.

See [Policy & Procedure](#) for details.

#### Criteria:

- Age  $\geq 18$  years.
- Mild to moderate disease in the outpatient setting
- High risk of progressing to severe illness.
- Alternative antiviral therapies not accessible or clinically appropriate.

No contraindications, warnings, or precautions. (See box.)

Counsel patient and document per requirements in box.

- Prescribe molnupiravir as soon as possible after positive COVID test and within five days of symptom onset.
- Patient should take molnupiravir 800 mg (four 200 mg capsules) PO twice daily for five days.

### Adverse Reactions

In the clinical studies quoted in the EUA, the following adverse events were reported: diarrhea, nausea, and dizziness.

### Contraindications, Warnings, and Precautions

- Molnupiravir is NOT authorized for use in patients who are hospitalized, requiring supplemental oxygen, or requiring more than their baseline supplemental oxygen flow rates due to COVID.
- Pregnancy: Due to risk of fetal toxicity, molnupiravir is NOT recommended for use during pregnancy.
- Breastfeeding: Not recommended to breastfeed during treatment period and for four days after the last dose. Instruct patients to pump and discard milk.
- Patients with childbearing potential:
  - Females: Instruct patients to use effective contraception during the treatment period and for four days after the last dose.
  - Males: Instruct patients with partners of childbearing potential to use effective contraception during the treatment period and for three months after the last dose.
- <18 years: Due to risk of bone and cartilage growth disruption, molnupiravir is NOT recommended for patients younger than 18 years old.

Resource: Fact Sheet for Health Care Providers Emergency Use Authorization (EUA) of Molnupiravir. Updated July 2023. Click [here](#) for source.

### Documentation Requirements for Molnupiravir

Communicate and document the following in the medical record:

- [Fact Sheet for Patients and Parents/Caregivers](#) given to patient/caregiver.
- Inform patient/caregiver of alternatives to receiving molnupiravir. See [clinicaltrials.gov](#) for emerging data.
- Inform patient/caregiver that molnupiravir is an unapproved drug that is authorized for use under Emergency Use Authorization.

### Reporting of Adverse Events

The prescribing health care provider is responsible for mandatory reporting of all medication errors and adverse events potentially related to molnupiravir. Reports must be made within seven days of the event.

Serious adverse events include: death; life-threatening adverse event; inpatient hospitalization or prolongation of existing hospitalization; persistent or significant incapacity or substantial disruption of the ability to conduct normal life function; congenital anomaly/birth defect; or medical or surgical intervention to prevent death, a life-threatening event, hospitalization, disability, or congenital anomaly.

Submit report to FDA MedWatch by completing the online form [here](#). The report should include "use of molnupiravir under Emergency Use Authorization (EUA)" in the "Describe Event" section.

See the [FDA MedWatch program](#) for more information.

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 Clinical Guideline Committee 9/25/23.

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### Ritonavir-Boosted Nirmatrelvir (brand name Paxlovid)

- Mechanism: Nirmatrelvir is a protease inhibitor; ritonavir is a cytochrome P450 3A4 inhibitor that increases nirmatrelvir concentrations.
- Regimen: Paxlovid is packaged with nirmatrelvir 150 mg x2 and ritonavir 100 mg. Take all three pills (nirmatrelvir 300 mg and ritonavir 100 mg) PO twice daily for five days. Initiate within five days of symptom onset.
- Main concerns: Significant drug-drug interactions.

#### Criteria:

- Age  $\geq 12$  years and weight  $\geq 40$  kg
- Mild to moderate disease in the outpatient setting
- High risk of progressing to severe illness.
- No contraindications (see box).



- Providers should document using “.Paxlovid” autotext and comment on need for labs. May place this in an Alert Note and complete full documentation later.
- Consult a pharmacist. **A pharmacist must be involved with all Paxlovid prescriptions.** See [Policy & Procedure](#) for details.
- Patients may request Paxlovid directly from the pharmacy. See [Policy & Procedure](#) for details.

#### Note

- Ritonavir can have significant [drug-drug interactions](#). These interactions are increased with renal or hepatic insufficiency.
- Pharmacist involvement is essential in making adjustments to chronic medications and creating a patient-specific, tailored plan.

#### Indications for Labwork (CMP)

- Age  $\geq 65$  years.
- Hypertension, diabetes, or CVD
- Other chronic viral illness (HIV, Hepatitis C)
- Malignancy, autoimmune diseases, nephrolithiasis, or recurrent UTIs
- Chronic use of nephrotoxic medications
- Family history or past history of CKD
- Clinical judgment.

*(May defer If checked in the last 12 months and no suspicion for worsening renal or hepatic impairment in that time.)*

#### Adverse Reactions

In the clinical studies quoted in the EUA, the following adverse events were reported: dysgeusia, diarrhea, hypertension, and myalgia.

#### Contraindications

- Paxlovid is NOT authorized for use in patients who are hospitalized, requiring supplemental oxygen, or requiring more than their baseline supplemental oxygen flow rates due to COVID.
- Do not give to any patient with known hypersensitivity to any ingredient of Paxlovid.
- Review patient's medications (including herbal supplements) for drug-drug interactions, summarized at the [NIH COVID Treatment Guidelines](#).

#### Special Populations

- Pregnancy & Breastfeeding: There are no available data in these populations to use to make a recommendation.
- Renal Impairment:
  - Moderate (eGFR  $\geq 30$  to  $< 60$  mL/min): change dose to nirmatrelvir 150 mg (one tab) and ritonavir 100 mg (one tab)
  - Severe (eGFR  $< 30$  mL/min): not recommended
- Hepatic Impairment: not recommended if [Child-Pugh Score](#) Class C.

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### Signs of Impending Airway Compromise

- Drooling
- Lethargy
- Tripod position
- Marked retractions
- Tachycardia
- Cyanosis or pallor
- Rapid progression of symptoms

NOTE: Use extra caution in children with airway anomalies or ANY history of prior intubation.

### Important Supportive Measures

1. Keep child upright or in position of comfort.
2. Turn lights down and minimize unpleasant interventions.
3. May take child outside for cool air.
4. Minimize invasive measures – keep child CALM!
5. **DO NOT** give albuterol; this can worsen croup.

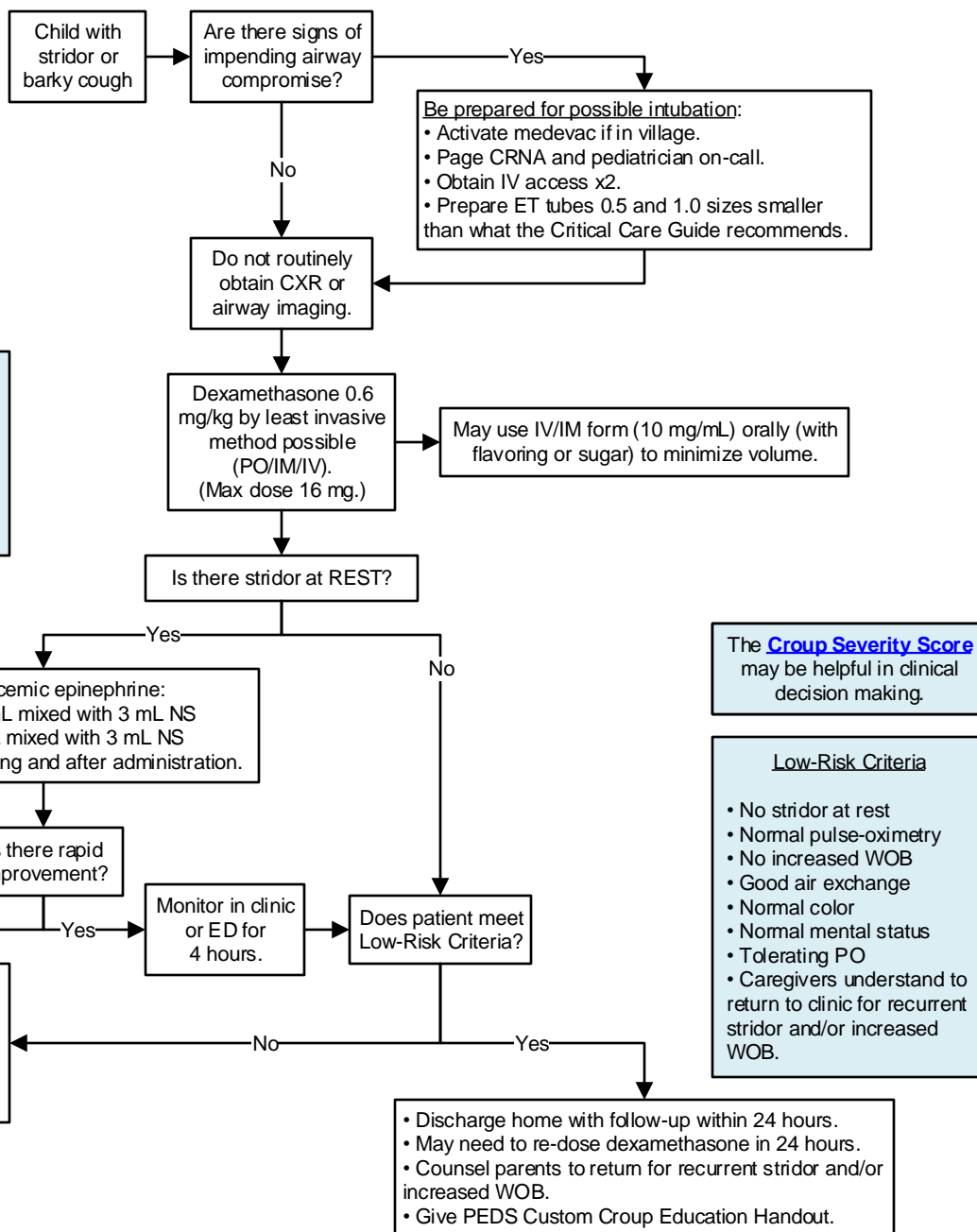
### In Village

If no racemic epinephrine available, mix 0.5 mL/kg of 1 mg/mL (1:1000) epinephrine (max dose 5 mL) with 1 bullet of NS and give via nebulizer.

### DDx Stridor

- Croup (most common in ages 6 months to 3 years)
- Foreign body
- Tracheomalacia
- Angioedema
- Tracheitis
- Epiglottitis
- Abscess

Note: if prolonged symptoms (>3-5 days without any improvement), consider diagnosis other than croup.



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Approved by Clinical Guideline Committee 11/21/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



Infant 0-90 days with recorded or reported rectal temperature  $\geq 100.4^{\circ}\text{F}$ .

Sick-appearing

- Evaluate patient in Bethel ED.
- Perform immediate work-up:
  - CBC with manual differential
  - Procalcitonin, CRP
  - Blood culture
  - U/A, urine culture
  - CXR
  - LP if stable
  - RSV/flu/COVID swabs

Admit or medevac, as appropriate.  
Give antibiotics. (See box.)

Well-appearing

0-28 days

29-60 days

61-90 days

- Evaluate patient in Bethel ED.
- Perform work-up:
  - CBC with manual differential
  - Procalcitonin, CRP
  - Blood culture
  - U/A, urine culture
  - Consider CXR, RSV/flu/COVID swabs

Meets all Low Risk Criteria (see box)?

No

Yes

- Perform LP.
- Give antibiotics. (See box.)
- Consider admission.

Evidence of UTI, AOM, or PNA?

Yes

No

- Consider LP based on clinical status, age, etc. LP not mandatory in well-appearing infants.
- Admission or daily follow-up until blood culture negative at least 36 hours.
- If UTI, treat empirically with cephalexin or ceftriaxone, pending speciation of culture.
- If AOM or PNA, use clinical judgment to decide on antibiotic treatment (oral or parenteral).

If concerned for bacterial meningitis:

- Consult pediatrics and strongly consider medevac.
- If transferring, send any extra CSF on ice.

### Village Management

- If well-appearing and meets criteria for evaluation in Bethel, send on next commercial flight. If travel to Bethel will be delayed, infant must have recheck with health aide within 12 hours and be followed at least daily until seen in Bethel.
- If infant is not well-appearing, consult peds to discuss treatment options.
- If giving ceftriaxone IM in the village, DO NOT say "ceftriaxone per CHAM." Give the health aide the exact dose per box below.

No temp  $> 101.3$   
AND  
Fever resolves by 48 hours  
AND  
Meets all Low Risk History & Exam Criteria?

No

Yes

- Evaluate patient in Bethel.
- Perform work-up:
  - U/A, urine culture
  - Consider bloodwork and LP based on history, exam, and risk factors.

- Daily rechecks in village, outpatient clinic, or ED until improving.
- Low threshold to bring to Bethel ED if any concerns.

- LP and antibiotics unnecessary unless clinical status changes.
- Daily follow-up until blood culture negative at least 36 hours.

### Acetaminophen

- Acetaminophen should NOT be given prior to vaccines, as there is some evidence it blunts the immune response.
- Acetaminophen should NOT be given around-the-clock in this age group.
- Acetaminophen MAY be given after a fever has been documented and the infant evaluated by a health aide or provider **EXCEPT in babies 61-90 days old who are being managed in the village as this may blunt the fever curve. If a child in the village is already scheduled to come to Bethel for further evaluation, acetaminophen may be given.**

### Low Risk Criteria

#### History & Exam

- Well-appearing (soothable, feeding well, etc.)
- No significant prior hospitalization.
- Gestational age  $> 37$  weeks.
- Neonatal course not complicated by: chromosomal anomaly, surgery (including G-tube), or infection.
- No evidence of invasive bacterial infection like cellulitis or osteomyelitis.

#### Lab

- Procalcitonin  $< 0.5$
- CRP  $< 2$
- Absolute neutrophil count (ANC) 1000-4000

### CSF

- Do Multiplex PCR if any suspicion for meningitis.
- See Harriet Lane (not the results in RAVEN) for normal results by day of life.
- Do not use correction formulas for traumatic LPs.

### Special Circumstances

- If fever within 48 hours of immunizations, well-appearing, and meets all history & exam low-risk criteria: no work-up necessary but must follow-up in village or Bethel within 12-24 hours. If fevers are rising or infant is not well-appearing, perform evaluation as above.
- Pre-treatment with antibiotics but otherwise meeting low-risk criteria: infant must be observed a full 48 hours off antibiotics.
- Unsuccessful LP: treat if appropriate and consider a repeat LP in 12-24 hours and determine treatment course based on cell counts. If repeat LP not performed or unsuccessful, either treat for 10-14 days with meningitic dosing of IV antibiotics or stop antibiotics at 48 hours and observe infant for an additional 48 hours off antibiotics. Consider admission.

### HSV Work-up

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

**NOTE:** If 22-28 days old and well-appearing with low-risk lab criteria, recent studies allow deferral of LP if admitted  $\pm$  antibiotics. Discuss with pediatrician and family if considering this option.

### Antibiotic Treatment

- 0-7 days:** please consult a pediatrician, pharmacist, or Neofax.
- 8-28 days:**
  - If well-appearing and low suspicion for meningitis: ampicillin 50 mg/kg IV Q8h AND gentamicin 5 mg/kg IV Q24h.
  - If well-appearing and any suspicion for meningitis: ampicillin 75 mg/kg IV Q6h AND cefepime 50 mg/kg IV Q12h.
  - If ill-appearing and/or positive CSF Gram stain: please consult a pediatrician and/or a pharmacist.
- 29-90 days:**
  - If low suspicion for meningitis: ceftriaxone 50 mg/kg IV/IM Q24h
  - If concern for meningitis: ceftriaxone 100 mg/kg IV once then 50 mg/kg IV Q12h AND vancomycin 20 mg/kg IV Q8h.
- Continue IV/IM antibiotics until cultures are negative at least 36 hours and patient is clinically stable or until specific organism and sensitivities are available to direct therapy.
- Dose #2 of ceftriaxone may be given 12-24 hours after dose #1.
- If known HSV exposure, seizures, or severe illness: acyclovir 20 mg/kg IV Q8h with IVF, perform HSV work-up (see box), and consult pediatrics.

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Approved by MSEC 9/7/21. Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact Leslie\_Herrmann@ykhc.org.

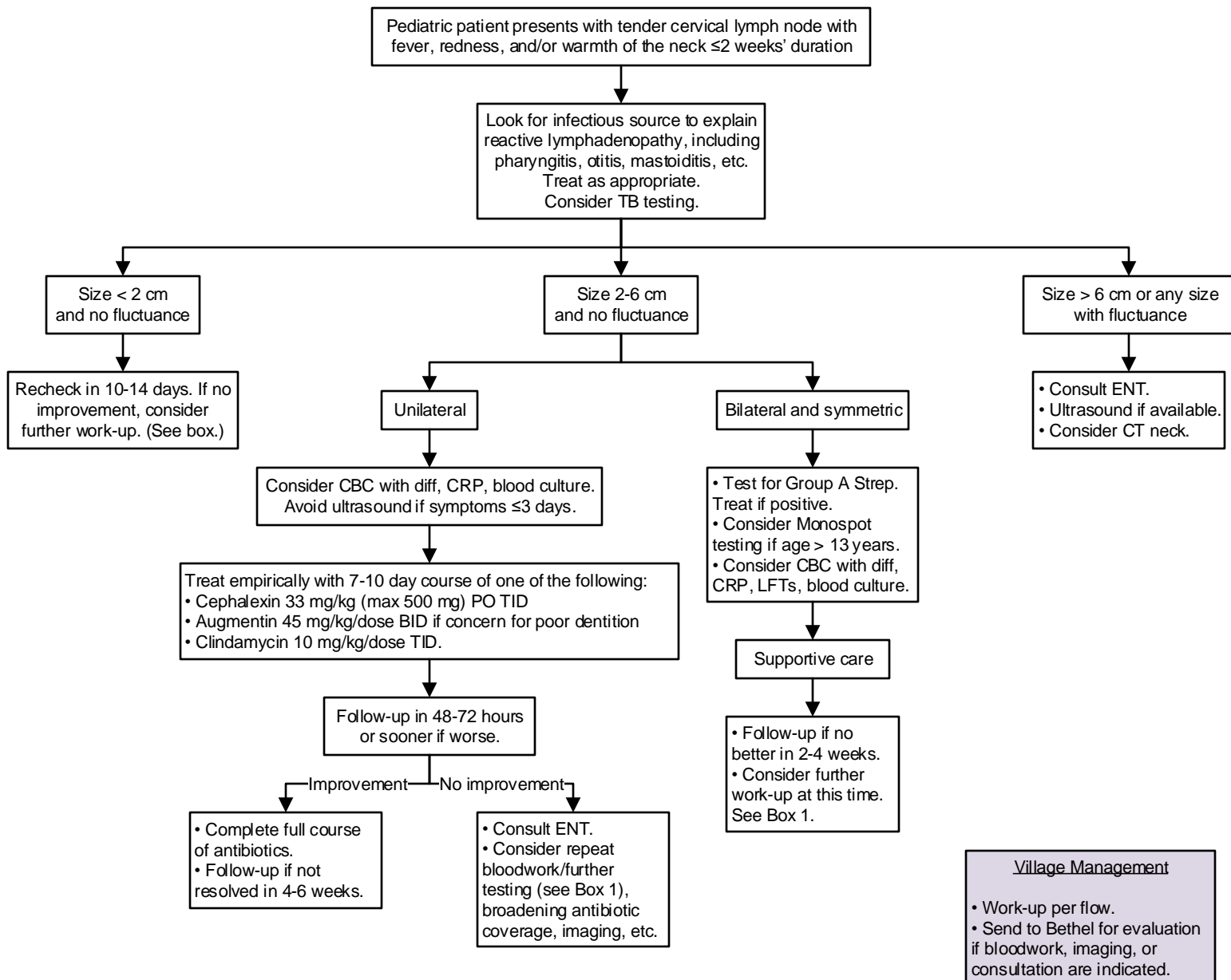


### Testing

For thorough information about testing for influenza, please see [this page from the CDC](#).

### Treatment

- For guidance on influenza treatment, please see [this page from the CDC](#).
- This includes a list of high-risk conditions that warrant treatment.
- Please note: Oseltamivir is a limited resource. Thus, the YKHC Antimicrobial Stewardship Program recommends that usage be limited to patients with additional risk factors for complications beyond Alaska Native or American Indigenous ethnicity.



### Further Work-up

Perform careful exam for lymphadenopathy of other locations. For any child with nontender lymphadenopathy or lack of improvement after specified period, consider, as appropriate:

- PPD/TB work-up
- CBC
- CRP
- LFTs
- Blood culture
- HIV testing
- RPR
- Toxoplasmosis testing
- Bartonella testing
- EBV, CMV titers
- LDH, uric acid
- CXR
- Hematology/oncology consult
- Infectious disease consult

### Most Common Causes

- **Reactive lymphadenopathy** due to local infection (may take 4-6 weeks to resolve).
  - **Unilateral:** *Staph aureus*, Group A Strep, Group B Strep, anaerobes, TB/MAC
  - **Bilateral:** respiratory viruses (enterovirus, adenovirus, influenza, etc.), Group A Strep, HSV (primary), EBV, CMV, *Mycoplasma*, *Arcanobacterium*, TB, *Bartonella*
- Less Common Causes to Consider**
- Kawasaki disease; periodic fever with aphthous stomatitis, pharyngitis, and adenitis (PFAPA); leukemia; lymphoma; HIV; tularemia

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Approved by MSEC 2/1/22.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact Jennifer\_Hampton@ykhc.org or Leslie\_Herrmann@ykhc.org.



The following is adapted from the "[ANMC Pediatrics Statement on Dexamethasone and Hearing Screening in Meningitis](#)," dated 2/4/20.

### Haemophilus influenzae type A

In recent years, *Haemophilus influenzae* type A (HiA) meningitis has been more common than other causes of bacterial meningitis in children admitted to ANMC. Many of these children have been transferred from YKHC. See this [State Epidemiology Bulletin](#) for information about Alaska cases in 2014-2018, including the outbreak in 2018.

The pattern of disease in HiA is similar to that seen in *Haemophilus influenzae* type B (HiB) meningitis. In HiB meningitis, dexamethasone has been shown to decrease the incidence of severe hearing loss. In Alaska, there have been multiple cases of sensorineural hearing loss associated with HiA meningitis. It is suspected that dexamethasone may confer similar benefits in HiA meningitis. As a result, our local experts (including infectious disease and endocrinology experts) recommend giving dexamethasone with all cases of suspected bacterial meningitis.

### Dexamethasone

- **Indications:** A child >6 weeks old with clinical meningitis or visibly purulent spinal fluid.
- **Timing:** First dose should be given 10-20 minutes prior to or concurrent with the first dose of antibiotics; if given after antibiotics have been given, there is no evidence that dexamethasone will improve outcomes.
- **Dose:** Dexamethasone 0.15 mg/kg/dose IV.
- **Course:** If dexamethasone is initiated and HiA/HiB is confirmed, continue dexamethasone 0.15 mg/kg/dose IV Q6h for 2-4 days. If CSF culture/PCR show a different pathogen or are negative, stop the dexamethasone.

### Hearing Screening

- All children with bacterial meningitis should be referred to audiology.
- Hearing evaluation should be scheduled one month after hospital discharge.





### Tecovirimat (also called TPOXX)

- Tecovirimat is an inhibitor of the orthopoxvirus VP37 envelope wrapping protein, which prevents the formation of egress-competent enveloped virions necessary for cell-to-cell and long-range dissemination of virus.
- Tecovirimat is approved by the FDA to treat smallpox under the [Animal Rule Regulations](#). It has not been studied in humans, as smallpox has been eradicated globally, and exposing people to smallpox virus for the purpose of a clinical trial is not ethical.
- Tecovirimat has also not been studied in the treatment of mpox. However, the FDA and CDC have an expanded access Investigational New Drug (IND) protocol (also known as “compassionate use”) that allows tecovirimat to be used to treat mpox under strict requirements. The drug is only available from the Strategic National Stockpile.
- YKHC’s Institutional Review Board has approved the use of tecovirimat as long as the [CDC/FDA protocols](#) are followed.

### CDC Expanded Access IND Protocol

Patient with lesions suspicious for mpox with an indication to consider tecovirimat (see box).

Swab lesions and send for [testing](#).  
Note: decision to treat is clinical, as results take a long time to return.

Counsel patient/family on tecovirimat, including experimental nature and possible risks.  
May use this [informed consent](#) form to guide counselling.

If patient/family agrees to tecovirimat, contact COVID-19 Response Team by Tiger Connect.  
Note: only providers on the IND registry may prescribe tecovirimat; thus, the COVID team has agreed to manage this drug.

- COVID team will discuss further with patient, prescribe drug, complete all required IND forms, complete consent form, and document in RAVEN.
- Standard course of therapy is 14 days. See [protocol](#) for dosing and mixing instructions.
- COVID team will do periodic telehealth visits with patient to monitor progress and document in RAVEN.

Please see [these resources](#) for pain management and other supportive measures.

### Indications to Consider Tecovirimat

- **Severe disease:** hemorrhagic disease; large number of confluent lesions; sepsis; encephalitis; ocular or periorbital infections; or other conditions requiring hospitalization.
- **Involvement of anatomic areas which might result in scarring or strictures:** lesions directly involving the pharynx causing dysphagia, inability to control secretions, or need for parenteral feeding; penile foreskin, vulva, vagina, urethra, or rectum with the potential for causing strictures or requiring catheterization; anal lesions interfering with bowel movements (for example, severe pain); and severe infections (including secondary bacterial skin infections), especially those that require surgical intervention such as debridement.
- **Severe immunocompromise:** advanced or poorly controlled human immunodeficiency virus (HIV), leukemia, lymphoma, generalized malignancy, solid organ transplantation, therapy with alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, or high-dose corticosteroids, being a recipient of a hematopoietic stem cell transplant <24 months post-transplant or ≥24 months but with graft-versus-host disease or disease relapse, or having autoimmune disease with immunodeficiency as a clinical component.
- **Pediatric populations:** particularly patients younger than 8 years of age.
- **Pregnant or breastfeeding people**
- **Concurrent conditions affecting skin integrity:** atopic dermatitis, eczema, burns, impetigo, varicella zoster virus infection, herpes simplex virus infection, severe acne, severe diaper dermatitis with extensive areas of denuded skin, psoriasis, or Darier disease (keratosis follicularis).

### Contraindications & Risks

- Patient or legally authorized representative unwilling to sign an informed consent and refuse tecovirimat treatment
- Known allergy to tecovirimat and/or inactive ingredients in tecovirimat
- For IV tecovirimat only: patients with severe renal impairment (CrCl <30 mL/min)\*. Oral tecovirimat is an option for patients with severe renal impairment.
- Co-administration with repaglinide may cause hypoglycemia. Monitor blood glucose and monitor for hypoglycemic symptoms during co-administration.

### Adverse Reactions

In a Phase 3 clinical trial, the most common reported events were headache; nausea; vomiting; abdominal pain; and infusion site pain, swelling, erythema, and extravasation. Other events were reported in <2% of patients.

### Reporting of Adverse Events

The prescribing health care provider is responsible for mandatory reporting of all medication errors and adverse events potentially related to tecovirimat. Reports must be made within seven days of the event.

Serious adverse events include: death; life-threatening adverse event; inpatient hospitalization or prolongation of existing hospitalization; persistent or significant incapacity or substantial disruption of the ability to conduct normal life function; congenital anomaly/birth defect; or medical or surgical intervention to prevent death, a life-threatening event, hospitalization, disability, or congenital anomaly.

Submit report to FDA MedWatch by completing the online form [here](#). The report should include “use of tecovirimat under Emergency Use Authorization (EUA)” in the “Describe Event” section.

See the [FDA MedWatch program](#) for more information.

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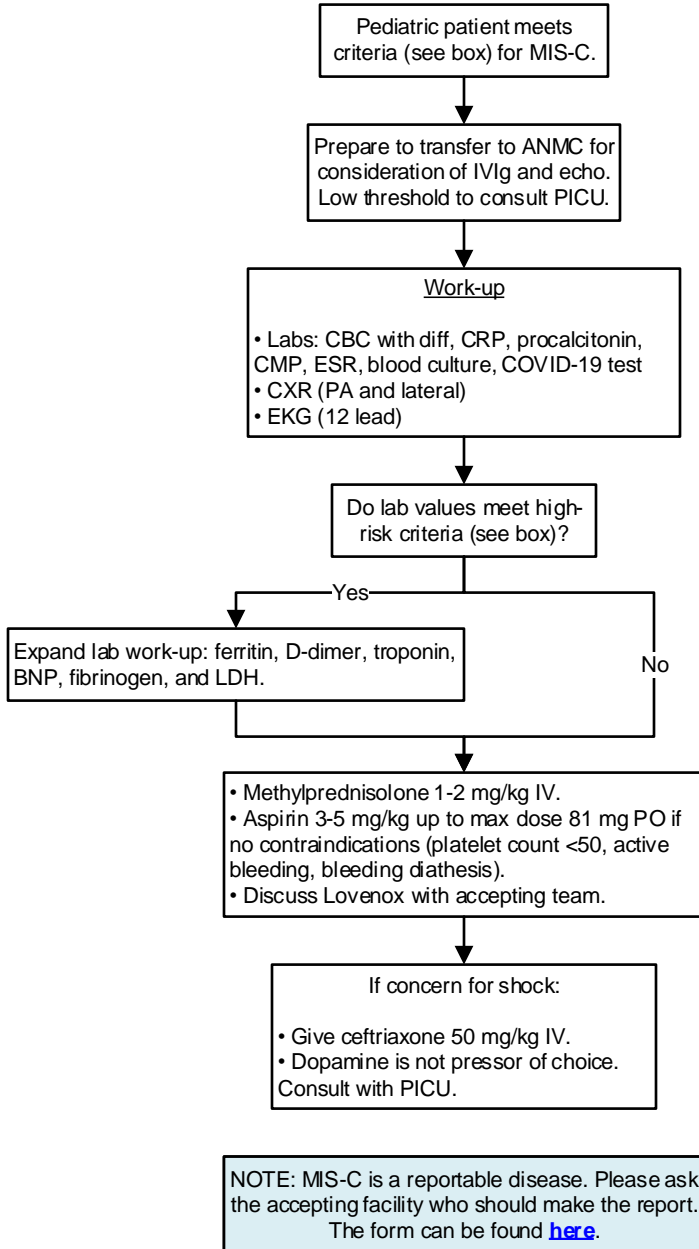
Approved by Clinical Guideline Committee 3/13/23.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



# Yukon-Kuskokwim HEALTH CORPORATION

## Clinical Guideline Care of a Pediatric Patient with Suspected Multisystem Inflammatory Syndrome (MIS-C)



### Case Definition for Multisystem Inflammatory Syndrome in Children (MIS-C) According to the CDC

An individual <21 years presenting with:

1. Measured or subjective fever  $\geq 100.4^{\circ}\text{F}$  for  $\geq 24$  hours.
2. Laboratory evidence of inflammation with one or more of the following: elevated CRP, procalcitonin, ESR, fibrinogen, D-dimer, ferritin, LDH, IL-6, or neutrophils; low lymphocytes or albumin level.
3. Evidence of clinically severe illness requiring hospitalization with at least two organ systems involved:
  - **Rash:** polymorphic, maculopapular, petechial, NOT vesicular
  - **GI symptoms:** diarrhea, abdominal pain, vomiting
  - **Extremity Changes:** erythema and edema of hands and feet
  - **Oral Mucosal Changes:** erythema and cracking of lips, strawberry tongue, erythema of oral and pharyngeal mucosa
  - **Conjunctivitis:** bilateral bulbar conjunctival injection without exudate
  - **Lymphadenopathy:** cervical  $> 1.5$  cm unilateral
  - **Neurologic:** headache, irritability, lethargy, AMS
4. No alternative plausible diagnoses.
5. Evidence of current or recent (within the last four weeks) COVID-19 infection.

May consider diagnosis even with negative COVID-19 testing if clinical suspicion is high.

### High-Risk Lab Criteria

- CRP  $\geq 3$  and/or ESR  $\geq 40$
- AND
- Lymphopenia  $< 1000$ , thrombocytopenia  $< 150,000$ , or sodium  $< 135$

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 6/6/22.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



### Box 1: AOM Decision-Making Principles

- If observation is warranted, do not prescribe antibiotics.
- Always treat pain.
- If patient has not received amoxicillin within 30 days, start with amoxicillin to treat new infection.
- Do not treat fluid that develops after AOM if child is asymptomatic – observe up to 3 months.
- Do not use antibiotic prophylaxis.
- Do not send ear drainage for culture.

### Box 2: Eligibility for Observation for 48-72 hours

- 6-24 month old with mild, uncertain, or unilateral AOM.
- >24 month old with mild/moderate (non-bulging) AOM.
- Caregiver comfortable withholding antibiotics.
- Follow-up assured.
- Antibiotics can be started promptly if symptoms persist or worsen.
- No fever > 102°F and only mild otalgia.
- No otorrhea (unless tympanostomy tubes present).

### Box 3: AOM Treatment

#### Antibiotic duration, by age:

- < 2 years: 10 day course of oral antibiotic
- 2-5 years: 7 day course of oral antibiotic
- ≥ 5 years: 5 day course of oral antibiotic
- Note: in patients with TM perforation or history of recurrent/complicated/chronic infections, treat for 10 days.

#### Antibiotic choice:

- 1<sup>st</sup> line: amoxicillin 45 mg/kg/dose PO BID
- 2<sup>nd</sup> line: Augmentin 45 mg/kg/dose PO BID
- 3<sup>rd</sup> line: cefdinir 14 mg/kg/dose PO QD
- OR ceftriaxone 50 mg/kg IV/IM QD for 1-3 days

#### Otitis-conjunctivitis syndrome

Augmentin 45 mg/kg/dose PO BID

**Try to avoid using cephalosporins.** They are less effective at treating the most common organisms that cause OM.

**Do not use azithromycin, erythromycin, cephalexin (Keflex), or Septra for AOM.**

**For PCN allergy:** Please refer the patient for an allergy trial if not already done.

cefdinir 14 mg/kg/dose PO QD

OR

ceftriaxone 50 mg/kg IV/IM QD for 1-3 days

#### AOM with Otorrhea

- If patient has ruptured TM and no tubes, treat with oral antibiotics for ten day course with dosing as above and otic antibiotics. Oral antibiotics may improve TM healing.
- If patient has tympanostomy tubes that are confirmed to be still in place, may treat with otic antibiotics only.

#### Otic Antibiotics

Wick ears prior to giving drops. After instilling drops, child should lie with affected side up for several minutes.

- Ciprofloxacin 4 drops BID for 7 days
- Ciprofloxacin + dexamethasone 4 drops BID for 7 days

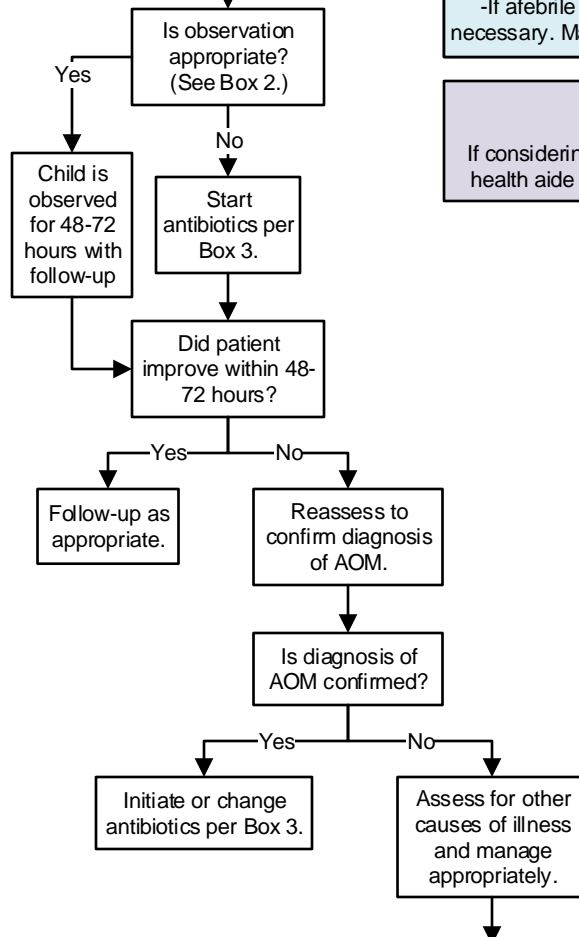
#### AOM ≥3 months

Acute onset of:

- Fever and ear pain
  - Bulging TM and decreased mobility
- See Box 1.

Always address pain:

- If >3 months old, use acetaminophen.
- If >6 months old, use acetaminophen and/or ibuprofen.



#### AOM <3 Months Old

If otorrhea, bulging TM, or other suspicion of 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 evaluation. Even if no fever, follow recommendations on [fever <90 days clinical guideline](#).
- 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 antibiotics as appropriate.

#### AOM via RMT

If considering antibiotics for AOM, always request that health aide sends photos of the tympanic membrane.

Consider **Otitis Media with Effusion (OME)** if no acute symptoms but decreased TM mobility. Non-infected fluid may persist for 3 months after AOM.

#### Tympanostomy Tubes

- **Indications:** OME for at least three months or recurrent episodes of AOM with at least three episodes in the past six months or at least four episodes in the past year (with at least one in the past six months).
- **Process:** Place order for "Refer to Audiology Internal." Audiology at YKHC will evaluate the child and refer to ENT if indicated.

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 Clinical Guideline Committee 3/13/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact Amy\_Carson-Strnad@ykhc.org.



### Symptoms of Peritonsillar Abscess/Cellulitis

- Progressively increasing throat pain and swelling
- Muffled speech / change in voice
- Neck pain, typically unilateral
- Fevers, chills, myalgias
- Dysphagia, odynophagia

### Labs

- CBC, BMP, CRP
- If needle aspiration, culture aspirate
- If SIRS or qSOFA  $\geq 2$ , add lactate, procalcitonin, blood cultures

- Prepare for **intubation**. Anticipate difficult airway. Consider calling CRNA.
- Place IV; get labs. (See box.)
- Give antibiotics. (See box.)
- Transfer to higher level care.

Impending airway compromise?

Yes

No

### Signs/Symptoms of Impending Airway Compromise

- Drooling
- Patient in "sniffing position" (leaning forward)
- Anxious appearance with suprasternal retractions with or without stridor

### Indications for CT Soft Tissue Neck with IV Contrast as Part of Initial Workup

- Toxic appearance
- Submental tenderness to palpation
- Neck stiffness, swelling, or pain with extension

### Village Management

- Amoxicillin/clavulanic acid (preferred)
- If unable to swallow, IM penicillin OR ceftriaxone + clindamycin
- Ketorolac/acetaminophen
- Consider dexamethasone 10 mg.

Commercial flight to Bethel ER; discuss with ED MD if concern for airway compromise.

Consider CT. (See box.)

### Examination with ANY?

- Trismus
- Uvular deviation
- Peritonsillar swelling

No

Examination with peritonsillar erythema?

No

Acute pharyngitis

Yes

Yes

Attempt needle aspiration

No pus

Peritonsillar cellulitis

Pus

Peritonsillar abscess

- Place IV; get labs. (See box.)
- Give antibiotics. (See box.)
- IV fluids.
- Consider dexamethasone 10 mg.
- Analgesia (non-opioid first).
- Monitor in ED minimum 3 hours.

Improving

Discharge on PO antibiotics with recheck in 24 hours.

Not improving

Obtain CT neck with contrast.

Deep tissue abscess

Consult ENT.

No deep tissue abscess

Admit to inpatient on IV antibiotics.

### Microbiology & Antibiotics

Continuum from pharyngitis > cellulitis/phlegmon > abscess. Often polymicrobial, typically GAS, *Strep viridans*, *Staph aureus*, fusobacterium, bacteriodes. MRSA coverage not indicated unless patient does not respond to initial antibiotic selection.

#### IV

Ampicillin/sulbactam 3 grams Q6h (preferred)

OR

Piperacillin/tazobactam 3.375 grams Q6h

OR

Ceftriaxone 1 gram Q12h + metronidazole 500 mg Q6h

OR

Clindamycin 600 mg Q6-8h (if penicillin allergy)

#### PO

Amoxicillin/clavulanate 875 mg BID (preferred)

OR

Cefpodoxime 300 mg Q12h + metronidazole 500 mg Q6h

OR

Clindamycin 300 mg Q6h (if penicillin allergy)

Treatment duration 14 days.

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Approved 6/6/22. Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact Travis\_Nelson@ykhc.org.



For thorough information about the diagnosis and treatment of Streptococcal pharyngitis, please see [this page](#) from the CDC.

Other Considerations:

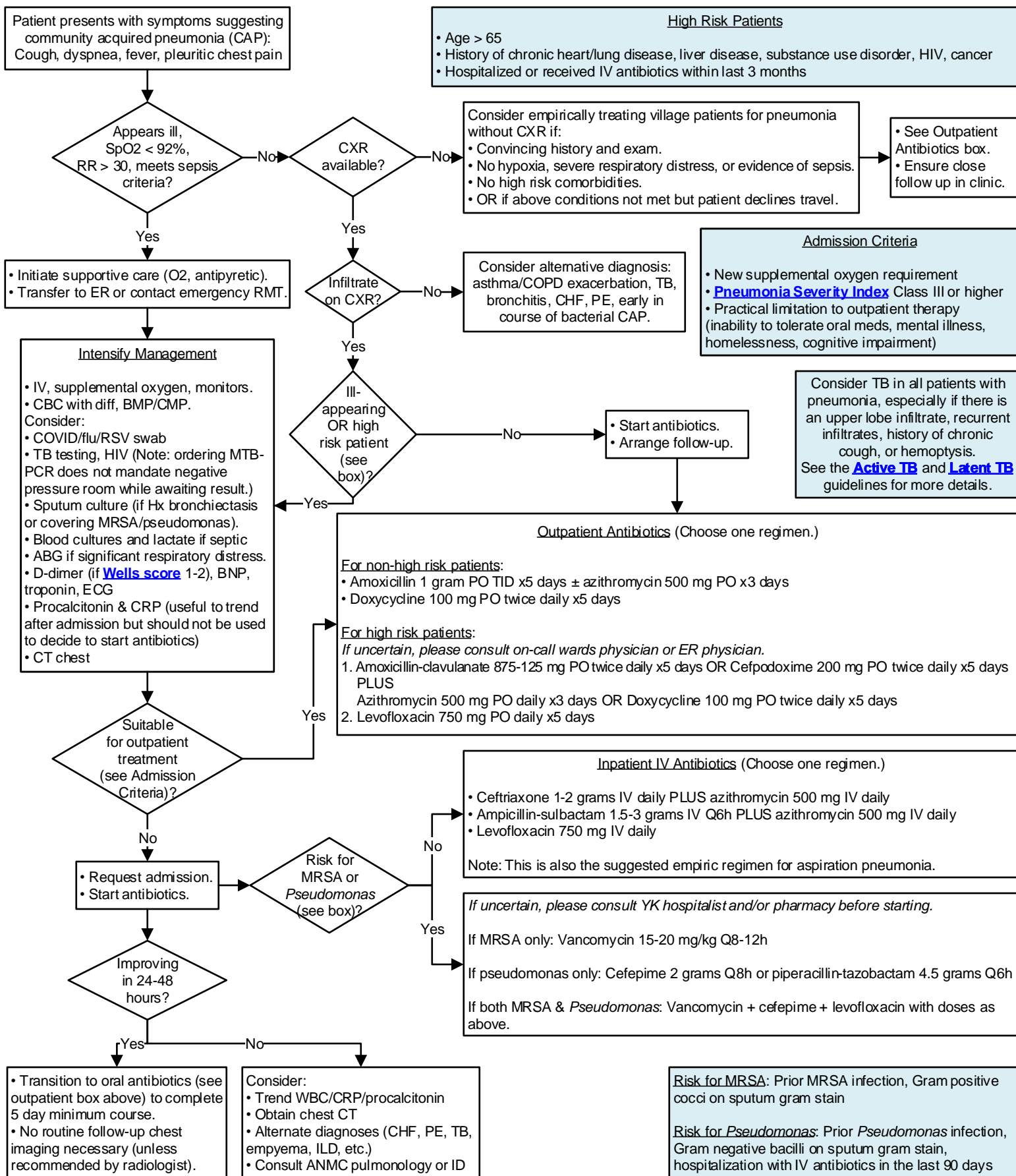
- Consider testing for oral GC/CT in at-risk populations.
- Testing for Group A streptococcal (GAS) pharyngitis is NOT recommended for acute pharyngitis with clinical features that strongly suggest viral etiology (e.g. cough, rhinorrhea, etc).
- Routine use of back-up cultures for those with a negative rapid test is not needed for adults; there is a low incidence of GAS in adults and risk of subsequent acute rheumatic fever is exceptionally low.
- It is NOT recommended to test for GAS in patients under the age of 3; the risk of rheumatic fever in this age group is exceptionally low.
- Patients are contagious for up to 24 hours after starting antibiotic treatment.
- Treatment for asymptomatic GAS carriers is not recommended, nor is testing or empiric treatment of household contacts.
- Refer to [Peritonsillar Abscess guideline](#) if appropriate

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Approved by Clinical Guideline Committee 1/11/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [ClinicalGuidelines@ykhc.org](mailto:ClinicalGuidelines@ykhc.org).



**REMEMBER:**

- If patient is <90 days and febrile, please see [fever guidelines](#).
- Pneumonia is a clinical diagnosis and does not require X-ray findings.

**Hypoxia**

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

**Pulse-Oximetry Monitoring**

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

**SUPPORTIVE MEASURES**

- Control fever, as it can be an independent cause of respiratory distress and tachycardia.
- Nasal suction with nasal bulb syringe and olive tip plus saline.
- Hydration by IV or enteral (including NG and G-tube).
- Gentle P&PD/CPT if helpful.
- Saline neb (either 0.9% or hypertonic 3%).
- Consider albuterol trial, especially in Alaska Native patients as they have high rates of RAD.

**Village Management**

Any child <5 years with suspected pneumonia should be evaluated in Bethel or an SRC.

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
- COVID/flu/RSV panel
- Place PPD

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

Bacterial pneumonia suspected

Bacterial pneumonia NOT suspected

Bacterial pneumonia NOT suspected

Bacterial pneumonia suspected

Begin antibiotics per Treatment box.

Consider other diagnoses: viral pneumonia, RAD, bronchiolitis, TB, acidosis, toxins, etc.

Prescribe antibiotics for 7 days per Treatment box.

- If <1 year old: requires >2 L supplemental oxygen to prevent hypoxia or improve WOB?
- If ≥1 year old: requires >3 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?

If concern for parapneumonic effusion or empyema, see [ANMC guideline](#).

Yes

No

Transfer to Anchorage

- Admit to YKHC Peds Inpatient Unit, using PED Admission/Respiratory Infection PowerPlan.
- Place PPD if older than 6 months and no PPD in past 6 months.

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

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

- Change to oral antibiotics for total of 7 days of treatment.
- Discharge home with follow-up within 48-72 hours.

- No routine follow-up CXR unless recurrent infiltrate in same lobe; in that case, repeat CXR in 4-6 weeks.

Improvement?

No

NOTE: There is limited evidence to support the use of procalcitonin to guide antimicrobial treatment in pediatric pneumonia, so it should not be used to guide management decisions at this time.

**Treatment**

NOTE: If known viral infection, viral pneumonia is likely; antibiotics not indicated. If influenza positive, see [Influenza guideline](#) for oseltamivir criteria.

**Outpatient**

- 1<sup>st</sup> line: amoxicillin 45 mg/kg/dose PO BID x7 days
- 2<sup>nd</sup> line: Augmentin 45 mg/kg/dose PO BID x7 days
- 3<sup>rd</sup> line: cefdinir 7 mg/kg/dose PO BID x7 days

**Inpatient**

- 1<sup>st</sup> line: ampicillin 50 mg/kg/dose IV Q6h
- 2<sup>nd</sup> line: Unasyn 50 mg/kg/dose IV Q6h
- 3<sup>rd</sup> line: ceftriaxone 75 mg/kg/dose IV Q24h

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

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

**For PCN allergy:** If reaction was non-anaphylactic, may trial amoxicillin with monitoring. If reaction was anaphylaxis, treat with a cephalosporin. 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. Must be prescribed in addition to primary treatment above.

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

**For Chronic Cough:** See [Bronchiectasis/Chronic Cough guideline](#).

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Approved by MSEC 12/7/21.

Click [here](#) to see the supplemental resources for this guideline.

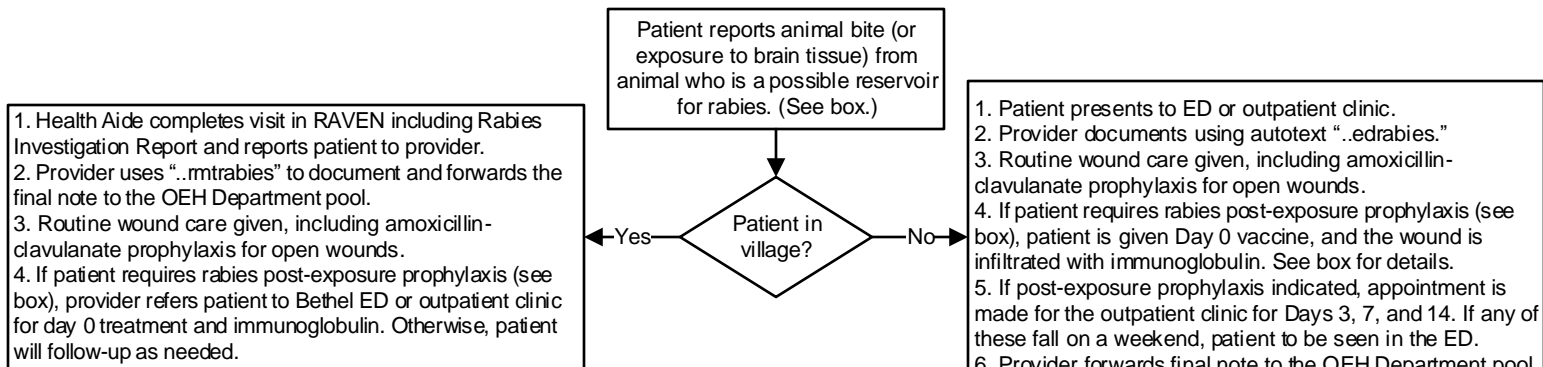
If comments about this guideline, please contact [Jennifer\\_Hampton@ykhc.org](mailto:Jennifer_Hampton@ykhc.org).



For ANMC's Procalcitonin Pathway, click [here](#).

For the supplemental resources associated with ANMC's Procalcitonin Pathway, click [here](#).





1. Patient presents to ED or outpatient clinic.
2. Patient is given Day 0 vaccine, and the wound is infiltrated with immunoglobulin. See box for details.
3. Provider documents using autotext “.edrabies.”
4. Provider orders rabies vaccine as a prescription for three more doses.
5. Provider instructs patient to go to the pharmacy to pick up vaccine and to call village clinic to make appointments on days 3, 7, and 14.
6. Patient Custom Education, “Rabies Prevention with Process for Vaccine Doses (Custom),” is completed with the dates of days 3, 7, and 14 and given to the patient.
7. Provider forwards final note to the OEH Department pool.

### Indications for Rabies Prophylaxis

1. The bite was from a potential vector of transmission, and this animal is not available to test.
2. The bite was from a dog who was behaving abnormally.
3. If the dog is available for quarantine, do **not** start post-exposure prophylaxis regardless of vaccination status. OEH (Office of Environmental Health) will initiate a 10-day quarantine. Please check under “all documents” for Alert Note or for the rabies investigation report from OEH.
4. If consultation is needed, call OEH at 543-6420 or State Section of Epidemiology 907-269-8000 or 800-478-0084 after hours.

### After-Hours Prescriptions

If patient is seen on a weekend or overnight, send the prescription to the pharmacy as usual. Send an email to [InpatientPharmacists@ykhc.org](mailto:InpatientPharmacists@ykhc.org) with patient's name, DOB, and MRN. Tell the ER charge nurse the patient will be returning the next day to pick up the doses. Instruct the patient to come back to the hospital the next day and to enquire at the ER for the doses.

### If There are Problems with Travel

- If travel from a village to Bethel cannot be arranged within 3-5 days, provider orders the vaccine for HAND CARRY to village clinic. Provider should include explanation of situation under “eRx Note to Pharmacy.” There **MUST** be a health aide in the village.
- Immunoglobulin must be given within seven days of first dose of vaccine. This must be given in Bethel.
- Continue to try to arrange travel so that patient will be in Bethel within seven days of first dose.

### Medications

Use Power Plans “ED Rabies Prophylaxis” or “AMB Rabies Prophylaxis.”

- Rabies vaccine 1 mL IM, given on days 0, 3, 7, 14. Same dose for adults and children. Day 0 is the first day the vaccine is given, not the day of exposure.
- Immunocompromised patients require an additional dose on day 28.
- Rabies vaccine must be refrigerated. It may be out of the refrigerator for less than 48 hours as long as it is not stored above 86°F. If vaccine is not stored properly, patient should call pharmacy refill line at 543-6988 to report this and arrange for more to be sent to village.
- Rabies immune globulin 20 units/kg given once. Give as much of dose as possible around and into the wound(s). Administer remainder of dose IM at a site distant from the vaccine administration site. Must give within seven days of first vaccine dose.

### Office of Environmental Health (OEH)

- All patients with animal bites are tracked by the OEH. The Rabies Investigation Report can be found under Documentation → All and includes recommendations from the OEH.
- If you need advice urgently, send message with MRN via Tiger Connect to OEHE On Call.

### Animals in Alaska that have Tested Positive for Rabies

1. Arctic fox
2. Caribou
3. Cat
4. Coyote
5. Dog
6. Keen's myotis bat
7. Little brown bat
8. Red fox
9. Reindeer
10. River otter
11. Wolf
12. Wolverine

### Other Resources

- See the [supplement](#) to this guideline on the wiki.
- [State of Alaska DHSS Rabies](#) page.
- Use the Power Plans “AMB/ED Rabies Prophylaxis” to find all necessary orders.
- See Division of Public Health [Rabies Post-Exposure Prophylaxis Treatment Sheet](#).

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Approved by Clinical Guideline Committee 6/1/23. Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact [Travis\\_Nelson@ykhc.org](mailto:Travis_Nelson@ykhc.org).



Please see the [ANMC Pediatric Acute Hematogenous Septic Arthritis/Osteomyelitis Guideline](#).

- Please note: this guideline was designed at ANMC, where recommended labs, MRI, and operative management are immediately available and antibiotics can be started after these interventions.
- When evaluating a patient at YKHC with possible septic arthritis or osteomyelitis, strongly consider empiric antibiotics if there is going to be a delay of >6 hours to perform the recommended work-up (joint aspiration, surgical drainage, etc.), as noted in ANMC's guideline.
- Always discuss antibiotics with ANMC consultants and advocate for empiric usage if appropriate. Keep in mind possible delays, including weather, transport difficulties, and other emergencies. If deferring antibiotics, ensure that patient is closely monitored for development of worsening infection.
- Always feel free to consult YKHC pediatric hospitalist with any questions.



### Universal Screening Recommendations

- All sexually active patients starting at age 14: annual screening for GC/CT, HIV, and syphilis.
- Any time GC and CT are tested for, HIV and syphilis screening should also be performed if not done in the last 12 months.
- Regardless of sexual activity, all teenagers should be screened for HIV by the age of 18. Additionally, all teenagers should undergo yearly GC/CT screening with, at minimum, a dirty urine.

### Symptoms of Genital Infection

- Sores (genital, oral, or anal)
- Discharge or burning
- Dysuria
- Groin pain
- Pelvic pain
- Sore throat
- Rectal itching
- Discomfort or pain with bowel movement
- Vaginal itching or odor
- Testicular pain, swelling, or twisted feeling (can be off and on)
- Pain with ejaculation or sex

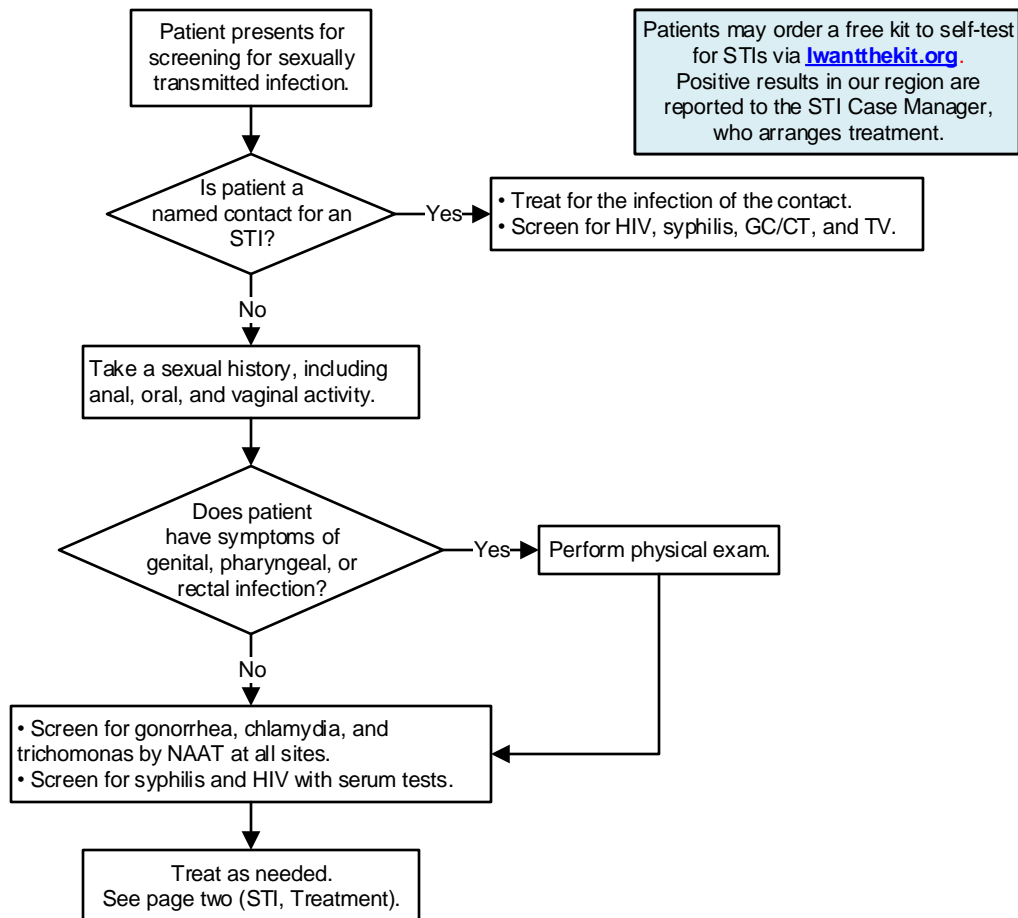
### Age of Consent in the State of Alaska

Two people who are both 16 or older can legally agree to have sex with each other. When a person involved in sex is under the age of 16, Alaska law looks at the difference in ages to decide whether consent can be legally given.

- No person over 16 can legally have sex with someone who is 13 or younger.
- No person under 16 can legally have sex with someone who is 4 or more years older.
- No person under 16 can legally have sex with a person in a position of authority over them (including a teacher, coach, or minister).

A positive STI test in a patient who fits the above scenarios should be reported to OCS, law enforcement (BPD if in Bethel or AST if in a village), and the Child Abuse Pool in RAVEN.

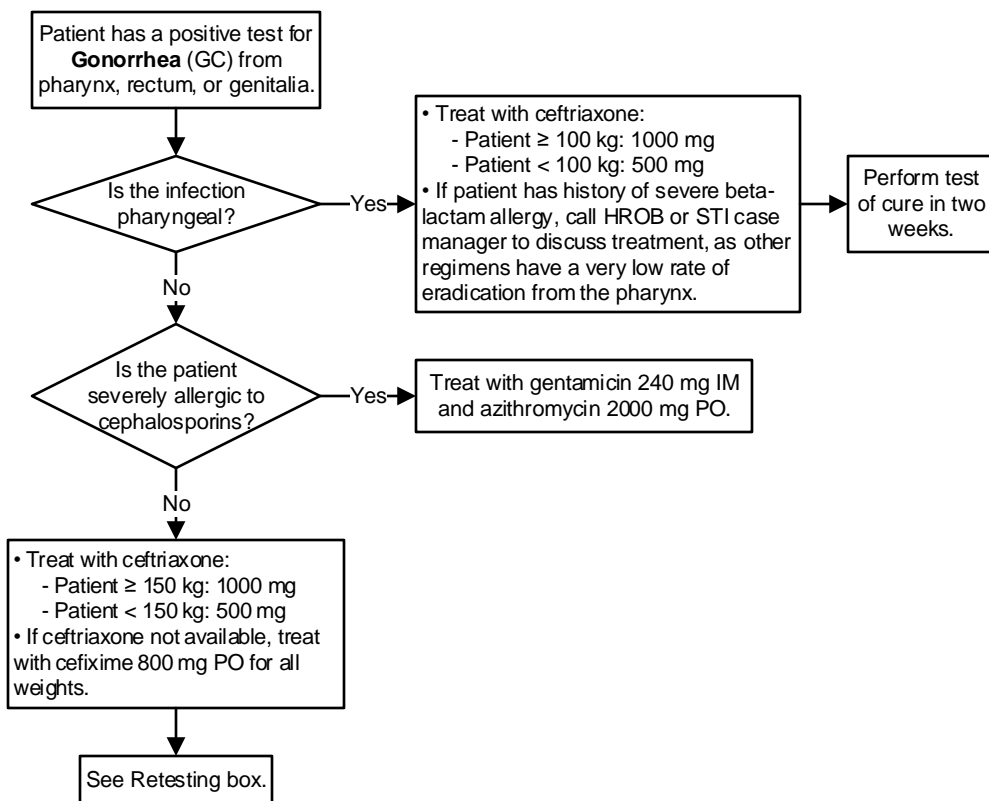
**Please note:** There is no lower age limit for STI testing. Any patient may be tested, regardless of age, without special consent.



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 Clinical Guideline Committee 1/19/24. Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [David\\_Compton@ykhc.org](mailto:David_Compton@ykhc.org).



### Expedited Partner Therapy (EPT)

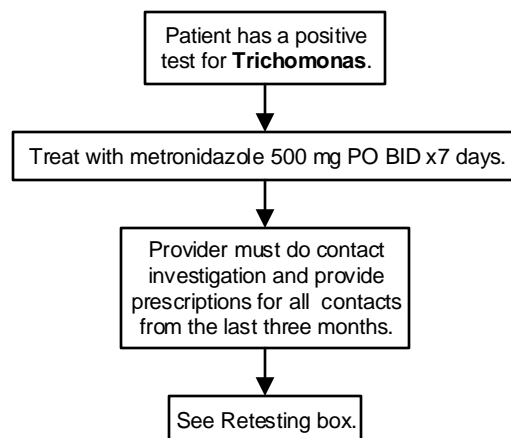
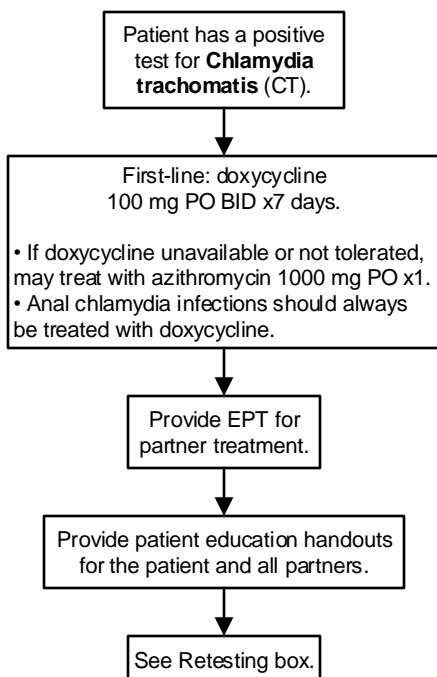
EPT is a method of treating partners by asking the patient to take the doses to the partner. This is the standard of care for chlamydia at YKHC.

#### Process:

1. Treat the patient with azithromycin 1000 mg PO UNLESS there is concern for anal chlamydia, in which case the treatment of course is doxycycline 100 mg PO BID x1 days..
2. For azithromycin, give the patient pre-packaged doses for each sexual contact in the last three months. Give a handout explaining the process. This can be found under Patient Education → All → "EPT Partner Chlamydia (Custom)."
3. Encourage all contacts to be seen for full STI testing.

### Retesting for All STIs

- If positive for anal and/or oral infection: Retest in one month at affected site (anal and/or oral) plus urine/vaginal.
- If pregnancy: Retest in one month.
- For all other cases: Retest in three months.





### Mycoplasma Genitalium

- This organism has been recently identified in our population.
- Prevalence is estimated at 1% in the general population but is much higher in individuals at high risk of STIs.
- Mgen is a known cause of nongonococcal urethritis in males, cervicitis in females, and possibly pelvic inflammatory disease (PID) in females. It is uncertain whether it causes proctitis in men who have sex with men (MSM). There is no clear evidence that *M. genitalium* is associated with any human diseases outside the anogenital tract. (Source: UpToDate)
- Testing should be considered in patients who have persistent symptoms despite completing an empiric course of treatment.

### Female patient with either:

- Persistent or recurring cervicitis
- PID

OR

### Male patient with either:

- Non-gonococcal urethritis
- Persistent urethritis

Ensure full STI testing has been performed (HIV, syphilis, GC/CT/TV).  
Consider retesting for GC/CT.  
Treat per [guideline](#).

Test for *Mycoplasma genitalium* (Mgen) using these orders:

- Mycoplasma genitalium, NAA swab
- Mycoplasma genitalium, NAA urine

Collection tubes are:

Aptima: yellow for urine, orange for vaginal swab, blue/purple for endocervical swab.

Tests are run at the Alaska state public health lab and will take up to a week to result.

If NAA positive for Mgen:

Doxycycline 100 mg oral BID for 7 days  
FOLLOWED BY  
Moxifloxacin 400 mg oral daily for 7 days.

No test of cure or test for reinfection is necessary.  
No contact tracing is necessary.  
This is NOT reportable to the state.



If considering the diagnosis of bacterial sinusitis in a child younger than 4, please consult a pediatrician.

Fever and rhinorrhea in child >4 years old

90-98% of pediatric sinus infections are caused by viruses. Consider bacterial sinusitis only in the following scenarios.

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

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

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

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

If no improvement

**Treatment**  
1<sup>st</sup> line High-dose Augmentin 45 mg/kg/dose PO BID for 10-14 days  
2<sup>nd</sup> line Cefdinir 14 mg/kg/dose PO daily for 10-14 days  
**Try to avoid using cephalosporins.** They are less effective at treating the most common organisms that cause sinusitis.  
**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. Avoid fluoroquinolones.

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 ENT consult.

Differential Diagnosis

- foreign body
- seasonal/environmental allergies
- recurrent/back-to-back viral rhinitis or nasopharyngitis
- GERD

Sinus Development in Children



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

Source: [https://www.google.com/search?rlz=C301C13424034657\\_0352992.2.0.0.0.200.38.07j1.2.0...0...1c.164psy-ab.0.2.395...030k1.0.rSFh1aHq74#imgrc=DSBxCfFAkWM.&sp=1518811500752](https://www.google.com/search?rlz=C301C13424034657_0352992.2.0.0.0.200.38.07j1.2.0...0...1c.164psy-ab.0.2.395...030k1.0.rSFh1aHq74#imgrc=DSBxCfFAkWM.&sp=1518811500752)

Imaging

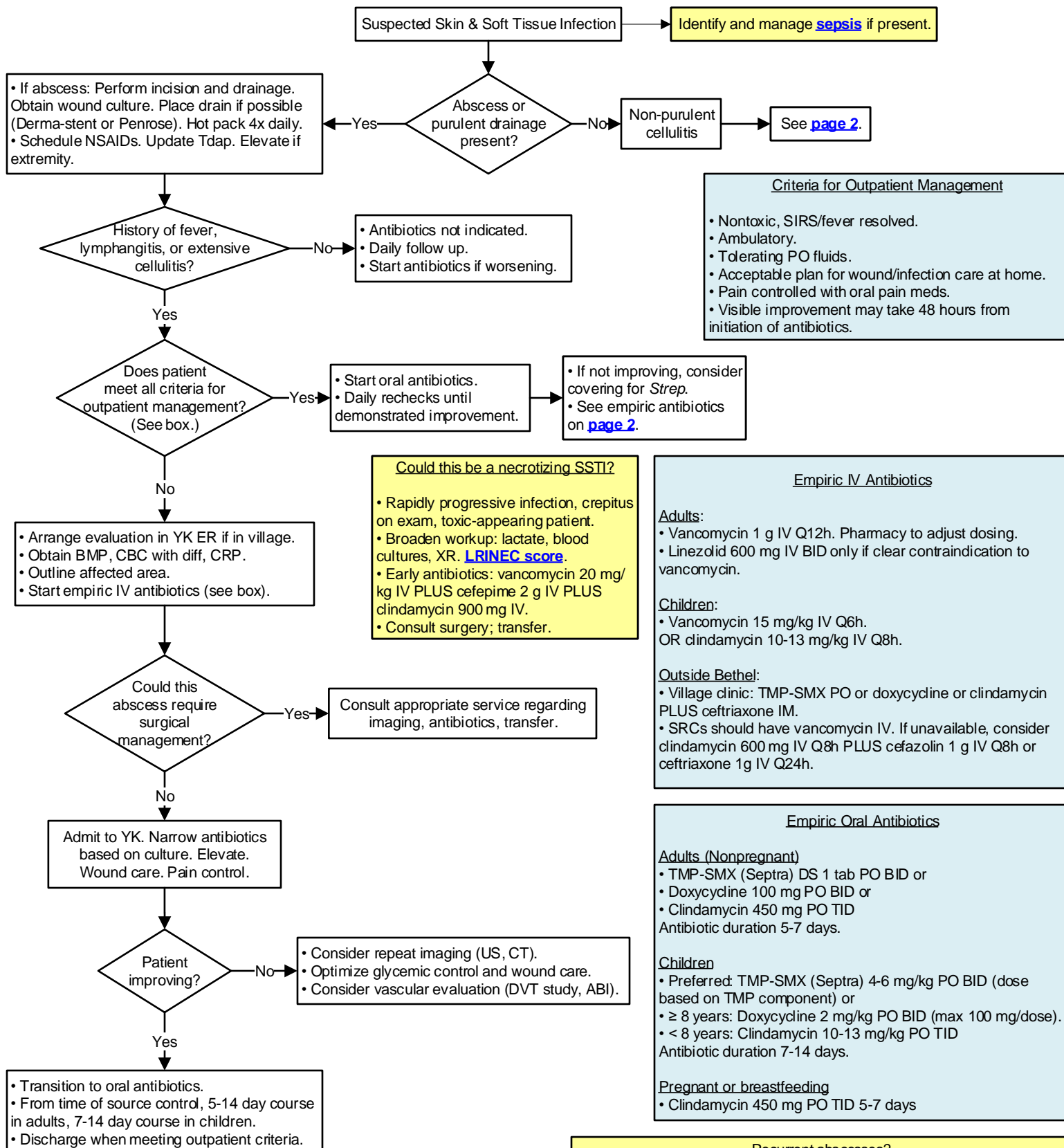
Do not routinely obtain imaging studies in suspected sinusitis unless there is concern for a complication like orbital or CNS involvement.

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.

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Approved by Clinical Guideline Committee 1/19/24.  
Click [here](#) to see the supplemental resources for this guideline.  
**If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).**

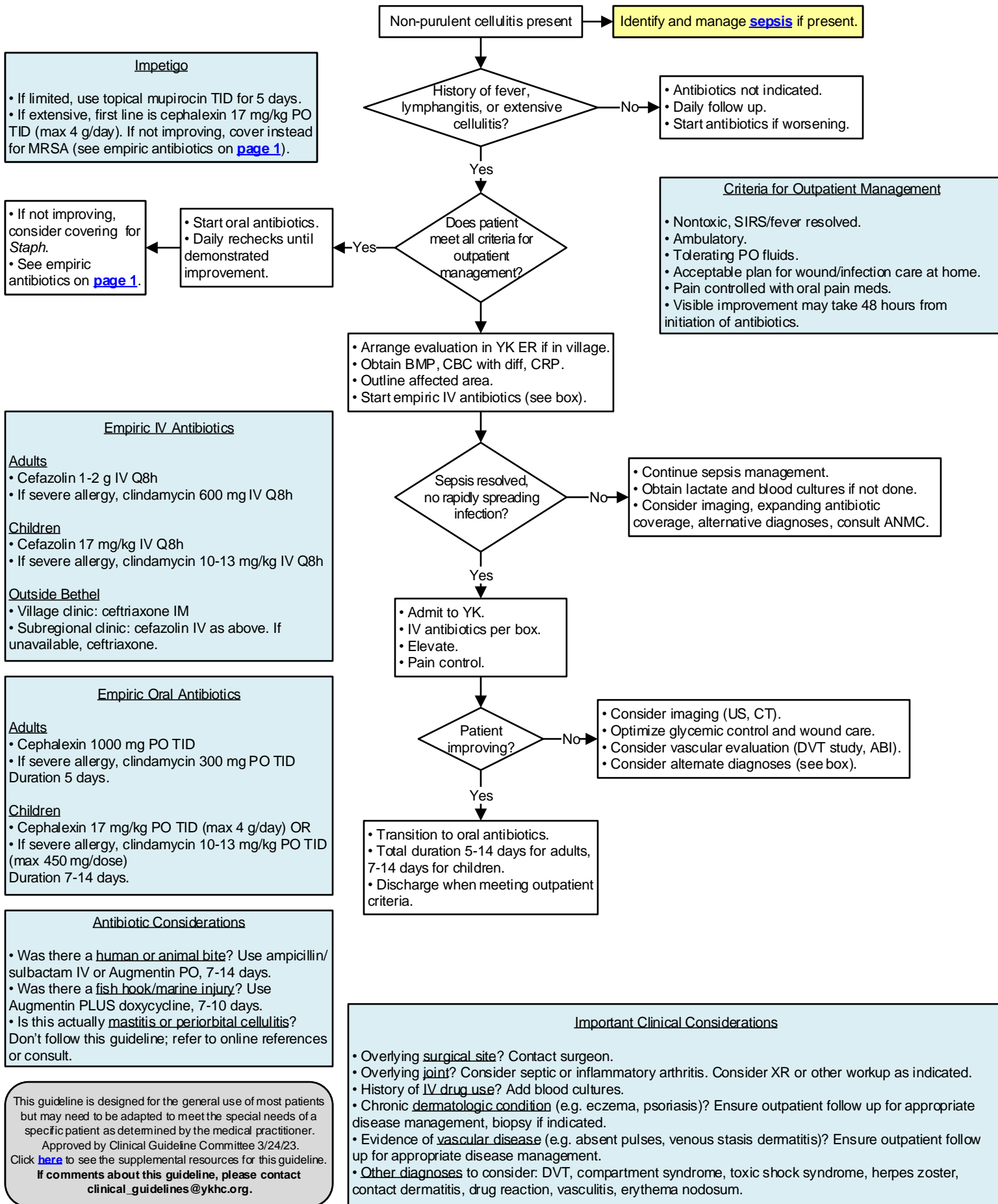


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Approved by Clinical Guideline Committee 3/24/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).







If you diagnose active TB, please contact a TB Officer.

**DO NOT PUT A PATIENT WHO MAY HAVE ACTIVE TB ON A PLANE UNLESS ACUTELY ILL:** This could expose the other passengers. Perform evaluation in village as able. Consult TB Officer.

### TB Symptoms and Risk Factors (clinical judgment required)

- Hemoptysis
- Cough > 3 weeks
- Fever
- Night sweats
- Weight loss
- Persistent pneumonia
- Atypical CXR
- Household contact of active TB
- Prior active or latent TB infection
- Foreign born from endemic area
- Immunosuppression (HIV, diabetes mellitus, prednisone >15 mg/day for > 1 month, or TNF-alpha blocker)
- Born before 1960 and long-term resident of western Alaska or other endemic area

### Active TB Treatments: choose one option

1. "RPT-MOX" (FOR NON-PREGNANT INDIVIDUALS ≥ 40 kg WITH DRUG SUSCEPTIBLE PULMONARY TB ONLY): If no rifamycin resistance on MTB-RIF, the isolate is presumed to be "SUSCEPTIBLE" for the purpose of initiating this option. See the "AMB TB Presumed Active" Power Plan for weight based dosing. This 4 month daily treatment regimen consists of an intensive phase composed of 8 weeks of daily treatment with RPT, MOX, INH, and PZA followed by a continuation phase of 9 weeks of daily treatment with RPT, MOX, and INH.
2. "RIPE": See "AMB TB Presumed Active" Power Plan for weight based dosing. This 6 month daily treatment regimen consists of an intensive phase composed of 8 weeks of daily treatment with RIF, INH, PZA, and EMB followed by a 4 month continuation phase of RIF and INH.

- For both options, at least 5 of the 7 weekly doses should be administered by DOT.
- When on INH, give pyridoxine (vitamin B6) 50 mg by mouth daily to prevent neuropathy.
- If patient is pregnant or HIV infected, please consult a TB officer.
- Dosing is per [CDC guidelines](#).
- Start treatment immediately, either inpatient or with 2 week prescription through YK pharmacy. Consult TB Officers and PHN regarding ongoing prescriptions.

### Abbreviations

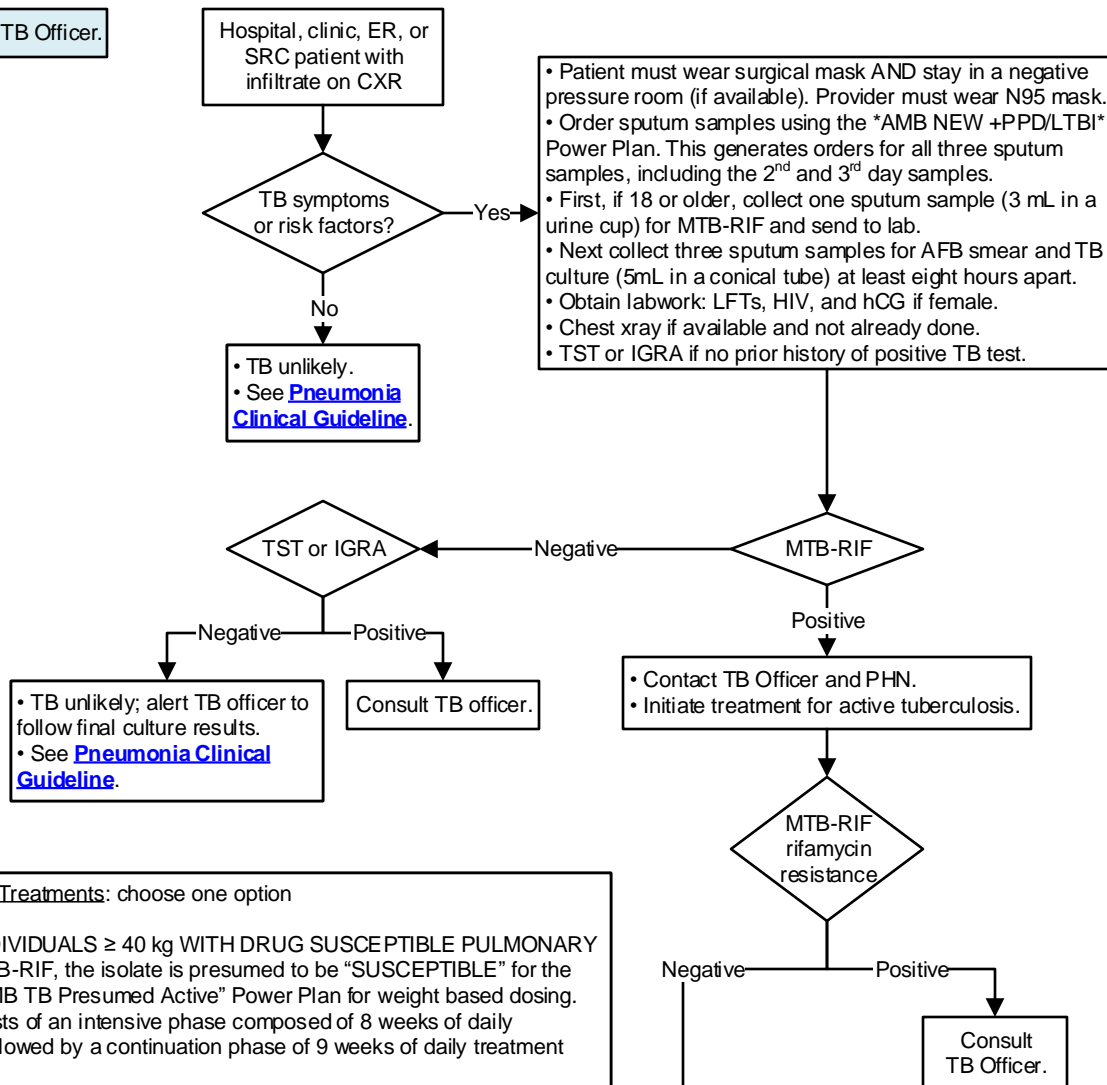
AFB: acid-fast bacilli  
 DOT: directly observed therapy  
 EMB: ethambutol  
 IGRA: interferon gamma release assay, e.g. QuantiFERON Gold  
 INH: isoniazid  
 LTBI: latent TB infection  
 MOX: moxifloxacin  
 MTB-RIF: mycobacterium tuberculosis nucleic acid amplification test that also tests for rifamycin resistance  
 PZA: pyrazinamide  
 RIF: rifampin(a rifamycin)  
 RPT: rifapentine (another rifamycin)  
 TST: tuberculosis skin test

**How to Consult a TB Officer:** Send a message via Tiger Connect to "TB Officers" Team.

### Contact Information

- Public Health Nursing (PHN):  
 Phone: 907-543-2110  
 Fax: 907-543-0435  
 All directly-observed therapy (DOT) will be arranged by PHN.
- Curry Center TB Warm Line: (877) 390-6682
- Dr. Jacob Gray, ANMC Infectious Disease (Tiger Text)
- State Epidemiology: (907) 269-8000

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 Approved 5/5/22. Click [here](#) to see the supplemental resources for this guideline.  
 If comments about this guideline, please contact Robert\_Tyree@ykhc.org.





### Symptoms

- Cough for more than three weeks
- Weight loss
- Fever
- Night sweats
- Hemoptysis

Do not perform TB skin test or QuantiFERON Gold on anyone with a prior positive. QuantiFERON Golds can be ordered Monday through Thursday only, and they cannot be done in villages.

### What is a positive TB skin test?

- At least 10 mm of induration OR >5 mm of induration for patients who are high risk for TB. (See box.)
- Must be read 48-72 hours after placement to be a true negative.
- If positive, the induration can remain up to seven days and can be read until then.

### High Risk for Tuberculosis

1. Immunosuppressed, HIV positive, prednisone >15 mg/day for >1 month, TNF- $\alpha$  blocker.
2. Suspicious chest X-ray.
3. Household contact with active TB.

### LTBI Treatments: Choose one option.

DOT is optional for all three treatment options.

1. 3HP: INH 15 mg/kg PO weekly, rounding to nearest 50 mg (max dose 900 mg) x 12 weeks AND Rifapentine PO weekly x12 weeks.  
Rifapentine Dosing:
  - 32.1-49.9 kg: 750 mg
  - >50 kg: 900 mg (max dose)
2. Rifampin 10 mg/kg PO daily (max dose 600 mg) x4 months.
3. INH 5 mg/kg PO daily (max dose 300 mg) x9 months.
  - If on INH, give pyridoxine (vitamin B6) 50 mg PO daily to prevent neuropathy.
  - If patient is pregnant or HIV infected, the preferred treatment is INH for 9 months. In HIV infection, avoid rifampin and rifapentine.

### Abbreviations

3HP: three month regimen of INH and rifapentine  
 AFB: acid-fast bacilli  
 DOT: directly-observed therapy  
 INH: isoniazid  
 LTBI: latent tuberculosis infection  
 MTB-RIF: mycobacterium tuberculosis nucleic acid amplification test that also tests for rifampin resistance  
 PHN: Public Health Nursing  
 TNF- $\alpha$ : tumor necrosis factor alpha

Patient  $\geq$ 14 years with:  
 New positive TB skin test  
 OR  
 New positive QuantiFERON-Gold.

At least one symptom

No

Thirty minute appointment in Bethel for:  
 • Physical exam  
 • Chest X-ray  
 • Labs: LFTs, HIV, and hCG if female

Abnormal chest X-ray?

No

LTBI

- Call PHN with plan of care.
- Begin treatment per box, using LTBI Power Plan.
- Send LTBI prescriptions to the YKHC pharmacy and securely email notification to [LTBI\\_Case\\_Managers@ykhc.org](mailto:LTBI_Case_Managers@ykhc.org).

Patient in village?

No

Yes

If patient has symptoms concerning for TB, see [Active TB Guideline](#). Do not send patient to Bethel unless patient is medically unstable.

DO NOT PUT A PATIENT WHO MAY HAVE ACTIVE TB ON A PLANE UNLESS ACUTELY ILL; this could expose the other passengers. Perform evaluation in village, as able.

### ACTIVE TB IS SUSPECTED

- Patient must wear surgical mask AND stay in a negative pressure room, if available, until MTB-RIF result is negative.
- Collect sputum samples using the "AMB NEW +PPD/LTBI" Power Plan. This generates orders for all three sputum samples, including the 2<sup>nd</sup> and 3<sup>rd</sup> day samples.
- First, if 18 or older, collect one sputum sample (3 mL in a urine cup) for MTB-RIF and send to lab.
- Next collect three sputum samples for AFB smear and TB culture (5 mL in a conical tube) at least eight hours apart.
- Obtain labwork: LFTs, HIV, and hCG if female.
- Chest X-ray if available.

MTB-RIF positive?

Yes

Active TB.  
 Contact TB officer and see [Active TB Guideline](#).

- Consult TB officer regarding whether to treat for active TB
- Consider treating for [CAP](#).

Sputum positive? No response to CAP tx?

No

LTBI.

Continue full course of treatment per LTBI case managers.

How to Consult a TB Officer: Send a message via Tiger Connect to "TB Officers" Team.

### Contact Information

- Public Health Nursing (PHN):  
 Phone: 907-543-2110  
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 All directly-observed therapy (DOT) will be arranged by LTBI Case Managers.
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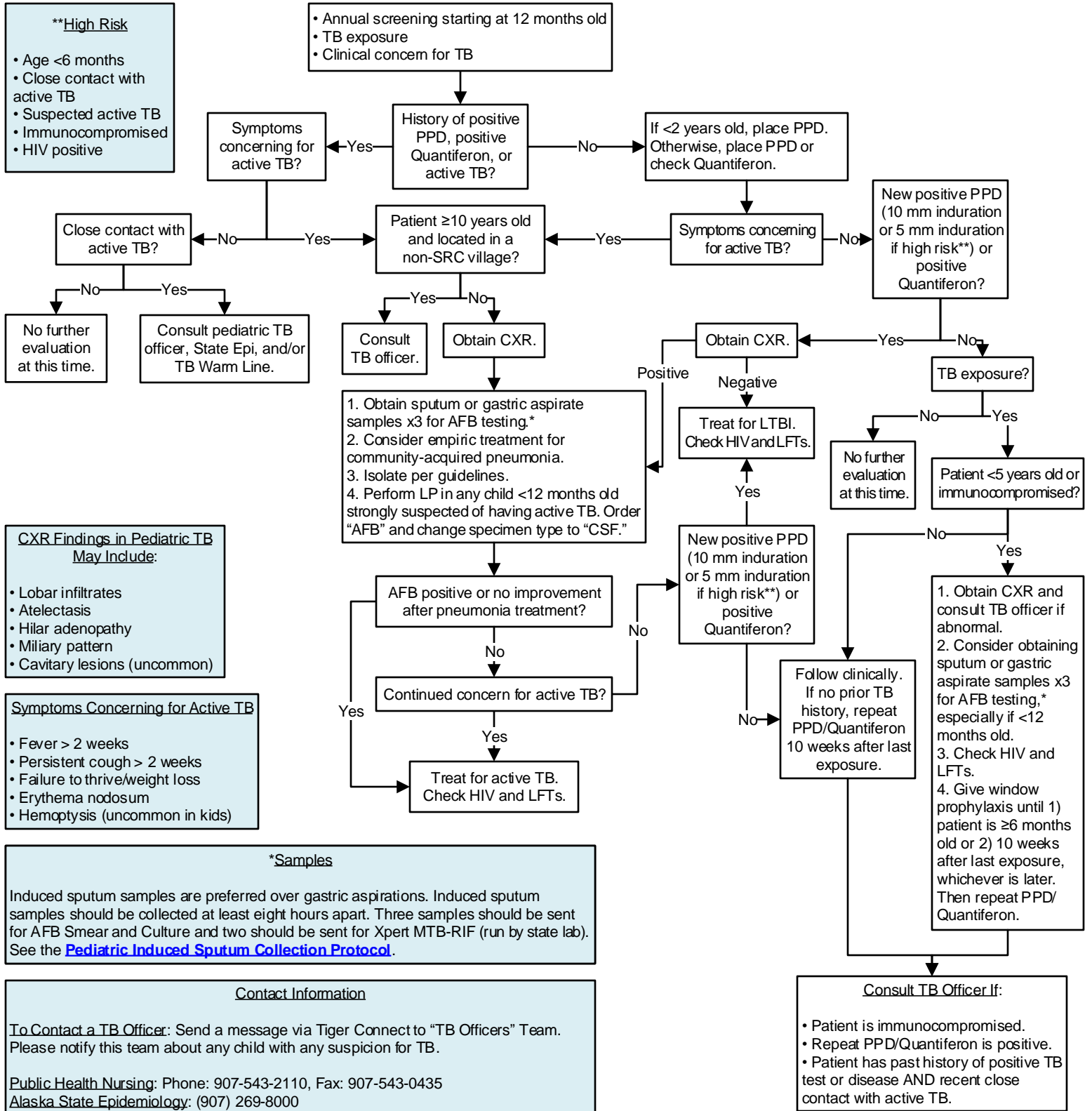
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 If comments about this guideline, please contact [Robert\\_Tyree@ykhc.org](mailto:Robert_Tyree@ykhc.org).



# Yukon-Kuskokwim HEALTH CORPORATION

## Clinical Guideline

### Tuberculosis Evaluation & Treatment (<14 years)



**\*Samples**  
Induced sputum samples are preferred over gastric aspirations. Induced sputum samples should be collected at least eight hours apart. Three samples should be sent for AFB Smear and Culture and two should be sent for Xpert MTB-RIF (run by state lab). See the [Pediatric Induced Sputum Collection Protocol](#).

**Contact Information**  
**To Contact a TB Officer:** Send a message via Tiger Connect to "TB Officers" Team. Please notify this team about any child with any suspicion for TB.  
**Public Health Nursing:** Phone: 907-543-2110, Fax: 907-543-0435  
**Alaska State Epidemiology:** (907) 269-8000  
**TB Warm Line/Curry Center:** (415) 502-4700 or (877) 390-6682

• Medications are typically prescribed by a TB officer in partnership with Public Health.  
• Please see the [Alaska Pediatric TB Manual](#) or the [Curry Center TB Reference](#) for more information.

**Abbreviations:** TB- tuberculosis; CXR- chest X-ray; PPD- purified protein derivative; AFB- acid-fast bacilli; HIV- human immunodeficiency virus; LFTs- liver function tests; Xpert MTB-RIF- rapid test for Mycobacterium tuberculosis and rifampin resistance.

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 6/6/22.  
Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact [Mien\\_Chyi@ykhc.org](mailto:Mien_Chyi@ykhc.org).



This protocol has been designed to maximize efficacy, use the least invasive measures that are still effective, and minimize hospital length of stay. **Please follow these steps to optimize sample quality.**

- 1. **Premedicate** with albuterol 2.5 mg/3mL (0.083%) solution – 3 mL via nebulizer to induce bronchodilation, facilitate delivery of hypertonic saline, and help prevent bronchospasm during delivery of hypertonic saline. May substitute MDI with mask and spacer. **DO NOT COMBINE with hypertonic saline.**
- 2. Administer 5 mL of 3% hypertonic saline solution via nebulizer **over a period of at least 10 minutes.** Prolonged administration has been shown to yield better samples.
- 3. If patient has copious nasal secretions, consider nasal suction with olive tip.
- 4. Obtain sample using mucus specimen trap with suction catheter appropriate for patient size. Measure from tip of nose to the tragus to cricoid cartilage for depth of catheter insertion and obtain sample via suction of the nasopharynx. The goal is to induce a gag and then a cough. *Sample is expected to be blood-tinged.*

(Note: This process may induce a vagal response. The patient should be sitting up with feet supported or lying down, NOT standing. If vasovagal syncope does occur, immediately place the patient supine with the legs elevated.)

- 5. Place specimen in appropriate collection container for desired test.
  - a. For rule-out pulmonary tuberculosis:
    - i. Collect three induced sputum samples **at least 8 hours apart** – one must be first morning sample (fasting goal 6-8 hours). Send for Acid Fast Bacilli Smear and Culture. Sample must be in an AFB container (conical with orange top), with a minimum volume of 2 mL (although 5 mL is preferable); sterile water may not be added to dilute sample.
    - ii. Two samples should also be sent for Xpert MTB-RIF. This test requires 3-5 mL of mucous in a sterile specimen cup. **DO NOT DILUTE**, or "saline wash" nares during suction for this specimen.
    - iii. AFB and Xpert may be obtained at the same time; if quantity not sufficient for both tests, prioritize the AFB.
  - b. Standard sputum cultures do not have a minimum volume and can be placed in a sterile specimen cup.
- 6. Label with full name of collector and date and time of the collection. This should be written **below the barcode**, NOT beside it. **If not labelled correctly, state lab will reject specimen.**
- 7. Collect specimen in RAVEN. Confirm the correct accession number and deselect any additional (future) accession numbers. **Ensure the collector ID, date, and time entered into RAVEN are an exact match to the written label.**

**Contraindications to collecting an induced sputum:** oxygen saturation of <92% despite supplemental oxygen therapy, inability to protect the airway, severe bronchospasm, or designation as inappropriate by the clinician for another reason (eg., midface trauma). After exclusion or resolution of these conditions, sputum induction can be considered.

### Special considerations:

This procedure can also be used for patients who are able to follow instructions but do not have a productive cough. In these cases, suction may or may not be necessary.

While there are no contraindications due to age, for infants younger than 6 months, the sensitivity of induced sputum samples is lower than that of gastric aspirates. Thus, three first morning gastric aspirates collected 24 hours apart or a single first morning gastric aspirate followed by 2-3 induced sputum samples eight hours apart may be preferable. Please consult a pediatric TB officer to discuss this plan.

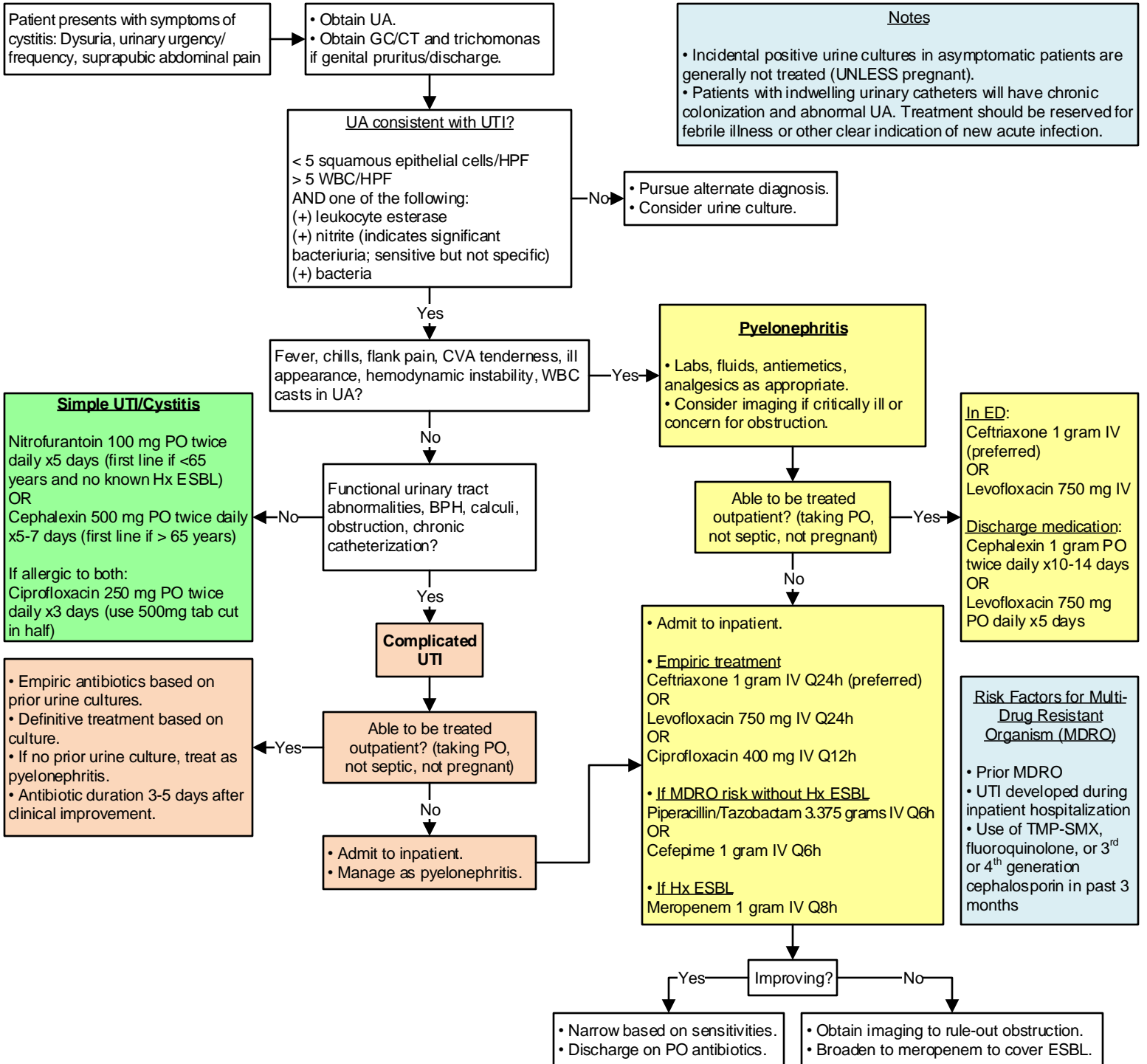
NOTE: Gastric aspirate samples cannot be sent for sputum culture or Xpert MTB-RIF.

Young infants with CPT1A-AV may need dextrose-containing mIVF while NPO. Very young infants may not tolerate fasting intervals of 6-8 hours; consider allowing breastmilk up to 4 hours pre-procedure and/or clear liquids up to 2 hours pre-procedure.



# Yukon-Kuskokwim HEALTH CORPORATION

## Clinical Guideline UTI (Adult)



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 Clinical Guideline Committee 10/21/22.  
 Click [here](#) to see the supplemental resources for this guideline.  
 If comments about this guideline, please contact [Kaia\\_Pearson@ykhc.org](mailto:Kaia_Pearson@ykhc.org).



### Risk Factors for UTI

- Constipation
- Poor hygiene
- Uncircumcised boy

### High Concern for UTI

- Fever >102
- No source
- Fever >48 hours
- History of UTI

May use [UTI Risk Calculator](#) to help risk-stratify.

### Signs and Symptoms of UTI

- Fever
- Dysuria
- Hematuria
- Vomiting
- Abdominal pain
- New daytime or nighttime wetting
- Increased frequency of voiding

### Differential Dx for Dysuria

- Vulvovaginitis
- Candida infection
- Bowel-bladder dysfunction
- Poor hygiene
- Sexual abuse (consider collecting dirty urine for GC/CT; see [Suspected Pediatric Sexual Abuse Procedure Guideline](#) for more information)
- Age-appropriate self-exploration
- UTI

### Resistance

- Empiric drug choice is based on local resistance patterns (see [YKHC Antibiogram](#)) and consultation with ID specialist.
- If urine culture grows an Extended-Spectrum Beta-Lactamase (ESBL) producing organism, please obtain an infectious disease consult during business hours and add ESBL to Problem List.

### Indications for VCUG

- Recurrent febrile UTI.
- Major anomaly on ultrasound. Consult pediatric urologist and consider obtaining VCUG in Anchorage.

Note: study available in Bethel 1-2 times per year when radiologist in-house.

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 one or more:

- Leukocyte esterase
- Nitrites
- >5 WBC/HPF on microscopy

Ensure urine culture is sent.

Patient appearing toxic or not tolerating PO?

Yes

Empiric antibiotic treatment:  
ceftriaxone 50 mg/kg/day IV/IM

No

Consider empiric treatment with cephalexin 20 mg/kg/dose Q8h x5-10 days. Max dose 1000 mg. Note: consider 10 day course if <6 mo. May defer empiric treatment and await culture sensitivities.

### Urine Culture Results

Diagnose UTI if:

- Single species  $\geq 50,000$  CFU/mL in a catheterized sample
- Single species  $\geq 100,000$  CFU/mL in a clean catch sample.
- Single species  $\geq 10,000$  CFU/mL in a catheterized sample with positive UA.
- $\geq 50,000$  CFU/mL in a clean catch sample with positive UA.

No

No UTI.  
Stop antibiotics.

Yes

Begin empiric treatment and narrow coverage per sensitivities.

If first UTI and  $\leq 24$  months, perform renal ultrasound at first opportunity to evaluate anatomy.

Renal abnormality identified.

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

### Symptomatic Care

- If dysuria, irritation, etc. recommend A+D ointment and instruct family to do soaks/baths with warm water and no soap.
- May consider baking soda  $\frac{1}{4}$  cup per tub.

### Village Management

- DO NOT treat any child empirically in the village without sending clean catch urine sample for culture.
- Consider symptomatic care (see box) for possible vulvovaginitis.
- If patient has dysuria, increased frequency, new-onset enuresis, and/or abnormal clean catch urinalysis, consider further evaluation in Bethel.

### DO NOT...

- Treat any child for UTI empirically without culture pending.
- Routinely collect urine via bag.
- Routinely perform a test of cure.
- Routinely start UTI prophylaxis.
- Perform suprapubic taps.
- Routinely obtain bloodwork for uncomplicated UTI.
- Add UTI to Problem List until confirmed by culture.

**NOTE: For infants <90 days with fever, see the [Fever in Infants 0-90 Days Guideline](#).**

If diagnosis of UTI is suspected after appropriate work-up, follow this guideline for full management recommendations.

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Approved by Clinical Guideline Committee 1/19/24.  
Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact [Clinical\\_Guidelines@ykhc.org](mailto:Clinical_Guidelines@ykhc.org).



### True Varicella infection is RARE in our region:

- DO NOT diagnose Varicella** without confirmatory lab testing.
- Per the CDC:
  - Two doses of VZV vaccine are 88-98% effective at preventing all VZV infections.
  - One dose of VZV vaccine is 80-85% effective at preventing all VZV infections.
- All confirmed Varicella must be confirmed to State Epidemiology with this form: <http://dhss.alaska.gov/dph/Epi/Documents/pubs/conditions/frmlnfect.pdf>

### Differential Diagnosis

- Hand-foot-mouth disease
- Scabies
- Stomatitis
- Eczema herpeticum
- Diffuse impetigo

### Documentation for Suspected Varicella Infection

- Date of symptom onset
- Date of suspected diagnosis
- Date of rash onset
- Location of rash, including where first noted
- Number of lesions
- Photos of lesions
- Evolution of rash (including appearance of new groups of lesions)
- Appearance of lesions (are there lesions in all stages of development at once?)

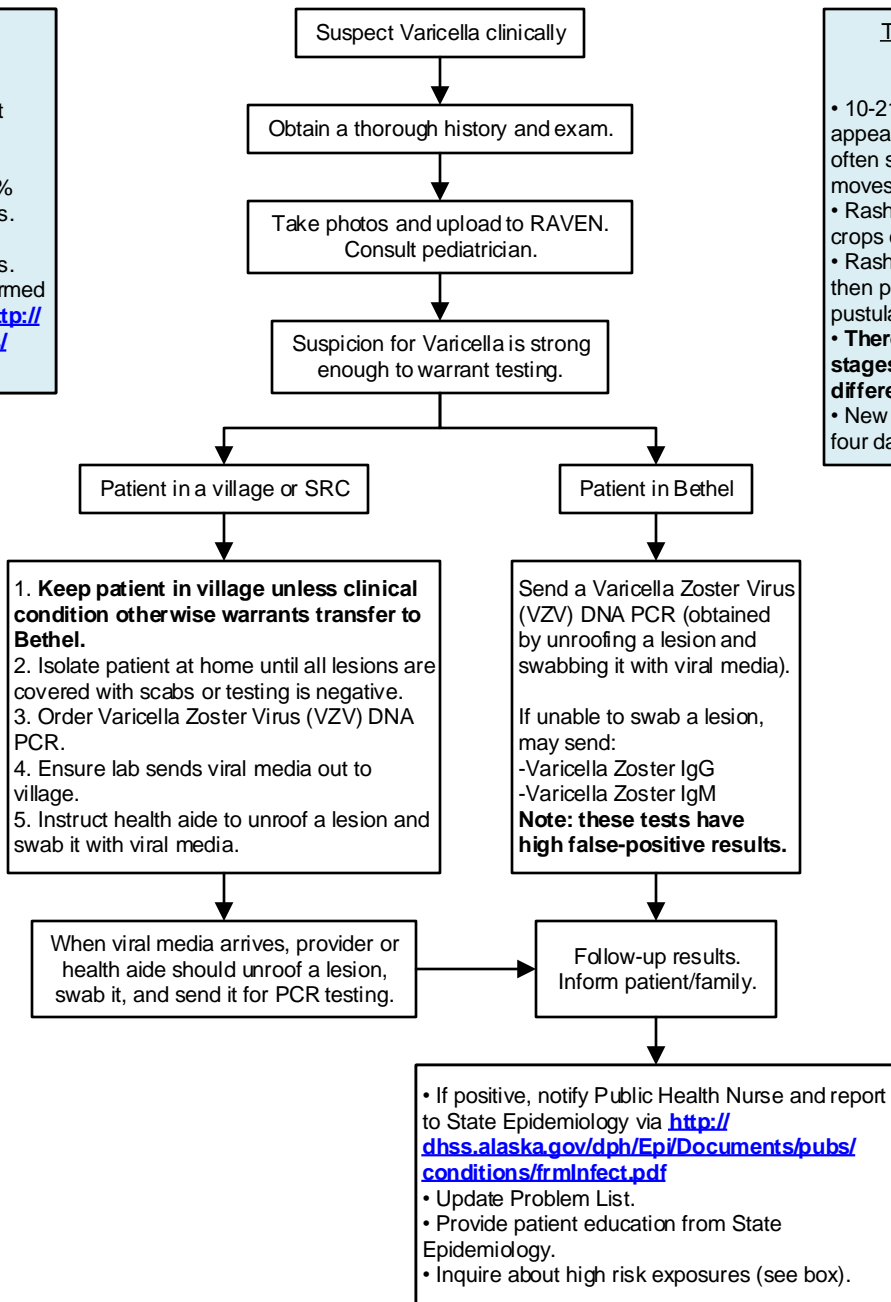
### High Risk Exposures

- Inquire if any pregnant women or immunocompromised people have been exposed.
- For pregnant women: find out if she has a history of varicella or has received the vaccine. If not, then consult HROB to consider further treatment.
- For immunocompromised patients: refer to a provider for evaluation.

**Note:** Unconfirmed cases must still receive the vaccine. There is no increased harm in vaccination if the patient had varicella in the past.

### Typical Presentation for Chickenpox/Varicella

- 10-21 days after exposure, fever appears, followed by rash that often starts on the head and then moves down.
- Rash appears in successive crops over several days.
- Rash begins as macular and then progresses to vesicular, then pustular, then crusted.
- **There are lesions in different stages of development on different parts of the body.**
- New vesicles stop forming within four days.





IF ANY CONCERN FOR APNEA, please consult a pediatrician immediately to determine need for further evaluation, transfer, medevac, etc.

### Recommendations on Management of Caffeine After NICU Discharge

- Recommended dose of caffeine is 12 mg/kg PO daily.
- Patient should be seen in Bethel by a pediatric provider within one week of returning to the region.
- Dose should be weight-adjusted every 1-2 weeks. This can occur in outpatient clinic with a pediatric provider or a pediatric consult, in an SRC with a pediatric consult, or in a village by RMT to Chronic Peds.
- Stop the caffeine when the baby is 42 weeks corrected gestational age.
- Discontinuation of caffeine may be delayed for another week so as not to coincide with immunizations, recent URI, or planned anesthesia (as all of these events can cause re-emergence of intermittent hypoxia with periodic breathing).



### When a Baby is Discharged from the NICU on Caffeine

- Update the Problem List with the plan, including the target dose, how often to weight-adjust, and the expected end date (when 42 weeks corrected gestational age will be).
- Write a prescription for the caffeine. Include the target dose. Under "eRx Note to Pharmacy," state "do not fill until family calls for refills."
- Assess caffeine dose at every encounter.

### Rationale

- In the past, premature infants were given caffeine until about 34 weeks post-menstrual age. Some needed caffeine past this point and went home on caffeine and an apnea monitor.
- Recent studies have shown that many preterm infants who have been taken off caffeine will go on to have intermittent hypoxia and subclinical apnea and bradycardia events after discharge from the hospital.
- Evidence is also building that prolonged use of caffeine results in better neurodevelopmental outcomes.
- As of January 2019, caffeine has been continued in preterm infants after discharge from the PAMC NICU.
- The PAMC NICU stopped the routine use of apnea monitors for babies discharged on caffeine due to sub-optimal monitor technology and frequent frustration among parents and providers. They prefer to emphasize the importance of giving caffeine rather than use of apnea monitors.

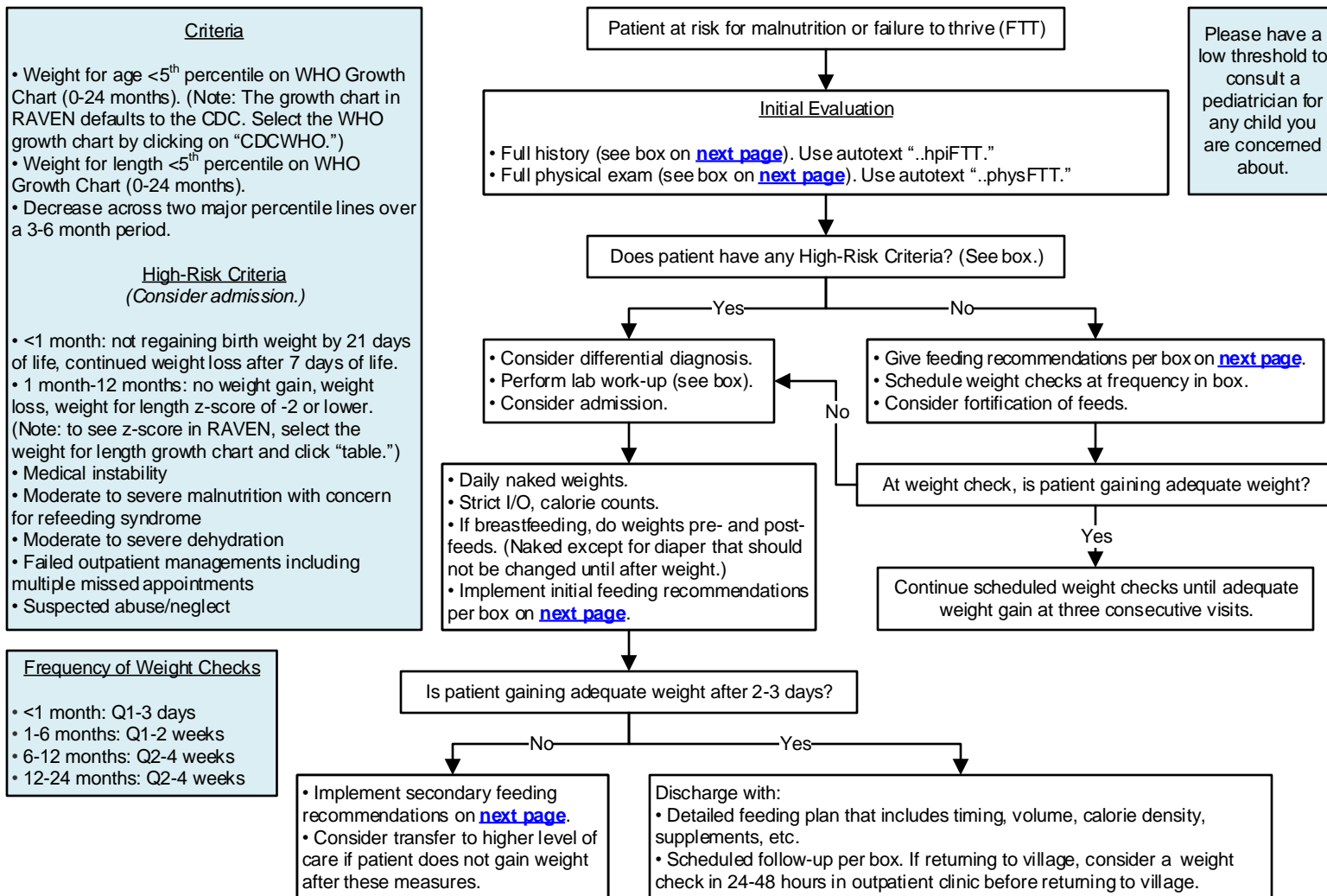
### Source

Adapted from letter from Alaska Neonatology Associates, Inc., Pediatric Medical Group, an affiliate of MEDNAX.  
1/10/2019  
Providence Alaska Medical Center (PAMC)  
Neonatal Intensive Care Unit (NICU)

This resource 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 Clinical Guideline Committee 1/11/23.

If comments about this resource, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).





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Approved by MSEC 3/1/22.

Click [here](#) for supplemental resources for this guideline.

If comments about this guideline, please contact  
Jennifer\_Prince3@ykhc.org.



### History

Use autotext “.hpiFTT” to document in RAVEN.

#### General

- Recurrent fevers or infections
- Detailed birth history

#### Cardiovascular

- Sweating and/or fatigue with feeds

#### GI

- Constipation
- Vomiting

#### Neurologic

- Depressed mental status, inconsolability, sleepiness
- Developmental delay
- Abnormal movements

#### Feeding

- Breastfeeding
  - Frequency, length, number per day, longest interval between feedings, night vs day?
  - One or both breasts, softer after feeding, ± nipple shield, any pain or difficulty with latch?
  - If pumping, how much is produced?
  - Can you see or hear the baby swallow?
  - Any supplementation (expressed breast milk or formula)?
  - Does baby fall asleep at breast?
- Formula
  - Frequency, length, amount per feed and per day, longest interval between feeds, night vs day?
  - Type of formula and recipe
  - Type and size of bottle and nipple
  - Any supplementation (either addition to the bottle or solids)?
- Swallow problems
  - Coughing during feeding
  - Wet or gurgly sounds during or immediately after feeding
  - Frequent upper respiratory tract infections, fevers, or pneumonia
- Reflux
  - Coughing, choking, gagging, or any respiratory symptoms with feeds
  - Spitting up/vomiting
  - Arching, fussiness, or discomfort with feeds

#### Social

- Who feeds the baby? Who lives at home? Is there a feeding schedule?
- If bottle fed, are there concerns about obtaining enough formula?

#### Elimination

- Number of wet and stool diapers per 24 hours
- Stool appearance (consistency, color, any orange/red crystal/powder, any blood or mucus)

Please see [ANMC's Preterm Nutrition Resource](#) for more information, including recipes for mixing high caloric density formula.

### Initial Feeding Recommendations

#### Breastmilk/Formula

- Minimum Intake Recommendations:
  - Term Infant: 108 kcal/kg/day = 162 mL/kg/day of 20 kcal/oz formula/breast milk
  - Preterm Infant: 110-130 kcal/kg/day = 177 mL/kg/day of 22 kcal/oz preterm formula
- Feeding Frequency:
  - <3 months: Q3h or ≥8 feeds/day. No more than 3 hours between feeds.
  - ≥3 months: Q3h during day with ≥6 feeds/day
- Wake the baby to feed if necessary.

#### For Solids

- Infant must be taking at least 24 oz/day of formula or breastmilk.
- Limit any other fluids like water or juice.
- By 12 months, goal 4-6 servings of >4 tablespoons per day.

### Secondary Feeding Recommendations

- If patient is able to tolerate goal feed volume, increase volume by 10% to max 180 mL/kg/day OR increase caloric density by 2 kcal/ounce to max 24 kcal/ounce.
- Allow at least 24 hours to assess tolerance to any changes.
- If patient is taking solids and >9 months, consider increasing calories in solids.
- If patient is not able to consistently and safely take enough by mouth to gain weight, consider NG feeds.

### Physical

Use autotext “.physFTT” to document in RAVEN.

#### General

- Cachexia, decreased subcutaneous stores, decreased muscle bulk
- Relative macrocephaly
- Lack of caregiver bonding or responsiveness to patient
- Dysmorphic features or syndromic appearance

#### HEENT

- Scleral icterus
- Nasal congestion or obstruction
- Cleft lip or palate
- Macroglossia or ankyloglossia
- Micrognathia

#### Respiratory

- Stridor
- Difficulty breathing, tachypnea
- Abnormal breath sounds including wheezing, crackles, etc.

#### Cardiovascular

- Murmurs
- Diminished or absent peripheral pulses

#### GI

- Hepatosplenomegaly
- Abdominal distension
- Palpable stools

#### Skin

- Jaundice
- Rashes or skin breakdown (including in diaper area)
- Severe atopic dermatitis

#### Neurologic

- Depressed mental status, inconsolability, sleepiness
- Developmental delay
- Abnormal movements

### Caloric Needs by Age

If preterm, use corrected age.

- <37 weeks: 110 -130 kcal/kg/day
- 37 weeks-6 months: 108 kcal/kg/day
- 7-12 months: 98 kcal/kg/day
- 12-24 months: 75-95 kcal/kg/day

### Average Daily Weight Gain by Age

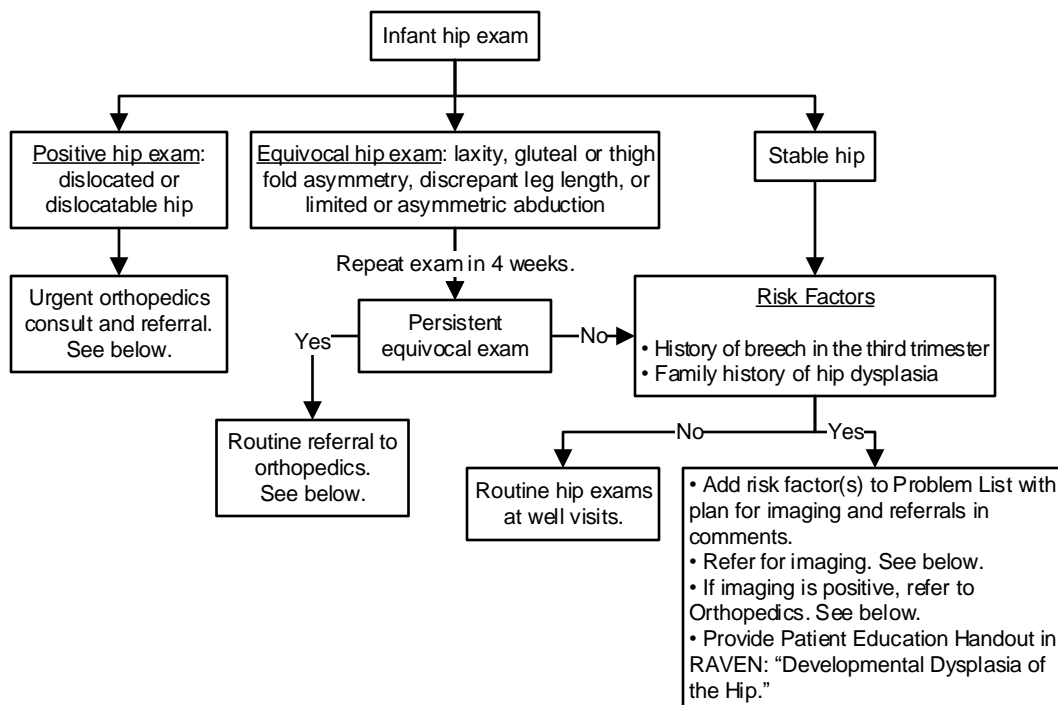
Age (corrected)	Median (grams/day)	
	Girls	Boys
2-4 weeks	29	34
4 weeks-2 months	34	40
2-3 months	24	27
3-4 months	20	21
4-5 months	16	17
5-6 months	13	14
6-8 months	11	11
8-10 months	9	9
10-12 months	8	8
12-15 months	4-9.5	4.5-10
15-18 months	4-9.5	4-9
18-21 months	4-9.5	4-9
21-24 months	3.5-9	3.5-9

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 3/1/22.

Click [here](#) for supplemental resources for this guideline.

If comments about this guideline, please contact  
Jennifer\_Prince3@ykhc.org.



### Barlow and Ortolani Tests

- The Barlow test is for laxity of the hip joint. It should be performed gently with no posterior force. If positive, you will feel laxity or the hip will sublux or dislocate.
- The Ortolani test is the maneuver to reduce a dislocated hip. If positive, you will feel a clunk.
- Per the AAP, "One can think of the Barlow and Ortolani tests as a continuous smooth gentle maneuver starting with the hip flexed and adducted, with gentle anterior pressure on the trochanter while the hip is abducted to feel whether the hip is locating into the socket, followed by gently adducting the hip and relieving the anterior pressure on the trochanter while sensing whether the hip slips out the back. The examiner should not attempt to forcefully dislocate the femoral head."
- See [this video](#) for AAP guidance on these exam maneuvers.

### Orthopedics Consults & Referrals

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

### Imaging

Patient must have either ultrasound or X-ray, as below.

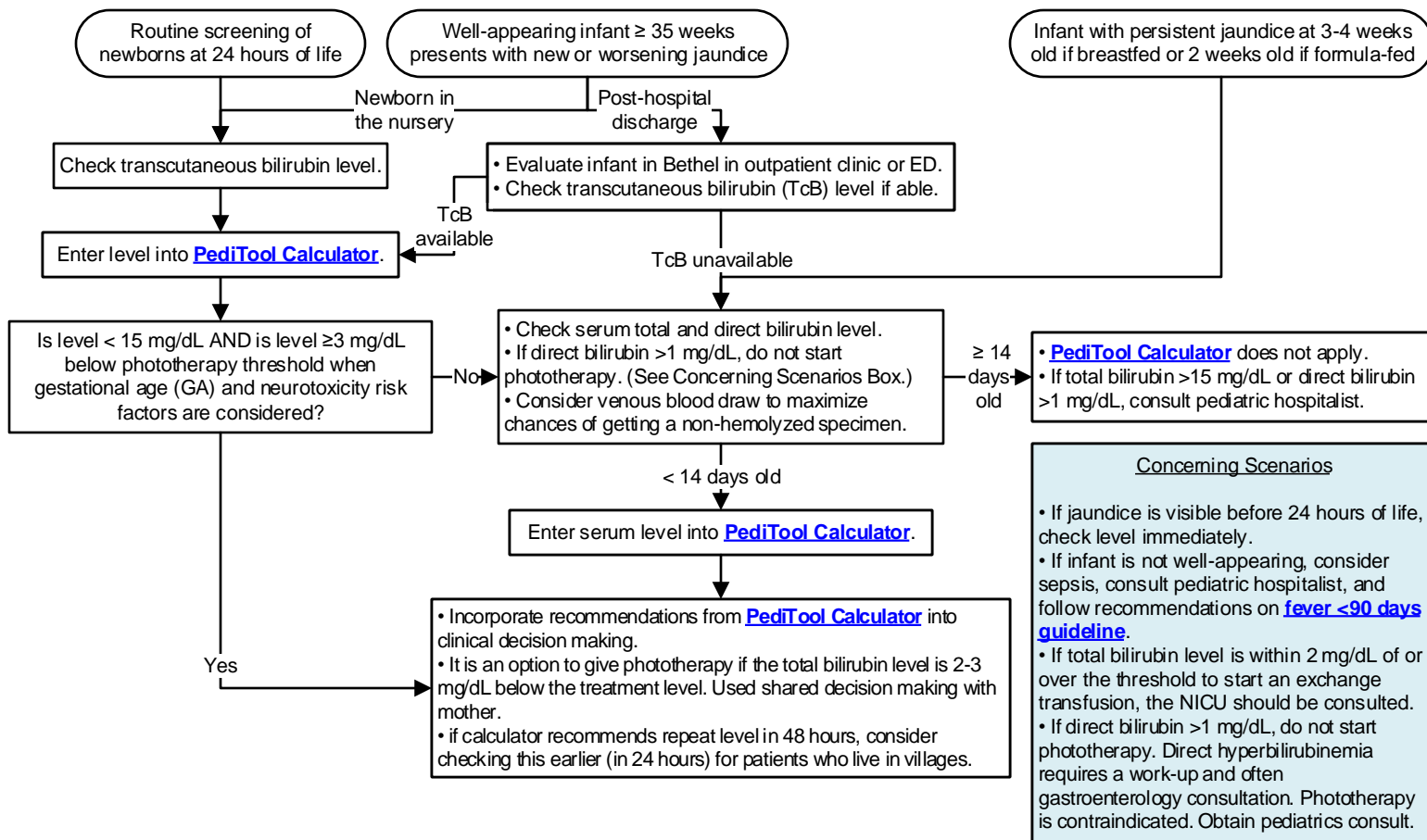
1. **Hip ultrasound:** 6 weeks to 4 months of age.
  - Performed at ANMC for beneficiaries and Alaska Regional Hospital for non-beneficiaries.
  - Place order for "Refer to Pediatric Clinic External (MRI / EEG / VFSS / Hip US)" with brief history.
  - If patient is a beneficiary, request follow-up appointment at Southcentral Foundation Team B.
  - If patient is not a beneficiary, request follow-up appointment with a pediatric provider in Bethel.
  - Send a RAVEN Communication to Chronic Peds Case Manager Pool about the referral and level of importance.
2. **X-ray, AP pelvis:** over 4 months of age. (Note: in premature infants, ossification of femoral heads is delayed. May use corrected gestational age of 4 months or later.)
  - Performed at YKHC.
  - Place an order for "XR Pelvis (Pelvis AP only)" and put in comments "AP view with hips in neutral position to rule-out developmental dysplasia of the hip."
  - Send a RAVEN Communication to Chronic Peds Case Manager Pool stating the order was placed and requesting an appointment for this with a pediatric provider in Bethel.

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Approved by Clinical Guideline Committee 12/9/22.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this protocol, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



### How to Use [PediTool Calculator](#)

(Note: Website may not work in Firefox.)

1. Enter infant's gestational age, age in hours, and total bilirubin level.
2. Note if infant has any neurotoxicity risk factors. (See box.)
3. Click "submit."
4. The next page will plot the level on a graph. You will see if the infant meets criteria for phototherapy and/or exchange transfusion.
5. If not starting phototherapy, scroll down to the table labelled, "Post-birth hospitalization discharge follow-up for infants who have NOT received phototherapy." Follow these recommendations for repeat levels.

### Neurotoxicity Risk Factors

Use this list to answer question on [PediTool calculator](#).

- Isoimmune hemolytic disease (positive DAT, etc.), G6PD deficiency, or other hemolytic condition
- Sepsis
- Clinical instability in past 24 hours

### Phototherapy

1. Order using one of the following:
  - PED Pediatric Admission Power Plan → PED Phototherapy sub-phase
  - OB/Newborn orders folder → OB Newborn Phototherapy Power Plan
2. **Check hemoglobin and hematocrit on all patients receiving phototherapy. May obtain via heel stick when checking bilirubin.**
3. Check serum total bilirubin level Q12h (or more frequently if neurotoxicity risk factors or concern for ongoing hemolysis). If level is trending up, consult pediatrician and consider broadening differential and work-up. Note: Transcutaneous bilirubin is not reliable until 24 hours after phototherapy has been stopped.
4. Encourage frequent feeding, but try to limit time out of phototherapy to no more than 20 minutes Q3h.
5. IV fluids are unnecessary unless infant has signs of dehydration.
6. Keep infant supine with eye protection while under phototherapy.
7. Stop phototherapy when serum total bilirubin level is ≥ 2 mg/dL below the phototherapy initiation level, using the hour of life at which phototherapy was initiated.
8. Obtain rebound bilirubin level 6-12 hours after stopping phototherapy if patient required phototherapy in first 48 hours of life, if concern for hemolysis, or if DAT positive.

### Direct Antibody Test (DAT)

- Order a DAT if:
  - Mother has positive or unknown antibody screen.
  - Mother is type O or Rh negative and did not receive Rhlg during pregnancy.
  - The infant's total bilirubin level has a high rate of rise (0.3 mg/dL/hour in first 24 hours or 0.2 mg/dL/hour after first 24 hours).
- If infant has a positive DAT, check transcutaneous bilirubin immediately and then retest Q4h x2 then Q12h x3.

### Labs for Expanded Work-up

Consider in infants with jaundice at <24 hours of life, rising levels despite phototherapy, or recurrent jaundice.

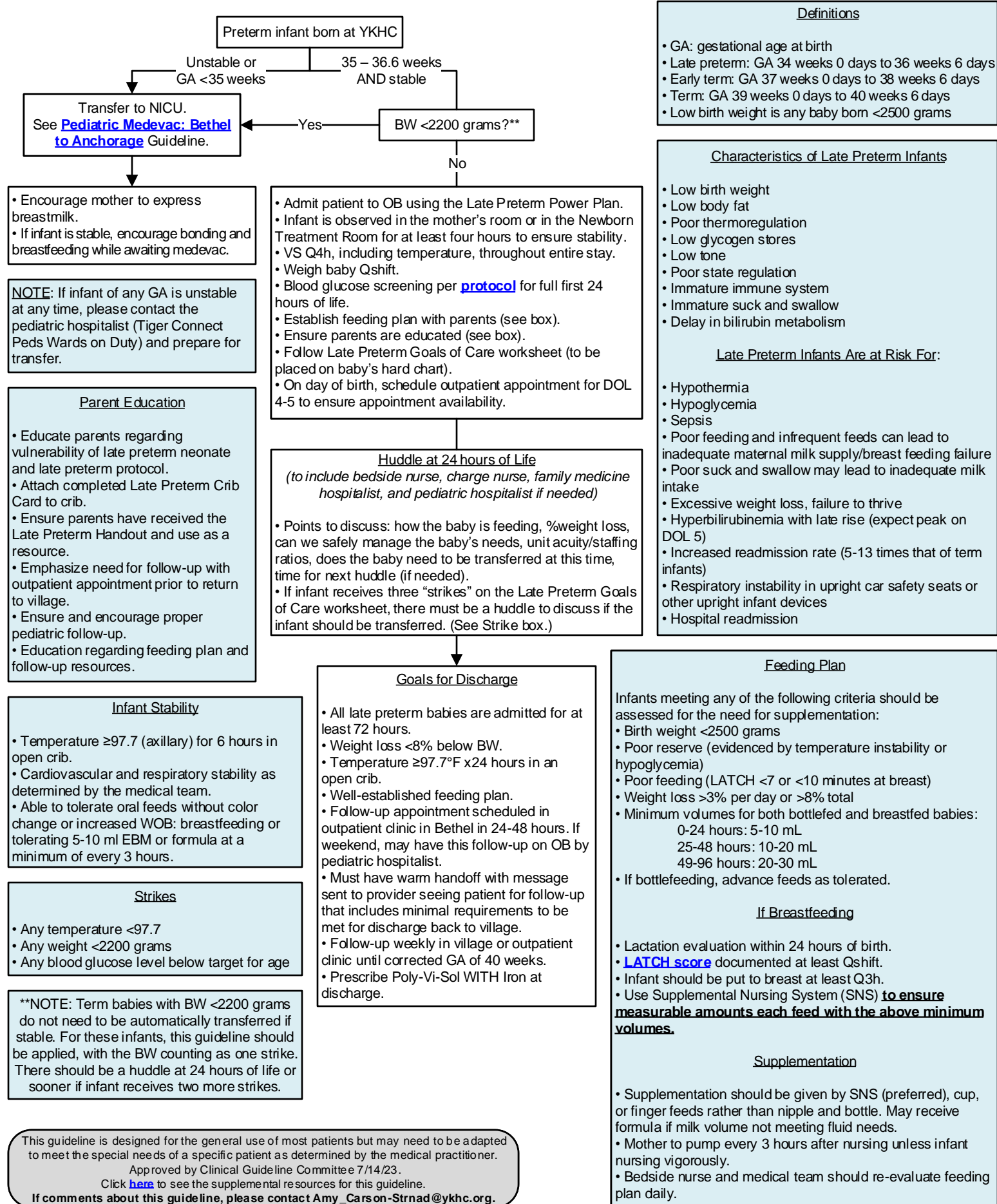
- Blood type, DAT (Direct Antibody Test, or Coombs)
- CBC with manual differential and reticulocyte count
- CMP
- Thyroid studies (if prolonged or recurrent)
- GGT
- G6PD

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 Clinical Guideline Committee 10/21/22.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Justin\\_Willis@ykhc.org](mailto:Justin_Willis@ykhc.org) or [Mien\\_Chyi@ykhc.org](mailto:Mien_Chyi@ykhc.org).



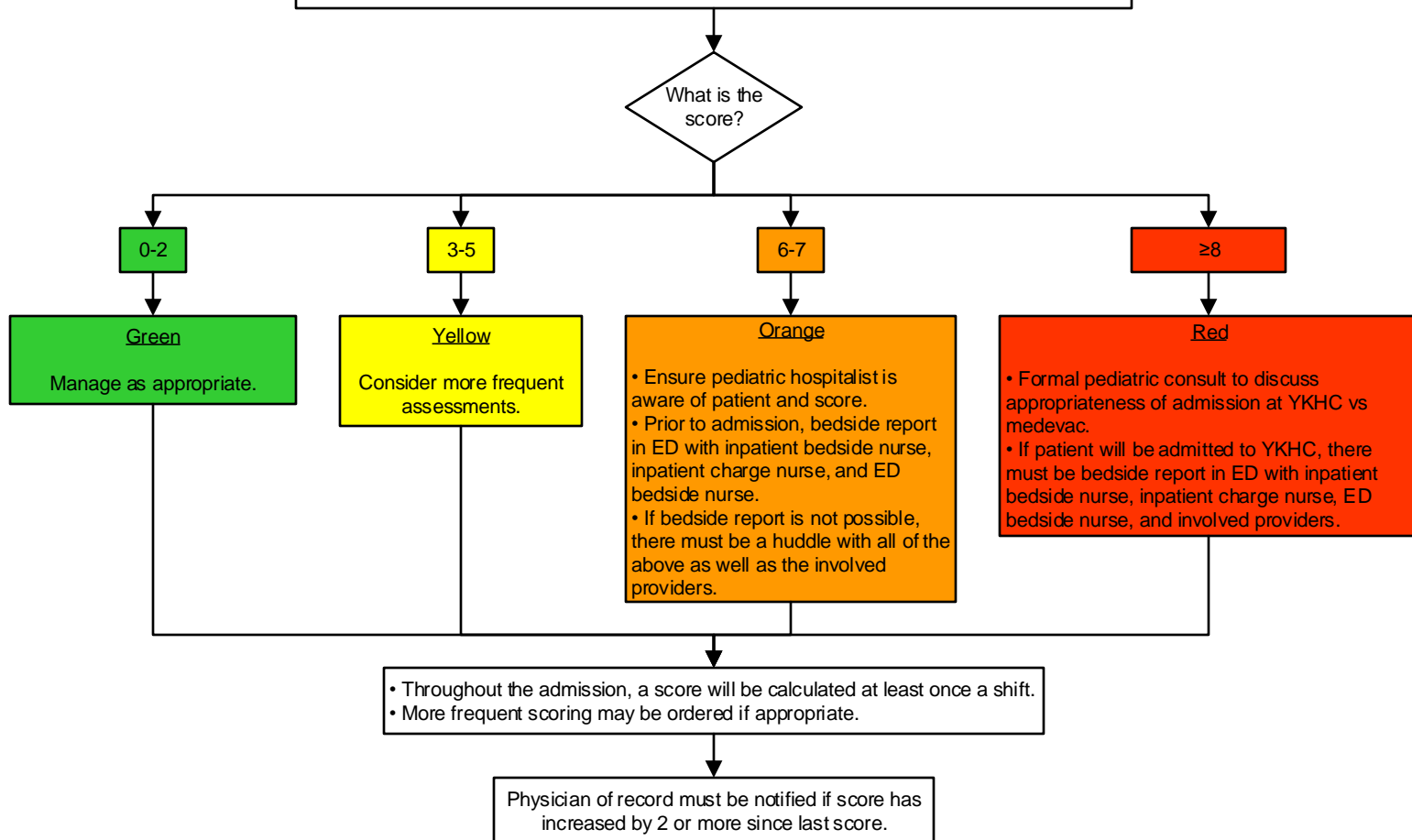


### mPEWS (modified Pediatric Early Warning System)

- YKHC uses the mPEWS to monitor admitted pediatric patients. Scoring is required prior to and throughout admissions to screen patients for acuity and help determine appropriate disposition.
- This is a scoring system that can help identify patients at risk for deterioration. YKHC uses it as a communication tool to highlight these patients.
- The score is calculated using the Ad Hoc form called "mPEWS," found in three places: (1) in ER encounters, under "mPEWS;" (2) in inpatient encounters, under "Assessments" → "mPEWS;" and in other encounters in "Asmt/Tx/Monitoring" folder.

Scoring details can be found at [this link](#).

- The ED will calculate a score prior to admission to the inpatient unit using the most recent vital signs and several aspects of PMH. If PMH unclear, the provider of record will clarify.
- Upon admission, the Inpatient Unit will calculate a score using the first vital signs taken.



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Approved by MSEC 3/1/22.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



### Indications for Use

- Neonate with respiratory distress.
- Head circumference  $\leq 39$  cm and age  $\leq 2$  months.
- Has stabilized on CPAP via NeoPuff.
- Must have a respiratory rate (NO apnea).
- Anticipated prolonged need for CPAP at YKHC due to weather, NNP team unavailable for transport, etc.
- Note: If newborn  $< 26$  weeks, discuss with NICU prior to use.

Note: If using on a non-newborn, must request NNP/ neonatal transport team to ensure level of support can be maintained during transport.

### Mask/Bonnet Set-Up

1. Measure the head circumference with the tape provided to determine the correct bonnet size.
2. Place the bonnet on the baby's head. Make sure to cover the bottom of the ears and the back of neck.
3. Mount the mask on the tubing.
4. Attach the fixation pillow to the hat, secure the tubes in the grooves, and secure with Velcro.
5. Use the fixation straps to hold the mask in place.
6. To hold optimal pressure, try to keep the infant's mouth closed. May offer a pacifier with Sweet-Ease.



### Ventilator Settings

1. While in standby, select the neonatal option. Then select "Modes."



2. Enter the patient's weight.

3. Select nCPAP mode and "Confirm."



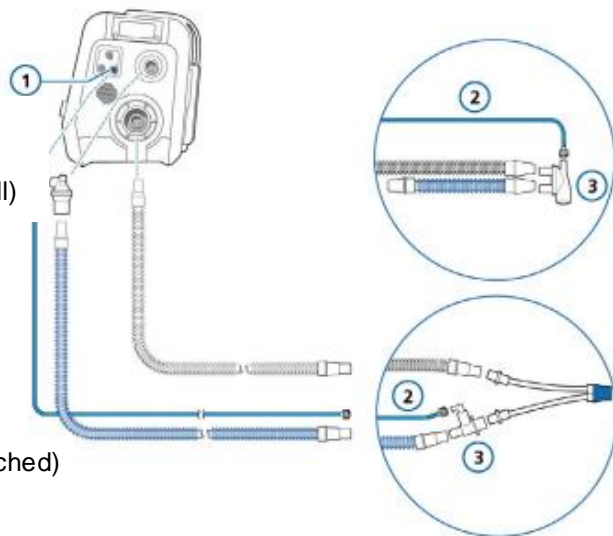
4. Adjust PEEP and  $\text{FiO}_2$  and then select "Confirm."

5. Select "Start Ventilation."

See the YKHC [Neonatal Resuscitation Summary](#) for weight-based drug doses and equipment.



### Tubing Set-Up



### Troubleshooting Tips

#### Ventilator Settings:

- Start by matching the PEEP level infant stabilized on with the NeoPuff, generally 5-8 cm H<sub>2</sub>O.
- Adjust settings as needed. If FiO<sub>2</sub> <40%, consider weaning PEEP. If requiring >8 cm H<sub>2</sub>O, discuss with neonatologist.

#### Tubing Set-Up:

- Try to maintain tubing proximal to infant parallel with the infant's face and midline.
- Ensure there is no tension on the tubing.

#### Bonnet:

- Choose the smallest bonnet you can fit on the baby. A snug fit will hold everything in place.
- Ensure velcro is not rubbing against the baby's skin.

#### Mask:

- Avoid overtightening but ensure good seal.
- If requiring nasal CPAP >6 hours, watch closely for skin breakdown and consider alternating mask with prong interface.

See the YKHC [Neonatal Resuscitation Summary](#) for weight-based drug doses and equipment.

This resource 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 Clinical Guideline Committee 2/9/24.

If comments about this resource, please contact [Zoe\\_Storck@ykhc.org](mailto:Zoe_Storck@ykhc.org).





Is infant  $\geq$  35 weeks?

No → This guideline does not apply to infants <35 weeks. Consult pediatrics. See [this link](#) for resources.

Yes

Is one or more of the following present?

- Any maternal fever during antepartum period
- Prolonged rupture of membranes
- GBS positive or unknown

No →

- Routine care.
- Infants born to mothers with GBS positive status should be observed in the hospital for 48 hours.
- Consult pediatric hospitalist with any questions or concerns.

Yes

- Go to the [Kaiser Neonatal Early-Onset Sepsis Calculator](#).
- Enter infant and maternal information.
- The first question will ask your local incidence of newborn sepsis. In the drop-down box, choose the CDC national incidence.

- Follow recommendations for blood culture, antibiotics, and vital sign frequency based on early-onset sepsis risk for infant's clinical status.
- "Well-appearing," "equivocal," and "clinical illness" are defined [here](#).
- Note: If the calculator recommends observation, this should be for at least 48 hours with vital signs Q4h.

If any clinical concerns about infant, consult pediatric hospitalist.

If giving antibiotics:

- Send blood culture, CBC with differential, and CRP.
- Order ampicillin and gentamicin, using [Neofax](#) or the [Neonatal Resuscitation Summary](#) for dosing.
- Consult pediatric hospitalist and prepare to transfer infant to NICU.

Note: CBC and CRP are not routinely recommended anymore. However, they can be useful to trend if starting antibiotics. Thus, we recommend they be obtained if starting antibiotics.

### Signs of Neonatal Sepsis

- Temp  $\geq$  100.4 or  $\leq$  97.5
- Irritability
- Poor Feeding
- Hypoglycemia
- Hypothermia
- Tachypnea
- Tachycardia
- "Not acting right"

If any of these signs are present, consider obtaining a pediatrics consult.

### References

- Pediatrics* 2019: [Management of Infants at Risk for Group B Streptococcal Disease](#)
- Pediatrics* 2018: [Management of Neonates Born at  \$\geq\$  35 0/7 Weeks' Gestation with Suspected or Proven Early-Onset Bacterial Sepsis](#)

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. Click [here](#) to see the supplemental resources for this guideline.

Approved by Clinical Guideline Committee 12/9/22.

If comments about this guideline, please contact Amy\_Carson-Strnad@ykhc.org.



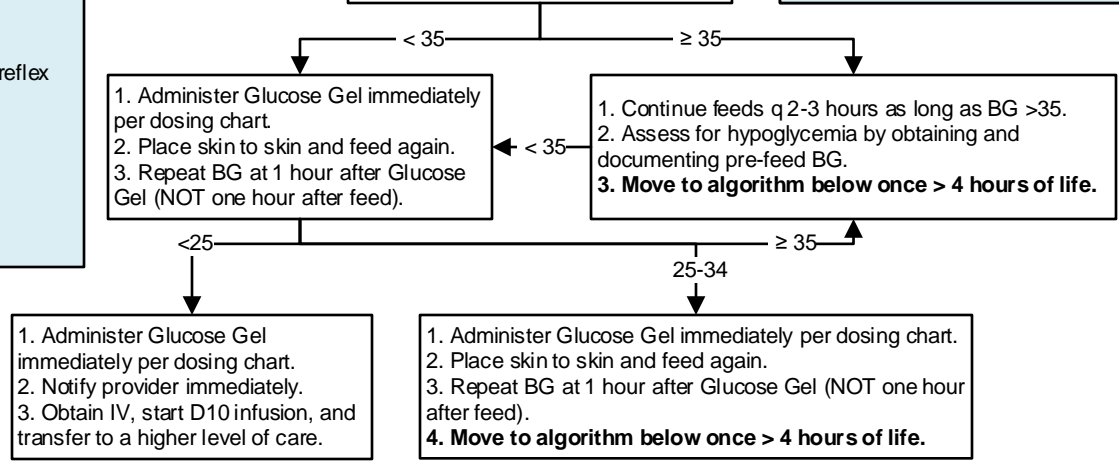
Target Glucose Levels for Age	
Birth to 4 hours of life	≥ 35 mg/dL
>4 – 24 hours of life	≥ 45 mg/dL
>24 – 48 hours of life	≥ 50 mg/dL
>48 hours of life	≥ 60 mg/dL

- Symptoms of Hypoglycemia**
- Irritability
  - Tremors/jitteriness
  - Exaggerated Moro reflex
  - High-pitched cry
  - Seizures
  - Lethargy
  - Floppiness
  - Cyanosis
  - Apnea
  - Poor Feeding

### 0-4 HOURS OF AGE

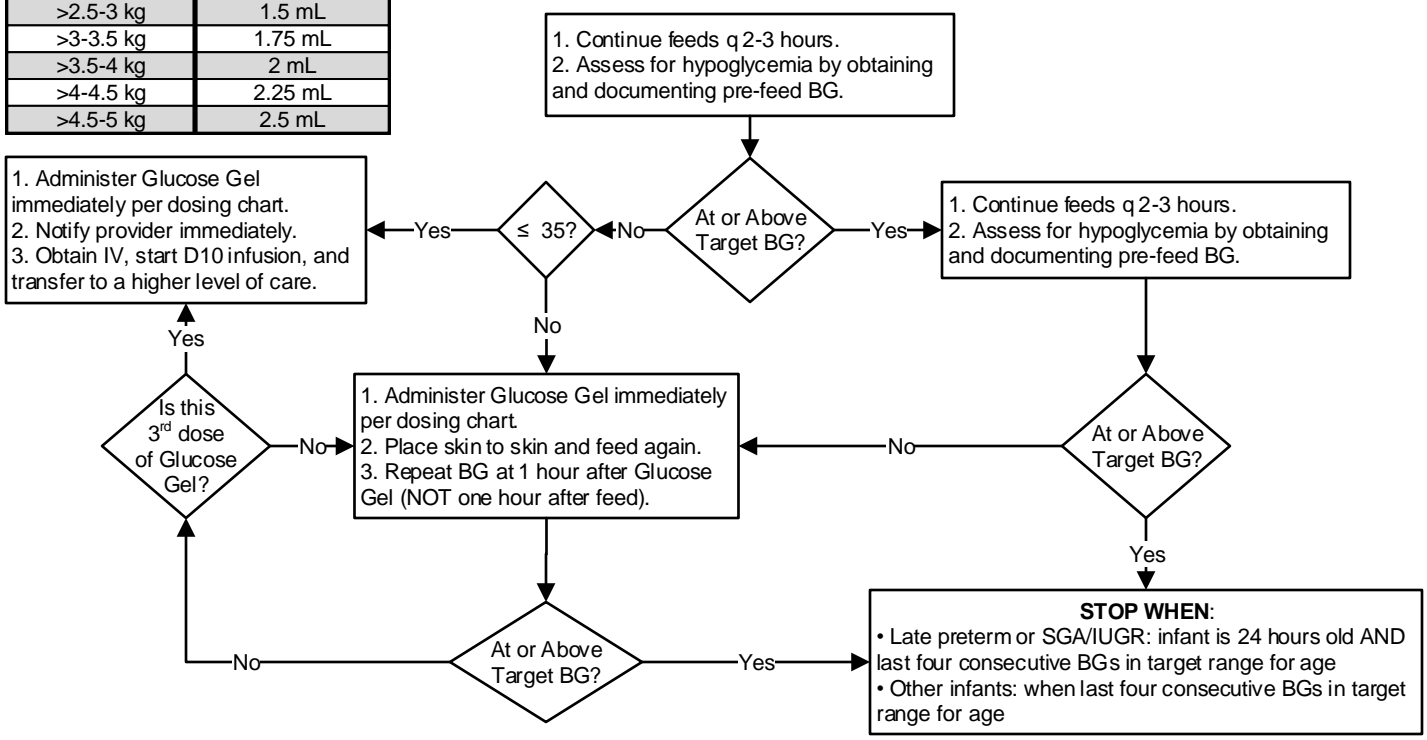
**At Risk Infants (See Indications Box)**  
Begin feeding within one hour of birth. First glucose should be obtained 30 minutes after completion of first feed.

- Indications for Screening of Asymptomatic Newborns**
- **SGA** (<10%ile BW) or IUGR
  - **LGA** (>90%ile BW)
  - Infant of Diabetic Mother
  - Late preterm (34 0/7 – 36 6/7) or post-term (>42 weeks)
  - Perinatal stress (C-section for fetal distress, maternal preeclampsia or severe HTN, etc.)
  - Physician discretion



GLUCOSE 40% GEL DOSING	
Birth Weight	Dose
≤ 2 kg	1 mL
>2-2.5 kg	1.25 mL
>2.5-3 kg	1.5 mL
>3-3.5 kg	1.75 mL
>3.5-4 kg	2 mL
>4-4.5 kg	2.25 mL
>4.5-5 kg	2.5 mL

### > 4 - 48 HOURS OF AGE



**If infant has severe symptoms or BG is <25 after first Dextrose Gel dose THE ABOVE PROTOCOL NO LONGER APPLIES.**

- Give Glucose Gel dose.
- Start IV.
- Give D10 2 mL/kg bolus at 1 mL/minute.
- Start D10 infusion at 80 mL/kg/day.
- Goal is to keep baby's serum glucose at 60.
- Check glucose 30 minutes after each bolus or rate change and Q1-2h until stable.
- If glucose remains low, give another D10 2 mL/kg bolus and increase hourly rate by 1 mL/hour.

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 12/7/21.  
Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact Amy\_Carson-Strnad@ykhc.org.



**PAMC Transfer center - 907-212-7363**  
**NICU (907) 212-3614 – Ask for attending neonatologist on call.**  
**Neonatologist direct line (for emergencies) (907) 212-2068.**

GESTATIONAL AGE (weeks)	24	26	28	30	32	34	36	38	40
ESTIMATED WEIGHT (grams)	700	900	1100	1350	1650	2100	2600	3000	3500
<b>EQUIPMENT/SUPPLIES: NG/OG Tube - 5 French + UVC &lt;32 weeks - 3.5 French + UVC ≥32 weeks - 5 French</b>									
Laryngoscope Blade	00	00	00	0	0	0	0	0-1	0-1
ETT Size	2.5	2.5	2.5-3.0	3.0	3.0	3.0-3.5	3.5	3.5-4.0	3.5-4.0
ETT Depth lip to tip. <i>Place at T2 above the carina.</i>	6.5-7 cm	6.5-7 cm	7 cm	7-7.5 cm	7.5 cm	8 cm	8.5 cm	9 cm	9.5 cm
Laryngeal mask airway (LMA)	none	none	none	none	Consult NICU.	1	1	1	1
Needle decompression. <i>See kit and protocol in neonatal code cart.</i>	18 gauge	18 gauge	18 gauge	18 gauge	18 gauge	16 gauge	16 gauge	16 gauge	16 gauge
UVC insertion. <i>Place just above diaphragm. Add umbilical stump length.</i> <b>May insert UVC 2-4 cm for emergency access.</b>	6.5 cm	6.9 cm	7.2 cm	7.5 cm	8 cm	8.7 cm	9.4 cm	10 cm	10.8 cm

<b>VITAL SIGNS: Heart Rate 120-160 + Respiratory Rate 30-60 + Mean Blood Pressure = Gestational age in weeks</b>									
<b>INITIAL VENTILATOR SETTINGS</b>									
Positive Inspiratory Pressure (PIP) cm H <sub>2</sub> O	16-22	16-22	16-22	16-22	18-24	18-24	18-24	20-28	20-28
Positive End Expiratory Pressure (PEEP) cm H <sub>2</sub> O	4-6	4-6	4-6	4-6	4-6	5-6	5-6	5-6	5-6
Inspiratory Time (seconds)	0.3-0.35	0.3-0.35	0.3-0.35	0.3-0.35	0.3-0.35	0.3-0.35	0.35-0.4	0.35-0.4	0.35-0.4
Respiratory Rate (breaths per minute)	30-45	30-45	30-45	30-45	20-40	20-40	20-40	20-40	20-40
Saturation Goal after 10 Minutes	88-95%	88-95%	88-95%	88-95%	88-95%	88-95%	88-95%	95-98%	95-98%

<b>MEDICATIONS</b>									
Epinephrine <b>IV/IO 0.1 mg/mL</b> 0.2 mL/kg. <i>May repeat every 3 minutes for asystole.</i>	0.14 mL	0.18 mL	0.22 mL	0.27 mL	0.33 mL	0.4 mL	0.5 mL	0.6 mL	0.7 mL
Epinephrine <b>ET ONLY 0.1 mg/mL</b> 1 mL/kg. <i>May repeat every 3 minutes for asystole.</i>	0.7 mL	0.9 mL	1.1 mL	1.3 mL	1.6 mL	2.1 mL	2.6 mL	3 mL	3.5 mL
Curosurf (poractant alfa 80 mg/mL) 2.5 mL/kg as a single dose. Give Curosurf <26 weeks OR 26-29 weeks requiring ≥40% FiO <sub>2</sub> OR >29 weeks with CXR-proven RDS. See <a href="#">guideline</a> for more details.	1.8 mL	2.2 mL	2.8 mL	3.4 mL	4 mL	5.2 mL	6.6 mL	7.6 mL	8.8 mL
<b>FOR HYPOGLYCEMIA:</b> Give D10 bolus 2 mL/kg IV/IO at 1 mL/min. Increase D10 maintenance fluid rate by 1 mL/hour for <2 kg or 2 mL/hour for ≥2 kg.	1.4 mL	1.8 mL	2.2 mL	2.7 mL	3.3 mL	4.2 mL	5.2 mL	6 mL	7 mL
Ampicillin ( <b>Dilute to 100 mg/mL</b> ) 50 mg/kg IV/IM	35 mg (0.35 mL)	45 mg (0.45 mL)	55 mg (0.55 mL)	68 mg (0.68 mL)	83 mg (0.83 mL)	105 mg (1.05 mL)	130 mg (1.3 mL)	150 mg (1.5 mL)	175 mg (1.75 mL)
Gentamicin (2 mg/mL) 5 mg/kg IV as one-time dose. May give IM. <b>DO NOT USE IN VILLAGE.</b>	3.5 mg (1.75 mL)	4.5 mg (2.25 mL)	5.5 mg (2.75 mL)	6.8 mg (3.4 mL)	8.2 mg (4.1 mL)	10.4 mg (5.2 mL)	13 mg (6.5 mL)	15 mg (7.5 mL)	17.6 mg (8.8 mL)
Volume Expanders: NS or albumin 10 mL/kg IV/IO. Give over 15-30 minutes; give faster if unstable; give slower for extreme premies.	7 mL	9 mL	11 mL	13.5 mL	16.5 mL	21 mL	26 mL	30 mL	35 mL
D10 Maintenance Fluids: <750 grams give 90-100 mL/kg/24 hours + ≥750 grams give 80 mL/kg/24 hours. Goal blood glucose is 50-110 mg/dL.	3 mL/hour	3 mL/hour	3.7 mL/hour	4.5 mL/hour	5.5 mL/hour	7 mL/hour	8.7 mL/hour	10 mL/hour	12 mL/hour
Phenobarbital (130 mg/mL) 10 mg/kg IV/IO/IM/PR. May give additional 10 mg/kg dose.	7 mg (0.05 mL)	9 mg (0.07 mL)	11 mg (0.08 mL)	13.5 mg (0.1 mL)	16.5 mg (0.13 mL)	21 mg (0.16 mL)	26 mg (0.2 mL)	30 mg (0.23 mL)	35 mg (0.27 mL)



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### Epinephrine 0.1 mg/mL

- This is the pre-filled syringe concentration.
- Draw up doses by inserting needle through the thick rubber stopper.
- Flush with 3 mL of NS regardless of weight or gestational age.

### Ampicillin 100 mg/mL

Products needed:

- Ampicillin 500 mg vial
- Sterile water for injection, 10 mL vial

How to mix:

1. Reconstitute 500 mg vial with 4.8 mL sterile water for injection. This will result in a 100 mg/mL final concentration.
2. The Neonatal Resuscitation Summary (page 1) lists the total dose and volume – draw up dose from vial.
3. Dose must be used within 1 hour of reconstitution.

Administration:

- Doses less than 500 mg can be injected via slow IV push over 3 to 5 minutes.
- Not compatible with D10W.
- Administer before gentamicin – do not administer at the same time.

### Gentamicin 2 mg/mL

Product needed:

- Gentamicin 100 mg/50 mL pre-mixed bag.

**DO NOT ADMINISTER THE BAG – the dose will be administered via syringe pump.**

The Neonatal Resuscitation Summary (page 1) lists the total dose and volume – draw up this volume from the bag and **immediately dispose of the bag.**

Administration:

- Administer after ampicillin – do not administer at the same time.
- Administer via **syringe pump** over 30 minutes.
- Compatible with D10W.

Rapid Sequence Intubation Medications: Consult NICU prior to use. Do not use in routine resuscitation. Consider for surfactant administration and in difficult airway.									
GESTATIONAL AGE (weeks)	24	26	28	30	32	34	36	38	40
ESTIMATED WEIGHT (grams)	700	900	1100	1350	1650	2100	2600	3000	3500
Atropine (0.1 mg/mL) – 0.02 mg/kg	0.01 mg (0.1 mL)	0.02 mg (0.2 mL)	0.02 mg (0.2 mL)	0.03 mg (0.3 mL)	0.03 mg (0.3 mL)	0.04 mg (0.4 mL)	0.05 mg (0.5 mL)	0.06 mg (0.6 mL)	0.07 mg (0.7 mL)
Fentanyl (**10 mcg/mL**) – 1 mcg/kg (May repeat dose once.) <b>Push slowly over 3-5 minutes.</b> Have dose of rocuronium drawn up in case of chest wall rigidity.	0.7 mcg (0.07 mL)	0.9 mcg (0.09 mL)	1.1 mcg (0.11 mL)	1.4 mcg (0.14 mL)	1.7 mcg (0.17 mL)	2.1 mcg (0.21 mL)	2.6 mcg (0.26 mL)	3 mcg (0.3 mL)	3.5 mcg (0.35 mL)
Rocuronium (10 mg/mL) – 0.6 mg/kg <b>Do not routinely use. Reserve for difficult airways.</b>	0.4 mg (0.04 mL)	0.5 mg (0.05 mL)	0.7 mg (0.07 mL)	0.8 mg (0.08 mL)	1 mg (0.1 mL)	1.3 mg (0.13 mL)	1.6 mg (0.16 mL)	1.8 mg (0.18 mL)	2.1 mg (0.21 mL)
Naloxone (0.4 mg/mL) – 0.1 mg/kg	0.07 mg (0.18 mL)	0.09 mg (0.23 mL)	0.11 mg (0.28 mL)	0.14 mg (0.35 mL)	0.16 mg (0.4 mL)	0.2 mg (0.5 mL)	0.26 mg (0.65 mL)	0.3 mg (0.75 mL)	0.35 mg (0.9 mL)

### Fentanyl 10 mcg/mL

Products needed:

- Fentanyl 50 mcg/mL, 2 mL vial
- Preservative-free normal saline

How to mix:

1. Draw up 1 mL of fentanyl 50 mcg/mL.
2. Add to 4 mL of normal saline.

Administration:

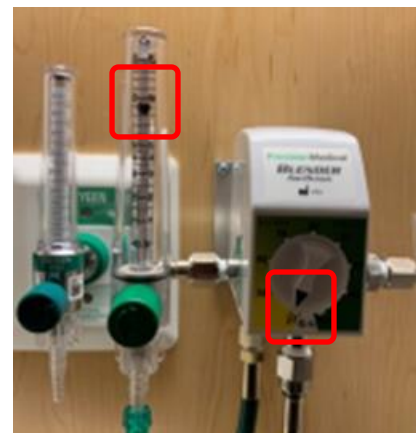
- Inject via slow IV push over 3 to 5 minutes.
- If chest wall rigidity develops, give dose of rocuronium or naloxone.

### RSI Drug Notes

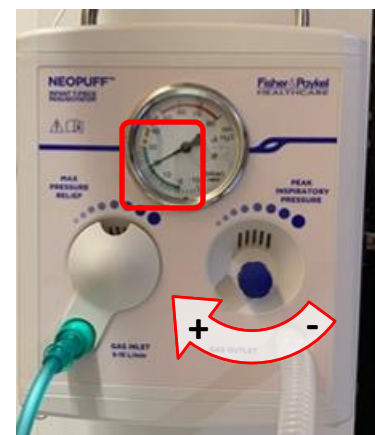
- Drug Locations:
  - Atropine and naloxone located in neonatal code cart.
  - Fentanyl 50 mcg/mL and rocuronium located in OB Pyxis.
- May flush with 0.5-1 mL of NS if needed.



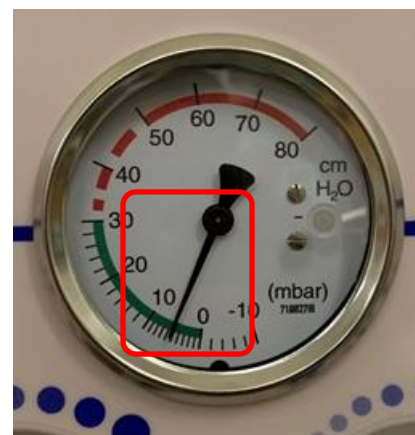
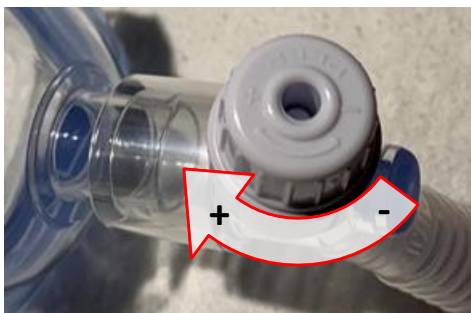
Attach the oxygen tubing to a 15 L flow meter.  
Set blender to 21% and consider increasing depending on clinical status.  
Set the flow meter to **10 L**.



Occlude both the mask and the hole.  
Set the PIP: Turn the knob labeled Peak Inspiratory Pressure until the arrow on the dial points to **20**.



Occlude only the mask.  
Set the PEEP: Turn the PEEP knob until the arrow on the dial points to **5**.

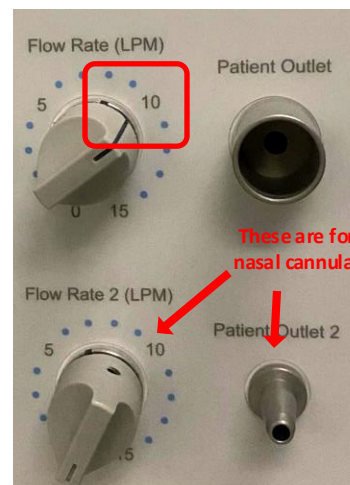
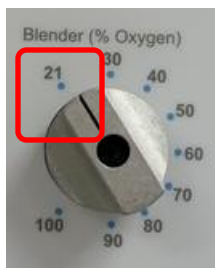


Troubleshooting: If you cannot achieve the desired pressures, try changing the liters on the flow meter or turning the Max Pressure Relief knob located under the flap.

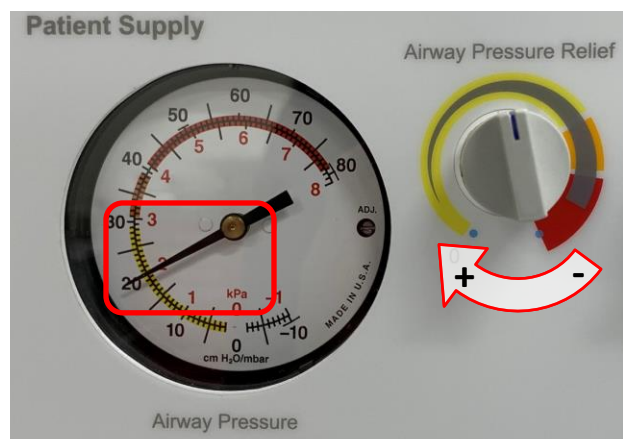
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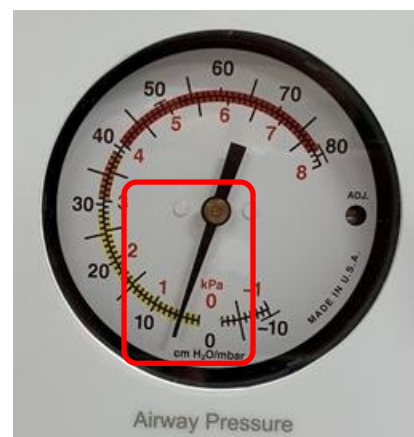
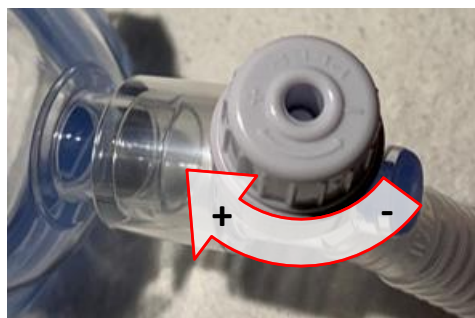
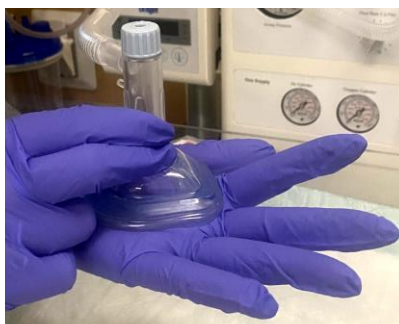
- Turn Gas Supply switch on. Down is ON.
- Set blender to 21% and consider increasing depending on clinical status.
- Set the top flow meter to **10 L**.
- The bottom flow meter is for use with nasal cannula.



- Occlude both the mask and the hole.
- Set the PIP: Turn the knob labeled Airway Pressure Relief until the arrow on the dial points to **20**.



- Occlude only the mask.
- Set the PEEP: Turn the PEEP knob until the arrow on the dial points to **5**.



Troubleshooting: If you cannot achieve the desired pressures, try changing the liters on the flow meter.



### Indications for Curosurf®

- GA < 26 weeks.
- GA 26-29 weeks with supplemental oxygen requirement  $\geq$  40%.
- GA > 29 weeks with CXR-proven RDS.

### Curosurf® Storage

- Curosurf® is stored at 36-46°F.
- If warmed and not opened or used, may be returned to refrigerated storage one time.
- Curosurf® is located in the OB medication refrigerator. If going on a medevac, ask the nurses to get the Curosurf®. It can be stored in a pink thermal bag that is kept next to it in the refrigerator.

### Reference:

See this [YouTube video](#) for a demonstration of the Y catheter.

### Preparation of Curosurf®

- Warm to room temperature and gently invert. Do not shake.
- Choose Curosurf® dose using the [Neonatal Resuscitation Summary](#) using estimated gestational age. If weight is known, calculate dose to be 2.5 mL/kg.
- Draw up total Curosurf® dose using a 20 gauge or larger needle.

### Preparation of Equipment and Patient

- Prior to intubation, if possible, check the ETT cap and make sure it comes on and off easily.
- Make sure you have the correct size Y cap for the ETT size.
- Check fit of Y cap on ETT. Attach catheter and feed it down the tube until it is ½ cm past the tip. Look for the number or color that will tell you the depth of the catheter at this point.
- Intubate patient with ETT cap on tube.
- Verify placement and secure tube.

### Administration of Curosurf®

- Infant should be supine.
- Disconnect Neopuff, bag, or ventilator.
- Remove ETT cap and replace with Y cap. (If ETT cap is stuck, cut the tube as high as possible and then place the Y cap.)
- Attach the Neopuff or bag to the larger port on the Y cap.
- Attach the catheter to the smaller port on the Y cap and advance it until it is at the desired depth.
- Inject the syringe of Curosurf® through the catheter.
- Pull the catheter all the way out but leave attached.
- Bag the baby at a rate of 40-60 breaths/minute for one minute.
- Allow the baby to recover.
- Remove the Y cap and replace the ETT cap.
- Resume ventilation.
- Do not suction for one hour after administration unless required for obstruction.
- Remember to adjust pressure on Neopuff as lung compliance improves.



### Preparation in the Village for the Health Aides

- Turn the heat up until everyone is sweating. May need extra space heaters.
- In the warmest part of the clinic, prepare a table with clean blankets, towels, saran wrap, etc.
- If the clinic has a dryer, instruct the health aides to warm the blankets there prior to birth.
- Ensure the following are prepared and functional: suction, oxygen tanks and tubing, BVM with smallest available mask, bulb suction.
- If available, set up desk lamps with old-style bulbs (not the spiral energy-efficient bulbs) to generate more heat.
- Seek out extra health aides or former health aides to help.

### Preparation for Medevac

- Review prenatal history and note risk factors for the baby.
- Coordinate with family medicine hospitalist activating the medevac and LifeMed crew about when to meet at the hangar. The LifeMed hangar is located at 3600 Tower Road.
- Turn over the Tiger Connect role for "Peds Wards on Duty" to another pediatrician or the family medicine hospitalist staying behind.
- Establish roles with LifeMed crew. Discuss doses and equipment based on estimated GA.

### What to Bring

- Curosurf if GA <32 weeks or unknown: located in the OB medication refrigerator. Place in pink thermal case.
- OB & Pediatric Village Delivery Backpack containing OB and pediatric supplies located in the nursery.
- Resources: [Neonatal Resuscitation Summary](#), [Surfactant Administration](#), [Neopuff Set Up Guide](#), [Pneumothorax Evacuation](#), [Neonatal Glucose Screening Guideline](#).
- Warm clothing. (There is extra warm gear under the bed in the peds call room)
- Snacks, drinks, money, motion sickness medication.

### Resuscitation

- Resuscitate per NRP algorithm. Remember that CPAP is a great tool for non-invasive respiratory support for transport.

#### For infants <32 weeks:

- Place infant directly into polyurethane bag without drying. If intubated, bag may cover face/head.
- Attempt IV or UVC access early.
- See [Surfactant Protocol](#), if indicated.

### Prior to Transport

- Communicate with OB staff so they are prepared.
- Ensure an Anchorage team has been activated, if needed.

### Delivery is Imminent

- Set up monitor, Neopuff, and intubation equipment (all carried by LifeMed), using sizes recommended by [Neonatal Resuscitation Summary](#).
- Activate chemical mattress just prior to delivery. Cover with single baby blanket.

#### For High Risk Deliveries, including GA <32 weeks:

- Discuss with neonatologist early – call (907) 212-3614.
- Activate medevac to Anchorage. Consider direct transfer from village, ramp transfer in Bethel, or further stabilization with NICU team in Bethel, as appropriate.
- Prepare polyurethane bag.

### Delivery is not Imminent

- Hospitalist assesses mother, does vaginal exam, obtains cultures, etc.
- LifeMed crew cares for mother.
- Pediatrician should help however possible and otherwise stay out of the way.
- Occasionally a mother will be transported to Bethel dilated and in labor. This decision is made if the benefit of being at a higher level of care outweighs the risks of potential delivery en route.

### Medications

- Give erythromycin to eyes and vitamin K IM if infant is stable.
- Hepatitis B and HBIg can wait until arrival in Bethel.
- Give ampicillin per Neonatal Resuscitation Summary for all preterm and high risk infants.
- Gentamicin should not be given in the village, as it is high-risk.

### Temperature

- Hypothermia in newborns is defined as temp <97.7°F.
- Cold babies do very poorly. It is better to over-prepare (use a polyurethane bag in term babies, etc.) rather than under-prepare.
- The baby pod carried by LifeMed does not have a heat source. It will not generate heat. Avoid placing the baby into it until it has warmed from being outside.
- Check axillary temperature at 5 minutes of life and then Q30 minutes.
- Place a hat and/or saran wrap on the baby as soon as possible.
- Do not remove hat, chemical mattress, or polyurethane bag until arrived at YKHC.
- You may tear holes in the bag to gain access to the baby for procedures.
- Avoid weighing premature babies, as this frequently contributes to heat loss in the village.

### Glucose

- Check glucose as soon as possible.
- See [Neonatal Glucose Screening Guideline](#). Goal glucose is >35 in first four hours of life.
- On babies <32 weeks, start D10 maintenance as soon as IV access has been established.
- If unable to get a glucose, have a low threshold to give sugar in preterm or high risk infants.
- If oral dextrose gel unavailable, may give Sweetease, oral glucose, colostrum, formula, or homemade sugar paste. May smear on gums for buccal absorption.

### Procedures

#### Intubation

- Prepare equipment.
- Wipe upper lip and rest of face.
- If need for sedation is anticipated, use morphine 0.05 mg/kg.
- Intubate and confirm placement with auscultation and ET<sub>CO</sub><sub>2</sub> detector.
- Tape tube with Benzoin and tape.
- Consider using Neopuff to ventilate en route rather than ventilator.

#### UVC (Always attempt PIV placement first unless infant is very unstable.)

- Use sterile technique.
- Flush catheter and stopcock with sterile saline. NOTE: the syringes for premade saline flushes are not sterile. You will have to use a sterile syringe to draw up flushes from a NS bag.
- If baby is in polyurethane bag, tear a small opening in the plastic.
- Place the UVC just far enough to get blood return.
- Cover skin around umbilicus with Tegaderm. Tape the UVC to the Tegaderm to secure it.

See [Surfactant Administration](#) and [Pneumothorax Evacuation](#) Resources.

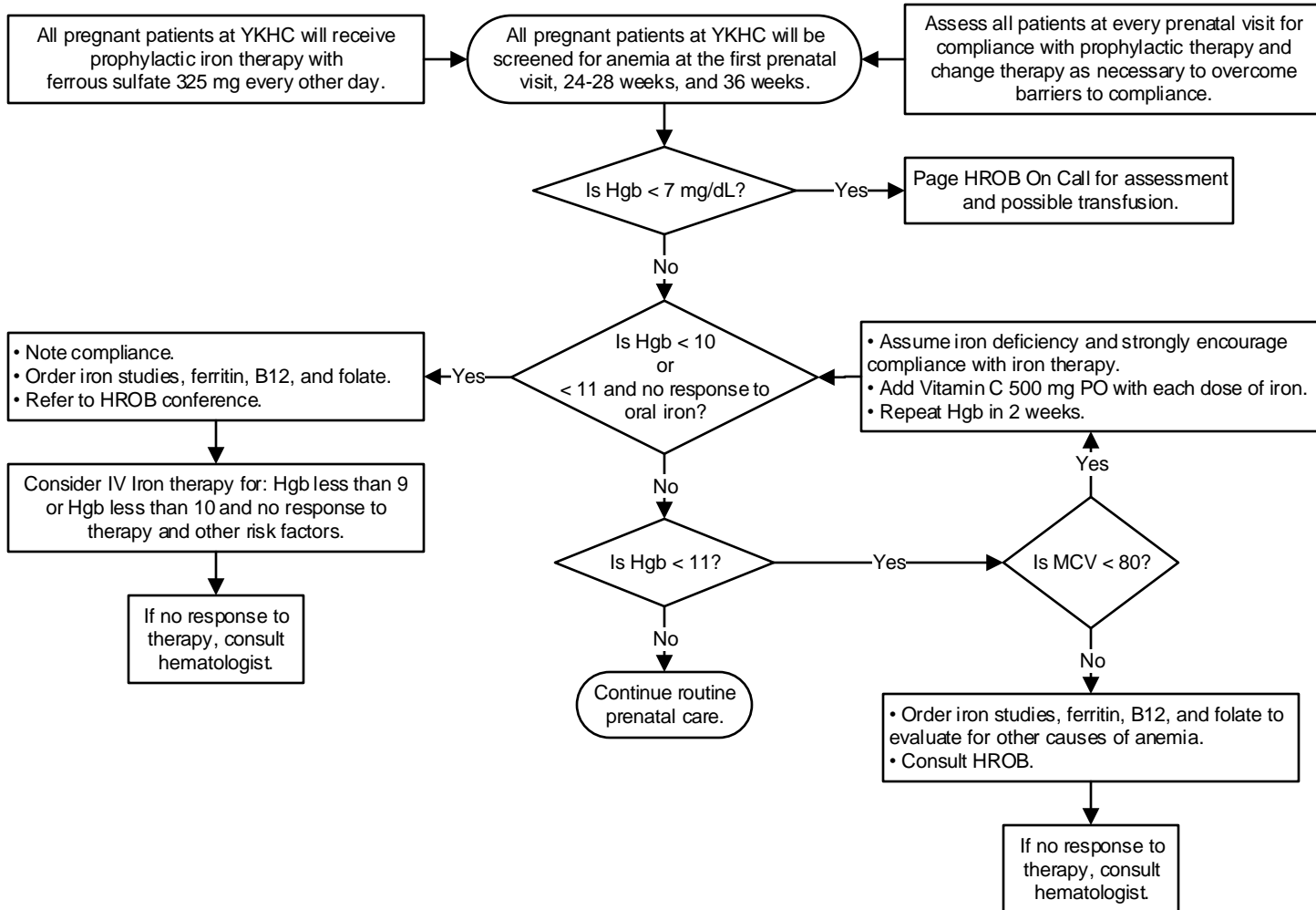
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Approved by Clinical Guidelines Committee 11/27/22.

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Soft Marker	Aneuploidy Evaluation	Antenatal Management	Follow-up Imaging
<b>Echogenic intracardiac focus</b>	<ul style="list-style-type: none"> <li>• cfDNA or quad screen negative: none</li> <li>• No previous screening: counseling for noninvasive testing for aneuploidy</li> </ul>	Routine care	N/A
<b>Echogenic bowel</b>	<ul style="list-style-type: none"> <li>• cfDNA or quad screen negative: none</li> <li>• No previous screening: counseling for noninvasive testing for aneuploidy</li> </ul>	Evaluation for cystic fibrosis, congenital viral infection, intra-amniotic bleeding	Third-trimester ultrasound examination for reassessment and evaluation of growth
<b>Choroid plexus cyst</b>	<ul style="list-style-type: none"> <li>• cfDNA or quad screen negative: none</li> <li>• No previous screening: counseling for noninvasive testing for aneuploidy</li> </ul>	Routine care	N/A
<b>Single umbilical artery</b>	cfDNA or quad screen negative or no previous screening: none	Consideration for weekly antenatal surveillance beginning at 36 0/7 week of gestation	Third-trimester ultrasound examination for evaluation of growth
<b>Urinary tract dilation</b>	<ul style="list-style-type: none"> <li>• cfDNA or quad screen negative: none</li> <li>• No previous screening: counseling for noninvasive testing for aneuploidy</li> </ul>	Evaluation for persistence, with frequency of evaluation dependent on initial findings	Third-trimester ultrasound examination to determine whether postnatal pediatric urology or nephrology follow-up is needed
<b>Shortened humerus, femur, or both</b>	<ul style="list-style-type: none"> <li>• cfDNA or quad screen negative: none</li> <li>• No previous screening: counseling for noninvasive testing for aneuploidy</li> </ul>	Evaluation for skeletal dysplasias	Third-trimester ultrasound examination for reassessment and evaluation of growth
<b>Thickened nuchal fold</b>	<ul style="list-style-type: none"> <li>• cfDNA negative: none</li> <li>• Quad screen negative: counseling for no further testing vs noninvasive vs invasive testing for aneuploidy</li> <li>• No previous screening: counseling for noninvasive vs invasive testing for aneuploidy</li> </ul>	Routine care	N/A
<b>Absent or hypoplastic nasal bone</b>	<ul style="list-style-type: none"> <li>• cfDNA negative: none</li> <li>• Quad screen negative: counseling for no further testing vs noninvasive vs invasive testing for aneuploidy</li> <li>• No previous screening: counseling for noninvasive vs invasive testing for aneuploidy</li> </ul>	Routine care	N/A

### Abbreviations

- cfDNA: cell-free DNA – order in RAVEN as MatemiT21
- CF: cystic fibrosis
- Quad screen: order in RAVEN as AFP Maternal (Quad Screen)

### Contact

MFM: Send referral through RAVEN via “Refer to Obstetrics External – Perinatology.”  
For non-beneficiaries, place this order AND send a message to Women’s Health Case Manager to ensure it is sent to the correct place.

### Source

Society for Maternal-Fetal Medicine. SMFM Consult Series #57: Evaluation and management of isolated soft ultrasound markers for aneuploidy in the second trimester. Am J Obstet Gynecol 2021.

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 Clinical Guideline Committee 3/24/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Someone@ykhc.org](mailto:Someone@ykhc.org).



### Abbreviations and Definitions

- **Glucose Screening Test (GST):** fasting or fed plasma glucose value one hour after 50 gram glucose load.
- **Gestational Glucose Tolerance Test (GGTT):** fasting plasma glucose value one hour and two hours after 75 gram glucose load.
- **BGM:** Blood Glucose Monitoring
- **Pre-gestational Diabetes:** patient with diagnosis of diabetes prior to pregnancy.
- **DSMES:** Diabetes Self-Management Education and Support

### Block Testing

Monitoring at different times of the day to identify patterns. For example, on some days the patient will check fasting levels, on other days check pre-meal levels, and on other days check levels 1-2 hours post-meal.

### Diagnostic Criteria for GDM Utilizing Two Hour 75 g GGTT

Pregnant patient with any of the following:  
Fasting glucose  $\geq 92$  mg/dL  
1 hour after oral load, glucose  $\geq 180$  mg/dL  
2 hours after oral load, glucose  $\geq 153$  mg/dL

### BGM Targets

- Fasting glucose  $< 95$  mg/dL
- 2 hour post-prandial glucose  $< 120$  mg/dL
- 1 hour post-prandial glucose  $< 140$  mg/dL

### Patients with Suboptimal Participation in Care

- Send letter after two weeks of not sending in sugar logs or two weeks of  $< 25\%$  of expected readings.
- Consider admission to monitor blood sugars.
- Consider transfer to ANMC at 32 weeks.

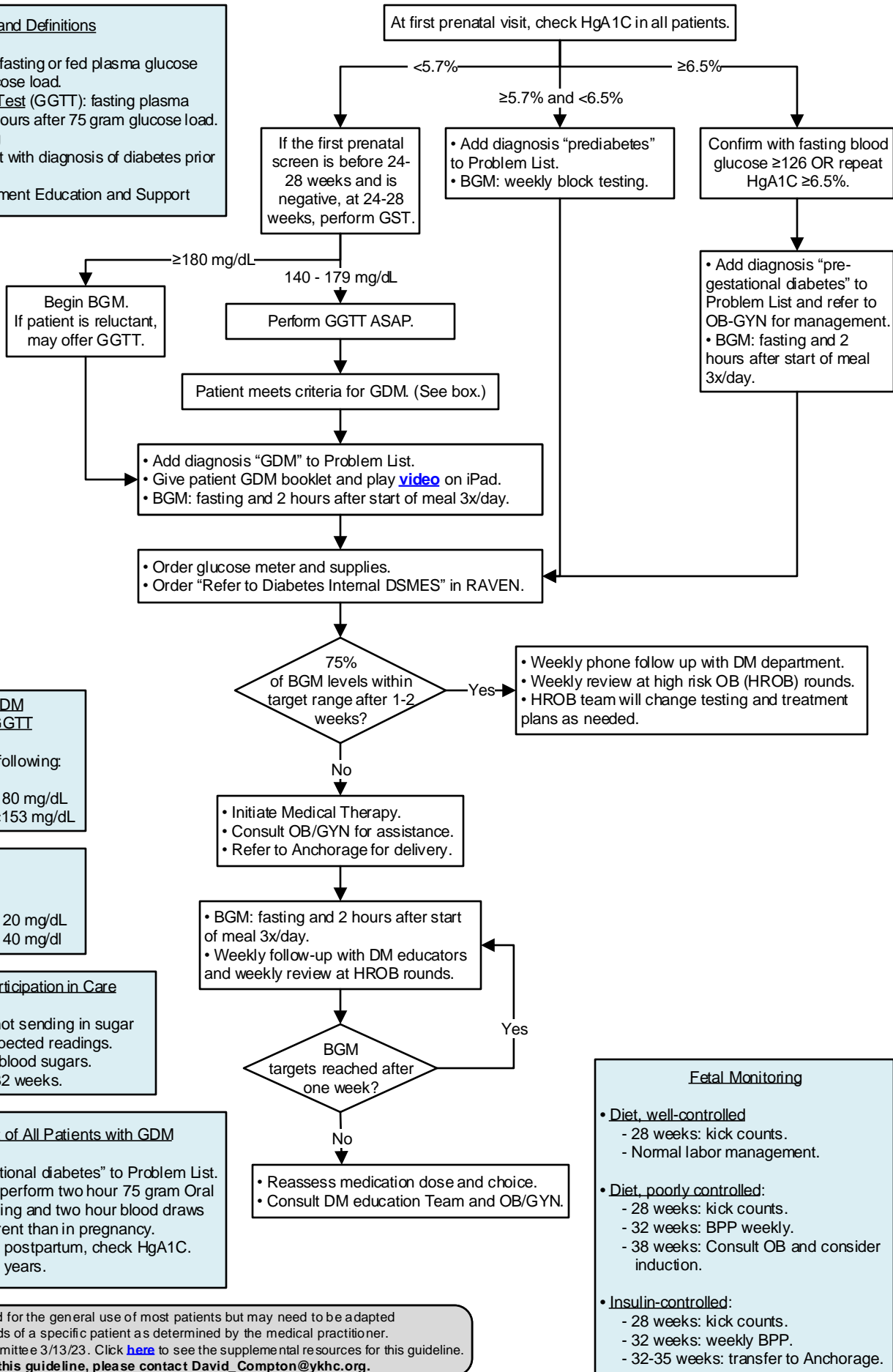
### Postpartum Management of All Patients with GDM

- Add diagnosis "History of gestational diabetes" to Problem List.
- At the 6 week postpartum visit, perform two hour 75 gram Oral Glucose Tolerance Test with fasting and two hour blood draws only. NOTE: the criteria are different than in pregnancy.
- As an alternative, at  $> 12$  weeks postpartum, check HgA1C.
- Diabetes screening every three years.

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### Fetal Monitoring

- **Diet, well-controlled**
  - 28 weeks: kick counts.
  - Normal labor management.
- **Diet, poorly controlled:**
  - 28 weeks: kick counts.
  - 32 weeks: BPP weekly.
  - 38 weeks: Consult OB and consider induction.
- **Insulin-controlled:**
  - 28 weeks: kick counts.
  - 32 weeks: weekly BPP.
  - 32-35 weeks: transfer to Anchorage.



### D&C Prior to Methotrexate?

D&C 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 minor, self-limited side effects from the medication, including nausea, mouth ulcers, and GI cramps.
- Most patients have some lower abdominal pain on the 3-6<sup>th</sup> 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

### Single Dose Regimen

- Single dose MTX 50 mg/m<sup>2</sup> IM on 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 50 mg/m<sup>2</sup> and repeat hCG measurement on days 4 and 7 after second dose.

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

Ectopic Pregnancy diagnosed after consultation with HROB or OB/GYN.

### Work-up

- Quantitative hCG
- Type and Screen
- CBC
- Comprehensive Metabolic Panel
- Transvaginal Pelvic Ultrasound (US)

Hemodynamically stable?

No → Consult HROB for immediate surgery or transfer.

Yes

Adnexal Mass ≥ 4 cm  
Cardiac activity  
Pregnancy in location other than a tube

Yes → Consult HROB for immediate surgery or transfer.

No

Platelets,  
kidney,  
and liver function  
normal?

No → Consult HROB for immediate surgery or transfer.

Yes

Is the  
hCG >5000 or is  
there a large  
mass?

No → Single Dose Regimen

Yes → Two Dose Regimen

### Two Dose Regimen

- Administer 50 mg/m<sup>2</sup> on day 1.
- Repeat 50 mg/m<sup>2</sup> on day 4.
- Measure hCG levels on days 4 and 7, and expect a 15% decrease between days 4 and 7.
- If the decrease is greater than 15%, measure hCG levels weekly until reaching non-pregnant level.
- If less than a 15% decrease in hCG levels, readminister MTX 50 mg/m<sup>2</sup> on days 7 and 11, measuring hCG levels.
- If hCG levels decrease 15% between days 7 and 11, continue to monitor weekly until non pregnant hCG levels are reached.



#### Nomenclature

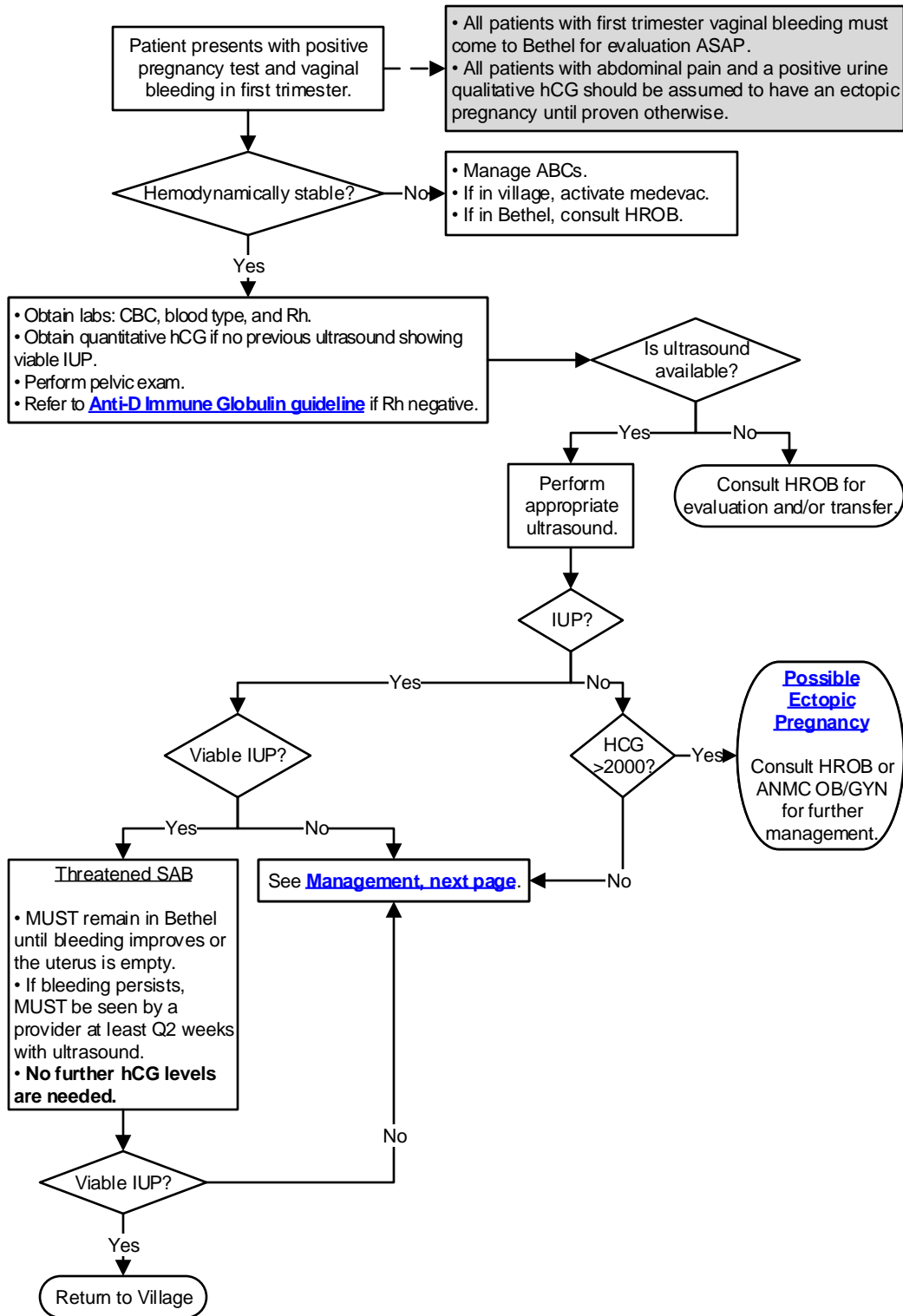
- **Viable:** A pregnancy is viable if it can potentially result in a liveborn baby.
- **Nonviable:** A pregnancy is nonviable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are nonviable.
- **Intrauterine pregnancy of uncertain viability:** A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

#### Findings Diagnostic of Pregnancy Failure

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

#### Comments

- In a patient 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 15 mm or more has no visible cardiac activity.
- Point of care ultrasound performed in the ED or clinic is an ultrasound for the purposes of this guideline. The ultrasound does not need to be performed in Diagnostic Imaging.





### Nomenclature

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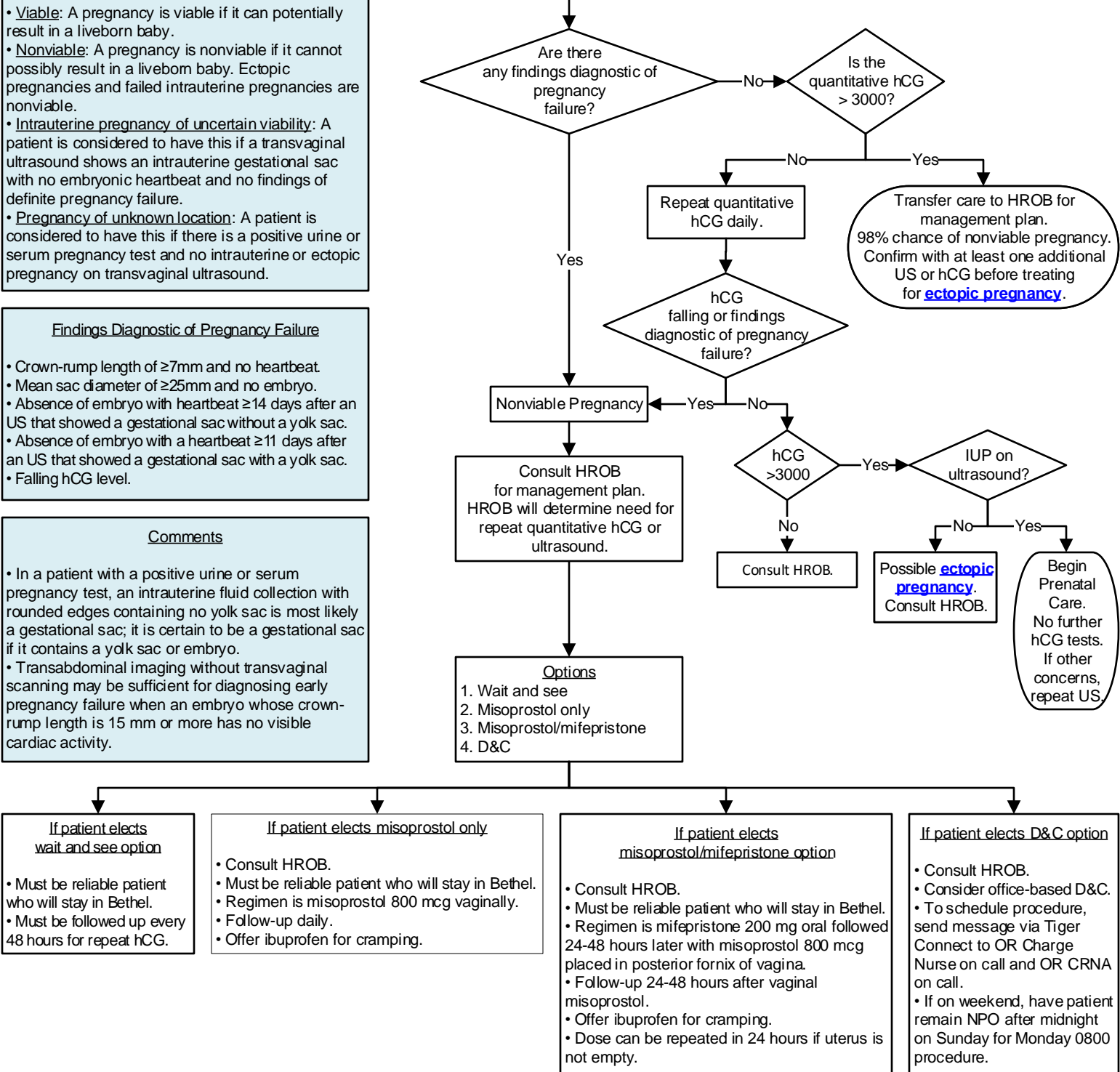
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- Absence of embryo with a heartbeat  $\geq 11$  days after an US that showed a gestational sac with a yolk sac.
- Falling hCG level.

### Comments

- In a patient 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 15 mm or more has no visible cardiac activity.

Pregnancy of uncertain viability or unknown location



### Following hCG to negative

- Contact GYN CM at 543-6557 or send communication in RAVEN to Women's Health Case Manager Pool.
- CM will follow hCG levels in consultation with HROB.

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Please give out [this patient education handout](#), which explains these treatment options.



#### Maternal GBS Prophylaxis

#### Use the GBS App

to determine need for prophylaxis and antibiotic of choice for GBS prevention

Web version: <https://www2a.cdc.gov/vaccines/m/gbs3/gbs.html>

or

Download for your smartphone.

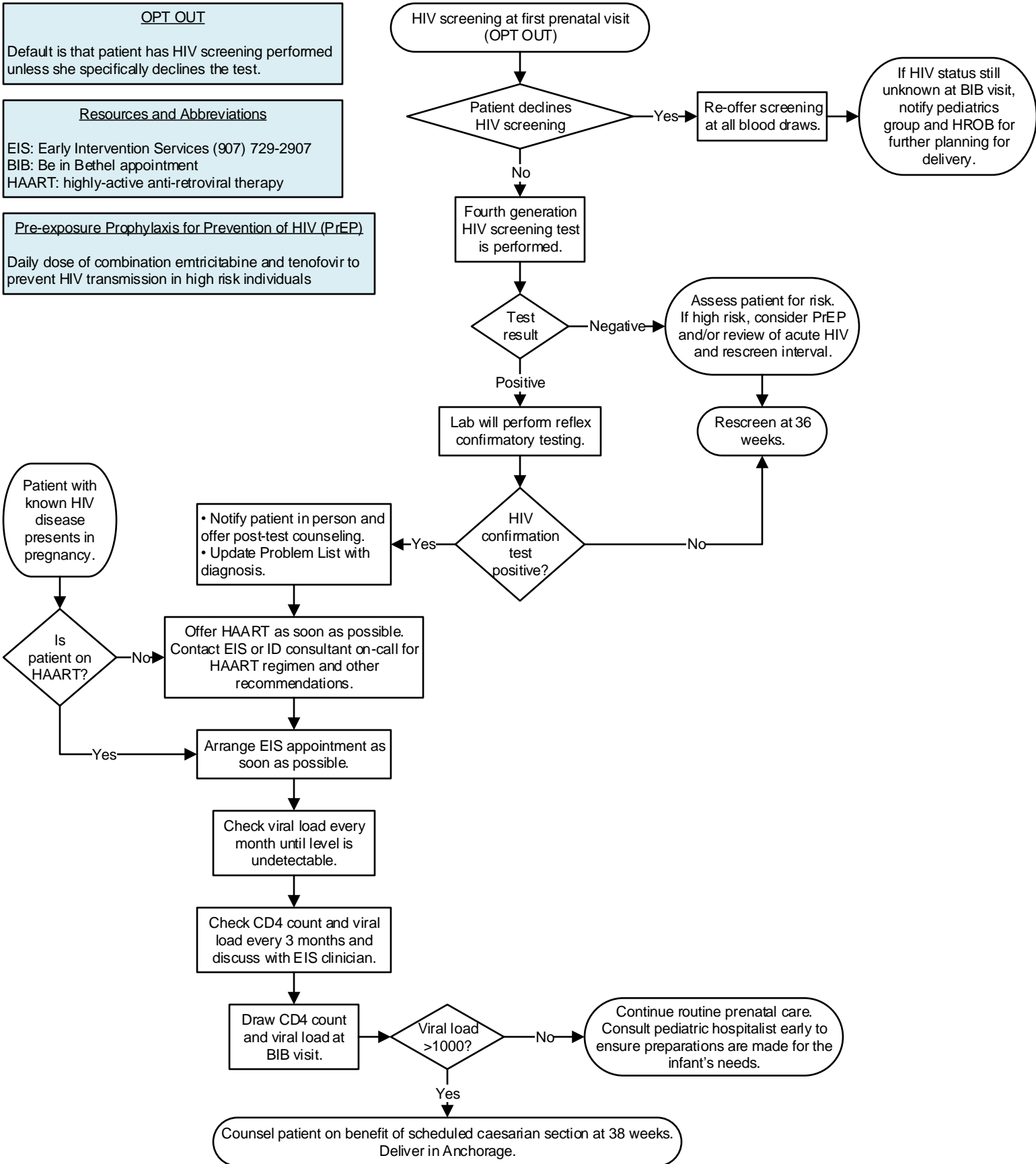
Please note: YKHC does not use the neonatal option available here. Please see the [Newborn Early-Onset Sepsis/GBS guideline](#) for more details.



**OPT OUT**  
Default is that patient has HIV screening performed unless she specifically declines the test.

**Resources and Abbreviations**  
EIS: Early Intervention Services (907) 729-2907  
BIB: Be in Bethel appointment  
HAART: highly-active anti-retroviral therapy

**Pre-exposure Prophylaxis for Prevention of HIV (PrEP)**  
Daily dose of combination emtricitabine and tenofovir to prevent HIV transmission in high risk individuals



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Diagnostic Criteria

History of hypertension (BP  $\geq$  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

Gestational Hypertension (GH) Diagnostic Criteria

BP  $\geq$ 140/90 measured on two occasions at least four hours apart.

First Prenatal Visit with History of Chronic Hypertension

- Obtain preeclampsia labs.
- Refer to HROB meeting for discussion.

Preeclampsia Labs

- CBC
- CMP
- Random urine protein to creatinine ratio

Severe HTN, renal, cardiac, or connective tissue disorders?

Yes → Refer to ANMC OB Service.

No ↓

First Trimester

- Monitor BP every 2-4 weeks.
- Fetal ultrasound to confirm EDC prior to 14 weeks gestation.

Severe Features of Preeclampsia

- sBP  $\geq$  160 OR dBP  $\geq$  110
- Renal insufficiency
- Pulmonary edema
- Thrombocytopenia (platelets  $<$ 100K)
- Impaired liver function
- IUGR
- Cerebral or visual symptoms
- Severe, unremitting headache

Second Trimester

- Monitor BP every 2-4 weeks.
- If patient with symptoms of severe features of preeclampsia, obtain preeclampsia labs and see [Hypertension, Severe](#) guideline for further management.
- Aspirin 162 mg daily starting at 12 weeks gestation and continuing until delivery to prevent complications.
- After 20 weeks, serial fetal U/S every 4 weeks to evaluate growth.

Superimposed preeclampsia present?

Yes → Refer to [Gestational Hypertension/Preeclampsia](#) guideline.

No ↓

Signs/Symptoms of Superimposed Preeclampsia

- Any signs/symptoms of severe features
- Worsening proteinuria
- Worsening hypertension

Third Trimester

- Monitor BP every 2 weeks.
- If patient with symptoms of severe features of preeclampsia, obtain preeclampsia labs and see [Hypertension, Severe](#) guideline for further management.
- BPP weekly after 34 weeks gestation.
- NST/AFI anytime patient is in Bethel between 28-36 weeks.

Consult OB/GYN at 37 weeks for timing of delivery.  
 MUST be delivered by the EDC or transferred to Anchorage.

Any patient with hypertension in pregnancy should have blood pressure monitored for at least two weeks postpartum.

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**How to Take a BP**

- Patient should be seated for 15 minutes and calm.
- Patient should not chew or smoke.
- The appropriate sized BP cuff should be used.

**Severe Features of Preeclampsia**

- sBP  $\geq$  160 OR dBP  $\geq$  110
- Renal insufficiency
- Pulmonary edema
- Thrombocytopenia (platelets  $<$ 100K)
- Impaired liver function
- IUGR
- Cerebral or visual symptoms
- Severe, unremitting headache

\*If random protein to creatinine ratio is between 0.15 and 0.3, obtain 24 hour urine protein.  
 - If  $\geq$ 300, diagnosis is preeclampsia.  
 - If  $<$ 300, diagnosis is gestational hypertension.

**Gestational Hypertension (GH) Diagnostic Criteria**

- BP  $\geq$ 140/90 measured on two occasions at least four hours apart.
- Only one elevated BP is needed to proceed with this guideline.

If patient  $<$  20 weeks, refer to [Chronic Hypertension in Pregnancy guideline](#).

**Full Maternal/Fetal Evaluation**

- Preeclampsia labs (see box)
- Tests for fetal wellbeing (NST, BPP)
- Ultrasound for growth

**Preeclampsia Labs**

- CBC
- CMP
- Random urine protein to creatinine ratio

Any signs or symptoms of severe features?

**Preeclampsia/Gestational Hypertension with Severe Features**

Treat blood pressure per [Hypertension, Severe](#) guideline.

Admit and consult OB/GYN.

- Magnesium sulfate: 4 grams IV bolus over 20 minutes, then 2 grams/hour IV.
- Check preeclampsia labs.
- Monitor fetal wellbeing.
- Obtain OB ultrasound to evaluate for IUGR or oligohydramnios.
- Monitor for signs and symptoms of magnesium toxicity.

If possible, transfer to Anchorage. If transfer not possible, consult HROB.

Random protein to creatinine ratio  $>$ 0.3\*?

Preeclampsia

Consult HROB on call.

Is patient able to participate in care plan?

Consider inpatient monitoring versus transfer to Anchorage.

**Outpatient Monitoring in Bethel**

- Daily kick counts.
- Office visit 2 times per week.
- NST twice weekly.
- AFI and preeclampsia labs once a week.
- Ultrasound for growth every 3 weeks.
- Transfer care to Inpatient OB at 38 weeks for delivery or transfer to Anchorage.

Any signs or symptoms of severe features?

Gestational Hypertension

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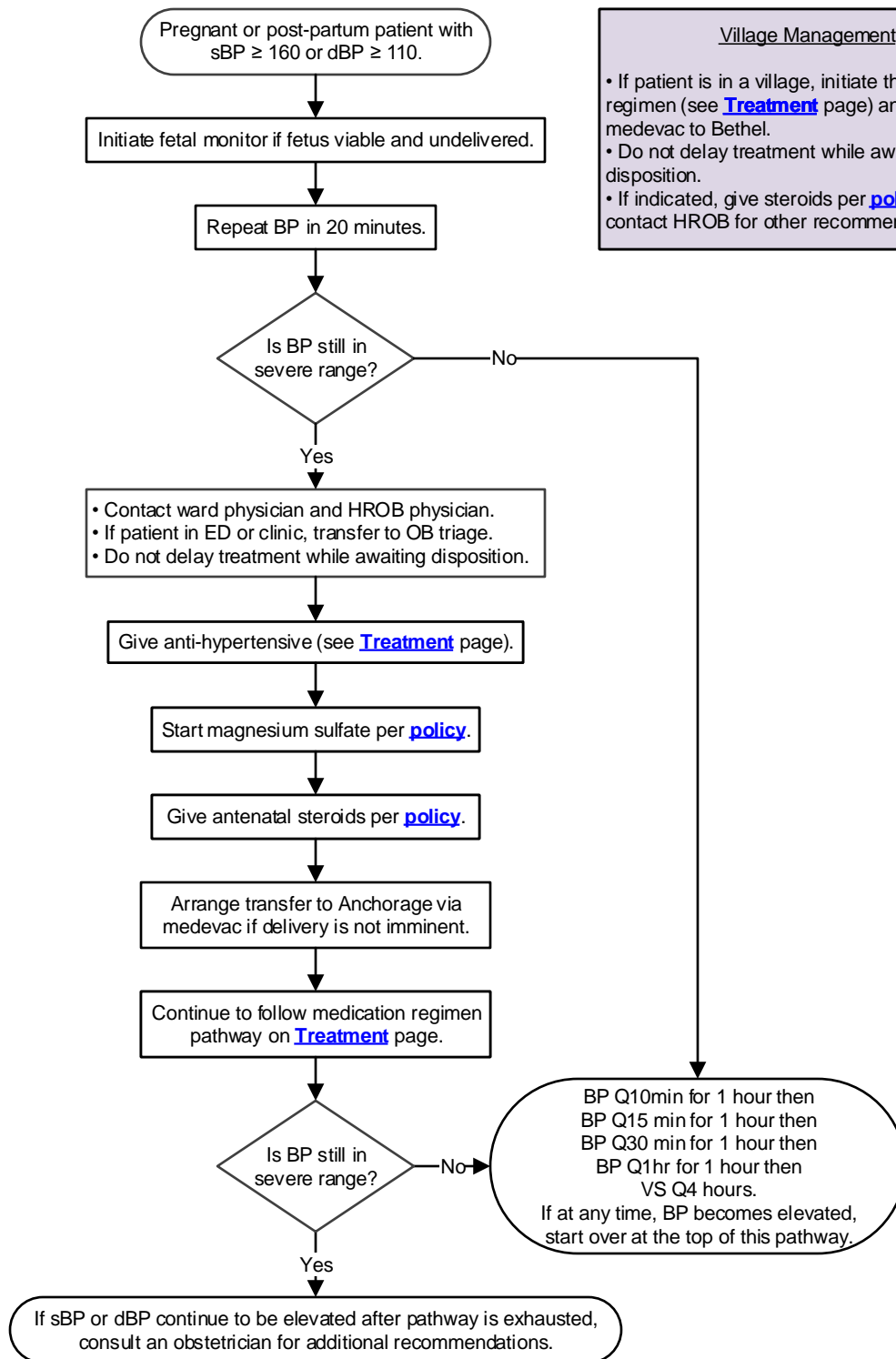
### BP Technique

- Use the appropriate sized cuff after 5 minutes of rest.
- Patient should be sitting or semi-reclining (not fully reclining).
- Repeat with manual cuff after a minimum of 20 minutes if sBP  $\geq$  160 or dBP  $\geq$  110.

Severe range BP is defined as sBP  $\geq$  160 or dBP  $\geq$  110.

### Village Management

- If patient is in a village, initiate the nifedipine regimen (see [Treatment](#) page) and activate medevac to Bethel.
- Do not delay treatment while awaiting disposition.
- If indicated, give steroids per [policy](#) and contact HROB for other recommendations.



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Severe range BP is defined as  
sBP  $\geq$  160 or dBP  $\geq$  110.

Anti-hypertensive  
Medication Regimens

After two severe range BPs have been verified, choose one regimen.  
Follow pathway until sBP  $<$  160 and dBP  $<$  110. At that time, return to first page for further management.

Give nifedipine (immediate release) 10 mg PO.

Repeat BP in 20 minutes.

If BP still in severe range, give nifedipine  
(immediate release) 20 mg PO.

Repeat BP in 20 minutes.

If BP still in severe range, give nifedipine  
(immediate release) 20 mg PO.

Repeat BP in 20 minutes.

If BP still in severe range,  
give labetalol 40 mg IV.

Give labetalol 20 mg IV.

Repeat BP in 20 minutes.

If BP still in severe range,  
give labetalol 40 mg IV.

Repeat BP in 20 minutes.

If BP still in severe range,  
give labetalol 80 mg IV.

Repeat BP in 20 minutes.

If BP still in severe range,  
give hydralazine 10 mg IV.

Give hydralazine 5 mg IV.

Repeat BP in 20 minutes.

If BP still in severe range,  
give hydralazine 10 mg IV.

Repeat BP in 20 minutes.

If BP still in severe range,  
give hydralazine 10 mg IV.

Repeat BP in 20 minutes.

If BP still in severe range,  
give labetalol 40 mg IV.

If sBP or dBP continue to be in severe range after pathway is  
exhausted, consult an obstetrician for additional recommendations.

### Village Management

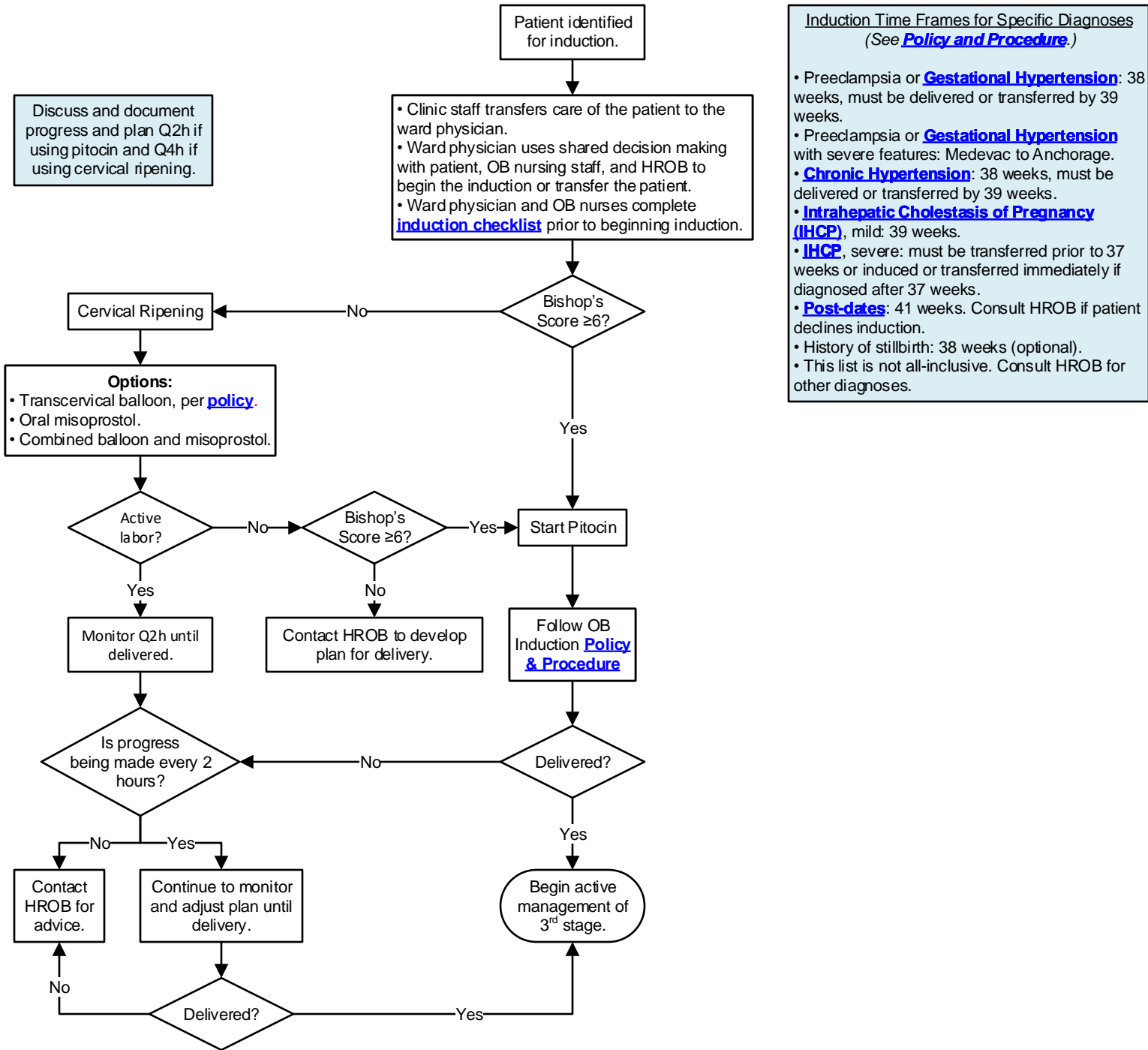
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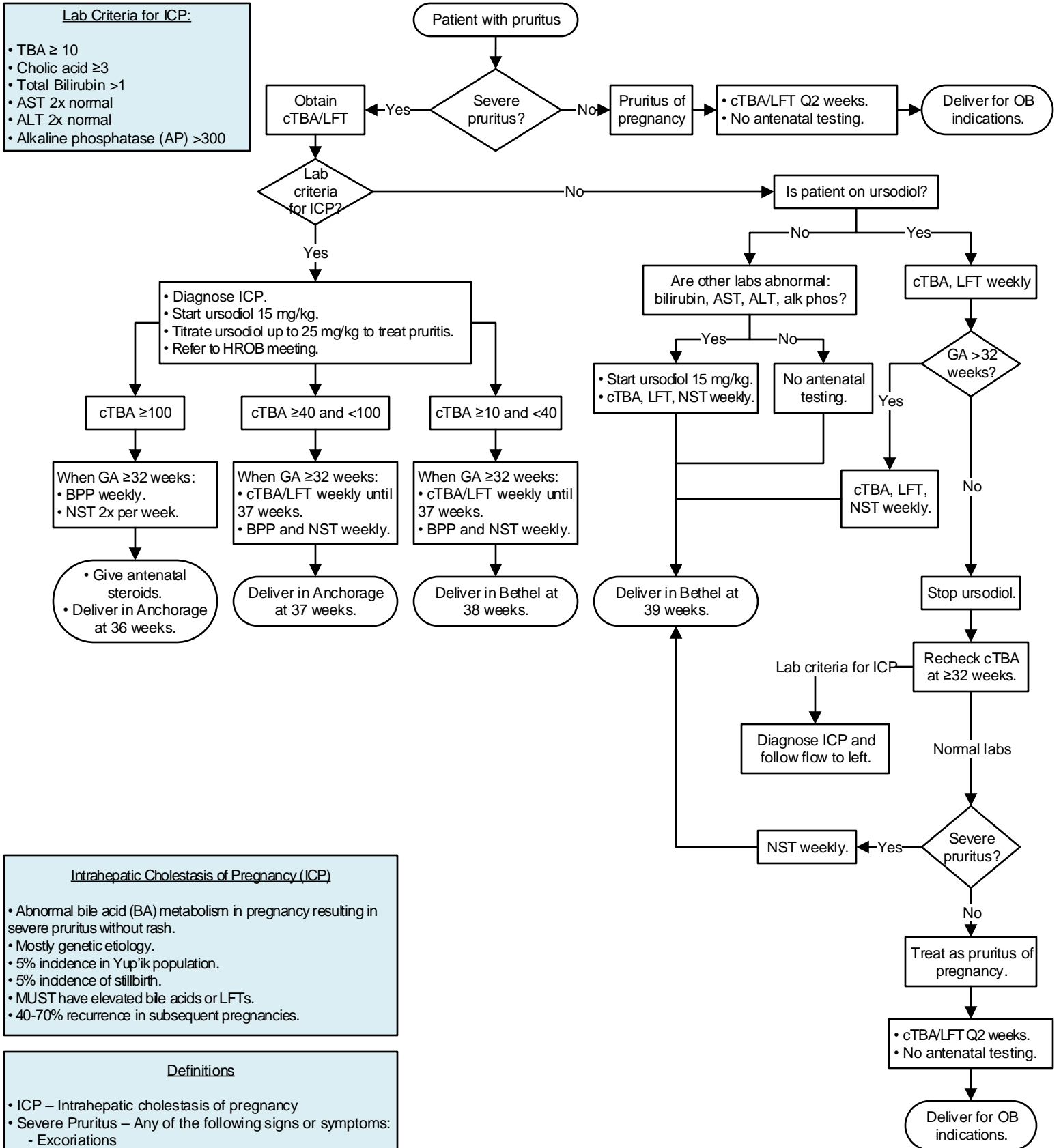
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Bishops Score					
Score	Dilatation	Effacement	Station	Position	Consistency
0	closed	0 - 30%	-3	posterior	firm
1	1-2 cm	40 - 50%	-2	mid-position	medium
2	3-4 cm	60 - 70%	-1,0	anterior	soft
3	5+ cm	80+%	+1,+2		

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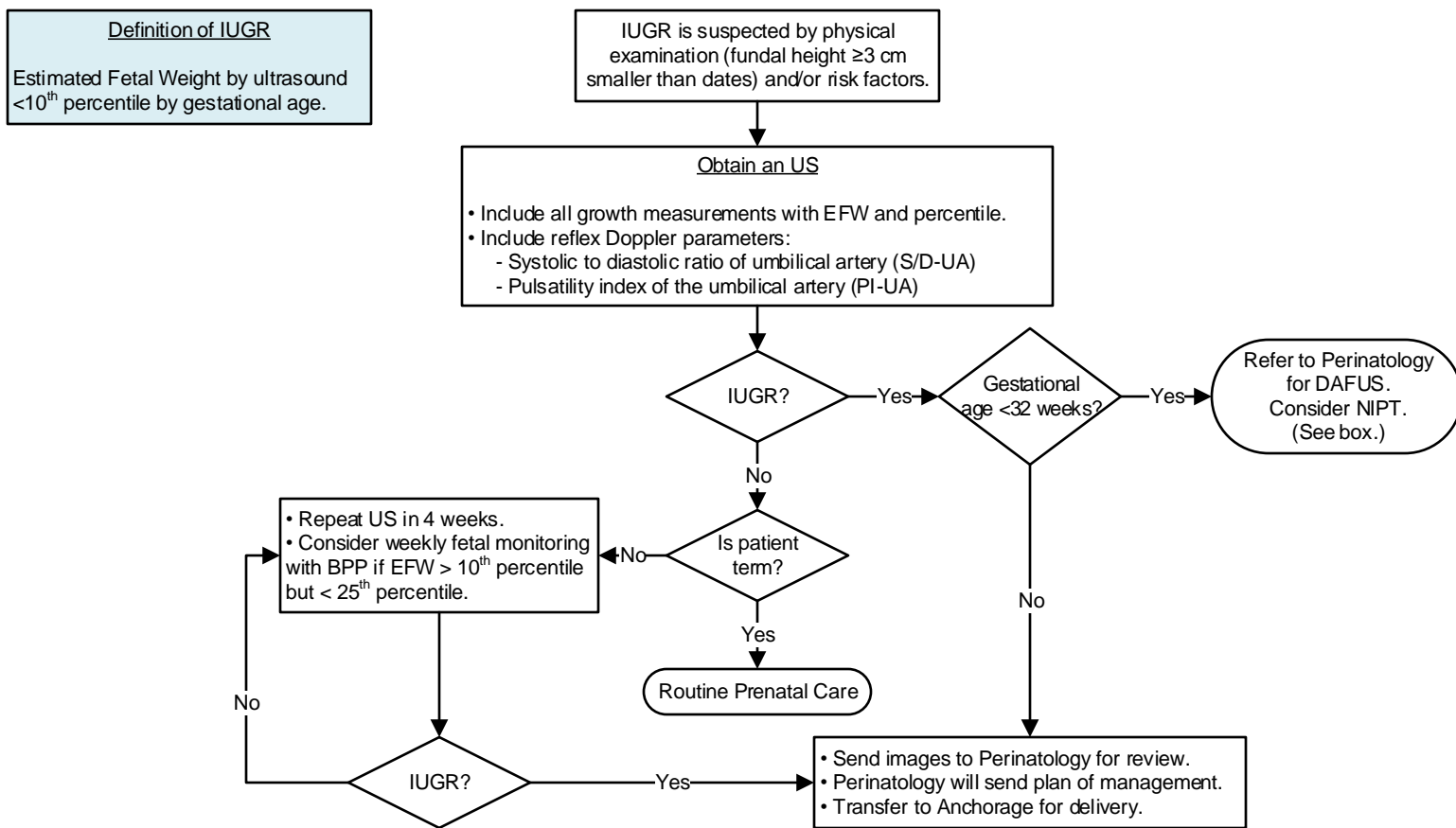
**Intrahepatic Cholestasis of Pregnancy (ICP)**

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

**Definitions**

- ICP – Intrahepatic cholestasis of pregnancy
- Severe Pruritus – Any of the following signs or symptoms:
  - Excoriations
  - Loss of sleep due to pruritus
  - Scratching during appointment
- Pruritus of pregnancy – non-severe pruritus without elevated TBA
- TBA – Total Bile Acids
- Corrected TBA (cTBA) = TBA – ursodeoxycholic acid
- LFT – Liver Function Test

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### Non-invasive Prenatal Testing (NIPT)

Non-invasive prenatal testing is a way to detect fetal chromosome abnormalities from a maternal blood draw. Our current test is InformaSeq from LabCorp.

### Risk Factors for Intrauterine Growth Restriction

#### Maternal Medical Conditions

- Hypertension
- Renal disease
- Restrictive lung disease
- Diabetes (with microvascular disease)
- Cyanotic heart disease
- Antiphospholipid syndrome
- Auto-immune disease

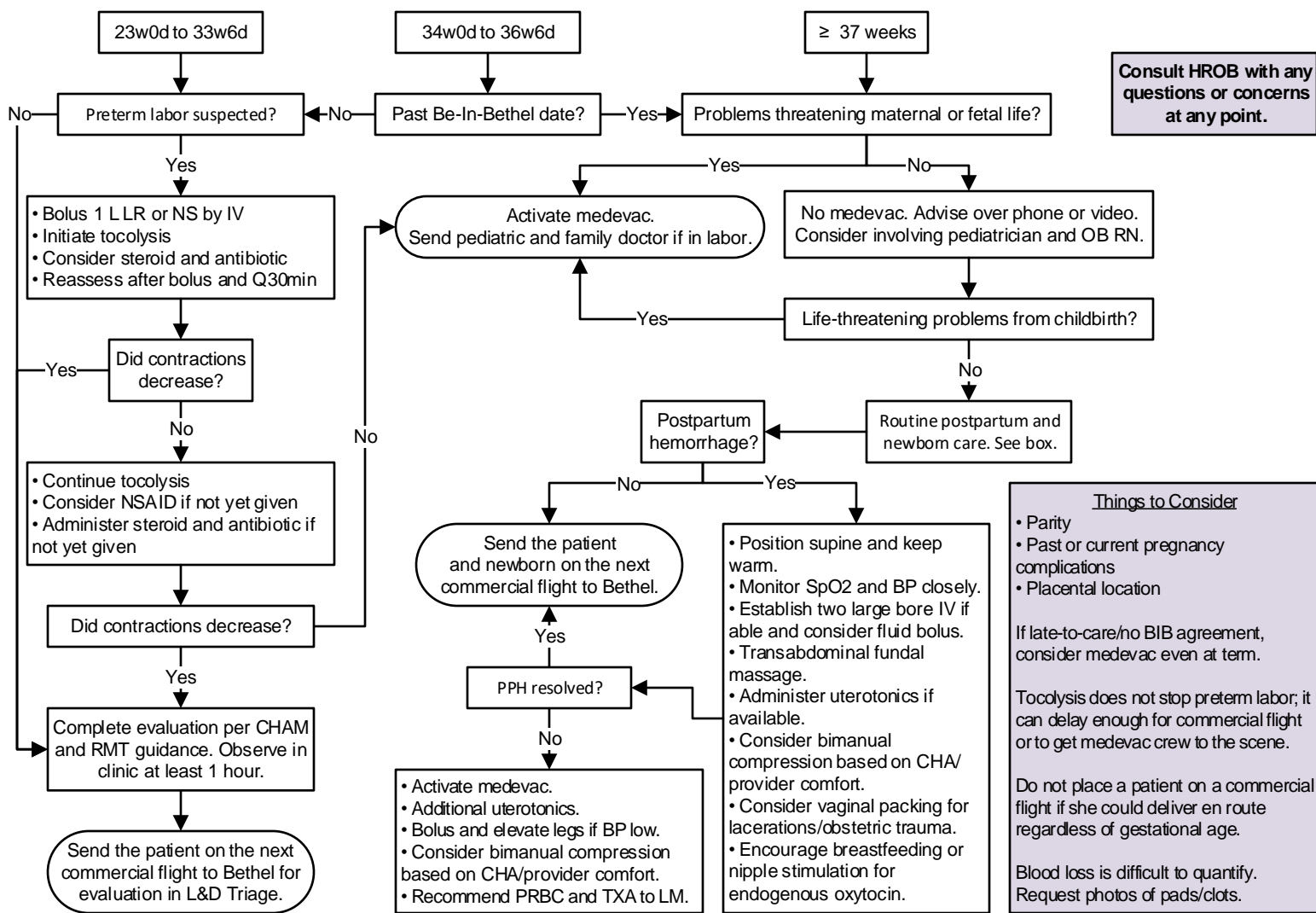
#### Other Factors

- Smoking and substance use and abuse
- Severe malnutrition
- Primary placental disease
- Multiple gestation
- Infections (viral, protozoal)
- Genetic disorders
- Exposure to teratogens

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Pregnant patient with symptoms suggestive of labor.



### If activating a medevac for village labor

- Do not send a resident.
- Ensure that all Tiger Connect roles are covered by back-up physician.
- Notify ED Doctor On Duty since they are medical control.
- Gather [Village Delivery Backpack](#) from OB and Butterfly/iPad for US.
- Discuss with pediatrician the need to bring surfactant.
- Bring warm clothing (extra gear in peds call room under the bed), snacks, drinks, money, motion sickness medication, etc.
- Coordinate with pediatrician and plan to meet at LifeMed hangar at 3600 Tower Road. Tell LifeMed (LM) Dispatch if delayed more than 20 minutes.

### Postpartum and Newborn Care

**Mother:** Check vital signs and fundal checks q15 min x 1 hour, then q30 min x 2 hours, then q1h x 3 hours. If all is well, may leave clinic to await travel with instructions to return immediately for return of bleeding or passing clots.

**Baby:** Check vital signs with axillary temperatures q30 minutes x 2 hours, then q1h x 4 hours. Low threshold to check blood glucose after first feed. Ensure vitamin K, erythromycin, and hepatitis B vaccine are given when able. If all is well, may leave clinic with instructions to return immediately for any concerns, especially trouble breathing, fast breathing, pauses in breathing, etc.

### Tocolytics

1. Nifedipine (as BP permits)  
0 min: 30 mg PO  
90 min: 20 mg PO  
180 min: 10 mg PO
2. Terbutaline 0.25 mg SC q5 min x 4 PRN
3. Ketorolac 60 mg IM or ibuprofen 800 mg PO

### Steroids

- Betamethasone 12 mg IM q24h x 2 (preferred); OR
- Dexamethasone 6 mg IM q12h x 4

### Antibiotic (if no allergy)

- Ceftriaxone 1 g IM

### Uterotonics

1. Oxytocin 10 units IM, 10-40 units IV bolus (SRC only)
2. Misoprostol 800 mcg PO/PR/SL
3. Methergine 0.2 mg IM q2h

### In the village

- Help the crew, follow their instructions, and expect to carry equipment.
- Assess fundal height and Leopold maneuvers; consider dating accuracy versus polyhydramnios if size greater than dates.
- If EGA < 34 weeks, perform a sterile speculum exam, obtain FFN, swab for GBS and GC/CT, and obtain urine sample for culture.
- If low risk for placenta previa (e.g., not noted on prior formal or Butterfly POCUS), check cervix after obtaining cultures.
- Make decision about disposition based on cervical exam, possible complications, and risk/benefit of travel.
- Discuss with HROB if any uncertainty about plan.
- Notify OB charge RN of plan as soon as possible from village clinic or Subregional Center (SRC) so they can prepare.
- If village delivery is anticipated, see [Village Deliveries \(Pediatrics\) Resource](#) for newborn care and preparation.

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Approved by Guideline Committee 8/23/23.

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If comments about this guideline, please contact  
William\_Guerin@ykhc.org.





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

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

Administer Rhogam if Rh negative

**Testing**

- CBC, CMP, PT/PTT, Blood type, and Rh factor, Quantitative hCG, pelvic ultrasound, chest X-ray.
- Consider TSH, free T4 if signs/symptoms of hyperthyroidism.

**Definitions**

**GTN** – gestational trophoblastic neoplasm.

**Complete Mole** – a form of aberrant fertilization with proliferation of trophoblastic tissue with a normal karyotype, no fetus, diffuse villous edema, and diffuse proliferation.

**Partial Mole** – a form of aberrant fertilization with proliferation of trophoblastic tissue with triploid karyotype, possibly a fetus, focal villous edema, and focal proliferation.

**Choriocarcinoma** – a malignant neoplasm arising from cytotrophoblast.

**Placental site trophoblastic tumor** – a malignant neoplasm arising from intermediate trophoblast.

**Post Molar GTN** – persistent hCG detection after the treatment of a complete or partial molar pregnancy.

**Invasive Mole** – detection of tumors within the uterus on imaging.

**Malignant GTN** – post molar gestational trophoblastic neoplasm.

**Metastatic GTN** – post molar GTN with imaging evidence of distant metastasis. The most common sites are vagina, lung, and brain.

Signs or symptoms of medical complications, hyperthyroid, severe anemia, coagulopathy, gestational HTN?

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

No

- Suction D&C.
- Consider transfer if uterus is >16 week size due to increased risk of complications.

Confirm pathology: molar pregnancy, complete, or partial

Yes

Quantitative hCG 48 hours after D&C and weekly.

Plateau ± 10% over three weeks rise ≥ 10% over two weeks. Quantitative hCG + at six months.

Yes → **Post molar GTN**

- CT chest, CBC, PT/PTT, CMP.
- Consult GYN ONC in Anchorage.

No

Weekly Quantitative hCG until negative x3 (<5).

Monthly Quantitative hCG for 6 months

**Contraception**  
Encourage Depo Provera, Nexplanon, IUD.

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### Differential Diagnosis by Trimester

#### First

- Aneuploidy
- Fetal Anomaly

#### Second

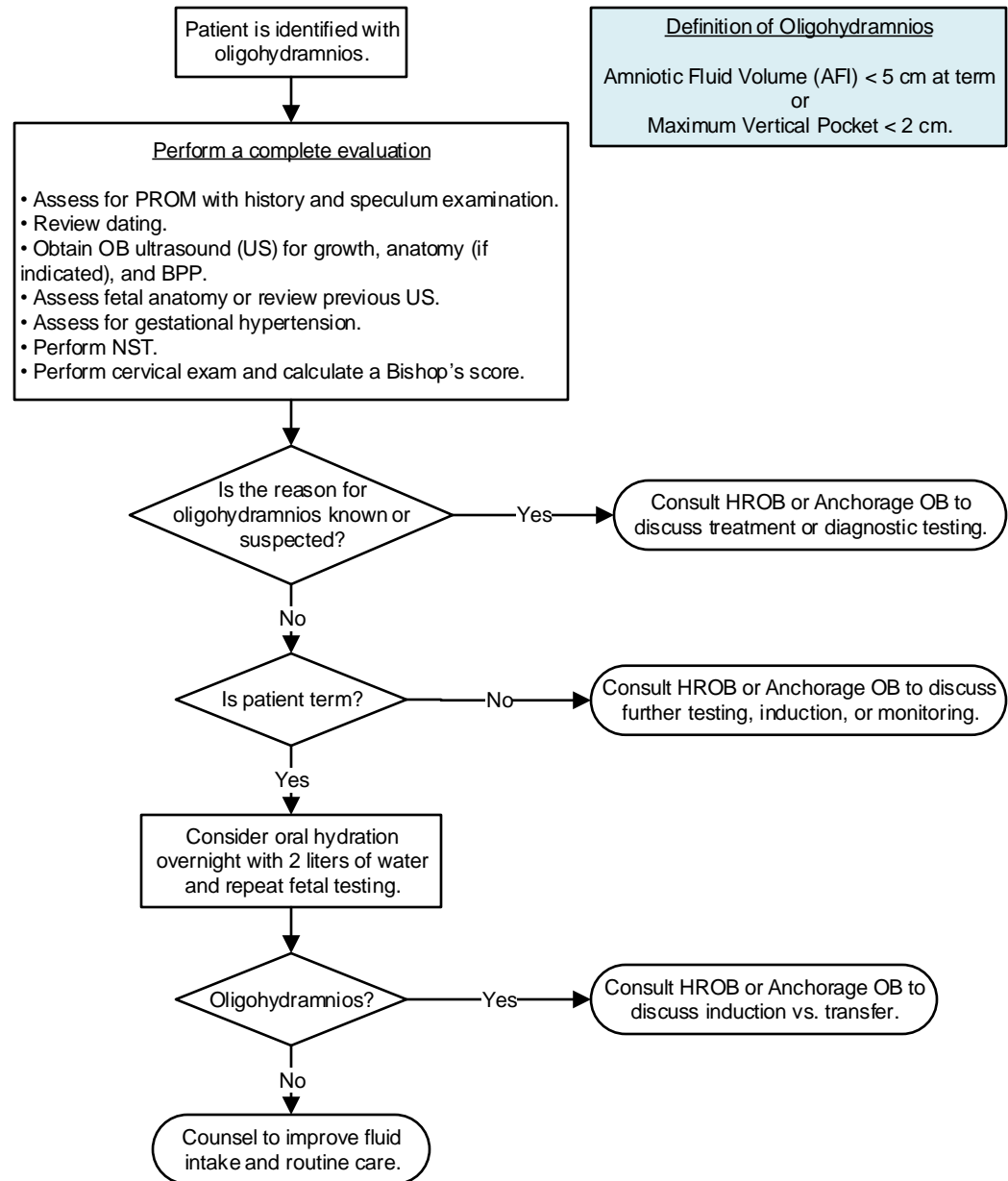
- Aneuploidy
- Fetal Anomaly
- Preterm premature rupture of membranes (PPROM)
- Placental abruption
- Fetal growth restriction
- Amniocentesis
- Elevated maternal serum alpha fetoprotein

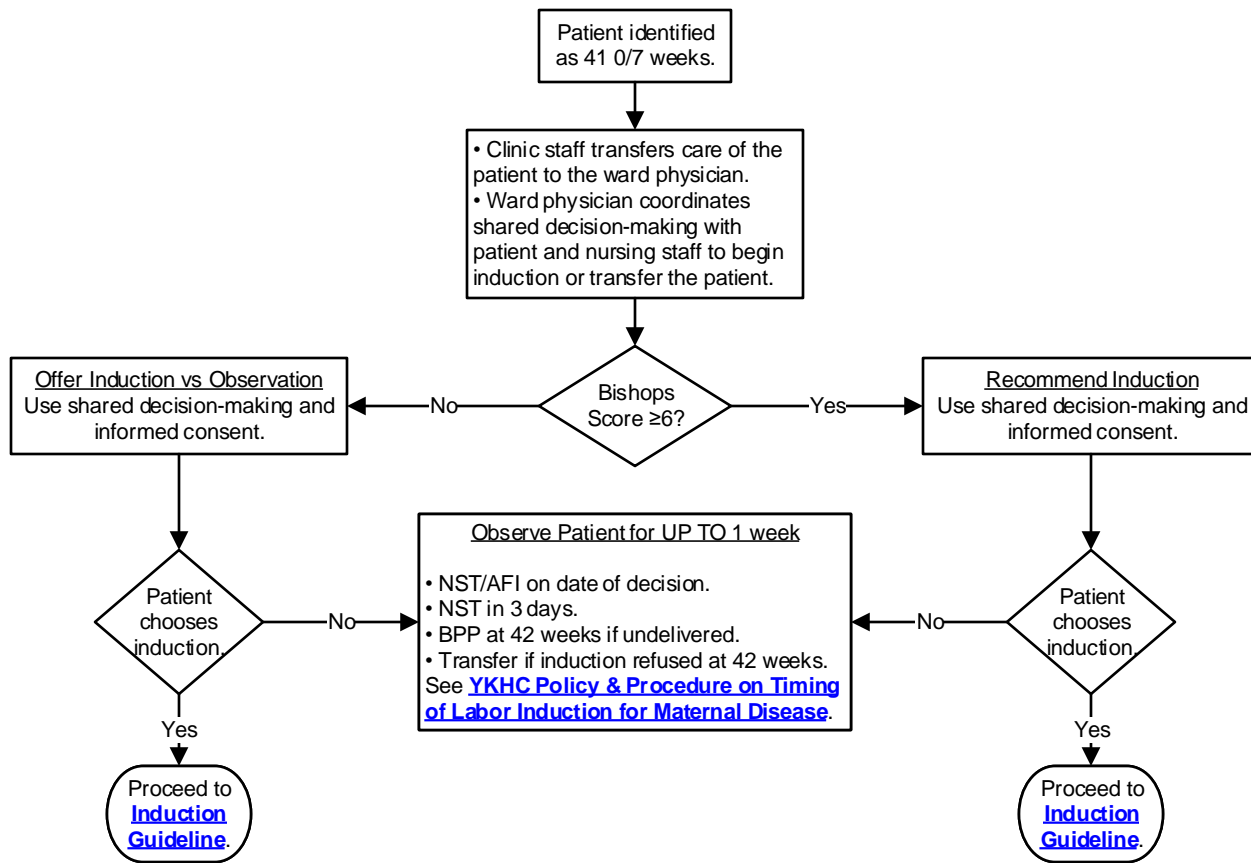
#### Third

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

### Definition of Oligohydramnios

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





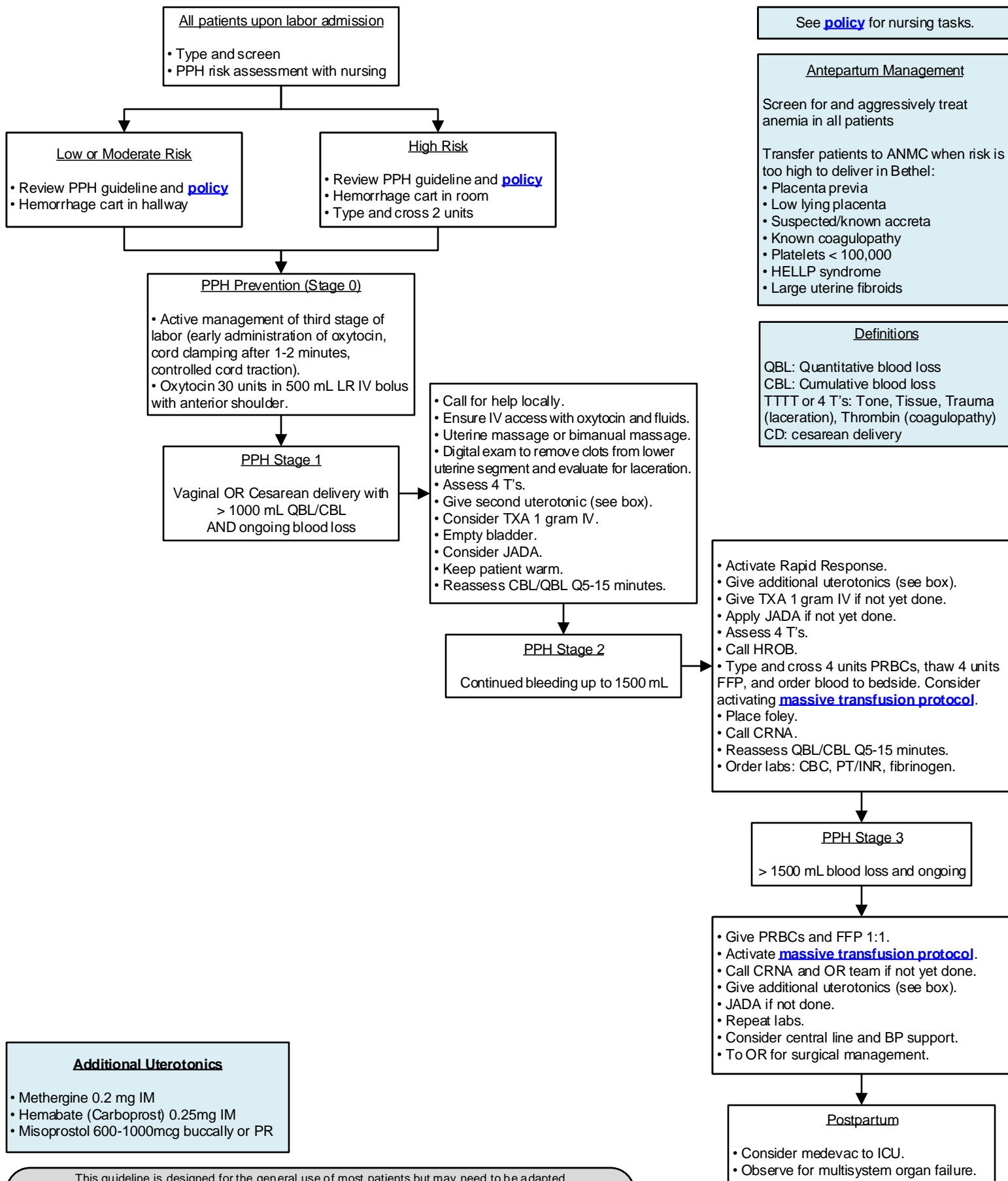
### Bishop Score

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

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### 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 two 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 (>6 weeks) 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.
  - 36 Week 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.
- Labs: urinalysis, urine culture, blood type and screen, HBsAg, Hepatitis C antibody, CBC, Rubella titer, HIV testing, treponemal testing, HgA1c, 25-OH vitamin D.
- Set up room for pelvic to do PAP (only do a PAP if it is due), GC/CT and trichomonas (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 gravida/para in one problem.
- Refer to HROB meeting if needed.
- Ask about S/Sx of IHCP; if present, 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

- If desired, quad screen 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 is incomplete, order US OB follow-up for the next visit to complete the anatomy exam.

### 24-28 Weeks

#### NURSING

- Labs: GST, CBC.
- Tdap after 24 weeks.
- GST – 50 g:
  - If result >140 mg/dL, schedule 2 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. Draw Quantiferon if failed to have PPD read.

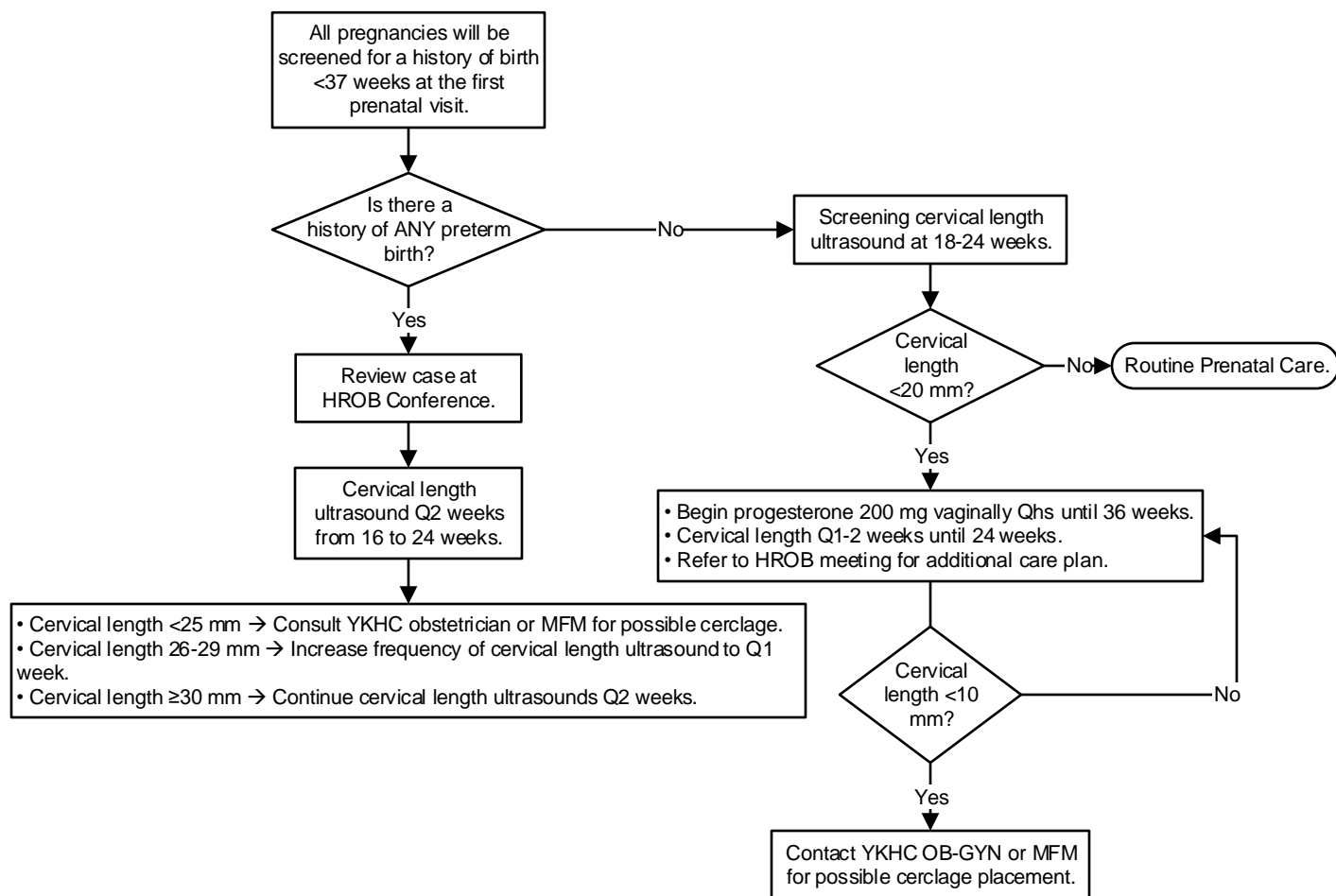
#### PROVIDER

- After 28 weeks, ask about preeclampsia symptoms.
- After 24 weeks, ask about preterm labor symptoms and IHCP symptoms.
  - Back pain.
  - Sudden increase in vaginal discharge.
  - Pelvic pressure.
  - Cramps/contractions.
- Educate patient on fetal movement count.

### 36 Weeks/BIB Date

- Labs: CBC, treponemal testing, HIV testing, GBS culture, GC/CT and trichomonas.
- Review TB status. Draw Quantiferon if status unknown.
- Schedule appointments to be seen each week by Bethel provider through 41 weeks.
- Complete Prematernal Home/Medical Clearance paperwork.
- Ask about any symptoms of:
  - Rupture of membranes.
  - Preeclampsia.
  - Labor.
  - Itching.

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### Definition of Preterm Labor

Regular uterine contractions after 20 weeks gestation and before 37 weeks gestation which lead to a progressive **cervical change**.  
Diagnosis of preterm labor requires a cervical exam.

### Exams

Recheck cervix every two hours as long as there is concern for preterm labor.

Patient presents with signs and symptoms of preterm labor

Sterile speculum vaginal exam to assess for cervical dilation and obtain:  
• Wet mount for bacterial vaginosis  
• Fetal Fibronectin, GC/CT, trichomonas, GBS PCR, and cervical exam.  
• Urinalysis

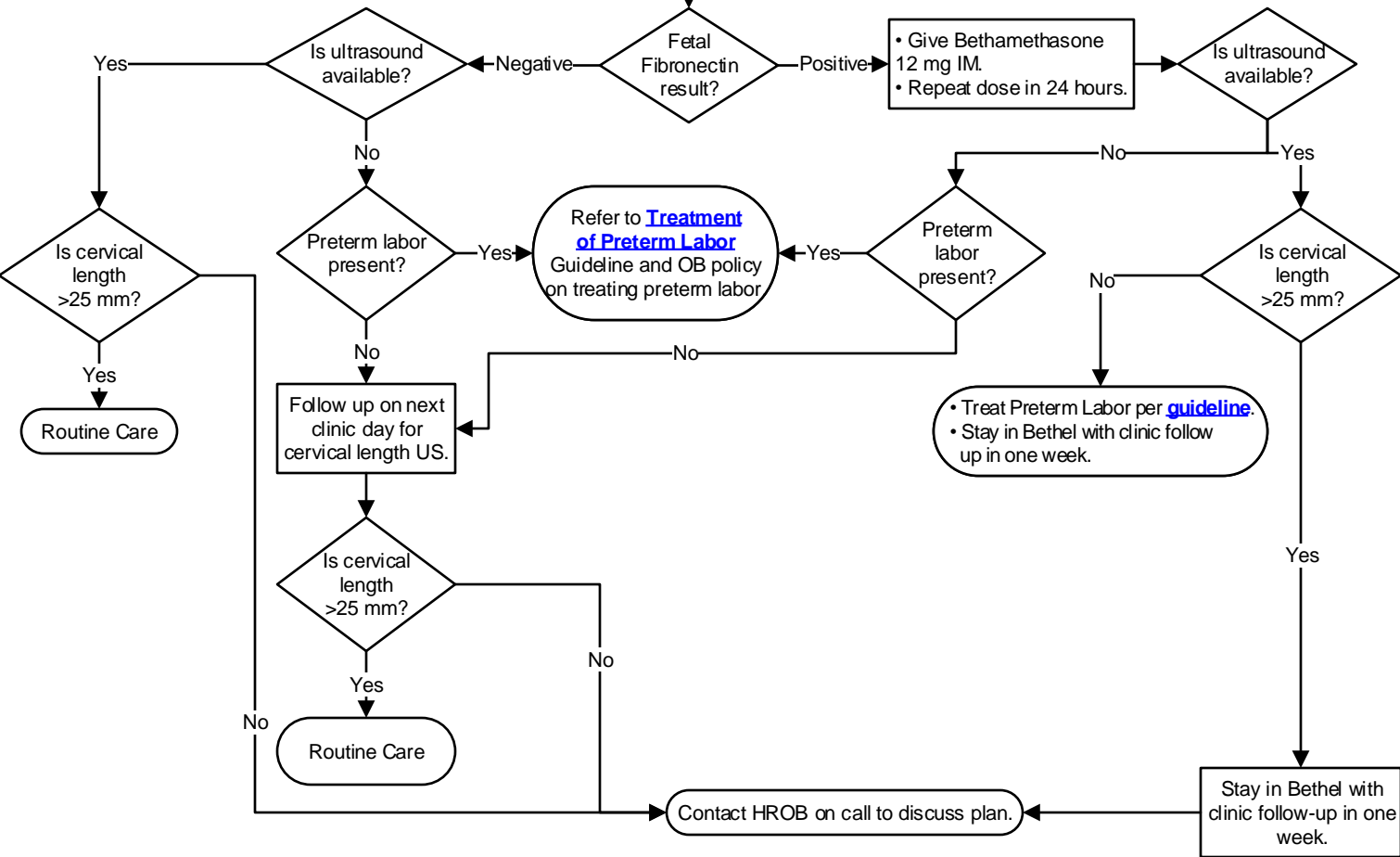
Patient with bacterial vaginosis?

### Antibiotic Treatment

1. Metronidazole 500 mg PO twice daily x7 days.
- or
2. Clindamycin 300 mg PO twice daily x7 days.

Refer to [Treatment of Preterm Labor](#) Guideline.

Is cervix dilated  $\geq 3$  cm?



### 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"

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

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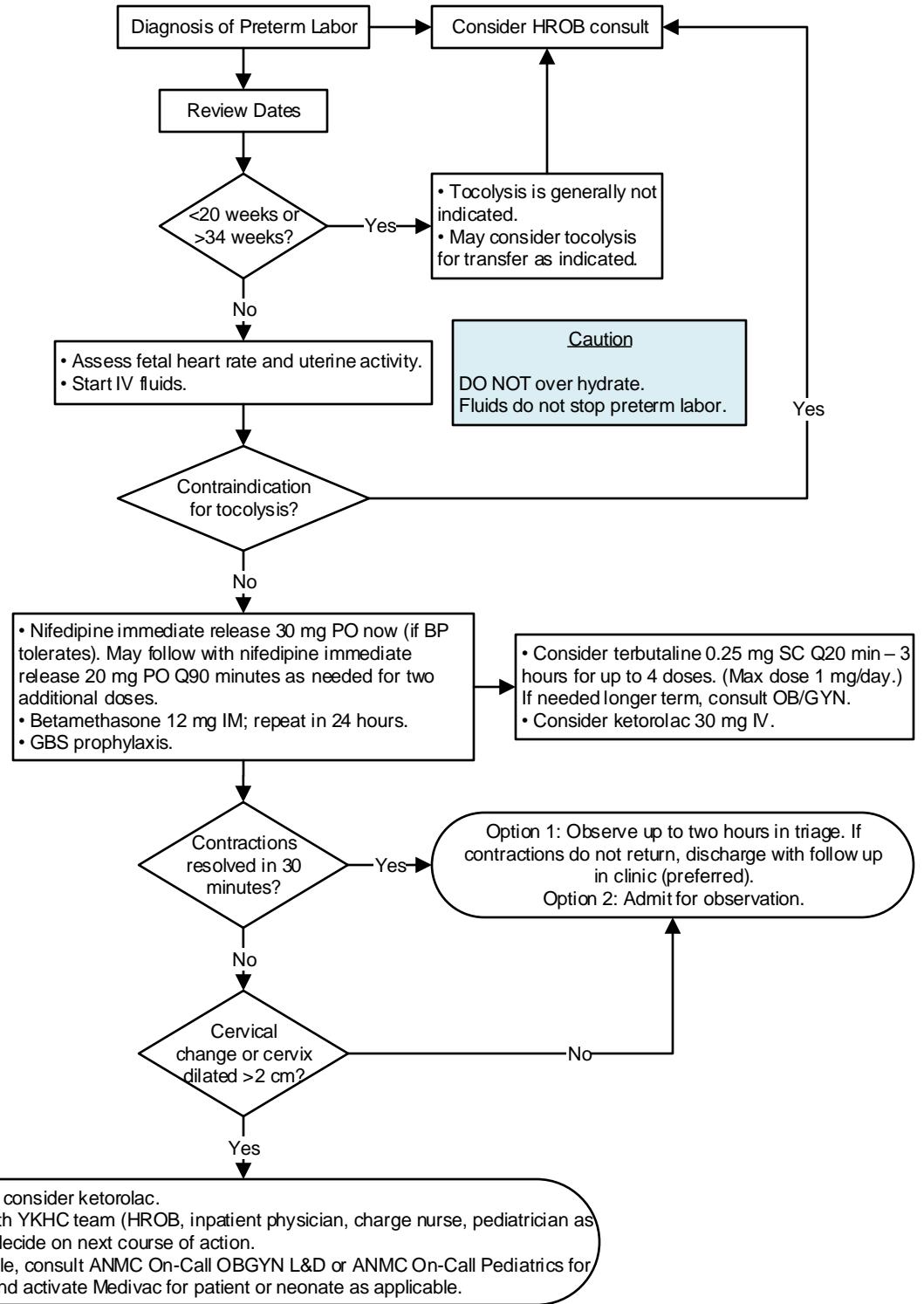
**Contraindications to Tocolysis**

- IUFD
- Lethal fetal anomaly
- Non-reassuring fetal assessment
- Severe IUGR
- Chorioamnionitis, relative
- Maternal hemorrhage with hemodynamic instability
- Severe preeclampsia or eclampsia
- PPROM
- Relative contraindication: delivery in Bethel seems inevitable.

**Contraindications to Terbutaline**

- Diabetes
- HTN
- Suspected placental abruption (relative)

If cervix is greater than 2cm dilated, consider early consult to ANMC On-Call OBGYN L&D for management and possible transfer discussion.



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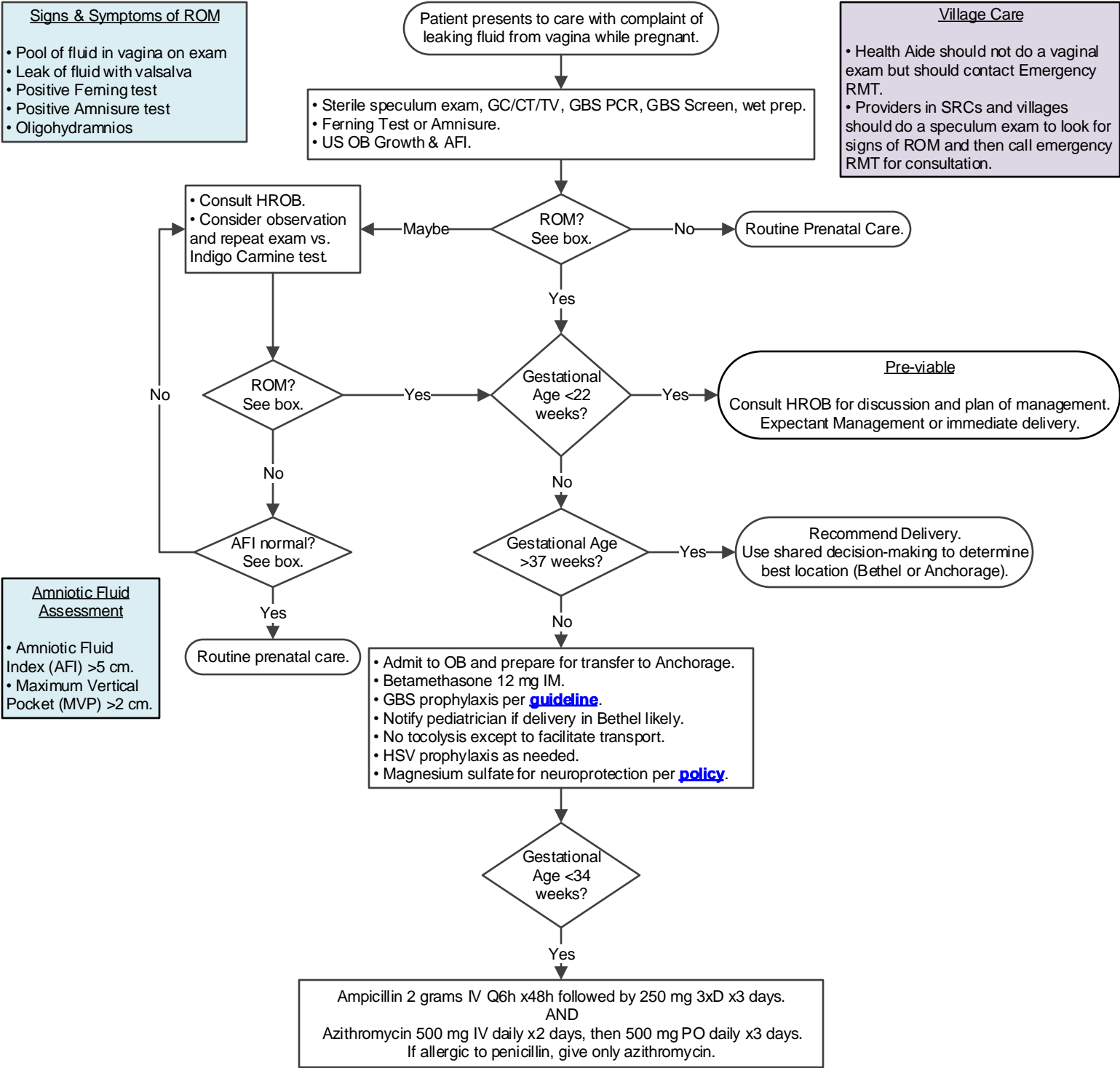


**Signs & Symptoms of ROM**

- Pool of fluid in vagina on exam
- Leak of fluid with valsalva
- Positive Ferning test
- Positive Amnisure test
- Oligohydramnios

**Village Care**

- Health Aide should not do a vaginal exam but should contact Emergency RMT.
- Providers in SRCs and villages should do a speculum exam to look for signs of ROM and then call emergency RMT for consultation.



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For more information, see [Rh Immune Globulin Work-up Policy & Procedure.](#)

At first prenatal visit, check blood type and antibody screen in all patients.

Rh negative?

No

• Blood Type on newborn after birth only as indicated.  
• No further testing of the patient for blood type.

Yes

• Note diagnosis on Problem List.  
• Educate the patient.

At 28 weeks

• Obtain labs on RHIG Workup (Antenatal) Power Plan.  
• Give RHIG (Rhogam®) 300 mcg IM after antibody screen.

When Patient is in Labor

Obtain blood type and antibody screen on admission.

After Delivery

• Obtain ABO and Rh on newborn.  
• Obtain fetal screen on mother.

Newborn Rh positive?

No

No further workup or treatment.

Yes

Fetal screen positive?

Yes

• Give the mother RHIG (Rhogam®) 300 mcg x2 doses (for total 600 mcg) Immune Globulin.  
• Send Kleinhauer-Betke (KB) test.  
• Consult OB/GYN.  
• Give additional doses based on KB results.

No

Give the mother RHIG (Rhogam®) 300 mcg IM.

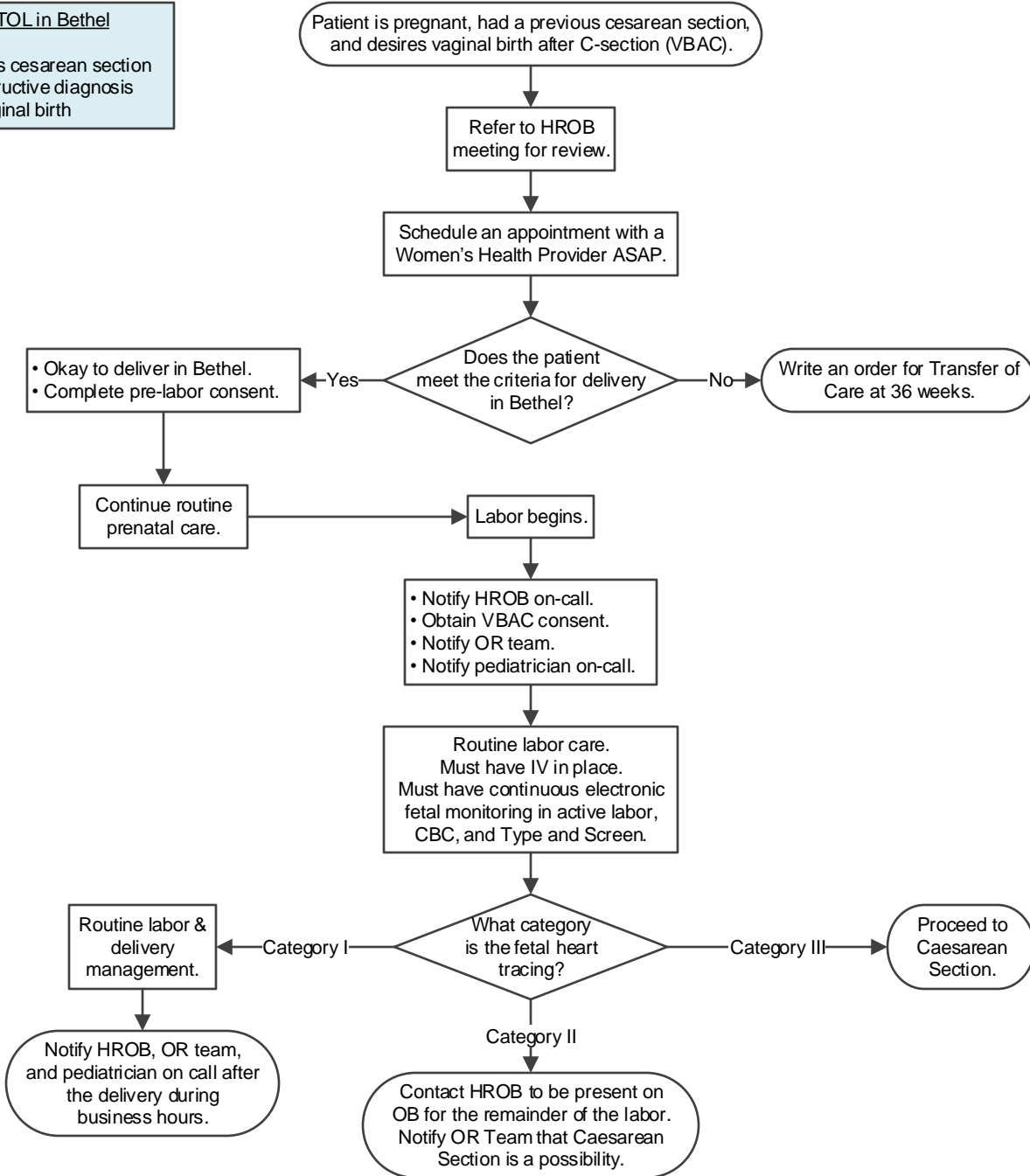
Other Situations Which Require anti-D Immune Globulin

- Miscarriage/Abortion
- Stillbirth
- Ectopic Pregnancy
- Maternal Trauma: consult OB/GYN.
- Threatened abortion
- Maternal hemorrhage in 2<sup>nd</sup> or 3<sup>rd</sup> trimester
- External cephalic version
- Amniocentesis

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



- Criteria for TOL in Bethel**
- Only one previous cesarean section
  - No previous obstructive diagnosis
  - One previous vaginal birth



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 3/1/22.  
**If comments about this guideline, please contact [Ellen\\_Hodges@ykhc.org](mailto:Ellen_Hodges@ykhc.org).**



## Background

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

## Anaphylaxis

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

## Hives vs Viral Rash

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

NOTE: If amoxicillin is needed to treat a life threatening infection, consult Allergy & Immunology to discuss possible desensitization. Alaska Asthma, Allergy, & Immunology can be reached at (907) 562-6228.

## References

1. Kelso JM. "Provocation challenges to evaluate amoxicillin allergy in children." JAMA Pediatrics 2016;170(6):e160282.
2. Mill C, et al. "Assessing the diagnostic properties of a graded oral provocation challenge for the diagnosis of immediate and nonimmediate reactions to amoxicillin in children." JAMA Pediatrics. 2016;170(6):e160033.

Patient labeled with a penicillin/amoxicillin allergy.

Review history. (See box.)

Was the reaction anaphylaxis (see box) or other life-threatening reaction (eg Stevens-Johnson syndrome, etc.)?

Yes

- Do not give drug or perform trial.
- Update chart, including the Problem List and a comment on the allergy.
- Refer to Allergy & Immunology at 5.

No

What was the reaction?

Rash

Vomiting and/or diarrhea without any other S/Sx anaphylaxis

Other

True hives, skin blistering/peeling, or mucous membrane involvement

Viral-appearing rash or other type of rash

- Do not give drug or perform trial.
- Update chart, including the Problem List and a comment on the allergy.
- Refer to Allergy & Immunology at 5.

- Not a true allergy.**
- Educate and perform Amoxicillin Trial (see box).
  - If patient/family refuses trial, update Problem List.
  - Offer future trial or refer to Allergy & Immunology at age 5 for amoxicillin allergy testing.

- Not a true allergy.**
- Educate and perform Amoxicillin Trial (see box).
  - If patient/family refuses trial, update Problem List.
  - Offer future trial or refer to Allergy & Immunology at age 5 for amoxicillin allergy testing.

Get more history. Consider pediatric consult.

This guideline is designed for patients that are extremely unlikely to be allergic to amoxicillin. There is no upper or lower age limit. Consult pediatrics with any questions.

## Amoxicillin Trial Procedure<sup>2</sup>

Use AMB Amoxicillin Trial Power Plan.

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine. Epinephrine (1 mg/mL): 0.01 mg/kg (or 0.01 mL/kg) IM Q5-15 minutes.  
Per AAP recommendations:
  - 7.5-25 kg: use EpiPen Jr (0.15 mg)
  - ≥ 25 kg: use EpiPen (0.3 mg)
2. Calculate weight-based dose of amoxicillin. Give patient 10% of that dose.
3. Place patient in nearby room and instruct caregiver to notify staff of any changes in status.
4. If no reaction by 20 minutes, give patient remaining 90% of weight-based dose of amoxicillin.
5. Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
6. Give patient and family amoxicillin trial education sheet.
7. Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose "cancel." On the "reason" drop-down menu, choose "OK on Retrial."

## Notes:

- If patient is on a beta-blocker, stop this for 24 hours prior to procedure, if possible. Beta-blockers can interfere with treatment for anaphylaxis, if it occurs.
- Ensure that patients with asthma have optimal control prior to this procedure.

## History

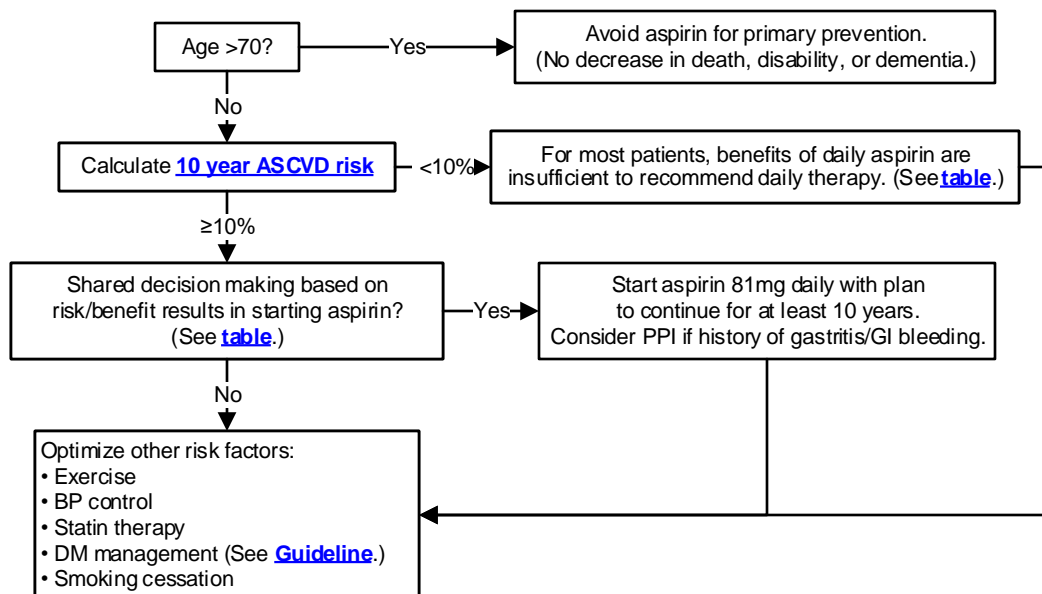
### Chart review:

- Review notes in allergy alert. Find date allergy was added, and then review notes from that day. Was ED visit or hospital admission required?
- Review Multimedia Manager photos.
- Were steroids or other treatment given?
- Has patient received a drug of the same class since the allergy was reported? Was it tolerated? Were there symptoms?

### History from patient/family:

What was the reaction?

- Vomiting and/or diarrhea?
- Rash?
  - Age? Time from first dose?
  - Hives? (See box.) Was it itchy?
  - Blistering or peeling?
  - Photos from family?
- Trouble breathing?
- Swelling of tongue/lips?
- Joint swelling or fever?
- Mucous membrane involvement?



### Notes

Aspirin produces significant reductions in mortality amongst survivors of cardiovascular disease, but its role in the primary prevention of cardiovascular disease amongst healthy adults is less clear.

See [table under "Possible Benefits"](#) for summary of RCT data for low dose aspirin in the primary prevention of cardiovascular disease.

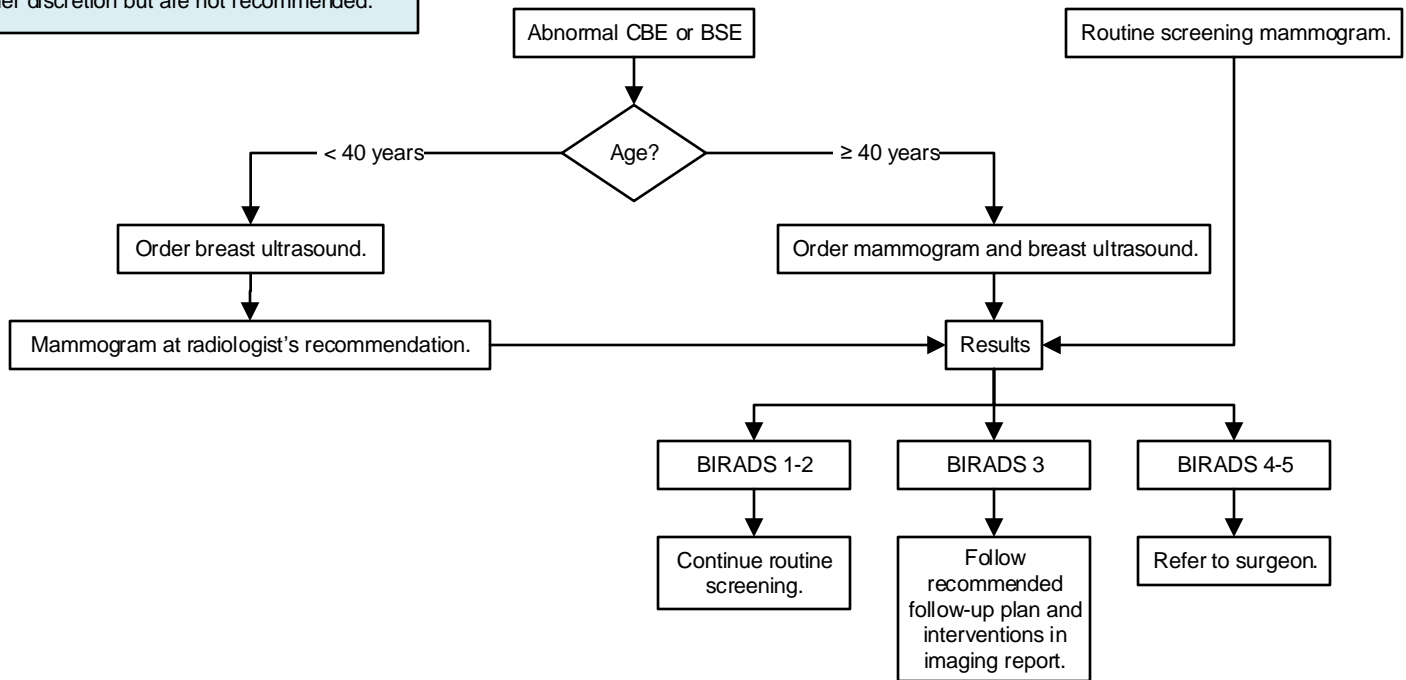


### Definitions

- CBE: Clinical Breast Exam
- BSE: Breast Self Exam
- BIRADS: Breast Imaging Reporting and Data System, a system that scores findings on breast imaging

### Recommendations for Screening at YKHC

- Mammogram: start at age 40 and rescreen Q2 years until age 74 depending on patient's health.
- Routine CBE or BSE can be done at patient/provider discretion but are not recommended.



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 Clinical Guideline Committee 1/11/23.

If comments about this guideline, please contact [David\\_Compton@ykhc.org](mailto:David_Compton@ykhc.org).



## Non-Narcotic Analgesics on the YKHC Formulary

### Muscle Relaxants

- Baclofen
- Cyclobenzaprine
- Tizanidine

### NSAIDS

- Aspirin
- Ibuprofen
- Indomethacin
- Meloxicam
- Nabumetone
- Naproxen

### Topical Analgesics

- Capsaicin Cream
- Diclofenac gel
- Lidocaine patch
- Lidocaine topical jelly
- Mentholmethylsalicylate (BenGay)

### Other

- Acetaminophen

### SNRI

- Duloxetine

### Tricyclics

- Amitriptyline
- Nortriptyline

### Neuropathic Pain Agents

- Carbamazepine
- Gabapentin
- Pregabalin

### Headache Agents

- Butalbital/APAP/Caffeine (Fioricet)
- Rizatriptan
- Sumatriptan
- Topiramate

Has the patient had chronic pain for >6 months that is interfering with his/her daily habits, subsistence activities, and/or job?

No

Optimize Pain Treatment Options (see box below) and non-narcotics.

Yes

Has the patient done ALL of the following?

- Seen ACT Clinician for ½ hour evaluation.
- Seen PT and performed home exercises.
- Tried three types of non-narcotic medications for at least six months.

No

Refer for these steps and plan follow-up after all have been completed.

Yes

Is the patient >45 years old?

No

Refer to Pain Committee for special consideration.

Yes

Does the patient have one of the following conditions?

- Orthopedic surgery
- Rheumatoid arthritis
- Severe spinal stenosis

No

Yes

Perform all comprehensive assessments

- History
- Physical
- Previous record review
- Toxicology screen
- Opioid Risk Tool (Ad Hoc form in RAVEN)
- Brief pain inventory (found using RAVEN autotext "...painChronicHPI")
- Pain diary (an example can be found [here](#))

Note: A maximum of 3 months of short-acting chronic pain medications may be prescribed before an agreement is required. The reason for continued opioid use past seven days should be documented in the chart for each refill. No chronic pain medications should be continued past 3 months without a valid agreement.

ALL assessments are completed

Patient meets criteria for narcotic treatment. Complete [Controlled Substance Agreement](#) (Pain Contract) with patient and prescribe medications.

Follow-up at least Q6 months. See [next page](#).

## Types of Pain and Recommended Management

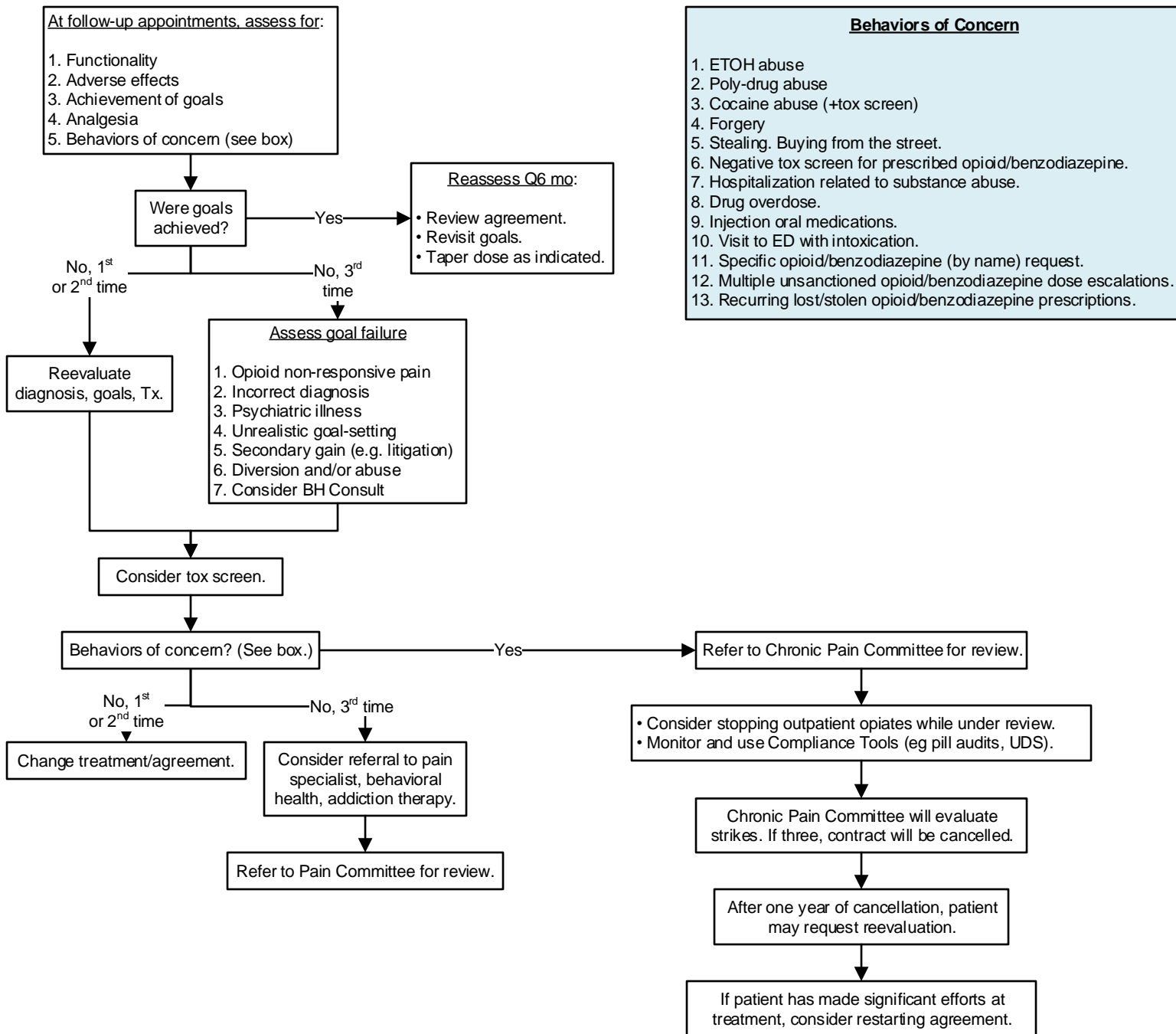
Treatment options for all types of pain: sleep hygiene, yoga, meditation

1. **Nociceptive Pain** (muscle, joint, or visceral): examples include strain, tension headache, osteoarthritis, low back pain, chronic cystitis, myofascial pain. Suggested treatments: NSAIDs, acetaminophen, PT, trigger point or joint injections, capsaicin cream, lidocaine patch/cream, yoga, meditation
2. **Neuropathic Pain**: Suggested treatments: NSAIDs, antidepressants (first-line TCAs, duloxetine), gabapentin  
Management for specific conditions:
  - Nerve compression: EMG, MRI, referral to surgeon
  - Nerve damage: EMG
  - Nerve traction: EMG, PT, yoga, meditation
  - Migraine: sumatriptan, rizatriptan, beta-blockers, etc.
  - Reflex sympathetic dystrophy: lidocaine patch
3. **Idiopathic Pain**: examples include fibromyalgia  
Suggested treatments: exercise, antidepressants (including duloxetine), yoga, meditation, sleep hygiene

This protocol 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 2/1/22.

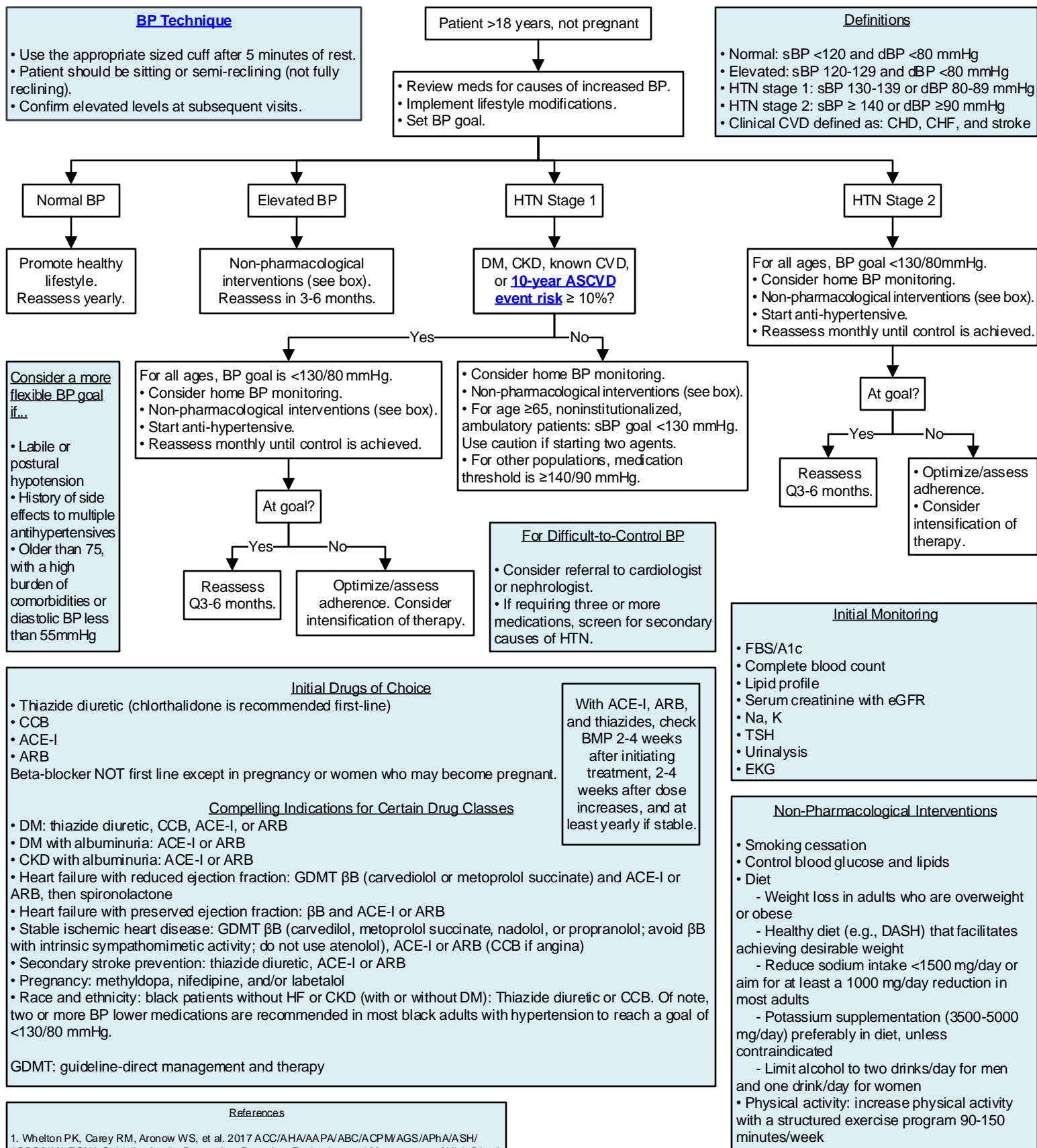
If comments about this guideline, please contact [Heidi\\_Salisbury@ykhc.org](mailto:Heidi_Salisbury@ykhc.org).



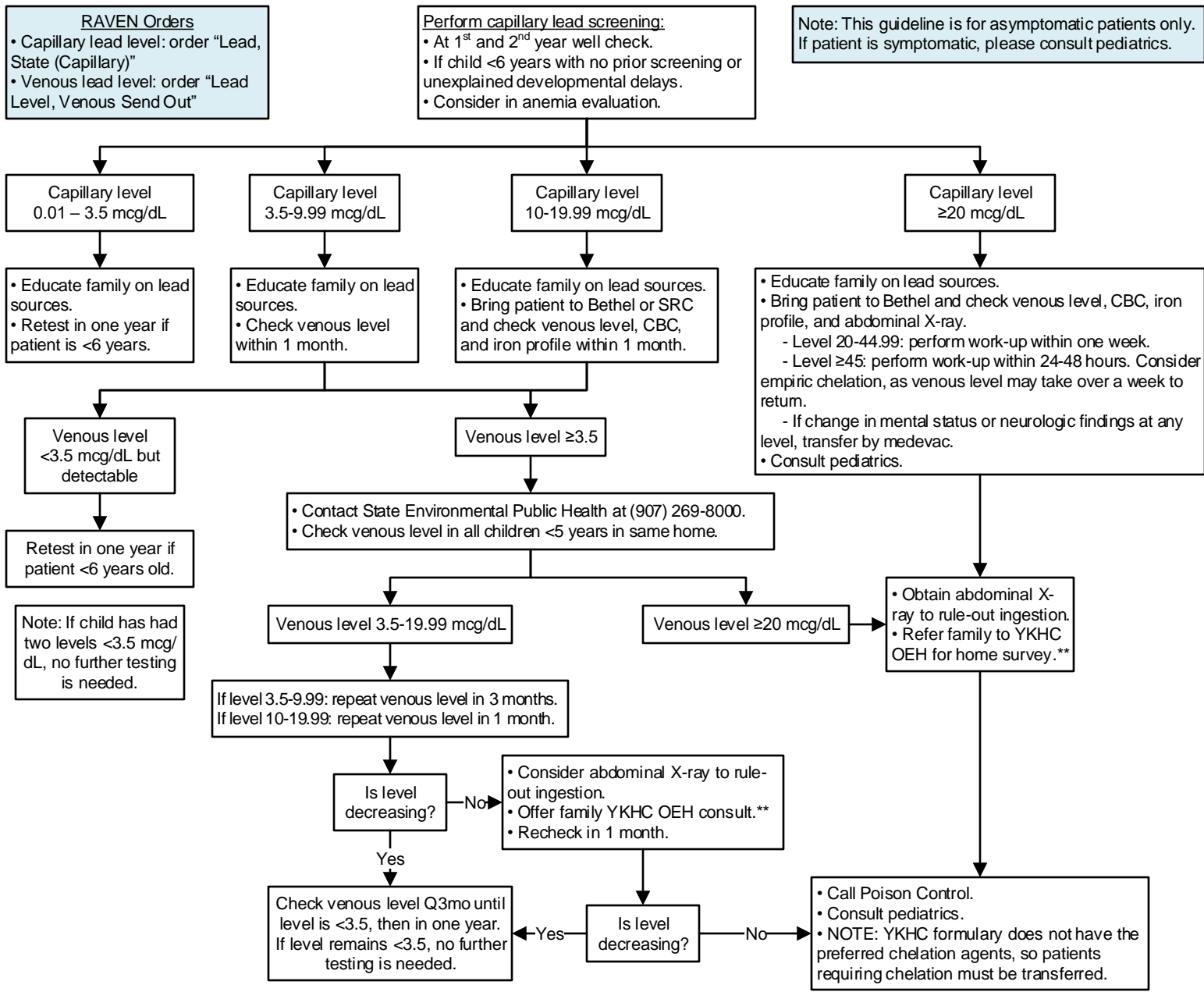
For terminal cancer patients (with life expectancy less than or equal to 6 months) who have previously demonstrated good compliance with Chronic Medication agreement, documentation of titration for pain control as appropriate is acceptable without requiring new agreement. Continue to monitor for achievement of goals/behaviors of concern.

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Approved by MSEC 2/1/22.  
If comments about this guideline, please contact  
Heidi\_Salisbury@ykhc.org.





This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner. Approved by MSEC 7/6/21. Click [here](#) to see the supplemental resources for this guideline. If comments about this guideline, please contact Jason\_Barrett@ykhc.org or Marsha\_Dunkley@ykhc.org.



- Common Sources of Lead in Alaska**  
 • Mining lead, zinc, silver, or gold ore  
 • Lead paint in homes or buildings built before 1978  
 • Firearms and ammunition  
 • Shooting ranges  
 • Game meat shot with lead ammunition  
 • Fishing weights  
 • Leaded aviation gas  
 • Marine paint  
 • Soldering, welding, or craft-making  
 • Pica or "mouthing" (eating dirt)  
 • Imported household objects  
 • Lead or brass pipes/faucets  
 • Batteries and automobile repair sites

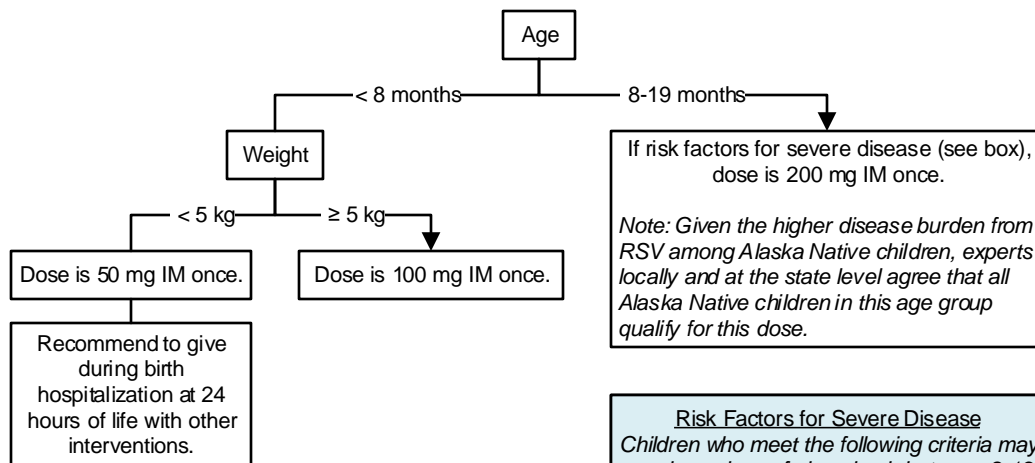
**\*\*To consult YK Office of Environmental Health (OEH), call 543-6420 with patient's name and DOB, lead levels, and parent's contact information. OEH can review environmental risk factors with family and offer a home visit if appropriate.**

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner. Approved by MSEC 3/1/22. Click [here](#) to see the supplemental resources for this guideline. **If comments about this guideline, please contact Justin\_Willis@ykhc.org.**



## General

- Nirsevimab (brand name Beyfortus™) is a monoclonal antibody to prevent RSV.
- Studies show that nirsevimab prevents ~80% of hospitalizations when given to infants <8 months.
- The season will be October 1, 2023 through March 31, 2024. This may be extended if RSV is still being seen at the end of this period.
- At YKHC, dose will be given during the birth hospitalization at 24 hours of life whenever possible.
- NOTE: The AAP recommends that nirsevimab not be given to infants whose mothers have received the maternal vaccine (Abrysvo™) more than 14 days prior to delivery unless the infant is at “substantially increased risk for severe disease.” Experts locally and at the state level have agreed that Alaska Native children are at increased risk of severe disease.
  - Thus, Alaska Native infants should be given nirsevimab during the birth hospitalization regardless of maternal immune status.
  - Recommendations are still evolving for infants without risk factors for severe disease. If the mother of a non-Alaska Native infant has received Abrysvo™ >14 days prior to delivery, that infant does not meet criteria for nirsevimab at birth but may benefit from administration at 3-6 months of life. This guideline will be updated as recommendations become available.



If risk factors for severe disease (see box), dose is 200 mg IM once.

*Note: Given the higher disease burden from RSV among Alaska Native children, experts locally and at the state level agree that all Alaska Native children in this age group qualify for this dose.*

## Risk Factors for Severe Disease

Children who meet the following criteria may receive a dose of nirsevimab between 8-19 months.

- American Indian and Alaska Native children.
- Children with chronic lung disease of prematurity who required medical support (chronic corticosteroid therapy, diuretic therapy, or supplemental oxygen) during the 6-month period before the start of their second RSV season.
- Children with severe immunocompromise.
- Cystic fibrosis patients who have either 1) manifestations of severe lung disease (previous hospitalization for pulmonary exacerbation in the first year of life or abnormalities on chest imaging that persist when stable) or 2) <10<sup>th</sup> percentile weight-for-length.

## Palivizumab (Synagis®)

- Non-Alaska Native children between 8-23 months with chronic lung disease or congenital heart disease may meet criteria for palivizumab.
- See the [Alaska State Epidemiology Bulletin for the 2022-2023 criteria for palivizumab](#) for more details.

## References and Resources

- [Alaska State Epidemiology Bulletin for Nirsevimab](#)
- [Alaska State Epidemiology Bulletin for RSVPreF Vaccine \(Abrysvo\)](#)
- [AAP FAQ for Nirsevimab](#)

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 Clinical Guideline Committee 10/20/23.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



### Initial Visit

- Review NICU/Nursery course and summarize highlights in note. Update Problem List. Make patient CPP.
- Enter birth weight and gestational age so that RAVEN Growth Chart will correct for gestational age. (Go to Growth Chart → Enter New → Measurement → Preterm Growth Chart: Change date to DOB, enter gestational age at birth, and enter birth weight.)
- Check height and weight. Do not discharge to village if not having appropriate weight gain (at least 25 grams per day for 4-5 consecutive days), temperature <97.7, or rising bilirubin level.
- Check bilirubin level if appearing jaundiced.
- Ensure infant is receiving fortified formula (ie Neosure) if discharged from the NICU on it. Infant should remain on this formula until 6 months corrected gestational age.
- Place order: "Refer to Family, Infant, Toddler Program."
- Place order: "Refer to Audiology Internal." In comments, type, "Premature infant: needs evaluation by 9 months corrected gestational age."
- If born <34 weeks, place order: "Refer to Child Family Developmental Services External", CFDS Sub-Specialty drop down "NICU Graduate Clinic."
- Place referrals for any subspecialists per NICU/nursery discharge summary.
- If Hgb level <9.5 g/dL at discharge, repeat hemoglobin level 2 weeks after discharge. If still <9.5 g/dL, repeat 2 months post-discharge.
- Write Vitamin D prescription with 11 refills and ensure receiving 800 IU Vitamin D supplementation. (Poly-vi-sol with iron has 400 IU of Vitamin D per drop.)
- Write iron prescription with 11 refills and ensure receiving iron supplementation (Poly-vi-sol or iron polysaccharide). Needs 2 mg/kg iron supplementation for first year of life. (Note: Poly-vi-sol with iron contains 11 mg/mL of iron.)

To consult the pediatrician on call, send a message through Tiger Connect to Peds Wards on Duty.

### General Information

- Soy milk formulas should not be given to preterm infants.
- Physiologic reflux is more common in preterm infants. There is no evidence to support the use of gastric acidity inhibitors. H<sub>2</sub> blockers and PPIs are associated with gastroenteritis, pneumonia, and bone fractures.
- Catch up growth of premature infants occurs for head first (3-8 months), then weight, then length.
- Recommend every member of the household is up to date on Tdap, COVID, and seasonal influenza vaccines to protect these high-risk infants.

### Criteria for Referral to Child Family Developmental Services (CFDS) Birth to Three High Risk Clinic

*This is a specialty clinic in Anchorage that follows high-risk infants.*

- Birth weight (BW) <1500 grams.
- Gestational age <34 weeks.
- Cardiorespiratory depression at birth
- Apgar score <5 at 5 minutes
- Prolonged hypoxia, acidemia, hypoglycemia, or hypotension requiring pressors.
- Persistent apnea requiring medication.
- Oxygen support for >28 days and X-ray findings consistent with chronic lung disease.
- Extracorporeal membrane oxygenation (ECMO)
- Persistent pulmonary hypertension of the newborn (PPHN)
- Seizure activity
- Intracranial pathology, including intracranial hemorrhage, periventricular leukomalacia, cerebral thrombosis, cerebral infarction, or any developmental/central nervous system (CNS) abnormality
- Other neurological insult, including hypoxic ischemic encephalopathy (HIE), kernicterus, sepsis, CNS infection
- Confirmed prenatal exposures to alcohol, methamphetamines, opiates, or Suboxone.

### All Subsequent Visits until Child is 24 Months Old

- Review and update Problem List.
- Assess growth based on corrected gestational age. Consult pediatrics if: there is a need to increase/decrease feeding calories, head circumference growth >1.25 cm/week, or infant is crossing major percentile lines.
- Review feeding, sleep, and development in detail.
- Check on FIT involvement. If family has not been contacted by FIT, reach out to Peds Wards on Duty, who will contact the FIT liaison.
- Give all vaccines per routine schedule based on chronologic age.
- Administer ASQ at **9 months**, **18 months**, and **24 months** chronologic age.
- Administer **MCHAT-R** at 18 months and 24 months chronologic age.
- Ensure specialty appointments/referrals have been made.
- If on caffeine, alter dose based on [Caffeine Protocol, Post-NICU Discharge Resource](#).
- If diagnosis of Bronchopulmonary Dysplasia or Chronic Lung Disease of Prematurity, check blood pressure at each visit. For normal neonatal and infant BPs, see [this page](#), table 1 and figures 1A and 1B.
- If infant qualified for Synagis, ensure monthly doses are given during RSV season until course is complete. Ensure patient is scheduled for these visits. Check Problem List for when next dose is due and how many doses will complete infant's course. If concerns or questions, email YKHCSynagis@ykhc.org.
- Ensure receiving Vitamin D 800 IU supplementation (Poly-vi-sol with iron has 400 IU of Vitamin D per drop).
- Ensure receiving iron supplementation (Poly-vi-sol or iron polysaccharide). Needs 2 mg/kg iron supplementation for first year of life. (Note: Poly-vi-sol with iron contains 11 mg/mL of iron.)

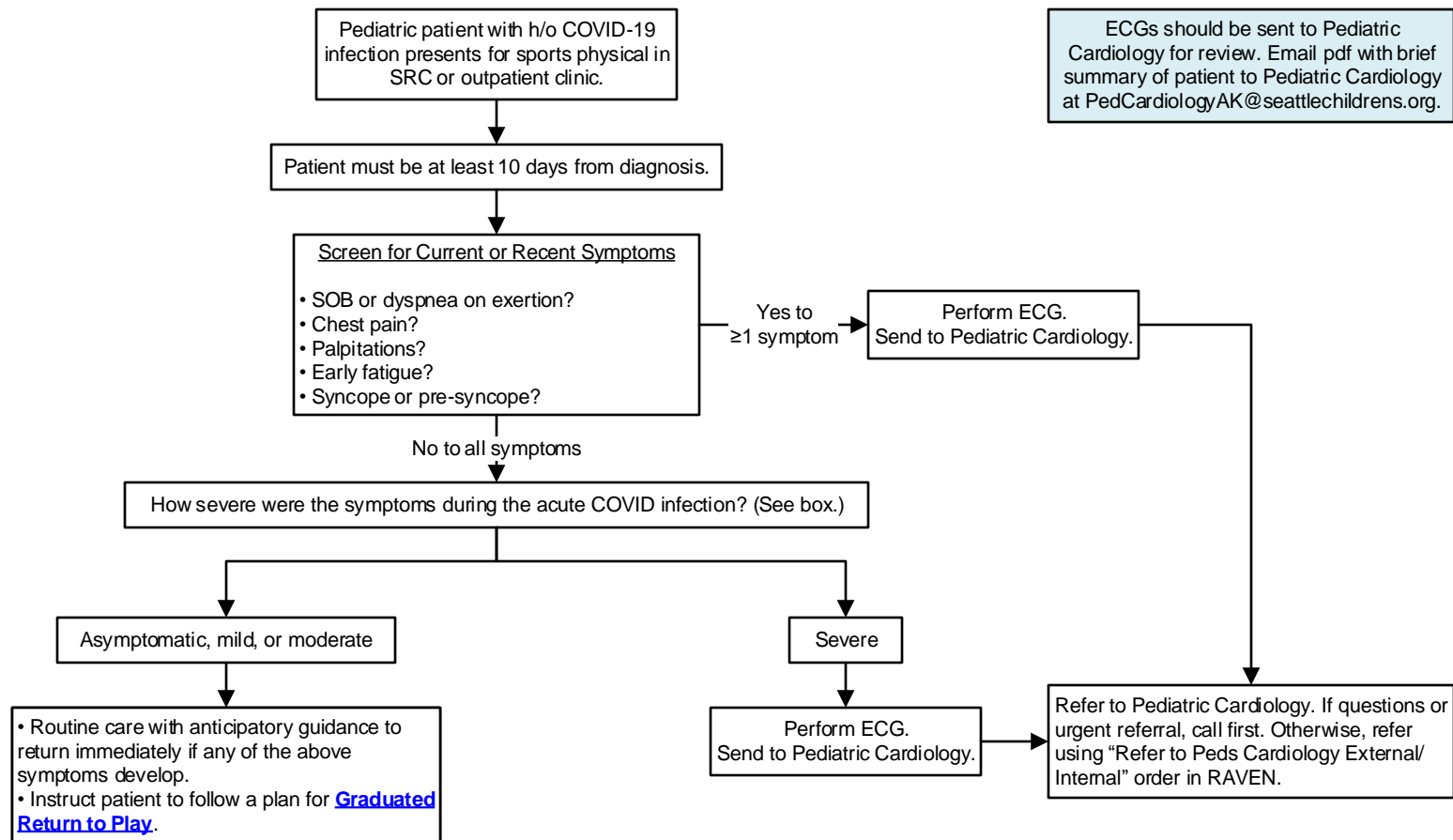
Please see the [Care of Late Preterm Newborns](#) guideline for information about late preterm babies who were cared for at YKDRH and were not admitted to a NICU.

**Documentation:** Use the autotext ".pednicugrad" for a summary of this checklist for charting purposes.

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 11/2/21.

If comments about this guideline, please contact [Justin\\_Willis@ykhc.org](mailto:Justin_Willis@ykhc.org).



### Symptom Severity Classification for this Guideline

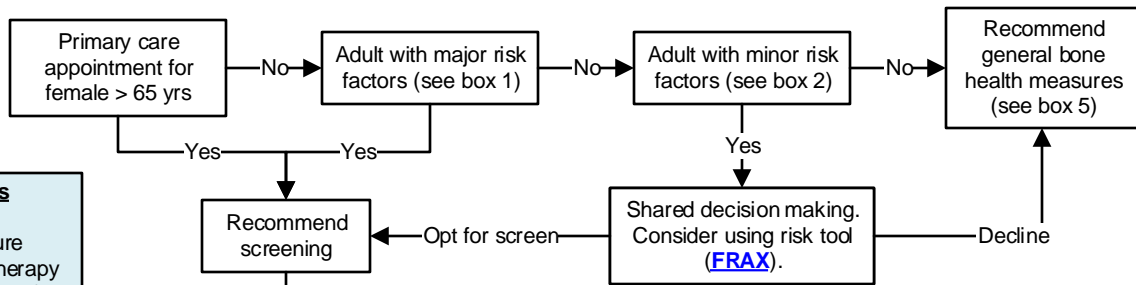
- Mild: no fever, <3 days of symptoms
- Moderate: prolonged fevers and bedrest, hospitalization not required, no abnormal cardiac testing throughout course
- Severe: hospitalized, abnormal cardiac testing, or MIS-C

**Note:** Providers may use their clinical judgment and perform an ECG if cardiac concerns not addressed by this guideline.

### Phone Numbers

Seattle Children's Pediatric Cardiology of Alaska (located in Anchorage):  
 • Phone: (907) 339-1945  
 • Fax: (907) 339-1994

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 Clinical Guideline Committee 9/25/23.  
 Click [here](#) to see the supplemental resources for this guideline.  
 If comments about this guideline, please contact [Leslie\\_Herrmann@ykhc.org](mailto:Leslie_Herrmann@ykhc.org).



**Box 1: Major Risk Factors**

- Adult > 50 with low-trauma fracture
- Adult on chronic glucocorticoid therapy (>5mg prednisone/day for > 3 months) or aromatase inhibitor
- History of bone metabolic disease (osteogenesis imperfecta, untreated hyperthyroidism, hypogonadism)

**Box 2: Minor Risk Factors**

- Male > 70
- Parental history of hip fracture
- Tobacco use or excessive alcohol use
- Low body weight (BMI < 20)
- Chronic use of a medication in box 3
- Presence of chronic condition in box 4

**Box 3: At Risk Medications**

- SSRI or lithium
- Proton pump inhibitor
- Antiepileptics
- Lasix
- Methotrexate
- Selective estrogen receptor modulator
- Heparin or warfarin

**Box 4: At Risk Conditions**

- DM type 1
- Premature menopause (age < 40)
- Chronic liver disease
- Chronic malnutrition or malabsorption
- Rheumatoid arthritis

**Box 5: Promote Bone Health**

- Ensure adequate intake of calcium and vitamin D, either through diet or supplementation.

**Recommended Calcium Intake**

Age	Sex	RDA mg/day
19-50	M+F	1000
51-70	M	1000
51-70	F	1200
>70	M+F	1200

**Recommended Vitamin D Intake**

Age	Sex	RDA IU/day
19-70	M+F	600
>70	M+F	800

- Recommend at least 90 minutes weight bearing exercise per week
- Maintain healthy weight. Avoid tobacco or excess alcohol.

Provider orders:  
 • CBC, CMP, TSH, vit D level  
 • CT bone density (at YK)  
 • DEXA is an option, only available at ANMC, and all subsequent monitoring must be with DEXA and not CT

• Supplement vitamin D to level > 20.  
 • If present, identify secondary cause of osteoporosis from screening labs (e.g. hyperthyroidism, hypercalcemia) and manage or refer.

BMD < 80 mg/cm<sup>3</sup>

Osteoporosis

Recommend treatment (next page).

80 ≤ BMD ≤ 120 mg/cm<sup>3</sup>

Osteopenia

Use **FRAX** tool. Is the 10 year risk of major osteoporotic fracture > 20% or risk of hip fracture > 3%?

BMD > 120 mg/cm<sup>3</sup>

Normal bone density

• Recommend general bone health and fracture prevention measures (see box 5 & 6).  
 • No consensus recommendation on how frequently to repeat screening.

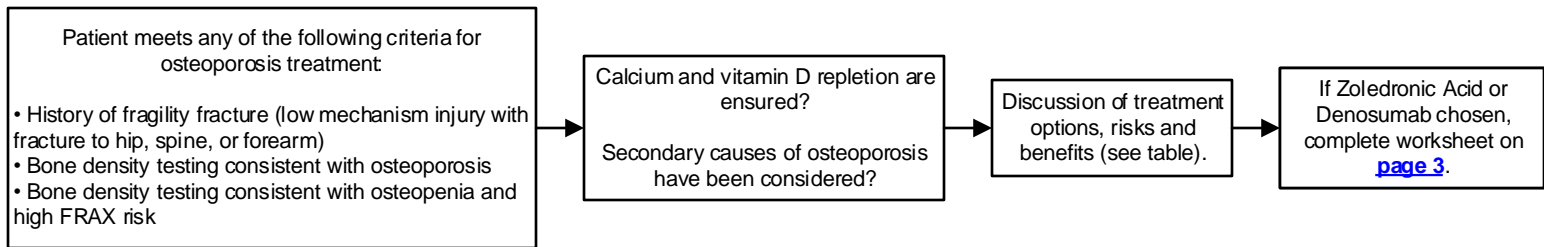
**Box 6: Prevent Fractures**

- Home safety review (loose rugs/cords, grab bars in bathroom, adequate lighting, etc)
- Prescribe walker or cane if appropriate
- Address polypharmacy, deprescribe if appropriate (diuretics, beta blockers, sedatives)
- Screen for visual and hearing impairment
- Consider PT referral

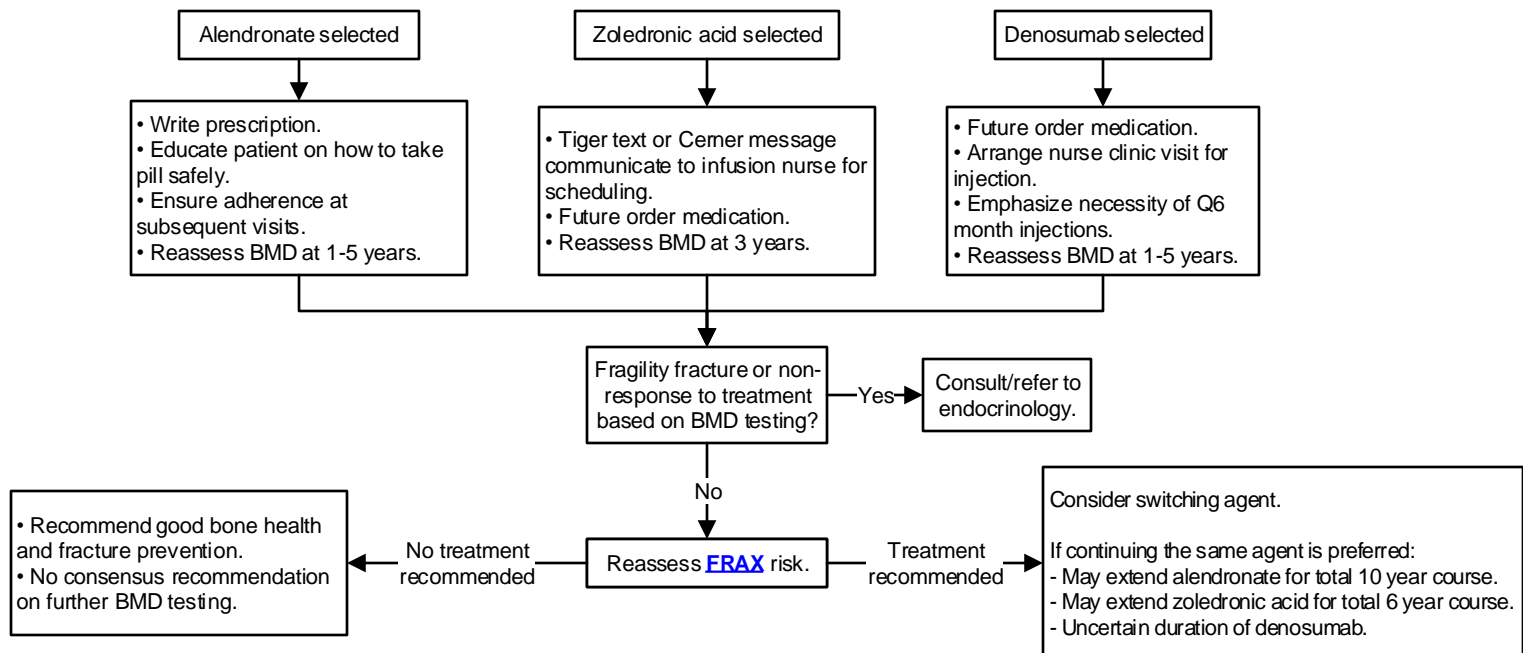
**References**

- [ANMC Osteoporosis Guideline](#)
- [USPSTF](#)
- [American College of Radiology](#)

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 11/7/23.  
 Click [here](#) to see the supplemental resources for this guideline.  
 If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).



Agent	Route of administration	Frequency and duration	Efficacy	Contraindications	Adverse effects
Alendronate	PO (first thing in the morning on empty stomach with glass of plain water, then sit upright x 30 min)	Daily or weekly for 3-5 years. Followed by 2 year break.	<ul style="list-style-type: none"> <li>Reduces risk of serious fracture by 20-70% over 10 years.</li> <li>Number needed to treat is between 17 and 100.</li> </ul>	<ul style="list-style-type: none"> <li>CrCl &lt; 35 ml/min</li> <li>Severe esophagitis or esophageal dysmotility (not just GERD)</li> <li>Inability to sit upright x 30 min</li> </ul>	<ul style="list-style-type: none"> <li>Osteonecrosis of the jaw estimated risk 1-5 in 10,000.</li> <li>Severe esophagitis.</li> <li>Atypical femur fracture.</li> </ul> Note: in RCTs there was no significant difference in adverse effects vs placebo.
Zoledronic acid	IV infusion	Annually for 3 years, followed by 2 year break	Same as alendronate, but may be enhanced by increased adherence	CrCl < 35ml/min	<ul style="list-style-type: none"> <li>Same as alendronate</li> <li>Potential difficulty/delay in emergency dental care</li> <li>Infusion reaction</li> </ul>
Denosumab	Subcutaneous injection	Every 6 months, discontinuation must be immediately followed by bisphosphonate	Same as bisphosphonates.	Inability to complete Q6 month visits.	<ul style="list-style-type: none"> <li>ONJ estimated risk 3 in 1,000</li> <li>Rapid bone density loss upon discontinuation if not followed immediately by bisphosphonate</li> </ul>



### References

- [American Society of Endocrinologists](#)
- [American College of Physicians](#)
- [AAOMS Position Paper on MRONJ 2022](#)

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Approved by MSEC 11/7/23.

Click [here](#) to see the supplemental resources for this guideline.  
If comments about this guideline, please contact [clinical\\_guidelines@ykhc.org](mailto:clinical_guidelines@ykhc.org).



### Osteoporosis Treatment Options and Consent

I am considering taking either Zoledronic Acid (Reclast) or Denosumab (Prolia) to lower my risk of serious fracture.

My provider has discussed the following risks, benefits, and alternatives with me.

Purpose of treatment	<ul style="list-style-type: none"> <li>Reduce risk of serious fracture such as hip, pelvis, or spine fracture. Elders living in the YK Delta might have a higher risk of fracture than others in the US. This might be a 3-4 percent risk over ten years, or a 1 in 25 chance.</li> <li>Serious fractures can lead to long hospital stays, loss of independence, need for nursing homes, and even increased risk of death.</li> </ul>
Benefits of treatment	<ul style="list-style-type: none"> <li>All of the available medicines at YK are effective at preventing fractures.</li> <li>All of the medicines could lower the risk of serious fracture by between 20 and 70 percent.</li> <li>This might reduce a person's risk of serious fracture from 3-4 percent to as low as 1 percent.</li> </ul>
Risks of treatment	<ul style="list-style-type: none"> <li>The medicine isn't effective for me and I have a serious fracture anyway.</li> <li>Osteonecrosis of the jaw. This means exposed jaw bone that is painful or infected, and could result in multiple surgeries or chronic pain. This is most likely to happen after a pulled tooth or dental procedure. But it can happen spontaneously. The risk of that side effect could be between 0.01% (1 in 10,000) and 0.3% (1 in 300). The risk can be lowered by regular dental care and good oral hygiene.</li> <li>Other rare side effects: atypical femur fracture, esophagitis, allergic/infusion reaction</li> <li>If the medicine is not taken exactly as the provider instructs, it may not be effective. One of the medicines (Denosumab) will actually increase the risk of fracture if not taken every 6 months.</li> </ul>
Alternatives to treatment	<ul style="list-style-type: none"> <li>Alendronate This is the same type of medicine as Zoledronic Acid. It is taken as a pill once a week and the person must take it first thing in the morning on empty stomach with glass of plain water, then sit upright for 30 minutes. It is about as effective as Zoledronic Acid, if people can remember to take it correctly. It also has a risk of osteonecrosis of the jaw, but if there are dental problems it is easier to stop this medicine than Zoledronic Acid.</li> <li>It is very important for all adults to stay active, get at least 90 minutes of weight bearing physical activity per week, consume enough calcium and vitamin D, and learn about preventing falls in the home.</li> </ul>

I would like to start treatment for osteoporosis with Zoledronic Acid or Denosumab.

I understand the purpose, benefits, risks, and alternatives that my provider reviewed with me.

Please choose one:

I would like to start the treatment right away. This may have more benefit preventing fractures sooner, but also more risk if I have a dental emergency.

I would like to see a dentist before starting treatment. I understand this may result in a delay before I can start the medicine.

Patient Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date and Time: \_\_\_\_\_

All patients should be verbally referred and encouraged to see a dentist even if they want to immediately start treatment. Dental takes walk in patients every day. Providers are also welcome to consult with a dentist before counseling a patient on their dental risks.

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Age	Hb/Hct	Coags	Lytes	BUN/Cr	Glucose	LFTs	EKG	CXR	T&S
30 months – 59 years	No routine testing needed in this age group.								
60 – 74 years							X		

Disease	Hb/Hct	Coags	Lytes	BUN/Cr	Glucose	LFTs	EKG	CXR	T&S
Hypertension			X				X		
Card – moderate	X		X	X			X		
Smoker > 20 years	X								
Malignancy	X								
Lymphoma	X (CBC)							X	
Hepatic	X	X	X			X			
Renal	X	X	X	X					
Bleeding	X (CBC)	X							
Diabetes			X	X	X		X		
Expected blood loss	X								X

Medication	Hb/Hct	Coags	Lytes	BUN/Cr	Glucose	LFTs	EKG	CXR	T&S
Diuretic			X	X					
Antihypertensive			X	X			X		
Cardiac medication			X	X			X		
Steroid			X		X				
Anticoagulant	X	X							

### Other

**Urine hCG:** obtain within 48 hours of surgery in women of childbearing age (13-50).

**Drug Levels:** draw level on all patients on digoxin or phenytoin.

**CXR:** obtain if recent change in sputum quality or color, pneumonia in past three months, chronic home oxygen use, planned intrathoracic surgery, or if exam reveals rales, rhonchi, or wheezes.

### Surgical Risk Screening for Elective Procedures (including endoscopy)

- Patients who are not to be scheduled at YKHC:
  - Patients with BMI > 45.
  - Severe obstructive sleep apnea.
  - Patients with pending cardiology, pulmonology, or sleep study referrals.
  - Patients younger than 30 months.
  - Patients older than 75 years.
  - Medically unstable patients (for example, uncontrolled diabetes mellitus, uncontrolled hypertension, etc.).
- Preventative antibiotic therapy will be administered within one hour prior to skin incision per protocol pre-operatively based on procedure type and patient's allergies unless otherwise ordered by physician.
- DVT/VTE prevention methods will be implemented using **SCIP Mechanical Prophylaxis Protocol** unless contraindicated or otherwise documented in orders by physician.

### Diabetes Management

- Oral agents: Discontinue SGLT2 inhibitors 3-4 days prior to surgery. Discontinue all other oral agents the evening prior to surgery, except Metformin can be taken. No oral agents except Metformin the morning of surgery.
- For patients who take insulin, consult pharmacy.**  
For patients who take long acting insulin in the morning, take 50% dose of NPH insulin or 75% dose of long-acting insulin (lantus) the morning of surgery.  
For patients who take long acting insulin at night, take 75% dose of NPH or lantus the night before surgery.  
For patients who take short acting insulin (regular, aspart), stop this insulin when fasting begins.
- Consume apple or cranberry juice up to two hours prior to arrival to surgery if insulin was given.
- For insulin pumps, set to basal rate and continue throughout pre-operative period.
- Upon arrival to Holding Area, obtain glucose level. Anesthesia will treat results.

Please send a message via Tiger Connect to "OR CRNA on call" with any questions about patient selection, etc.

See YKHC Policy & Procedure on [Patient Selection Criteria for Ambulatory Surgery](#).

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Approved 6/6/22.

If comments about this protocol, please contact  
Jennifer\_Lent@ykhc.org.



### NPO Guidelines

1. All patients are to be NPO after midnight the night before the procedure. Additionally, patients undergoing endoscopy or with delayed gastric emptying will receive more extensive NPO instructions.
2. Patient may brush his/her teeth but should not swallow toothpaste.
3. Gum and candy of any type are not allowed.
4. All patients will be allowed to eat a full, regular diet (solids) up to eight hours prior to surgery. Patients going to the OR at 0730 who were NPO after midnight are considered to meet this standard.

**Estimated Energy Requirements for Various Activities, Based on Duke Activity Status Index\***






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

\* MET = metabolic equivalent

Adapted from J AM Coll Cardiol, with permission from Elsevier.

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Dressing	Description	Drainage	When to Use	Frequency of Change	Examples
Polymem	Pink foam	Light to moderate	Burns, lacerations, abscesses, pressure injuries; nearly any superficial or partial-thickness wound. Doesn't stick to wound.	QOD, up to Q7 days	
Mepilex	White foam	Light to moderate	Burns that are smaller in size, lacerations, abscesses, pressure injuries, nearly any superficial or partial-thickness wound. Doesn't stick to wound. Silicone backing keeps dressing from sliding	QOD, up to Q7 days	
Adaptic	Impregnated gauze	Light to heavy	Burns, frostbite, abscesses, pressure injuries; nearly any superficial, partial or full-thickness wound. Doesn't stick to wound.	Daily	
Gauze	Woven white material	Light to heavy	Always put Adaptic down first. Gauze will stick to wound if applied directly. Used to absorb drainage.	Daily	
ABD pad	Thick white pad	Heavy	Always put Adaptic down first. ABD will stick to wound if applied directly. Used to absorb drainage.	Daily	
Duoderm	Tan with gel-like backing	Light to moderate	Pressure injuries (Stage I-III)	Q3 days	
Sorbalgon	Tightly woven seaweed	Moderate to heavy	Helps absorb exudate. Cut to fit in cavity wound. Not indicated for tunneling as particles may remain when dressing removed.	Daily	
Packing strip	Strips of tightly woven gauze	Light to heavy	Used to fill tunnels, undermining or the wound bed. Pack lightly not tightly. Always document how many pieces used and remove that same number at next dressing change.	Q1-2 days	
Kerlix	Fluffy white roll	Heavy	To secure primary dressing in place vs using tape.	When primary dressing is changed	
Flexicon	Roll with blue line	Light to moderate	To secure primary dressing in place vs using tape.	When primary dressing is changed	

### Notes

- Primary dressing is directly in contact with the wound.
- Secondary dressing is the outer dressing (Medipore pad, Flexicon, etc.).
- Frequency of dressing change will almost always be based on amount of drainage. The goal is to select a dressing that allows for changes every other day or longer.

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Approved by Clinical Guideline Committee 12/9/22.

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Dressing	Description	When to Use	Frequency of Change	Examples
Tegaderm	Clear sheet	Can be used in place of tape for larger wounds. Occlusive.	When primary dressing is changed.	
Medipore pad	Thin white foam with tape border	Can be used to secure Polymem, Mepilex, or Adaptic with gauze.	When primary dressing is changed.	
Cavilon No-Sting Barrier	Wipe or lollipop	Used around outside of wound to protect skin. Used with moderate to heavily draining wounds or with tape irritation.	Apply every three dressing changes.	
Bacitracin	Antibiotic ointment	For wounds with local or systemic infection.	With every dressing change.	
Santyl	Enzymatic debrider (ointment)	Wounds with adherent slough. Must be able to reach base of wound to be effective (bottom-up debrider).	Daily	
DuoDERM hydrogel	Hydrating ointment	Use over exposed tendon for hydration; use over thick eschar that needs to soften for debridement.	With every dressing change.	
Aquaphor	Clear emollient	Burns or frostbite wounds that are epithelializing, healed wounds that itch due to dryness.	Daily (sometimes 2-3x/day).	
CalmoSeptine	Pink lotion	On skin that itches (intact or with little wounds). Can also be used to protect against moisture from exudate, urine, or stool.	Daily (do not scrub off).	
Cavilon Barrier Cream	White lotion	Good on perineum to protect against urine and stool.	Daily (do not scrub off).	
Chlorhexidine	Liquid or scrub	If bacterial load is high. Can be used 1-3 times and then stop to prevent cytotoxic effects.	At most 3 consecutive days.	
Interdry	White fabric	Used to wick moisture between skin folds (with or without the presence of yeast). Do not use with creams or powders. Allow a minimum of 2" of fabric exposed outside the skin for moisture evaporation.	Can be used up to 5 days, depending on fabric soiling, odor, amount of moisture.	

### Notes

- Primary dressing is directly in contact with the wound.
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Wound Type	Sample Wound Care Scripts
Burn	<p><b>Initial Dressings</b> (when wound drainage is heavy, first 1-2 weeks): <i>Usually changed 1-2x/day.</i></p> <ol style="list-style-type: none"> <li>1. Bacitracin ointment applied to Adaptic then applied to wound</li> <li>2. Cover with Abdominal pad</li> <li>3. Secure with Kerlix or Flexicon</li> </ol> <p><b>Once Drainage Slows:</b> <i>Usually changed every 2 days.</i></p> <ol style="list-style-type: none"> <li>1. Cover wounds with just Polymem or Mepilex</li> <li>2. Secure with Flexicon</li> </ol> <p>Aquaphor or similar emollient should be applied to newly healed skin daily to prevent drying out and cracking.</p>
Frostbite	<p><b>Initial Dressings</b> (when wound drainage is heavy, first 1-2 weeks): <i>Usually changed 1-2x/day.</i></p> <ol style="list-style-type: none"> <li>1. Bacitracin ointment applied to Adaptic then applied to wound.</li> <li>2. Cover with Abdominal pad.</li> <li>3. Secure with Kerlix or Flexicon.</li> </ol> <p><b>Once Drainage Slows:</b> <i>Usually changed every two days.</i></p> <ol style="list-style-type: none"> <li>1. Cover wounds with just Polymem or Mepilex.</li> <li>2. Secure with Flexicon.</li> </ol> <p>Aquaphor or similar emollient should be applied to newly healed skin daily to prevent drying out and cracking. Allow blackened areas to remain dry. No ointment application here.</p>
Abscess	<p>Lightly fill wound cavity with Packing Strip (usually ¼" width) or Calcium Alginate (Sorbalgon). <b>If drainage is heavy:</b> <i>Usually changed daily.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Adaptic and ABD pad.</li> <li>2. Secure with Flexicon.</li> </ol> <p><b>If drainage is light:</b> <i>Usually changed every two days.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Polymem or Mepilex.</li> <li>2. Make sure all edges are secure (Medipore tape, Medipore pad, Tegaderm or wrap).</li> </ol> <p>Discontinue packing once wound bed has filled and cavity no longer exists</p>
Tunneling Abscess	<p>Lightly fill wound tunnel with Packing Strip to base of tunnel. Then fill remaining cavity with more Packing Strip or Calcium Alginate (Sorbalgon). <b>If drainage is heavy:</b> <i>Usually changed daily.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Adaptic and ABD pad.</li> <li>2. Secure with Flexicon.</li> </ol> <p><b>If drainage is light:</b> <i>Usually changed every two days.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Polymem or Mepilex.</li> <li>2. Make sure all edges are secure (Medipore tape, Medipore pad, Tegaderm, or wrap).</li> </ol> <p>Discontinue packing once tunnel is &lt;2 cm.</p>
Pressure Ulcer	<p><b>Stage II:</b> <i>Usually changed every 3 days.</i> Cover wound with Tegaderm Hydrocolloid or Duoderm.</p> <p><b>Stage III and IV</b> Fill wound cavity with Packing strip (usually ¼" width) or Calcium Alginate (Sorbalgon). <b>If drainage is heavy:</b> <i>Usually changed daily.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Adaptic and ABD pad.</li> <li>2. Secure with Tegaderm transparent film.</li> </ol> <p><b>If drainage is light:</b> <i>Usually changed every three days.</i> Cover with Duoderm or Tegaderm Hydrocolloid</p>
Laceration	<p><b>If edges are slightly jagged but can nearly come together</b> Apply Steri strips or tissue adhesive.</p> <p><b>If edges are quite jagged and cannot approximate:</b> <i>Usually changed daily.</i></p> <ol style="list-style-type: none"> <li>1. Apply bacitracin to wound (use &lt;1 week).</li> <li>2. Cover with Adaptic and gauze and secure with Medipore pad for first 2-3 days.</li> </ol> <p><b>Once bleeding/drainage slow:</b> <i>Usually changed every 2-3 days.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Polymem or Mepilex.</li> <li>2. Make sure all edges are secure (Medipore pad, Tegaderm, Medipore tape, or wrap).</li> </ol>
Abrasion	<p><b>If drainage is heavy:</b> <i>Usually changed daily.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Adaptic and gauze.</li> <li>2. Secure with Medipore pad.</li> </ol> <p><b>If drainage is light:</b> <i>Usually changed every 2-3 days.</i></p> <ol style="list-style-type: none"> <li>1. Cover with Polymem or Mepilex.</li> <li>2. Make sure all edges are secure (Medipore pad, Tegaderm, Medipore tape, or wrap).</li> </ol>

### Notes

- Any wound that is draining heavily will likely need Cavilon No-Sting skin protectant applied around wound to prevent maceration. This can be reapplied every other dressing change.
- All wounds should be cleaned with wound cleanser or saline prior to application of new dressings.

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Approved by Clinical Guideline Committee 12/9/22.

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### Table 1: Alcohol Hangover (F10.120)

- Poorly defined but universally understood; occurs the morning after a night of heavy drinking.
- In general, starts <12 hours after a binge of <24 hours.
- Sx: fatigue, thirst, headache, nausea, concentration problems, apathy, loss of appetite, dizziness, vomiting, heart pounding/racing.
- Requirements: HR<130, BP<160/100, RR<24, T<100.4, ambulatory, GCS=15, appropriate history, no tremor, no anxiety, no significant comorbidities.

### Table 2: Inpatient Criteria

- CIWA>12, despite treatment with PB/BZD.
- Requiring high-dose sedatives or IV infusion to maintain CIWA<12.
- GCS<8 or hemodynamic instability.
- Persistent hyperthermia (T>100.4 F).
- Respiratory insufficiency (hypoxia, hypercapnia, etc.).
- Marked acid-base disturbance.
- Cardiac disease (heart failure, arrhythmia, evidence of ischemia, etc.).
- Severe electrolyte abnormality.
- Severe renal insufficiency or requiring high volume fluids.
- Evidence of rhabdomyolysis.
- Potentially serious infection (PNA, wounds, etc.).
- Severe GI pathology (GI bleed, pancreatitis, etc.).
- Severe psychomotor agitation (high risk to self or others, gravely disabled, etc.).
- Evidence concerning for Wernicke-Korsakoff Syndrome (oculomotor dysfunction, ataxia, severe malnutrition).
- Withdrawal despite very elevated serum ethanol.

### Table 3: Phenobarbital Contraindications

- Absolute: Hx allergy, adverse reactions, or porphyria
- Relative: current significant sedative level (including EtOH, BZD, or anti-psychotics)

### Table 4: Phenobarbital (PB) Protocol

- Phenobarbital 260 mg IV then phenobarbital 130 mg IV every 30-40 minutes until CIWA score  $\leq$  12. No discharge meds.  
OR (for very large/small patients)
- Phenobarbital 4 mg/kg IV (rounded to nearest 130 mg) then phenobarbital 2 mg/kg IV every 30 minutes until CIWA score  $\leq$  12. No discharge meds.  
OR
- Either of the above via IM injection, with subsequent doses very 60-90 minutes.

#### Adverse Effects:

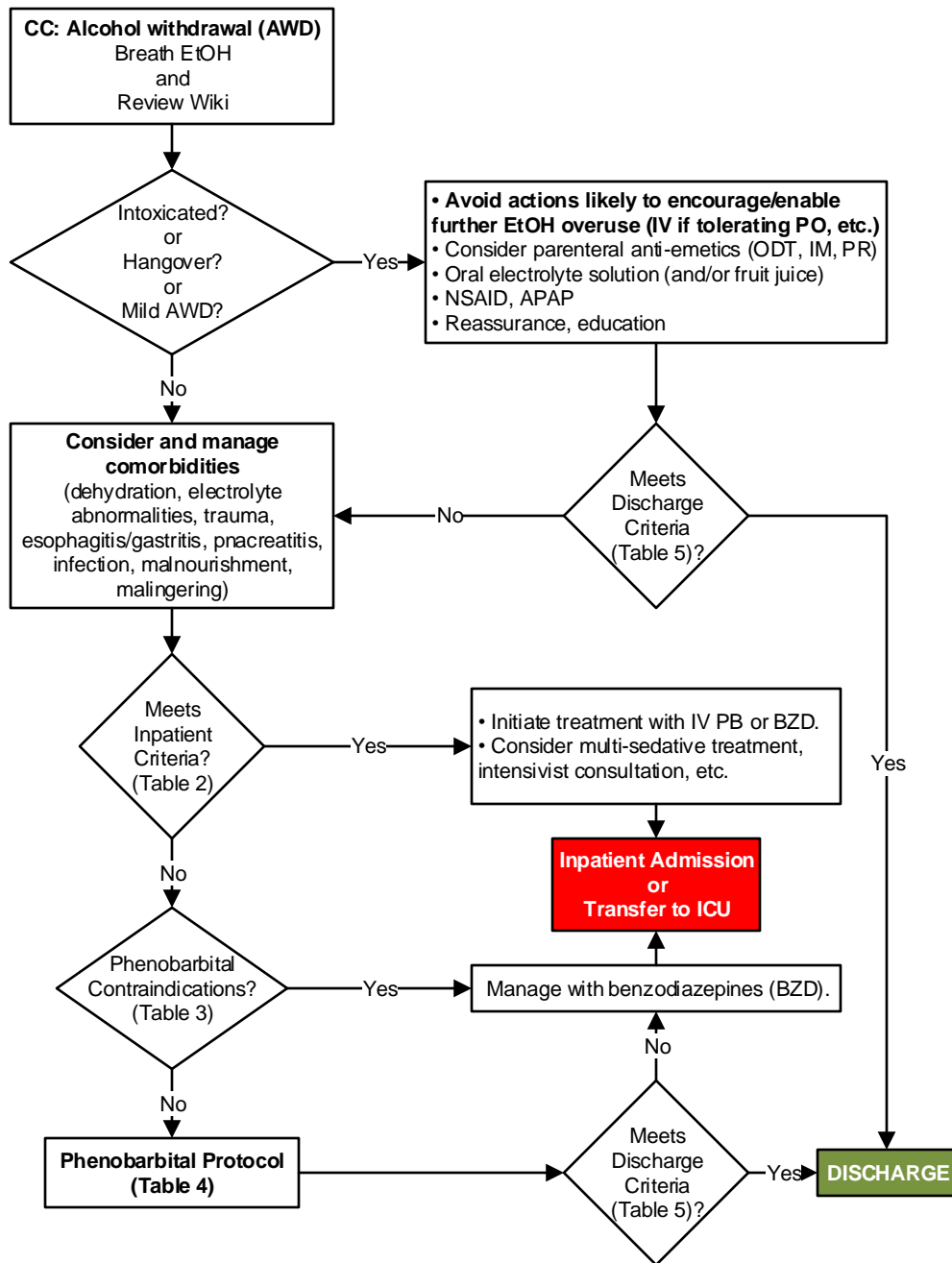
- Transient asymptomatic hypotension
- Transient ataxia
- Transient lethargy

### Table 5: Discharge Criteria

- No inpatient criteria present (Table 2).
- CIWA score <12.
- Awakens to voice or light touch.
- Oriented with no delirium.
- Ambulatory without assistance.
- Taking liquids without vomiting.
- No co-administered sedatives/anti-psychotics.
- No seizures after treatment.
- Likely compliant with important outpatient medications (including antibiotics, etc.).

Please see the Wiki for more information:

[Alcohol Withdrawal in the YK Delta Phenobarbital for Alcohol Withdrawal](#)



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Approved by Clinical Guideline Committee 10/21/22.

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Concern raised by caregiver or teacher for Attention Deficit Hyperactivity Disorder (ADHD) in child aged 6-17 years

For children <6 years, consider referral to CFDS and/or psychiatry group.

Distribute initial Vanderbilt evaluation forms for caregiver and teacher to complete. Click [here](#) for forms.

Schedule appointment with provider trained in ADHD evaluation and management.

Initial Vanderbilt evaluation forms completed by caregiver and teacher. Forms reviewed by provider before, at, or after appointment.<sup>1</sup> Provider conducts medical evaluation at appointment.

Vanderbilt positive for ADHD with comorbid psychiatric conditions

- Address any medical issues (sleep, etc.).
- Refer to psychiatry group for further evaluation and management.

#### Complicated Patients

Refer complicated patients to psychiatry group. Patients on more than one psychiatric medication may require more frequent visits.

#### Contact

- If questions about pediatric management, use Tiger Connect Team "Pediatric Outpatient."
- If a patient has run out of medications, send a Tiger Text to role "Psych Med Refills Only (Not for Patients)."
- To consult a psychiatrist, send a message to Tiger Connect role "Psychiatry Attending Physician (Not for patients)."

Vanderbilt positive only for ADHD and physical/situational/organic conditions excluded. No cardiac contraindications (see box).

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

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

Schedule follow-up appointment within 30 days of starting medication or changing dose. Review follow-up Vanderbilt forms: do they indicate acceptable control of ADHD symptoms with reasonable side effect profile?

Yes

Monthly weight checks in village clinic or Bethel for three months after any dose adjustment.

May refill stimulant prescription for up to three months at a time once on a stable dose without significant adverse effects.<sup>3</sup>

- Follow-up ADHD appointment for medication review (with completed Vanderbilt evaluation forms) every 3 months.
- May alternate face-to-face visits with VTC appointments. Must check height, weight, and VS every 6 months.
- May refill one additional month while awaiting an appointment if necessary.

Vanderbilt negative for ADHD

- Perform full WCC.
- Address any medical issues (sleep, etc.).
- Consider checking lead and vitamin D levels and/or referring to Audiology and Optometry.
- Consider referral to Behavioral Health for counseling or to Child and Family Developmental Services (CFDS) clinic in Anchorage for further neurodevelopmental testing.<sup>2</sup>

Review results with caregiver (may be by phone). Titrate dose as indicated. May consult psychiatrist via Tiger Connect.

No

If any of the following are present, refer to cardiologist prior to starting stimulants:

- Hx congenital heart disease or previous heart surgery
- FHx sudden death suggesting cardiac disease under 40 in a first-degree relative
- SOB on exertion compared to peers
- Syncope on exertion or in response to fright or noise
- Palpitations that are rapid, regular, and start and stop suddenly; fleeting occasional "bumps" do not need investigation
- Chest pain suggestive of cardiac etiology
- S/Sx heart failure
- Heart murmur not c/w benign process
- If BP consistently above the 95<sup>th</sup> percentile for age and height

#### Footnotes

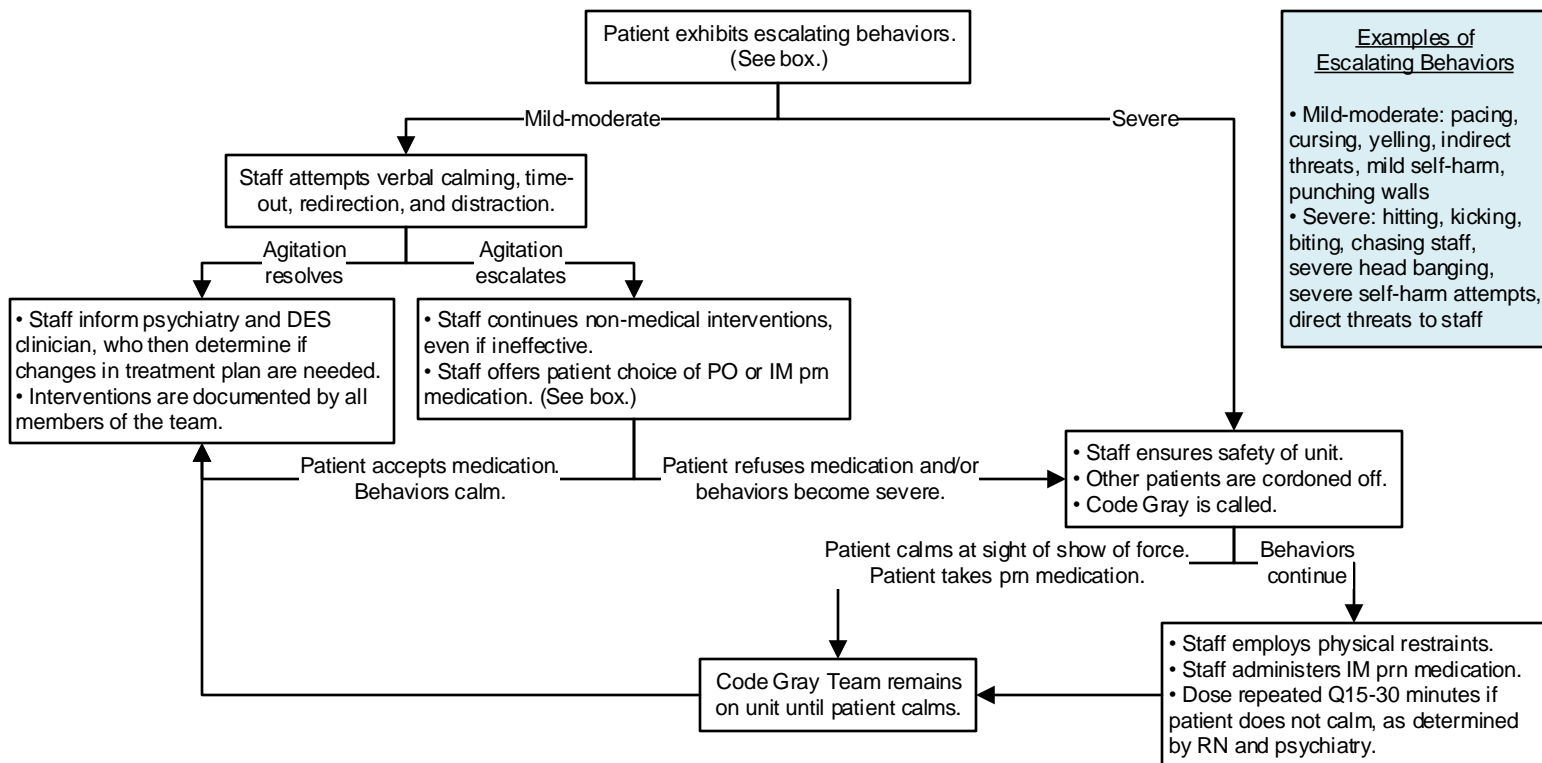
1. Scan completed Vanderbilt forms into MultiMedia Manager under "Continuity of Care."
2. To refer to [CFDS](#) or other private psychologist: use "Refer to Other External" order and send a message to the case manager to process the referral.
3. E-prescribe three separate 30 day prescriptions after checking Alaska PDMP. Include the month the medicine is to be filled in the comments or special instructions section.

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Approved by Clinical Guideline Committee 7/14/23.

Click [here](#) for the supplemental resources for this guideline.

If comments about this guideline, please contact [Clinical\\_Guidelines@ykhc.org](mailto:Clinical_Guidelines@ykhc.org).



### Code Gray

- Code Gray team is activated by pressing button on panel located at the nursing station. This will activate an overhead page on the hospital PA system.
- Code Gray team will include all available security personnel, behavioral health clinician, charge nurse (or designee), and if possible another nurse. Medical provider will attend if able. Goal is a minimum of six team members at all Code Gray events.
- Charge nurse will determine when patient is calm enough for Code Gray staff to leave unit.
- BH clinician and bedside nurse will document incident in detail, including all interventions attempted, if meds were given, patient response and behaviors, actions if restraint and/or seclusion were applied, and timing of events.

### Medications to Treat a Combative Patient

(Use "MED Behavioral Health IP Admission" Power Plan.)

- Olanzapine 5-10 mg IM/PO Q10-30 minutes *pm* up to max 24 hour dose 60 mg.
- Haloperidol 2.5-10 mg IM/PO Q10-30 minutes *pm* up to max 24 hour dose 100 mg.
- If multiple classes and/or high doses of medications are used, consider monitoring of vital signs and/or end tidal CO<sub>2</sub> per provider discretion.
- In 24 hours, if a patient receives >30 mg of haloperidol OR >30 mg of olanzapine OR if doses of both add up to >30 mg, notify hospitalist and perform EKG when patient is stable enough to tolerate it.

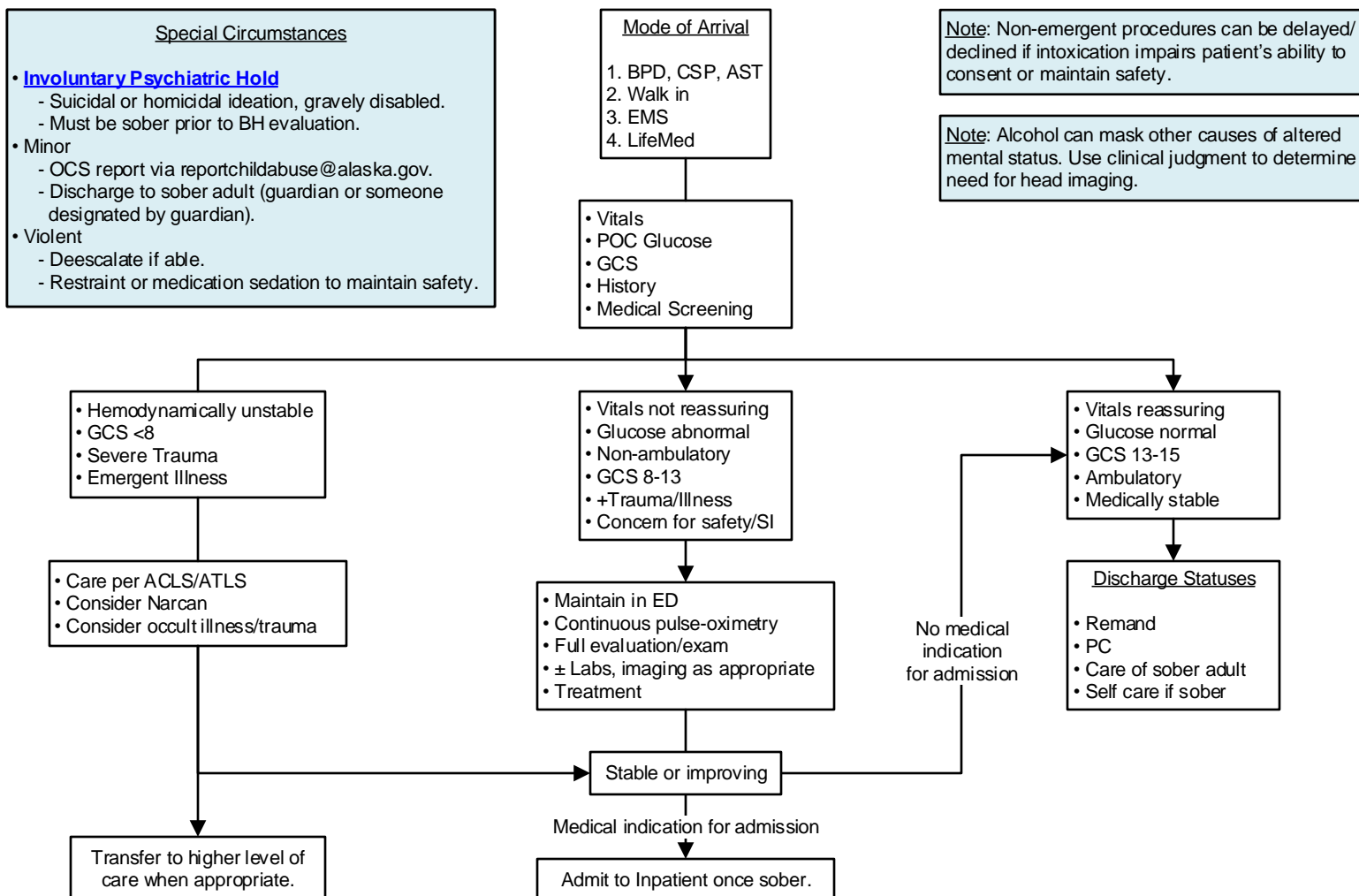
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If comments about this guideline, please contact  
Thomas\_Peterson@ykhc.org.





### Common Complications of Acute Alcohol Intoxication

- Hypoglycemia
- Electrolyte abnormality
- Hypothermia
- Occult trauma
- Co-ingestion/intoxication
- Gastritis
- Pancreatitis
- Hepatitis
- Occult infection
- Aspiration
- Exacerbation of chronic illness
- Victim of physical/sexual assault

### Alcohol Metabolism

- $(\text{Serum Alcohol} - 80) / (20 \text{ to } 30) = \text{Time to sobriety}$
- $\text{BRAC} \times 1000 = \text{Serum Alcohol}$
- Serum alcohol <80 is considered sober.

### Deescalation Strategies for Adolescents

- If not immediately dangerous, attempt simple, nonrestrictive strategies:
  - Verbal de-escalation.
  - Reduction of environmental stimuli (a quiet room is much better than a loud hallway).
  - Offer basic needs (ex, food, warm blanket).

#### Medications

*Use caution when giving medications to intoxicated patients, as alcohol can intensify sedation effects.*

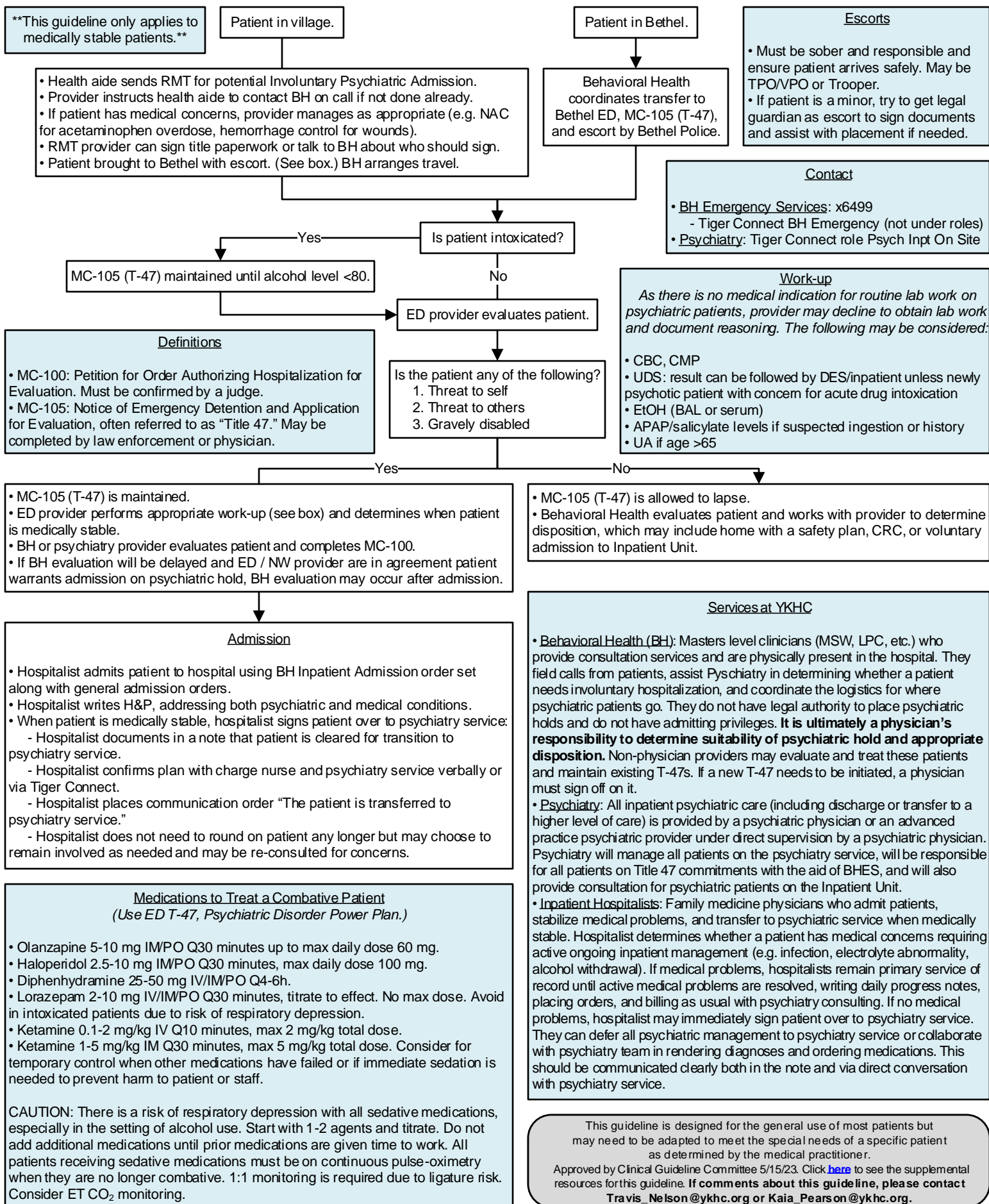
- Oral vs Intramuscular - If the patient is cooperative, offer oral medications first
  - May give the patient sense of some control.
  - Avoid trauma of being physically restrained for IM shot.
  - Many medications are equally effective in oral form
  - If patient is not cooperative, the oral route is not going to be an option.
- Benzodiazepines
  - Lorazepam – 0.05-0.1 mg/kg/dose (PO/IM/IV)
  - Midazolam – 0.25-0.5 mg/kg/dose PO; 0.2-0.3 mg/kg IN; 0.1-0.15 mg/kg/dose IM
- First Generation Antipsychotics
  - Haloperidol – 0.5-5 mg PO; 0.05-0.15 mg/kg IM (up to 5 mg/dose)
- Second Generation Antipsychotics
  - Risperidone – 0.25-2 mg PO/ODT
  - Olanzapine – 2.5-5 mg PO/ODT
- Others:
  - Diphenhydramine – 1 mg/kg/dose (PO/IM)
  - Ketamine
    - Rapid onset due to high bioavailability (even when given IM)
    - No QT prolongation issues
    - Safe even in overdose (important when you aren't sure of patient weight)
    - No respiratory depression (rarely, may see laryngospasm)

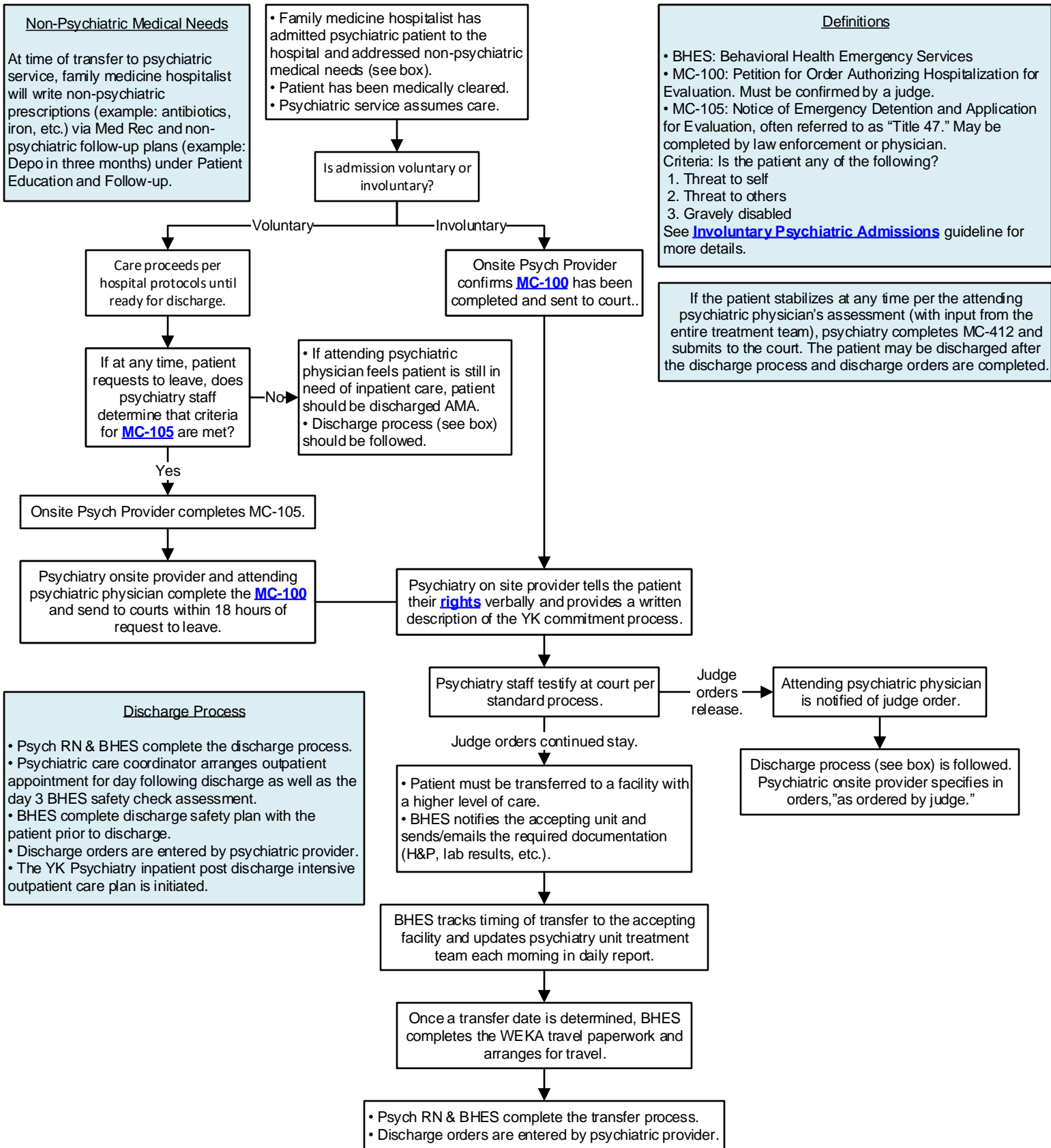
This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.

Approved by MSEC 3/1/22.

Click [here](#) to see the supplemental resources for this guideline.

If comments about this guideline, please contact  
Megan\_Young@ykhc.org.





**Non-Psychiatric Medical Needs**

At time of transfer to psychiatric service, family medicine hospitalist will write non-psychiatric prescriptions (example: antibiotics, iron, etc.) via Med Rec and non-psychiatric follow-up plans (example: Depo in three months) under Patient Education and Follow-up.

- Family medicine hospitalist has admitted psychiatric patient to the hospital and addressed non-psychiatric medical needs (see box).
- Patient has been medically cleared.
- Psychiatric service assumes care.

**Definitions**

- BHES: Behavioral Health Emergency Services
- MC-100: Petition for Order Authorizing Hospitalization for Evaluation. Must be confirmed by a judge.
- MC-105: Notice of Emergency Detention and Application for Evaluation, often referred to as "Title 47." May be completed by law enforcement or physician. Criteria: Is the patient any of the following?
  - Threat to self
  - Threat to others
  - Gravely disabled

See [Involuntary Psychiatric Admissions](#) guideline for more details.

If the patient stabilizes at any time per the attending psychiatric physician's assessment (with input from the entire treatment team), psychiatry completes MC-412 and submits to the court. The patient may be discharged after the discharge process and discharge orders are completed.

**Discharge Process**

- Psych RN & BHES complete the discharge process.
- Psychiatric care coordinator arranges outpatient appointment for day following discharge as well as the day 3 BHES safety check assessment.
- BHES complete discharge safety plan with the patient prior to discharge.
- Discharge orders are entered by psychiatric provider.
- The YK Psychiatry inpatient post discharge intensive outpatient care plan is initiated.



<input type="checkbox"/> Has YKHC pediatric group been briefed and asked for feedback on concerns or issues?	<input type="checkbox"/> N/A
<input type="checkbox"/> Prior to patient returning, has care conference been scheduled with 1-2 pediatricians to represent group/consensus recommendations? Other key participants include: case managers, SRC providers, health aides, and family members.	<input type="checkbox"/> N/A
<input type="checkbox"/> Where will primary care occur – village, SRC, Bethel, or Anchorage?	<input type="checkbox"/> N/A
<input type="checkbox"/> Does home have electricity, running water, and a refrigerator?	<input type="checkbox"/> N/A
<input type="checkbox"/> Is there a back-up plan in place if electricity goes down?	<input type="checkbox"/> N/A
<input type="checkbox"/> Have family/caregivers received CPR training?	<input type="checkbox"/> N/A
<input type="checkbox"/> Does the family have needed emergency equipment? Ex: ambu bag (if no CHA available), suction, pulse-oximeter, oxygen, glucometer, etc. Have they received training on how to use this equipment?	<input type="checkbox"/> N/A
<input type="checkbox"/> Does the family have needed supplies: medications, beds, commodes, syringes, dressings, wheelchair, lotions, etc.?	<input type="checkbox"/> N/A
<input type="checkbox"/> If the patient is at risk for seizures, has the family received Diastat or intranasal midazolam and received the appropriate training?	<input type="checkbox"/> N/A
<input type="checkbox"/> If the patient has a G-tube, are the caregivers comfortable replacing it? Do they have emergency supplies, including an extra G-tube and Foley catheters in the same French size and smaller sizes?	<input type="checkbox"/> N/A
<input type="checkbox"/> If the patient has a port, are the caregivers comfortable accessing it? Have they received the appropriate training? Do they have all the supplies needed to access it?	<input type="checkbox"/> N/A
<input type="checkbox"/> Has an Informed Consent to Return to Village been customized for this patient and approved by Risk Management (Linda Weisweaver and Chris Beltzer as of 11/2022)? [See <a href="#">Peds Folder → Informed Consent to Return to Village</a> for template.]	<input type="checkbox"/> N/A
<input type="checkbox"/> Have the caregivers completed the Informed Consent to Return to Village?	<input type="checkbox"/> N/A
<input type="checkbox"/> If patient is returning to the village against medical advice, have Risk Management, Clinical Director, and appropriate administrators been made aware?	<input type="checkbox"/> N/A
<input type="checkbox"/> If the patient is DNR/DNI/Comfort Care, have the <a href="#">Expected Home Death Forms</a> been completed? Has the <a href="#">POLST Form</a> been completed? Does family have enough medications needed for comfort care?	<input type="checkbox"/> N/A
<input type="checkbox"/> Have all current and anticipated prescriptions with refills been ordered on the YKHC RAVEN Medication List?	<input type="checkbox"/> N/A
<input type="checkbox"/> Is there a prescription for electrolyte replacement solution (ex: Pedialyte)?	<input type="checkbox"/> N/A
<input type="checkbox"/> Has the YKHC RAVEN Problem List been updated with care plans, follow-up needs, therapeutic parameters, etc.?	<input type="checkbox"/> N/A
<input type="checkbox"/> Has a clinic appointment been scheduled to establish care at YKHC?	<input type="checkbox"/> N/A
<input type="checkbox"/> Have the health aides been notified of the complex needs of this patient?	<input type="checkbox"/> N/A
<input type="checkbox"/> Have the nearest SRC providers been notified of the complex needs of this patient?	<input type="checkbox"/> N/A
<input type="checkbox"/> After the care conference: has a detailed note been placed in the chart summarizing the care conference? Has this note been sent by email to the pediatric group, case managers, and SRC providers?	<input type="checkbox"/> N/A
<input type="checkbox"/> Has family referral to YKHC BH been offered?	<input type="checkbox"/> N/A
<input type="checkbox"/> Have VTC appointments been set up for patient and family?	<input type="checkbox"/> N/A



### Wheelchairs

#### Standard Manual Wheelchair Criteria

1. The patient cannot use a cane or a walker for mobility and why (include diagnosis).
2. The patient requires a wheelchair to complete mobility-related ADLS (: toileting, feeding, dressing, grooming, bathing, etc.).
3. The patient is able/willing to propel the wheelchair.

OR

A caregiver is present and can propel the wheelchair.

4. The hallways and doorways in the home are adequate in width to allow a wheelchair to pass through.
5. Timeframe of need: lifetime or a specified amount of time.
6. Size wheelchair needed: 18 inches is standard; 16 inches is narrow; 20 inches is small bariatric.
7. Height and weight within the last 30 days.

#### Hemi Wheelchair

Standard Manual Wheelchair Criteria met AND one of the following:

- a. Lower seat height (17" to 18") required due to short stature.
- b. Patient needs to place feet on the ground for propulsion.

#### Lightweight Wheelchair

Standard Manual wheelchair criteria met AND *both* of the following:

- a. Unable to self-propel in standard chair.
- b. Able to self-propel in lightweight chair.

#### Heavy Duty Wheelchair

Standard manual wheelchair criteria met AND one of the following:

- a. Weight over 250 lb,
- b. Severe spasticity.

#### Extra Heavy Duty Wheelchair

Standard wheelchair criteria met AND weight over 300 lbs.

### Notes

- Case Management will complete a wheelchair packet that includes measurements of the patient and the household doors.
- Wheelchairs are expected to last five years. If a new one is needed sooner, Medicaid will not pay for it.
- Physical Therapy typically stocks standard manual wheelchairs only.
- Other size wheelchairs (hemi, lightweight, heavy duty, etc.) must be ordered from Prodigy by the case managers.
- Custom wheelchairs (e.g. electric) require referral to National Seating and Mobility Clinic (at Providence). Talk to case manager.
- Transport wheelchairs are not covered by Medicaid or provided by Prodigy, but can be shopped for online.

### Commode

#### Standard Commode Requirements

1. Patient is physically incapable of utilizing toilet facilities. This would occur in the following situations:
  - a. The patient is confined to a single room (confinement to a single room means the patient is bedridden, cannot walk with a cane or walker, or cannot use or be wheeled in a wheelchair to access the bathroom).
  - b. The patient is confined to one level of the home environment and there is no toilet on that level.
  - c. The patient is confined to the home and there are no toilet facilities in the home.
2. Height and Weight within 30 days of prescription.

#### Extra Wide/Heavy Duty Commode Chair

Patient meets standard commode requirements AND weight >300 lbs documented in medical record within 30 days.

#### Drop-Arm Commode

Patient meets standard commode requirements AND detachable arms feature is necessary to facilitate transferring the patient OR the patient has a body configuration that requires extra width.

#### A commode is NOT covered by Medicare for the following conditions/situations:

- Urinary urgency or incontinence.
- Slow gait and cannot get to the bathroom in a timely manner.
- Patient is able to walk with or without an assistive device, are able to use a wheelchair in the home, and are able to get to the bathroom.

### Semi Electric Hospital Bed

One or more of the following criteria

- a. Medical condition which requires positioning of the body in ways not feasible with an ordinary bed.
- b. Requires positioning of the body in order to alleviate pain.
- c. Requires head of bed to be elevated more than 30 degrees most of the time due to congestive heart failure, chronic pulmonary disease, or problems with aspiration.
- d. Requires traction equipment, which can only be attached to a hospital bed.
- e. Requires frequent changes in body position and/or has an immediate need for a change in body positions (i.e. a patient has large or multiple pressure ulcers on the trunk or pelvis and needs to be repositioned frequently and is unable to do so without assistance; or the patient has limited strength to move or shift their body).

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 Clinical Guideline Committee 12/9/22.

If comments about this guideline, please contact [ClinicalGuidelines@ykhc.org](mailto:ClinicalGuidelines@ykhc.org).



The following must be included in a provider note for a patient to receive incontinence supplies:

1. Patient is incontinent of feces and urine.
2. All incontinence care is provided by a care taker.
3. 6-8 briefs daily are needed.
4. All attempts at training patient to toilet independently have failed.
5. Length of time needed (may be lifetime).
6. Prognosis of independent bladder control: Poor/not likely.

Note

If patient is expected to need more than six briefs per day, a separate letter of medical necessity must be drafted by the case managers.

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Approved by Clinical Guideline Committee 12/9/22.

**If comments about this guideline, please contact [ClinicalGuidelines@ykhc.org](mailto:ClinicalGuidelines@ykhc.org).**



## Documentation Requirements for Pediatric Nutritional Supplements

The following resource is from the Medicaid Certificate of Medical Necessity.

Medicaid, Medicare, and other insurers have specific requirements for medical provider documentation. If those requirements are not met, nutritional supplements will not be covered.

**Use the autotext “..nutritionalsupplementdocumentation.”**

### Documentation Requirements for the Prescription of Nutritional Supplements:

The following objective documentation is required to show the medical necessity of the nutritional supplement being prescribed.

This information needs to appear in the body of the medical provider’s chart notes:

- Diagnosis of the patient including ICD-10 code.
- Product being prescribed. (Example: PediaSure)
- Why product is medically necessary.
- Goal or target weight for the patient.
- Total daily caloric requirement.
- Total daily calories obtained from ingestion (oral) foods.
- Total daily calories to be obtained from nutritional supplement.

## Documentation Example

*PediaSure is medically necessary for this child.*

**Diagnosis:** dysphagia (R13.10), G-tube dependence

**Product:** PediaSure

**Medical Necessity:** Patient has severe dysphagia. He is undergoing oral feeding therapy but is unable to take any degree of sufficient calories by mouth and is thus entirely dependent on a G-tube for nutrition. PediaSure will give him the nutrition he needs to survive.

**Goal/Target Weight:** currently at target weight of XX kg (XXth percentile for age when corrected for prematurity). Target weight along this trajectory in one year will be XX kg.

**Total Daily Caloric Requirement:** XX calories/day (usually estimate 100-120 cal/kg/day – adjust based on growth)

**Total Calories Obtained from Oral Intake:** 0 calories/day

**Total Daily Calories to be Obtained from Nutritional Supplement:** XX calories/day

For resources and information about nutritional supplements in former premature babies, please see the [ANMC Guideline on Preterm Infant Nutrition through 2 Years Old](#).

This resource 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 Clinical Guideline Committee 11/27/22.

If comments about this resource, please contact [Tamara\\_Hill@ykhc.org](mailto:Tamara_Hill@ykhc.org).