Revised October 2019

CLINICAL GUIDELINES 2019

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Yukon-Kuskokwim
HEALTH CORPORATION

CLINICAL GUIDELINES
2019
rev. 10-17-19

Emergency Department Guidelines

Yukon-Kuskokwim HEALTH CORPORATION

Skin and Soft Tissue Infection, p.1

MSEC approved 07-12-17

Skin and Soft Tissue infection identified

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

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

Abscess present?

Yes → Cutaneous abscess → Perform incision and drainage with local anesthesia. Culture wound and break up loculations. Place fixed Penrose drain if possible. Hot packs/soaks q2-4 hours and rest/elevation if on extremity

No → Purulent drainage or exudate?

Yes → Purulent cellulitis

No → Non-purulent cellulitis → See Page 2

Cellulitis >10 cm or >1% BSA in child (size of child's palm)

No, antibiotics not indicated → Outpatient management with daily follow up until continuous improvement is demonstrated

Yes → Consider empiric oral antibiotic therapy

Empiric oral Antibiotic Therapy
Adults
Septra DS 1-2 tabs PO q12hours (do not give to pregnant women)
Children:
Septra 4-6 mg/kg PO q 12 hours (based on TMP component)
Adults with sulfa allergy:
Doxycycline 100 mg PO q12 hours
Children with sulfa allergy:
>/=8 years: Doxycycline 2 mg/kg PO q12 hours x 10 days (max 100 mg/dose)
<8 years: Clindamycin 10-13 mg/kg PO q8 hours
Pregnant or breastfeeding women:
Clindamycin 450 mg PO TID
***Antibiotic duration 5-7 days**
***Septra and doxycycline do NOT cover strep pyogenes**

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

yes → Outpatient management with daily follow up until continuous improvement is demonstrated

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

No →
- Admission with IV antibiotics. (See Box 3.)
- Recommend blood cultures, CBC, basic metabolic panel.
- Elevation and heating pad.
- Consider IV fluids.
- Address pain control.
- Consider imaging.
- If patient meets criteria for sepsis, follow sepsis guideline

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

BOX 3: Empiric Antibiotic Options
1. Vancomycin:
   • For adults: load with 30 mg/kg IV, then dose 15 mg/kg q8 or q12 hours.
   • For patients <18 years: 20 mg/kg IV q6 hours. If patient is obese, consider dosing based on ideal body weight.
2. Linezolid 600 mg IV/PO q12 hours. Restricted to known MRSA resistance or vancomycin allergy.
3. In children with rapidly progressing cellulitis/abscess or associated systemic symptoms (fever, listlessness, lethargy, etc.) consider covering Haemophilus influenzae type A/B with ceftriaxone 75 mg/kg IV/IM q24 hours in addition to above.

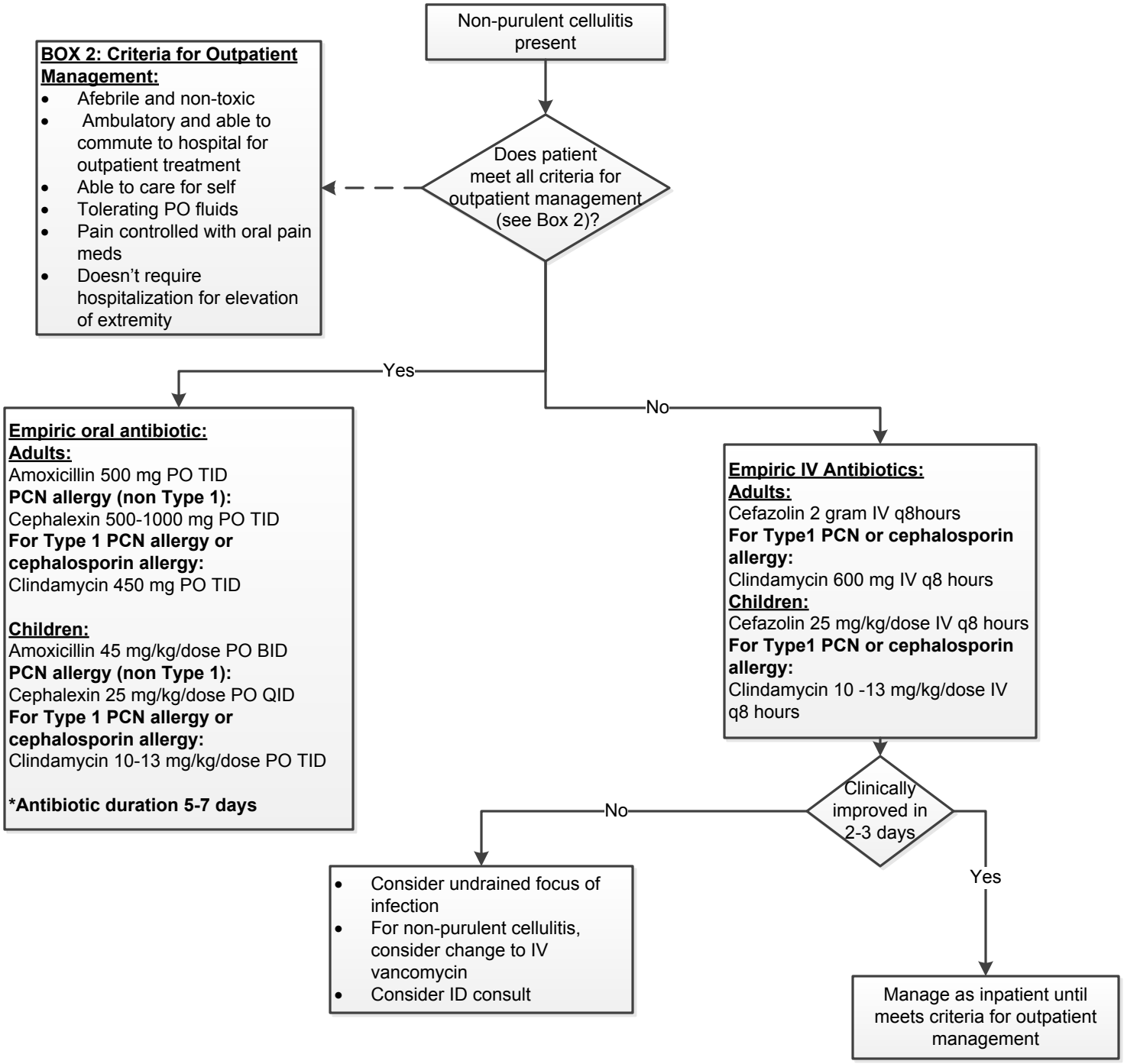
Patient improving?

Yes → Manage as inpatient until meets criteria for outpatient management

No →
- Review culture and sensitivities
- Consider imaging.
- Consider repeat incision and drainage

Skin and Soft Tissue Infection, p.2

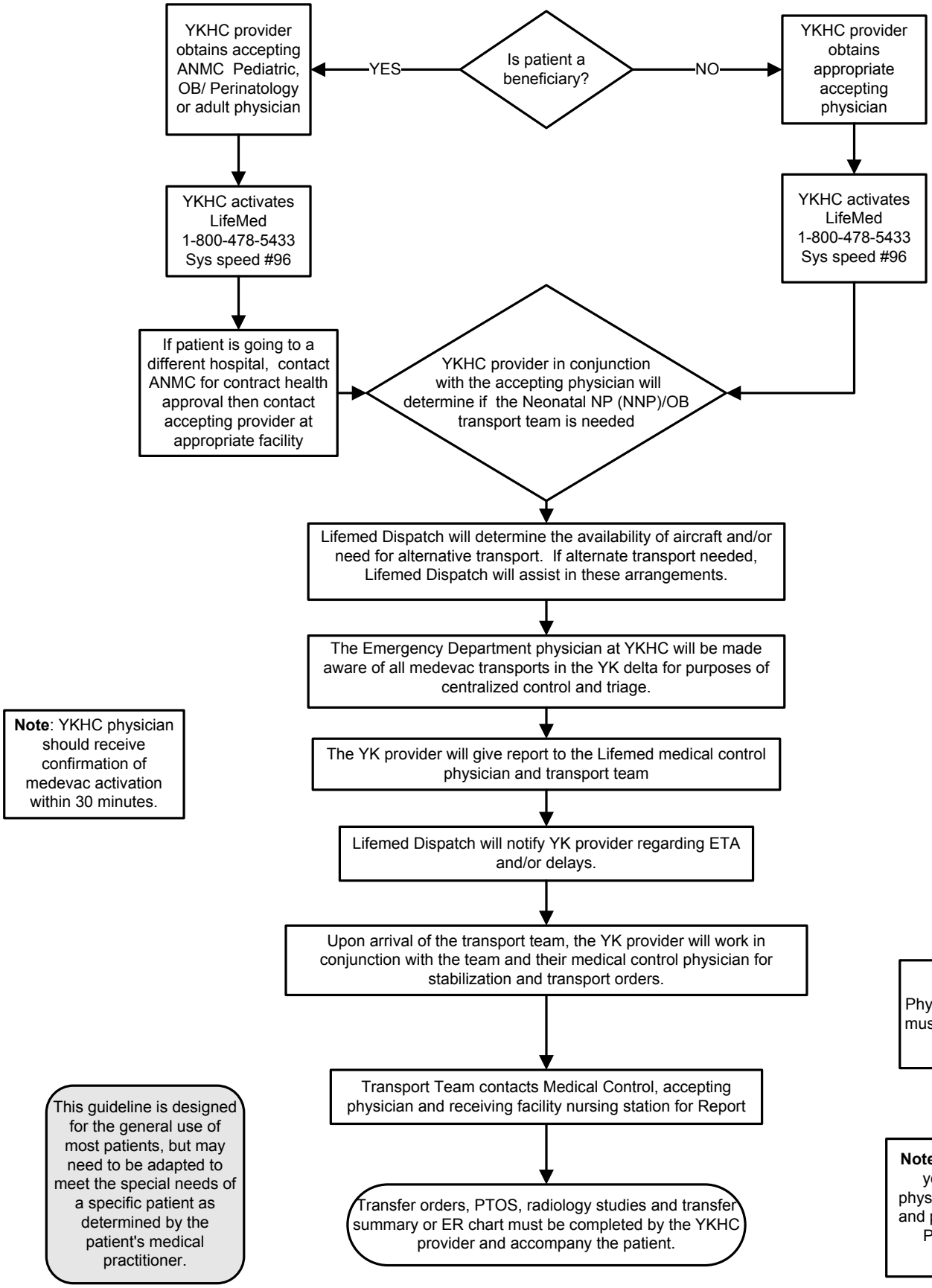
MSEC approved 07-12-17



Yukon-Kuskokwim HEALTH CORPORATION

Medevac Activation—Bethel to Anchorage

MSEC approved 06/22/11



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

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

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

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

Yukon-Kuskokwim HEALTH CORPORATION

Medevac Activation – Village to Bethel

MSEC approved 06/22/11

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

Activation of Medevac

Activating provider calls LifeMed Dispatch with patient's name, DOB, village, and diagnosis

LifeMed Dispatch 1-800-478-5433

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

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

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

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

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

LifeMed Dispatch

1. LifeMed Dispatch notifies Grant Aviation/Pilot/LifeMed
If LifeMed cannot launch (weather, runway lights) dispatch notifies ER Physician. Pilot will continue to check weather.

2. ER clerk faxes PTO, health summary, notes to Bethel LifeMed crew quarters

3. LifeMed crew contacts Village Health Aide and ER Physician for additional information prior to flying

4. If there is a prolonged delay (weather) it is crucial that LifeMed crew contacts the ER Physician and Health Aide prior to flying

5. In extenuating circumstances patient may need direct transport to Anchorage from village. After obtaining an accepting physician in Anchorage, YK MD will work with LifeMed for transport logistics.

Consider Ramp Transfer Direct to Anchorage under these circumstances:

1. Obvious need for acute surgical intervention
2. Hemodynamically stable intubated patients
3. Hemodynamically stable acute MI patients
4. Other extenuating circumstances.

LifeMed launches

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

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

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

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

Yukon-Kuskokwim HEALTH CORPORATION

Intubation – Adult

MSEC approved 06/22/11

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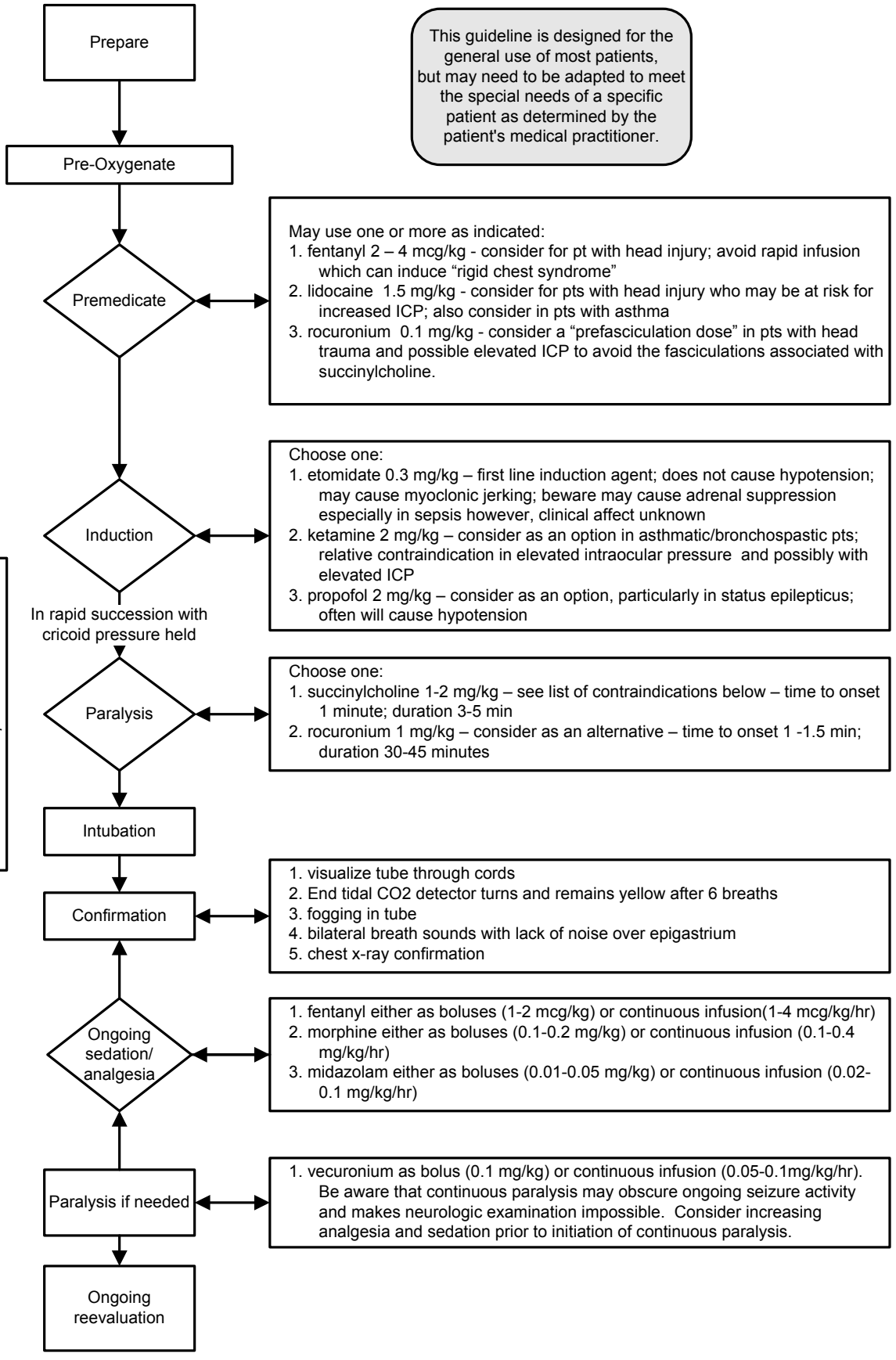


Succinylcholine

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

Relative contraindications
- Elevated ICP or elevated intraocular pressure
- Pseudocholinesterace deficiency

Yukon-Kuskokwim HEALTH CORPORATION

Sepsis – Adult

MSEC approved 7/12/17

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

Consider sepsis EARLY in *any* pt with suspected infection

Does pt meet criteria for sepsis or septic shock?

NO → *Reassess after initial evaluation -- consider*
fever, leukocytosis, hypotension?
unexplained altered mental status?
tachypnea? especially if lungs CTA and SaO_2 WNL?
unexplained organ dysfunction?
clinical concern during ongoing care?

YES

Airway stable?

NO → ET intubation
target tidal volume 6 mL/kg for pts without ARDS

YES

Large bore IV x 2
LABS INCLUDING LACTATE, PCT & BLOOD CULTURES
START FLUID RESUSCITATION immediately: Give 1 L NS or LR bolus with target at least 30 ml/kg within 1-3 hr

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

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

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

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

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

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

Yes → **START NOREPINEPHRINE** or other vasopressor (see guidelines) and **TITRATE** fluids and pressors to **MAP >65**

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

Consider intubation to facilitate appropriate volume resuscitation

Consider hydrocortisone (see guidelines) *only* for septic shock not responsive to adequate fluid resuscitation and vasopressors

No

If initial lactate is > 2:

RECHECK LACTATE 1-2 hrs after starting resuscitation

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

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

GET SOURCE CONTROL and obtain additional cultures PRN

Continue to reassess frequently while awaiting admission or transfer

Village Management
- Aggressive hydration, PO if you can't get an IV and the patient is alert enough to drink
- Spplemental oxygen via nasal cannula
- Consider Ceftriaxone 2 grams IM
- Activate medevac
- Consider VTC

SEPSIS 3 & ACEP NOTES

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

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

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

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

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

Consider insulin if 2 consecutive blood glucose levels are > 180

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

Sepsis – Adult Medications p. 1

MSEC approved 07/12/17

EMPIRIC ANTIBIOTIC RECOMMENDATIONS BY SOURCE OF INFECTION

If possible, 1st dose of antibiotics should be administered as a 30 min infusion to reduce time to therapeutic concentration

Source of infection	Medication	Dose	Maximum Dose
unknown	vancomycin[1]	25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs	2 grams
	OR		
	linezolid	600 mg IV Q12 hrs	600 mg
	AND		
	piperacillin-tazobactam[2]	4.5 grams IV Q8 hrs	4.5 grams
	OR		
	cefepime	2 grams IV Q8 hrs if in shock	2 grams
	AND		
	gentamicin or tobramycin[3]	7 mg/kg IV Q24 hrs	Consult pharm
	OR		
	levofloxacin	750 mg IV Q24 hrs	750 mg
community acquired pneumonia	ceftriaxone	1 gram IV Q24 hrs (2 gm if > 80 kg)	2 grams
	OR		
	ampicillin-sulbactam	3 gm Q6 hrs	
	AND		
	levofloxacin	750 mg IV Q24 hrs	750 mg
	OR		
	azithromycin	500 mg PO/IV Q24 hrs	500 mg
	if at risk for aspiration CONSIDER		
	Metronidazole	500 mg IV Q8hrs	depends
hospital acquired pneumonia OR high risk for MDR organisms	vancomycin[1]	25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs	2 grams
	OR		
	linezolid	600 mg IV Q12 hrs	600 mg
	AND		
	piperacillin-tazobactam[2]	4.5 grams IV Q6 hrs	4.5 grams
	OR		
	cefepime	2 grams IV Q8 hrs	2 grams
	AND		
	levofloxacin	750 mg IV Q24 hrs	750 mg
	OR		
	gentamicin or tobramycin[3]	7 mg/kg IV Q24 hrs	Consult pharm
meningitis	dexamethasone	10 mg IV *PRIOR TO ABX*	
	AND		
	vancomycin[1]	25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs	2 grams
	AND		
	ceftriaxone	2 grams IV Q12 hrs	2 grams
	if > 50 y/o ADD		
	ampicillin	2 grams IV Q6 hrs	2 grams

Sepsis – Adult Medications p. 2

MSEC approved 07/12/17

urinary tract	ceftriaxone	1 gm IV Q24 hrs (2 gm if > 80 kg)	2 grams
	AND consider		
	gentamicin	7 mg/kg IV Q24 hrs	Consult pharm
	OR		
	levofloxacin	750 mg IV Q24 hrs	750 mg
	if urological interventions or MDR risk factors CONSIDER		
	piperacillin-tazobactam[2]	3.375 grams IV Q6 hrs	4.5 grams
	OR		
	cefepime	1 gram IV Q6 hrs	2 grams
	If ESBL add		
	Meropenem	500 mg IV q8hrs	1 gram
Intra-abdominal/pelvic	piperacillin-tazobactam[2]	3.375 grams IV Q6 hrs	4.5 grams
	OR		
	cefepime	1 gram IV Q6 hrs	2 grams
	AND		
	metronidazole	500 mg IV Q6 hrs	500 mg
	OR		
	ciprofloxacin	400 mg IV Q12 hrs	400 mg
	AND		
	metronidazole	500 mg IV Q8 hrs	500 mg
skin and soft tissue/necrotizing infections	***if PURULENT***		
	vancomycin[1]	25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs	2 grams
	if NONPURULENT		
	cefazolin	2 grams IV Q8 hrs	2 grams
	OR		
	ceftriaxone	1-2 grams IV Q24 hrs	2 grams
	OR		
	ampicillin-sulbactam	3 grams Q6 hrs	3 grams
	if NECROTIZING ADD		
	piperacillin-tazobactam[2]	3.375 grams IV Q6 hrs	4.5 grams
	AND		
	clindamycin	900 mg IV Q8 hrs	900 mg
	OR		
	ceftriaxone	2 grams IV Q12 hrs	2 grams
	AND		
	metronidazole	500 mg IV Q6 hrs	500 mg
neutropenic cancer patients (ANC < 500)	piperacillin-tazobactam[2]	4.5 grams IV Q6-8 hrs	4.5 grams
	OR		
	cefepime	1 gram IV Q6 hrs	2 grams
	AND		
	vancomycin[1]	25-30 mg/kg loading dose THEN 20mg/kg Q8-12 hrs	2 grams
	is suspected/confirmed HSV or VZV CONSIDER		
	acyclovir	10 mg/kg Q8 hrs	Consult pharm

[1] linezolid may be substituted for vancomycin in patients with relative contraindication to vancomycin use or high risk for AKI
[2] gentamicin and tobramycin dosing based on ideal body weight
[3] may substitute ampicillin-sulbactam 3 gm IV Q6 hrs for piperacillin-tazobactam when pseudomonas is not of concern

VASOPRESSORS

medication	dose	notes
ALL vasoactive medications should be infused via central line with the exception of dopamine, which can be infused via a peripheral IV at rates less than 10 mcg/kg/min		
norepinephrine	8-12 mcg/min IV initial infusion rate	1st line vasopressor of choice in sepsis
epinephrine	1-10 mcg/min initially, titrated to effect	may be added to or used in place of norepinephrine to maintain adequate BP
dopamine	2-20 mcg/kg/min	2nd line option in highly select patients as it causes more tachycardia
phenylephrine	100-180 mcg/min IV initial infusion until stabilized, titrate to goal of 60-200 mcg/min (max dose range 80-360 mcg/min)	can be used as salvage therapy for refractive hypotension associated with tachycardia
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
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

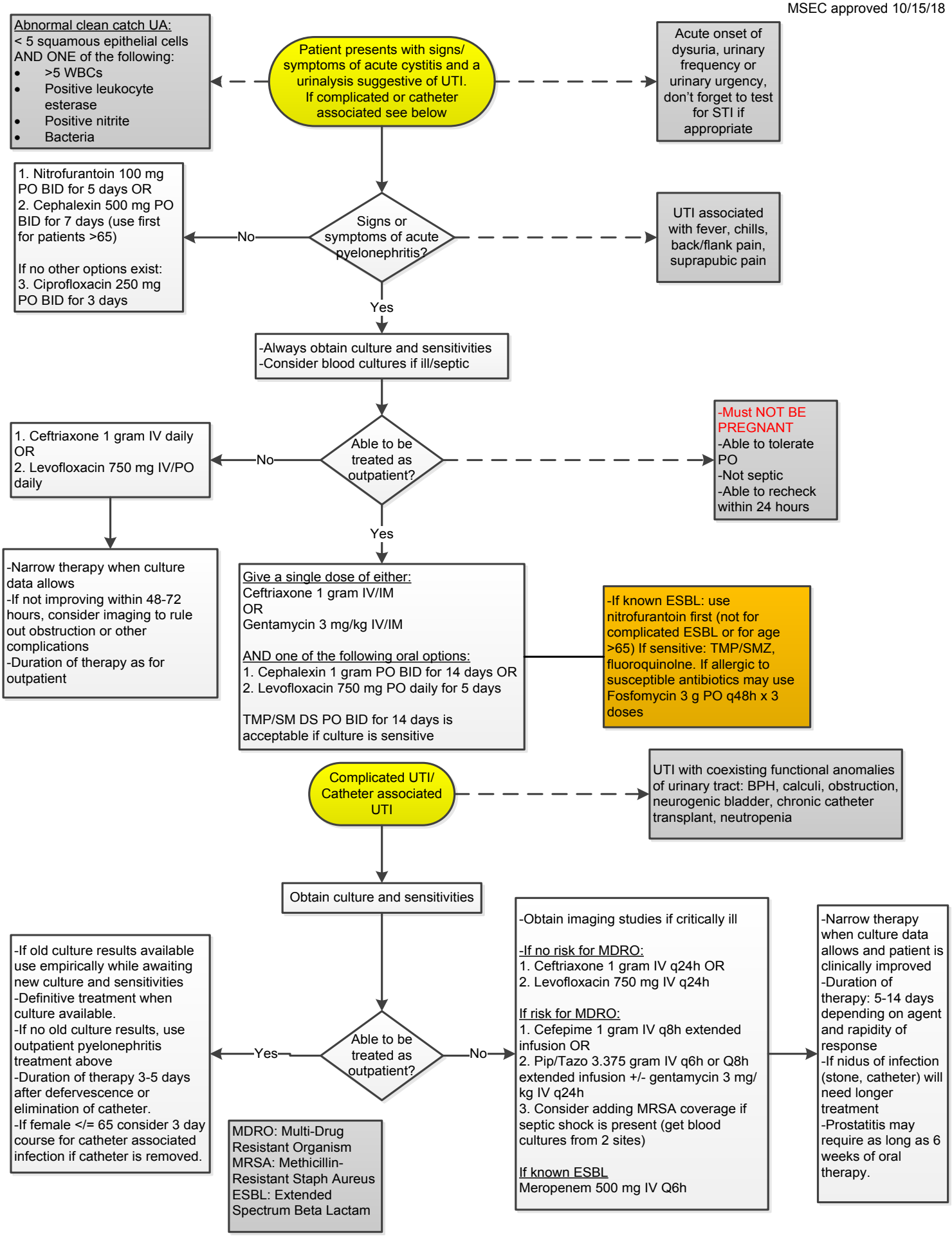
CORTICOSTEROIDS

Corticosteroids should NOT be administered for the treatment of sepsis in the absence of shock. Steroids are beneficial in those experiencing adrenal insufficiency in the presence of septic shock, however ACTH testing is not routinely recommended in adult patients. If hemodynamic stability is not achieved after adequate fluid resuscitation and vasopressor therapy, the use of IV hydrocortisone alone at a dose of 200 mg/day can be considered regardless of AI status. Hydrocortisone should be tapered when vasopressors are no longer required.

Yukon-Kuskokwim HEALTH CORPORATION

UTI – Adult

MSEC approved 10/15/18



Yukon-Kuskokwim HEALTH CORPORATION

Pneumonia – Adult

MSEC approved 09/21/18

Patient presents with symptoms suggesting Community Acquired Pneumonia:
Cough, sputum, dyspnea, pleuritic chest pain, fever

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

If multiple TB risk factors, see Adult TB guideline.

CXR shows infiltrate?

No → Chronic lung disease?

Patient Education
1. Smoking Cessation
2. Immunizations
   * Influenza
   * Pneumovax
3. PPD
4. Follow-up

Chronic lung disease? → No

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

Chronic lung disease? → If yes, consider

Outpatient Antibiotics
1. Amoxicillin 1000 mg PO TID for 5-7 days
AND
2. Azithromycin 500 mg PO daily for 3 days

If anaphylaxis to PCN:

3. Doxycycline 100 mg PO BID for 5-7 days is reasonable for patient without comorbid conditions.

4. Levofloxacin 750 mg PO daily for 5 days

CXR shows infiltrate? → Yes

Consider Procalcitonin to differentiate bacterial causes of symptoms

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

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

No → Outpatient Antibiotics

Yes →

Labs
1. CBC with diff
2. Comprehensive Metabolic Panel
3. +/- Blood culture x 2 (prior to ABX)
4. +/- Sputum
5. +/- ABG
6. +/- HIV
7. Procalcitonin

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

PSI ≤ 70 → Yes → Outpatient Antibiotics

PSI ≤ 70 → No

PSI 71-90 → Yes → Probable outpatient treatment. Management to be based on clinical judgement as above.

PSI 71-90 → No

PSI ≥ 91 → Yes

Inpatient Antibiotics
1. Ceftriaxone 1gram IV daily
AND
2. Azithromycin 500 mg IV/PO daily x 3 days

If anaphylaxis to PCN:

3. Levofloxacin 750 mg IV/PO daily for 5 days

-Remember to consult with our clinical pharmacists for any questions/ concerns
-Consider consultation with respiratory therapy for admitted patients

CAP = Community Acquired Pneumonia
HAP = Healthcare Associated Pneumonia
VAP = Ventilator Associated Pneumonia

Suspect Aspiration : ampicillin-sulbactam 3 grams IV Q6hrs **OR** Ceftriaxone 1 gram IV Q24hrs **AND** metronidazole 500 mg IV every 8 hours
Suspect Pseudomonas: Cefepime 1 gram IV Q 8hours, extended infusion.
Suspect early onset HAP: within first 4 days of hospitalization, treat as CAP
Suspect late onset HAP or VAP: Vancomycin IV dosed per protocol **AND** Cefepime 1 gram IV Q 8 hours, extended infusion

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

Demographic Factors	
Age of Males in years	age (year)
Age of Female in years	age (year) -10
Nursing home resident	+10
Comorbid Illnesses	
Neoplastic disease[1]	+30
Liver disease[2]	+20
Congestive heart failure[3]	+10
Cerebrovascular disease [4]	+10
Renal disease [5]	+10
Physical Examination Findings	
Altered mental status	+20
Respiratory rate > 30/minute	+20
Systolic BP < 90 mmHg	+15
Temperature < 95 degrees F (35C) or > 104F (40C)	+15
Pulse >125/minute	+10
Laboratory Findings	
pH < 7.35	+30
BUN > 20 mg/dl (11 mmol/L)	+20
Sodium < 130 mEq/L	+20
Glucose > 250 mg/dL (14 mmol/L)	+10
Hgb < 9 gm (Hematocrit < 30 %)	+10
PO2< 60, Sp 02 sat < 90%(room air)	+10
Pleural effusion	+10

Patient with 02 sat < 90%, homelessness, multilobar pneumonia or risk for aspiration may warrant hospitalization despite their risk classification.

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

Remember to order a follow up chest x-ray in 6-8 weeks to ensure resolution of infiltrate

Active Pulmonary TB for Patients ≥14 Years

MSEC approved 04-13-16

Hospital, clinic, ER, or SRC patient with infiltrate on CXR

>4 Risk Factors for TB?

Yes

1. Isolate patient.
2. Sputum for Xpert® MTB/RIF
3. Sputum for AFB-send out
4. TST or IGRA if no prior history of positive test

Xpert® MTB/ RIF result

Positive

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

Negative

1. Discontinue isolation unless admitted with high index of suspicion for TB.
2. Treat as CAP or HAP.
3. Collect two morning sputums for AFB with isolation if admitted.
4. Report to Public Health for follow-up.

No

Treat as CAP or HAP using PSI.

Improvement?

Yes

CXR follow-up in 6-8 weeks for adults.

No

Re-evaluate for antibiotic failure/ TB/cancer/etc.

Yes, and in an SRC

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

Xpert® MTB/ RIF result

Positive

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

Negative

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

Village clinic patient (no CXR) with >4 Risk Factors for TB

Risk Factors for TB

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

PSI
<www.mdcalc.com/psi-port-score-pneumonia-severity-index-adult-cap/>
PSI ≤70 stable for outpatient therapy
PSI 71-90 likely outpatient therapy but may consider inpatient
PSI ≥91 advise inpatient therapy

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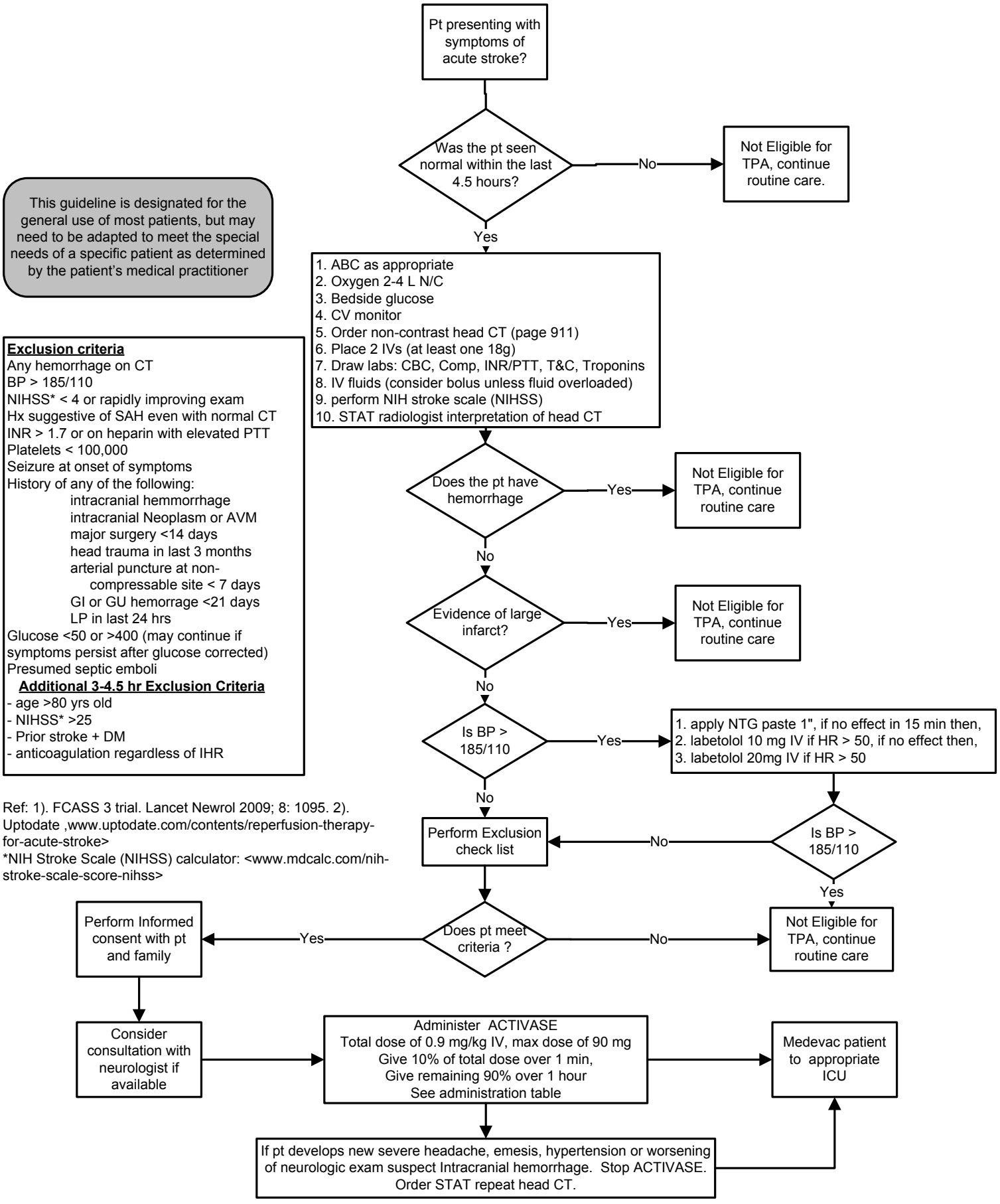
Abbreviations: AFB-acid fast bacilli; CA-cancer; CAP-community acquired pneumonia; CXR-chest x-ray; DM-diabetes mellitus; DOT-direct observational therapy; ER-emergency room; LFTs-liver function tests; HAP-healthcare associated pneumonia; HIV-human immunodeficiency virus; IGRA-interferon gamma release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

Yukon-Kuskokwim HEALTH CORPORATION

Ischemic Stroke – Acute

MSEC approved 06/22/11



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Exclusion criteria

Any hemorrhage on CT
BP > 185/110
NIHSS* < 4 or rapidly improving exam
Hx suggestive of SAH even with normal CT
INR > 1.7 or on heparin with elevated PTT
Platelets < 100,000
Seizure at onset of symptoms
History of any of the following:
- intracranial hemmorrhage
- intracranial Neoplasm or AVM
- major surgery <14 days
- head trauma in last 3 months
- arterial puncture at non-compressable site < 7 days
- GI or GU hemorrage <21 days
- LP in last 24 hrs

Glucose <50 or >400 (may continue if symptoms persist after glucose corrected)
Presumed septic emboli

Additional 3-4.5 hr Exclusion Criteria

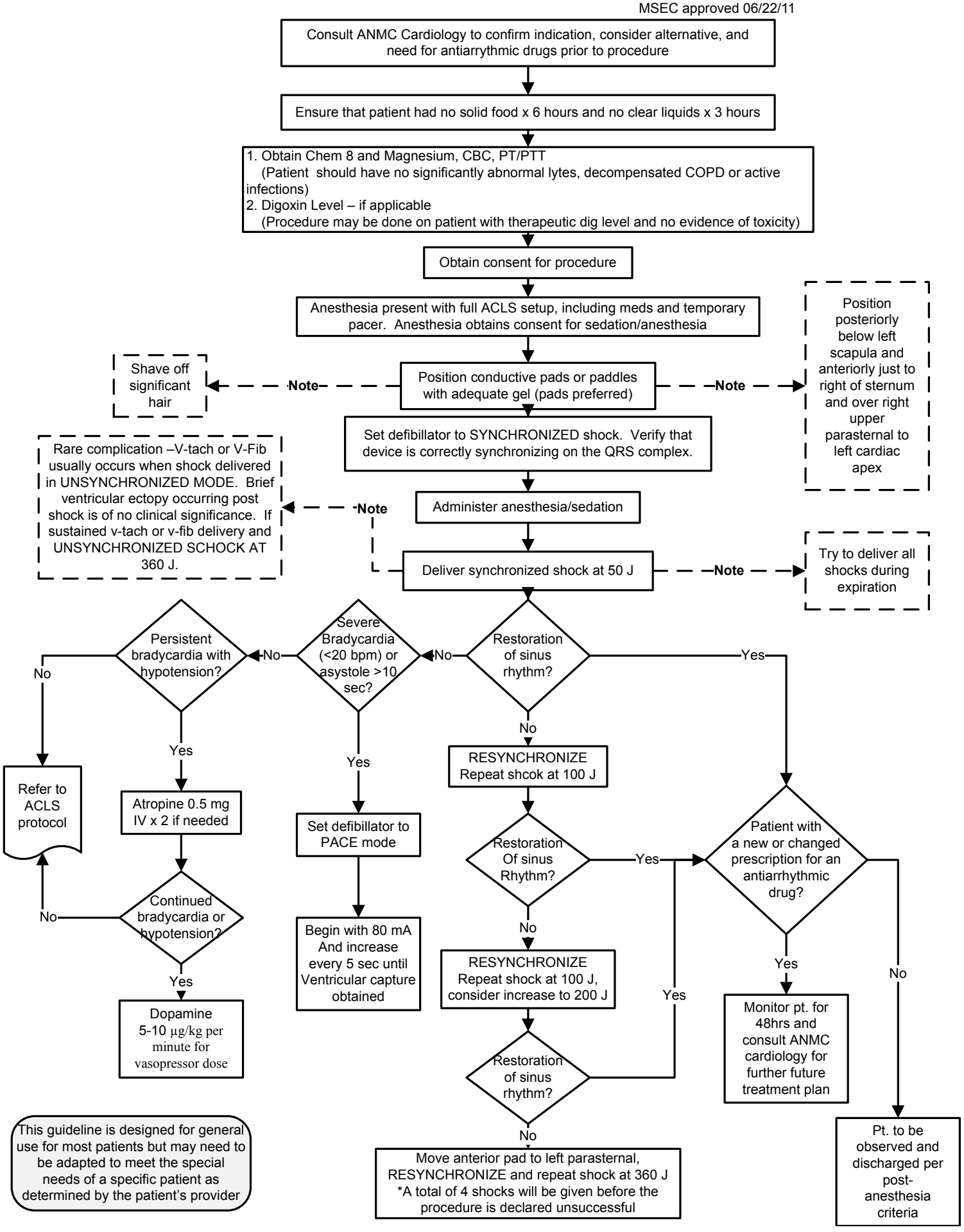
- age >80 yrs old
- NIHSS* >25
- Prior stroke + DM
- anticoagulation regardless of IHR

Ref: 1). FCASS 3 trial. Lancet Newrol 2009; 8: 1095. 2). Uptodate ,www.uptodate.com/contents/reperfusion-therapy-for-acute-stroke>
*NIH Stroke Scale (NIHSS) calculator: <www.mdcalc.com/nih-stroke-scale-score-nihss>

Yukon-Kuskokwim HEALTH CORPORATION

Atrial Fibrillation / Atrial Flutter

MSEC approved 06/22/11



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

Yukon-Kuskokwim HEALTH CORPORATION

Myocardial Infarction – Acute

MSEC approved 06/22/11

Patient presents with chest pain suggestive of MI
Substernal/Left sided chest pain, shortness of breath, diaphoresis, nausea

For non-native patients, please consult Alaska Cardiology Associates

Focused history and physical exam
Focus on fibrinolytic therapy analysis

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

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

Assess 12 Lead EKG

ST Elevation in 2 contiguous leads or new LBBB

Consider activating medevac

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

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

Enoxaparin 1mg/kg sq q 12 hrs

Time from onset < 12 hrs?

- Yes → Thrombolysis, if no contraindication
  Goal - door to drug < 30 min.
  → Consult ANMC and transfer
- No → Persistent chest pain?
  - Yes → ANMC consultation
  - No → Continual Monitoring & Assessment
    Admit or transfer

ST Depression / T-wave Inversion

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

Nitroglycerin IV or paste

Enoxaparin 1mg/kg sq q 12 hrs

Consider a glycoprotein 2b3a inhibitor

ANMC consult

Non-Diag. EKG

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

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

- Yes → ST Depression / T-wave Inversion
- No → Repeat markers at 6-12 hrs

Positive markers?

- Yes → ST Depression / T-wave Inversion
- No → High Risk Patient?
  - Yes →
    1. Aspirin ec 81-325 mg po q day
    2. Consider Metoprolol
    3. Consider Enoxaparin 1mg/kg sq q 12 hrs
    4. Consider nitroglycerin paste or IV

    → Consider ANMC consult - depending on clinical situation, consider inpatient work-up, outpatient work-up, or transfer.
  - No →
    1. Aspirin ec 81-325 mg po q day
    2. Consider metoprolol

    → Outpatient work-up

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

Fibrinolytic Therapy Recommendations

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

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

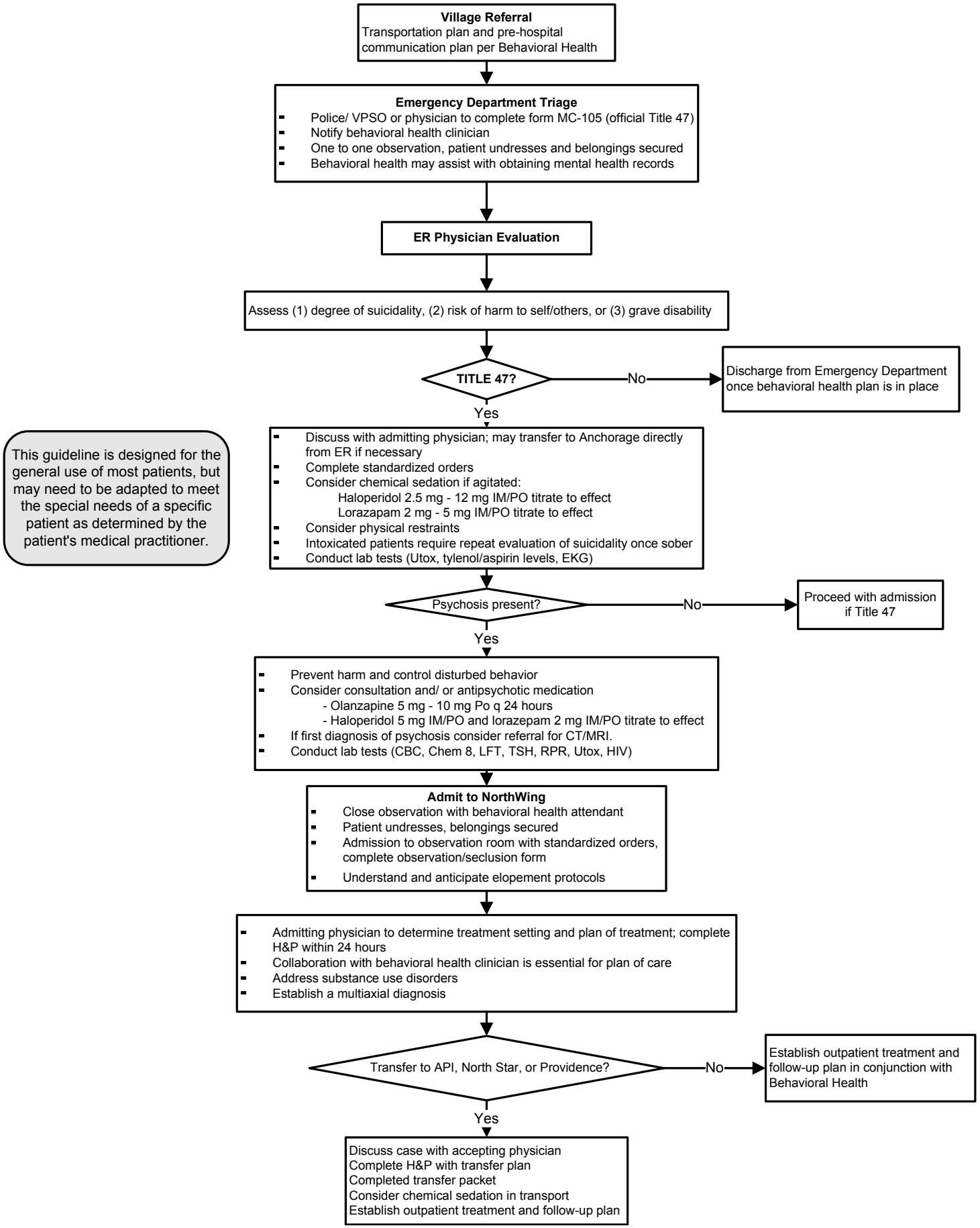
Cautions
Recent major surgery: cerebrovascular dz; recent GI bleeding, recent trauma; high likelihood of left heart thrombus; acute pericarditis; subacute bacterial endocarditis, renal or hepatic dysfunction; pregnancy; diabetic hemorrhagic retinopathy; septic thrombophlebitis; occluded AV cannula; advanced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

High Risk Criteria

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

Title 47 Hold

MSEC approved 06/22/11



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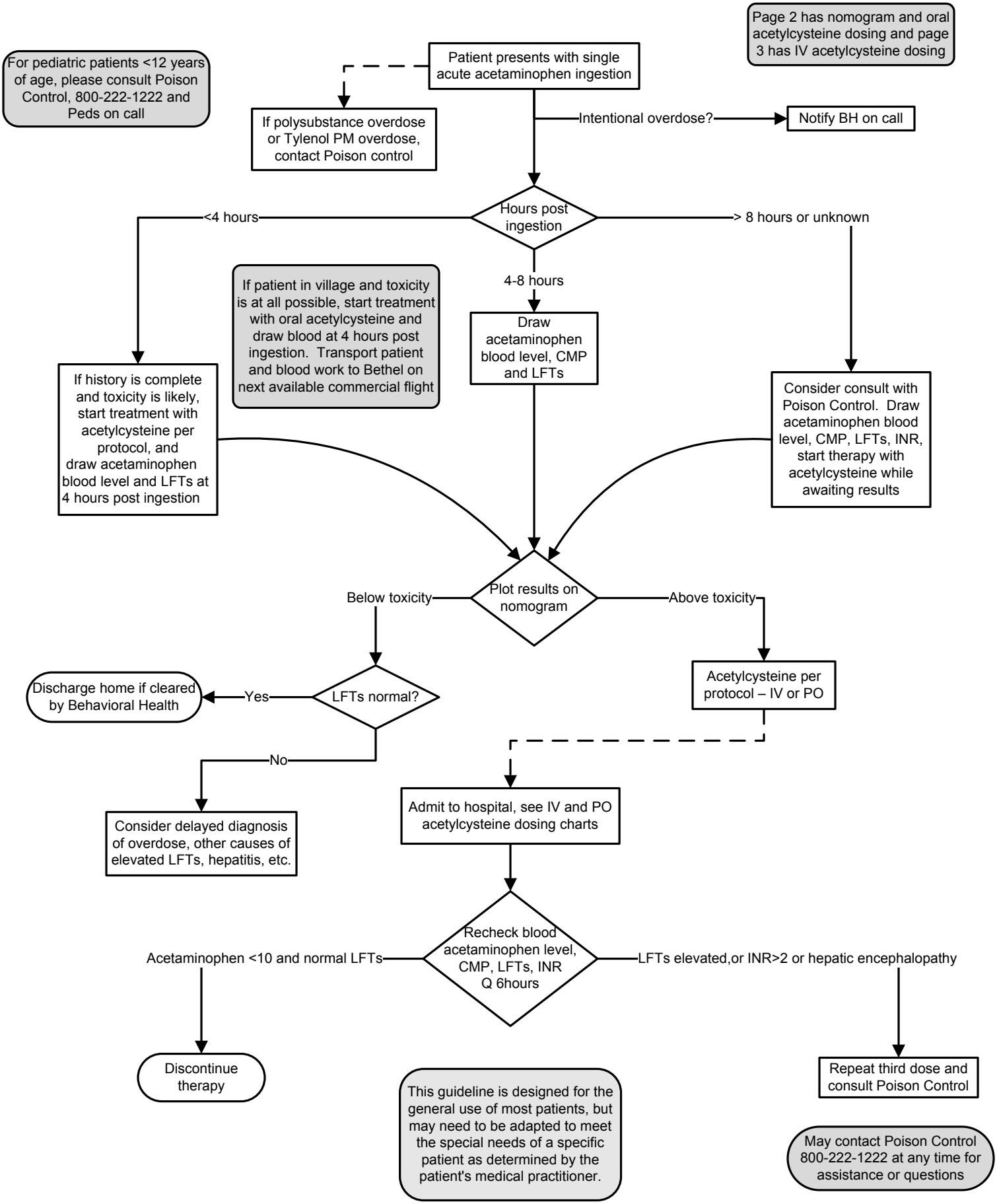
Acetaminophen Overdose, p.1

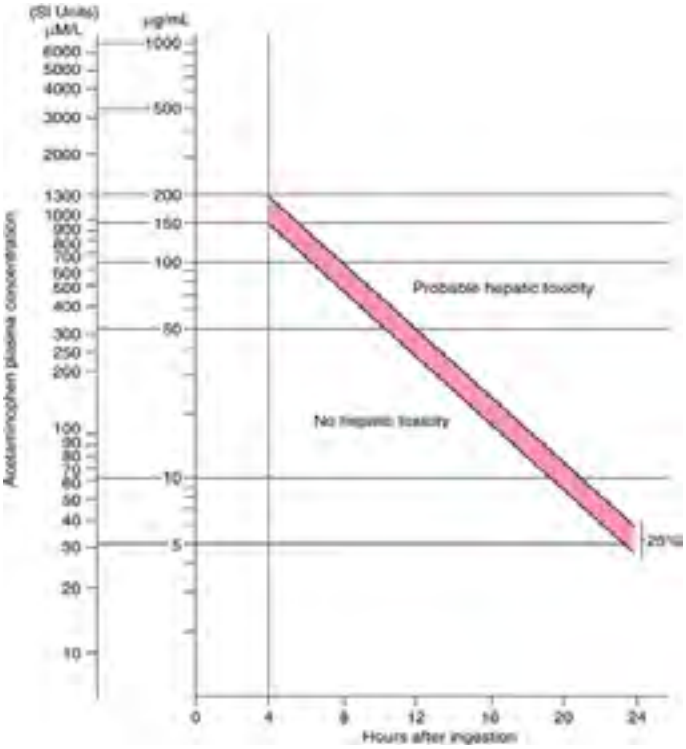
MSEC approved 06/22/11



Acetaminophen Overdose p.2

MSEC approved 06/22/11

Rumack-Matthew nomogram for single acute acetaminophen poisoning



Loading dose for oral acetylcysteine

Body Weight		grams Acetylcysteine	mL of 20% Acetylcysteine Solution	mL of Diluent	Total mL of 5% Solution
(kg)	(lb)				
100-109	220-240	15	75	225	300
90- 99	198-218	14	70	210	280
80- 89	176-196	13	65	195	260
70- 79	154-174	11	55	165	220
60- 69	132-152	10	50	150	200
50- 59	110-130	8	40	120	160
40- 49	88-108	7	35	105	140
30- 39	66- 86	6	30	90	120
20- 29	44- 64	4	20	60	80

Maintenance dose for oral acetylcysteine

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

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

IV dosing of Acetadote (IV acetylcysteine)

Also go to website ***www.acetadote.net*** and there is a dosing calculator where you can enter the exact weight of the patient and get each of the 3 doses

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

Body Weight		LOADING Dose 150 mg/kg in 200 mL diluent ◊ over 60 min	SECOND Dose 50 mg/kg in 500mL diluent over 4 hours	THIRD Dose 100 mg/kg in 1000mL diluent over 16 hours
(kg)	(lb)	Acetadote (mL)	Acetadote (mL)	Acetadote (mL)
100	220	75	25	50
90	198	67.5	22.5	45
80	176	60	20	40
70	154	52.5	17.5	35
60	132	45	15	30
50	110	37.5	12.5	25
40	88	30	10	20

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

Body Weight		LOADING Dose 150 mg/kg over 60 minutes		SECOND Dose 50 mg/kg over 4 hours		THIRD Dose 100 mg/kg over 16 hours	
(kg)	(lb)	Acetadote (mL)	Diluent ◊ (mL)	Acetadote (mL)	Diluent (mL)	Acetadote (mL)	Diluent (mL)
30	66	22.5	100	7.5	250	15	500
25	55	18.75	100	6.25	250	12.5	500

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

Body Weight		LOADING Dose 150 mg/kg over 60 minutes		SECOND Dose 50 mg/kg over 4 hours		THIRD Dose 100 mg/kg over 16 hours	
(kg)	(lb)	Acetadote (mL)	Diluent ◊ (mL)	Acetadote (mL)	Diluent (mL)	Acetadote (mL)	Diluent (mL)
20	44	15	60	5	140	10	280
15	33	11.25	45	3.75	105	7.5	210
10	22	7.5	30	2.5	70	5	140

◊Acetadote is hyperosmolar (2600 mOsm/L) and is compatible with 5% Dextrose (D5W), ½ Normal Saline (0.45% Sodium Chloride Injection, ½ NS), and Water for Injection (WFI).

Rabies

MSEC approved 8/7/19

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

Does the patient require rabies post-exposure prophylaxis? (See BOX 1.)

No → Provide usual wound treatment

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

Yes or maybe

Patient in village?

No →
1. Patient presents to ED or outpatient clinic.
2. Ad hoc form in RAVEN entitled "Rabies Investigation Report" is started.
3. Provider forwards the final note to the OEH department pool.

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

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

Yes →
1. Health Aide completes visit in RAVEN.
2. Ad hoc form in RAVEN entitled "Rabies Investigation Report" is started.
3. Patient is reported to RMT provider.
4. Provider forwards the final note to the OEH department pool.

1. RMT provider orders the vaccine for HAND CARRY to village clinic – 3 doses.
2. Contact the on-call pharmacist to arrange the HAND CARRY to the village.

Day zero is the first day the vaccine is given, not the day of the exposure.

Patient is given Day 0 vaccine in village clinic.

Day 3 vaccine and immunoglobulin given in Bethel outpatient clinic unless it is the weekend (then patient goes to ED). At that visit:
-Wound is assessed.
-Immunoglobulin is infiltrated directly into wound site.

Day 7 & 14 vaccine given in village.

If patient is immunocompromised, he/she requires an additional dose on day 28.

BOX 1

Indications for rabies prophylaxis:
1. The bite was from a fox, bat, coyote, skunk, woodchuck, or wolf, and this animal is not available to test.
2. The bite was from a dog who was behaving abnormally.
3. The bite was from a dog not available for quarantine.
4. If 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.
5. If consultation is needed, call OEH at 543-6420 or State Section of Epidemiology 907-269-8000 or 800-478-0084 after hours.

Other Resources
- Wiki→Rabies→FAQ.
- http://dhss.alaska.gov/dph/Epi/id/Pages/rabies
- Google "rabies state of Alaska"
- Use the Power Plans "AMB/ED Rabies Prophylaxis" to find all necessary orders.

Rabies Investigation Report:
This is an ad hoc form that is started by the CHA/P in village clinic or by the ED/outpatient clinic provider when the patient first presents for care. This is sent electronically to the OEH (Office of Environmental Health) who will follow up on the status of the dog. Please check under "all documents" for Alert Note or for the rabies investigation report from OEH.

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

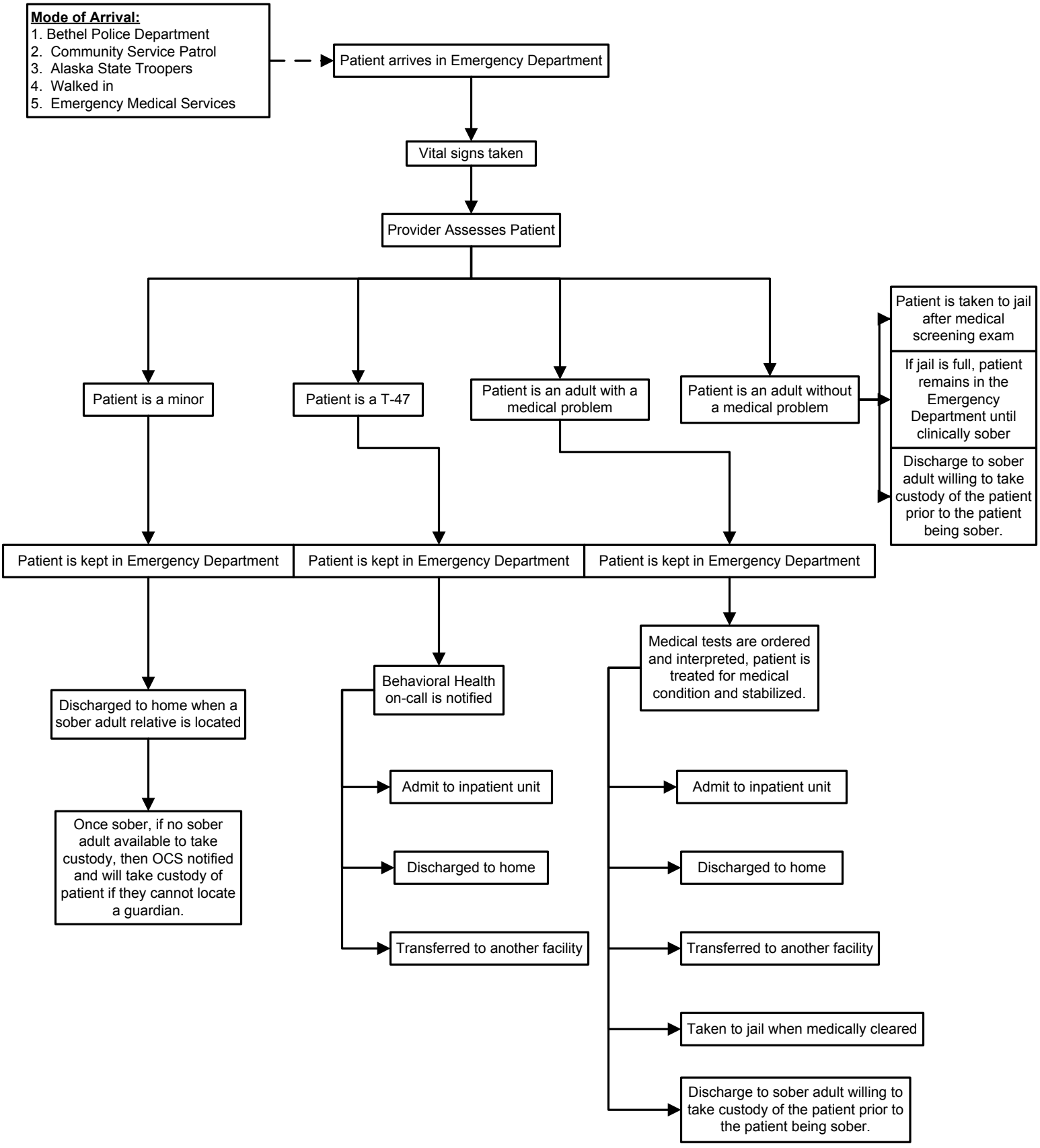
For village patient:
Day 0 dose: Given in village from HAND CARRY.
Day 3 dose: Given in Bethel.
Day 7 dose: Given in village from HAND CARRY.
Day 14 dose: Given in village from HAND CARRY.

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 8/7/19.
If comments about this guideline, please contact Ellen_Hodges@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

Intoxicated ER Patient

MSEC approved 06/22/11



Frostbite

Patient identified as having potential frostbite

Immediate Emergent Treatment

For patients in village clinic, see CHAM.

STABILIZE PATIENT
Airway, Breathing, Circulation

→ Assess for and treat hypothermia

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

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

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

→ **Strongly Consider Hospital Admission, especially with extremity frostbite**

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

Wound care referral upon admission

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

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

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

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

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

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

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

Yukon-Kuskokwim HEALTH CORPORATION

Burn Evaluation and Treatment

MSEC Approved 7/12/17

Severe Criteria
- Circumferential burns
- Burns of face, neck, GU area
- Burns across joints
- Electrical/chemical burns
- Inhalation injuries
- Trauma (refer to trauma protocol)
- Any full-thickness (3rd degree) burns

Parkland Formula

Fluid resuscitation, used if:
Adult TBSA > 15%
Child TBSA > 10%

(weight in kg) x 4 mL x %TBSA = total fluid to be given over 24 hours

Give half in first eight hours from time of burn. Give other half over the next sixteen hours.

LR preferred.

Patient presents with a burn.

↓

CABs

↓

Respiratory compromise?
Inhalation injury?
Singed mouth?
Circumferential burn of neck?

→ Yes → Immediate endotracheal intubation

↓ No

Assess total body surface area (TBSA).
Assess depth.

↓

Adult TBSA > 10%?
Child TBSA > 5%?
Severe criteria (see box)?

→ Yes →
- IV access
- Analgesia
- Labs: CBC with diff, CMP, UDS, EtOH, CK, coags.
- If inhalation injury, add: carboxyhemoglobin, ABG.
- Give IVF per Parkland formula.

↓

Consult General Surgey

↓

Transfer to higher level of care via commercial flight or medevac as appropriate.

↓ No

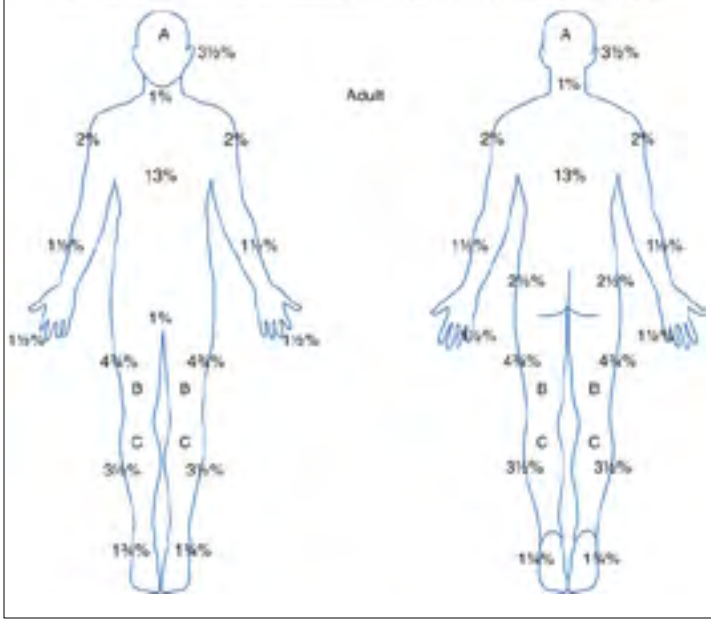
Wound Care
- Cleanse in dilute betadine or chlorhexidine.
- Apply non-adherent or hydrocolloid dressing to superficial burns.
- Apply Bacitracin under Xeroform to partial-thickness burns.
- Elevation/compression (caution for signs of nerve compression).

↓

Close follow-up

Rule of Nines to Estimate TBSA

Age	0–1	1–4	5–9	10–14	15
A – ½ of head	9½%	8½%	6½%	5½%	4½%
B – ½ of one thigh	9½%	8½%	6½%	5½%	4½%
C – ½ of one leg	9½%	8½%	6½%	5½%	4½%



Classification of Burns by Depth

- Superficial (1st degree): epidermis only, dry, red, blanches with pressure, no blisters, painful
- Superficial partial-thickness (2nd degree): epidermis and part of dermis, blisters, moist, red, weeping, blanches with pressure, painful
- Deep partial-thickness (2nd degree): epidermis and deep dermis, blisters, wet or waxy dry, patchy white to red, does not blanch, pressure sensation only
- Full-thickness (3rd 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 4th 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 MSEC 7/12/17.
If comments about this guideline, please contact Tara_Lathrop@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

First Trimester Vaginal Bleeding: Ectopic Pregnancy Diagnosis & Treatment of Non-Viable Early Pregnancy

MSEC approved 07/12/17

1
Nomenclature

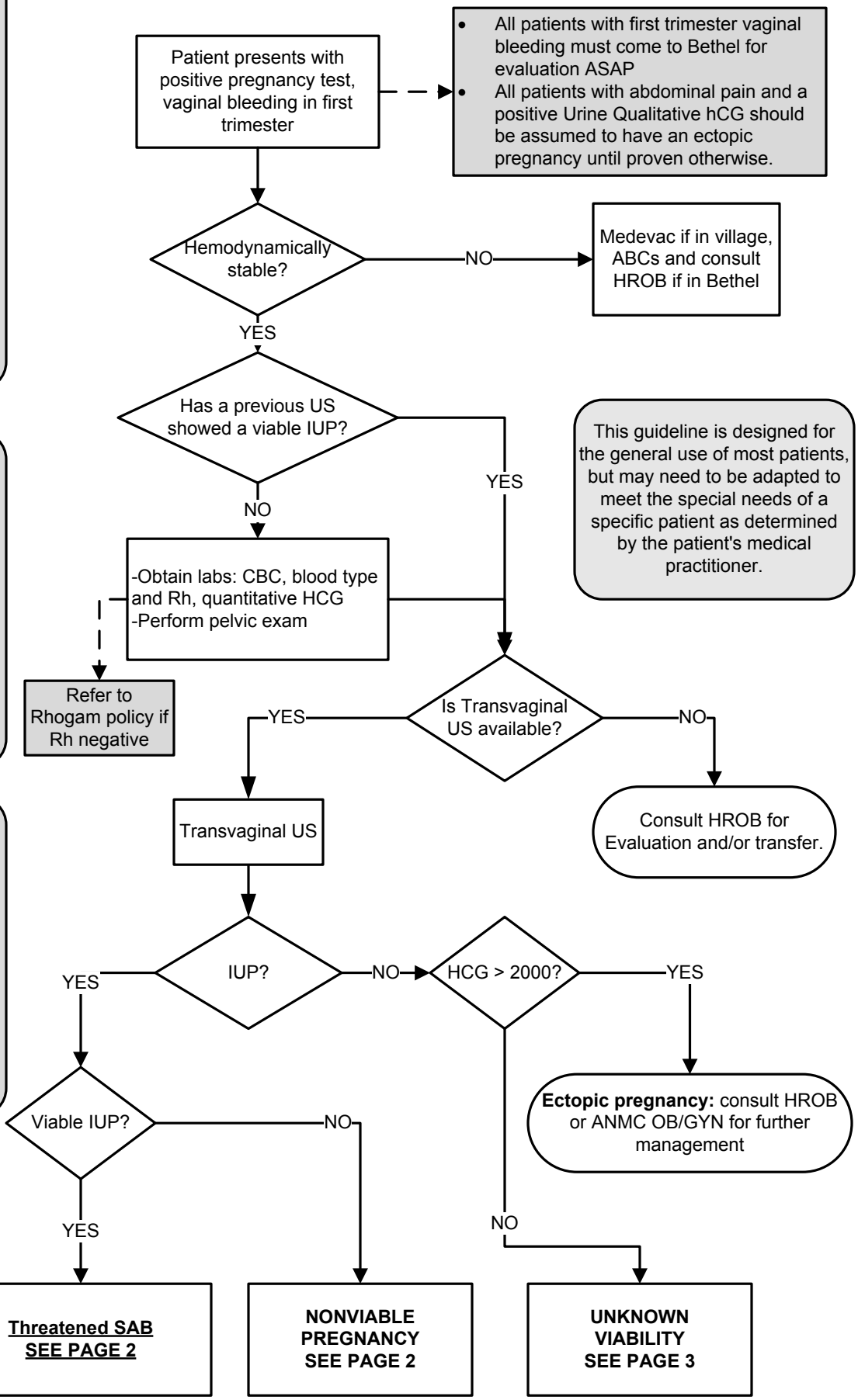
- **Viable** – A pregnancy is vialble if it can potentially result in a liveborn baby.
- **Nonviable** – A pregnancy is nonviable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are nonviable
- **Intrauterine pregnancy of uncertain viability**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

2
Findings diagnostic of Pregnancy Failure

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

Comments

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



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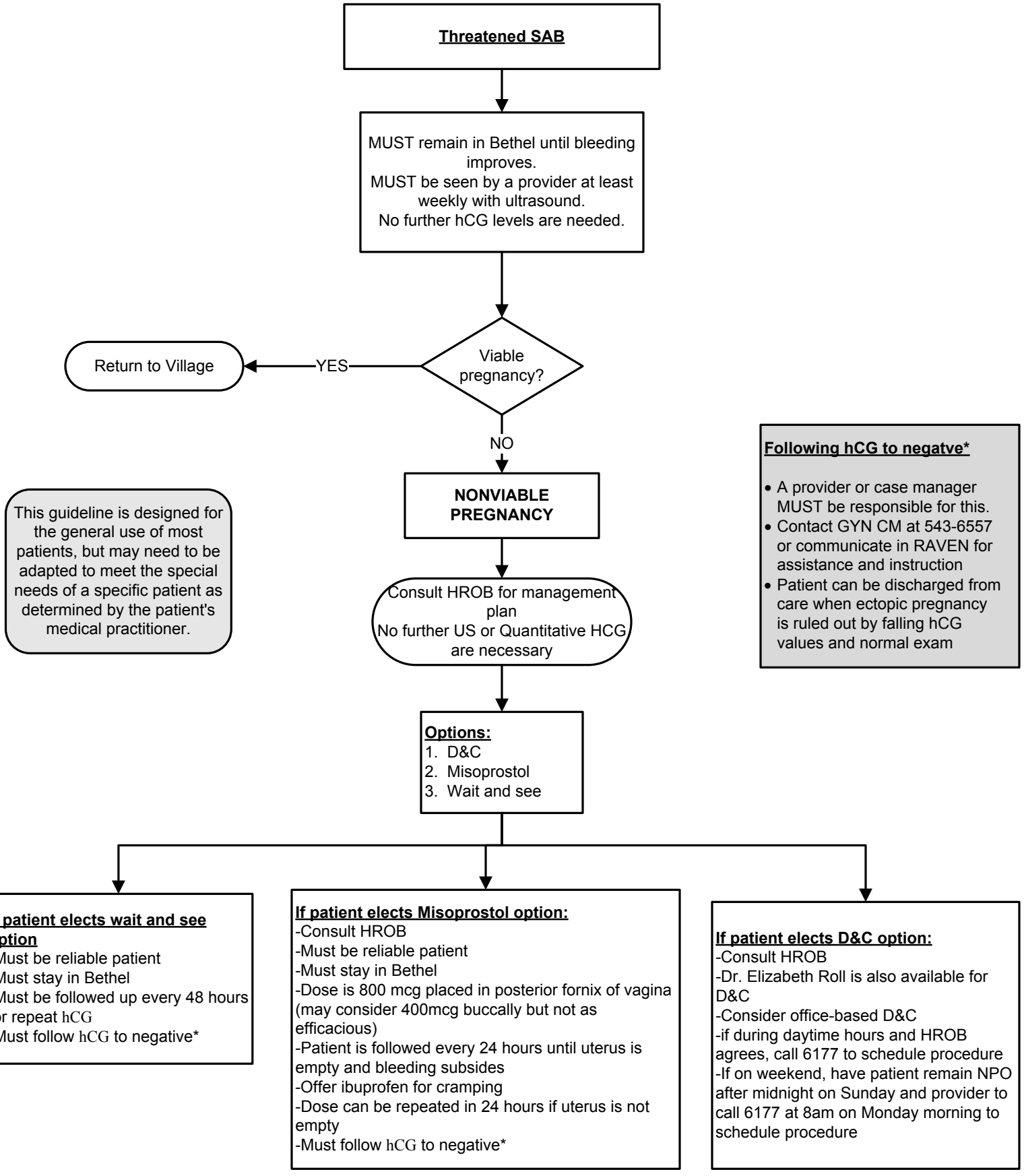
MSEC approved 07/12/17



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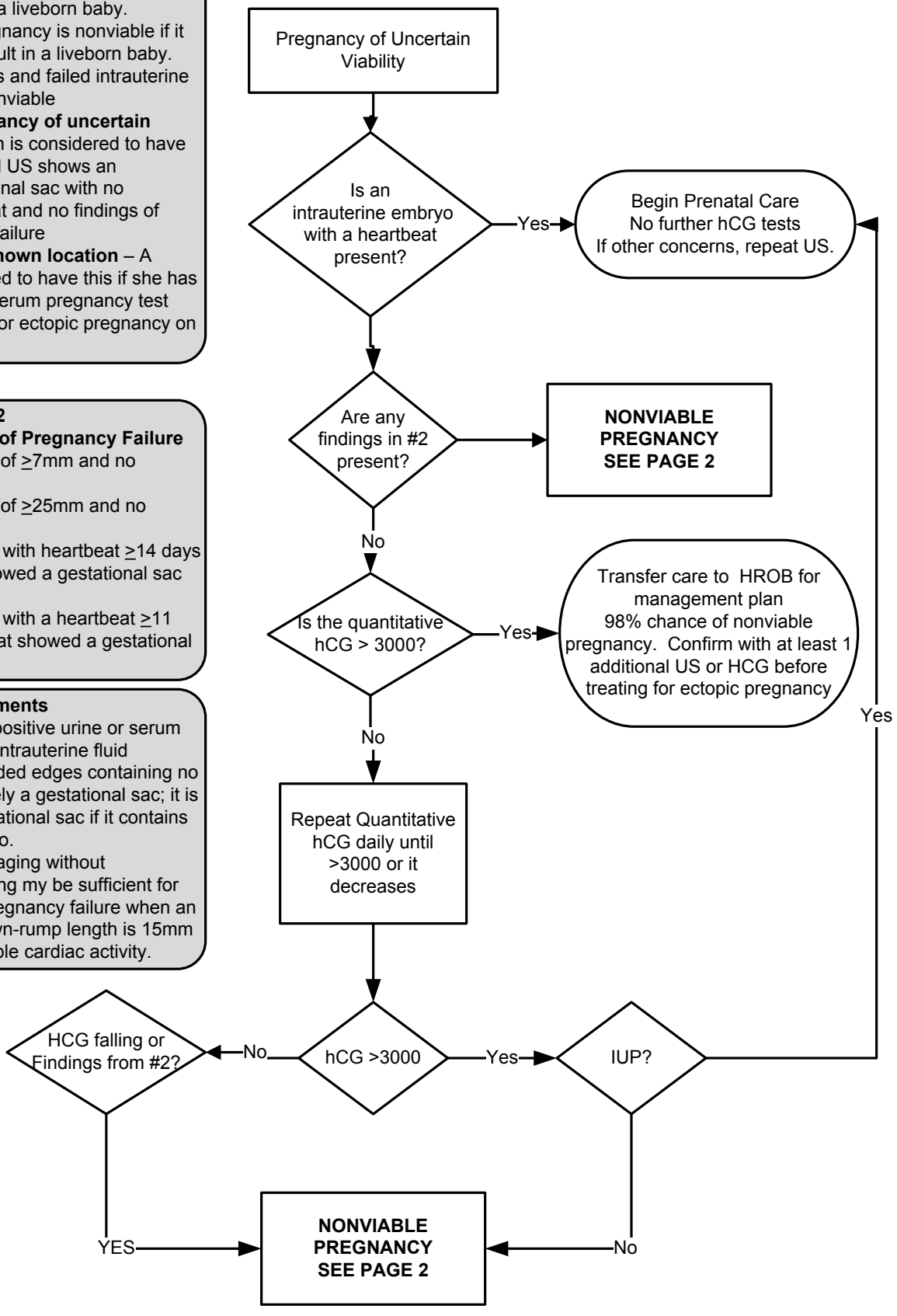


Initial Values (Baseline)				
PCT Value	<0.1 ng/mL	0.1-0.24 ng/mL	0.25-0.5 ng/mL	>0.5 ng/mL
Antibiotic **START** Recommendation	Initiation Strongly discouraged	Initiation Discouraged	Initiation Encouraged	Initiation Strongly Encouraged
Comments	• Hold on giving antibiotics • Consider alternative diagnosis • Repeat PCT in 6-12 hours if antibiotics not initiated and no clinical improvement • If clinically unstable, immunosuppressed or high risk consider overruling (PSI Class IV-V, CURB-65 >3)		• Start antibiotics • Repeat every 2-3 days to consider early antibiotic cessation. See follow-up algorithm below • If initial value is >5-10 ng/mL, assess for reduction of 90% from peak values.	
Follow-Up (Repeat PCTs q48-72 hours)				
PCT Value	<0.1 ng/mL or ↓ by >90%	0.1-0.24 ng/mL or ↓ by >80%	0.25-0.5 ng/mL	>0.5 ng/mL
Antibiotic **STOP** Recommendation	Cessation Strongly Encouraged	Cessation Encouraged	Cessation Discouraged	Cessation Strongly Discouraged
Comments	• Stop antibiotics • Consider continuing if clinically unstable		• Continue antibiotics • If PCT rising or not adequately decreasing, consider possible treatment failure and evaluate for need for expanding antibiotic coverage or further diagnostic evaluation	

PCT in Adults for Sepsis without a Source				
Follow-Up (Repeat PCTs q24 hours or with AM labs daily x3 days)				
PCT Value	<0.25 ng/mL	0.25-0.49 ng/mL or ↓ by >80%	≥0.5 ng/mL **AND** ↓ by <80%	≥0.5 ng/mL **AND** rising or stable
Antibiotic **STOP** Recommendation	Cessation Strongly Encouraged	Cessation Encouraged	Cessation Discouraged	Cessation Strongly Discouraged
Comments	• Stop antibiotics • Consider continuing if clinically unstable		• Continue antibiotics • A PCT value which is rising or not declining at least 10% per day is a poor prognostic indicator and suggests infection is not controlled • Consider expanding antibiotic coverage or further diagnostic evaluation	

Yukon-Kuskokwim HEALTH CORPORATION

Alcohol Hangover/Withdrawal

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, CP<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.

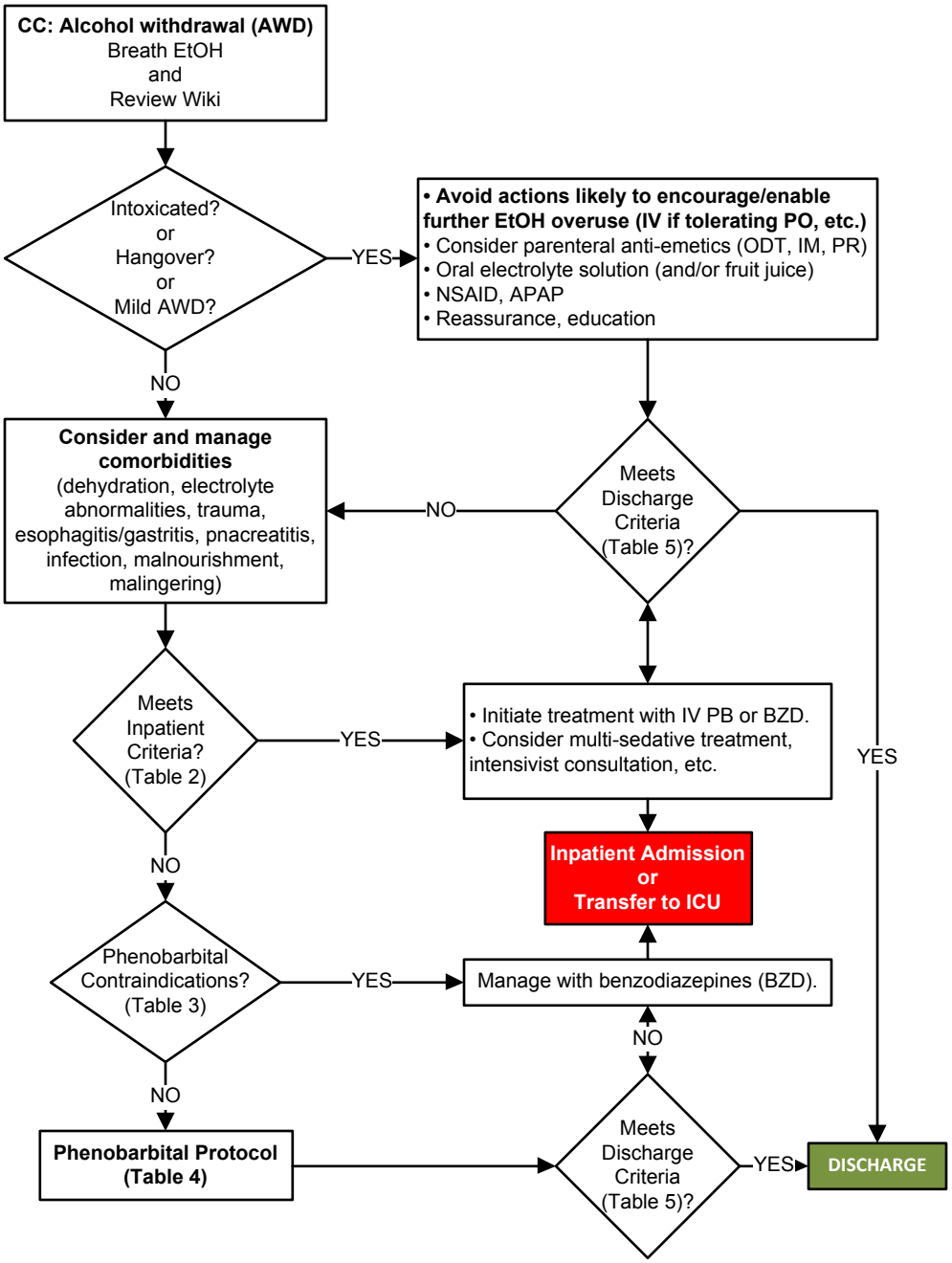
Table 3: Phenobarbital Contraindications
Absolute: Hx allergy, adverse reactions, or porphyria
Relative: current significant sedative level (including EtOH, BZD, or anti-psychotics)

Table 4: Phenobarbital (PB) Protocol
- Phenobarbital 260 mg IV
then phenobarbital 130 mg IV every 30-40 minutes until CIWA score ≤ 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 ≤ 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:
http://yk-health.org/wiki/Alcohol_Withdrawal_in_the_YK_Delta
http://yk-health.org/wiki/Phenobarbital_for_Alcohol_Withdrawal



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 10/9/19.
If comments about this guideline, please contact Megan_Young@ykhc.org.

Yukon-Kuskokwim
HEALTH CORPORATION

CLINICAL GUIDELINES
2019
rev. 10-17-19

Emergency Department Protocols

Yukon-Kuskokwim HEALTH CORPORATION

Use of Consultants at YKHC

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

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

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

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

Provider needs consultation about patient at YKHC

Consult provider is located in Bethel?

No

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

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

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

Yes

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

No

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

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

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

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

Yes

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

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

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

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 asses this patient in person…"
"I would like to transfer this patient via medevac to ANMC…"

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

Yukon-Kuskokwim
HEALTH CORPORATION

CLINICAL GUIDELINES
2019
rev. 10-17-19

Pediatric Emergency Guidelines

Yukon-Kuskokwim HEALTH CORPORATION

Pediatric Critical Care and Medevac Guide: Patient in Bethel

MSEC Approved 9/13/17

Call pediatric hospitalist for all potentially critical pediatric patients.

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

Pediatric patient in Bethel requires medevac.

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

Pediatric hospitalist (or other physician in consultation with pediatric hospitalist) can call ANMC PICU consultant for advice, management, and accepting physician.
(907) 297-8809
This phone is held by the PICU physician or NP. You may request the physician.
Ensure the ANMC Transfer Center has been contacted.

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

ANMC PICU consultant stays available to support pediatric hospitalist with ongoing patient management as needed.

Pediatric hospitalist may request that ANMC PICU consultant update LifeMed Medical Control if able.

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

Trauma, Surgical, Orthopedic Emergency

ER provider calls ANMC Transfer Center for accepting physician at (907) 729-2337 or by Tiger Text.

For all pediatric trauma cases and surgical cases in children >4 years, call the ANMC general surgeon on call. For surgical cases in children ≤4 years, call the pediatric surgeon on call through the ANMC operator or their office at (907) 375-8333.

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

ER provider calls ANMC Transfer Center for accepting physician at (907) 729-2337 or by Tiger Text.

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

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

ER provider updates LifeMed Medical Control as needed.

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

Intubation – Pediatric

MSEC approved 07/12/17

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

Pre-oxygenate

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

Induce → Midazolam and fentanyl

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

Intubate

Confirm placement → 1. Direct visualization of tube through cords.
2. CO_2 detector turns yellow and remains yellow after six breaths.
3. Mist in tube.
4. Bilateral equal breath sounds with lack of noise over epigastrium.
5. CXR.

Initiate sedation/ analgesia → • Fentanyl continuous infusion with boluses Q15minutes *prn*. Give bolus prior to starting drip.
CONSIDER:
• Midazolam boluses if needed. Consider continuous infusion if needed. Watch for hypotension.

Place on ventilator → • For ventilator dyssynchrony, give rocuronium boluses as needed.
• Use end-tidal CO_2 monitoring.

Continuously reevaluate

REMEMBER:
Helpful resources include:
• Pharmacist on-call
• Respiratory therapist
• CRNA on-call
• Difficult Airway Drawer with laryngeal mask airway (LMA)
• GlideScope®

Always place NG/OG tube for decompression.

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

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

updated 8/1/18

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.

Yukon-Kuskokwim HEALTH CORPORATION

High-Flow Nasal Cannula (HFNC) — Pediatric

MSEC Approved 7/12/17 • Minor revisions 07-26-18

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

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

↓

Page respiratory therapist.

↓

Page pediatrician on-call.

↓

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

↓

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

↓

Initial Settings
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 Q20-30 minutes.

↓

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

↓

Maintain current settings until medevac arrives.

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

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

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

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

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

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

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

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.

Yukon-Kuskokwim HEALTH CORPORATION

Sepsis – Pediatric

MSEC approved 10/9/19

Shock Criteria

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

AND

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

Patient meets criteria for severe sepsis/shock → Call pediatric hospitalist. Page pharmacist and RT. → Consult PICU by direct line: (907) 297-8809.

Place on CR monitor.
Start supplemental oxygen. Prepare BVM.
Get access: IV/IO x2.
Bolus: NS 20 mL/kg x2 over ≤ 10 minutes.
Reassess volume status after each bolus.

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

Labs: bedside glucose, blood culture, electrolytes, CBC, lactate, ionized calcium, procalcitonin.

Order empiric antibiotics STAT.

Is patient maintaining airway? — No → Intubate per Pediatric Intubation Guideline.

Yes

If not improving, give third bolus of NS 20 mL/kg.
Correct hypoglycemia.
Correct hypocalcemia.

Is there continuing hypotension, poor pulses, change in mental status, or delayed cap refill?

Yes → Start vasopressor and consider methylprednisolone for fluid-refractory shock in consultation with the PICU.

Start vasopressor and consider methylprednisolone for fluid-refractory shock in consultation with the PICU.

Continue to reassess and give boluses of NS 20 mL/kg unless patient develops rales, respiratory distress, hepatomegaly, or a gallop.

If shock persists, consider a second pressor, calcium chloride, etc. in consultation with PICU.

No → Monitor closely per Continuing Management Box while awaiting medevac.

Monitor closely per Continuing Management Box while awaiting medevac.

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

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

Village Management
- Consult pediatric hospitalist.
- Aggressive hydration: IV or PO.
- Supplemental oxygen via nasal cannula.
- Monitor glucose.
- Treat hypoglycemia with Insta-Glucose tubes buccally – NOT rectally.
- Ceftriaxone 100 mg/kg IM.
- May give Epinephrine 0.01mg/kg SC.
- Activate medevac.
- Consider VTC.

See Wiki RMT Section for more detailed recommendations.

Empiric Antibiotic Choice

≤28 days
Ampicillin 50 mg/kg AND gentamicin 4 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.

Age	HR (beats/minute)		RR (breaths/minute)		Hypotension (sBP in mmHg)
	Bradycardia	Tachycardia	Low	High	
0 days – 1 week	<100	>200	<30	>70	<60
1 week – 1 month	<100	>200	<30	>70	<60
1 – 3 months	<100	>180	<20	>60	<70
3 – 12 months	<100	>180	<20	>60	<70
1 – 2 years	<90	>160	<20	>40	<70
2 – 6 years	<60	>160		>40	<80
6 – 13 years	<60	>120		>23	<90
13 – 18 years	<60	>110		>23	<90

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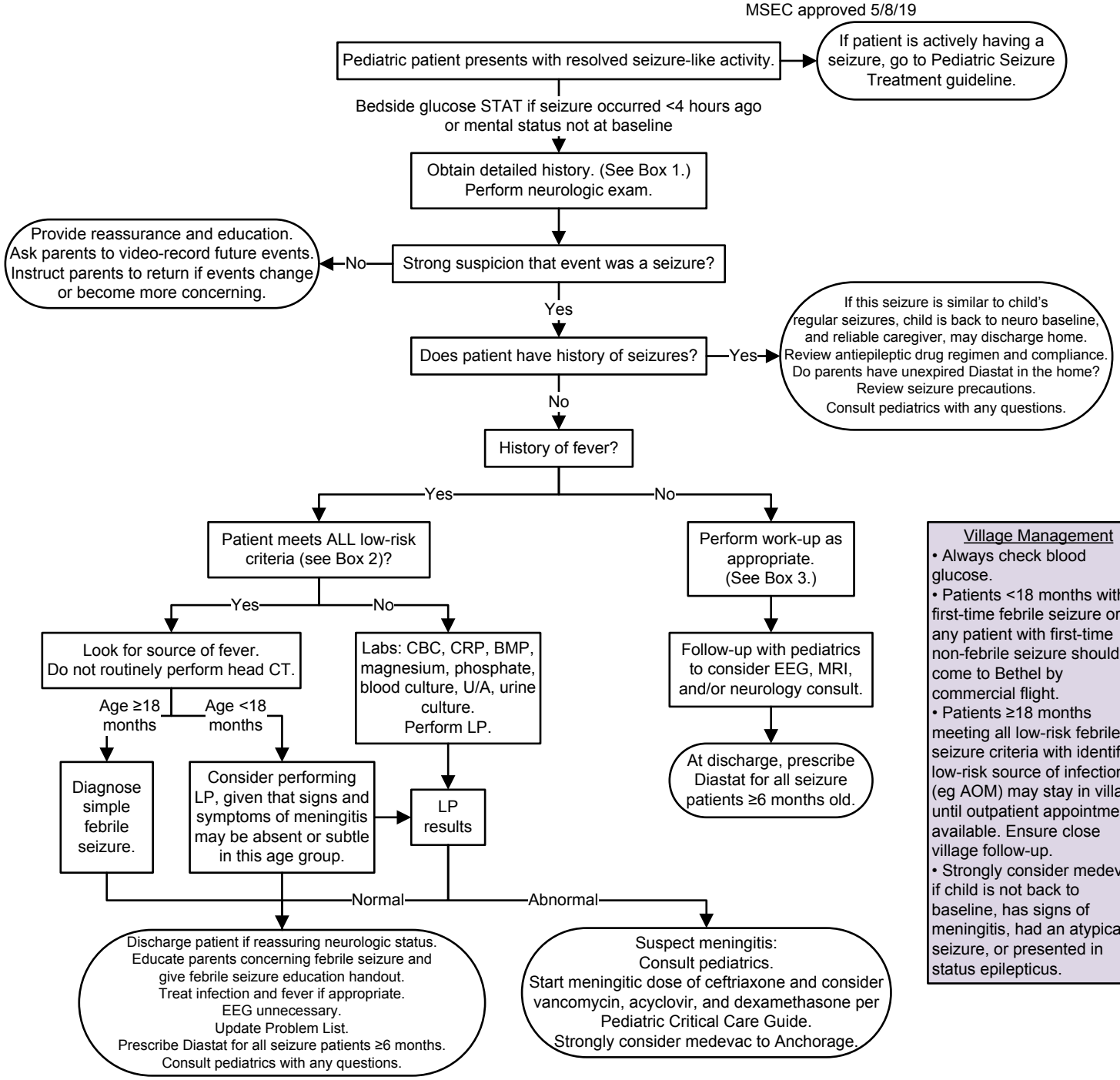
If comments about this guideline, please contact Amy_Carson-Strnad@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

Seizure Evaluation – Pediatric

MSEC approved 5/8/19



Village Management

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

Box 1: Detailed History

- When/where did it occur? Awake or asleep?
- What proceeded 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

PMH

- Prior history of seizures
- History of breathholding

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

Box 2: Low risk febrile seizure criteria

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

Box 3: Work-up

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

Radiological studies:

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

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Approved by MSEC 5/8/19.
If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

Seizure Treatment – Pediatric

MSEC approved 5/8/19

If in the ER or NW, ask a nurse to get the Peds Seizure Kit. Tell him/her to type "seizure" in the Pyxis.

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

Pediatric patient is having a seizure.

ABCs.
Bedside glucose STAT.
Obtain IV.
Consult pediatrics.
If first seizure: BMP, magnesium, phosphate, CBC, CRP, blood culture.
Obtain brief history.

Seizure lasting ≥3 minutes.

No → Go to Pediatric Post-Seizure Evaluation guideline.

Yes

Benzodiazepine IV/IO, intranasal, or PR.

Seizure continues 5 more minutes.

Repeat benzodiazepine dose.

Seizure continues 5 more minutes.

Prepare for possible intubation.

Consult ANMC PICU at (907) 297-8809.

Age ≤ 12 months

Phenobarbital 20 mg/kg IV or IM.

Seizure continues 10 more minutes.

Phenobarbital 10 mg/kg IV or IM.

Seizure continues 10 more minutes.

Keppra 20 mg/kg IV or IM.

Seizure continues 10 more minutes.

Keppra 20 mg/kg IV or IM.

Seizure continues 10 more minutes.

Start propofol with PICU consultation.

Age >12 months

Keppra 20 mg/kg IV or IM. Max dose 2000 mg.

Seizure continues 10 more minutes.

Keppra 20 mg/kg IV or IM. Max dose 2000 mg.

Seizure continues 10 more minutes.

Fosphenytoin 20 mg/kg IV. Max dose 1500 mg.

Seizure continues 10 more minutes.

Fosphenytoin 10 mg/kg IV. Max dose 1500 mg.

Seizure continues 10 more minutes.

Phenobarbital 20 mg/kg IV or IM. Max dose 1000 mg.

Seizure continues 10 more minutes.

Phenobarbital 10 mg/kg IV or IM. Max dose 1000 mg.

Seizure continues 10 more minutes.

Start propofol with PICU consultation.

ER Management
Note: Peds Seizure Kit includes dosing.
Lorazepam 0.1 mg/kg IV/IO (max dose 4 mg) or midazolam 0.2 mg/kg intranasal (max dose 10 mg) if no IV access.

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 20 mg/kg IM (max dose 1000 mg). If giving phenobarbital, consult pediatrics, notify ER, and strongly consider activating a medevac.
- Low threshold to activate medevac for atypical or prolonged seizure.

Note: If febrile seizure with status epilepticus, consider giving phenobarbital after benzodiazepines prior to Keppra in any age group.

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

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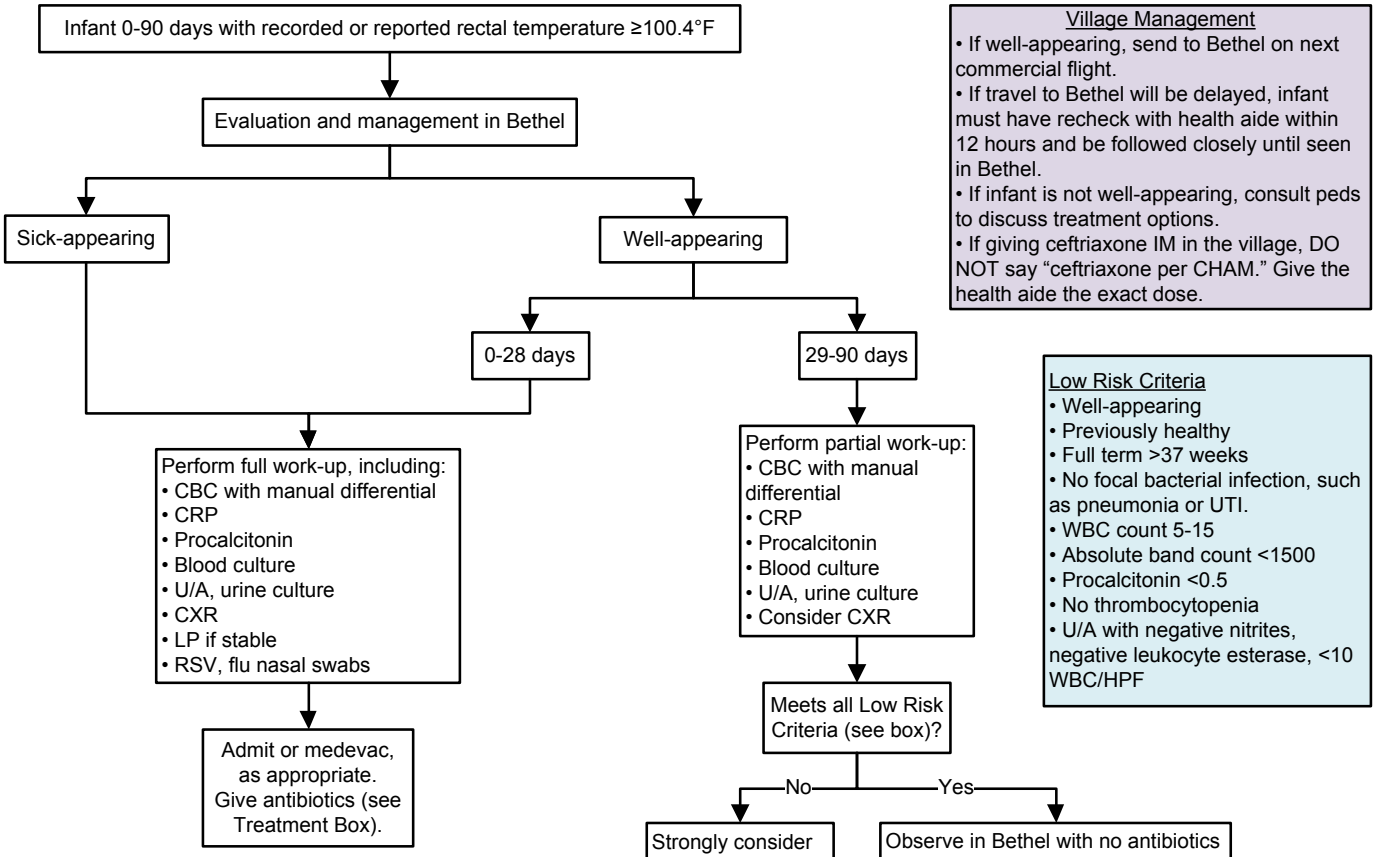
Approved by MSEC 5/8/19.
If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

Fever – Infants 0-90 days

MSEC Approved 5/8/19



Village Management

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

Low Risk Criteria

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

CSF Results

Normal CSF	0-28 days	29-90 days
WBC	<20	<10
Glucose	>40	>40
Protein	<100	<75

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

Special Circumstances

1. Immunizations within 24 hours of fever <101 and well-appearing: no work-up necessary but must follow-up in village or Bethel within 12-24 hours. If fevers persist or infant is not well-appearing, perform work-up as above.

2. Pre-treatment with antibiotics with no focal bacterial infection: infant must be observed a full 48 hours off antibiotics. This may require staying in Bethel for 48 hours of antibiotics followed by another 48 hours of observation off antibiotics with daily follow-up. Consider ordering CSF Multiplex PCR, a send-out test.

3. Unsuccessful LP: treat if appropriate and consider a repeat LP in 12-24 hours and determine treatment course based on cell counts. If repeat LP not performed or unsuccessful, either treat for 10-14 days with meningitic dosing of IV antibiotics or stop antibiotics at 48 hours and observe infant for an additional 48 hours off antibiotics. Consider admission.

HSV Work-up

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

Risk-Stratification Resource: Kaiser Neonatal Sepsis Calculator

Treatment

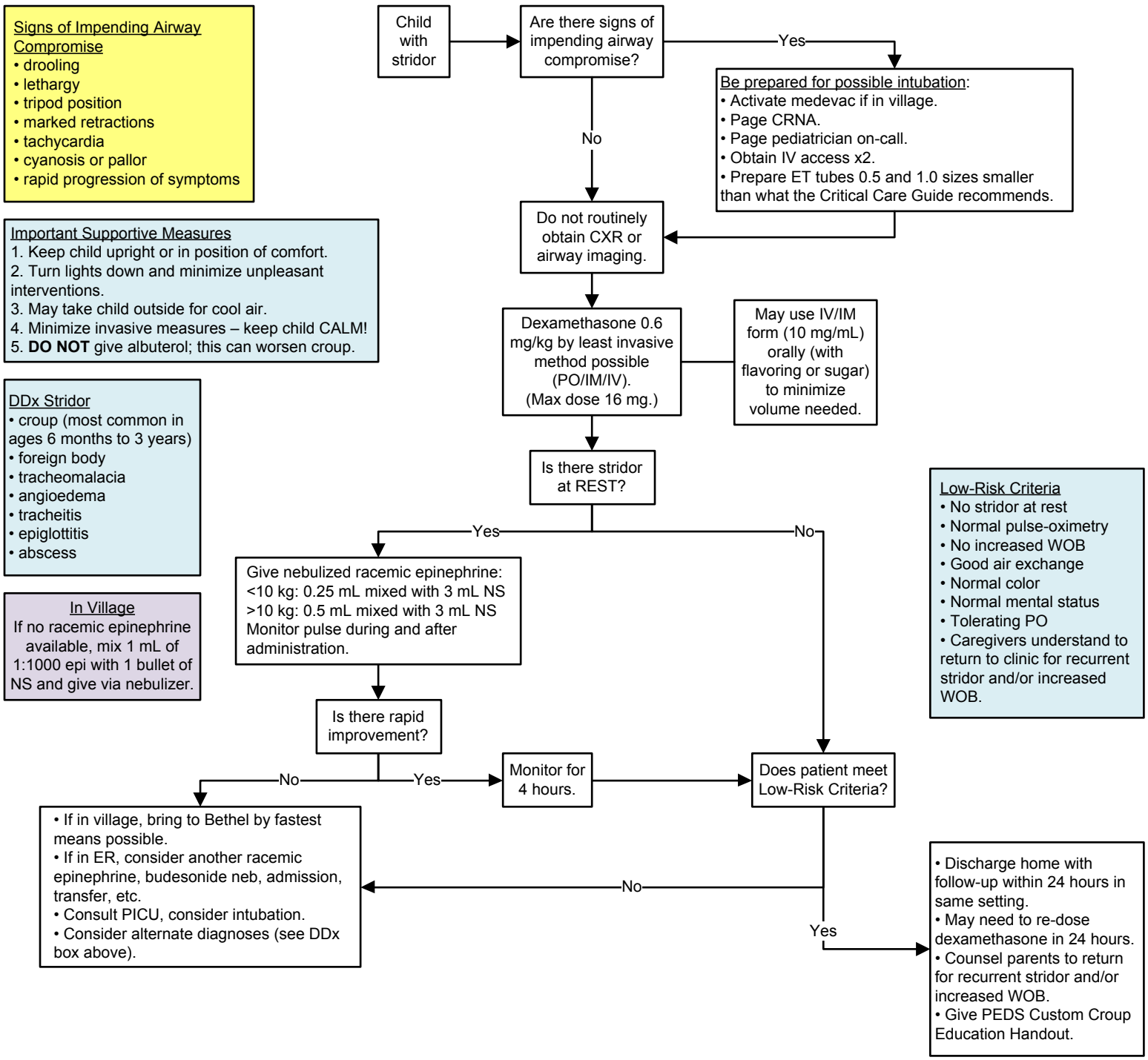
No febrile infant <90 days should receive antibiotics without an LP.

- 0-7 days: please consult a pediatrician, pharmacist, or Neofax.
- 8-28 days:
  - -If well-appearing and low suspicion for meningitis: ampicillin 50 mg/kg IV Q8h AND gentamicin 4 mg/kg IV Q24h
  - -If well-appearing and any suspicion for meningitis: ampicillin 75 mg/kg IV Q6h AND cefepime 50 mg/kg IV Q12h
  - -If ill-appearing and/or positive CSF Gram stain: please consult a pediatrician and/or a pharmacist.
- 29-90 days: ceftriaxone 75 mg/kg IV/IM Q24h OR if worried about meningitis 100 mg/kg IV once then 50 mg/kg IV Q12h
- Continue IV/IM antibiotics until cultures are negative and patient is clinically stable x48-72 hours or until specific organism and sensitivities are available to direct therapy.
- If known HSV exposure, seizures, or severe illness: acyclovir 20 mg/kg IV Q8h with IVF, perform HSV work-up (see box), and consult pediatrics.
- If suspicion for bacterial meningitis, strongly consider medevac.
- If transferring patient, send any extra CSF on ice with patient.

Yukon-Kuskokwim HEALTH CORPORATION

Croup/Stridor: Evaluation & Treatment

MSEC Approved 10/9/019



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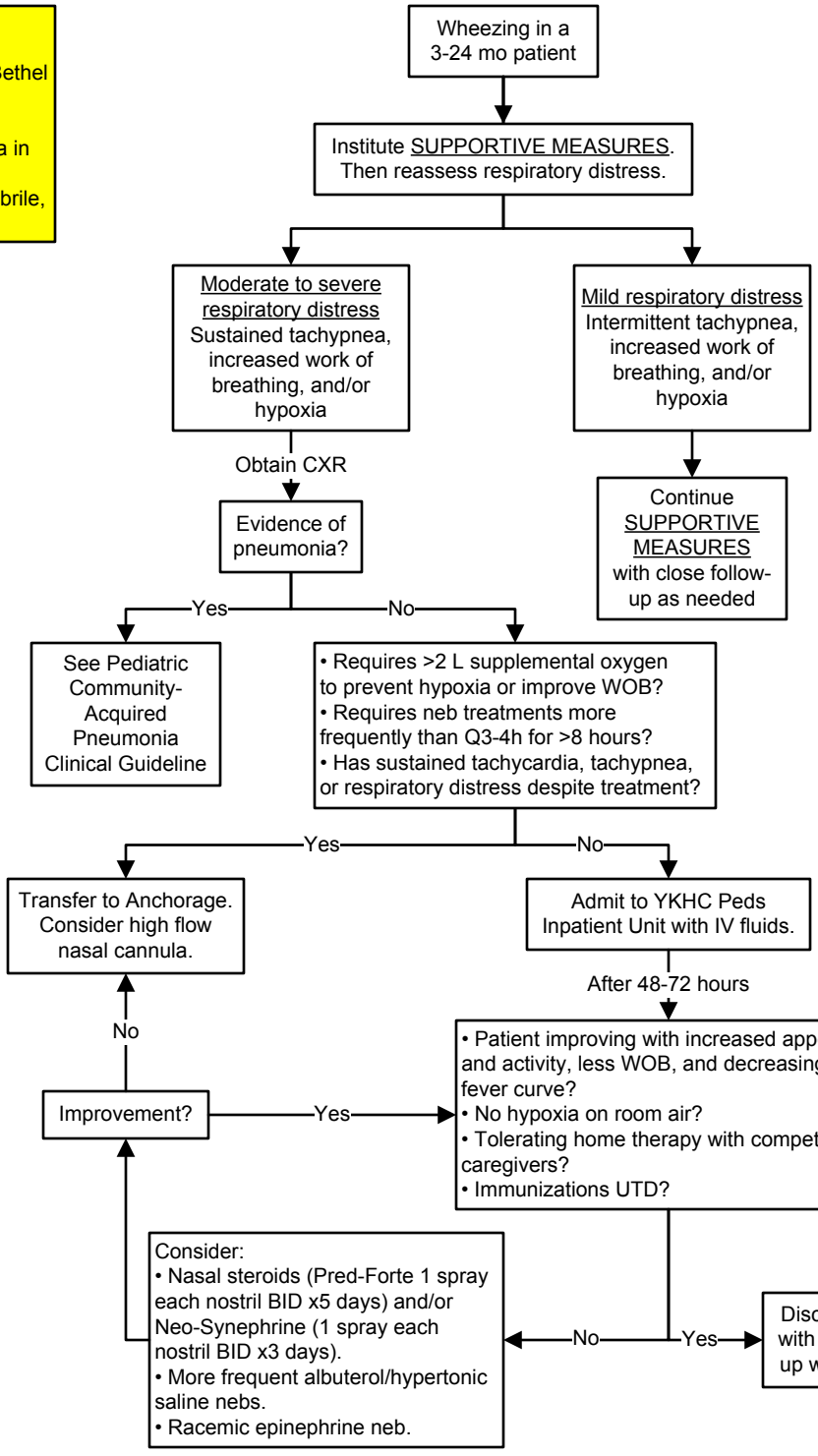
Bronchiolitis / Wheezing – 3-24 Months

MSEC Approved 5/8/19

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



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 nebs.
• Have low threshold to refer to Bethel for further evaluation if no improvement with supportive measures or any concerns.
• If no improvement after 2-3 days of village management, refer to Bethel for further care.
• If unable to bring to Bethel and worsening, consult a pediatrician and consider systemic steroids.

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.

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

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

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Approved by MSEC 5/8/19.
If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

Pneumonia – Pediatric > 3 Months

MSEC Approved 5/8/19

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.

Cough + fever

Institute SUPPORTIVE MEASURES
Then reassess respiratory distress

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

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

• CXR (PA & lateral)
• CBC, CRP, and blood culture
• RSV and flu if <3 years
• Place PPD

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

Infiltrate / No infiltrate

Begin antibiotics per Treatment box.

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

No infiltrate / Infiltrate

Prescribe antibiotics for 10 days per Treatment box.

• Place PPD if older than 6 months and no PPD in past 6 months.
• 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.

• 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?

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?

Improvement? Yes / No

No / Yes

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

• Change to oral antibiotics for total of 10 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.

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.

Treatment

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

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

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

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

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

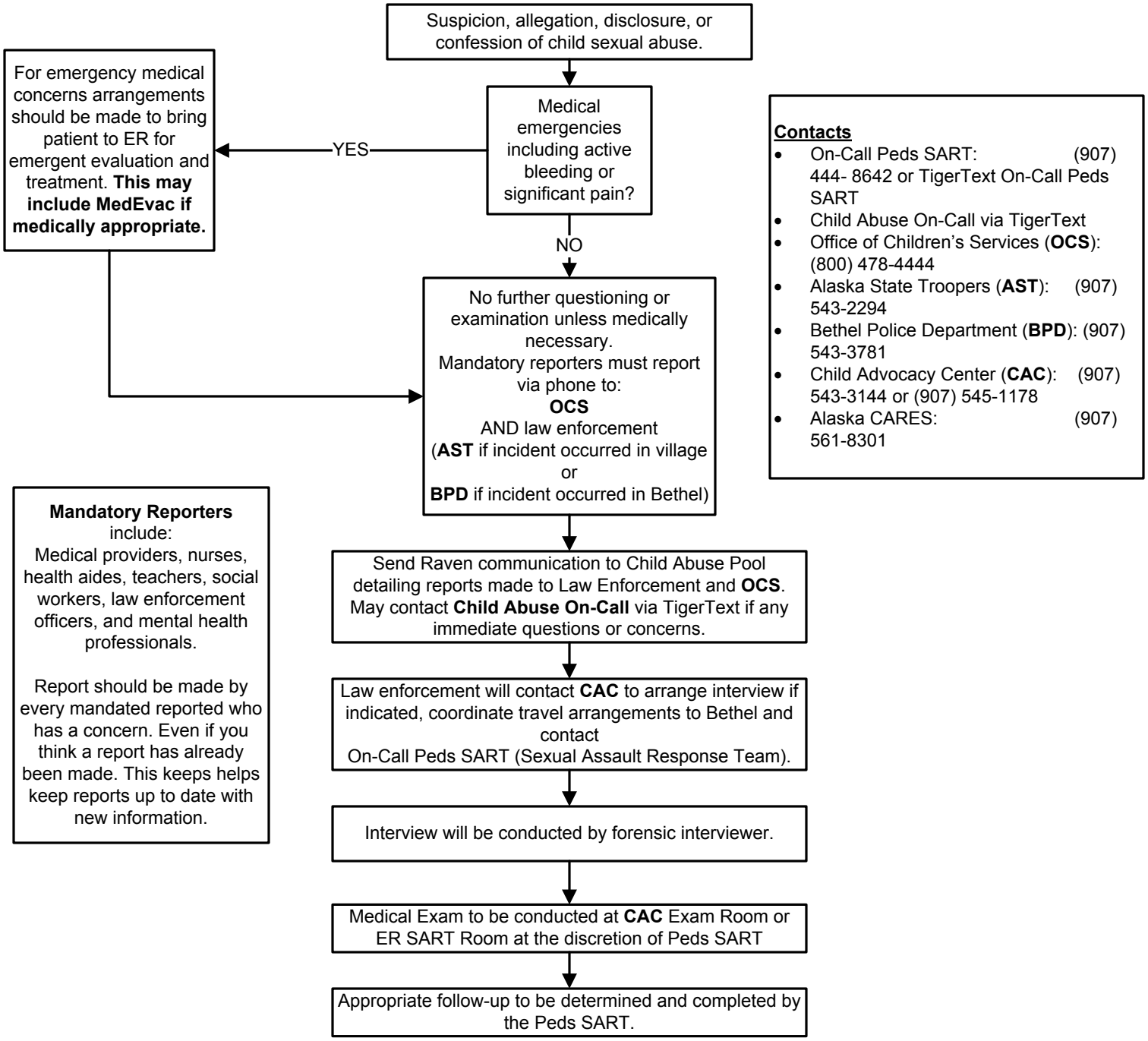
RUL infiltrate: consider starting with Augmentin/Unasyn to cover for oral anaerobes. Consider thickener.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Approved by MSEC 5/8/19.
If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

Suspected Child Sexual Abuse Procedure

MSEC Approved 6/5/19



Contacts

- On-Call Peds SART: (907) 444- 8642 or TigerText On-Call Peds SART
- Child Abuse On-Call via TigerText
- Office of Children's Services (**OCS**): (800) 478-4444
- 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 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 reported who has a concern. Even if you think a report has already been made. This keeps helps keep reports up to date with new 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.

Yukon-Kuskokwim HEALTH CORPORATION

Suspected Child Physical Abuse Procedure

MSEC 8

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

↓

Treat any acute issues as medically appropriate. If patient is in village and stable please arrange to have patient sent to ER 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 Non-Accidental Trauma (NAT) Work-up

- Skeletal Survey .(See Box)
- CT Head if <6 months, symptomatic, or evidence of Closed Head Injury
- Laboratory Testing for Occult Injuries (See Box)
- Take photos of any injury visible on exam, especially bruising. Take a photograph of the injury at a distance, followed up by a close-up photo to establish relative size and landmarks.

↓

Send RAVEN communication to Child Abuse Pool detailing reports made to Law Enforcement and **OCS**. May contact **Child Abuse On-Call** via TigerText 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 TigerText **Child Abuse On-Call** to help reach a safe discharge plan.

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

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.

Contacts

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

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

Laboratory Testing for Occult Injuries

All Patients ≤ 7 years or >7 if clinically indicated

- CBC
- CMP
- Amylase/Lipase
- UA

Fractures

- Above labs and Magnesium & Phosphorus

Bruising or Intracranial Hemorrhage

- Above labs plus PT/PTT
- If patient needs blood, obtain vWF (von Willebrand) antigen and activity, Factor VII and IX

Altered Mental Status/Drug Ingestion

- Urine Drug Screen
- Ethanol level
- Tylenol level
- Aspirin level

Obtain Skeletal Survey For:

Children 0-24 months if concerns for child abuse or any of the following are present:

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

ALL children 0-11 months with any type of fracture except the following:

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

Children 0-24 months with any of the following fractures:

- Rib fracture
- Complex or ping pong skull fracture
- Humeral fracture with epiphyseal separation attributed to short fall (< 3 feet)
- Femur diaphyseal fracture attributed to fall from any height

Yukon-Kuskokwim HEALTH CORPORATION

Head Injury/Concussion <18 Years

MSEC Approved 5/8/19

Head injury in a child <18 years.

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

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

Discharge with head injury education and competent caregiver

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

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

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

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

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

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

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

Not improved → CT Scan
Perform noncontrast head CT with spinal motion restriction

Improved → Discharge with head injury education and competent caregiver. Consider concussion follow-up (see Concussion Management box).

Normal / Abnormal → Is patient improving?

Yes → Discharge with head injury education and competent caregiver. Consider concussion follow-up (see Concussion Management box).

No → Consult PICU and trauma service.

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

Plain films of the skull are not recommended.

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

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

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
	No response	No response	1
Best motor response	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

Yukon-Kuskokwim HEALTH CORPORATION

Amoxicillin Allergy Trials

MSEC approved 5/8/19

Background

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

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 age 5.

No

What was the reaction?

History

Chart review:
• Review notes in allergy alert. Find date allergy was added, and then review notes from that day.
• Look in Multimedia Manager for photos.
• Has patient received a drug of the same class since the allergy was reported?

History from patient/family:
• What was the reaction?
  Vomiting and/or diarrhea?
  Rash?
    Age? Time from first dose?
    Hives? (See box.)
    Photos from family?
  Trouble breathing?
  Swelling of tongue/lips?

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

Rash

Viral-appearing rash or other type of rash

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.

True hives

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

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

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.

Other

Get more history. Consider pediatric consult.

Hives vs Viral Rash

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

Amoxicillin Trial Procedure[2]

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine available.
Epinephrine (1 mg/mL): 0.01 mg/kg (or 0.01 mL/kg) IM q5-15 minutes.
Per AAP recommendations:
  • 7.5-25 kg: use EpiPen Jr (0.15 mg)
  • ≥ 25 kg: use EpiPen (0.3 mg)
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."

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.

Yukon-Kuskokwim
HEALTH CORPORATION

CLINICAL GUIDELINES
2019
rev. 10-17-19

Pediatric Outpatient Guidelines

Yukon-Kuskokwim HEALTH CORPORATION

UTI – Children 3 Months–5 Years

MSEC Approved 5/8/19

Child less than 5 years of age with concern for UTI

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

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

Ensure urine culture is sent.

Patient appearing toxic?

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

No → Consider empiric treatment with cephalexin 20 mg/kg/dose Q8h x10 days.
May defer empiric treatment and await culture sensitivities.

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

No → No UTI. Stop antibiotics.

Yes → Begin empiric treatment and narrow coverage per sensitivities.

Once clinically improved and sensitivities established, switch to oral antibiotics

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

Renal abnormality identified.

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

Signs and Symptoms of UTI
• fever
• dysuria
• vomiting
• abdominal pain
• new daytime or nighttime wetting
• increased frequency of voiding
• malodorous urine

Differential Dx for Dysuria
• UTI
• vulvovaginitis
• Candida infection
• poor hygiene
• sexual abuse
• age-appropriate self-exploration

Resistance
• Empiric drug choice is based on local resistance patterns and consultation with ID specialist.
• If urine culture grows an Extended-Spectrum Beta-Lactamase (ESBL) producing organism, please obtain a pediatrics consult and add ESBL to Problem List.

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

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

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

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

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

Yukon-Kuskokwim HEALTH CORPORATION

Otitis Media 3 Months–12 Years

MSEC Approved 4/26/18

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

AOM ≥3 months
Acute onset of:
- Fever and ear pain
- Bulging TM and decreased mobility

See Box 1.

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

Is observation appropriate? (See Box 2.)

Yes → Child is observed for 48-72 hours with follow-up

No → Start antibiotics per Box 3.

Did patient improve within 48-72 hours?

Yes → Follow-up as appropriate.

No → Reassess to confirm diagnosis of AOM.

Is diagnosis of AOM confirmed?

Yes → Initiate or change antibiotics per Box 3.

No → Assess for other causes of illness and manage appropriately.

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

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

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

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

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

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

For PCN allergy: Please obtain a pediatrics consult.

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

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

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

Yukon-Kuskokwim HEALTH CORPORATION

Sinusitis > 5 Years

MSEC Approved 4/26/18

Differential Diagnosis
-foreign body
-seasonal/environmental allergies
-recurrent/back-to-back viral rhinitis or nasopharyngitis

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

Consider sinusitis

If considering the diagnosis of sinusitis in a child younger than 5, please consult a pediatrician.

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

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

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

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

If no improvement

Treatment

1st line High-dose amoxicillin 45 mg/kg/dose PO BID for 14 days

2nd line High-dose Augmentin 45 mg/kg/dose PO BID for 14 days

3rd line Cefdinir 14 mg/kg/dose PO daily for 14 days

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

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

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

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

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?biw=1536&bih=740&tbm=isch&sa=1&ei=rTiHWt3rCIHRjAP4hKaICA&q=sinus+development&oq=sinus+development&gs_l=psy-ab.3..0i67k1j0l5j0i5i30k1l3j0i8i30k1.34240.34657.0.35299.2.2.0.0.0.0.200.398.0j1j1.2.0....0...1c.1.64.psy-ab..0.2.395...0i30k1.0.rSFh1aHlq74#imgrc=IDSBxCfrF0AkWM:&spf=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.

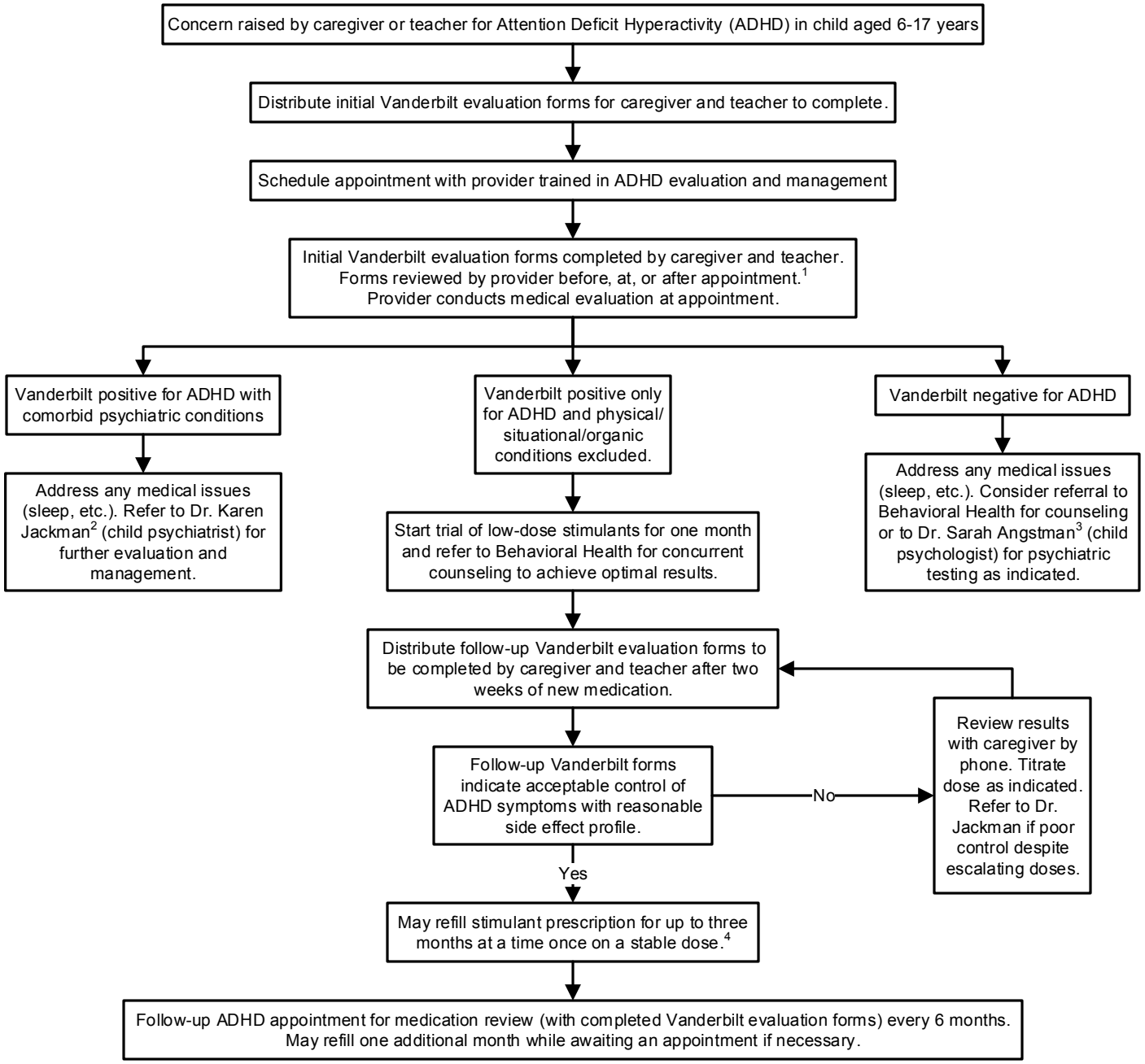
Adjuvant Therapies

-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.

Yukon-Kuskokwim HEALTH CORPORATION

Attention Deficit Hyperactivity Disorder in Children

MSEC approved 07/12/17

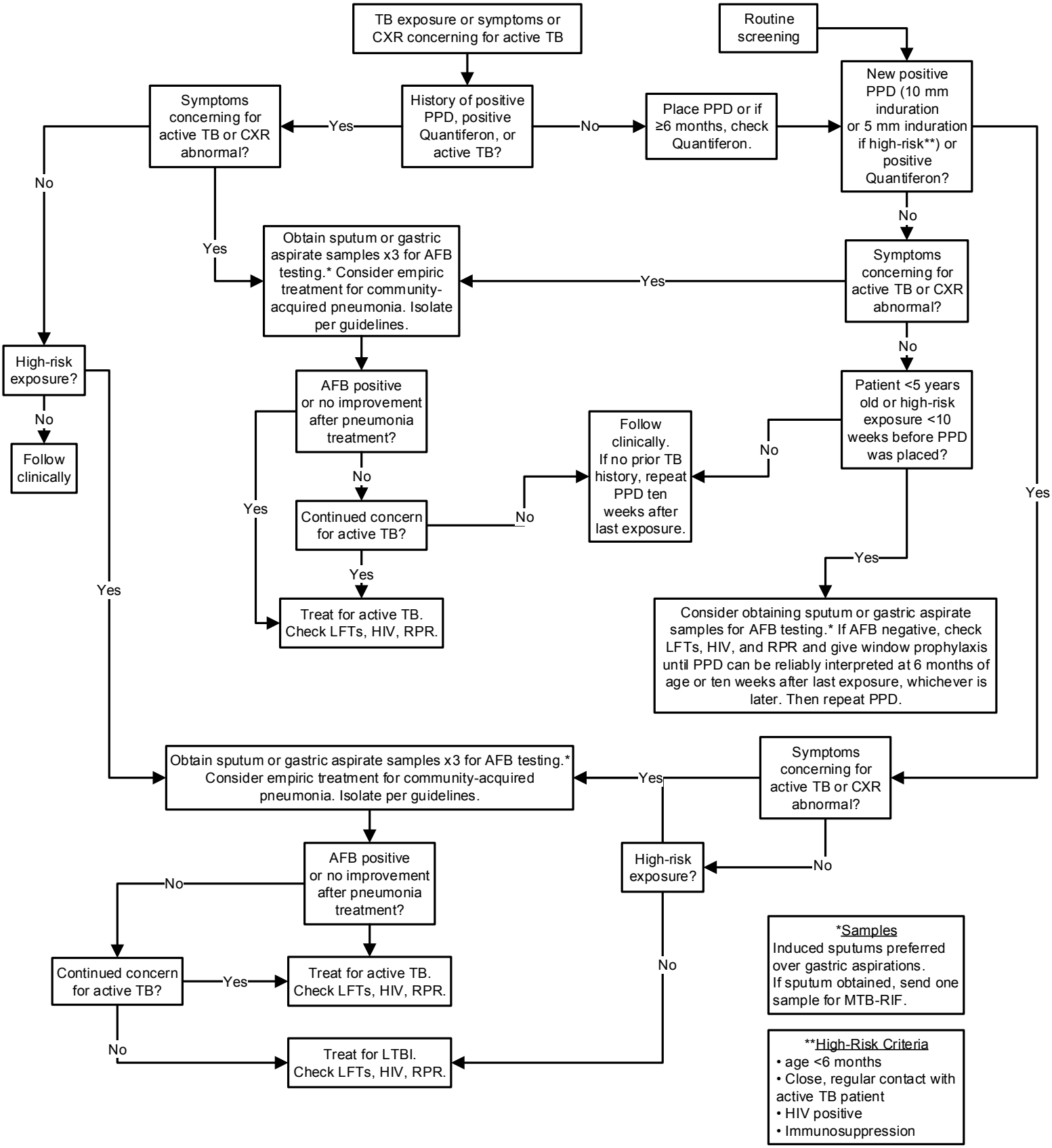


1. Scan completed Vanderbilt forms into MultiMedia Manager under "Continuity of Care."
2. Use "Refer to Peds Psychiatry Internal" order. Dr. Jackman may be contacted at (907) 230-3765 or jackman@alaska.net.
Her case manager is Patricia Sipary at ext 6466.
3. Use "Refer to Other External" order and send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

Yukon-Kuskokwim HEALTH CORPORATION

TB Evaluation & Treatment – Pediatric

MSEC Approved 4/26/18 - minor revisions 07-26-18



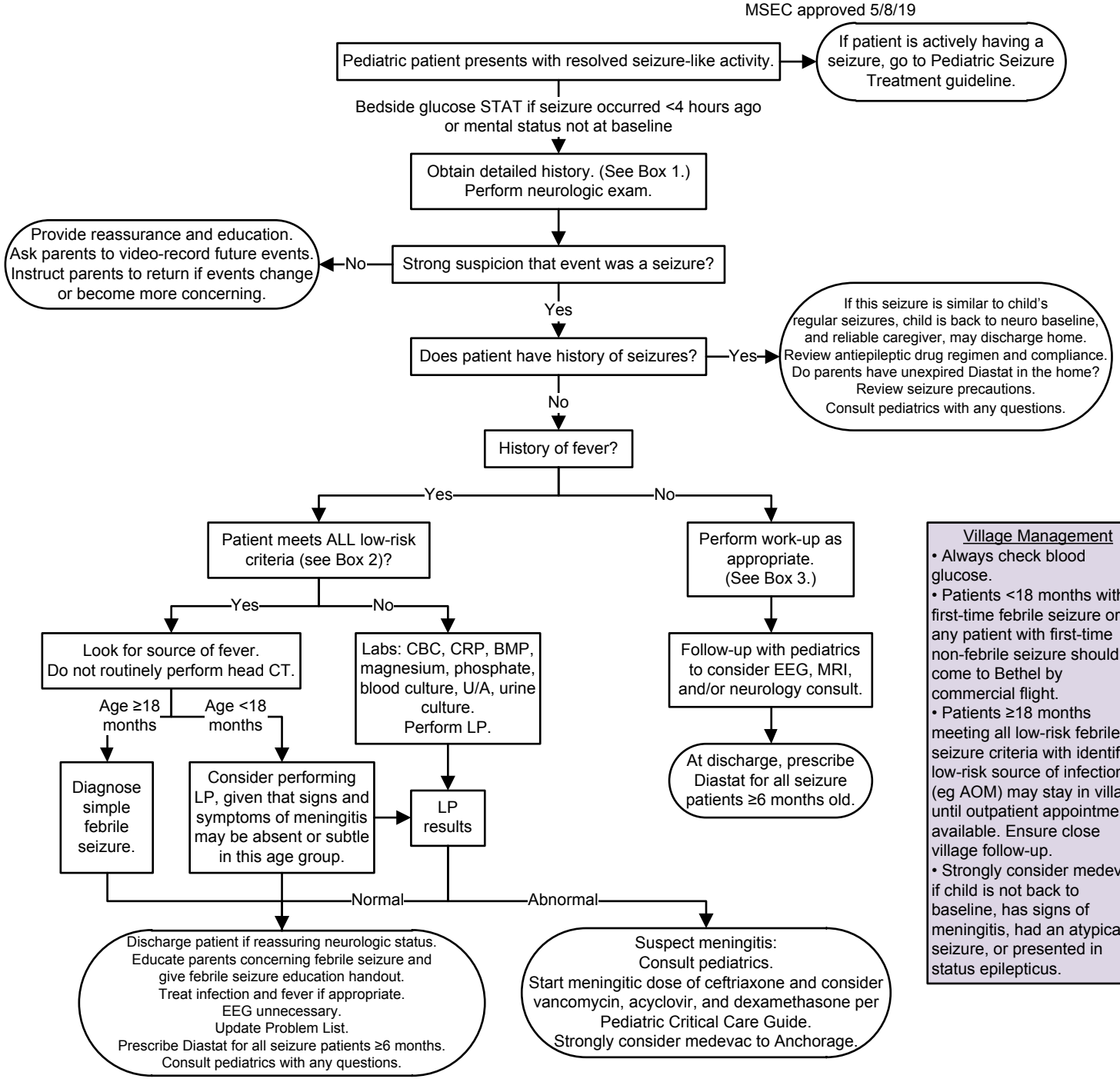
Abbreviations: TB- tuberculosis; CXR- chest X-ray; PPD- purified protein derivative; AFB- acid-fast bacilli; HIV- human immunodeficiency virus; LFTs- liver function tests

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.

Yukon-Kuskokwim HEALTH CORPORATION

Seizure Evaluation – Pediatric

MSEC approved 5/8/19



Village Management

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

Box 1: Detailed History

- When/where did it occur? Awake or asleep?
- What proceeded 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

PMH

- Prior history of seizures
- History of breathholding

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

Box 2: Low risk febrile seizure criteria

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

Box 3: Work-up

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

Radiological studies:

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

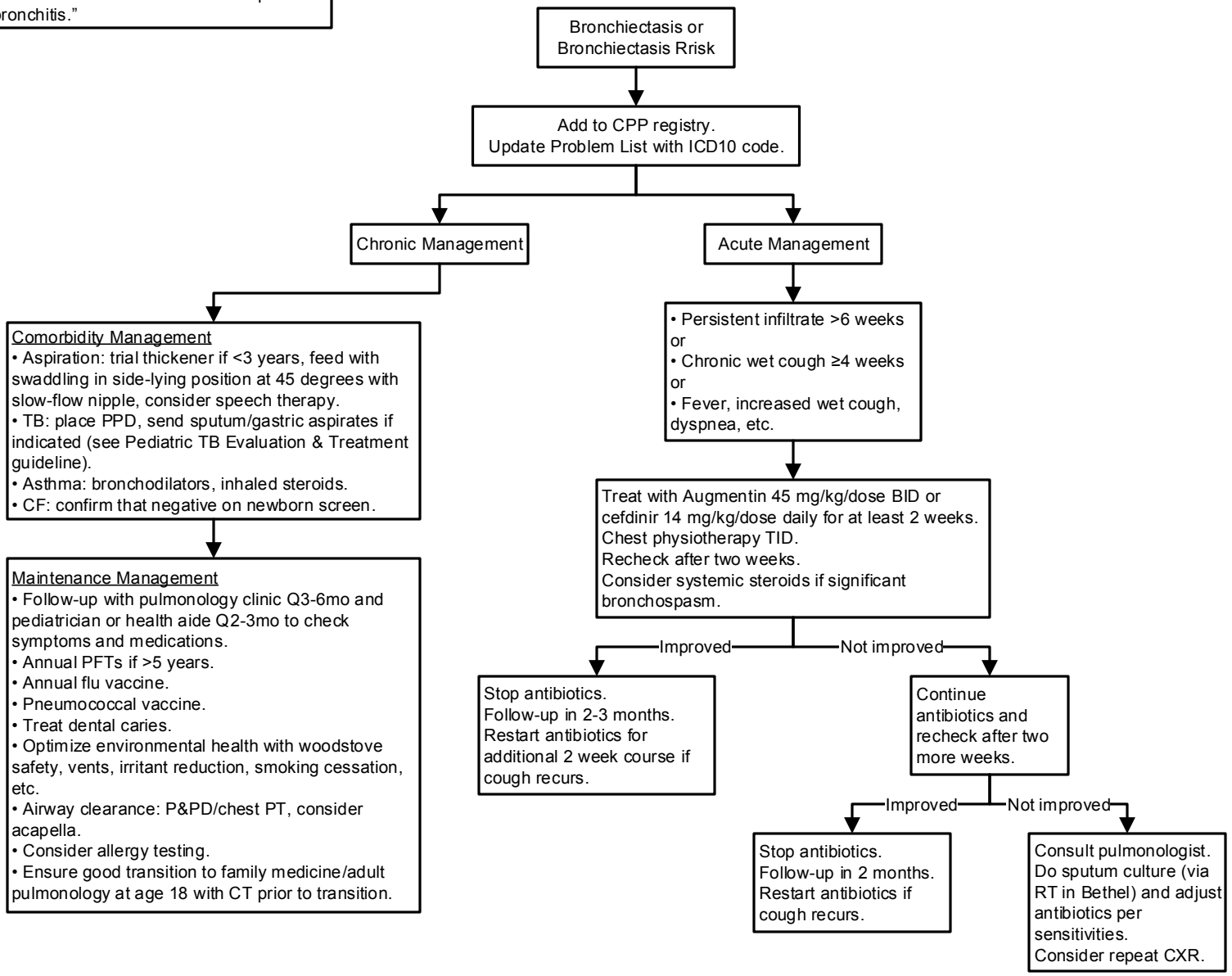
for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Approved by MSEC 5/8/19.
If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.

Yukon-Kuskokwim HEALTH CORPORATION

Chronic Cough/Bronchiectasis – Pediatrics

MSEC approved 12/13/17

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



Yukon-Kuskokwim HEALTH CORPORATION

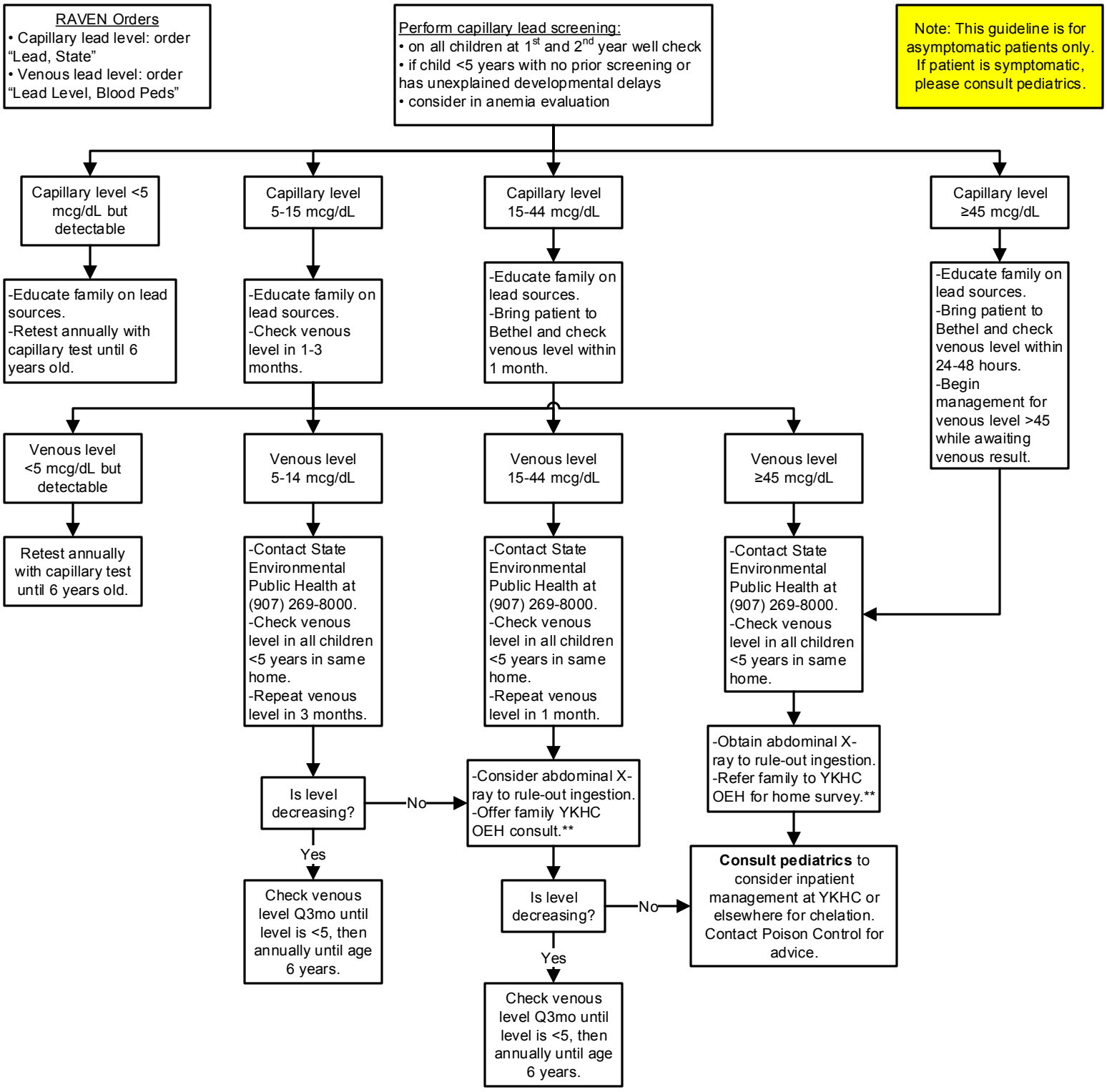
Lead Evaluation – Pediatrics

MSEC approved 12/13/17

RAVEN Orders
• Capillary lead level: order "Lead, State"
• Venous lead level: order "Lead Level, Blood Peds"

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

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

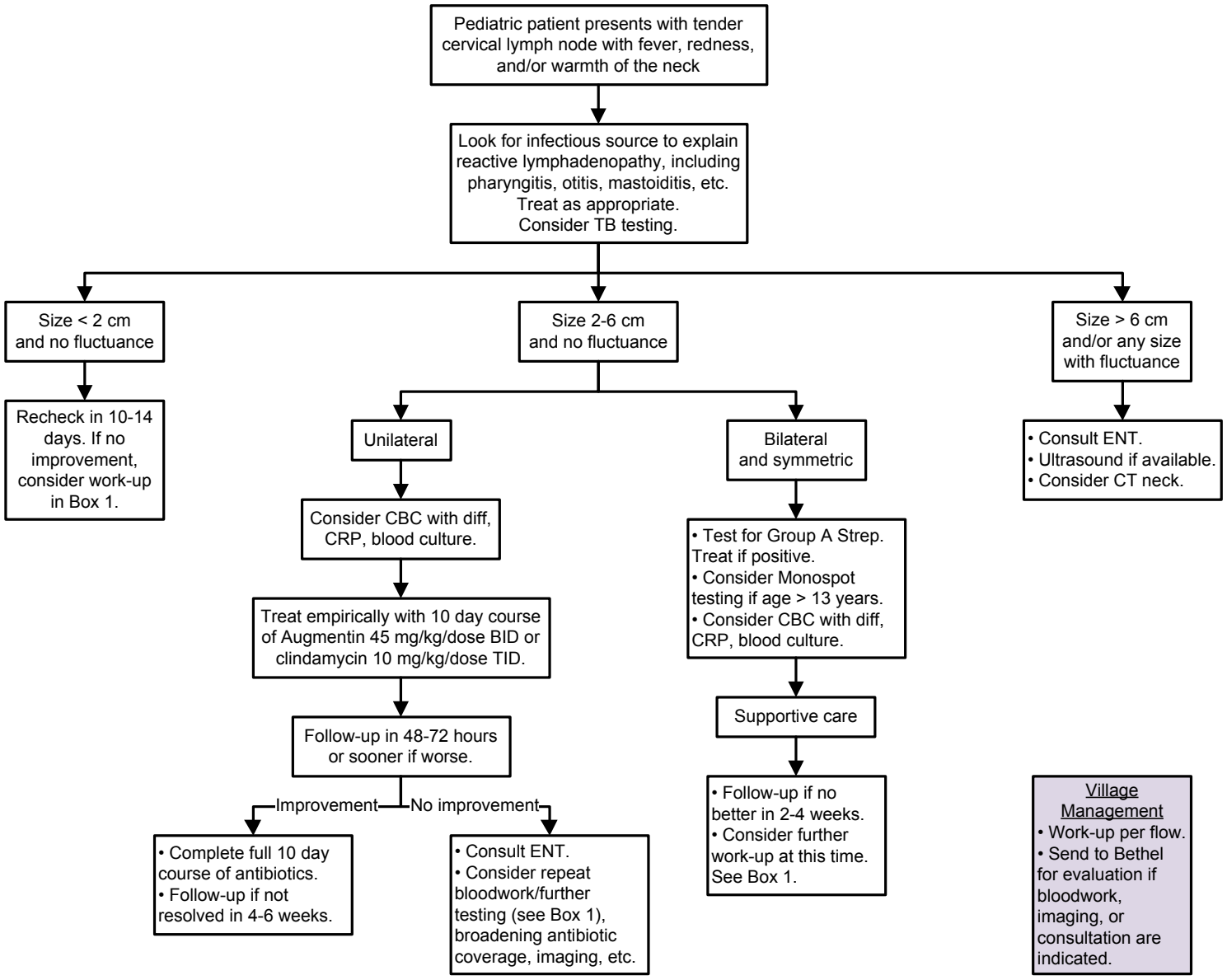


**To consult YK Office of Environmental Health (OEH), email Jennifer_Dobson@ykhc.org with patient's name and DOB, lead levels, and parent's contact information. OEH can review environmental risk factors with family and offer a home visit if appropriate.

Yukon-Kuskokwim HEALTH CORPORATION

Acute Cervical Lymphadenitis Evaluation & Treatment – Pediatrics

MSEC approved 12/13/17



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

Box 1: Further Work-up

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

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

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

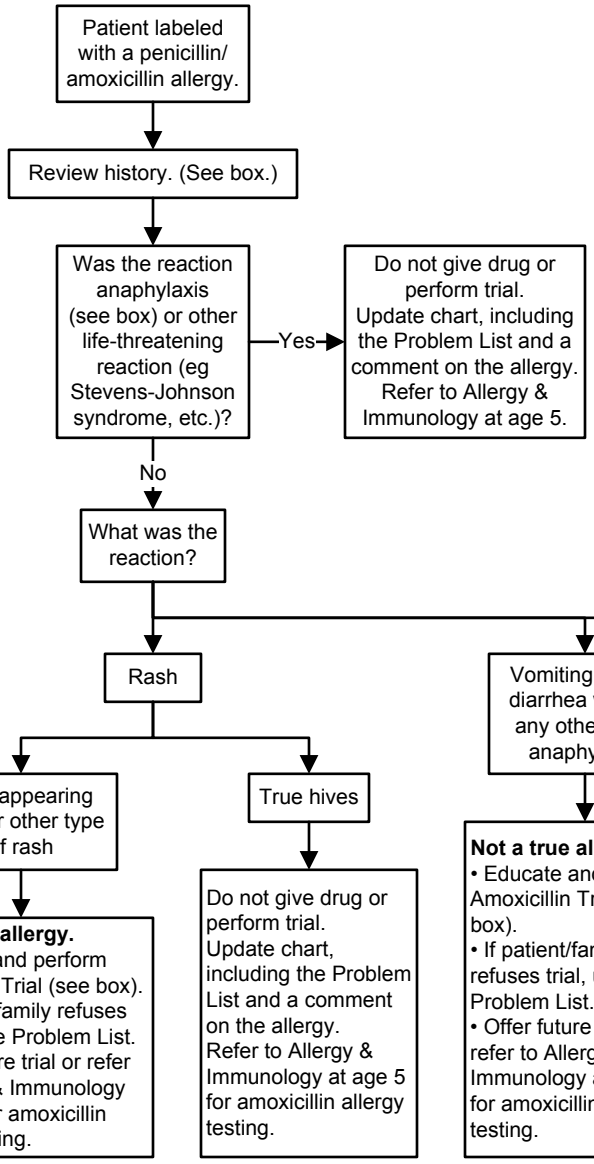
Yukon-Kuskokwim HEALTH CORPORATION

Amoxicillin Allergy Trials

MSEC approved 5/18/19

Background

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



History

Chart review:
• Review notes in allergy alert. Find date allergy was added, and then review notes from that day.
• Look in Multimedia Manager for photos.
• Has patient received a drug of the same class since the allergy was reported?

History from patient/family:
• What was the reaction?
  Vomiting and/or diarrhea?
  Rash?
    Age? Time from first dose?
    Hives? (See box.)
    Photos from family?
  Trouble breathing?
  Swelling of tongue/lips?

Anaphylaxis

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

Hives vs Viral Rash

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

Amoxicillin Trial Procedure[2]

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine available.
Epinephrine (1 mg/mL): 0.01 mg/kg (or 0.01 mL/kg) IM q5-15 minutes.
Per AAP recommendations:
  • 7.5-25 kg: use EpiPen Jr (0.15 mg)
  • ≥ 25 kg: use EpiPen (0.3 mg)
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.”

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.

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CLINICAL GUIDELINES
2019
rev. 10-17-19

Pediatric Neonatal Guidelines

Yukon-Kuskokwim HEALTH CORPORATION

Neonatal Resuscitation Summary

NICU 907-212-3614 Ask for attending neonatologist on call

Gestational Age (weeks)	24	26	28	30	32	34	36	38	40
Estimated Weight (grams)	**700**	**900**	**1100**	**1350**	**1650**	**2100**	**2600**	**3000**	**3500**
Equipment/Supplies : NG/OG Tube = 5F ♦ UVC <32 wks = 3.5F OR >32 wks = 5F ♦ UAC = 3.5F ♦ Chest Needle = 18g									
ETT Size (mm)	2.5	2.5	2.5-3.0	3	3	3–3.5	3.5	3.5-4.0	3.5-4.0
Laryngoscope Blade	00	00	00	0	0	0	0	0-1	0-1
ETT Depth lip to tip (cm) *Place at T2 above the carina*	6.5–7 cm	6.5–7 cm	7	7–7.5 cm	7.5 cm	8 cm	8.5 cm	9 cm	9.5 cm
UVC insertion (cm). Place just above diaphragm. Must add additional umbilical stump length. **May put UVC in 2-4 cm for emergency access**.	6.5	6.9	7.2	7.5	8	8.7	9.4	10	10.8
UAC insertion (cm) **high line = T6-T9 preferred.** *Must add additional umbilical stump length*	11.1	11.7	12.3	13	14	15.3	16.8	18	19.5
UAC insertion (cm). low line = L3-L4 *Must add additional umbilical stump length*	7.7	7.9	8.1	8.4	8.7	9.1	9.6	10	10.5
Chest Tube	8F	8F 4-6	8F	8F	8F	8-10F	8-10F	10-12F	10-12F
Vitals: Heart Rate 120-160 | Respiratory Rate 30-60 | Mean Blood Pressure = Gestational age in weeks									
Initial Ventilator Settings									
Positive Inspiratory Pressure (PIP) cmH_2O	16-22	16-22	16-22	16-22	18-24	18-24	18-24	20-28	20-28
Positive End Expiratory Pressure (PEEP) cmH_2O	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6
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
Respitory Rate (per minute)	30-45	30-45	30-45	30-45	20-40	20-40	20-40	20-40	20-40
Saturation Goal after 10 min.	88-95%	88-95%	88-95%	88-95%	88-95%	88-95%	88-95%	95-98%	95-98%
Medications									
Epinephrine **IV/IO** 0.1mg/mL 0.1–0.3 ml/kg. May repeat every 3 minutes for asystole.	0.1-0.2ml	0.1-0.3ml	0.1-0.3ml	0.1-0.4ml	0.2-0.5ml	0.2-0.6ml	0.3-0.8ml	0.3-0.9ml	0.4-1ml
Epinephrine **ET ONLY** 0.1mg/mL 1ml/kg. May repeat every 3 minutes for asystole.	0.7ml	0.9ml	1.1ml	1.3ml	1.6ml	2.1ml	2.6ml	3ml	3.5ml
Curosurf (poractant alfa 80 mg/ml) 2.5 ml/kg divided into two doses. Give curosurf <26 wks **OR** 26–29 wks and needs ≥ 40% O2 **OR** > 29 wks with CXR proven RDS	1.8ml	2.3ml	2.8ml	3.4ml	4.1ml	5.3ml	6.5ml	7.5ml	8.8ml
FOR HYPOGLYCEMIA: Give D10 Bolus 2ml/kg IV/IO at 1ml/min. Increase D10 maintenance fluid rate (see below) by 1ml/hr for <2kg or 2ml/hr ≥2kg.	1.4ml	1.8ml	2.2ml	2.7ml	3.3ml	4.2ml	5.2ml	6ml	7ml
Ampicillin **(Dilute to 100 mg/ml)** 50mg/kg IV/IM	35mg (0.35ml)	45mg (0.45ml)	55mg (0.55ml)	68mg (0.68ml)	83mg (0.83ml)	105mg (1.05ml)	130mg (1.3ml)	150mg (1.5ml)	175mg (1.75ml)
Gentamicin (1mg/1ml) ≤29wks=5mg/kg IV; 30-34wks=4.5mg/kg IV; ≥35wks=4mg/kg IV. Give IV dose over 30 min. May use IM. **DO NOT USE IN VILLAGE! PHARMACIST TO CHECK DOSE.**	3.5mg (3.5ml)	4.5mg (4.5ml)	5.5mg (5.5ml)	6mg (6ml)	7.5mg (7.5ml)	9.5mg (9.5ml)	10.5mg (10.5ml)	12mg (12ml)	14mg (14ml)
Volume Expanders: NS or albumin – 10 mL/kg IV or IO. Give over 15–30 minutes or faster if unstable, slower for extreme premies.	7ml	9ml	11ml	13.5ml	16.5ml	21ml	26ml	30ml	35ml
D10 Maint Fluids <750gm=90-100ml/kg/24hr >750gm=80ml/kg/24hr. (goal blood glucose is 50-110mg/dl)	3ml/hr	3ml/hr	3.7ml/hr	4.5ml/hr	5.5ml/hr	7ml/hr	8.7ml/hr	10ml/hr	12ml/hr
Phenobarb (130mg/ml) 10mg/kg IV, IO, IM, PR May give additional 10mg/kg dose.	7mg (0.05ml)	9mg (0.07ml)	11mg (0.08ml)	13.5mg (0.1ml)	16.5mg (0.13ml)	21mg (0.16ml)	26mg (0.2ml)	30mg (0.23ml)	35mg (0.27ml)

Reviewed and updated by YKHC Pediatrics, OB Nursing, and Pharmacy Services in conjunction with Providence NICU staff.

Approved by MSEC Pending

MSEC approved 4/26/18 Rev. 041318

Yukon-Kuskokwim HEALTH CORPORATION

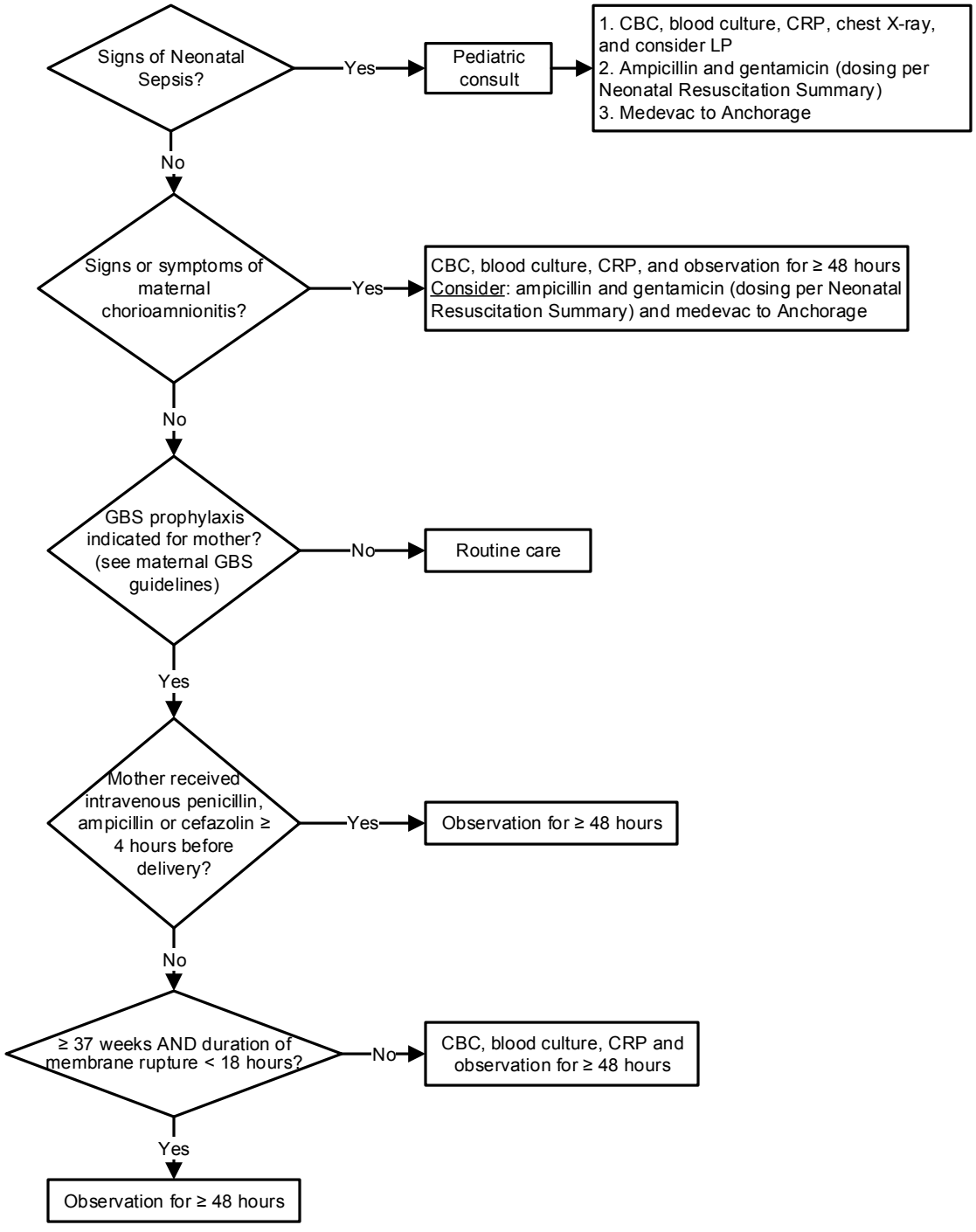
Newborn GBS & Infection Evaluation and Treatment

MSEC approved 09/21/17

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

Intrapartum Maternal GBS Risk Factors

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

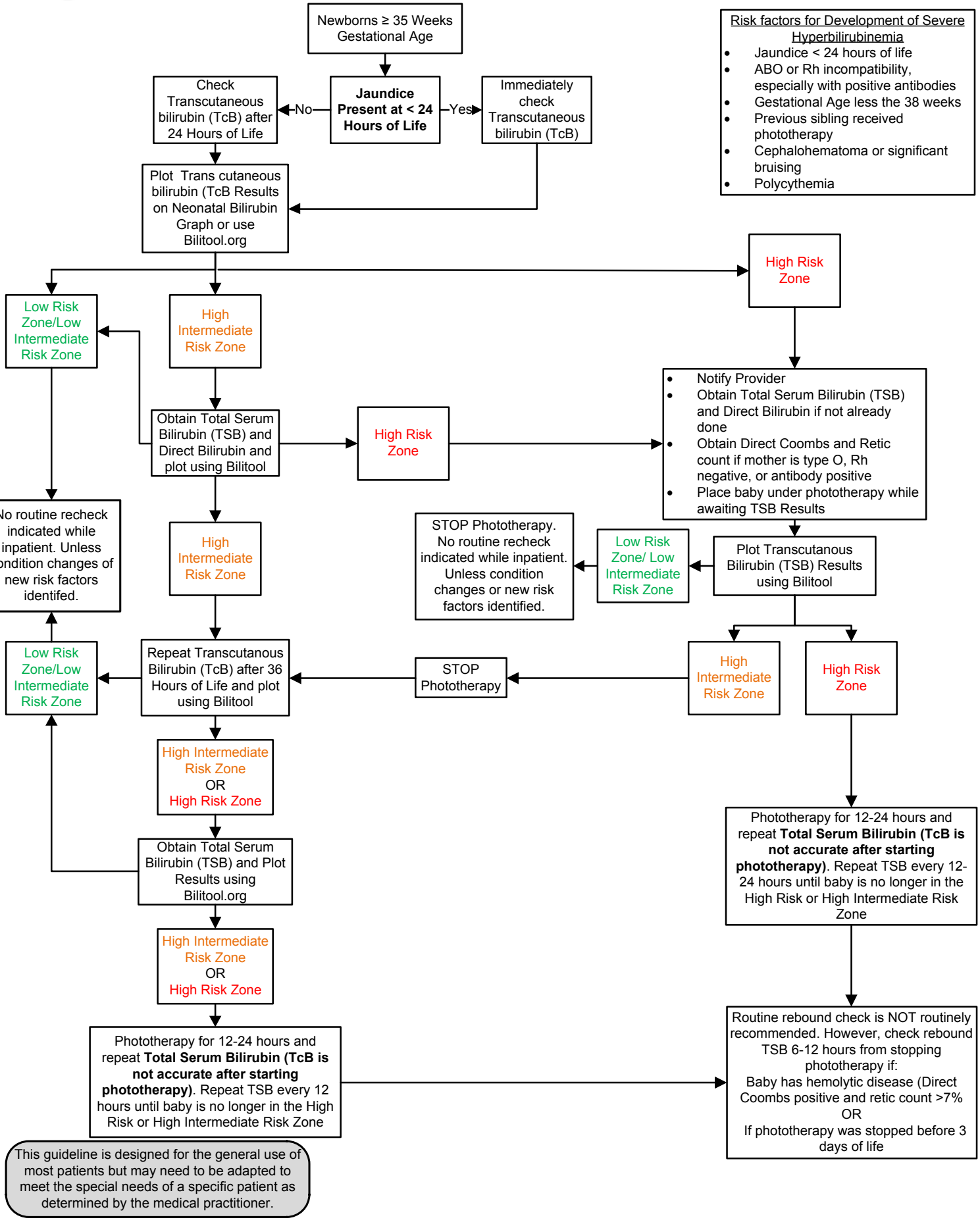


Note: If mother receives "inadequate prophylaxis" (eg. clindamycin, vancomycin, or erythromycin) for GBS status, provider may consider a limited work up of the neonate

Yukon-Kuskokwim HEALTH CORPORATION

Jaundice – Neonatal Evaluation & Treatment

MSEC approved 6/5/19



Yukon-Kuskokwim HEALTH CORPORATION

Neonatal Glucose Screening Evaluation and Treatment

MSEC Approved 3/21/19

ANY TIME INFANT IS SYMPTOMATIC OR BG IS <25 AFTER 1ST DEXTROSE GEL DOSE, GIVE DEXTROSE GEL AND NOTIFY PROVIDER IMMEDIATELY
THIS SCREENING PROTOCOL NO LONGER APPLIES

0-4 HOURS OF AGE

At Risk Infants (See Box)
Begin feeding within one hour of birth. First glucose should be obtained 30 minutes after completion of first feed

Risk Factors and Indications for Screening of Asymptotic Newborns:
SGA (<10%ile BW)
LGA (>90%ile BW)
Infant of Diabetic Mother
Late Preterm (34 0/7 – 36 6/7)
Other clinical situation per physician discretion

< 35 / >35

1. Administer Dextrose Gel immediately per dosing chart
2. Place skin to skin and feed again
3. Repeat BG at 1 hour after Dextrose Gel (NOT one hour after feed)

<35

1. Continue feeds q 2-3 hours as long as BG >35
2. Assess for hypoglycemia by obtaining and documenting pre-feed BG
3. Move to algorithm below once > 4 hours of life

DEXTROSE (40%) GEL DOSING

Birth Weight	mLs to Administer
≤ 2 kg	1 ml
>2- 2.5 kg	1.25 ml
>2.5 – 3 kg	1.5 ml
>3 kg – 3.5 kg	1.75 ml
>3.5 – 4 kg	2 ml
>4 kg – 4.5 kg	2.25 ml
>4.5 – 5 kg	2.5 ML

>35

<25

1. Administer Dextrose Gel immediately per dosing chart
2. Notify provider immediately
3. Provider to consider persistent hypoglycemia workup, obtain IV, start D10 infusion, and transfer to a higher level of care

25 – 35

1. Administer Dextrose Gel immediately per dosing chart
2. Place skin to skin and feed again
3. Repeat BG at 1 hour after Dextrose Gel (NOT one hour after feed)
4. Move to algorithm below once > 4 hours of life

Symptoms of Hypoglycemia in Newborns:
Irritability
Tremors
Jitteriness
Exaggerated Moro Reflex
High Pitched Cry
Seizures
Lethargy
Floppiness
Cyanosis
Apnea
Poor Feeding

> 4 - 48 HOURS OF AGE

1. Continue feeds q 2-3 hours
2. Assess for hypoglycemia by obtaining and documenting pre-feed BG

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

At or Above Target BG?

No → ≤ 35?

Yes → 1. Administer Dextrose Gel immediately per dosing chart
2. Notify provider immediately
3. Provider to consider persistent hypoglycemia workup, obtain IV, start D10 infusion, and transfer to a higher level of care

Yes → 1. Continue feeds q 2-3 hours
2. Assess for hypoglycemia by obtaining and documenting pre-feed BG

≤ 35? No → 1. Administer Dextrose Gel immediately per dosing chart
2. Place skin to skin and feed again
3. Repeat BG at 1 hour after Dextrose Gel (NOT one hour after feed)

Is this 3rd dose of Dextrose Gel Gel? Yes → No → 1. Administer Dextrose Gel immediately per dosing chart

At or Above Target BG? No → 1. Administer Dextrose Gel immediately per dosing chart

At or Above Target BG? Yes → **STOP When you have Four CONSECUTIVE BGs in Target Range for Age**

At or Above Target BG? No → Is this 3rd dose of Dextrose Gel Gel?

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.

Yukon-Kuskokwim
HEALTH CORPORATION

CLINICAL GUIDELINES
2019
rev. 10-17-19

Pediatric Protocols/Reference

Pediatric Induced Sputum Collection

MSEC approved 4/26/18

POLICY: To obtain sputum samples safely and effectively in pediatric patients

PROCEDURE: Induced Sputum Collection in Pediatric Patients

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

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

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

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

5. Place specimen in appropriate collection container for desired test.

   a. For r/o pulmonary tuberculosis, collect 3 induced sputum samples at least 8 hours apart – one must be first morning sample. Send for Acid Fast Bacilli Smear and Culture. Sample must be a minimum of 5 ml, may add sterile water to achieve desired volume.

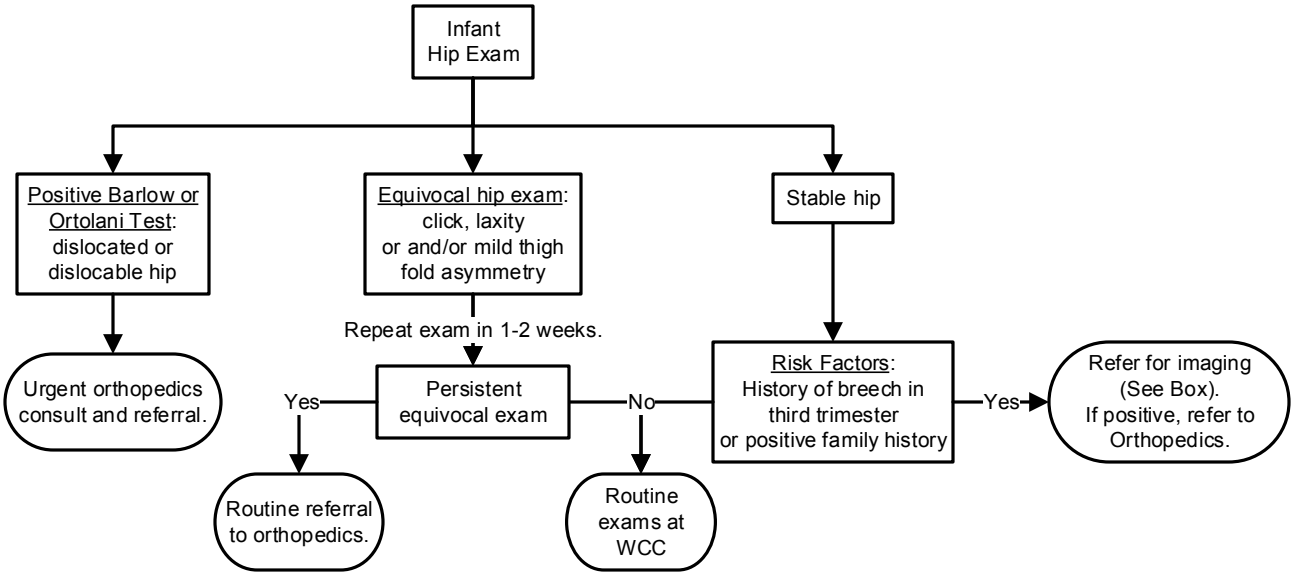
   b. Standard sputum cultures do not have a minimum volume and can be placed in a sterile specimen cup.

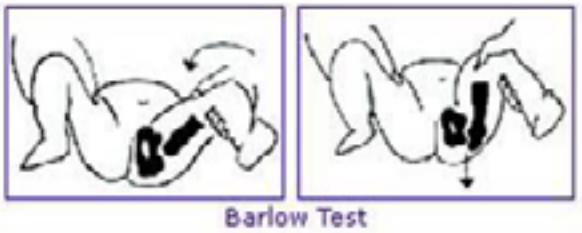
***Contraindications to above procedur**e: oxygen saturation of <92% despite supplemental oxygen therapy, inability to protect the airways, severe bronchospasm, or designation as inappropriate by the clinician for another reason (eg, midface trauma). After exclusion or resolution of these conditions,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

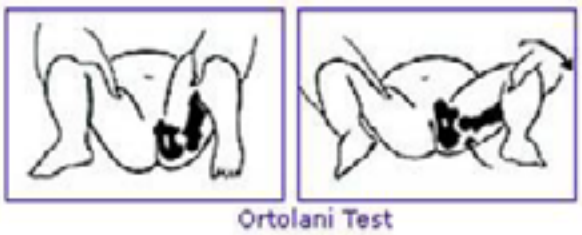
Yukon-Kuskokwim HEALTH CORPORATION

Pediatric Hip Exam and Surveillance Protocol

MSEC approved 4/26/18







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

Imaging

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

Orthopedics Consults & Referrals

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

Yukon-Kuskokwim HEALTH CORPORATION

Acute Concussion Evaluation (Ace) ED Version

A. Injury Characteristics **Date/Time of Injury**_____ **Reporter: __Patient __Parent __Spouse __Other**_____

1. Injury Description _____

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

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

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

2. Cause: __MVC __Pedestrian-MVC __Fall __Assault __Sports (specify)_____ Other_____

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

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

5. Loss of Consciousness: Did you/ person lose consciousness? __ Yes __No Duration_____

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

7. Seizures: Were seizures observed? No__ Yes___ Detail_____

B. Symptom Check List* Since the injury, has the person experienced any of these symptoms any more than usual today or in the past day?

Indicate presence of each symptom (0=No, 1=Yes). ***Lovell & Collins, 1998 JHTR***

PHYSICAL (10)		COGNITIVE (4)		SLEEP (4)		
Headache	0 1	Feeling mentally foggy	0 1	Drowsiness	0 1	
Nausea	0 1	Feeling slowed down	0 1	Sleeping less than usual	0 1	N/A
Vomiting	0 1	Difficulty concentrating	0 1	Sleeping more than usual	0 1	N/A
Balance problems	0 1	Difficulty remembering	0 1	Trouble falling asleep	0 1	N/A
Dizziness	0 1	**COGNITIVE Total (0-4)** ____		**SLEEP Total (0-4)** ____		
Visual problems	0 1	**EMOTIONAL (4)**				
Fatigue	0 1	Irritability	0 1			
Sensitivity to light	0 1	Sadness	0 1			
Sensitivity to noise	0 1	More emotional	0 1			
Numbness/Tingling	0 1	Nervousness	0 1			
PHYSICAL Total (0-10) ____		**EMOTIONAL Total (0-4)** ____				
(Add Physical, Cognitive, Emotion, Sleep totals) Total Symptom Score (0-22)		____				

Other Observations

_____

Patient Participation: Full__ Partial __ None __

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

C. Concussion History: *Previous# 0 1 2 3 4 5 Date(s)*_____

Headache History: *Prior treatment for headache N___ Y___ Details*_____

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

E. Follow-Up Action Plan _√_ **Referral to PCP for Office Monitoring** **MD Name**_____

___ Neuropsychological Testing (recommended for Return to Sport decisions and academic/ behavioral management)

___ Physician: Neurosurgery____ Neurology____ Sports Medicine____ Physiatry____ Psychiatry____

___ Other_____

ACE-ED Completed by: _____ MD RN NP DO

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

ACE ED Instructions

A. Injury Characteristics

1. **Injury Description:** Ask for **description of events** resulting in the injury; how the injury occurred, type of force, location on head.
2. **Cause:** Indicate the cause of injury or write in Other cause.

3/4. **Amnesia:** Determine whether child was not registering memories (amnesia) – before (retrograde) and after (anterograde) injury. Estimate length of time for each (Retrograde amnesia "What is the last thing you remember before your injury?" Anterograde amnesia "What is the first thing you remember after your injury?")

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

6. **Early signs observed by others.** Ask the individuals who know the patient (parent, spouse, friend, etc.) about signs of the concussion/ mTBI that they may have observed. Signs are typically observed early after the injury.

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

B. Symptom Check List:

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

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

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

C. Concussion history: Assess the number and date(s) of prior concussions.[4-8] History of prior concussions, especially recent (within past several weeks or months) would suggest the need for more conservative decision-making regarding Return to Play, and general post-injury management.

Headache history: Assess personal history of diagnosis/treatment for headaches. Recent research indicates headache (migraine in particular) can result in protracted recovery from concussion.[8-11]

D. Diagnosis: Assign the most appropriate diagnosis given the following:

850.0 (Concussion, with no loss of consciousness) – Positive Injury Description (A1), i.e., forcible direct/ indirect blow to the head; plus evidence of active symptoms (B) of any type and number related to the trauma; no evidence of LOC (A5), skull fracture, or other intracranial injury.

850.1 (Concussion, with brief loss of consciousness < 1 hour) - Positive Injury Description (A1), i.e., forcible direct/ indirect blow to the head; plus evidence of active symptoms (B) of any type and number related to the trauma; positive evidence of LOC (A5); no skull fracture, or other intracranial injury.

850.9 (Concussion, unspecified) - Positive Injury Description (A1), i.e., forcible direct/ indirect blow to the head; plus evidence of active symptoms (B) of any type and number related to the trauma; unclear/unknown injury details; unclear evidence of LOC (A5), no skull fracture, or other intracranial injury.

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

E. Follow-Up Action: Determine a plan of action for follow-up of symptomatic patients. Serial evaluation of the concussion is critical as symptoms may resolve, worsen, or ebb and flow depending upon a variety of factors (e.g., cognitive/ physical exertion, comorbidities). Referral to a specialist can be particularly valuable to help manage certain aspects of the patient's condition.

(a) Patient monitoring in the primary care physician office.

(b) Referral to a specialist: particularly valuable to help manage certain aspects of the patient's condition.

- Neuropsychological Testing is particularly relevant for cognitive and/or behavioral dysfunction affecting school, home or work activities, for purpose of treatment planning. Testing is also recommended when a patient may be returning to sports or other at-risk activities.
- Physician Evaluation is particularly relevant for medical evaluation and management of concussion. Also, critical for evaluation and management of focal neurologic, sensory, vestibular, and motor concerns. May be useful for medication management (e.g., headaches, sleep disturbance, depression) if post-concussive problems persist.

Yukon-Kuskokwim HEALTH CORPORATION

Acute Concussion Evaluation (ACE) OP Version

A. Injury Characteristics **Date/Time of Injury**_____ **Reporter: __Patient __Parent __Spouse __Other**_____

1. Injury Description _____

_____

1a. Is there evidence of a forcible blow to the head (direct or indirect)? __Yes __No __Unknown
1b. Is there evidence of intracranial injury or skull fracture? __Yes __No __Unknown
1c. Location of Impact: __Frontal __Lft Temporal __Rt Temporal __Lft Parietal __Rt Parietal __Occipital __Neck __Indirect Force

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

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

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

5. Loss of Consciousness: Did you/ person lose consciousness? __ Yes __No Duration

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

7. Seizures: Were seizures observed? No__ Yes___ Detail_____

B. Symptom Check List* Since the injury, has the person experienced any of these symptoms any more than usual today or in the past day?

Indicate presence of each symptom (0=No, 1=Yes). ***Lovell & Collins, 1998 JHTR***

PHYSICAL (10)		COGNITIVE (4)		SLEEP (4)	
Headache	0 1	Feeling mentally foggy	0 1	Drowsiness	0 1
Nausea	0 1	Feeling slowed down	0 1	Sleeping less than usual	0 1 N/A
Vomiting	0 1	Difficulty concentrating	0 1	Sleeping more than usual	0 1 N/A
Balance problems	0 1	Difficulty remembering	0 1	Trouble falling asleep	0 1 N/A
Dizziness	0 1	**COGNITIVE Total (0-4)** _____		**SLEEP Total (0-4)** _____	
Visual problems	0 1	**EMOTIONAL (4)**			
Fatigue	0 1	Irritability	0 1		
Sensitivity to light	0 1	Sadness	0 1		
Sensitivity to noise	0 1	More emotional	0 1		
Numbness/Tingling	0 1	Nervousness	0 1		
PHYSICAL Total (0-10) _____		**EMOTIONAL Total (0-4)** _____			
(Add Physical, Cognitive, Emotion, Sleep totals) Total Symptom Score (0-22)		_____			

Exertion: Do these symptoms worsen with:
Physical Activity __Yes __No __N/A
Cognitive Activity __Yes __No __N/A

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

Normal 0 1 2 3 4 5 6 Very Different

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

Concussion History? Y ___ N___	√	**Headache History?** Y ___ N___	√	**Developmental History**	√	**Psychiatric History**
Previous # 1 2 3 4 5 6+		Prior treatment for headache		Learning disabilities		Anxiety
Longest symptom duration Days__ Weeks__ Months__ Years__		History of migraine headache __ Personal __ Family_____		Attention-Deficit/ Hyperactivity Disorder		Depression
						Sleep disorder
If multiple concussions, less force caused reinjury? Yes__ No__		_____		Other developmental disorder_____		Other psychiatric disorder _____

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

_____

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

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

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

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

___ **No Follow-Up Needed**
___ **Physician/Clinician Office Monitoring**: Date of next follow-up _____
___ **Referral:**
___ Neuropsychological Testing
___ Physician: Neurosurgery____ Neurology____ Sports Medicine____ Physiatrist____ Psychiatrist____ Other_____
___ Emergency Department

ACE Completed by:_____ **MD RN NP PhD ATC**

A concussion (or mild traumatic brain injury (MTBI)) is a complex pathophysiologic process affecting the brain, induced by traumatic biomechanical forces secondary to direct or indirect forces to the head. Disturbance of brain function is related to neurometabolic dysfunction, rather than structural injury, and is typically associated with normal structural neuroimaging findings (i.e., CT scan, MRI). Concussion may or may not involve a loss of consciousness (LOC). Concussion results in a constellation of physical, cognitive, emotional, and sleep-related symptoms. Symptoms may last from several minutes to days, weeks, months or even longer in some cases.

ACE Instructions

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

A. Injury Characteristics:

1. Obtain **description of the injury** – how injury occurred, type of force, location on the head or body (if force transmitted to head). Different biomechanics of injury may result in differential symptom patterns (e.g., occipital blow may result in visual changes, balance difficulties).
2. Indicate the **cause of injury**. Greater forces associated with the trauma are likely to result in more severe presentation of symptoms.

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

5. **Loss of consciousness (LOC)** – If occurs, determine length of LOC.
6. **Early signs.** If present, ask the individuals who know the patient (parent, spouse, friend, etc) about specific signs of the concussion that may have been observed. These signs are typically observed early after the injury.
7. Inquire whether **seizures** were observed or not.

B. Symptom Checklist: [2]

1. Ask patient (and/or parent, if child) to report presence of the four categories of symptoms since injury. It is important to assess all listed symptoms as different parts of the brain control different functions. One or all symptoms may be present depending upon mechanisms of injury.[3] Record "1" for Yes or "0" for No for their presence or absence, respectively.
2. For all symptoms, indicate presence of symptoms as experienced within the past 24 hours. Since symptoms can be present premorbidly/at baseline (e.g., inattention, headaches, sleep, sadness), it is important to assess change from their usual presentation.
3. **Scoring**: Sum total number of symptoms present per area, and sum all four areas into Total Symptom Score (score range 0-22). (Note: most sleep symptoms are only applicable after a night has passed since the injury. Drowsiness may be present on the day of injury.) If symptoms are new and present, there is no lower limit symptom score. Any score > 0 indicates positive symptom history.
4. **Exertion:** Inquire whether any symptoms worsen with physical (e.g., running, climbing stairs, bike riding) and/or cognitive (e.g., academic studies, multi-tasking at work, reading or other tasks requiring focused concentration) exertion. Clinicians should be aware that symptoms will typically worsen or re-emerge with exertion, indicating incomplete recovery. Over-exertion may protract recovery.
5. **Overall Rating:** Determine how different the person is acting from their usual self. Circle "0" (Normal) to "6" (Very Different).

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

1. **Concussion history:** Assess the number and date(s) of prior concussions, the duration of symptoms for each injury, and whether less biomechanical force resulted in re-injury. Research indicates that cognitive and symptom effects of concussion may be cumulative, especially if there is minimal duration of time between injuries and less biomechanical force results in subsequent concussion (which may indicate incomplete recovery from initial trauma).[4-8]
2. **Headache history:** Assess personal and/or family history of diagnosis/treatment for headaches. Research indicates headache (migraine in particular) can result in protracted recovery from concussion.[8-11]
3. **Developmental history**: Assess history of learning disabilities, Attention-Deficit/Hyperactivity Disorder or other developmental disorders. Research indicates that there is the possibility of a longer period of recovery with these conditions.[12]
4. **Psychiatric history**: Assess for history of depression/mood disorder, anxiety, and/or sleep disorder.[13-16]

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

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

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

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

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

Other Diagnoses – If the patient presents with a positive injury description and associated symptoms, but additional evidence of intracranial injury (A 1b) such as from neuroimaging, a moderate TBI and the diagnostic category of 854 (Intracranial injury) should be considered.

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

1. **Physician/Clinician serial monitoring –** Particularly appropriate if number and severity of symptoms are steadily decreasing over time and/or fully resolve within 3-5 days. If steady reduction is not evident, referral to a specialist is warranted.
2. **Referral to a specialist –** Appropriate if symptom reduction is not evident in 3-5 days, or sooner if symptom profile is concerning in type/severity.
   - Neuropsychological Testing can provide valuable information to help assess a patient's brain function and impairment and assist with treatment planning, such as return to play decisions.
   - Physician Evaluation is particularly relevant for medical evaluation and management of concussion. It is also critical for evaluating and managing focal neurologic, sensory, vestibular, and motor concerns. It may be useful for medication management (e.g., headaches, sleep disturbance, depression) if post-concussive problems persist.

ASAA HEALTHCARE PROVIDER RELEASE AND RETURN TO PLAY PROTOCOL (RTP)

Student Name: _____

Sport: _____ **School:** _____ **Birthdate:** _____

Date of Injury: _____ **Description:** _____

IMPORTANT NOTE TO HEALTHCARE PROVIDER

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

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

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

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

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

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

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

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

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

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

ASAA HEALTHCARE PROVIDER RELEASE AND RETURN TO PLAY PROTOCOL (RTP)

Student Name: _____

SYMPTOMATIC STAGE: Physical and Cognitive Rest; Then Incremental Cognitive Work, without Provoking Symptoms.	
Day 1	Begin when symptom free for 24 hours. 15 min of light aerobic activity: walk, swim, stationary bike. **NO** resistance training.
Day 2	30 min light-moderate aerobic activity: jog, more intense walk, swim, stationary bike. **NO** resistance training. START PE class at previous day's activity level. As RTP Protocol activity level increases, PE activity level remains 1 day behind
Day 3	30 min mod-heavy aerobic activity: run, swim, cycle, skate, Nordic ski. **NO** resistance training.
Day 4	30 min heavy aerobic activity: hard run, swim, cycle, skate, Nordic ski. 15 min Resistance Training: push-up, sit-up, weightlifting
Day 5	Return to Practice, Non-contact Limited Participation: Routine sport-specific drills
Day 6	Return to Full-Contact Practice
Day 7	Medically Eligible for Competition after completing RTP Protocol and is cleared by Healthcare Professional. ASAA Eligibility Criteria must be met before return to competition.

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

☐ Student has sustained a concussion and is not yet ready to begin the Return to Play Protocol.

☐ Student is cleared to begin ASAA's **Return to Play Protocol** with any modifications noted below. *This clearance is no longer effective if student's symptoms return and persist.*

☐ **Student is entirely free of concussion symptoms and has completed the ASAA Return to Play Protocol as described above. The athlete is medically eligible to return to competition.**

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

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

☐ Student has **NOT** sustained a concussion. The **Medical Diagnosis** which explains his/her symptoms is:
This is **REQUIRED** if checking the first box:_____

☐ Student is cleared to return to full sports participation. Medical Dx:_____

☐ Student is cleared for limited participation with the following restrictions [attach more pages if needed]:

SECTION 3: HEALTHCARE PROFESSIONAL ATTESTATION

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

_____
Healthcare Provider Signature | HCP Printed Name | AK License Number | Date

SECTION 3: ATHLETE AND PARENT CONSENT

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

_____ _____
Student Athlete Signature | Date — Parent Signature | Date

_____ _____
Student Athlete Printed Name — Parent Printed Name

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Pediatric Endocrine Emergency Protocol

RL 1/7/19

Hypoglycemia

If low BG and cause unknown, GET CRITICAL SAMPLE PRIOR TO TREATMENT!

~Labs tested during hypoglycemia are critical to identifying cause and preventing recurrence~

- Serum critical sample
  - » BMP Insulin, C-peptide, Cortisol, GH
  - » Free fatty acids, B-hydoxybutyrate, Acetoacetate
  - » Lactate, Ammonia, Save serum (sulfonylureas), Total and Free carnitin
- At any time
  - » Acylcarnitine profile, serum amino acids,
- Urine – as quickly after hypoglycemia as possible
  - » Urine *ketones*
  - » Urine Organic acids
- If suspect hyperinsulinism, glucagon stim test (0.03mg/kg, max 1 mg) and measure lab glucose at 0, 15, and 30 minutes

Acute Treatment: obtain critical sample and correct hypoglycemia within 10-15 minutes

- Glucose gel per eCHAM guidelines
- IV or IO dextrose bolus (D10%, or D25%), followed by continuous infusion of Dextrose IVF and frequent blood sugar checks (q1-2 hrs initially, maybe more frequent)
  - » D25% 2-4 ml/kg; D10 5-10 ml/kg (neonates 2 ml/kg D10)
- IF insulin-mediated, treat with *glucagon* 0.03 mg/kg up to 1 mg *OR* 0.5 mg IM <20kg, 1 mg IM >20 kg

Adrenal Insufficiency

Critical Sample before treatment: cortisol

- If suspect primary adrenal insufficiency, include ACTH, renin, aldosterone
- If suspect CAH, include 17OH-progesterone or CAH-6b panel (send-outs)
- Also check BMP, CBC, U/A

Treat while awaiting results

- Normal Saline Bolus 20ml/kg
- Hydrocortisone 50-100 mg/m2 IV bolus (lower end of range if less sick, higher end of range if more sick) followed by 50-65 mg/m2/day, divided q6h
  - » If no IV access, SoluCortef IM or Dexamethasone IM
  - » SoluCortef 50-65 mg/m2 IV/IM – short acting
    - ♦ At this dose, adequate mineralocorticoid activity to replace moderate doses of oral fludrocortisone (80 mg HC = 0.2 mg fludrocortisone)
  - » Dexamethasone 1.5-2 mg/m2 IV/IM—long acting
    - ♦ *No mineralocorticoid activity*
    - ♦ Does not cross react with cortisol in lab assay so can use Dex if unable to get cortisol before treatment and then do Cortrosyn stimulation test after treatment
  - » SoluMedrol 10-15 mg/m2 IV/IM–intermediate acting
    - ♦ *No mineralocorticoid activity*
- For milder presentation, ex. known diagnosis with flu symptoms, but hemodynamically stable, can skip load, use 50-65/m^2/day, divided every 6 hours.

Known adrenal insufficiency (ie CAH or hypopituitarism) and adrenal crisis

- Loading dose hydrocortisone IV or IM 50mg/m2 x1 then 50mg/m2/day divided q6hrs
- If BSA unknown or for more rapid dosing, can use age:
  - » **<3 y.o.: 25mg IM/IV bolus followed by 25-30mg/day divided q6hrs**
  - » **3-12 y.o.: 50mg IM/IV bolus followed by 50-60mg/day divided q6hrs**
  - » **>12 y.o.: 100mg IM/IV bolus followed by 100mg/day divided q6hrs**
- If severely ill or unable to take PO due to continued emesis, but no IV, can give SoluCortef 30-50mg/m2 IM (better for CAH because has fludrocortisone activity at high doses, but only lasts about 6 hours), or Dexamethasone 1.5-2mg/m2 IM
- If less ill (ie, not in crisis but needs stress doses because of fever or vomiting), can give double or triple oral dose (usually double if fever, triple if vomiting or more sick)
- Normal saline bolus 20ml/kg/ IV then D5NS or D10NS (depending on blood sugar) at 1.5 x maintenance
- Monitor electrolytes, BP
- For anesthesia: begin triple dose the night before the procedure, then 30-50mg/m2 IV or IM on call to the OR prior to anesthesia; and continue stress doing for 24 hrs after procedure

Pediatric Endocrine Emergency Protocol

Hypercalcemia

Critical sample: Ca, Phos, iPTH

- Other labs: 25OHD, 1,25OH2D, urine ca/cr, CBC

Treatment for severe hypercalcemia (Ca >14): same initial treatment independent of the cause

- Saline diuresis: NS bolus followed by 2.5-3L/m^2/da
  - » Saline diuresis generally works rapidly, but only as long at it is continued, and usually does not normalize calcium.
- Consider Calcitonin 4 units/kg IV/IM/SC q 12 hrs
  - » Tachyphylaxis common (often 2nd-line therapy y
  - » Common side effects: nausea, vomiting, flushing
- May need bisphosphonates
- Discontinue any medications known to cause or worsen hypercalcemia
- Avoid immobilization

If mild/moderate (Ca <13-14) and no contraindication to PO: 2-3 L/day water plus PO salt to promote Ca excretion

Therapy specific for underlying disorder

- Hyperparathyroidism à parathyroidectomy
- Glucocorticoids à effective if associated with hematologic malignancy or diseases with increased 1,25 (OH)2 vitamin D.

Hypocalcemia

Critical sample: Calcium, Phosphorus, Magnesium, intact PTH before treatment

- Ca and PTH need to be simultaneous, and PTH MUST be obtained while Ca is low
- Collect urine Ca/Cr while Ca low if possible
- If there is reason to suspect low albumin, check ionized calcium or calculate corrected calcium using albumin
  - » Corr Ca = measured calcium + [0.8 (4-albumin)]
- Other useful labs: CMP (kidney, liver, bone function), 25OHD, 1,25OH_2D, urine Ca/Cr

Treatment if Symptomatic - tetany, sz, apnea, heart failure, laryngospasm

- *Slow* (<1 ml/min) IV infusion 10% Ca gluconate 1 ml/kg
  - » 100 mg/ml Ca Gluconate = 9 mg/ml elemental Ca
  - » Cardiac monitoring (bradycardia, shortened QTc); close attention to infusion site if not central IV (risk of tissue necrosis if peripheral IV infiltration)
- If Mg low, replace with 0.1-0.2 ml/kg 50% Mg Sulfate

If not acutely symptomatic, can do more comprehensive eval first to determine cause and appropriate oral treatment.

Pediatric Endocrine Emergency Protocol

RL 1/7/19

Thyroid Storm (Thyrotoxic Crisis)

SCORE: ≥45, highly suggestive of thyroid storm; 25–44, thyroid storm; and <25, thyroid storm unlikely.

Thermoregulatory Dysfunction	Score
Temperature (C)	
37–37.7	5
37.7–38.3	10
38.3–38.8	15
38.8–39.3	20
39.4–39.9	25
40	30
Central Nervous System Effects	
Mild: agitation	10
Moderate: delerium, psychoses, extreme lethargy	20
Severe: Seizure, coma	30
Gastrointestinal—hepatic dysfunction	
Moderate: diarrhea, nausea/vomiting, abdominal pain	10
Severe: unexplained jaundice	20
Cardiovascular dysfunction	
Trachycardia (heart rate/min)	
99–109	5
110–119	10
129–129	15
130–139	20
≥140	25
Congestive heart failure	
Mild: Pedal edema	5
Moderate: bibasilar rales	10
Severe: pulmonary edema	15
Atrial fibrillation	10
Precipitant history	
Negative	0
Positive	10
TOTAL SCORE	

Critical Sample: **Free T4 and TSH** run STAT

- Other labs: TBII, TSI, TPO antibodies
- Useful to measure: CMP (glucose, liver function), CBC (acute infection?), urine pregnancy test

Acute Treatment

- Oxygen
- Adrenergic blockade (if not in CHF) - goal HR<100
  - » *Propranolol* (PO 2mg/kg/day div Q6-8 hrs or IV 0.01mg/kg/dose (max 5mg) over 10-15 min)
  - » If contraindication to propranolol (ie asthma), can use atenolol (cardioselective) with caution
- IV fluids (cooled if necessary)
- Cooling blankets
- Antipyretics should be avoided when possible
- Sedation – phenobarbital stimulated thyroid hormone clearance
- Hemodynamic support/treat CHF if present

Longer term treatment:

- Block thyroid hormone synthesis and release
  - » Thionamides – block thyroid hormone synthesis
    - ♦ PTU (propylthiouracil): black box warning in peds
    - ♦ Methimazole : ~0.8 mg/kg up to 60 mg loading, then ~0.4 mg/kg up to 30 mg every 6 hours (5, 10 mg tabs)
  - » High Dose Iodine – blocks release of already formed thyroid hormone
    - ♦ Should be delayed until 1-2 hours after thionamide, to prevent transient increase in thyroid hormone levels
    - ♦ SSKI (Lugol solution) 5 drops every 6-12 hours
    - ♦ Use will necessitate delay in radioactive iodine treatment if that is desired
- Block peripheral conversion of T4 to T3
  - » Corticosteroids (stress dose HC or equivalent)
  - » Propranolol
  - » Iodinated contrast agents

Identify and treat precipitating event causing severe decompensation

- infection, pregnancy, emotional stress, DKA, pulmonary embolism, CVA, trauma, hypoglycemia

Assess for underlying cause

- Grave's disease, functioning thyroid nodule ("hot nodule")

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Endocrine Referrals/Labs and Follow-up Recommendations

Please remember that this is just a list of lab tests often recommend prior to seeing patients. These are not physician orders. However, they are recommended prior to specialty appointments.

1. CAH-Congenital Adrenal Hyperplasia: meds often adjusted based on labs/growth/bone age

- 17-OH-P (17-OH hydroxyprogesterone) often every 3-6 months Infants/toddlers often ordered q 1-3 months. (Goal: ~300-900)
- Androstenedione: Often every 3-6 months. Infants/toddlers often ordered every 1-3 months. (Goal: w/in normal range)
- Renin Activity: Often every 3-6 months. Renin hard to obtain in villages as must be sent frozen. (Goal: w/in normal range)
- Bone age after 2-3 years of age, then annually
- Accurate height and weight measurements each visit
- F/u in endo clinic every 3 to 6 months

1a. Newborn with + FH of CAH but no ambiguous genitalia (ie no physical s/s of CAH):

- Newborn screen after 24hrs of life (in all infants)
- Serum 17OHP around day 3-4 of life (17OHP levels are normally high during the first 2-3 days after birth but by the 3rd day, levels in healthy infants fall and levels in affected infants rise to diagnostic levels)
- Alert state newborn screening program of patient at risk of CAH
- Measure serum electrolytes prior to hospital discharge and at 5 and 10 days of age (hyponatremia and hyperkalemia are usually not present before 7 days of age and salt-losing crisis will typically occur in the second week of life)
- After newborn is sent home, parents should be cautioned to watch for signs of salt-losing crisis including vomiting, diarrhea, lethargy, dehydration, decreased PO intake
- If positive newborn screen or elevated 17OHP, patient should be seen immediately and consult endocrinologist on call.

2. Congenital Hypothyroid/Hashimoto Thyroiditis/Goiter:meds usually adjusted based on labs

General Information

- When a med dosage change is made, labs are usually repeated in 4-6 weeks and then again before the next clinic visit.
- Under certain circumstances a Thyroid U/S is sometimes ordered-not routine.
- Growth records on all children with any thyroid condition should be plotted.
- Often other thyroid labs are done as part of initial workup, but depends on what the presumptive dx is. (TSI, Antithyroid peroxidase AB, etc.)

Specific Labs – Goal: normal Free T4 and TSH (infants should have a free T4 at least ~1)

Congenital Hypothyroidism

- FT4 & TSH 2weeks after dose started.
- 0-6 Months: FT4 & TSH every month
- 6-12 Months: FT4 & TSH every 2 months
- 1-3 Years: FT4 & TSH every 3 months

Acquired Hypothyroidism

- FT4 & TSH 4-6 weeks after starting med or after dose change
- FT4 & TSH every 6 months routinely

Central Hypothyroidism (ie, hypopituitarism)

- Free T4 every 4-6 months routinely

3. Hypopituitarism/Septooptic dysplasia/Optic nerve hypoplasia: (any combination of deficiencies of GH, TSH, ACTH, LH/FSH, ADH)

- Labs to follow depend on deficiency
- If panhypopituitarism
  - » IGF-1 every 6-12 months if on GH (see below)
  - » Free T4 every 4-6 months (see above)
  - » May check BMP if concerns about inadequate adrenal hormone replacement
  - » Na levels if DI depend on thirst—if intact thirst, Na level every 3-4 months; if non-intact thirst, may need Na every 2-4 weeks
  - » LH/FSH pediatric, estradiol ultrasensitive or total testosterone at approx. age 12
- Accurate height and weight plotted on growth chart

Work-up of Short Stature

- X-ray: bone age XR left hand/wrist
- bloodwork: TSH, free T4, TTG IgA, IgA, CMP, CBC, IGF-1, IGFBP-3, ESR. Also do chromosome microarray if a girl.
- urine: urinalysis (looking for RTA)

4. Children on Growth Hormone Injections: (GH deficiency/Turners/Noonan's/Prader-Willi Syn/SGA/Panhypopituitarism/CRF)

- Free T4 and IGF-1
  - » Usually obtained q 6-12 months. Other labs including these may be done for initial diagnosis which may include GH stimulation tests.
  - » GH dose will be adjusted based on IGF-1, growth pattern and weight
- Bone age: includes left hand and wrist – please have radiology send via PACS to ANMC
  - » Initially and approximately every year.
- Accurate height and weight
  - » Crucial to have correct plotting on growth record. (Lengths are done on infants & toddlers less than 2 years of age or if not able to stand well; plotted on 0-24mo WHO growth chart; heights are done when the child is over age 2 and plotted on the CDC 2-20 growth chart.)

5. Insulin Resistance/Obesity: goal is to prevent these children from becoming diabetic; not usually managed in endocrine clinic unless there is an endocrine condition (diabetes, prediabetes, PCOS, dyslipidemia); hypertension is managed by PCP or nephrology

- ** Refer to publications in Pediatrics
- Screening fasting plasma glucose, HbA1c every 2 yrs. OGTT if needed (Fasting Insulin not routine)
  - » Fasting plasma glucose <100 is normal; 100-125 = prediabetes, >125 = diabetes
  - » OGTT-fasting plasma glucose, then drink 1.75g/kg (max 75 g) of glucola (within 10-15 min) and repeat plasma glucose in 2 hours.
    - ♦ Fasting 101-125 = impaired fasting glucose; over 125 = diabetes
    - ♦ 2 hour 141-199 = impaired glucose tolerance; over 199 = diabetes
  - » HbA1c: 5.7% to 6.4% = prediabetes; >6.4%, likely diabetes but not necessarily diagnostic in children
- Fasting lipids initially and then per recommendation, usually every 2 years
  - » If abnormal, repeat after 2 weeks but before 3 months (see below)
  - » If still abnormal, dietitian referral
- Liver function tests-AST/ALT every 2 years
- Growth records with accurate height & weight plotted-also calculate and plot BMI.
  - » Only obtain TSH & Free T4 initially if patient is showing growth deceleration.
- All patients should have initial evaluation and then monthly appointments with a dietitian whenever possible.
  - » Daily activity, one hour/day with lifestyle change.
  - » The more they see their primary provider and dietician, the more likely they are to comply with changes in dietary and activity levels.

6. Type 2 Diabetes:

- At diagnosis: HgbA1C. Other labs depend on the individual case.
  - » Criteria for dx of diabetes (per ADA):
    - ♦ FPG > 125 (no caloric intake for 8 hrs)
    - ♦ OR 2-hr glucose >199 during an OGTT
    - ♦ OR HbA1c >6.4% (**controversial for dx in children)
    - ♦ **the above 3 criteria require repeat testing in the absence of unequivocal hyperglycemia)
    - ♦ OR classic symptoms of hyperglycemia or hyperglycemic crisis and a random plasma glucose >199
- HbA1c every 3 months: Goal A1c <7%
- Fasting lipid panel soon after diagnosis and every 5 years if normal
  - » If abnormal, repeat after 2 weeks but before 3 months (see below)
  - » If still abnormal, dietitian referral
- Random urine microalbumin/creatinine soon after diagnosis and annually
  - » If abnormal, repeat with first morning urine MA/Cr or overnight collection; if still abnormal, referral to nephrology
- Eye exam soon after diagnosis and annually
- Dental exam annually
- Dietician visit q 3-6 months
- RN-CDE for education

Endocrine Referrals/Labs and Follow-up Recommendations

7. Type I Diabetes Mellitus:

New Diagnosis: HbA1c, BMP, c-peptide, insulin level, other labs depending on patient and presentation (for diagnostic criteria, see above; type 1 distinguished from type 2 based on presentation, physical exam, sometimes on labs such as c-peptide and diabetes antibodies)

- Hemoglobin A1C: Every 3 months (lifetime standard of care for DM)
  - » This lab helps determine the overall status of blood glucose readings over a 3 month period and gives an average of all readings.
  - » A1c goal is generally 7%; infants and toddlers, tolerate A1c goal of ~8%
- Fasting Lipid Panel
  - » Initial check soon after diagnosis, once blood sugars stabilized, if over 2 y.o.
  - » Repeat fasting lipid panel every 5 years if initial is normal (starting at 9 y.o.)
  - » If abnormal, fasting lipid panel should be repeated at least 2 weeks later but less than 3 months later to confirm
  - » If confirmed abnormal, referral to dietician for lifestyle/diet modification
- Thyroid and Thyroid Auto Antibodies
  - » Obtain Free T4 & TSH at diagnosis and annually
  - » Antibodies not routine, but if done it includes thyroid peroxidase AB
- Celiac screening
  - » TTG IgA and total serum IgA soon after diagnosis
  - » Annually for the first 5 years
    - ♦ More frequent if symptoms
- Eye exam
  - » Initial eye exam soon after diagnosis to detect cataracts or major refractive errors
  - » Annual eye exam should start at
    - ♦ 9 y.o. if 5-year duration diabetes
    - ♦ 11 y.o. if 2-year duration diabetes
    - ♦ After 2 years duration if diabetes diagnosed in an adolescent
- Urine microalbumin/creatinine screen
  - » Spot urine microalbumin/creatinine annually after age 10 y.o.
  - » If abnormal, repeat with first morning void or an overnight urine collection
- Flu Vaccine recommended yearly
- Dental recommended yearly
- RN CDE referral for all aspects of Diabetes education. Work closely with CDE if patient is on Lantus + rapid acting insulin intensive regimen-ideally.
- Dietitian CDE for dietary/CHO counting/activity/insulin (learning to count carbs)
- All children should see Pediatric Endocrinologist every 3 months (may alternate depending on needs of family/primary provider)
  - » Families need to know when to do Urine Ketones: if BS over 300 or if ill

Acceptable, Borderline-High, and High Plasma Lipid, Lipoprotein and Apollipoprotein Concentrations (mg/dL) For Children and Adolescents

NOTE: Values given are in mg/dL, to convert to BI units, divide the results for TC, LDL-C, HDL-C and non-HDL-C by 38.8, for TG, divide by 88.6

Category	Acceptable	Borderline	High+
TC	< 170	170_199	≥ 200
LDL-C	< 110	110–129	≥ 130
non-HDL-C	< 120	120–144	≥ 145
ApoB	< 90	90–109	≥ 110
TG 0–9 yrs	< 75	75–99	≥ 100
TG 10–15 yrs	< 90	90–129	≥130
Category	**Acceptable**	**Borderline**	**Low***
HDL-C	> 45	40–45	<40
ApoA-II	>120	115–120	< 115

* Values for pharma lipid and Apopea;lskdfj levels are from the National Cholesterol Education Program (NCEP) Expert Panel on Cholesterol Levels in Children. Non-HDL-C values from the Bareluma Hear Study are equivalent to the NCEP Pediatric Panel cut points for LDL-C. Values for plasma apoli and mpc A-1 are from the National Health and Nutrition Examination Survey ??

* The cut points fro high and boarderline-high represent approximately the 95th and 75th percenticles respectively. Low cut points for HDL-C and apoA-1 represent approximately the 10th percentile.

Yukon-Kuskokwim HEALTH CORPORATION

Protocol for the Management of Pediatric Diabetic Ketoacidosis (DKA)

7.29.19

General Guidelines and Definitions:

Disclaimer: These are guidelines—not hard and fast rules. Some patients, such as younger children (<5 y.o.) and poorly controlled diabetics (HbA1c >10%), may not adhere to the usual course and guidelines may need to be modified. The below categorizations of mild, moderate, and severe are not the consensus-statement published definitions, but are more "real-world" categorizations.

DKA: A state of *insulin deficiency* and characterized by *severe depletion of water and electrolytes* (see Appendix 1).The primary goals are to **treat the insulin deficiency** (which will correct the acidosis and reverse the ketosis) and to **replace fluids and electrolytes**. Other goals include gradually achieving euglycemia, monitoring for complications of DKA, and identifying and treating any precipitating event.

Clinical signs of DKA: dehydration, tachycardia, tachypnea, Kussmaul respirations, acetone breath odor, nausea, vomiting, abdominal pain, blurry vision, confusion, drowsiness, progressive decrease in level of consciousness, loss of consciousness

Biochemical criteria for DKA: hyperglycemia (BG > 200mg/dl); venous PH <7.3 or serum bicarb <15, beta-hydroxybutyrate ≥3 or moderate/large ketonuria

Diabetic ketosis without significant acidosis: Urine ketones moderate/large, nausea +/- vomiting, pH >7.3, Bicarb >15

- Management:
  - » Oral or IV hydration, depending on vomiting, ability to tolerate PO
  - » Supplemental insulin (Novolog, SQ: 0.1-0.2 units/kg every 4 hours) in addition to patient's usual long-acting insulin (ie Lantus, Tresiba)
  - » Often managed as outpatient at home or in Emergency Unit
  - » In established patient with good family support, sometimes managed at home by phone under guidance from on-call physician with no knowledge of laboratory results other than self-monitored blood glucose and urinary ketones

Mild-moderate DKA:Urine ketones mod/large, persistent vomiting, pH 7.2–7.3, Bicarb 10–15

- Management:
  - » Oral or IV hydration (usually IV)
  - » Supplemental insulin should be used (Novolog SQ 10% of total daily insulin dose or 0.1-0.2 units/kg every 2 hours*) in addition to the patient's usual long-acting insulin (ie Lantus, Tresiba)
  - » May require admission and management with IV regular insulin infusion (0.05-0.1 units/kg/hr)

Severe DKA: Urine Ketones Large, pH <7.2, Bicarb <10 *OR* mild/moderate DKA with other organ system impairment (altered mental status, impaired renal function, respiratory distress, compromised circulation) (published definition: pH <7.1, bicarb <5)

- Management
  - » Admit to hospital for therapy and intensive monitoring
  - » PICU status may be appropriate in some cases (altered mental status, hypokalemia, hyponatremia (after sodium corrected for glucose†), young age (<5 y.o.), hypotension, per admitting physician)
  - » IV hydration (3 L/m2/day)¥
  - » IV insulin (0.1 units/kg/hour)
  - » Intensive monitoring for improvement and signs of cerebral injury
  - » Follow guidelines as given in the remainder of this protocol

Some useful formulas:

*Total daily insulin dose approx. = Lantus dose x 2 (In general, Lantus dose is 50% of pt's total daily insulin)
†Corrected sodium = [((Glucose -100)/100) x 1.6] + Pt's Na [glucose is mg/dl]
¥BSA (m^2)= sq root [(wt(kg) x ht(cm))/3600]; estimated BSA = (wt(kg) x 4 + 7)/(90 + wt(kg))
‡Anion Gap = Na – (Cl + HCO_3); normal is 12 +/- 2 mmol/L
€Effective osmolality = 2 x (Na + K) + glucose/18 [glucose is mg/dl]

Fluid Management (2 bag system)

- Total fluids should not exceed about 3500 ml/m2/day
- Volume expansion (Fluid bolus) should be initiated prior to insulin administration, and insulin should be initiated at least 1 hour after the fluid administration has begun
  - » Initial bolus of NS or LR with 20 ml/kg over 1-2 hours
  - » If poor peripheral perfusion, hypotension, or shock persist after the initial 20ml/kg, it may be appropriate to repeat with a second 10-20 ml/kg NS bolus
- Rehydration: assume 10% dehydration and plan to replace the deficit over 24 hrs (See Appendix 2)
  - » This can often be accomplished by running IV fluids at 1.5 x maintenance or 3000 ml/m2/day
  - » Initial IVF with ½NS + 20meq/L K-phosphate + 20 meq/L K-acetate (or KCl if K-acetate is not available) **note, there is zero dextrose in this fluid
    - ♦ Consider NS if 1) measured Na level is low and does not rise with the fall in glucose
    - ♦ If K is >6, repeat the BMP or IStat and add the K to the fluids when the K is <6; If K is low, may need up to 60 meq/L K total (typically 30 and 30 of the two types of K solution)

- » "Y-in" D10 ½NS + 20meq/L K-phosphate + 20 meq/L K-acetate (or KCl) when the serum glucose is less than 250 mg/dl or if glucose falls faster than 100mg/dl per hour
- » 2 bag method: Use 2 separate bags of IV rehydration fluid with identical electrolyte composition; one bag has NO dextrose and the other has 10% dextrose. Increase and decrease the rate of each bag reciprocally so that the total rate is constant at the desired rehydration rate (ie, 3 L/m2/day) and the glucose is maintained between 150 and 250.
  - ♦ Typically, when the BG is ≤ 250, run the 2 fluids at 50/50 rates and when the BG is <200, stop running the fluid without the dextrose and run the D10 fluid at 100% of the desired rate
  - ♦ DO NOT REDUCE INSULIN INFUSION RATE BECAUSE OF FALLING BLOOD GLUCOSE UNTIL THE REDUCTION IS INDICATED BASED ON RESOLUTION OF KETOACIDOSIS; If the patient is still acidotic, they still need the insulin—increase the dextrose content instead (can use D12.5% fluids prn)

- **Do not administer sodium bicarbonate to correct the acidosis** (*cautious* administration may be *considered* if pH <6.9 and the acidosis is so profound as to adversely affect the action of epinephrine during resuscitation, decreased cardiac contractility, impaired tissue perfusion from vasodilation, or life-threatening hyperkalemia; dose should be 1-2 mmol/kg over 60 minutes)

Insulin Therapy

- "Low-dose continuous IV insulin infusion" = 0.1 units/kg/ hour regular insulin, IV (conc. 1 unit/mL)
  - » Start insulin 1 hr after initial fluids have been started but do not further delay in starting insulin
- Do not give intravenous insulin bolus or subcutaneous insulin bolus when starting the continuous infusion (*if a delay in starting the insulin infusion is expected to be longer than 1 hour (i.e., more than 2 hours after IVF have been started, then a SQ insulin dose may be warranted)
- CONTINUE IV INSULIN INFUSION AT 0.1 UNITS/KG/HR UNTIL THE KETOACIDOSIS IS RESOLVED bicarb >18, the anion gap is closed (AG <12)‡, and the patient is awake and can tolerate PO fluids
  - » A lower continuous rate (0.05 – 0.08 units/kg/hr may be needed in patients with marked insulin sensitivity
- Usually, long-acting basal insulin (ie Lantus, Tresiba) should be given at the usual time, even if the patient is on an insulin infusion (this is most frequently given at bedtime; its onset of action is approx. 1-2 hrs)
  - » Administering basal insulin while on the insulin infusion allows us to d/c the insulin infusion when it is appropriate (see above) without waiting for subcutaneous insulin to be given; it also provides background insulin so that DKA does not recur after the insulin infusion is discontinued (remember: without SQ insulin, once the IV insulin infusion is stopped, the patient has no other insulin on board!)
  - » In new-onset diabetes, the usual starting total daily dose of insulin is 0.5-1 units/kg/day, 50% of which should be given as basal insulin; in known diabetes, the patient's home dose of basal can be used.
  - » For those patients on insulin pumps, they will not be on a long-acting basal insulin, so do not need to receive this unless there is a plan to not restart the patient's pump while they are hospitalized. Otherwise, they can simply be restarted on their pump when the IV insulin infusion is completed.

Cerebral Injury in DKA

- The most common cause of death during DKA in children is clinically apparent cerebral injury, which occurs in about 0.5-0.9% of cases and manifests as sudden neurologic decline. It often occurs early in the course of DKA (sometimes even before treatment has been started) and when it is clinically apparent, the prognosis is usually poor; mortality rate is up to 21-24%. The pathogenesis is incompletely understood, but may result from cerebral hypoperfusion and the effects of reperfusion, along with neuroinflammation. Cerebral *edema* is likely a consequence (rather than the cause) of cerebral injury, and often develops hours or days after the diagnosis of brain injury.
- **Risk factors** include:
  - » Younger age; New-onset diabetes; Longer duration of symptoms
  - » Sodium bicarbonate treatment for correction of acidosis
  - » Administration of insulin in the first hour of fluid treatment
  - » Increased BUN at presentation
  - » Greater hypocapnia at presentation after adjusting for degree of acidosis
  - » More severe acidosis at presentation
  - » An attenuated rise in measured serum sodium concentrations during therapy
- Children with DKA are frequently sleepy, but **warning signs and symptoms of cerebral injury include**:
  - » Worsening of Glasgow Coma Scale (GCS) Score
  - » Slowing of heart rate, rising blood pressure, decreased O_2 saturation (Cushing's Triad)
  - » *Change* in neurological status (restlessness, irritability, increased drowsiness, incontinence)
  - » Headache, vomiting, focal neurological signs, dilated/unresponsive/sluggish/unequal pupils, papilledema
  - » Decreasing urine output without clinical improvement or tapering of fluids

- **CEREBRAL INJURY IS A LIFE THREATENING MEDICAL EMERGENCY REQUIRING IMMEDIATE AGGRESSIVE INTERVENTION AND IMMEDIATE TRANSFER TO AN INTENSIVE CARE UNIT SETTING.**
- **Treatment** includes:
  - » Give Mannitol 0.5-1 gm/kg over 10-15 min and repeat if no initial response in 30 min to 2 hrs
    - ♦ Hypertonic saline (3% saline) 2.5-5ml/kg over 30 min may be an alternative or 2nd line
  - » Elevate the head of the bed to 30 deg and keep the head in a midline position
  - » Adjust fluid administration as indicated to maintain normal BP and optimize cerebral perfusion; avoid hypotension that might compromise cerebral perfusion pressure
  - » Administer oxygen as needed to maintain normal oxygen saturation
  - » Intubation may be necessary if impending respiratory failure, but aggressive hyperventilation to hypocarbia (pCO_2 <22 mmHg) has been associated with poor outcome and is not recommended
  - » Head CT scan should be obtained to rule out other possible intracerebral causes of neurologic deterioration AFTER treatment for cerebral injury has been started (DO NOT DELAY TREATMENT TO GET THE HEAD CT!); changes that will be detectable on head CT often occur late in the development of cerebral injury

Monitoring and Other Recommendations

- Height and weight are both needed in order to calculate body surface area
- Vital Signs Q1 hour for at least first 12 hours, then Q2 hours; HR monitor and pulse oximetry
- Neuro checks/GCS score Q1 hour
- Strict monitoring of Intake and Output is essential (Strict I/O)
- Check blood sugar (bedside glucose) every hour while on insulin infusion
- NPO until acidosis is resolved in order to strictly monitor total intake, avoid excessive fluid administration, and decrease the risk of aspiration should consciousness be altered
- BMP, Magnesium, Phosphorus, beta-hydroxybutyrate initially and q4-6 hours
- I-Stat-7 Q2 hours until pH >7.25, then Q4-6 hours
- After first 12-18 hrs of DKA treatment, check urine ketones every void until negative twice in a row
- Mannitol 1 gm/kg or 3% Saline at bedside (and ready to be given for acute change in mental status)
- Two peripheral IV catheters should be placed for fluid and insulin administration and for blood sampling
- A flow sheet with lab results and clinical response can be a useful guide to therapy
- Initial labs should include: Hemoglobin A1c, BMP, Mg, Phos, Beta-hydroxybutyrate, diabetes autoantibodies (islet cell antibody, insulin antibody, glutamic acid decarboxylase (GAD-65) antibody, ZnT8 antibody), celiac panel (total IgA and TTG), TSH and free T4 (if patient is very ill, the TSH and free T4 should wait until child is more stable to avoid abnormalities of "sick euthyroid syndrome"), insulin and c-peptide (do not measure insulin if patient has already been started on insulin), CBC, cultures if indicated (fever, etc; **leukocytosis is a common finding in DKA and does not alone indicate infection)
- Call 907-563-2662, ask to speak with pediatric endocrinologist on call any time of the day or night

Sick day management guide when a patient has ketones based on amount of ketones and the blood sugar			
Urine Ketones	Blood Glucose		
	<100	100-200	Over 200
Neg/Trace/Small	Push sugar-containing fluids	Push fluids (sugar and sugar-free)	Push sugar free fluids; continue to check ketones while ill; give correction dose if BG>250-300
Moderate	Push ~30-60g carBG to get BG over 200, consider mini-dose glucagon (see below)	Push ~30g carbs to get BG over 200 (recheck BG q 30-60min)	Give extra NovoLog (10% of total daily dose or 0.1 units/kg or double the BG correction dose); check BG and ketones in 2 hrs; repeat Novolog dose in 2 hrs if ketones do not decrease
Large, but well patient (not continuously vomiting, no difficulty breathing, awake)	Push fluids (30-60g carBG), consider mini-dose glucagon	Push ~30 g carbs to get BG over 180-200 (recheck BG q30-60 min)	Give extra Novolog (20% of total daily insulin dose or double the BG correction); check BG and ket in 2 hrs ; repeat Novo-Log dose in 2 hours if ketones do not decrease
Large, and sick pt (cont vomiting, difficulty breathing, lethargy)	Bring to ER, consider mini-dose glucagon on the way	Bring to ER Cont to push fluids if possible on the way	Bring to ER (can give an extra insulin dose while on their way to the ER if they live far away)

Total daily insulin dose approx. = 2 x Lantus/Tresiba dose

Double the correction: calculate what insulin dose would be based on their BG correction factor and give 2 x that dose

References:
Kuppermann et al, N Engl J Med. 2018: 378(24):2275-87
Woflsdorf et al, Ped Diab. 2018:19 (Suppl 27):155-77 Wolfsdorf et al, Diab Care. 2006:29(5):1150-59
White NH, Washington Univ in St Louis; 1989 (rev 2003)

Prevention of DKA is key

- In patients with newly diagnosed diabetes, education of the public and health care providers to recognize early signs of diabetes can lead to diagnosis of type 1 diabetes before DKA develops
- In patients with known diabetes, sick day reeducation with diabetes educator is important to discuss factors that led to DKA in this situation and how to avoid it in the future (ie urine ketone monitoring with illness or high blood glucose, avoiding insulin omission, appropriate use of insulin pump and trouble-shooting with pump problems)
- Appropriately manage sick days and ketones at home or in the hospital to prevent progression to DKA (see below)

Appendix 1: Pathophysiology of DKA

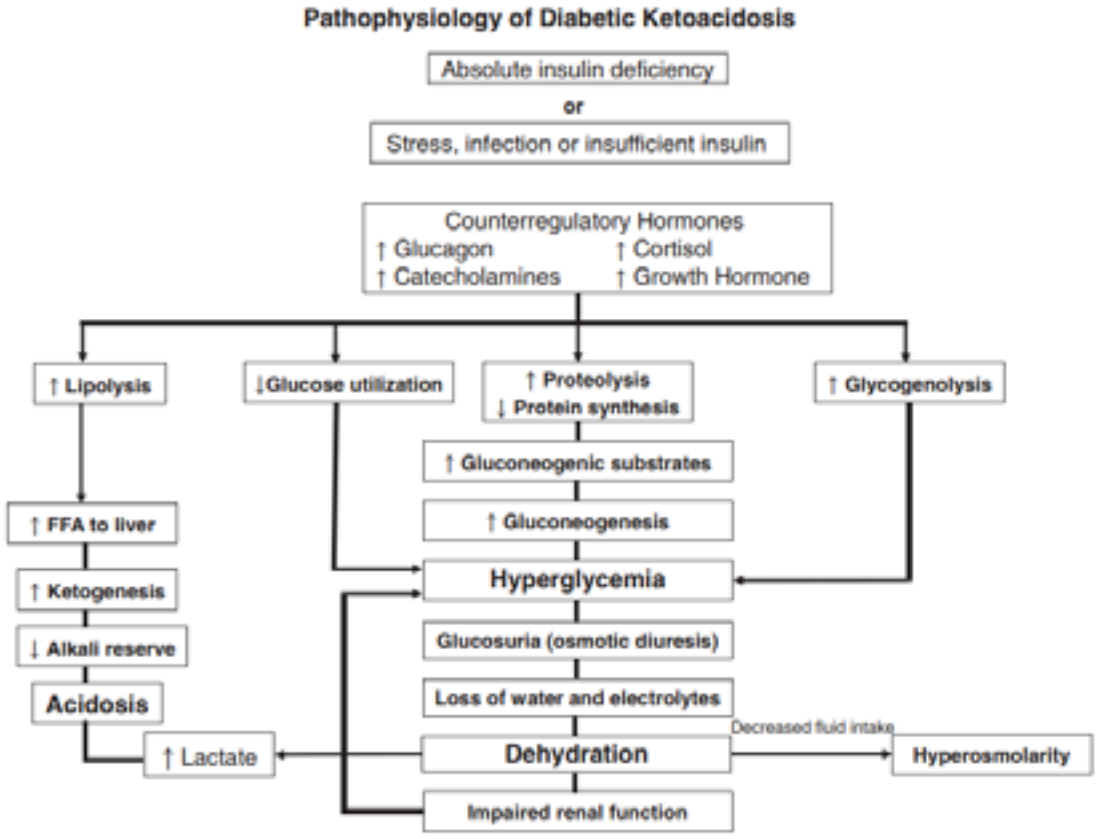

FIGURE 1 Pathophysiology of diabetic ketoacidosis. Copyright© 2006 American Diabetes Association. From diabetes care, Vol. 29, 2006:1150-1159. Reprinted with permission of *The American Diabetes Association*

Appendix 2: Fluid maintenance and replacement volumes based on body weight and an assumption of 10% dehydration

Body weight (kg)	Maintenance (mL/24 h)	DKA: give maintenance +5% of body weight/24 h	
		mL/24 h	mL/h
4	325	530	22
5	405	650	27
6	485	790	33
7	570	920	38
8	640	1040	43
9	710	1160	48
10	780	1280	53
11	840	1390	58
12	890	1490	62
13	940	1590	66
14	990	1690	70
15	1030	1780	74
16	1070	1870	78
17	1120	1970	82
18	1150	2050	85
19	1190	2140	89
20	1230	2230	93
22	1300	2400	100
24	1360	2560	107
26	1430	2730	114
28	1490	2890	120
30	1560	3060	128
32	1620	3220	134
34	1680	3360	140
36	1730	3460	144
38	1790	3580	149
40	1850	3700	154
45	1980	3960	165
50	2100	4200	175
55	2210	4420	184
60	2320	4640	193
65	2410	4820	201
70	2500	5000	208
75	2590	5180	216
80	2690	5380	224

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Use of Consultants at YKHC

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

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

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

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

Provider needs consultation about patient at YKHC

Consult provider is located in Bethel?

No

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

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

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

Yes

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

No

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

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

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

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

Yes

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

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

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

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 asses this patient in person…"
"I would like to transfer this patient via medevac to ANMC…"

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

Yukon-Kuskokwim
HEALTH CORPORATION

CLINICAL GUIDELINES
2019
rev. 10-17-19

OB Guidelines

Yukon-Kuskokwim HEALTH CORPORATION

First Trimester Vaginal Bleeding: Ectopic Pregnancy Diagnosis & Treatment of Non-Viable Early Pregnancy, p.1

MSEC approved 07/12/17

1
Nomenclature

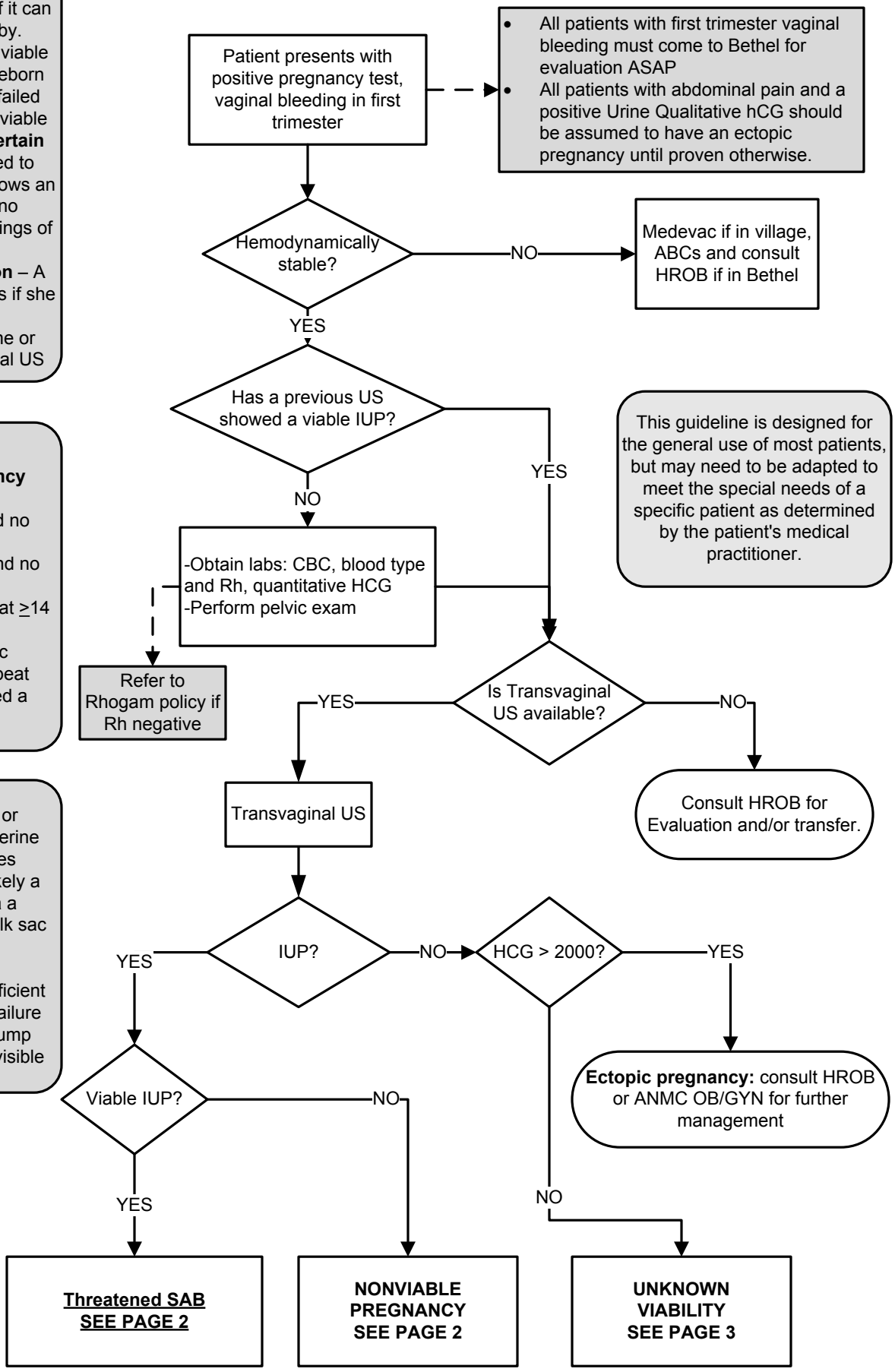
- **Viable** – A pregnancy is vialble if it can potentially result in a liveborn baby.
- **Nonviable** – A pregnancy is nonviable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are nonviable
- **Intrauterine pregnancy of uncertain viability**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

2
Findings diagnostic of Pregnancy Failure

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

Comments

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



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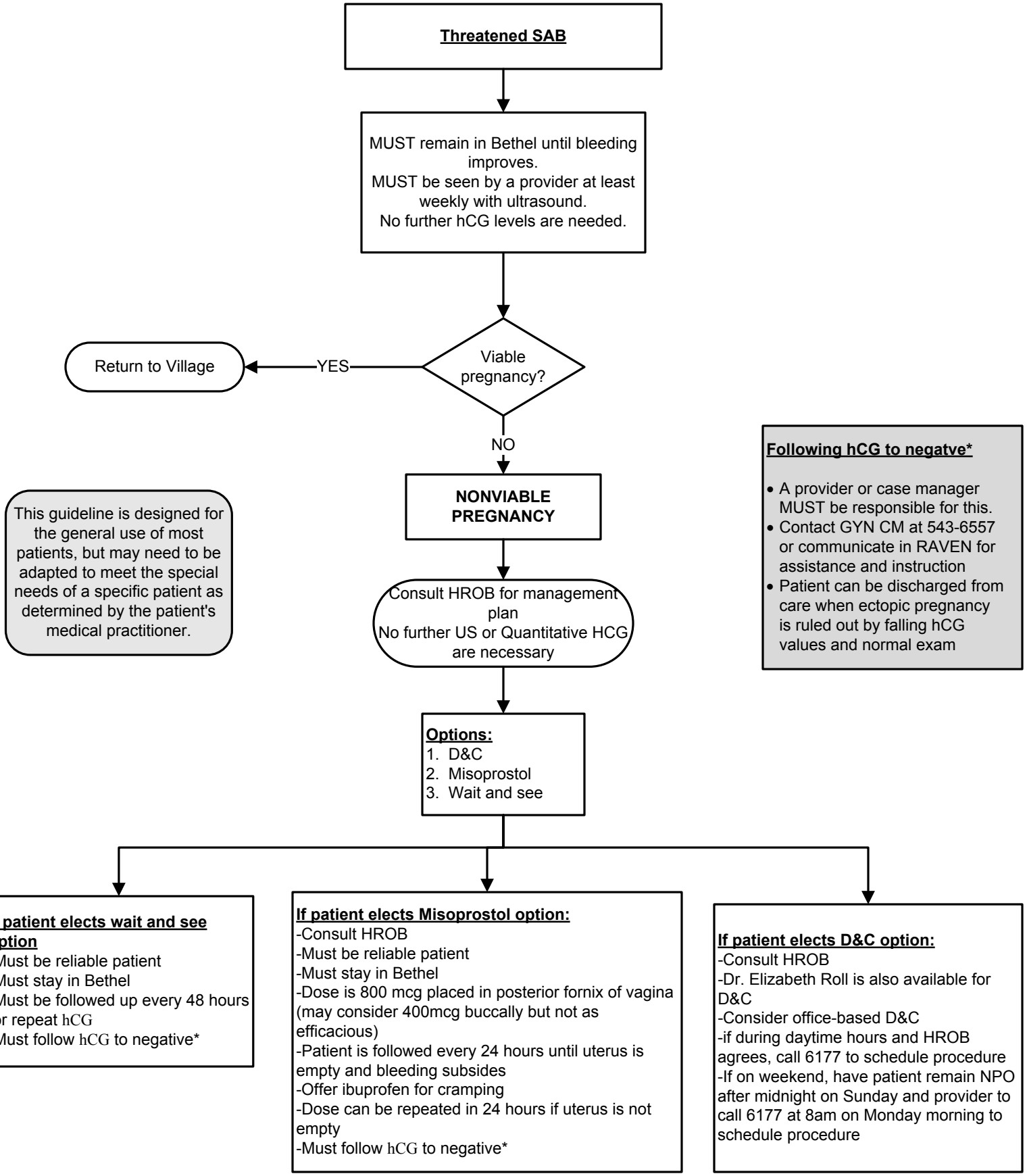
First Trimester Vaginal Bleeding: Ectopic Pregnancy Diagnosis & Treatment of Non-Viable Early Pregnancy, p.2

MSEC approved 07/12/17



Yukon-Kuskokwim HEALTH CORPORATION

First Trimester Vaginal Bleeding: Ectopic Pregnancy Diagnosis & Treatment of Non-Viable Early Pregnancy, p.3

MSEC approved 07/12/17

1
Nomenclature

- **Viable** – A pregnancy is vialble if it can potentially result in a liveborn baby.
- **Nonviable** – A pregnancy is nonviable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are nonviable
- **Intrauterine pregnancy of uncertain viability** – A woman is considered to have this if a transvaginal US shows an intrauterine gestational sac with no embryonic heartbeat and no findings of definite pregnancy failure
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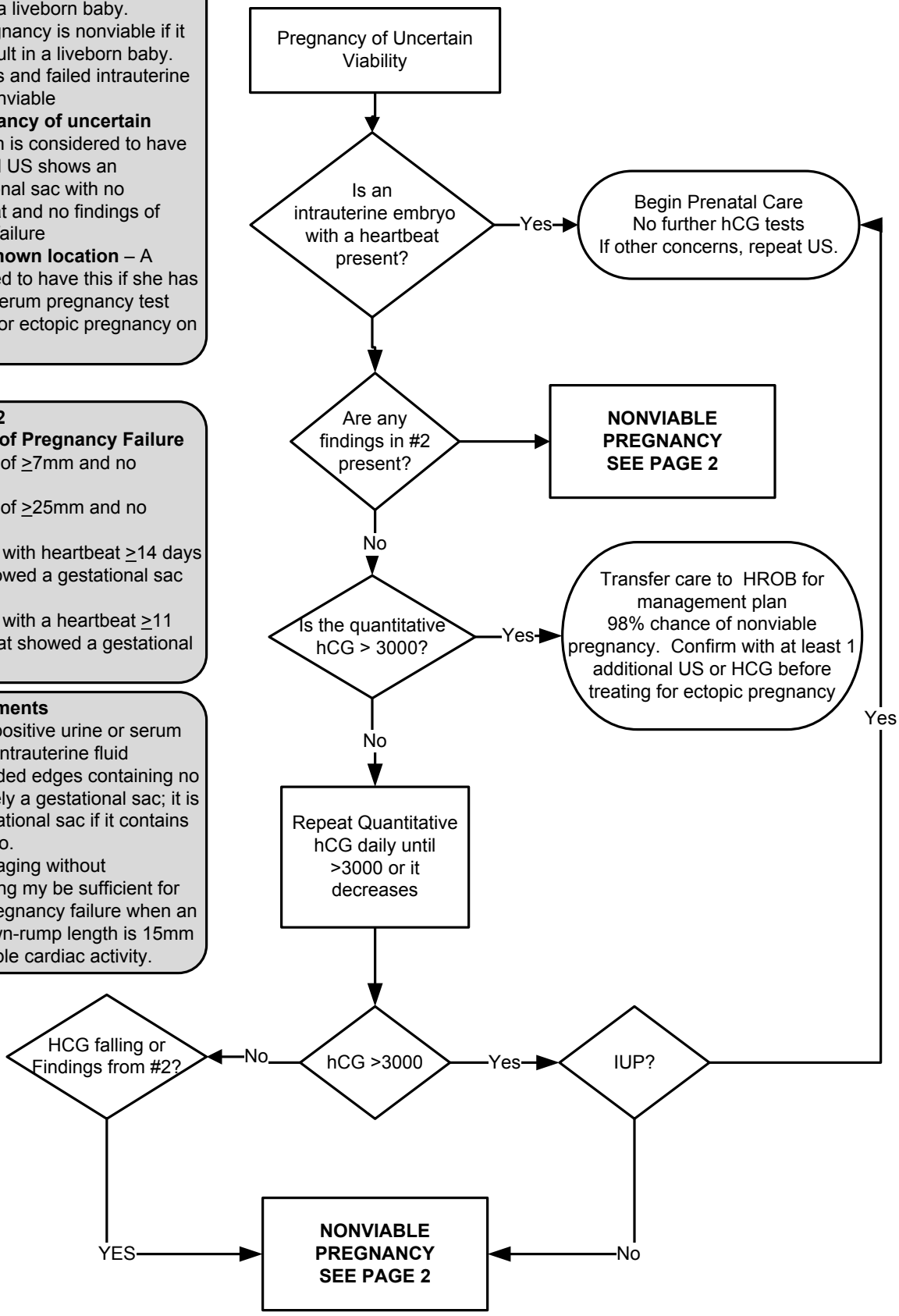


Ectopic Pregnancy – Treatment

MSEC approved 07/12/17

D&C Prior to Methotrexate?

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

Typical side effects of MTX.

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

Contraindication to MTX.

Absolute contraindications

Breast Feeding

Overt or Laboratory evidence of immunodeficiency

Alcoholism, alcoholic liver disease, or other chronic liver disease

Preexisting blood dyscrasias, such as bone marrow hypoplasia, leukopenia, thrombocytopenia or significant anemia

Known sensitivity to MTX

Active pulmonary disease

Peptic ulcer disease

Hepatic, renal or hematologic dysfunction

Relative contraindications

Gestational sac larger that 3.5cm

Embryonic cardiac motion

Ectopic Pregnancy diagnosed after consultation with HROB or OB/GYN

Obtain:
- Quantitative HCG
- Type and Screen
- CBC
- Comp Chem.
- Transvaginal Pelvic Ultrasound (US)

Hemodynamically stable?

No → Consult HROB for immediate surgery or transfer

Yes

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

→ 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?

NO

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

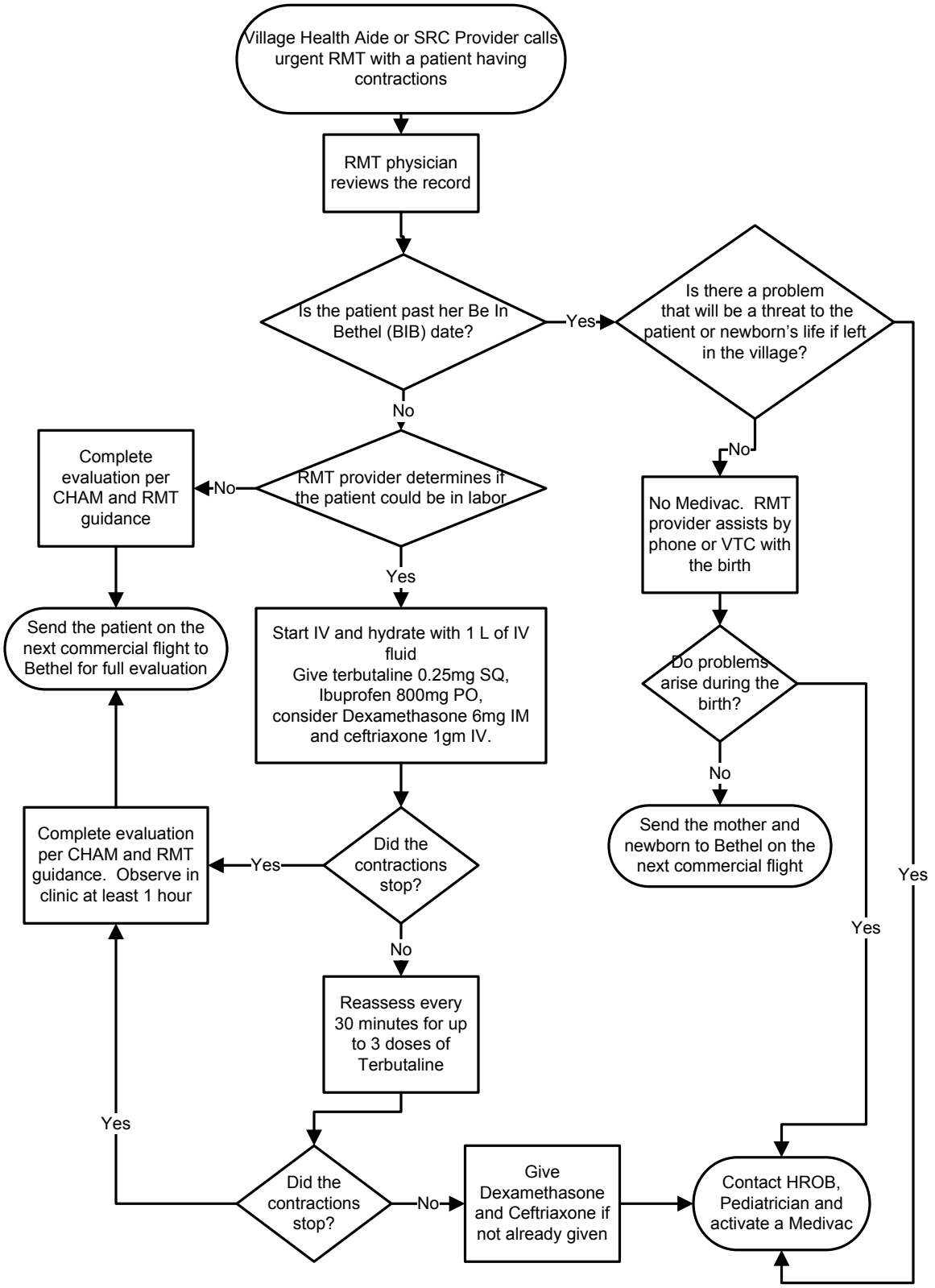
YES

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

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

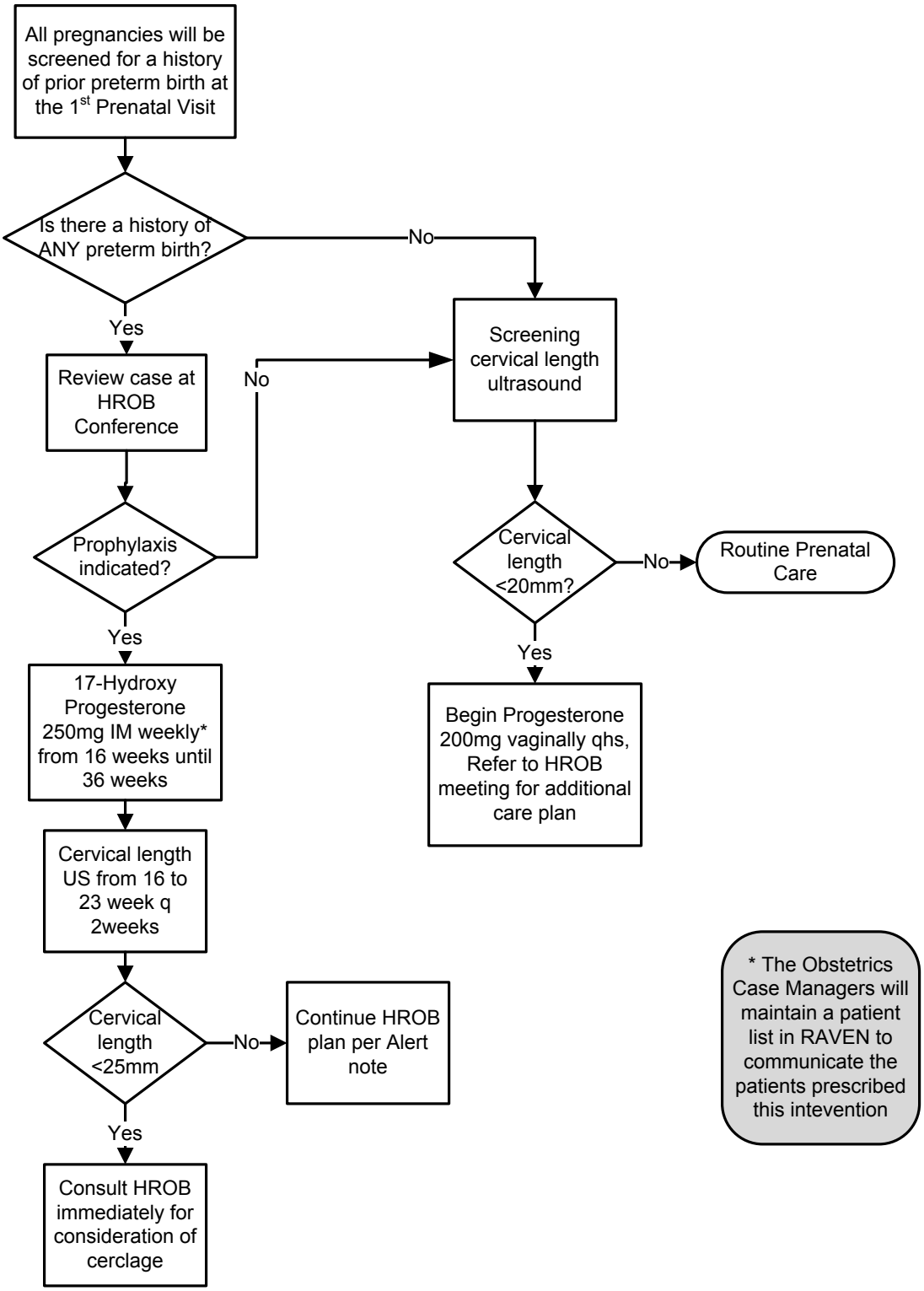
Labor Patient – Village

MSEC approved 12/14/16



Preterm Labor – Screening and Prevention

MSEC approved 8/24/16



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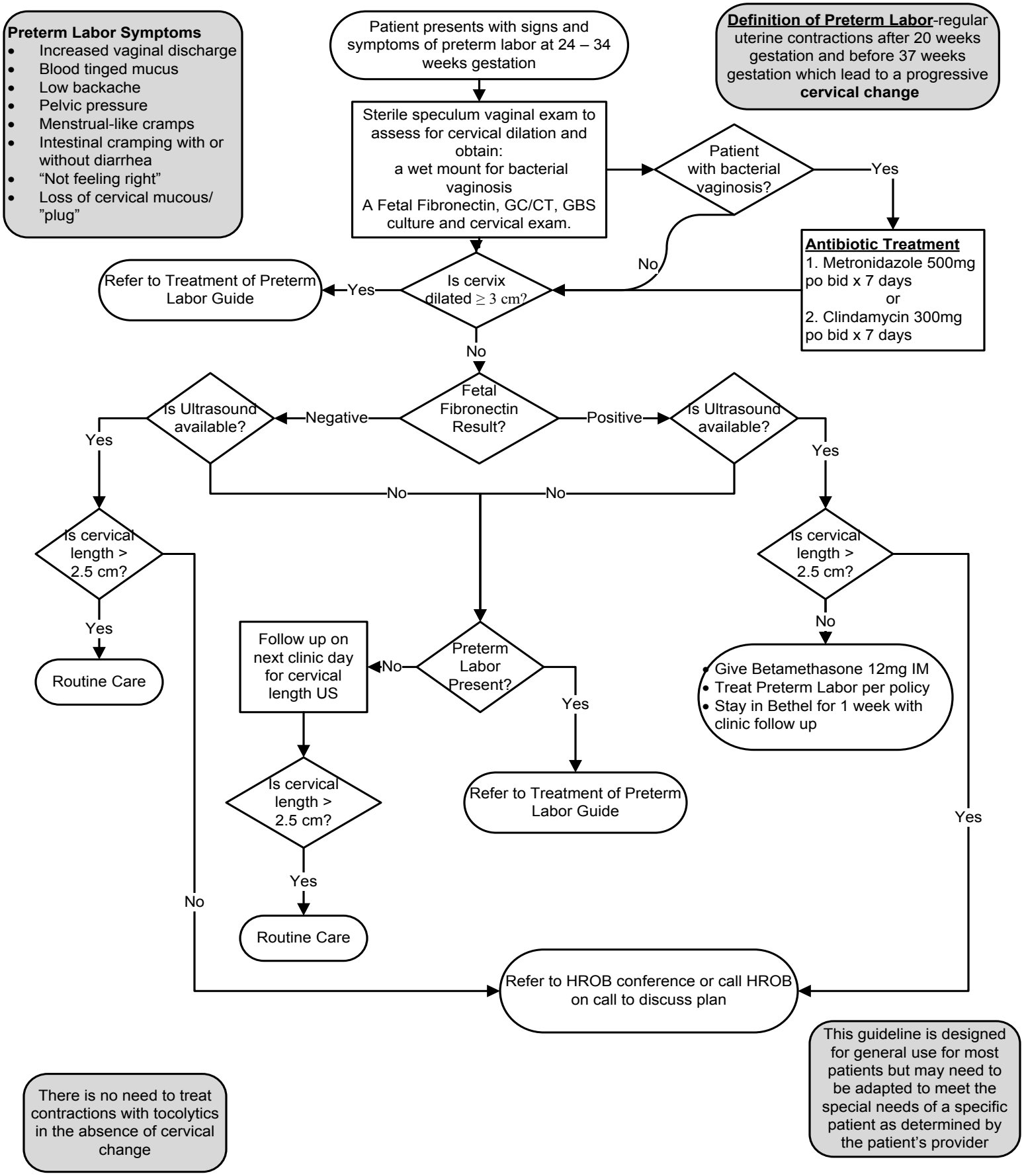
Preterm Labor – Evaluation

MSEC approved 07-12-17



Preterm Labor – Treatment

MSEC approved 7/12/17

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

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

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

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

Diagnosis of Preterm Labor

Consider HROB Consult

Review Dates

<20 weeks or >34 weeks

Yes

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

No

Assess fetal heart rate and uterine activity, start IV fluids

Cautions

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

Contraindication for tocolysis?

Yes

No

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

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

Contractions resolved in 30 minutes

Yes

Option 1: discharge with follow up in clinic (preferred)
Option2: Admit for observation

No

Cervical Change or cervix dilated >2cm?

No

Yes

- Strongly consider ketorolac
- Consider Transfer to Anchorage

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Gestational Diabetes

MSEC approved 07-12-17

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

First prenatal visit: Screen all women with a HgbA1C

≥6.5% → Add diagnosis of diabetes

<6.4 %

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

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

≥180 → Go direct to SMBG or offer GTT if patient resists testing

140 - 179 mg/dL

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

Diagnostic Criteria for GDM utilizing two hour 75g GTT

Gestational Diabetes Mellitus	Fasting ≥ 92 mg/dL
Pregnancy with one or more of the following levels:	1 hour glucose ≥ 180 mg/dL
	2 hour glucose ≥ 153 mg/dL

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

75% of Self-Monitoring Blood glucose (SMBG)Targets (fasting glucose < 95 mg/dL and 2 hour post-prandial glucose < 120 mg/dL) within target range after 1-2 weeks?

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

No

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

Initiate Medical Therapy
Consult OB/GYN for assistance
Refer to Anchorage for delivery

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

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

SMBG targets reached after 1 week?

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

No → Reassess medication dose and choice and consult DM education team/OBGYN

GBS Prophylaxis of the Mother at Term

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

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Molar Pregnancy

MSEC approved 07/12/17

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

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

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

No

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

Confirm pathology molar pregnancy, complete or partial

Yes

Quantitative βhCG 48 hours after D&C and weekly

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

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

No

Weekly Quantitative βhCG until negative x3 (<5)

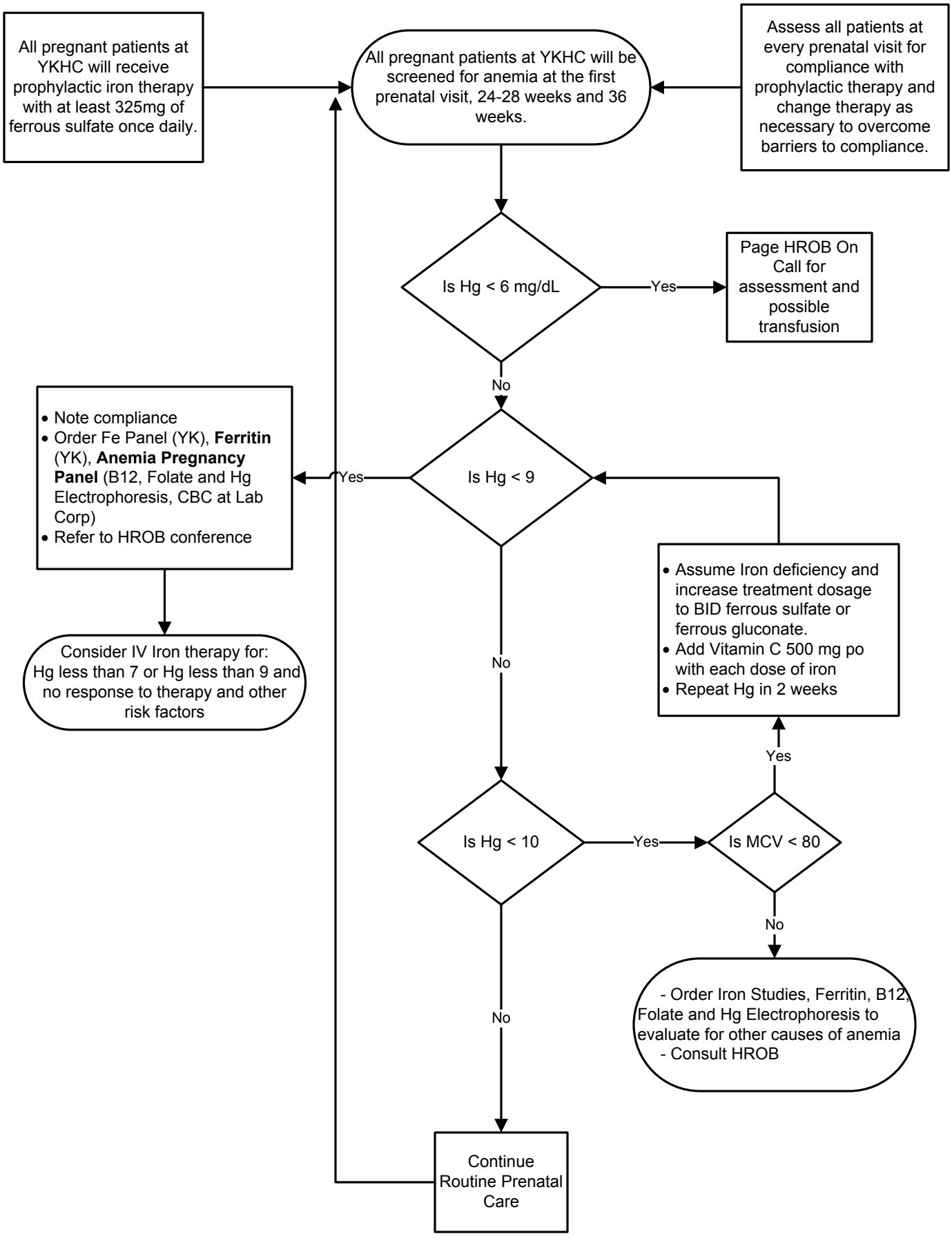
Monthly Quantitative βhCG for 6 months

Contraception:
Encourage Depo Provera, Implanon, Mirena

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

Anemia in Pregnancy

MSEC approved 07/12/17



Anti-D Immune Globulin

rev 10-30-17

Reference Lab Policy
Rh Immune Globulin Work-up
Fetal Screen

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

Rh Negative?
- No → • Blood Type on newborn after birth as indicated
  • No further testing of the patient for blood type.
- Yes

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

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

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

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

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

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

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

Fetal Screen positive?
- Yes → • Give two, 300 mcg doses of anti-D Immune Globulin
  • Send Kleinhauer-Betke (KB) test
  • Consult OB/GYN
  • Give additional doses as needed based on KB results
- No → Give the mother 300 mcg of anti-D Immune Globulin IM

Intrauterine Growth Restriction (IUGR)

MSEC approved 07/12/17

Risk Factors for Intrauterine Growth Restriction

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

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

Definition of IUGR

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

Obtain an US:

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

IUGR? — Yes → Gestational age < 24 weeks? — Yes → Refer to Perinatology for DAFUS, consider NIPT (See Box 1)

IUGR? — No → Is patient term? — Yes → Routine Prenatal Care

Is patient term? — No → Repeat US in 4 weeks. Consider weekly fetal monitoring with BPP if EFW > 10th percentile but < 25th percentile

Gestational age < 24 weeks? — No → Consult HROB or Anchorage OB to discuss induction, monitoring, or transfer

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

IUGR? — No → Routine Prenatal Care

IUGR? — Yes → Consult HROB or Anchorage OB to discuss induction, monitoring, or transfer

Box 1
NIPT – Non-invasive prenatal testing is a way to detect Fetal chromosome abnormalites from a maternal blood draw. Our current test is the InformaSeq from LabCorp.

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Oligohydramnios

MSEC approved 07/12/17

Differential Diagnosis by Trimenster

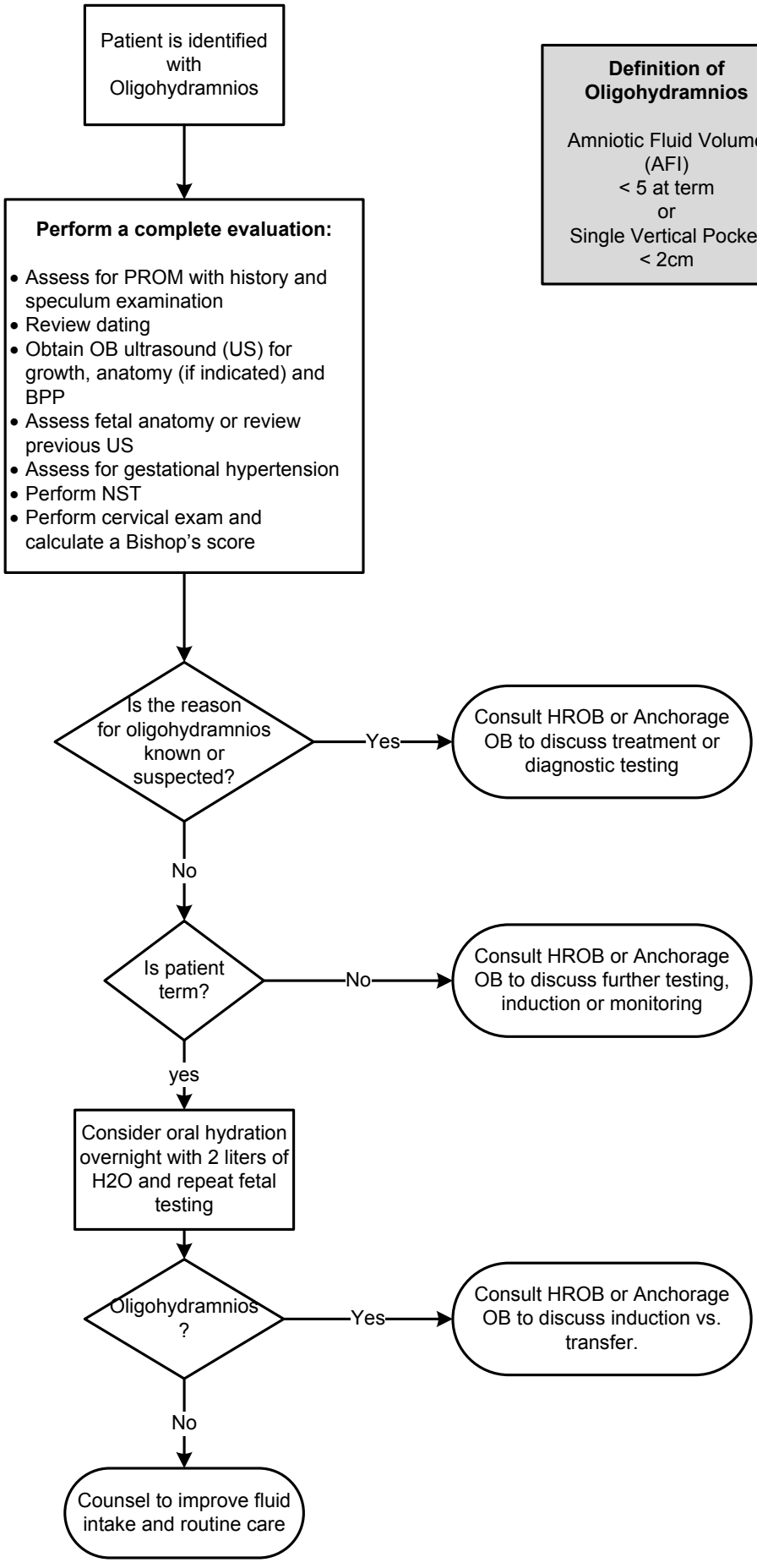
First
- Aneuploidy
- Fetal Anomaly

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

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

Definition of Oligohydramnios

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



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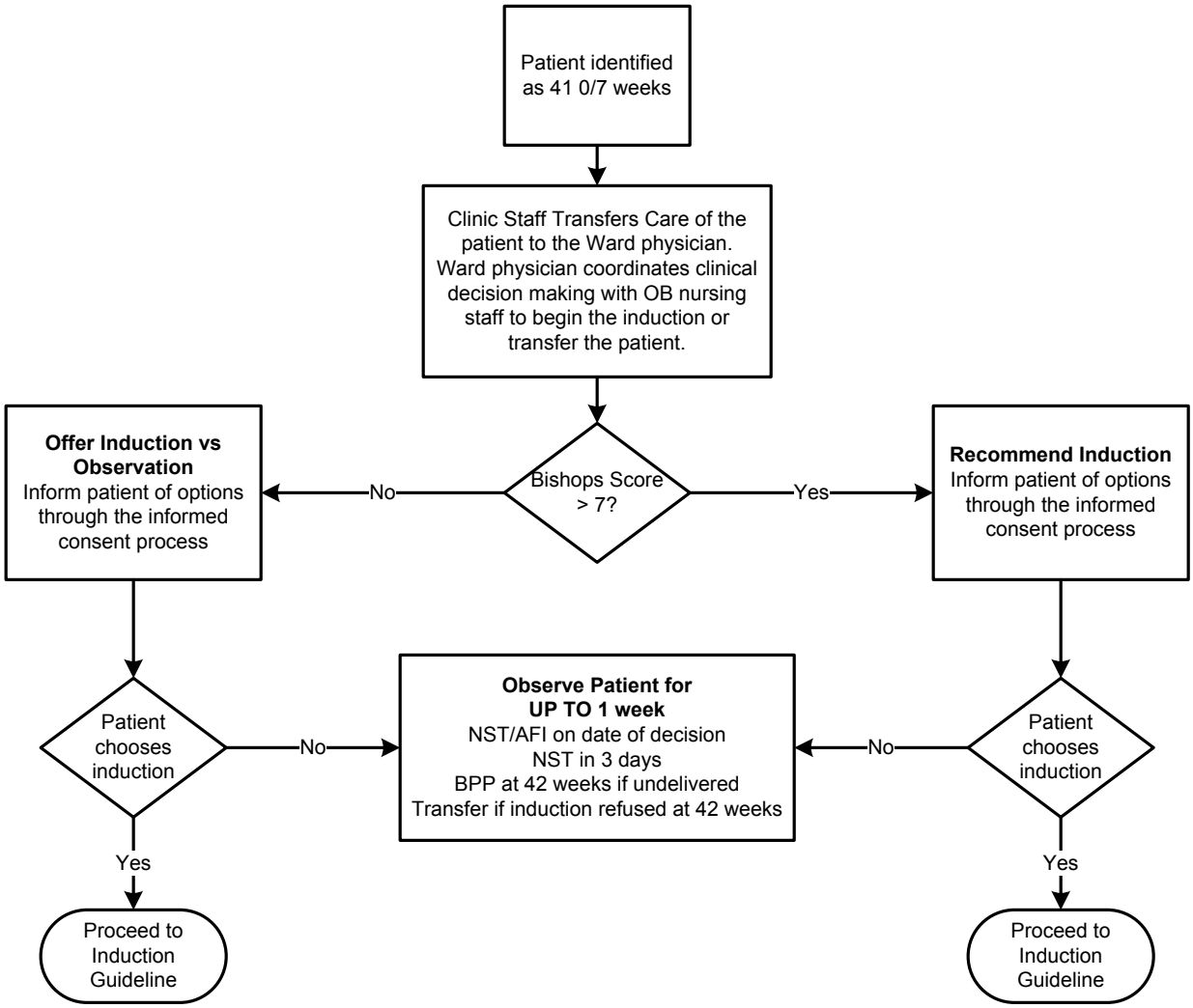
Post Dates Pregnancy

MSEC approved 06/22/11



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		

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

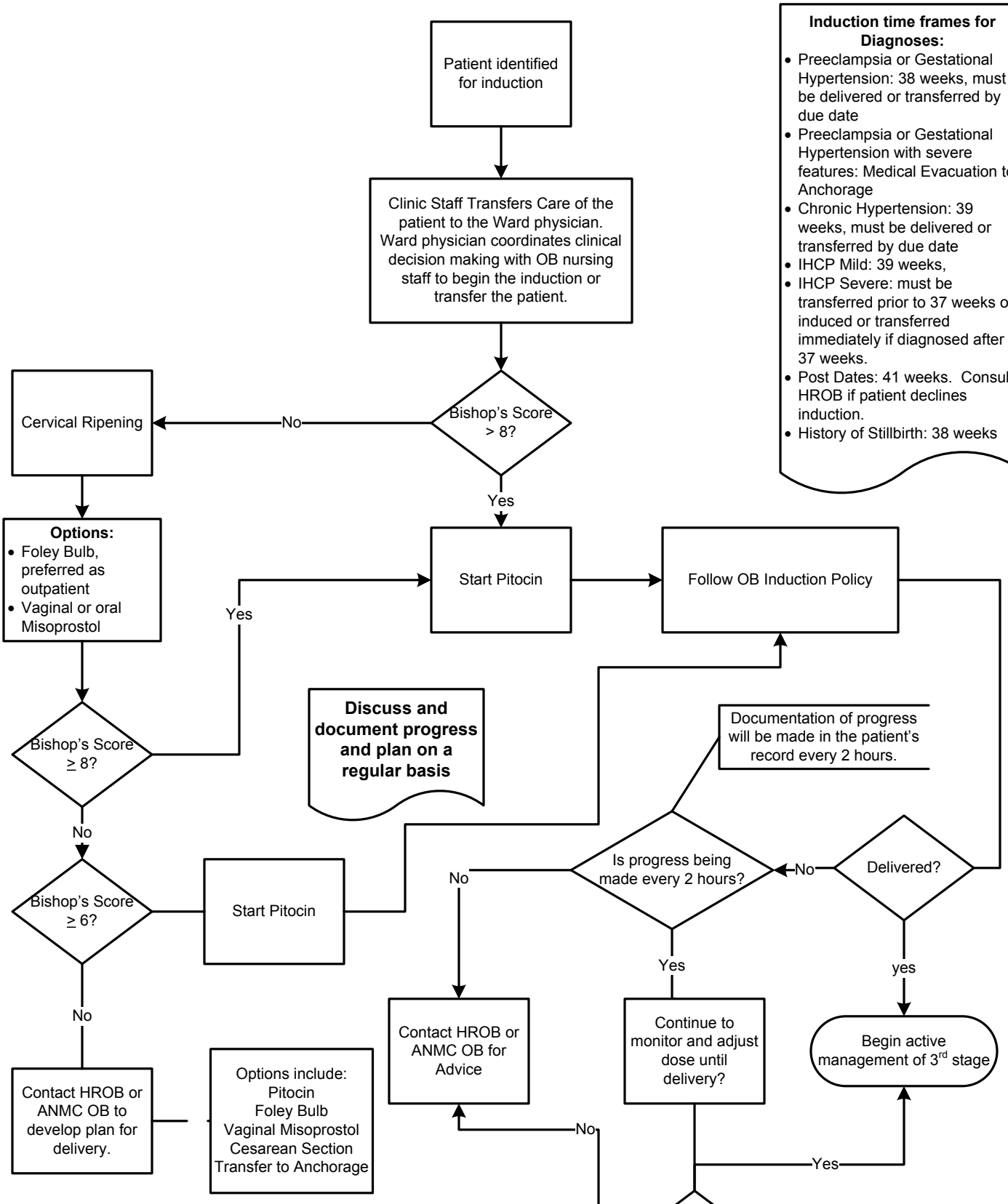
Yukon-Kuskokwim HEALTH CORPORATION

Induction of Labor

MSEC approved 12/14/16

Induction time frames for Diagnoses:

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



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Intrahepatic Cholestatis of Pregnancy (IHCP)

MSEC approved 12/14/16

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

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

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

Severe Pruritus:
- Insomnia
- Worse on palms of hands and soles of feet
- Excoriation present
- Scratching during the exam.

Draw baseline BA & LFT

Abnormal

Normal

IHCP:
- Begin Ursodiol 15mg/kg/day
- Schedule antenatal surveillance at 32 weeks

Repeat BA at 32 weeks or at onset of pruritus

2nd or 3rd Trimester with pruritus

Is the pruritus severe?

Yes

No

Are the Bile Acids and LFTs Normal?

Yes

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

No

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

Are the Bile Acids and LFTs Normal?

No

Yes

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

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

Are TBA >40?

NO

Mild IHCP Induce at 39 weeks.

YES

SEVERE IHCP Transfer to Anchorage for Delivery at 37 weeks.

Biophysical Profile (BPP)
- NST
- US including: Fetal Breathing, Tone, Gross body motion and AFI

Abnormal Lab levels

Total Bile Acids (TBA)-	>10 µmol/L
Cholic Acid -	> 3 µmol/L
AST/ALT -	>40 units/L
Bilirubin -	> 1 mg/dl
Alkaline Phosphatase -	>300 units/L

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Chronic Hypertension in Pregnancy

MSEC approved 07/12/17

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

First Prenatal Visit with history of Chronic Hypertension
Obtain GH labs†. Refer to HROB meeting for discussion.

First Trimester
1. Monitor BP every 2-4 weeks.
2. Fetal ultrasound to confirm EDC prior to 14 weeks gestation .

Second Trimester
1. Monitor BP every 2-4 weeks.
2. If patient with symptoms of severe features of preeclampsia‡, obtain GH labs†
3. Aspirin 81 mg daily between 12-37 weeks gestation to prevent complications

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

Superimposed Preeclampsia present?*
- Yes → Refer to Gestational Hypertension Guideline
- No →

Third Trimester
1. Monitor BP every two weeks.
2. If patient demonstrates severe features of preeclampsia‡, obtain GH labs.
3. BPP weekly after 34 weeks gestation.
4. NST/AFI anytime patient is in Bethel between 28-36 weeks.

Severe HTN, renal, cardiac, or connective tissue disorders?
- Yes → Refer to ANMC OB Service.
- No →

Consult OB/GYN at 37 weeks for timing of delivery.MUST be delivered by the EDC or transferred to Anchorage

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

‡ Severe Features of Preeclampsia
- Severe hypertension (160/ 110)
- Thrombocytopenia (<100K)
- Impaired liver function
- Progressive renal insufficiency
- Pulmonary edema
- New onset cerebral or visual disturbances
- Oligohydramnios

*** Signs/Symptoms of Superimposed Preeclampsia**
- Any signs/symptoms of severe features
- Worsening proteinuria
- Worsening hypertension

Any patient with hypertension in pregnancy should have blood pressure monitored for at least 2 weeks post partum

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

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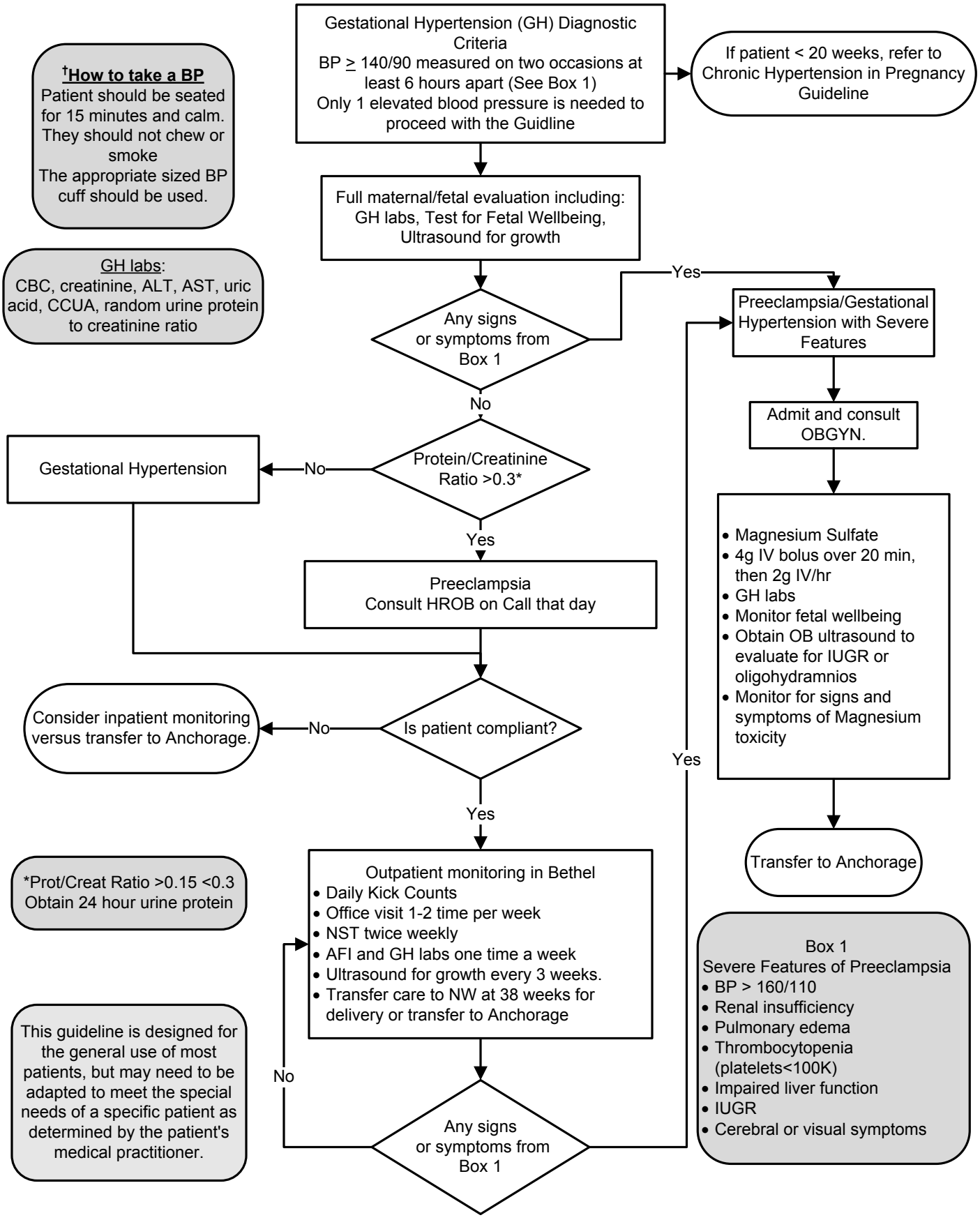
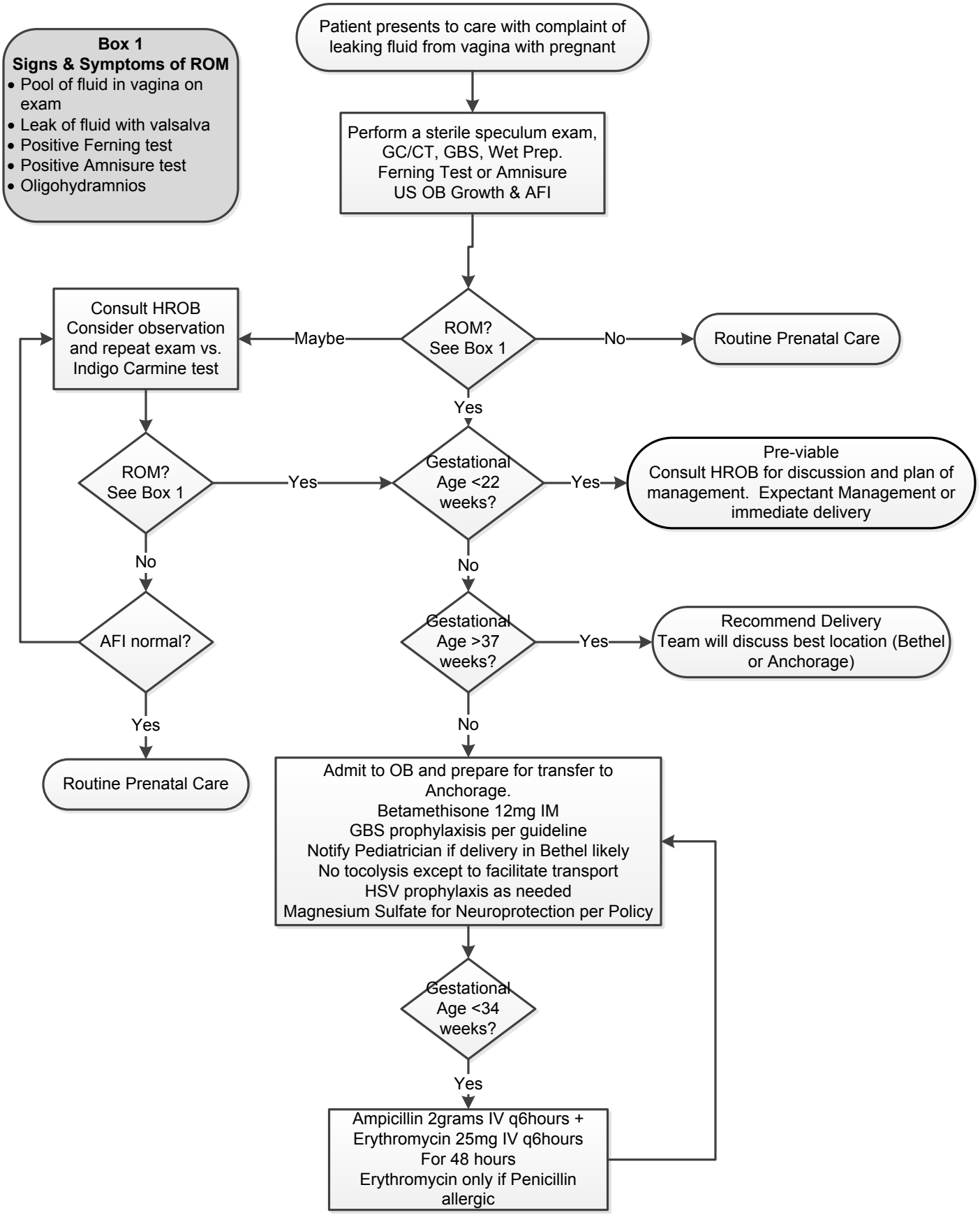
Gestational Hypertension

MSEC approved 07-12-17

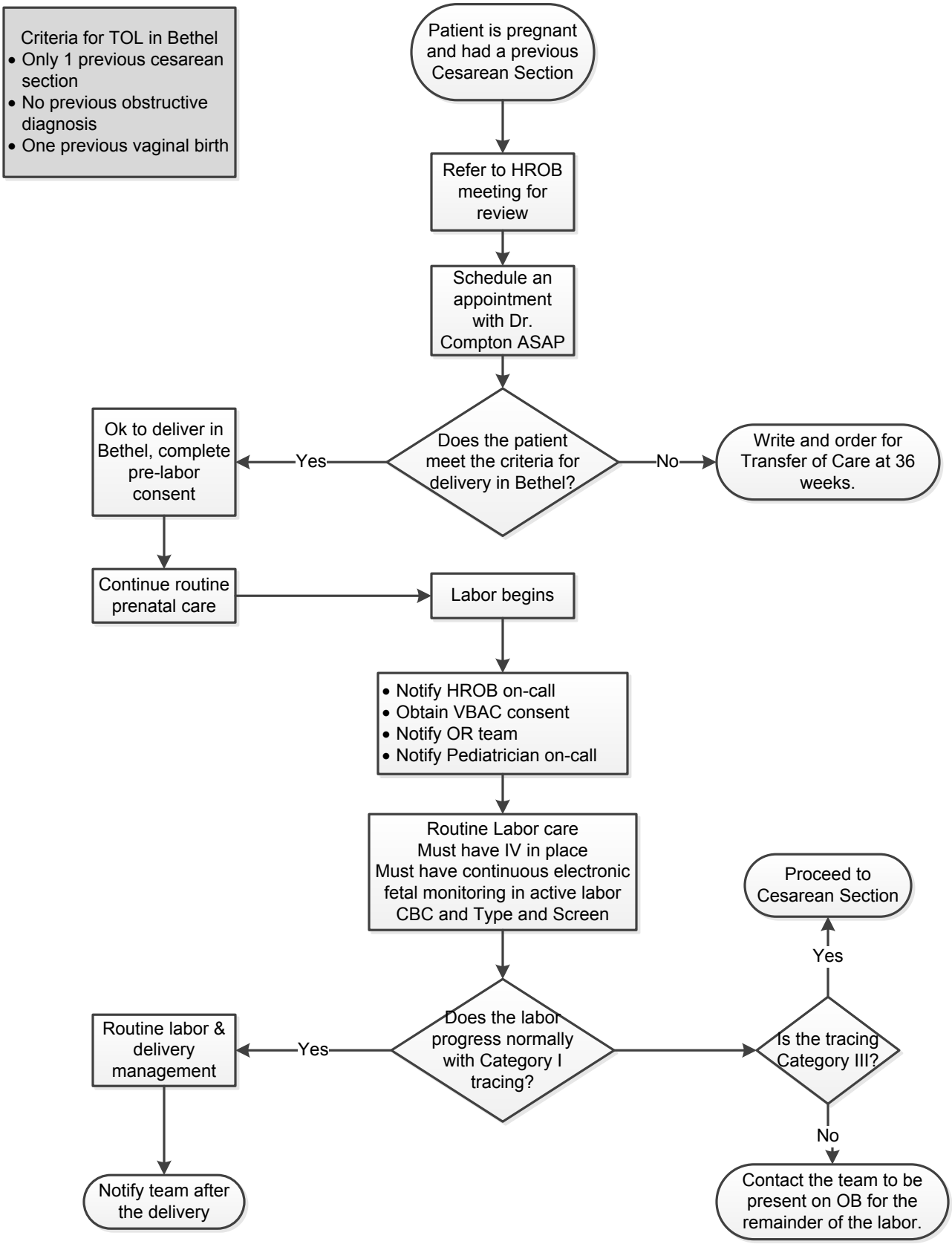


Preterm Premature Rupture of Membranes

rev 07-26-17



Vaginal Birth After Cesarian



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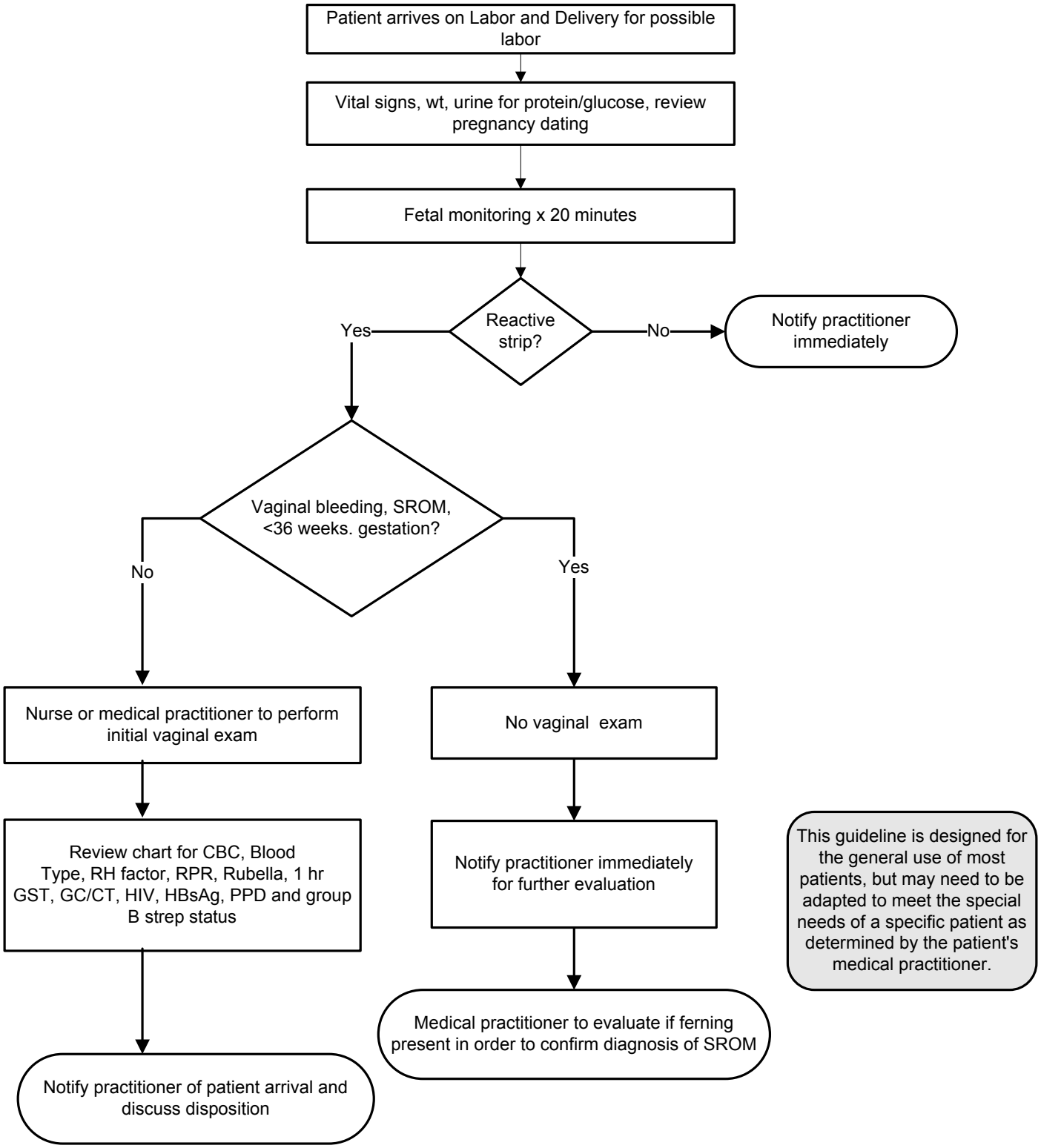
CLINICAL GUIDELINES
2019
rev. 10-17-19

OB Protocols

Antepartum Patient

MSEC approved 06/22/11



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Prenatal Care Guidelines

Rev Date: 6/20/17

BASICS

- Review the chart EVERY visit for incomplete lab or other required testing.
- Review the problem list EVERY visit for needed testing or intervention items.
- Patient should see a Bethel provider or CHA/P monthly from first visit to 32 weeks.
- Patient should see a Bethel Provider or CHA/P every 2 weeks after 32 weeks and then weekly at 36 weeks.
- If there is any question of EDC, see guideline or refer to HROB meeting for decision.

First Prenatal

NURSING/CASE MANAGER

- Order First Trimester Transvaginal OB Ultrasound (>6weeks) for dating
- Patient to initiate paperwork
  - Residential Information sheet
  - Pregnancy Verification Sheet—use LMP if no EDC from ultrasound
  - Quad screen consent form
  - FAS & Drug assessment screening questionnaire
  - 36wk BIB/Medevac Policy
- Review TB screening status –Patient MUST HAVE a negative Quantiferon or PPD prior to 36 weeks to stay at Prematernal Home. Place PPD if needed.
- Send patient for labs: Urinalysis with reflex, Blood type and screen, HbsAg, CBC, Rubella titer, RPR, HIV testing, HgA1C, 25-OH Vitamin D.
- Set up room for pelvic to do PAP (only do a PAP if it is due), Wet Prep, GC/CT (with verbal consent)
- Routine patient handouts: WIC handout

PROVIDER

- Prenatal H&P and Prenatal Education
- Chart review
- Offer Flu vaccine October through the end of the flu season
- Discuss and sign BIB/Medevac Policy contract
- Update the Problem List and include EDC and gravida/para in one problem
- Refer to HROB meeting if needed
- Ask about S/S of IHCP, if positive, add Bile acids and LFTs to lab draw

PATIENT

- Go to the Medicaid office to file for Medicaid
- Go to the WIC office to file for WIC

15–21 Weeks

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

20 Weeks

- Ultrasound to screen for anomalies, US OB anatomy and cervical length
  - only one is needed no matter where it is done
  - Aim for 20 weeks
  - If anatomy incomplete, order a US OB follow-up for the next visit to complete the anatomy exam

24–28 Weeks

NURSING

- Labs: GST, CBC, 25-OH Vitamin D
- Tdap, after 24 weeks
- GST-50g (1/2 bottle or 5 oz)
  - If result >140mg/dl schedule 3 hour GTT ASAP.
  - If the result > 179, no GTT, refer directly to diabetes education
- Attempt to keep the patient until the results of the GST are back.
- Review TB status. Send to lab for Quantiferon if failed to have PPD read.

PROVIDER

- After 28 weeks ask about preeclampsia symptoms
- After 24 weeks ask about PTL symptoms and IHCP symptoms?
  - Back pain
  - Sudden increase in vaginal discharge
  - Pelvic Pressure
  - Cramps/contractions
- Educate patient on fetal movement count

36-week/ BIB date

- Labs: CBC, RPR, Pelvic exam with GBS culture, GC/CT, wet mount if concerns.
- Review TB status. Send to lab for Quantiferon if status unknown.
- Schedule appointments to be seen each week by Bethel provider through 41 weeks
- Complete Pre-maternal Home/Medical clearance paper
- Ask about any symptoms of:
  - Rupture of membranes
  - Preeclampsia
  - labor
  - itching

Yukon-Kuskokwim HEALTH CORPORATION

Use of Consultants at YKHC

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

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

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

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

Provider needs consultation about patient at YKHC

Consult provider is located in Bethel?

No

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

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

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

Yes

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

No

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

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

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

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

Yes

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

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

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

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 asses this patient in person…"
"I would like to transfer this patient via medevac to ANMC…"

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

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CLINICAL GUIDELINES
2019
rev. 10-17-19

Outpatient Guidelines

Yukon-Kuskokwim HEALTH CORPORATION

Skin and Soft Tissue Infection, p.1

MSEC approved 07/12/17

Skin and Soft Tissue infection identified

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

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

Abscess present?

Yes → Cutaneous abscess

Perform incision and drainage with local anesthesia.
Culture wound and break up loculations. Place fixed Penrose drain if possible. Hot packs/soaks q2-4 hours and rest/elevation if on extremity

No → Purulent drainage or exudate?

Yes → Purulent cellulitis

No → Non-purulent cellulitis → See Page 2

Cellulitis >10 cm or >1% BSA in child (size of child's palm)

No, antibiotics not indicated → Outpatient management with daily follow up until continuous improvement is demonstrated

Yes → Consider empiric oral antibiotic therapy

Empiric oral Antibiotic Therapy
Adults
Septra DS 1-2 tabs PO q12hours (do not give to pregnant women)
Children:
Septra 4-6 mg/kg PO q 12 hours (based on TMP component)
Adults with sulfa allergy:
Doxycycline 100 mg PO q12 hours
Children with sulfa allergy:
>/=8 years: Doxycycline 2 mg/kg PO q12 hours x 10 days (max 100 mg/dose)
<8 years: Clindamycin 10-13 mg/kg PO q8 hours
Pregnant or breastfeeding women:
Clindamycin 450 mg PO TID
***Antibiotic duration 5-7 days**
***Septra and doxycycline do NOT cover strep pyogenes**

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

yes → Outpatient management with daily follow up until continuous improvement is demonstrated

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

No →
- Admission with IV antibiotics. (See Box 3.)
- Recommend blood cultures, CBC, basic metabolic panel.
- Elevation and heating pad.
- Consider IV fluids.
- Address pain control.
- Consider imaging.
- If patient meets criteria for sepsis, follow sepsis guideline

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

BOX 3: Empiric Antibiotic Options
1. Vancomycin:
   • For adults: load with 30 mg/kg IV, then dose 15 mg/kg q8 or q12 hours.
   • For patients <18 years: 20 mg/kg IV q6 hours. If patient is obese, consider dosing based on ideal body weight.
2. Linezolid 600 mg IV/PO q12 hours. Restricted to known MRSA resistance or vancomycin allergy.
3. In children with rapidly progressing cellulitis/abscess or associated systemic symptoms (fever, listlessness, lethargy, etc.) consider covering Haemophilus influenzae type A/B with ceftriaxone 75 mg/kg IV/IM q24 hours in addition to above.

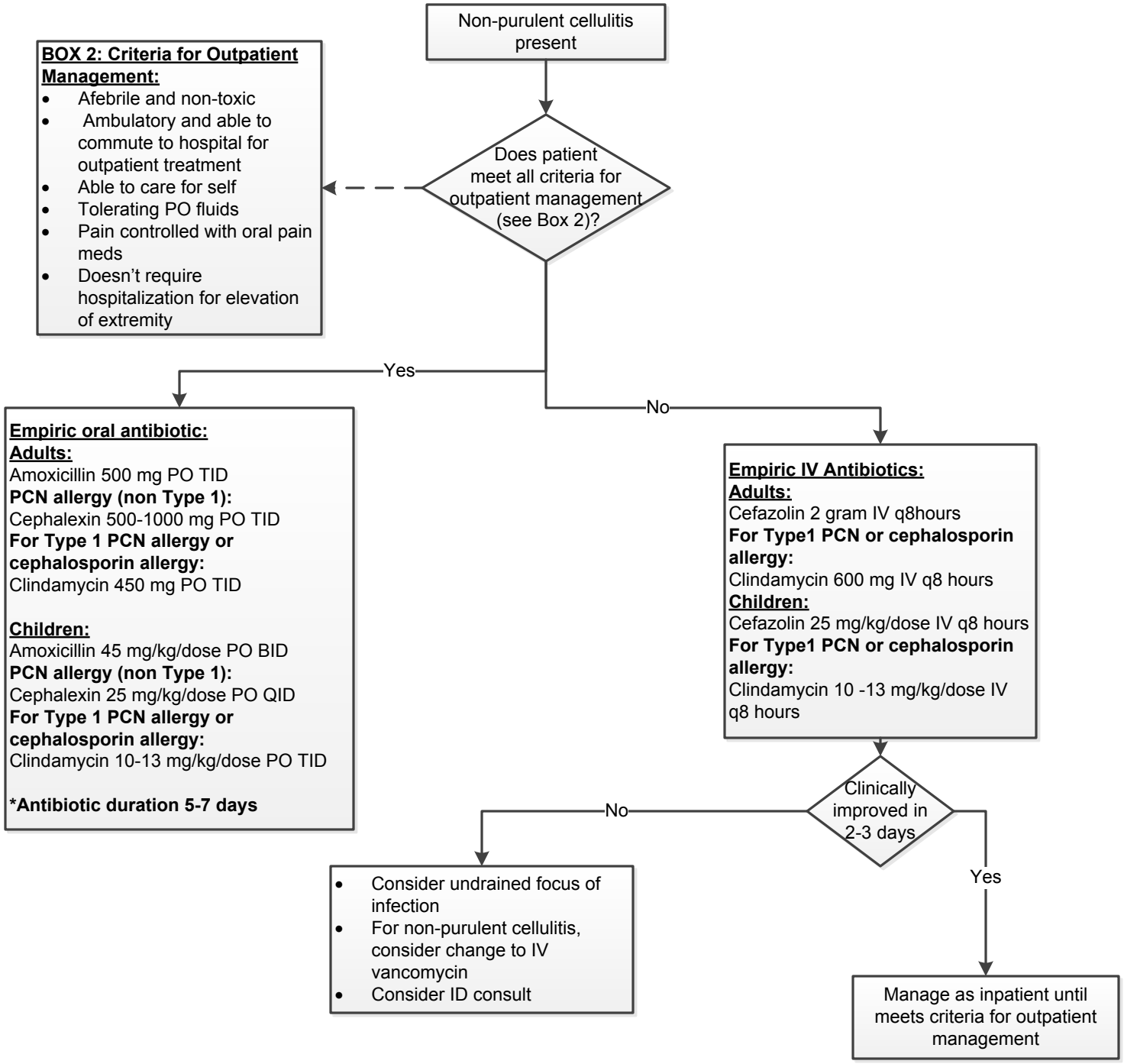
Patient improving?

Yes → Manage as inpatient until meets criteria for outpatient management

No →
- Review culture and sensitivities
- Consider imaging.
- Consider repeat incision and drainage

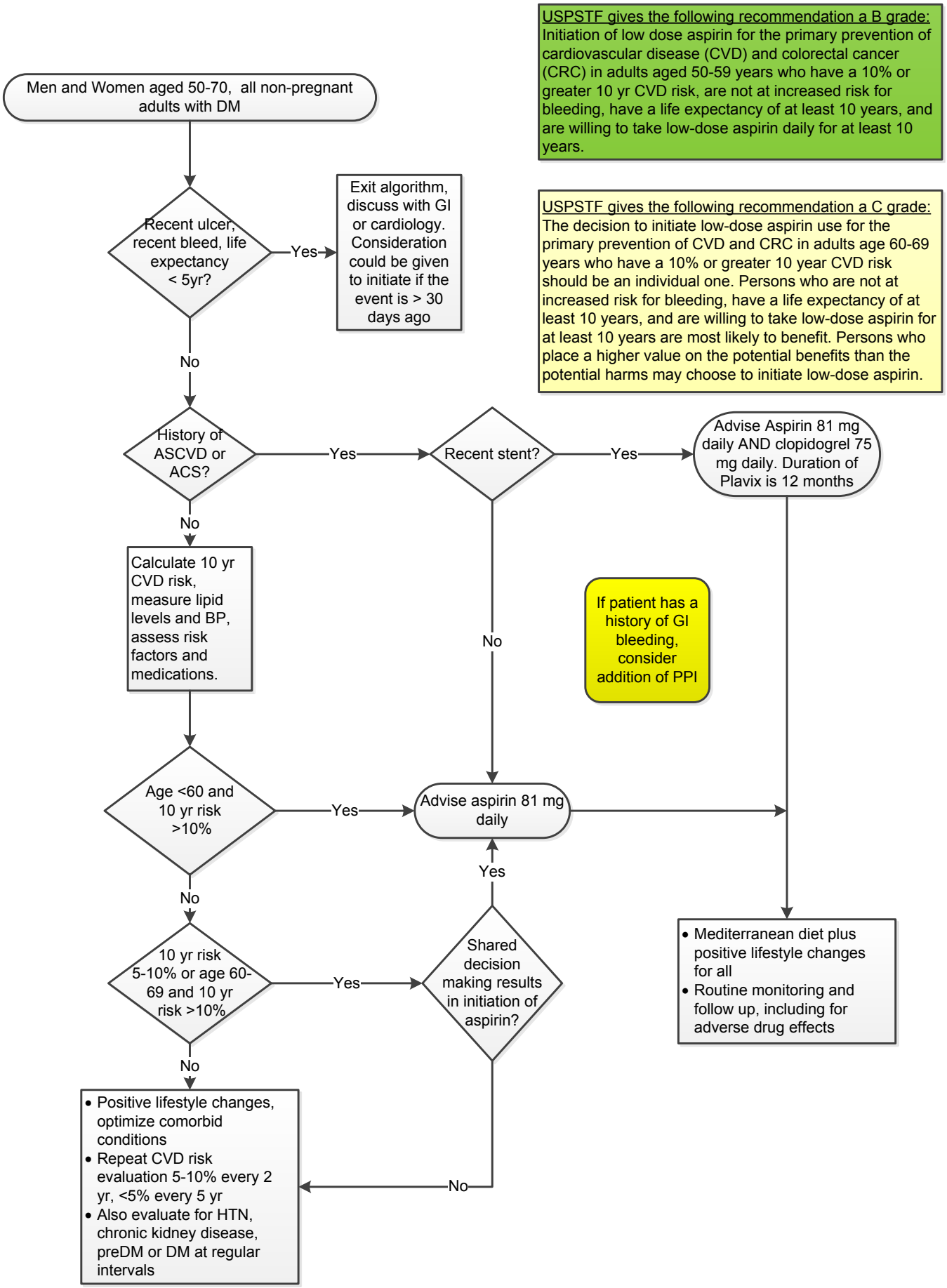
Skin and Soft Tissue Infection, p.2

MSEC approved 07-12-17



Aspirin

MSEC approved 07-12-17



Yukon-Kuskokwim HEALTH CORPORATION

Type 2 Diabetes

MSEC approved March, 2015

Antihyperglycemic Therapy Chart *(Double-click to see reference)*

YKHC Approach to Starting Insulin *(Double-click to see reference)*

References *(Double-click to see reference)*

Diagnostic Criteria

Hemoglobin A1c ≥ 6.5 *

or

Fasting glucose (FPG) ≥126 mg/dl *

or

One random glucose (RPG) ≥200 mg/dl with classic symptoms of hyperglycemia or hyperglycemic crisis

or

2 hour 75 g OGTT (oral glucose tolerance test) ≥200 mg/dl *

* In the absence of unequivocal signs of hyperglycemia, results should be confirmed by repeat testing

1. Consider completing Powernote Note Pathway "Diabetes, Type 2" and include: WT, HT, BP, Tobacco & ETOH Hx, perform foot exam, discuss mental health & sexuality, add diagnosis to *Problem List* in RAVEN
2. Consider completing Diabetes Powerplan and order A1c, lipids (fasting or non-fasting), CMP, CCUA & Urine Microalbumin, EKG if not obtained in the last 5 yrs, update immunizations, including PPD, and refer to optometry & dental internal
3. Establish treatment goals with patient†‡
4. Consider Statin, ASA, ACE or ARB
5. Consider ordering glucometer and strips
6. Refer to Diabetes Program
   - By calling 543-6133 or cell 545-2649 for same day counseling appointments
   AND
   - By placing referral order in RAVEN *"Refer to Diabetes Program Internal"*
7. Place future lab orders (A1C in 3 months)
8. Place "Bethel Follow-Up" or "*village name* Follow-Up" order in RAVEN

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

FPG ≥ 126 Or RPG ≥ 200 Or A1C ≥ 6.5 and < 9

No

A1C ≥ 9

No

RPG > 300 [4†] Or A1C > 10 [4†]

Yes

MNT & Physical Activity/ SMBG AND Start Metformin [1] unless contraindicated

Yes

Goals Reached at 2-3 months?†

No

Yes

Monitor using SMBG Targets and Lab Monitoring & continue medication therapy

Yes

Place referral order in RAVEN *"Refer to Diabetes Program Internal"* AND MNT & Physical Activity/SMBG AND Metformin [1] AND Second oral agent or insulin [2,3]
- Thiazolidinedione (Pioglitazone) Or,
- Sulfonylurea (Glimepiride, Glyburide, Glipizide) Or ,
- DPP-4 Inhibitor (Saxagliptin) Or,
- GLP-1 Receptor Agonist (Liraglutide) Or,
- Insulin [3]

Goals Reached at 2-3 months?†‡

Yes

No

Place referral order in RAVEN *"Refer to Diabetes Program Internal"* AND Add 3rd agent (see Antihyperglycemic therapy chart)

Goals Reached at 2-3 months?‡

No

Place referral order in RAVEN *"Refer to Diabetes Program Internal"* AND Titrate over 2-3 months; reinforce MNT, activity & medication adherence

Goals Reached at 2-3 months?‡

Yes

No

Yes

MNT & Physical Activity/SMBG AND Metformin[1] AND Basal Insulin (Glargine) AND Bolus Insulin [3] OR GLP-1 Receptor Agonist (Liraglutide)

No

Goals Reached at 2-3 months?[4†]

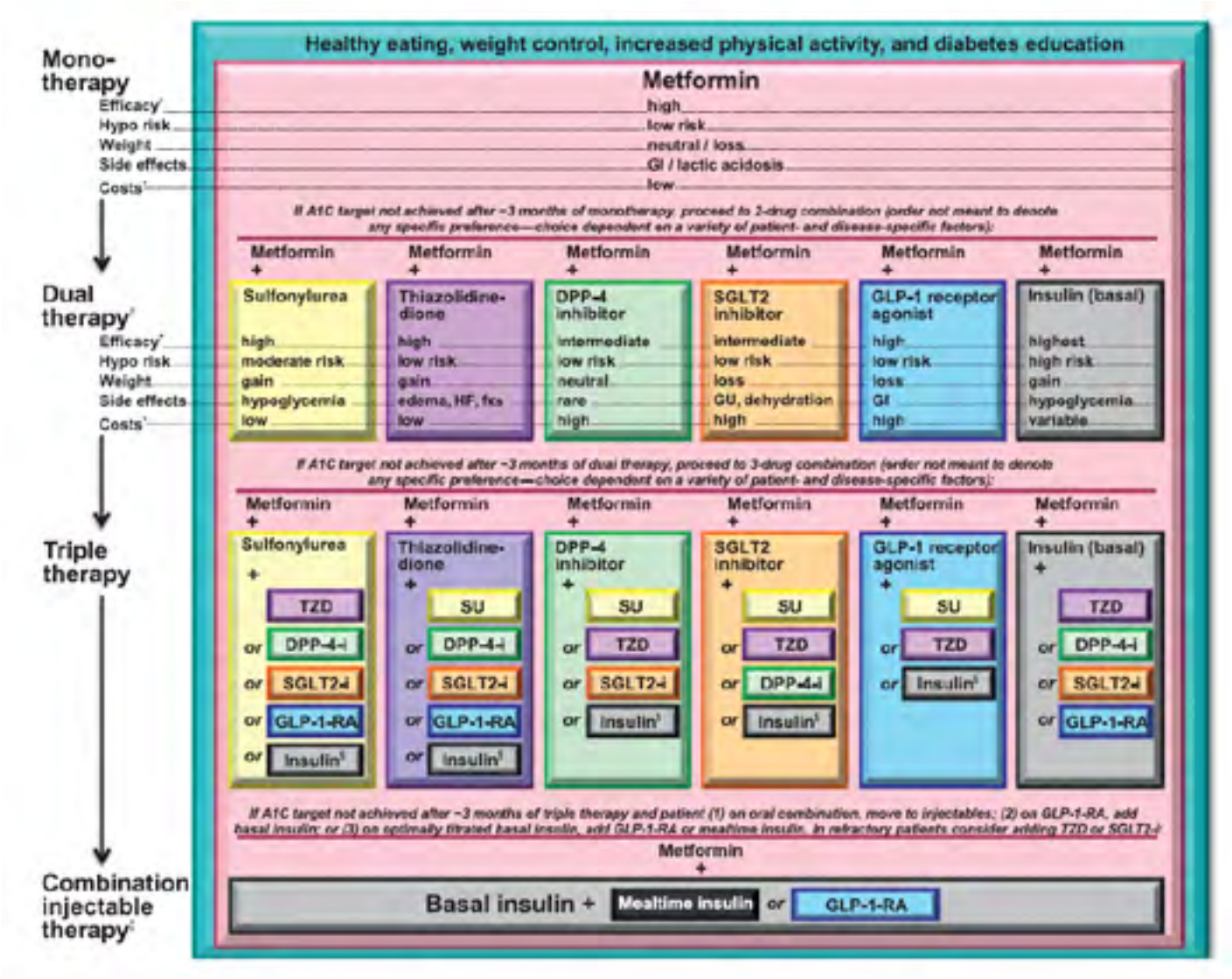
Yes

No

Place referral order in RAVEN *"Refer to Diabetes Program Internal"* AND Consult ANMC or Endocrinologist

Type 2 Diabetes

MSEC approved March, 2015



References

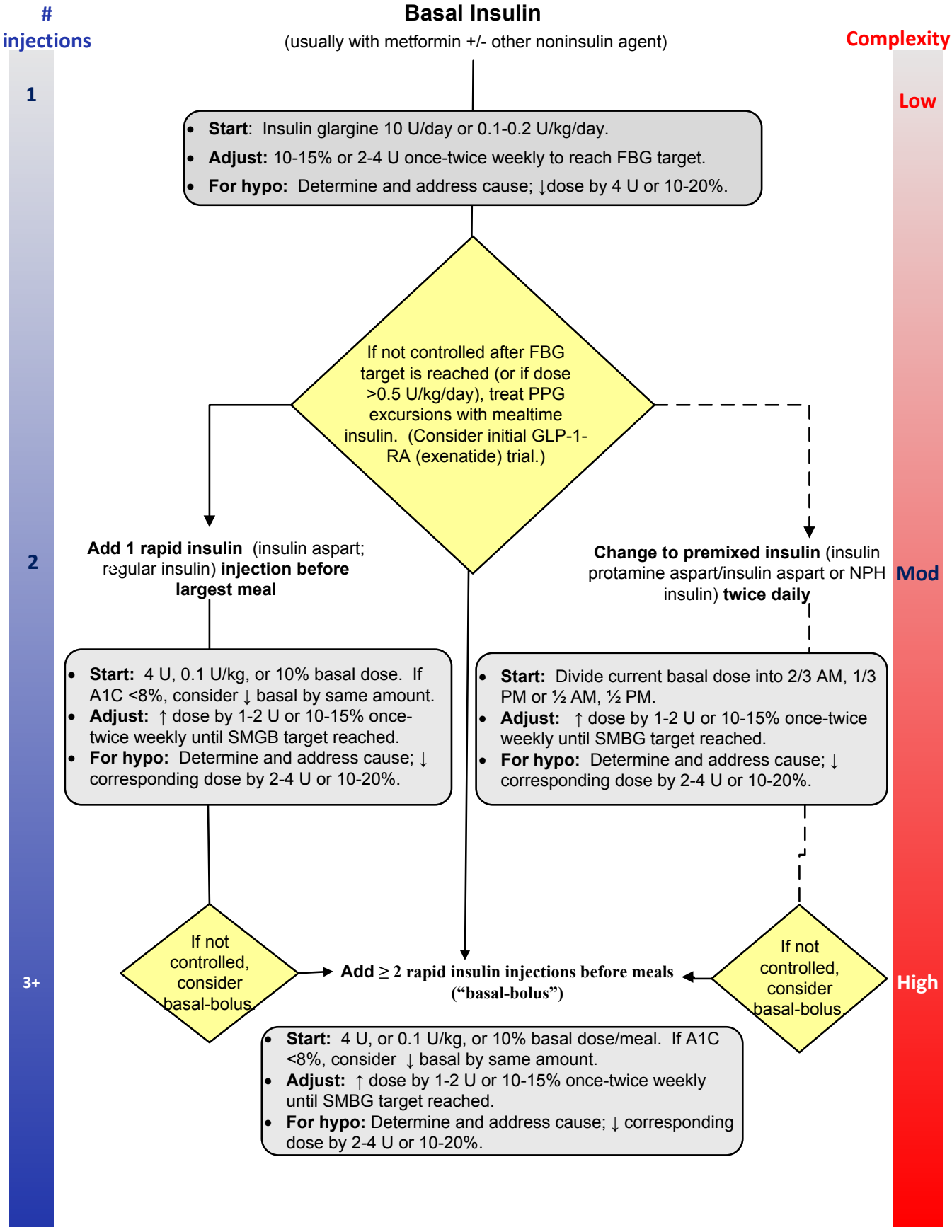
1. ADA 2014 Guidelines; Metformin: Preferred initial therapy (if tolerated and not contraindicated)
2. ADA 2014 Guidelines; Add second oral agent, GLP-1 receptor agonist, or insulin If non-insulin monotherapy at maximum tolerated dose does not achieve or maintain A1c target over 3 mos.
3. ADA 2014 Guidelines; Consider insulin therapy with or without other agents at outset in newly diagnosed patients with markedly symptomatic and/or elevated BG levels or A1C
4. ADA 2015 Standards of Care; Summary of glycemic recommendations for nonpregnant adults with diabetes

† More or less stringent glycemic controls may be appropriate for individual patients. Goals should be individualized based on duration of diabetes, age/life expectancy co-morbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations. (See Glycemic Targets Chart on the Document Library)

‡ Postprandial glucose may be targeted if A1c goals are not met despite reaching preprandial glucose goals.

Type 2 Diabetes

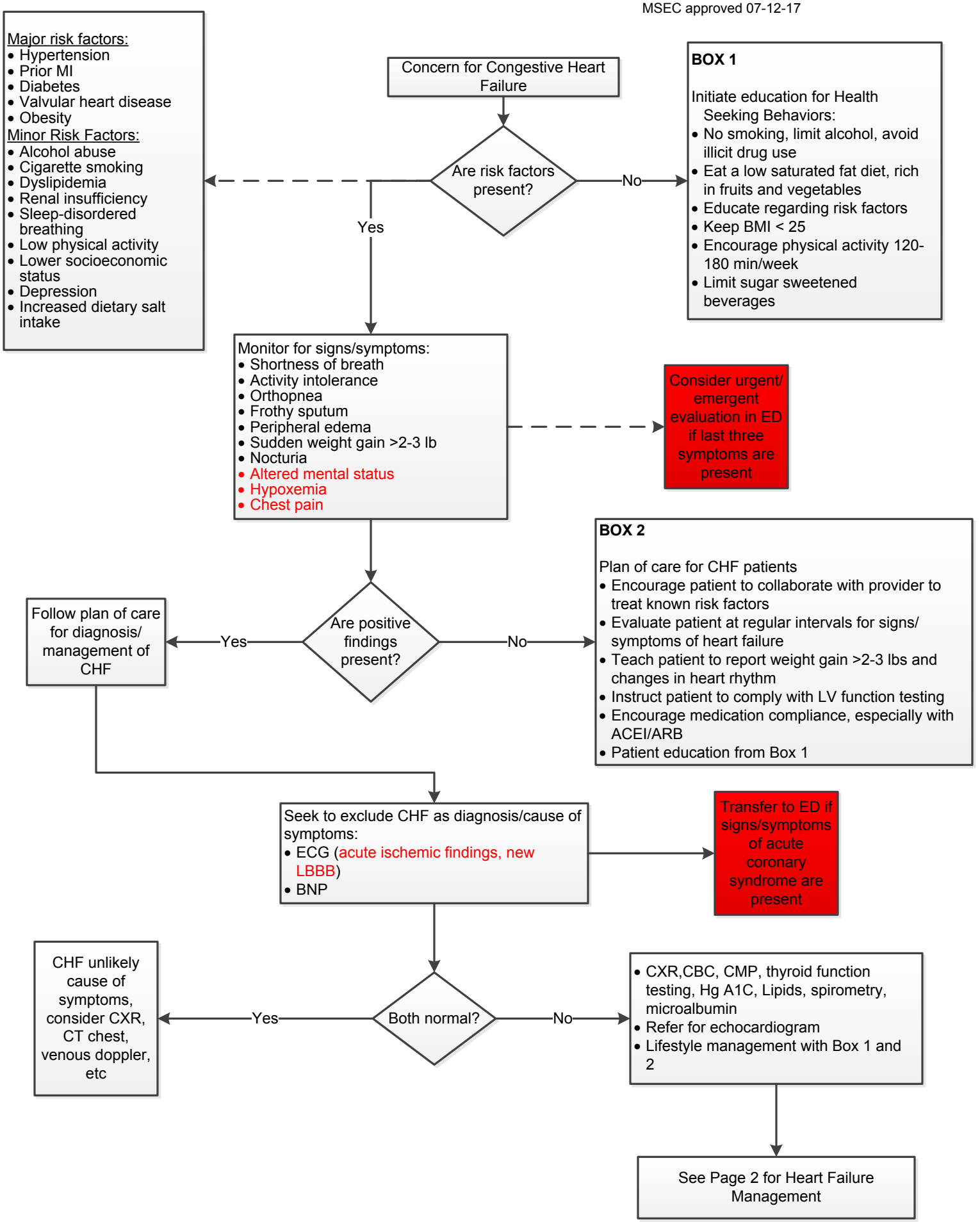
MSEC approved March, 2015



Yukon-Kuskokwim HEALTH CORPORATION

Congestive Heart Failure, p.1

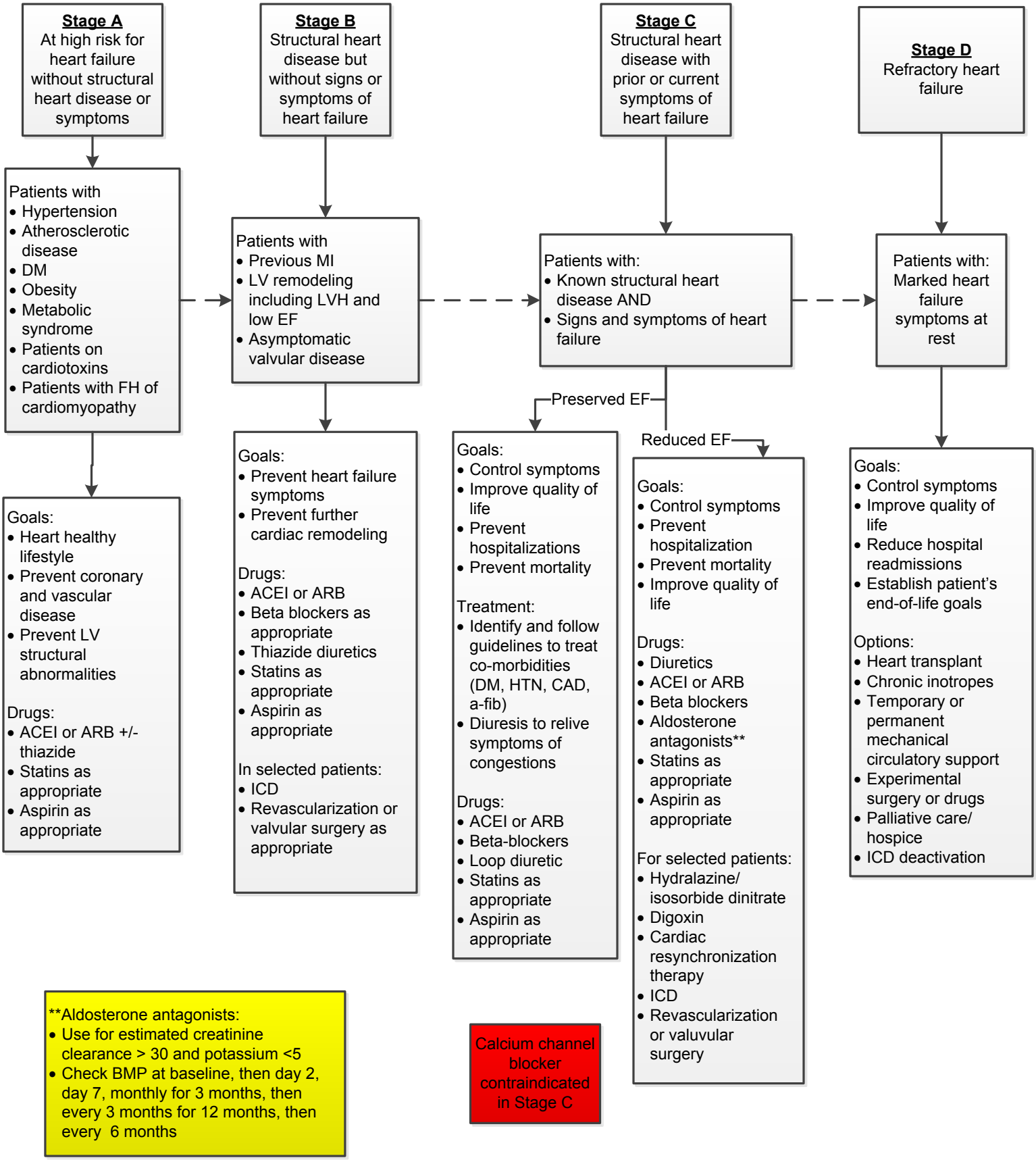
MSEC approved 07-12-17



Yukon-Kuskokwim HEALTH CORPORATION

Congestive Heart Failure, p.2

MSEC approved 07-12-17



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Dyspepsia – H. Pylori

MSEC approved 4/26/18

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

Pediatrics:
- Goal is to determine underlying cause of symptoms, not solely the presence of *H pylori* infection.
- Principles of testing and treatment are the same as for adults.
- Diagnostic testing is NOT recommended with functional abdominal pain or iron-deficiency anemia.
- Consult pediatrics if considering this diagnosis.

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

Testing/Treatment strategy

Dyspepsia

Weight loss/ fecal blood?

Yes

No

Empiric Treatment with H2 Blocker or PPI

Improvement ?

No

Yes

If adult: Perform Upper Endoscopy. If child: Consult pediatrics.

Follow up for recurrence of clinical symptoms

H. Pylori identified by histology and/or CLO test from EGD
AND
Endoscopy reveals the following:
- Duodenal ulcers
- Gastric ulcer
- MALT lymphoma
- Intestinal metaplasia

Treat for H. Pylori with antibiotics

****All treatment is for 14 days****

Adult Dosing
Preferred Treatment:
Metronidazole 500 mg PO QID
Amoxicillin 1000 mg PO BID
Omeprazole 20 mg PO BID
Bismuth subsalicylate 524 mg PO QID

PCN allergic (anaphylactic):
Metronidazole 500 mg PO QID
Doxycycline 100 mg PO BID
Omeprazole 20 mg PO BID
Bismuth subsalicylate 524 mg PO QID

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

Pediatric Dosing
Metronidazole 10 mg/kg PO BID
Amoxicillin 45 mg/kg PO BID
Omeprazole 1 mg/kg PO BID
Bismuth subsalicylate
<10 years: 262 mg PO QID
>10 years: 524 mg PO QID

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

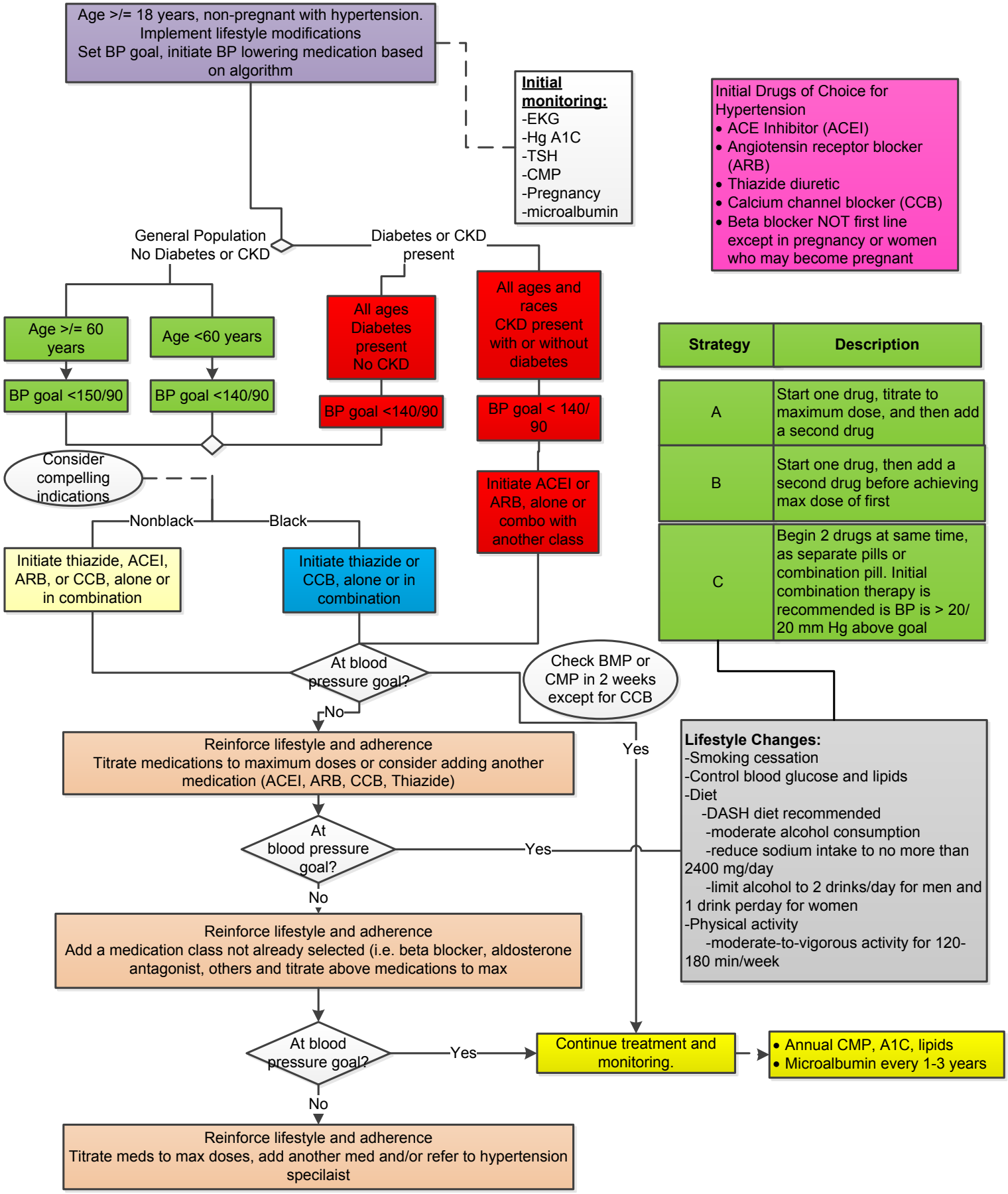
Symptomatic relief Medications:
Adults:
Ranitidine 150 mg PO BID
Omeprazole 20 mg PO BID

Children:
Ranitidine 5-10 mg/kg PO divided BID

Eradication Testing:
- Urea Breath Test for *Test of Cure* is necessary to determine need for retreatment. It can be performed on children as young as 3. The stool antigen test available at YKHC is not recommended for test of cure.
- 10-35% of individuals will fail treatment.
- Serologic testing is not recommended due to prolonged antibody persistence beyond date of cure and false positive results.
- Must be off PPI for ≥ 2 weeks prior to Urea Breath Test.

Hypertension

MSEC approved 06/17

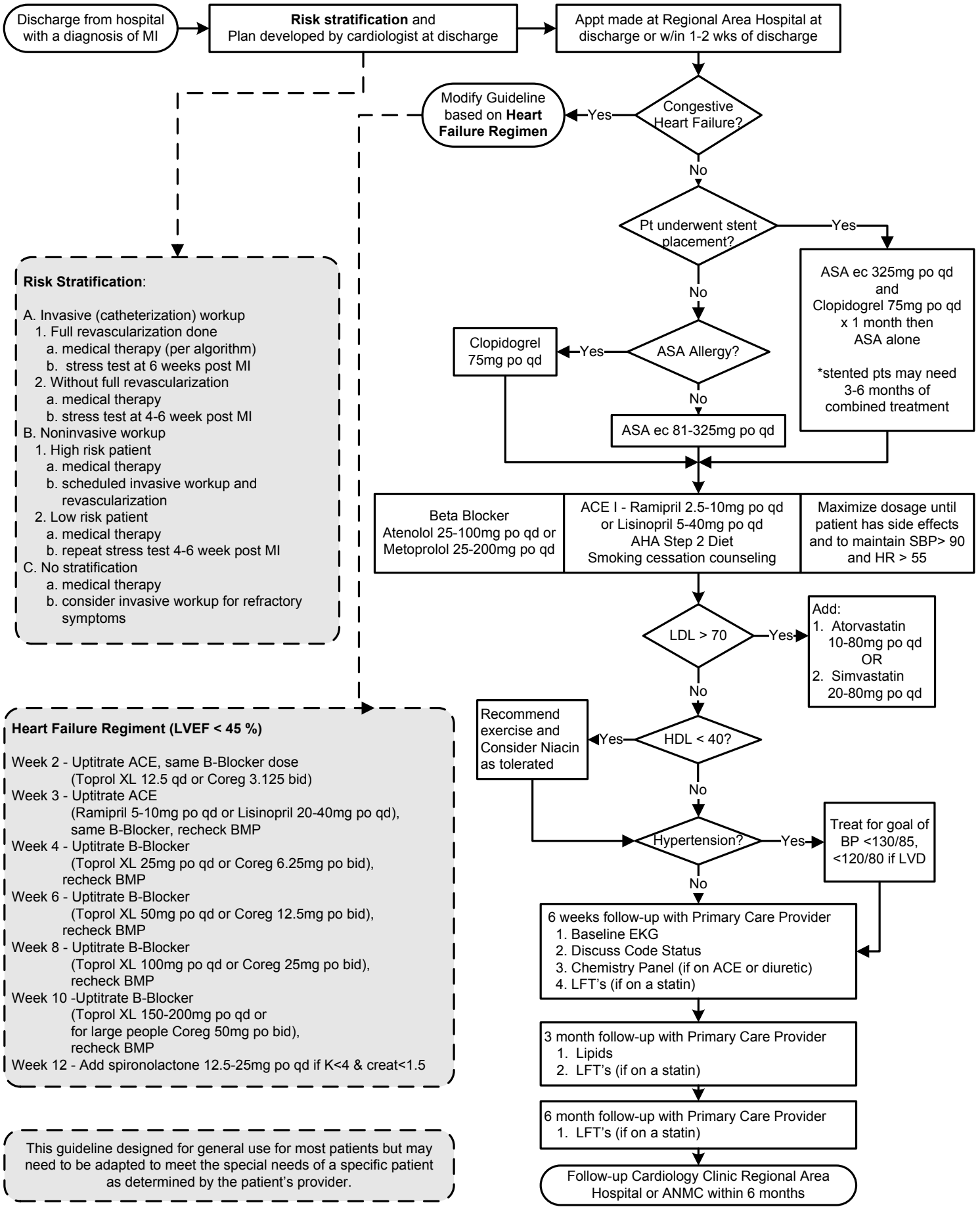


Strategy	Description
A	Start one drug, titrate to maximum dose, and then add a second drug
B	Start one drug, then add a second drug before achieving max dose of first
C	Begin 2 drugs at same time, as separate pills or combination pill. Initial combination therapy is recommended is BP is > 20/20 mm Hg above goal

Yukon-Kuskokwim HEALTH CORPORATION

Myocardial Infarction (AMI) – Post Discharge Care

MSEC approved 06/22/11



Risk Stratification:

A. Invasive (catheterization) workup
  1. Full revascularization done
    a. medical therapy (per algorithm)
    b. stress test at 6 weeks post MI
  2. Without full revascularization
    a. medical therapy
    b. stress test at 4-6 week post MI
B. Noninvasive workup
  1. High risk patient
    a. medical therapy
    b. scheduled invasive workup and revascularization
  2. Low risk patient
    a. medical therapy
    b. repeat stress test 4-6 week post MI
C. No stratification
    a. medical therapy
    b. consider invasive workup for refractory symptoms

Heart Failure Regiment (LVEF < 45 %)

Week 2 - Uptitrate ACE, same B-Blocker dose
(Toprol XL 12.5 qd or Coreg 3.125 bid)
Week 3 - Uptitrate ACE
(Ramipril 5-10mg po qd or Lisinopril 20-40mg po qd), same B-Blocker, recheck BMP
Week 4 - Uptitrate B-Blocker
(Toprol XL 25mg po qd or Coreg 6.25mg po bid), recheck BMP
Week 6 - Uptitrate B-Blocker
(Toprol XL 50mg po qd or Coreg 12.5mg po bid), recheck BMP
Week 8 - Uptitrate B-Blocker
(Toprol XL 100mg po qd or Coreg 25mg po bid), recheck BMP
Week 10 -Uptitrate B-Blocker
(Toprol XL 150-200mg po qd or for large people Coreg 50mg po bid), recheck BMP
Week 12 - Add spironolactone 12.5-25mg po qd if K<4 & creat<1.5

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

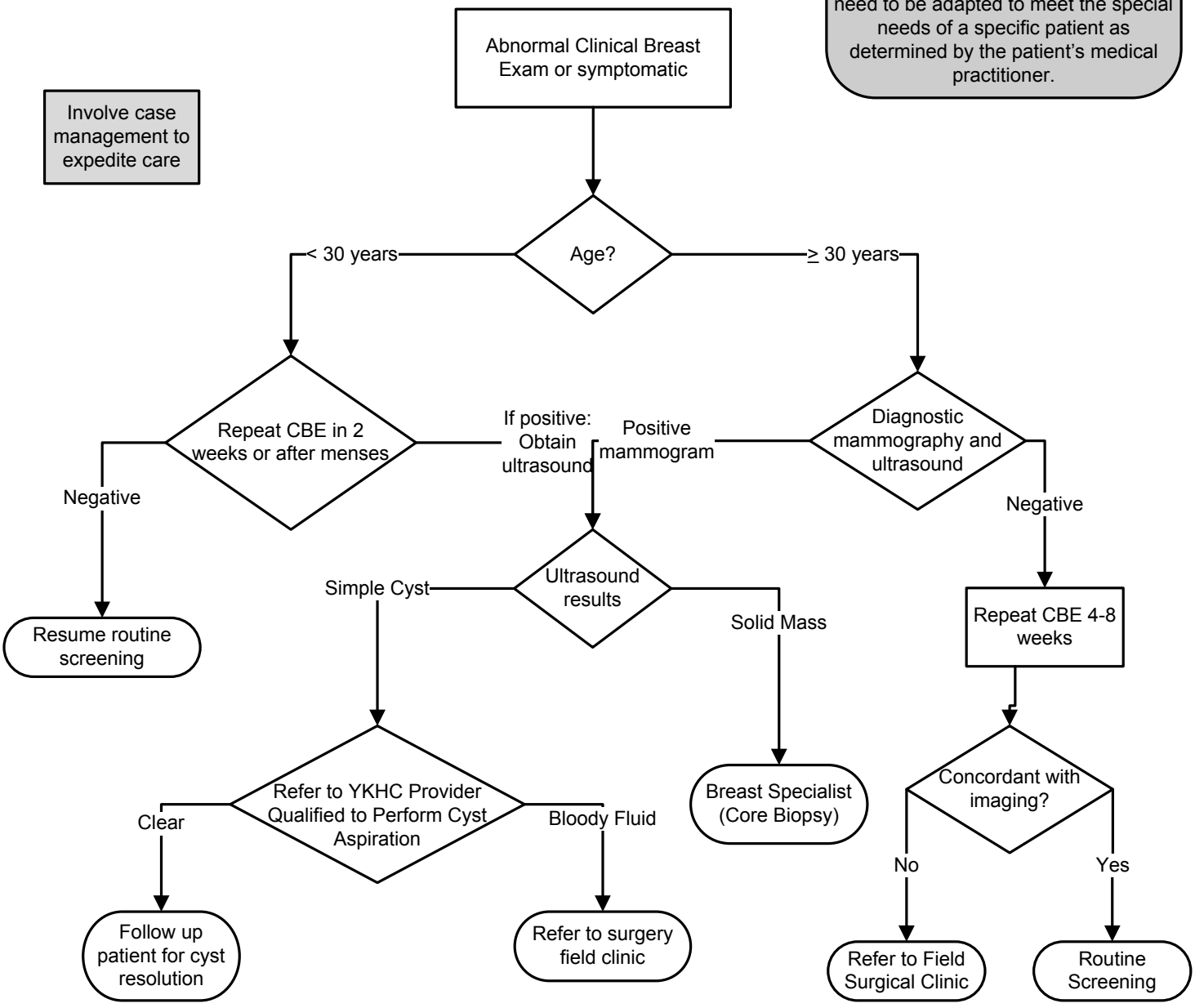
Yukon-Kuskokwim HEALTH CORPORATION

Breast Cancer Screening

MSEC approved 06/22/11

Clinical Breast Exam Screening Recommendations:
1. Breast self-examination: at provider's discretion
2. Clinical breast examination: at provider's discretion
3. Mammography: start age 45
screen every 2 years
end screening at age 70, based on health status

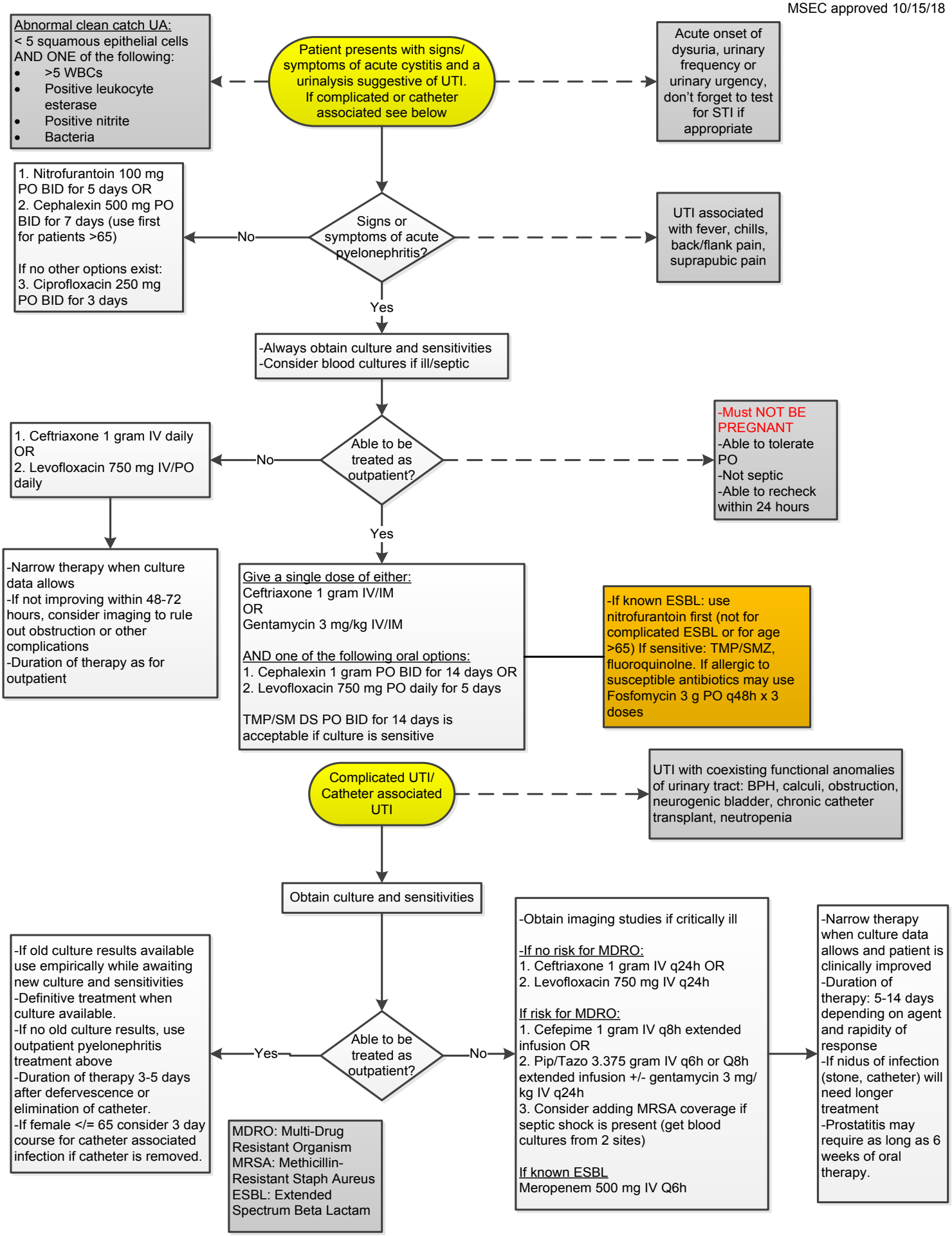
This guideline is designed for the general use of most patients, but may need to be adapted to meet the special needs of a specific patient as determined by the patient's medical practitioner.



Yukon-Kuskokwim HEALTH CORPORATION

UTI – Adult

MSEC approved 10/15/18



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Latent Tuberculosis Bacterial Infection (LTBI)

MSEC Approved 4/19/12

High Risk for TB
1. Exposure to a Active TB pt
2. HIV+
3. Immunosupressed
4. Prednisone dependent on 15 mg a day or more.
5. Suspicious CXR
6. Under 6 months of age

+ PPD

At least 10 mm of induration **OR** > 5 mm induration (not redness) for patients who are High Risk for TB – See box on Left.

Needs to be read at 48-72 hours after placement for a true negative.
If positive – the induration will remain up to 7 days and it can be read until then.

Schedule 40 min Clinic appt.
Notify Public Health Clinic – fax them PEF or PCC

Can have patient do a 3 Sputums for AFB Smear /Culture in village or Bethel while waiting for appt date.

Public Health Nursing Contact Information

(PHN) – Public Health Nurses
Phone – 543-2110
Fax – 543-0435

ALL DOT- (Directly Observed Therapy) WILL BE SET UP BY PHNs

Examine patient and perform symptom review: Cough > 3 weeks, sputum, weight loss, sweats, fever, cough not resolving on antibiotics, fatigue

Get CXR/ LFTs, HIV on all patients. Consider STI screening - RPR/GC/CT.
Order 3 AFB Smear/AFB Cx to be done – 1st in the office now, other two at home 1st AM samples if not already done.

If concerned about False + PPD, consider getting QFT-gold.

CXR normal? Symptom review normal?

No → Consider Active TB. **See Tuberculosis Guideline**

Yes → Adult or child?

Older child or Adult → 1. Hold on LTBI meds while obtaining sputum samples
2.Ensure follow-up if medication deferred.
3. Have discussion with PHNs.
4. Send PCCs and med order to PHN

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

If culture is positve – stop LTBI therapy and start 4 drug Active TB therapy.. Consult YKHC TB Officer.
See Tuberculosis guideline.

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

Treat as LTBI
1. See regimens and select with PHN discussion.
2. Use pills and a crusher- mixing it in pudding or applesauce.
3. See Q 3 months for follow up. Can check LFTs but not needed.
4. Send PCC/Med Rec to PHNs.

LTBI Treatment Meds
1. Isoniazid 300 mg Qday for 9 months – Adult,
Peds 20 mg/kg max 300mg
2. Isoniazid 900 mg 2x a week for 9 months –
Peds – 30 mg/kg max 900mg. –**ONLY DOT**
3. For 12 and up – Isoniazid wt based/Rifapentine wt. based Q week x 12 weeks. Not for pregnant, nursing, HIV+ on retrovirals, or LTBI with presumed INH or Rifampin resistance. **ONLY DOT**
4. If INH resistant – Rifampin QDay 10 mg/kg- 4 months adult. Peds- 10-20 mg/kg Qday- 6 months.

Adult or child?

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

Infant or child unable to do sputum (<6years) → Admit child for 3 days of AM Gastric Aspirates – see protocol. Then start 4 drugs TB therapy.

Yukon-Kuskokwim
HEALTH CORPORATION

CLINICAL GUIDELINES
2019
rev. 10-17-19

Outpatient Protocols

Yukon-Kuskokwim HEALTH CORPORATION

Use of Consultants at YKHC

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

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

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

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

Provider needs consultation about patient at YKHC

Consult provider is located in Bethel?

No

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

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

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

Yes

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

No

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

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

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

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

Yes

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

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

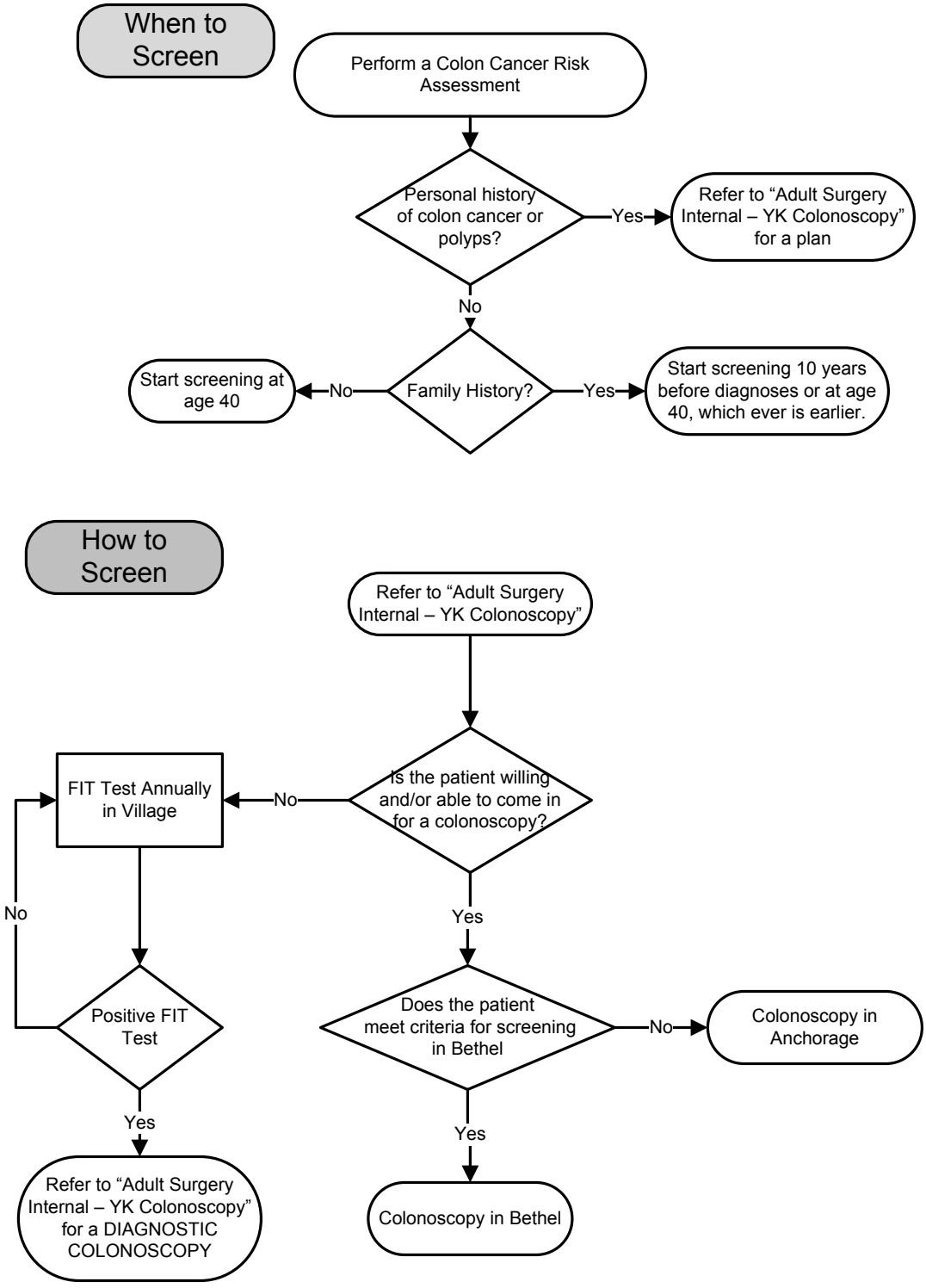
Once patient is stabilized, discussion will occur between the primary provider and the consultant regarding documentation of the patient's medical care in the record and ongoing management.

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 asses this patient in person…"
"I would like to transfer this patient via medevac to ANMC…"

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

Colon Cancer Screening

MSEC Approved 12/14/16



Yukon-Kuskokwim HEALTH CORPORATION

Contraception – Quick Start

3/25/13

This guideline is designed to establish a standard for starting contraception in all cases.

Was the first day of the LMP <5 days ago?

YES

Initiate Contraception today

- Urge condom use to protect against HIV and other STIs
- Provide at least 3-month supply of pills, rings, or patches.
- Patient should return for pregnancy test:
  - In 2 weeks after starting Depo Provera
  - If no period at the end of the first pill, patch or ring cycle.

No

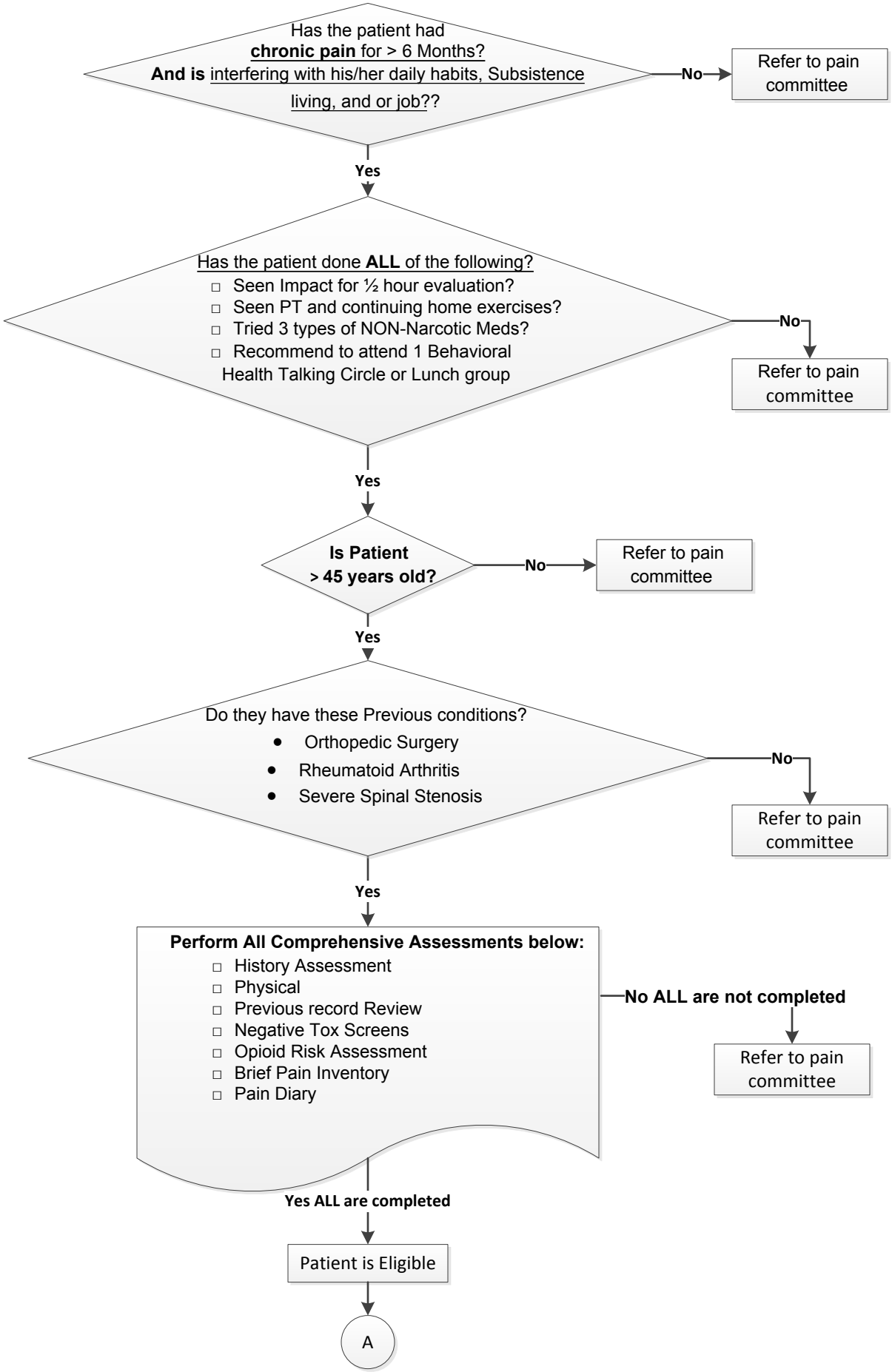
Do a urine pregnancy test.
If result is negative:

- Initiate contraception today.
- Advise condom use for one week, as back-up.
- Provide Emergency Contraception if patient has had unprotected sex in the past 5 days.
- Repeat pregnancy test in 2 weeks

Yukon-Kuskokwim HEALTH CORPORATION

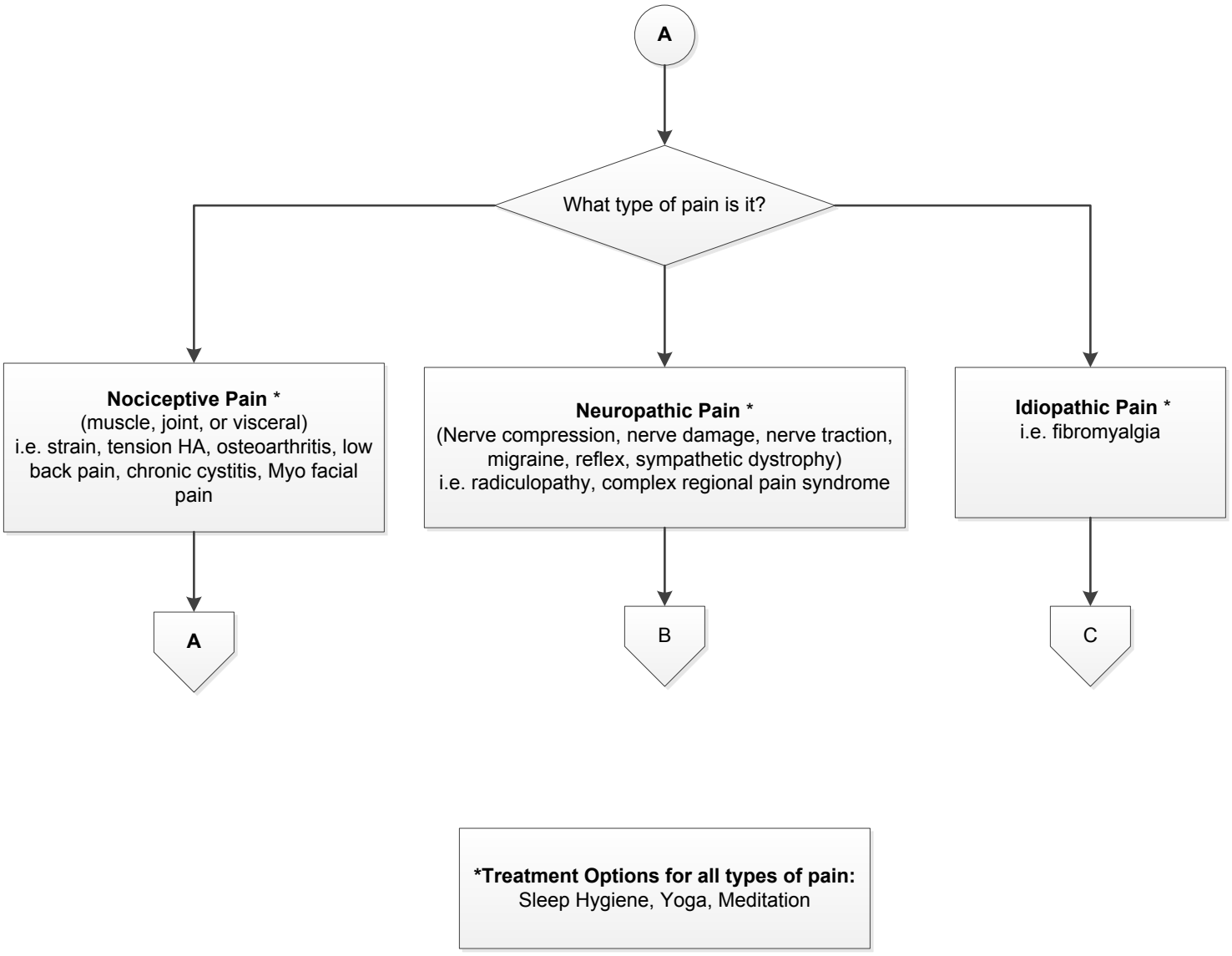
Chronic Pain – Narcotic Treatment Eligibility

MSEC Approved 1/ 21/15



Chronic Pain – Non Narcotics Treatment p.1

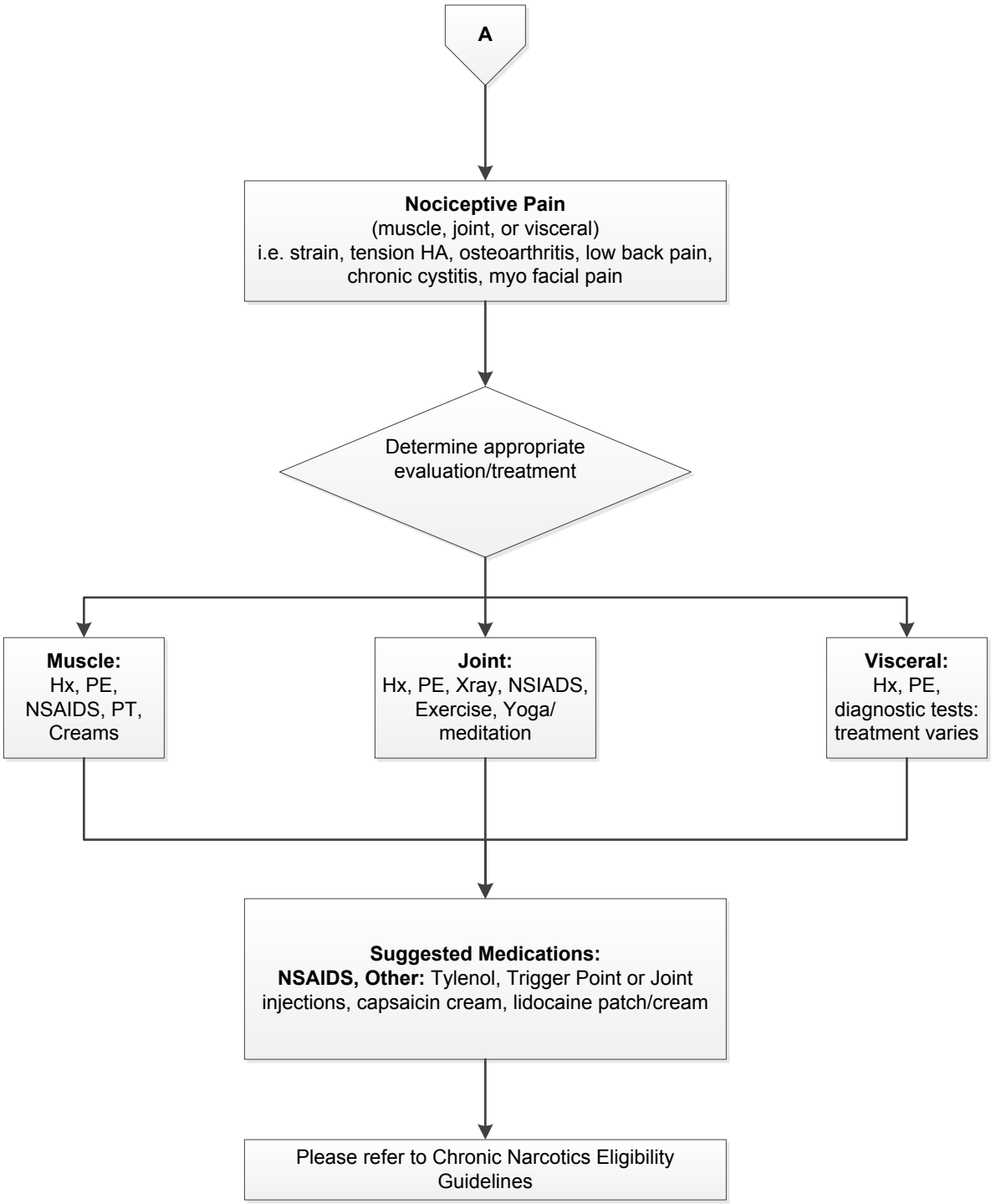
MSEC Approved 1/ 21/15



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

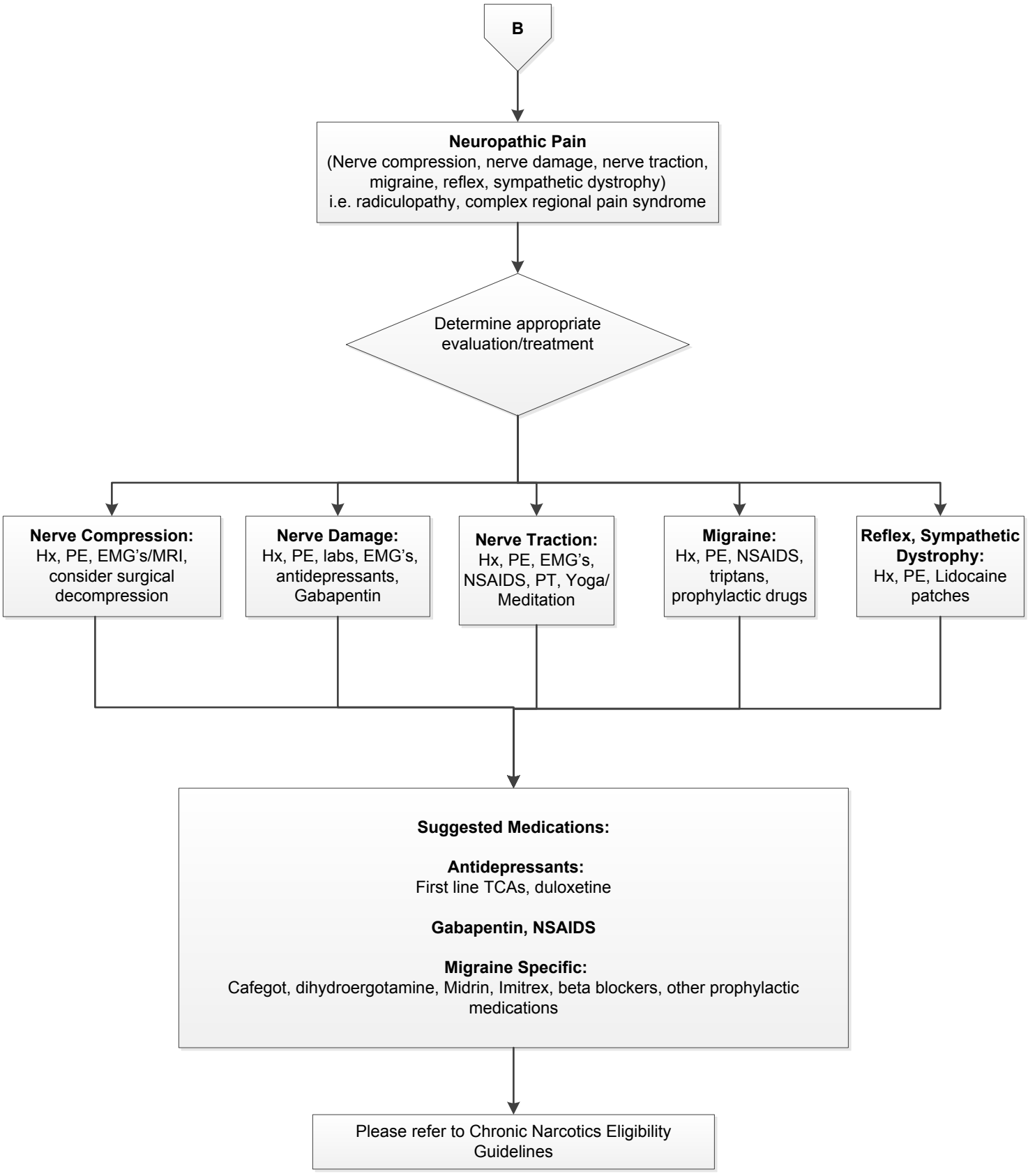
Chronic Pain – Non Narcotics Treatment p.2

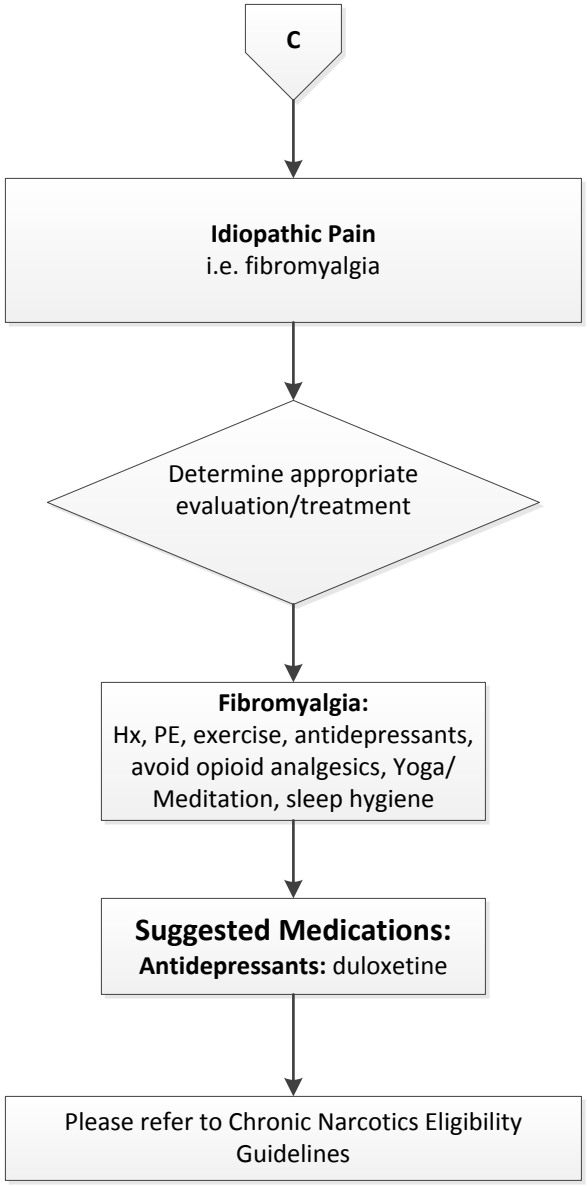
MSEC Approved 1/ 21/15



Chronic Pain – Non Narcotics Treatment p.3

MSEC Approved 1/ 21/15




C
Idiopathic Pain
i.e. fibromyalgia
Determine appropriate evaluation/treatment
Fibromyalgia:
Hx, PE, exercise, antidepressants, avoid opioid analgesics, Yoga/ Meditation, sleep hygiene
Suggested Medications:
Antidepressants: duloxetine
Please refer to Chronic Narcotics Eligibility Guidelines

Yukon-Kuskokwim HEALTH CORPORATION

Chronic Pain – Reassessment & Follow-Up

MSEC Approved 1/ 21/15

Follow up and reevaluation: Assess for:
1. functionality
2. adverse effects
3. achievement of goals
4. analgesia
5. behaviors of concern: see flow sheet

Were goal's achieved?

Yes → Reassess q 6 months, review agreement, revisit goals, taper as indicated

No 1st time → Reevaluate diagnosis, goals, tx

No 2nd time → Reevaluate diagnosis, goals, tx

No 3rd time →

Assess goal failure:
1. Opioid non-responsive pain
2. Incorrect diagnosis
3. Psychiatric illness
4. Unrealistic goal setting
5. secondary gain (e.g. litigation)
6. Diversion and/ or abuse
7. Consider Behavioral Health Consult

For terminal cancer patients (with life expectancy less than or equal to 6 months) who have previously demonstrated good compliance with Chronic Medication agreement, documentation of titration for pain control as appropriate is acceptable without requiring new agreement. Continue to monitor for achievement of goals/ behaviors of concern

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

Behaviors of concern?

Yes →

Patient showing behaviors of concern?
1. ETOH abuse
2. poly drug abuse
3. Cocaine abuse (+tox screen)
4. Forgery
5. Stealing. Buying from the street
6. Negative tox screen for prescribed opioid/benzodiazepine
7. Hospitalization related to substance abuse
8. Drug overdose
9. Injection oral medications
10. Visit to ED with intoxication
11. Specific opioid/benzodiazepine (by name) request
12. Multiple unsanctioned opioid/benzodiazepine dose escalations
13. Recurring loss/stolen opioid/benzodiazepine prescriptions

- Refer to committee for review via pain committee order
- Consider stopping outpatient opiates while under review
- Monitor
- Compliance Tools (e.g. pill audits/UDS)
- Review at pain review
- Evaluate strikes
- 3 strikes cancel contract
- Reassess with patient's request letter
- If significant efforts of treatment consider restart agreement

No 1st time → Consider Toxicology screen → Change treatment/ agreement

No 2nd time → Consider Toxicology screen → Change treatment/ agreement

No 3rd time → Consider Toxicology screen → Consider referral to pain specialist, behavioral health, addiction therapy

Refer to Pain Committee via order

Coming Soon

Yukon-Kuskokwim HEALTH CORPORATION

Pre-Anesthesia Testing, p.1

2015

AGE	Hb/Hct	Coags	Lytes	Bun/Cr	Gluc	LFT's	EKG	CXR
0 - 59	No routine testing needed in this age group.							
> 60							X	
75 - 99	X		X	X	X		X	

DISEASE	Hb/Hct	Coags	Lytes	Bun/Cr	Gluc	LFT's	EKG	CXR	T&S
Hypertension			X				X		
Card - Mod	X		X	X			X		
Card - Severe	X		X	X			X	X	
Pulm - Mild									
Pulm - Severe	X						X	X	
Smoke > 20yr	X								
Malignancy	X								
Lymphoma								X	
Heptic	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	Gluc	LFT's	EKG	CXR
Diuretic			X	X				
BP Meds			X	X			X	
Cardiac Meds			X	X			X	
Steroids			X		X			
Anticoagulants	X	X						

Other

Urine HCG: Needed within 48 hours of surgery in women of childbearing age (13–50).

Drug Levels: Level drawn on all patients on Digoxin and Dilantin.

CXR: Recent change in sputum quality or color, pneumonia in past 3 months, chronic home O2 use, planned intrathoracic surgery, or if exam reveals rales, rhonchi, or wheezes

Surgical Risk Screening Protocol Orders

1. Patients who are not to be scheduled at YKHC:

   a. Patients with BMI > 45 (Up to BMI of 45 is acceptable if no significant, unstable CV, respiratory, or endocrine Pathology is present)

      • English BMI Formula = (Weight in pounds / (Height in inches) x (Height in inches)) x 703

      • Metric BMI Formula = (Weight in Kilograms / (Height in Meters) x (Height in Meters))

   b. Obstructive Sleep Apnea Perioperative Risk Score of 5 or 6.

2. Preventive antibiotic therapy will be administered within one hour prior to skin incision per protocol pre-operatively, based on procedure type and patients allergies, unless otherwise ordered by physician.

3. DVT/VTE prevention methods will be implemented using SCIP Mechanical Prophylaxis Protocol unless contraindicated or otherwise documented in orders by physician.

Diabetes Management

1. Discontinue all oral agents the evening prior to surgery, except Metformin which can be taken the evening prior to surgery but not to day of surgery.

2. Discontinue insulin after midnight for AM surgeries.

3. Take 1/2 usual dose of insulin the AM of surgery if surgery is scheduled to start at noon or later.

4. Take 100% of Lantus insulin up to time of surgery.

5. Consume apple or cranberry juice up till 2 hours prior to arrival to surgery if insulin was used.

6. For insulin pumps, set to basal rate and continue throughout pre-operative period.

7. Arrival to Holding Area, Glucose will be obtained. Results treated by anesthesia.

continued on next page.

NPO Guidelines:

The pre-operative nurse will instruct all patients to be NPO after midnight and to follow the surgeon's instructions if they differ from these.

The surgeon who gives different instructions will be responsible for thorough patient instruction of anything other that these guidelines.

1. All patients are equal with regard to NPO guidelines (i.e. gastric emptying time, obesity)

2. Clear liquids may be consumed up to 2 hours prior to scheduled arrival time.

3. Clear liquids are water, black coffee, and beverages not cloudy and can be seen through. Sugar and artificial sweeteners are acceptable. All broths are NOT acceptable.

4. Patient may brush their teeth, but should not swallow tooth paste.

5. Gum and candy of any type are not allowed.

6. All patients will be allowed to eat a full, regular diet (solid) up to 8 hours prior to surgery. Patient going to the OR at 0730 who were NPO after midnight are considered to meet this standard.

7. Infants up to 24 months of age will be allowed breast milk up to 4 hours prior to the arrival to the hospital. Infant formula will be considered a solid.

Table 4. 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 1 or 2 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.		