Perinatal Pre-Learning Addendum

Contents

- EMTALA
- Perinatal Triage and Medical Screening Exam
- Perinatal Universal: Assessment, Care Planning, and Discharge
- Universal: Maternal, Intrapartum
- Postpartum: Vaginal Delivery and Cesarean Section
- Maternal Early Warning Triggers (MEWT) Practice Guidelines
- Hypertensive Disorders of Pregnancy
- Maternal Sepsis
- Obstetric Hemorrhage
- Uterine Tamponade Balloon Catheter and Intrauterine Vacuum System (Jada) for Postpartum Hemorrhage
- Perinatal Universal Protocol
- PROVOR: Waste Anesthesia Gases and Hazards
- Formaldehyde Hazard Awareness

Newborn

- Care of the Newborn – Term
- Newborn Fall Prevention Practice Guidelines -Perinatal- Pediatrics- & NICU
- Newborn Feeding and donor milk
- Policy: Newborn Glucose Management
- Critical Congenital Heart Disease (CCHD) Screening for the Newborn
- Newborn Blood Screening
- Care of the Newborn- Late Preterm and Small for gestational age (SGA) newborn
- Transcutaneous Bilirubin Measurement
- Care of the Newborn Under Phototherapy
- Perinatal Loss

EMTALA:

For additional information refer to full Policy: *Emergency Medical Treatment and Labor Act* in PolicyStat

Covered patients include:

- Any individual who comes to the Emergency Department (ED) or onto the hospital property (or campus), or within 250 yards of the facility seeking or needing examination, or treatment for a medical condition
- Any individual with an emergency medical condition or in active labor
- Any individual with a psychiatric emergency medical condition:
- Acute symptoms of sufficient severity that render the patient an immediate danger to self or others, or unable to provide for or utilize food, shelter or clothing due to the disorder
- Includes psychiatric disturbances, symptoms of substance abuse and intoxication that absent immediate medical attention may result in serious jeopardy to health, impairment of bodily functions or dysfunction of any body organ or part
- When medical help is requested by, or on behalf of, an individual by a prudent layperson or observer
- A "live born" infant at any stage of development
- Arrival on hospital property by a non-hospital-owned ambulance for examination or treatment of a medical condition at a designated emergency department
- Any individual in a hospital-owned and operated ambulance for purposes of examination or treatment of an emergency medical condition, even if the ambulance is not on hospital property

Non-covered patients include:

- In-patients
- Patients undergoing scheduled out-patient care

The Medical Screening Examination (MSE) is used to determine if an emergency medical condition does or does not exist for:

- Every patient arriving at the Emergency Department requesting to be seen
- Any patient coming to the hospital in labor and/or a newborn infant
- Any individual on hospital property requesting medical assistance
- Any individual needing medical assistance as identified by a prudent layperson

Perinatal Screening/Medical Screening Exam (MSE)

For additional information refer to full Policy: *Perinatal Triage and Medical Screening Exam* in PolicyStat

ALL Patients presenting to triage MUST BE SEEN BY LISCENSED PROVIDER or MSE trained nurse at Providence prior to Discharge!

- All patients who present to the Perinatal Department requesting medical services will receive a Medical Screening Examination (MSE) to determine if an Emergency Medical Condition (EMC) exists. The MSE includes appropriate diagnostic studies and interventions necessary to determine if an EMC. For example, initial questions should include: "What is the purpose of your visit today?" "What is your due date?" "Is the baby moving?" Depending on responses, FHR monitoring, bloodwork and ultrasound may be ordered as clinically indicated.

- EMTALA requires a MSE and stabilizing treatment for women in labor, including their unborn child(ren) and newly born infants as defined by the Born-Alive Infants Protection Act. The obligations apply when presenting for care to a dedicated emergency department, including labor and delivery, or other locations on the hospital property. It includes if there is a request on an infant's behalf or a prudent layperson would conclude that an infant needs examination or treatment for a potential EMC.

- Perinatal patients will be triaged per the following guidelines:
  - <18 and 0/7 weeks estimated gestation: Emergency Department (ED)
  - The perinatal department may consult for fetal heart tones in the ED
  - ≥ 18 and 0/7 weeks estimated gestation: perinatal department

- CONSIDERATIONS
  - Care should be coordinated between the ED, perinatal department, and any additional services.
  - Verbal consent for treatment may be obtained in emergent situations. Obtain written consent in a timely manner.
  - Facilitate communication to patient's primary care provider, if other than obstetrical care provider, for non-obstetrical diagnosis and treatment.
  - In order to ensure the timely provision of a MSE, time frames will be based upon triage designation of status and associated urgency.
  - EMTALA obligations are fulfilled when:
    i. An appropriate MSE identifies no EMC.
    ii. The patient refuses to consent to treatment offered or refuses to consent to transfer offered.
    iii. The EMC is stabilized.
    iv. A patient with an EMC is stabilized, admitted, and develops a new EMC.

Perinatal Screening/Medical Screening Exam (MSE) cont.

Maternal Minimum Required Documentation	
Point of Care	**Required Documentation**

Perinatal Triage and Medical Screening Examination	***UPON ARRIVAL**: Complete Arrival Navigator Tab*
	• Date/time of arrival and notification of provider
	• Language assessment
	• Chief complaint
	• Dating
	• OB Providers
	• Allergies: includes latex sensitivity
	• History
	• Social History
	• Review and validation of prior-to-admission medications (PTA)
	• Ensure discharge pharmacy listed in EPIC
	• Epidemic Risk
	• Isolation Screen
	• Vital Signs: T, P, R, BP including height and weight
	• Pain assessment with:
	  ○ Pain rating, descriptors and assessment tool
	  ○ Acceptable comfort level and effects of pain on goal
	  ○ Chronic pain assessment
	• Fetal Movement
	• FHTs/uterine activity
	• SVE when appropriate to include:
	  ○ Dilatation/effacement/station/presenting part/status of membranes/character/amount of bloody show
	• NPO status
	• Urine POCT
	***Complete necessary screenings under Admission Tab**:*
	• Psychosocial
	• Falls
	• Immunizations: Influenza and Pneumonia (seasonal), Tdap, Tetanus, MMR
	Complete focus assessment and systems assessment under flowsheets OB PCS

Perinatal Universal: Assessment, Care Planning, and Discharge

For additional information refer to full Policy: *Perinatal Universal: Assessment, Care Planning, and Discharge* in PolicyStat including the chart for documentation frequency.

The RN is responsible for performing a focused and comprehensive assessment. The focused assessment and applicable screening is determined by the reason for admission. The focused assessment is to be completed within 4 hours.

- Within four hours of admission the care plan is initiated, and a completed care plan is established within eight hours.
- Within 24 hours, a comprehensive assessment and risk screening will be completed to establish nursing diagnostic statements and develop, implement and evaluate a plan of care.

Note: "Focused Assessment" means an appraisal of a client's status and situation at hand, through observation and collection of objective and subjective data. Focused assessment involves identification of normal and abnormal findings, anticipation and recognition of changes or potential changes in client's health status and may contribute to a comprehensive assessment performed by the Registered Nurse.

Note: A "Comprehensive Assessment" and risk screening within 24 hours of admission includes; but is not limited to, the synthesis of biological, psychological, social, sexual, economic, cultural and spiritual aspects of the patient's condition or needs for the purpose of establishing nursing diagnostic statements, and developing, implementing and evaluating a plan of care.

Universal Maternal / Intrapartum

For additional information refer to full Policy: Universal: Maternal, Intrapartum in PolicyStat

- Assess patient on admission per Perinatal Universal: Assessment, Care Planning, and Discharge policy and per orders.
- Obtain 20-minute baseline electronic fetal monitor strip, then monitor and assess per Fetal Heart Rate Nomenclature and Management policy and orders. Evaluation of the FHR and uterine contractions should occur at recommended intervals in the tables below. Document uterine contraction frequency in minute intervals, such as "3-5" to indicate every 3-5 minutes.
    - Patients with high-risk conditions should be monitored continuously.

- Fetal heart rate intermittent auscultation and abdominal palpation may be appropriate after baseline monitoring for patients without maternal-fetal risk factors. Obtain order for intermittent auscultation if appropriate. Refer to Intermittent Auscultation policy. Continuous electronic fetal monitoring (EFM) should be utilized if unable to determine baseline or decelerations noted during intermittent auscultation. After utilizing EFM, returning to intermittent auscultation procedure should be done after consultation with provider. Patients with high-risk conditions should be monitored continuously.

OB Response to EFM 5-Tier Color

OB TEAM RESPONSE TO EFM 5-TIER COLOR

Providence St.Joseph Health

	GREEN - Reassess & document every 30 minutes			
	BLUE	**YELLOW**	**ORANGE**	**RED**
Immediately	• Begin FHR interventions based on tracing, if applicable	• FHR interventions based on tracing	• FHR interventions based on tracing • SBAR to LIP • LIP to bedside • Charge RN notified • OB Surgeon if LIP without C/S privileges	• STAT call to LIP & OB Surgeon, if LIP without C/S privileges • Alert Charge RN • Anesthesia • Neo. Resuscitation Team • Move to OR if vaginal delivery is not immediate
30 minutes	• FHR interventions based on tracing • IF TOLAC, SBAR to LIP	• SBAR to LIP • LIP to review FHR tracing	**30 minutes MAXIMUM** • Resolution or improving • ASAP delivery if no improvement	
1 hour	• SBAR to LIP if non-TOLAC • IF TOLAC, LIP to bedside	• SBAR to LIP • LIP to review FHR tracing • Document plan		
1.5 hours	• Interventions if not already done	• SBAR to LIP • LIP to bedside to review FHR tracing		
2 hours	• Verify appropriate interventions been done • LIP to bedside for both TOLAC & non-TOLAC patients	• Bedside Huddle: LIP, Primary RN, Charge RN, OB Surgeon if LIP without C/S privileges • Document plan		
PURPLE	**Purple color in VIGILANCE indicates uterine tachysystole only, without Category II EFM tracing . Respond per protocol.**			

Assessment and Documentation of Fetal Status and Uterine Contractions Using Electronic Fetal Monitoring

		Latent (<4 cm)	Latent phase (4-5 cm)	Active phase (≥6 cm)	Second Stage
Low risk	*Assessment*	Every 1 hour	Every 30 min		Every 15 min
	Summary Documentation	Every 1 hour		Every 30 min	
Cervical Ripening	*Assessment*	Every 30 min			
	Summary Documentation	Every 1 hour			
With risk factors	*Assessment*	Every 30 mins		Every 15 min	Every 5 min
	Summary Documentation	Every 1 hour	Every 30 min		
Oxytocin administration	*Assessment*	Every 15 min			Every 5 min
	Summary Documentation	Every 30 min			
Color Assignment	*Documentation*	Every 1 hour	Every 30 min		

Assessment and Documentation of Fetal Status and Uterine Contractions Using EFM

Assessment and Documentation of Fetal Status and Uterine Contractions Using Electronic Fetal Monitoring

		Latent (<4 cm)	Latent phase (4-5 cm)	Active phase (≥6 cm)	Second Stage
Low risk	*Assessment*	Every 1 hour	Every 30 min		Every 15 min
	Summary Documentation	Every 1 hour		Every 30 min	
Cervical Ripening	*Assessment*	Every 30 min			
	Summary Documentation	Every 1 hour			
With risk factors	*Assessment*	Every 30 mins		Every 15 min	Every 5 min
	Summary Documentation	Every 1 hour	Every 30 min		
Oxytocin administration	*Assessment*	Every 15 min			Every 5 min
	Summary Documentation	Every 30 min			
Color Assignment	*Documentation*	Every 1 hour	Every 30 min		

Low-Risk Patients:

Patients without maternal-fetal risk factors.

High-Risk Patients:

Any labor patient assessed as unstable or needing increased supportive care, i.e.:

- Induction/augmentation of labor with oxytocin
- Gestational hypertension
- Preeclampsia/eclampsia
- Diabetes
- Preterm
- Multiple Gestation
- Maternal-fetal compromise
- Regional analgesia
- Other identified complications/indications

Postpartum Care

For additional information refer to full policies*: Postpartum: Vaginal Delivery* in PolicyStat and *Postpartum: Cesarean Section*

Vaginal Delivery Postpartum Care

Immediate Recovery Phase

1. Immediate recovery phase occurs for a minimum of 2 hours or longer based on patient condition.
2. Assess vital signs per orders.
3. Assess fundal tone, bleeding, perineal condition, and pain every 15 minutes x 2 hours or until stable.
4. Activate appropriate care plan based on patient's current diagnosis.
5. Follow bladder emptying guidelines (hyperlink in Epic protocols).
6. Perform fall risk assessment according to Perinatal Fall Risk Assessment policy prior to ambulation.
7. Complete OB hemorrhage risk assessment on admission to postpartum (postpartum phase of care).

Ongoing Postpartum Care

1. Assess vital signs per orders.
2. Assess uterine tone, fundal placement and lochia every 4 hours x 12 hours and as needed per patient risk factors.
3. Perform individualized focused assessment (breasts, uterus, perineum, bladder, bowel, lochia, and extremities) upon assumption of care, and with any significant change. Consider expanding individualized focused assessment to include specific system assessments based on patient's risk factors.
4. May discontinue saline lock when VS stable, voiding regularly, and based on clinical risk factors (i.e. risk of hemorrhage, hypertension, etc).
5. I&O every 8 hours. Discontinue I&O when patient has voided twice and when IV fluids have stopped. Measure and document two voids post delivery.
6. Instruct patient regarding perineal care:
    a. Use of water bottle for cleansing perineum with each void
    b. Application of cold pack for 24 to 48 hours after delivery as needed
    c. Moist heat (i.e. sitz bath) after 24 hours as needed
    d. Use of analgesic medications as ordered
7. With patient/family/significant other:
    a. Develop and/or revise individualized plan of care, and develop mutually acceptable inpatient goals.
    b. Involve patient in bedside report as appropriate.
    c. Provide patient and significant other with ongoing education per phase of care as part of patients' individualized plan of care, including planning for ongoing care at home.
    d. Reinforce teaching related to infant security and safety.

Cesarean Delivery Postpartum Care

The following assessments and interventions are applicable for all cesarean delivery postpartum patients, both low risk and high risk. High risk patients may include, but are not limited to patients with preeclampsia/eclampsia, cardiac disease, pulmonary disease, postpartum hemorrhage, diabetes, and sepsis. If patient meets provider notification criteria per orders, increase assessment and/or vital sign frequencies based on patient condition.

1. Assess vital signs per orders.
2. Assess uterine tone, fundal placement and lochia every 4 hours x 24 hours and as needed per patient risk factors.

Postpartum Care (cont)

3. Perform and document an individualized focused assessment (breasts, uterus, perineum, bladder, bowel, lochia, extremities, abdominal dressing, and incision) upon assumption of care of patient and as needed per patient condition. Consider expanding individualized focused assessment to include specific system assessments based on patient's risk factors (e.g. assess respiratory and cardiac status on patient who received large fluid volumes).
4. Activate appropriate care plan based on patient's current diagnosis.
5. Assist with cough, deep breathing, and repositioning.
6. May discontinue saline lock when VS stable, voiding regularly, and based on clinical risk factors (ie risk of hemorrhage, hypertension, etc).
7. Total I&O every 8 hours until 24 hours after IV and urinary catheter removed, unless otherwise specified in LIP orders. Consider discontinuing I&O after 2 voids for those patients with no risk factors.
8. Perform fall risk assessment according to Perinatal Fall Risk Assessment policy prior to ambulation. Encourage early ambulation.
9. Follow bladder emptying guidelines (hyperlink in Epic protocols).
10. With patient/family/significant other:
    a. Develop and/or revise individualized plan of care, and develop mutually acceptable inpatient goals.
    b. Involve patient in bedside report as appropriate.
    c. Provide patient and significant other with ongoing education per phase of care as part of patients' individualized plan of care, including planning for ongoing care at home.
    d. Reinforce teaching related to infant security and safety.

Maternal Early Warning Triggers

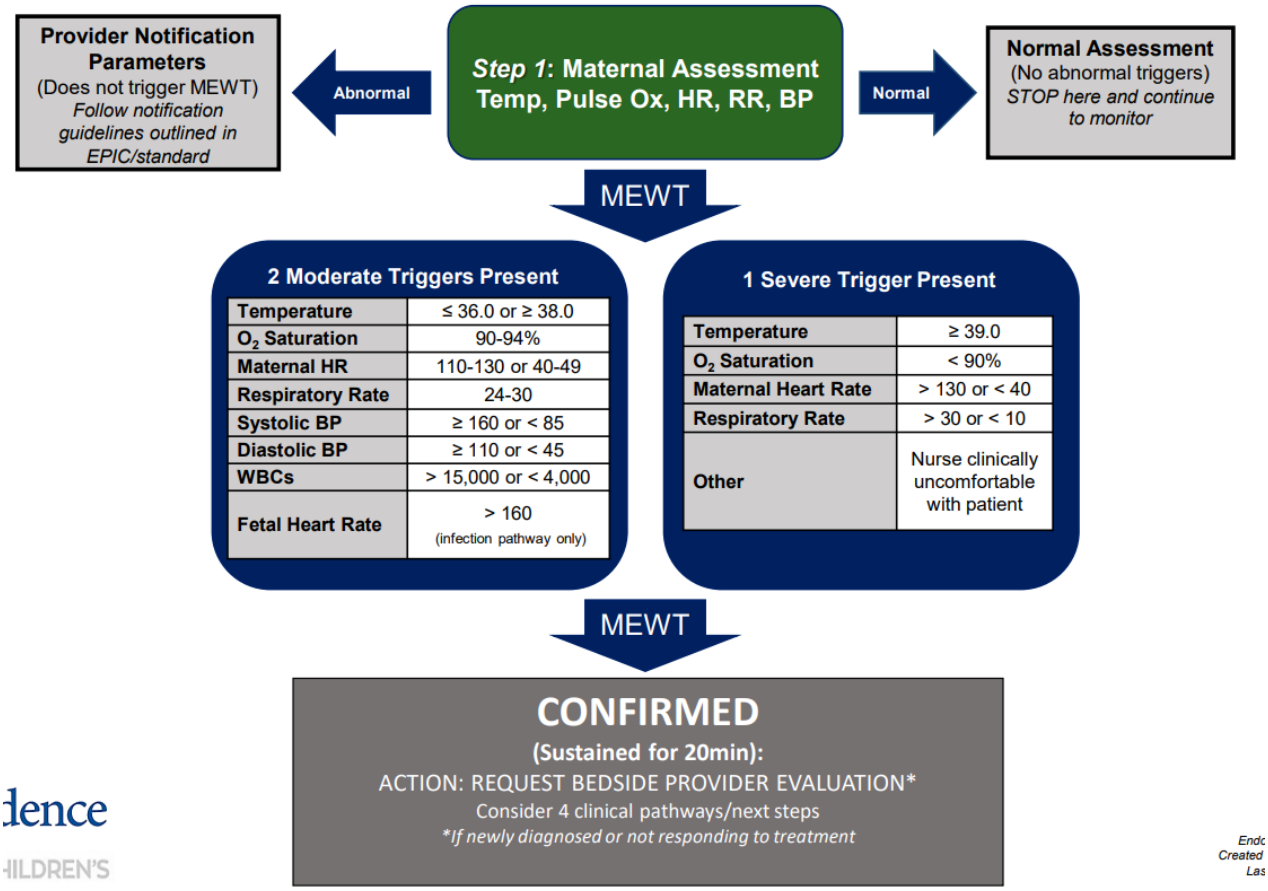
For additional information refer to full policy*: Maternal Early Warning Triggers (MEWT) Practice Guidelines* in PolicyStat

Severe Maternal Triggers:

1. Temperature ≥39.0
2. O_2 Saturation <90%
3. Maternal Heart Rate >130 or <40
4. Respiratory Rate >30 or <10
5. Mean Arterial Pressure <55
6. Nurse uncomfortable with patient

Moderate Maternal Triggers

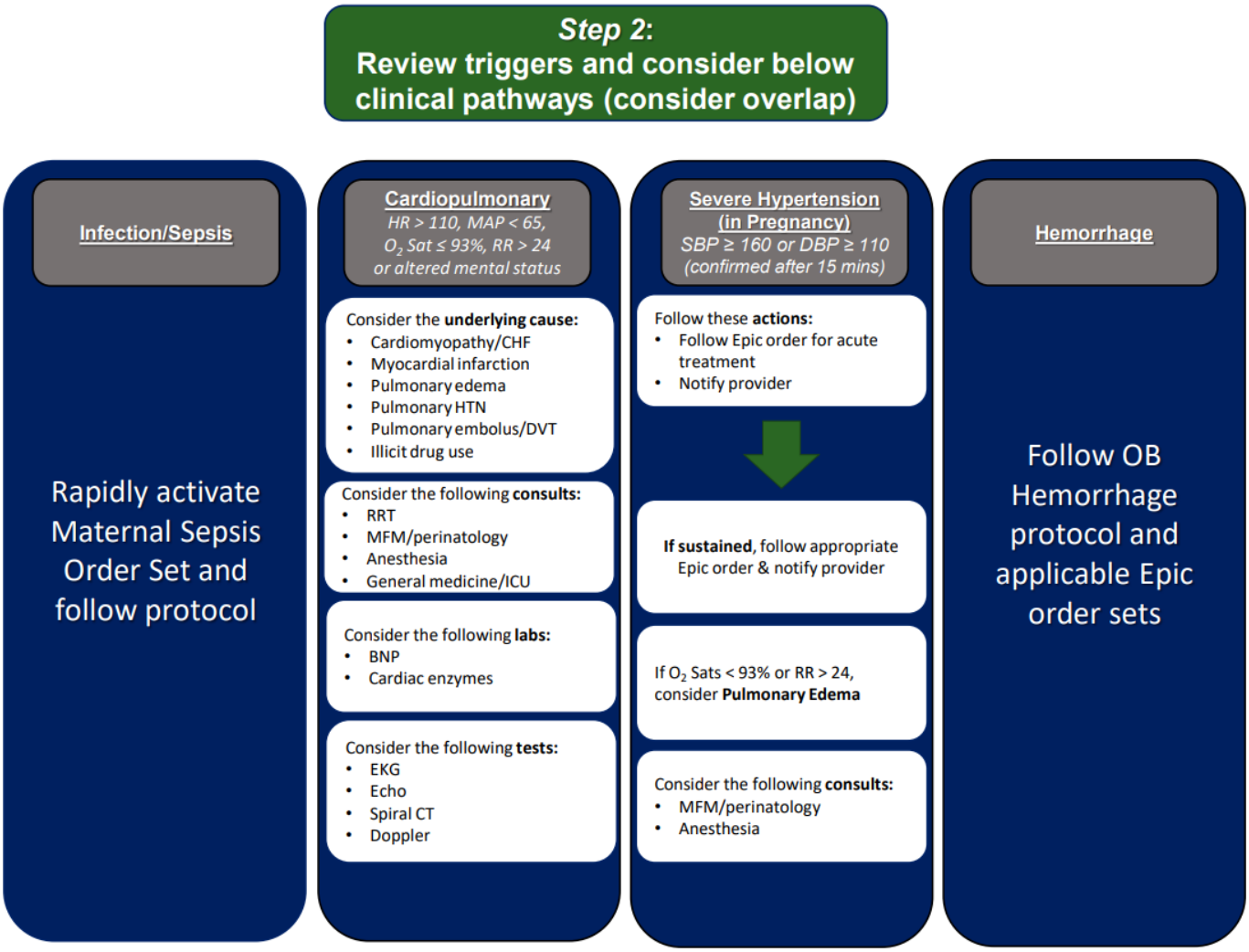
1. Temperature ≤36.0 or ≥38.0
2. O_2 Saturation 90-94%
3. Maternal Heart Rate 110-130 or 40-49
4. Systolic BP ≥160 or <85
5. Diastolic BP ≥110 or <45
6. White Blood Cells >15,000 or <4,000
7. Fetal Heart Rate >160 (infection pathway only)



dence
HILDREN'S

Endo
Created
Las

Maternal Early Warning Triggers (cont)



Hypertension in the Perinatal Patient

For additional information refer to full policy*: Hypertensive Disorders of Pregnancy* in PolicyStat

Hypertension in the perinatal patient:

- Hypertension is defined as an elevation in either the systolic blood pressure to 140 mmHg or higher or diastolic blood pressure to 90 mmHg or higher on at least 2 occasions, 4 hours apart.
- **Acute onset of severe hypertension in pregnancy is defined as systolic >/= 160 mmHg and/or diastolic >/=110 mmHg at least 15 minutes apart and is considered a hypertensive emergency**.

Follow order set which includes medication administration and monitoring for any episode of severe hypertension

E. Assessments for acute BP treatment with IV antihypertensives

Assessments for acute BP treatment with IV antihypertensives	
Antepartum, Intrapartum, & Postpartum	
BP, Pulse, Respiration	Q 10-20 minutes based on medication administered until stable. Then BP: Q 10 min for 1 hr, Q 15 min x 4, Q 30 min x 2, Q 1 hr x 4
SaO2	Continuous monitoring
Level of Consciousness	Every 5-15 min for a minimum of 1 hr
Fetal Assessment and Uterine Activity	Continuous until delivery

Nursing assessment frequencies in the hypertensive patient

A. Gestational Hypertension

Gestational Hypertension			
	Antepartum	**Intrapartum**	**Postpartum**
Blood pressure, pulse, respirations, SaO2	While awake: Q 4 hrs While asleep: Q 8 hrs or as ordered & condition indicates	Q 60 min or as ordered & condition indicates	Q 4 hours or asordered & condition indicates
Intake & Output	Q shift or per LIP order	Q 4 hours or per LIP order	Q shift or per LIP order

Hypertension in the Perinatal Patient (cont)

B. Preeclampsia Without Severe Features – NOT on magnesium sulfate

Preeclampsia Without Sever Features			
	Antepartum*	**Intrapartum***	**Postpartum***
BP, Pulse, Respiration, SaO2	While awake: Q 4 hrs While asleep: Q 8 hrs	Q 60 min	Q 4-8 hrs
Lung Sounds	Q 4-8 hrs	Q 4-8 hrs	Q 4-8 hrs
▪ **Deep tendon reflexes/clonus, level of consciousness** ▪ **Edema** ▪ **Assessment for headache, visual disturbances, epigastric pain**	Q 4-8 hrs depending on patient condition	Q 4-8 hrs depending on patient condition	Q 4-8 hrs depending on patient condition
Intake and Output	Q 4 hrs during labor or Q 8-12 hrs (depending on shift length) and totals every 24hrs		
Fetal Assessment and Uterine Activity	Q Shift minimum	Continuous	N/A

***This is the minimum frequency recommended for the patient NOT on magnesium sulfate.**

C. Preeclampsia with Severe Features on Magnesium Sulfate **Nursing Assessment Frequent**

NOTE: Postpartum patients who have had magnesium sulfate discontinued for 4 hours or more, have systolic BP less than 160 and diastolic BP less than 110 and no symptoms of severe preeclampsia can have assessment frequency consistent with Box B above (Preeclampsia withoutsevere features).

Preeclampsia with Severe Features on Magnesium Sulfate	
Antepartum, Intrapartum, & Postpartum	
BP, Pulse, Respiration, SaO2	Q 5-15 min during loading dose Q 30 min x 2 then hourly during maintenance of magnesium sulfate infusion Continuous SaO2 during magnesium infusion for intrapartum. For postpartum patient, check with vital signs
Lung Sounds	Q 2 hrs Assess for signs/symptoms of pulmonary edema (i.e. shortness of breath, crackles)
Deep tendon reflexes (DTRs) & clonus, edema, level of consciousness	Q 4 hrs or more frequently depending on patient condition
Assessment for headache, visualdisturbances, epigastric pain	At a minimum, Q shift or more often based on the clinical situation. ***Advise patient of importance of reporting headache to nurse.
Intake and output	Q 1 hr with totals every 8-12 and 24 hrs
Fetal Assessment and Uterine Activity	Continuous fetal monitoring to check for evolving abnormal fetal heart rate patterns and recurrent decelerations with decreasing variability

Hypertension in the Perinatal Patient (cont)

D. Post Eclamptic Seizure and Magnesium Sulfate Toxicity

Post Eclamptic Seizure and Magnesium Sulfate Toxicity	
Antepartum, Intrapartum, & Postpartum	
BP, Pulse, Respiration	Q 5 min until stable
SaO2	Continuous
Level of consciousness	Q 15 min for a minimum of 1 hr
Fetal Assessment and Uterine Activity	Continuous Following a maternal seizure, fetal bradycardia is commonly seen due to maternal hypoxia. Stabilization of the mother is the first priority, followed by fetal resuscitation. Cesarean delivery should be reserved for unsuccessful cardiorespiratory resuscitation of the mother or continual non-reassuring FHR tracings.

Sepsis

For additional information refer to full policy*: Maternal Early Warning Triggers (MEWT) Practice Guidelines* in PolicyStat

- Sepsis occurs in about 0.04% of deliveries and is a leading cause of maternal death (12.7-23.0%)
- Most cases (63%) of maternal death from sepsis are likely to have been preventable
- For each maternal death from sepsis, there are 50 women who experience life-threatening morbidity from sepsis
- The incidence of an intrapartum fever of ≥38°C in pregnancies at ≥36 weeks' gestation is common at 6.8% (approximately 1 in 15 women in labor)
- The risk of neonatal sepsis in newborns delivered of mothers with intrapartum fever or a diagnosis of clinical chorioamnionitis is low at 0.24%, a rate that is <1 in 400

CURRENT DEFINITIONS: 2016 Surviving Sepsis Guidelines (CMQCC)

- Sepsis: Life threatening organ dysfunction caused by a dysregulated host response to infection
- Septic shock: Subset of sepsis with underlying circulatory and cellular metabolism abnormalities that are profound enough to substantially increase mortality
- "Severe Sepsis" in the adult population is the same as “Sepsis” in the maternal population

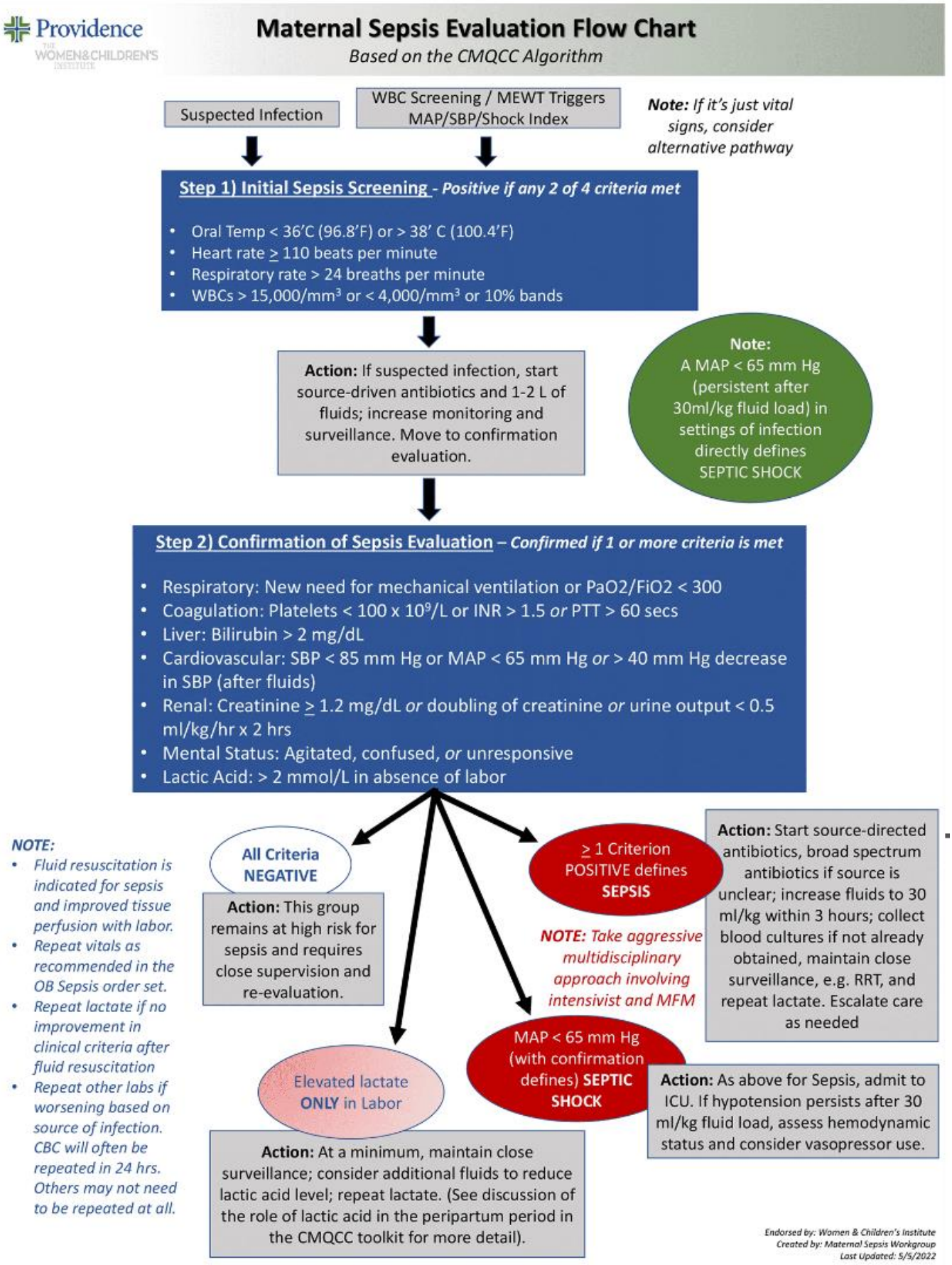
Assessment and Treatment Key Principles

1. Early administration of antibiotics, ideally within one hour of presentation, is critically important in sepsis
2. The initial choice of antibiotics in critically-ill patients is generally empiric and broad spectrum to cover most or all likely pathogens
3. Assessment for source control (such as surgical/percutaneous drainage or debridement) should be initiated in a timely fashion using the least invasive approach possible

OB Sepsis Order Set

- Includes an informational link to CMQCC Maternal Sepsis Evaluation Flow Chart
- Incorporates necessary orders to rapidly execute step 1 of the Sepsis Pathway
- Limited list of antibiotic choices based on the most frequent antepartum and intrapartum infections
- Default settings required: Choice of IV fluids
- OB Antibiotic choices duplicated on ER Sepsis Order set (1st dose only)
- Discussion points:
    - Blood cultures, Blood gases not defaulted but available
    - No viral/parasitic laboratories

Sepsis (cont)


Providence
THE WOMEN & CHILDREN'S INSTITUTE
Maternal Sepsis Evaluation Flow Chart
Based on the CMQCC Algorithm
Suspected Infection
WBC Screening / MEWT Triggers
MAP/SBP/Shock Index
Note: If it's just vital signs, consider alternative pathway
Step 1) Initial Sepsis Screening - Positive if any 2 of 4 criteria met
Oral Temp < 36'C (96.8'F) or > 38' C (100.4'F)
Heart rate ≥ 110 beats per minute
Respiratory rate > 24 breaths per minute
WBCs > 15,000/mm³ or < 4,000/mm³ or 10% bands
Action: If suspected infection, start source-driven antibiotics and 1-2 L of fluids; increase monitoring and surveillance. Move to confirmation evaluation.
Note: A MAP < 65 mm Hg (persistent after 30ml/kg fluid load) in settings of infection directly defines SEPTIC SHOCK
Step 2) Confirmation of Sepsis Evaluation – Confirmed if 1 or more criteria is met
Respiratory: New need for mechanical ventilation or PaO2/FiO2 < 300
Coagulation: Platelets < 100 x 10⁹/L or INR > 1.5 or PTT > 60 secs
Liver: Bilirubin > 2 mg/dL
Cardiovascular: SBP < 85 mm Hg or MAP < 65 mm Hg or > 40 mm Hg decrease in SBP (after fluids)
Renal: Creatinine ≥ 1.2 mg/dL or doubling of creatinine or urine output < 0.5 ml/kg/hr x 2 hrs
Mental Status: Agitated, confused, or unresponsive
Lactic Acid: > 2 mmol/L in absence of labor
NOTE:
Fluid resuscitation is indicated for sepsis and improved tissue perfusion with labor.
Repeat vitals as recommended in the OB Sepsis order set.
Repeat lactate if no improvement in clinical criteria after fluid resuscitation
Repeat other labs if worsening based on source of infection. CBC will often be repeated in 24 hrs. Others may not need to be repeated at all.
All Criteria NEGATIVE
Action: This group remains at high risk for sepsis and requires close supervision and re-evaluation.
≥ 1 Criterion POSITIVE defines SEPSIS
NOTE: Take aggressive multidisciplinary approach involving intensivist and MFM
Action: Start source-directed antibiotics, broad spectrum antibiotics if source is unclear; increase fluids to 30 ml/kg within 3 hours; collect blood cultures if not already obtained, maintain close surveillance, e.g. RRT, and repeat lactate. Escalate care as needed
Elevated lactate ONLY in Labor
Action: At a minimum, maintain close surveillance; consider additional fluids to reduce lactic acid level; repeat lactate. (See discussion of the role of lactic acid in the peripartum period in the CMQCC toolkit for more detail).
MAP < 65 mm Hg (with confirmation defines) SEPTIC SHOCK
Action: As above for Sepsis, admit to ICU. If hypotension persists after 30 ml/kg fluid load, assess hemodynamic status and consider vasopressor use.
Endorsed by: Women & Children's Institute
Created by: Maternal Sepsis Workgroup
Last Updated: 5/5/2022

Obstetric Hemorrhage

For additional information refer to full policy*: Obstetric Hemorrhage, Insertion of Uterine Tamponade Balloon Catheter for Postpartum Hemorrhage and Intrauterine Vacuum System (Jada) for Postpartum Hemorrhage* in PolicyStat

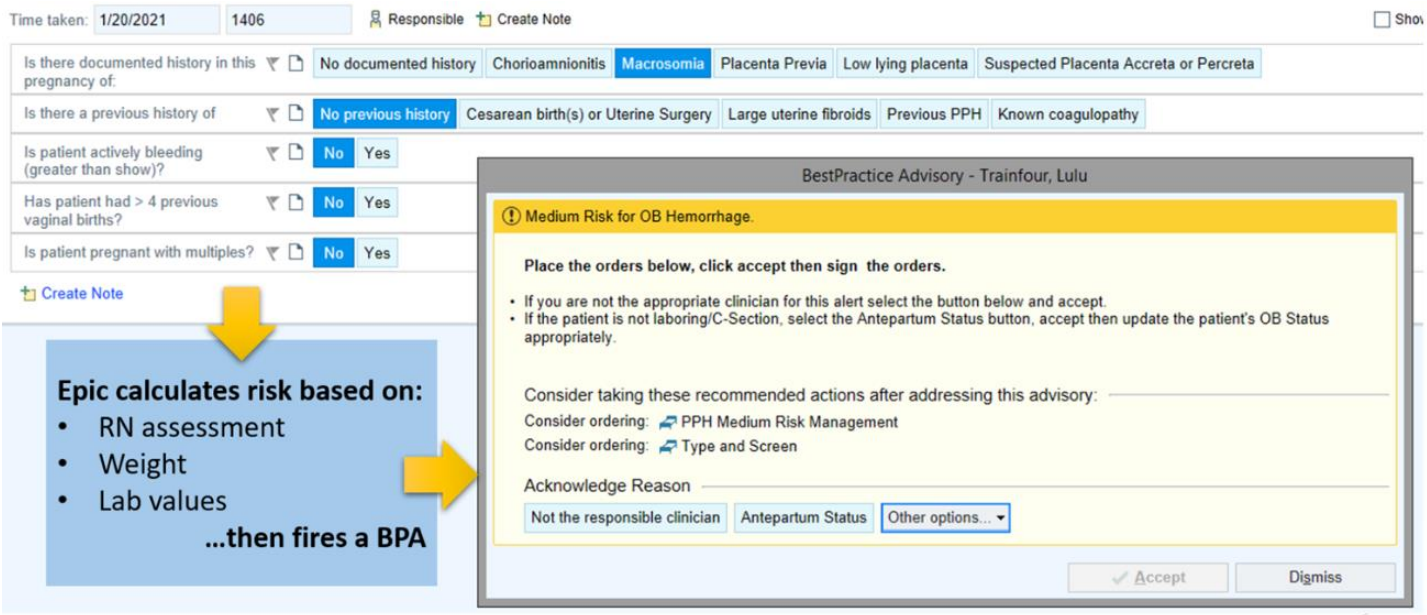
Obstetric Hemorrhage Prevalence

- Hemorrhage rates are on the rise despite decreases in maternal morbidity overall
- Obstetrical hemorrhage is the 4th leading cause of maternal mortality
- 3-5% of obstetric patients will experience a postpartum hemorrhage
- African American and Native women are 3x more likely to die from pregnancy related causes
- 2 of 3 maternal deaths are preventable with earlier recognition and intervention

Every patient, every time

On **Admission**:

Low Risk	Medium Risk	High Risk
• No prior uterine incision • Singleton • ≤ 4 previous vaginal births • No known bleeding disorder • No history of PPH	• Prior C/S or uterine surgery • Multiple gestation • > 4 previous vaginal births • History of previous PPH • Large uterine fibroids • Estimated fetal weight > 4 kg • Morbid obesity (BMI > 35) • Low lying placenta	• Placenta previa • Suspected accrete or percreta • Platelets < 100,000 • Active bleeding on admission • Known coagulopathy • Hematocrit < 30 and other risk factors



Obstetric Hemorrhage (cont)

Throughout hospital stay monitor for the following:

- Chorioamnionitis
- Prolonged 2nd stage of labor
- Prolonged oxytocin use (> 24 hr)
- Active bleeding
- Magnesium sulfate treatment
- Vacuum or forceps delivery
- Cesarean birth (esp. urgent/emergent)
- Retained placenta
- Increased postpartum bleeding

Treat 2 or more risk factors as HIGH RISK – ***Epic does not do this automatically***

With one risk factor, increase to the next level

First line medication!

Second line medications:

- Follow standard
- Give medications appropriate for patient

Oxytocin	Methergine	Tranexamic acid	Hemabate	Misoprostol
• 30 units in 500 mL solution titrated to uterine tone OR • 10 units IM (no IV access)	• 0.2 mg IM • May repeat q 2-4h • *Avoid with hypertension*	• 1 gram diluted in 50-100 mL • May repeat 1x after 30 min	• 250 mcg IM • May repeat q 15 min x 8 doses/24 hr • *Avoid with asthma*	• 600 mcg oral OR • 800 mcg rectal

Stage patient in Epic documentation to trigger needed ordersets

Stage 0: All Births
- Screening, QBL & Active Management of the 3rd Stage

Stage 1: Cumulative blood loss > 500 mL (vag) or >1000 mL (C/S) with continued bleeding
- OR increased bleeding during recovery / postpartum
- OR vital signs of HR ≥ 110, BP ≤ 85/45, O2 Sat < 95%

Stage 2: Cumulative blood loss < 1500 mL with
- Continued bleeding
- OR vital sign instability

Stage 3: Cumulative blood loss >1500 mL
- Continued bleeding
- >2 units PRBCs given
- Vital sign instability / suspicion of DIC

Obstetric Hemorrhage (cont)

Prenatal Assessment & Planning

- ☐ **Identify and prepare for patients with special considerations:** Placenta Previa/Accreta, bleeding disorder, positive prenatal antibody screen or those who decline blood products.
- ☐ **Screen and aggressively treat severe anemia:** If oral iron fails, initiate IV Iron Sucrose Protocol to reach desired Hgb/Hct, especially for at risk mothers.

Admission Assessment & Planning

- ☐ **Verify Type & Antibody Screen from prenatal record**
  - ☐ If not available, order Type & Screen (lab will notify if 2nd specimen needed for confirmation)
  - ☐ If prenatal or current antibody screen is positive order Type & Cross
- ☐ **All other patients**
  - ☐ Send specimen to blood bank

- ☐ Evaluate for **Risk Factors** on admission, throughout labor and postpartum (at every handover)

If medium risk or **high risk:**

- ☐ Order Type & Screen or Type & Cross ☐ Review Hemorrhage Protocol
- ☐ Notify OB Anesthesia

Identify women who may decline transfusion

- ☐ Notify OB provider for plan of care
- ☐ Early consult with OB anesthesia

Ongoing Risk Assessment

- ☐ **Evaluate for development of additional risk factors in labor**:
  - Prolonged 2nd Stage labor
  - Prolonged oxytocin use (defined as >24 hours)
  - Active bleeding
  - Chorioamnionitis
  - Magnesium sulfate treatment
- ☐ **If one of the above factors is present, increase to next risk level** (see below) **and convert to Type & Screen or Type & Crossmatch**
- ☐ **Treat 2 or more of the above risk factors as High Risk**
- ☐ **Monitor patient postpartum for increased bleeding**

Admission Hemorrhage Risk Factor Evaluation

Low (Extra blood bank tube)	Medium (Type and Screen)	High (Type and Crossmatch all facilities)
No previous uterine incision	Prior cesarean birth(s) or uterine surgery	Placenta Previa, low lying placenta
Singleton pregnancy	Multiple gestation	Suspected Placenta Accreta or Percreta
≤ 4previous vaginal births	> 4 previous vaginal births	If prenatal or current antibody screen is positive
No known bleeding disorder	Chorioamnionitis	**Type and Crossmatch (facilities without electronic crossmatch) Or**
No history of PPH	History of previous PPH	**Type & Screen (facilities with electronic crossmatching)**
	Large uterine fibroids	Platelets <100,000
	Estimated fetal weight greater than 4kg	Active bleeding (greater than show) on admit
	Morbid obesity (BMI >35)	Known coagulopathy
	Low lying placenta	Hematocrit <30 and other risk factors

Stage 0: All Births - Prevention & Recognition of OB Hemorrhage

Active Management of Third Stage of labor

- ☐ Oxytocin infusion: 30 units oxytocin/500 ml solution titrate infusion rate to uterine tone; or 10 units IM; do not give oxytocin as IV push
- ☐ Evaluate uterine tone, fundal massage as necessary
- ☐ Express uterus for blood and clots
- ☐ Assess bladder

Ongoing Quantitative Evaluation of Blood Loss

- ☐ Using formal methods, such as graduated containers, visual comparisons and weight of blood soaked materials (**1gm = 1ml**)

Ongoing Evaluation of Vital Signs

If cumulative blood loss > 500ml vaginal birth or > 1000ml C/S with continued bleeding or vital signs of HR ≥ 110, BP ≤ 85/45, 02 sat < 95% or increased bleeding during recovery or postpartum, proceed to STAGE 1.

Obstetric Hemorrhage (cont)

STAGE 1: OB Hemorrhage

Cumulative blood loss > 500ml vaginal birth or > 1000ml C/S with continued bleeding or vital signs of HR ≥ 110, BP ≤ 85/45, 02 sat < 95% or increased bleeding during recovery or postpartum.

MOBILIZE

Primary nurse, Physician or Midwife :
- ☐ Activate OB Hemorrhage Protocol and Checklist

Primary nurse:
- ☐ Notify Obstetrician or Midwife
- ☐ Notify charge nurse
- ☐ Notify anesthesiologist/CRNA

Charge nurse/designee:
- ☐ Assist primary nurse as needed or assign staff member(s) to help

ACT

Primary nurse or designee:
- ☐ Establish IV access if not present, at least 18 gauge
- ☐ Titrate IV Oxytocin infusion rate to uterine tone
- ☐ Apply vigorous fundal massage
- ☐ Administer misoprostol 800 mcg SL per protocol (may give rectally if general anesthesia). If no response, move to next agent.
- ☐ Methergine 0.2 mg IM per protocol **(if not hypertensive)** give once. If needed, may give additional doses. If good response, may give additional doses q 2 hr. If no response, move to Hemabate.
- ☐ Vital Signs, including 0_2 sat & level of consciousness (LOC) q 5 minutes
- ☐ Weigh materials, calculate and **record** cumulative blood loss q 5-15 minutes
- ☐ Administer oxygen to maintain 0_2 sats at >95%
- ☐ Empty bladder: straight cath or place Foley with urimeter
- ☐ Type and Crossmatch for 2 units Red Blood Cells STAT (if not already done)
- ☐ Keep patient warm

Physician or midwife:
- ☐ Rule out retained products of conception, laceration or hematoma

Surgeon (if cesarean birth and still open)
- ☐ Inspect for uncontrolled bleeding at all levels, esp. broad ligament, posterior uterus, and retained placenta

THINK

Consider potential etiology:
- Uterine atony
- Trauma/laceration
- Retained placenta
- Amniotic fluid embolism
- Uterine inversion
- Coagulopathy
- Placenta accreta
- Uterine rupture

Once stabilized: Modify Postpartum management with increased surveillance.

If continued bleeding or continued vital sign instability and < 1500 ml cumulative blood loss, proceed to STAGE 2

UTEROTONIC AGENTS for POSTPARTUM HEMORRHAGE

Drug	Dose	Route	Frequency	Side Effects	Contraindications	Storage
Pitocin® (Oxytocin) 10units/ml	30/500ml, rate titrated to uterine tone	IV infusion	Continuous	Usually none, nausea, vomiting, hyponatremia ("water intoxication" with prolonged IV administration, -↓BP and ↑HR with high doses (especially IV push)	Hypersensitivity to drug	Room temp
Cytotec® (Misoprostol) 100 or 200mcg tablets	800mcg	Sublingual or oral preferred, per rectum not preferred	One time	Nausea, vomiting, diarrhea, shivering, fever (transient), headache	Rare Known allergy to prostaglandin, Hypersensitivity to drug	Room temp
Methergine® (Methylergonivine) 0.2mg/ml	0.2mg	IM **(not given IV)**	Q 2-4 hours -If no response after first dose, it is unlikely that additional doses will be of benefit	Nausea, vomiting, severe hypertension (especially if given IV-which is not recommended)	Hypertension, Preeclampsia, Cardiovascular disease Hypersensitivity to drug Caution if multiple doses of ephedrine have been used, may exaggerate hypertensive response w/possible cerebral hemorrhage	Refrigerate, protect from light
Hemabate® (Carboprost) 250mcg/ml	250 mcg	IM or intra-myometrial **(not given IV)**	- Q 15-90 min - Not to exceed 8 doses/24 hrs , - If no response after several doses, additional doses will not be of benefit.	Nausea, vomiting, diarrhea, fever (transient), headache, chills, shivering, hypertension, bronchospasm	Caution in women with hepatic disease, asthma, hypertension, active cardiac or pulmonary disease Hypersensitivity to drug	Refrigerate

Obstetric Hemorrhage (cont)

STAGE 2: OB Hemorrhage

Continued bleeding or vital sign instability and < 1500 mL cumulative blood loss

MOBILIZE

Primary nurse (or charge nurse):

- ☐ Call Obstetrician or Midwife to bedside
- ☐ Call anesthesiologist/CRNA
- ☐ Activate Rapid Response Team or equivalent (where available): PHONE #:
- ☐ Notify blood bank of "Stage 2 OB hemorrhage". Order products as directed.
- ☐ Give SBAR to team
- ☐ Remain with patient
- ☐ Calculate/transcribe final I&O

Charge nurse:

- ☐ Notify back-up Obstetrician or Perinatologist or internal resource*
- ☐ Notify phlebotomist for STAT labs
- ☐ Notify respiratory therapy for ABG
- ☐ Notify Anesthesia tech (where available)
- ☐ Bring hemorrhage cart to the patient's location
- ☐ Initiate OB Transfusion Administration Record and OB Hemorrhage Flow-sheet
- ☐ If considering **selective embolization,** call-in interventional Radiology Team and second Anesthesiologist/CRNA
- ☐ Notify nursing supervisor*
- ☐ Assign runner and 2nd RN
- ☐ Assign single person to communicate with blood bank
- ☐ Assign support person for family, as needed

*Internal resource may vary by ministry

ACT

Team leader (OB physician or midwife):

- ☐ Additional uterotonic medication: Methergine 0.2mg or Hemabate 250 mcg IM [if not contraindicated] Can repeat Hemabate every 15 min. up to 8 doses/24 hrs; (Note-75% respond to first dose)
- ☐ Continue IV oxytocin and provide additional IV crystalloid solution

Do not delay other interventions (see right column) while waiting for response to medications

- ☐ Bimanual uterine massage
- ☐ Move to OR
- ☐ Order 2 units PRBCs
- ☐ Order labs STAT (CBC with no differential, Protime INR, PTT, Fibrinogen, Calcium Ionized, Basic Metabolic Panel) consider ABG
- ☐ **Transfuse PRBCs based on clinical signs and response. Do not wait for lab results. Consider emergency O negative transfusion.**

Primary nurse with RRT and OB Anesthesia/CRNA:

- ☐ Establish 2nd large bore IV, at least 16 gauge
- ☐ Assess and announce vital signs and cumulative blood loss q 5-10 minutes
- ☐ Set up blood administration set and blood warmer for transfusion
- ☐ Administer meds, blood products and draw labs, as ordered
- ☐ Keep patient warm

Second nurse (or charge nurse):

- ☐ Place Foley with urimeter (if not already done)
- ☐ Assure portable light, OB procedure tray or hemorrhage cart are in OR
- ☐ Obtain blood products from the Blood Bank (or send designated runner)
- ☐ Assist with move to OR (if indicated)

Blood Bank:

- ☐ Determine availability of thawed plasma, fresh frozen plasma, and platelets. Initiate delivery of platelets if not present on-site.
- ☐ Consider thawing 2-4 FFP (takes 30 min). Use if transfusing > 2 units PRBCs.
- ☐ Prepare for possibility of massive hemorrhage and transfusion

THINK

Sequentially advance through procedures and other interventions based on etiology:

Vaginal birth

Trauma (vaginal, cervical or uterine):
- Visualize and repair

Retained placenta:
- D&C

Uterine atony or lower uterine segment bleeding:
- Intrauterine Balloon

If **above measures unproductive**:
- Selective embolization (nterventional Radiology if available)

C-section:
- B-Lynch Suture
- Intrauterine Balloon
- Selective Embolization

Uterine Inversion:
- Anesthesia and uterine relaxation drugs for manual replacement

Amniotic Fluid Embolism:
- Maximally aggressive respiratory, vasopressor and blood product support

If vital signs are worse than expected given the measured blood loss, consider uterine rupture, broad ligament tear or internal bleeding. **Move to laparotomy.**

Once stabilized: Modify Postpartum management with increased surveillance.

Re-evaluate bleeding and vital signs.
If continued bleeding, cumulative blood loss >1500ml, > 2 units PRBCs given, vital signs unstable or suspicion for DIC, proceed to STAGE 3

Obstetric Hemorrhage (cont)

STAGE 3: OB Hemorrhage

Continue bleeding, cumulative blood loss >1500ml, >2 units PRBCs given, VS unstable or suspicion for DIC

MOBILIZE	ACT	THINK
Activate Massive Transfusion Protocol *Ensure all clinicians from stage 2 are notified **Charge Nurse or designee:** ☐ Call assistant surgeon (e.g. Gyn Oncologist) as directed. PHONE: ☐ Notify adult intensivist ☐ Call-in second Anesthesiologist/CRNA ☐ Call-in OR staff and a Rapid Response team (or equivalent where available)Ensure hemorrhage cart available at the patient's location ☐ Reassign staff as needed ☐ Notify house supervisor/s or equivalent and manager on-calld (In OR, Anesthesiologist/CRNA will assess and document VS) ☐ If transfer considered, notify ICU **Blood Bank:** ☐ Prepare to issue additional blood products as needed - **stay ahead** ☐ Blood Bank will notify Pathologist that there is a MTP; Pathologist is available for consultation upon request from Obstetrician or Anesthesiologist	**Establish team leadership and assign roles** **Team leader** (OB physician + OB Anesthesiologist/CRNA, Anesthesiologist/CRNA and/or perinatologist and/or intensivist): ☐ **Order 1st round Massive Transfusion Protocol** ▪ 6 RBCs + 4 FFP + 1 platelet + 1 cryo ☐ **Move to OR** if not already there ☐ Repeat labs STAT (CBC with no differential, Protime INR, PTT, Fibrinogen, Calcium Ionized, Basic Metabolic Panel) ☐ Order next round of MTP for ongoing resuscitation **Anesthesiologist/CRNA** (as indicated): ☐ Arterial blood gases ☐ Central hemodynamic monitoring ☐ CVP or PA line ☐ Arterial line ☐ Vasopressor support ☐ Intubation ☐ Calcium replacement ☐ Electrolyte monitoring ☐ Use fluid warmer and/or rapid infuser for fluid & blood product administration ☐ Apply upper body warming blanket if feasible ☐ Announce VS and cumulative measured blood loss q 5-10 minutes **Primary nurse/** (or designee): ☐ Apply sequential compression stockings to lower extremities ☐ Circulate in OR ☐ Call out lab results directly to the Anesthesiologist/CRNA and OB **Second nurse and/or Anesthesiologist/CRNA**: ☐ Continue to administer meds, blood products and draw labs, as ordered **Third Nurse, Recorder, Runner** as allowed by facility resources.	▪ **Selective Embolization (IR)** ▪ **Interventions based on etiology not yet completed** ▪ Prevent hypothermia, acidemia **Conservative or Definitive Surgery**: ▪ Uterine Artery Ligation ▪ B-Lynch Suture ▪ Hysterectomy **For ongoing Resuscitation:** **Order next round MTP** **Aggressively Transfuse** **Based on Vital Signs, Blood Loss** **After the first 2 units of PRBCs use near equal FFP and RBC for massive hemorrhage:** **4 - 6 PRBCs: 4 FFP: 1 apheresis platelets** **Unresponsive Coagulopathy**: ☐ Request consultation with Blood Bank Pathologist ▪ Role of rFactor VIIa is very controversial. ▪ After 8-10 units PRBCs and coagulation factor replacement with ongoing hemorrhage, may consider risk/benefit of rFactor VIIa in consultation with blood bank pathologist. **Once Stabilized:** Modify Postpartum management with increased surveillance. Consider ICU.

BLOOD PRODUCTS

Packed Red Blood Cells (PRBC) Approximately 35-40 minutes for crossmatch once sample is in the lab and assuming no antibodies present. Transfuse O negative blood if you cannot wait.	Best first-line product for blood loss Packed red blood cells (1 unit = 300mL volume) and typically increases HCT by 3% If antibody positive, may take 1 -24 hours for crossmatch
Fresh Frozen Plasma (FFP) Approximately 35-40 minutes to thaw for release.	Highly desired if >2 units PRBCs give, or for prolonged PT, aPTT>1.5x control Fresh Frozen Plasma (1 unit = 280mL volume)
Platelets (PLTS) Local variation in time to release (may need to come from regional blood bank).	Priority for women with platelets <50,000 Single-donor Apheresis unit (= 6 units of platelet concentrates) provides 40-50k transient increase in platelets
Cryoprecipitate (CRYO) Approximately 35-40 minutes to thaw for release.	Priority for women with Fibrinogen levels < 80; Cryoprecipitate pool (=5 units of single cryoprecipitate) typically raises Fibrinogen 70-100mg/dL: Caution: 5 units come from 5 different donors, so infection risk is proportionate

Hemorrhage devices

For additional information refer to full policy*: Obstetric Hemorrhage, Insertion of Uterine Tamponade Balloon Catheter for Postpartum Hemorrhage and Intrauterine Vacuum System (Jada) for Postpartum Hemorrhage* in PolicyStat

Uterine Tamponade Balloon Catheter for Postpartum Hemorrhage

I. Patient Monitoring:

1. Once balloon is placed and is inflated, connect the drainage port to a fluid collection bag to monitor hemostasis.

   NOTE: If no bleeding or drainage is present in tube or collection bag, RN may gently flush drainage port and tubing with sterile isotonic saline, using no more than 25 mL.
2. Patient should be monitored continuously for signs of increased bleeding, uterine cramping, increasing fundal height or a deteriorating condition.

Obstetric Hemorrhage (cont)

Hemorrhage devices Uterine Tamponade Balloon Catheter (cont)

3. Patient monitoring should include, but not limited to: increased pain, blood pressure, pulse, urine output, cramping, pallor, and active bleeding.
4. Document drainage every 15 minutes x 4, then every 30 min x 2, and then hourly x 3, or more often as needed per patient acuity, and per LIP orders until balloon is removed.
   NOTE: Signs of deteriorating or non-improving conditions should indicate more aggressive treatment and management of patient uterine bleeding.
   NOTE: This device is not a substitute for surgical management when indicated and fluid resuscitation of life-threatening postpartum hemorrhage.

II. Balloon Removal:

1. Balloon and vaginal packing are removed by LIP with RN assistance.
2. Maximum indwell time is twenty-four (24) hours. Balloon may be removed sooner upon LIP determination of hemostasis or need to apply alternative treatment.
3. Using an appropriate syringe, slowly aspirate the contents of the balloon until fully deflated, in accordance with the instilled volume.
4. Gently retract the balloon from the uterus and vaginal canal and discard.
5. Continue to monitor the patient for signs of uterine bleeding.

Intrauterine Vacuum System (Jada)

III. INTRAUTERINE VACUUM SYSTEM REMOVAL

1. Intrauterine vacuum system is removed by OB provider and assisted by RN.
2. To avoid uterine inversion, do not remove while vacuum is applied. Always disconnect device from vacuum tubing before removal.
3. Remove all fluid from the Cervical Seal prior to removing the intrauterine vacuum device to avoid disruption of the vaginal mucosa or any sutured lacerations.
4. If postpartum hemorrhage/abnormal postpartum uterine bleeding remains controlled and the uterus remains firm for a minimum of 30 minutes after vacuum is disconnected, remove intrauterine vacuum device.
5. Place one hand on the abdomen to secure the uterine fundus while the other hand slowly withdraws the device.
6. Continue to monitor the patient for signs of uterine bleeding after removal.

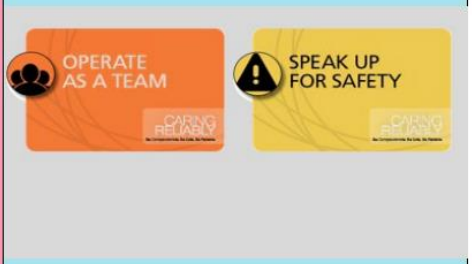
IV. PATIENT MONITORING

1. Patient should be monitored for signs of increased bleeding, uterine cramping, increasing fundal height or a deteriorating condition.
2. Patient monitoring should include, but not limited to: increased pain, blood pressure, pulse, urine output, cramping, pallor, and active bleeding.
3. Assess and document vital signs and drainage output every 15 minutes x 2 hours, and then hourly while intrauterine vacuum device is in place, or more often as needed per patient acuity.
4. Add "uterine balloon" LDA and add comment "Jada" for documentation of output.
5. After intrauterine vacuum device is removed assess and document vital signs and bleeding every 15 min x 2 and then per orders.
6. Notify provider for abnormal vital signs, increased bleeding, increased pain, or problems with intrauterine device.

Universal Protocol

For additional information refer to full Policy: *Universal Protocol for Invasive Procedures* in PolicyStat

PERINATAL SAFE SURGERY CHECKLIST: OREGON

BRIEFING	TIMEOUT	DEBRIEF
Verify prior to initiation of Anesthesia	Immediately before procedure start. All team members *suspend activity* & verbally participate*	At the end of the case and beforethe SURGEON leaves the OR
CIRCULATOR verifies with SURGEON, ANESTHESIA PROVIDER and SCRUB: ❑ Team communication regarding fetal status and urgency of case ❑ Patient states name, date of birth, and planned procedure ❑ Procedure, indication, and site laterality confirmed and matched to consent ❑ Allergies verified ❑ Room thermostat set @68 degrees (75 degrees for preterm) ❑ Blood product availability addressed (if applicable) ❑ Resuscitation team notified (if applicable) **CIRCULATOR & ANESTHESIA PROVIDER** verify: ❑ Special anesthesia equipment present ❑ Anesthesia ready ❑ FHR stated and verified after anesthesia initiation	**SURGEON** leads the timeout & begins by stating: ❑ Patient Name ❑ Procedure planned ❑ Blood loss/products (if applicable) **ANESTHESIA PROVIDER** states: ❑ Antibiotic given **SCRUB** continues by stating: ❑ Instruments counted and ready ❑ Cautery holstered **CIRCULATOR** continues by stating: ❑ Patient name & procedure match consent form ❑ Verifies suction device is on and working ❑ SCDs applied and turned on ❑ Active warming in place ❑ Radiant warmer on and working ❑ Newborn team ready to care for newborn ❑ Circulator initiates introductions by stating name & role ❑ Are there any other concerns? ❑ "THE TIMEOUT IS COMPLETE" Note: A colored towel covers the instrument tray until the CIRCULATOR states "TIMEOUT IS COMPLETE" *Abbreviated time out may be appropriate in emergent cases ❑Support person present	**CIRCULATOR confirms with SURGEON, ANESTHESIA PROVIDER and SCRUB:** ❑ Counts are correct ❑ Actual procedure performed ❑ QBL ❑ Specimens verified and correctly labeled (if applicable) 

Waste Anesthesia Gases

For additional information refer to full Policy: *Waste Anesthetic Gases* in PolicyStat

What are Waste Anesthesia Gases (WAG)?

- Small amounts of volatile anesthesia gases that leak from the patients anesthetic breather circuit in the air of operating rooms
- Leak from gas cylinders or anesthesia containers
- Exhaled by patients recovering from anesthesia

Who Could be Exposed to WAG?

Everyone working in the OR can be affected.

- Anesthesiologists
- Nurse anesthetists
- Surgical and obstetric nurses
- Operating room (OR) technicians
- Surgeons
- Anesthesia technicians
- Post-anesthesia care nurses
- Circulating nurse

What are the Health Effects of Exposure?

- Headache
- Irritability
- Fatigue
- Nausea
- Drowsiness
- Judgment impairment
- Liver and Kidney disorders
- Miscarriages

Passive Badge Monitoring

Semi Annual monitoring is recommended by OSHA.

An anesthesiologist, surgeon, or nurse working near patients head should wear a passive badge monitor for his or her shift.

Passive Badges are to be worn on the outside of clothing, in your breathing zone (in space between shoulders and nose) for their entire shift.

What if Anesthesia is Spilled?

If spill happens:

- <10 mL – no special handling other than remove other items away from spilled liquid. It evaporates quickly.
- 10 mL to 30 mL- quickly cover it with a impermeable material (blue chux or towel and cover with plastic bag) to prevent vapors from overwhelming the room and absorb the liquid.
- Large spill – > 30 mL - EVACUATE AREA and call "Code Orange Response Team" for clean up.
- Ensure proper use of PPE during clean-up -Gloves, goggles, face shields. Only help with clean up if trained to do so.

Manage disposal of liquid agents:

1. Once absorbed - Place absorbent or chux into a plastic bag, tie closed
2. Then place in a Yellow Hazmat Bag
3. Call EVS to transport and log waste into Hazardous Waste Storage area.

Find Out More!

Check out the following websites:

- OSHA - Guidelines for Waste Anesthesia Gases 296.1910.1200 http://www.osha.gov/dts/osta/anestheticgases/index.html
- CDC / NIOSH Workplace – http://www.cdc.gov/niosh/docs/2007-151/pdfs/2007-151.pdf

Formaldehyde Awareness

For additional information refer to full Policy: *Formaldehyde Exposure Control Program* in PolicyStat

Health Hazards of Formalin

Formaldehyde, one of the ingredients in formalin, is a **carcinogen** and **mutagenic**.

- **Carcinogen** = a chemical demonstrated to cause cancer in humans or to cause cancer in animals, thus considered capable of causing cancer in humans
- **Mutagenic** = a physical or chemical agent that permanently changes genetic material (usually DNA) in an organism.

In 2011, the National Toxicology Program, an interagency program of the Department of Health and Human Services, named formaldehyde as a known human carcinogen in its 12th Report on Carcinogens.

Health Hazards of Formalin

Formaldehyde, one of the ingredients in formalin, is a **sensitizer**.

- **Sensitizer =** a chemical substance or mixture that causes a substantial number of persons to develop an allergic reaction (like asthma or skin rash) after repeated exposure

Formaldehyde may cause skin sensitization which becomes evident upon re-exposure. Formaldehyde may also cause an allergic respiratory reaction.

Health Hazards of Formalin

Formaldehyde is **corrosive** to the eyes and an **irritant** to the skin and respiratory tract.

- **Corrosive** = highly reactive substance / chemical that causes significant damage to living tissue it comes into contact with.
- **Irritant** = a chemical substance or mixture which on immediate, prolonged or repeated contact with tissue induces a local inflammatory response in the skin, eyes or mucous membranes.

Eye irritation, headaches, skin rash and respiratory issues are all early signs of formalin exposure.

Protecting Yourself from Exposure

The **best** way to protect yourself is to **avoid exposure**:

- Substitute a less toxic product if possible.
- Keep containers closed whenever possible.
- Conduct work in areas with local exhaust ventilation.
- Use the smallest quantity necessary.
- Wear appropriate PPE.

The **most effective exposure controls** are:

1. Good ventilation
2. Safe work practices
3. Personal protective equipment (PPE)
    - Nitrile gloves
    - Chemical goggles
    - Lab coat / liquid resistant gown, if splash potential exists
    - Respiratory protection, if pouring without local exhaust ventilation.

Formaldehyde Awareness Cont.

Personal Protective Equipment

- Caregivers who have a **lower potential** for exposure based on work activities (e.g., placing tissue sample in formalin container and then securing lid).
  - Nitrile gloves are **required**
  - Chemical goggles are recommended
- Caregivers who have **increased potential** for exposure based on work activities where splash potential is possible (e.g., work over open containers of / pour formalin or work with tissue soaked in formalin).
  - Nitrile gloves are **required**
  - Chemical goggles (***not*** safety glasses) are **required**
  - Lab coat / liquid resistant gown is **required**
  - Face shield worn over chemical goggles is recommended

Reminder: Remove PPE and wash hands with soap & water before leaving work area.

Signs and Symptoms of Exposure

You may suspect you are exposed to formaldehyde if you experience:

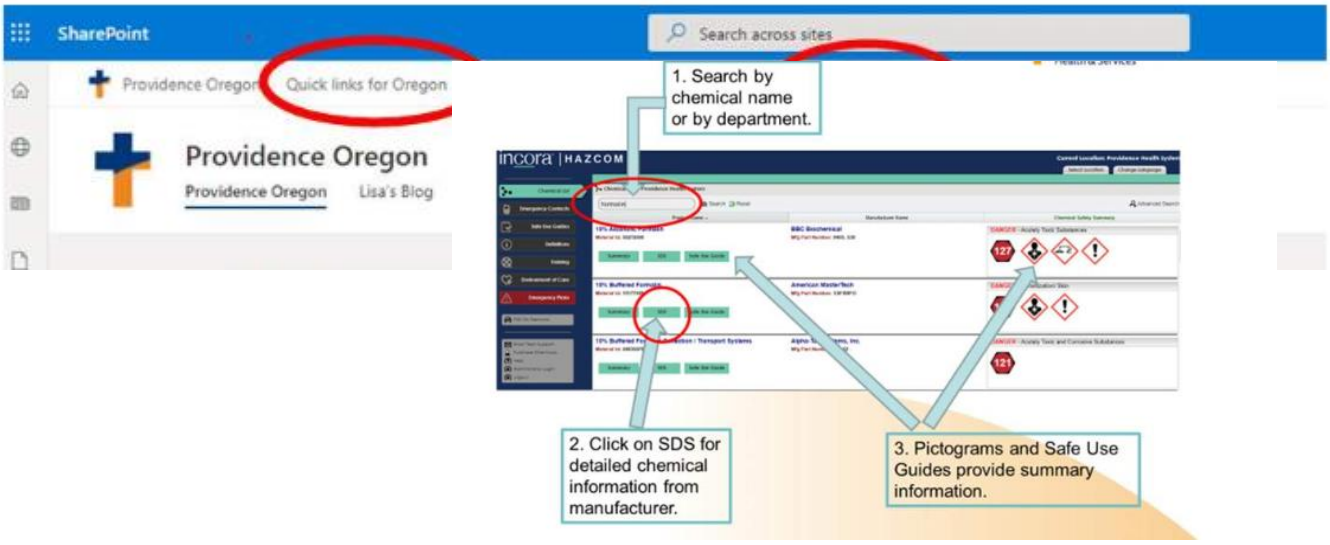
- Eye irritation
- Headaches
- Skin rash
- Respiratory issues.

Emergency First Aid

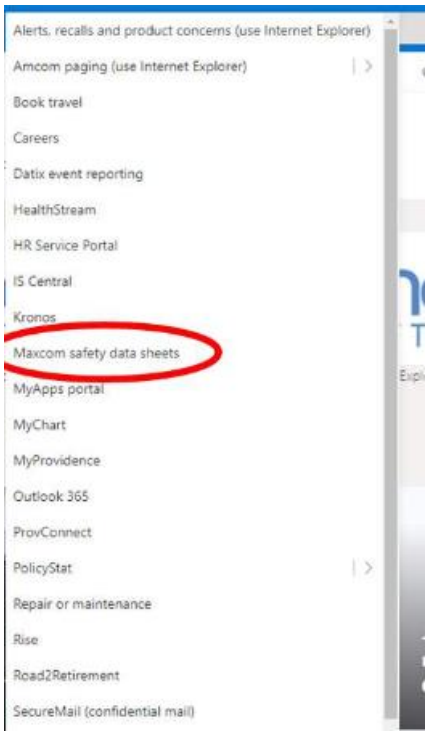
If you are exposed to formaldehyde:

- Flush eyes with water for 15 minutes at eyewash station
- Remove to fresh air
- Remove contaminated clothing and wash skin with soap and water
- Seek medical attention as soon as possible
- Notify your Core Leader and Caregiver Health Services

Locating Safety Data Sheets



Formaldehyde Awareness Cont.



Labeling

- All containers must be labeled.
- Manufacturer's original label is adequate.
- If you create a secondary container, you must label it with:
    a. Name of chemical
    b. Hazard warning statement (e.g., irritant, corrosive, etc.)

Formalin Pictograms

Formalin poses a chronic health hazard: it is a human carcinogen and mutagen.

Formalin is corrosive and can cause serious eye damage.

Formalin is a skin and respiratory tract irritant and an allergic sensitizer.

Formaldehyde Awareness Cont.

Spill Cleanup

- Work areas where formalin / formaldehyde is used **must** be supplied with spill clean-up materials necessary to manage small or incidental spills.
- Small or incidental spills will be cleaned up by trained caregivers in the immediate area.
    - Wear gloves and chemical goggles
    - Cover drains and limit spread of spill
    - Use absorbent material
    - Work from outside of the spill, in
    - Place spill debris into a closed, labeled bag or container
    - Complete Spill Report Form from Hazardous Chemical Spill Clean-up – Code Orange Policy
    - Contact Safety and Environmental Health Manager / Security for disposal
- Call a Code Orange whenever assistance with hazardous chemical spills is necessary or if you are unsure how to proceed safely.

Newborn Items

Term Newborn

For additional information refer to full Policy: *Care of the Newborn - Term* in PolicyStat

Immediate Care

- Unless clinically contraindicated, provide uninterrupted skin-to-skin contact between mother and newborn from birth until completion of the first breastfeeding. Because the newborn must be separated from his/her mother to obtain a birth weight, the nurse will use judgment for the timing of this intervention, keeping in mind the need to promote thermoregulation, balanced with the need to obtain a weight for clinical calculations.
- Perform Apgar assessment and scoring at 1 and 5 minutes of age. NRP guidelines recommend Apgar assessments every 5 minutes, up to 20 minutes of age, or until a score of 7 or greater is obtained.
- Assess the newborn for birth injuries or congenital anomalies.
- Monitor and record temperature, heart rate, respiratory rate and character, skin color, level of consciousness, tone, and activity level at least once every 30 minutes until the neonate's condition has remained stable for 2 hours.
- Bathing is not necessary unless indicated by maternal infection risk factors, such as; HIV, syphilis, hepatitis B, hepatitis C, COVID-19, or parents desire. Vernix may offer antibacterial protection.
- Plot gestational age and percentiles for weight.
    - Utilize the Olsen Growth Curves for any newborn up to 41 0/7 weeks of gestation.
    - Utilize the WHO Growth Curves for any newborn ≥ 41 1/7 weeks of gestation.

Ongoing Care

Assessments:

- Assess temperature, pulse, and respiration at least every 8 hours or as ordered.
- Assess color, respiratory effort, cardiac, nutritional intake, urinary and bowel elimination, and neuromuscular status at least every 8 hours. Any newborn with a respiratory rate > 60, grunting, retracting, or with questionable color will be further assessed with pulse oximetry.

Deviation From Defined Limits of Normal Assessments:

- Any deviation from defined limits will warrant further assessments, documentation, appropriate intervention and primary care provider notification as needed.
    - Any deviation of temperature, pulse, and/or respirations from defined limits should warrant reassessment within 30-60 minutes. The primary care provider should be notified if the reassessment is outside of defined limits.
- Pulse oximetry checks may be considered based on vital signs and clinical assessments.

Term Newborn (cont)

Bilirubin results

- If newborn appears jaundiced within the first 24 hours: Screen with a total serum bilirubin test (TSB) and contact the LIP immediately with results.
- To document the bilirubin level and determine “Follow-up recommendations” the birth time, birth date, birth weight, and gestational age must be documented. It is important that newborns with any neurotoxicity risk factors be marked as such by, selecting the Neurotoxicity risk factors button. This ensures the right thresholds for treatment and follow-up recommendations.
- Ensure there is a plan for bilirubin follow-up recommendations, as indicated, prior to discharge.
  - "Recheck in 1-2 days": TsB or TcB in 1-2 days
  - "Follow-up within 2 days": TsB or TcB according to clinical judgment based on physical exam, risk factors, feeding adequacy, weight trajectory, and family support.

If using transcutaneous bilirubin screening method at facility:

- If using transcutaneous screening method, perform transcutaneous bilirubin screen (TcB) prior to newborn screening around 24 hours of age (may perform at as early as 18 hours of patient is discharging early). Performing TcB screening prior to the newborn screen allows for drawing a single specimen to perform a serum bilirubin test if indicated.
- If TcB results indicate recommendation of phototherapy, optional phototherapy, or recheck bili in 4-24 hours the RN will release, collect, and send a total serum bilirubin to the lab for confirmation prior to notifying the LIP of the results.
- If TcB or serum results indicate follow-up recommendations as “Follow-up 1-2 days” OR “Follow-up 1-3 days” then repeat transcutaneous bilirubin again at 48 hours or within 6 hours prior to discharge, whichever comes first.

Provider notification

- If Follow-up recommendations indicate “Phototherapy” or “Optional phototherapy” then notify LIP immediately and obtain orders including a follow up bilirubin order.
- If Follow-up recommendations indicate “Recheck bili in 4-24 hours" (unless otherwise ordered):
  - Notify the LIP immediately if resulted between 0800 – 1700 and obtain a repeat bilirubin order or plan for follow up after discharge.
  - Notify the LIP during morning rounds if resulted between 1700-0800 and obtain a repeat bilirubin order or plan for follow up after discharge.

Newborn Provider Notification Guidelines

Non-exclusive guidelines– nursing discretion always indicated for concerns/conditions not listed.

Notification process at time of delivery:

- Service standard: Notification of birth by 30 minutes of age. Process and timeline may vary per ministry expectations.
- Well newborn/low risk: RN or HUC call/page LIP/answering service with basic information:
  - Name + date/time of birth + gestation + weight.
- RN will communicate directly with the LIP for any concerns and/or issues documented on the Obstetric to Pediatric Care Provider Newborn Handoff in EMR record.

Maternal & Perinatal issues requiring notification:

- Maternal unknown or HIV positive (inform provider if HIV Treatment Algorithm has been followed).
- Maternal unknown or positive Hepatitis B and refuses Hepatitis B vaccine and Hepatitis B immune globulin treatment for newborn.
- Increased risk of early onset sepsis: Notify LIP with a calculated sepsis risk score of 0.65/1000 or greater with or without signs/symptoms of sepsis.

Newborn issues requiring notification: Initial issues:

- Temperature instability [< 36.4 C x 2 or > 38 C x 2 (axillary)]
- Respiratory distress/grunting/apnea
- Mottling or unusual rash
- Change in feeding patterns, lethargy, vomiting or suspected sepsis
- Maternal HIV status positive
- Maternal syphilis status positive
- Cord pH <7.00
- 5 minute Apgar score <7
- Gestational age <35 0/7 weeks or weight <2000 grams
- Notify if parent/guardian refuses Vitamin K injection (notify immediately between 0800-1700 or during morning rounds if birth occurs between 1700-0800)

Transition and Recovery Issues:

- **Hypoglycemia**: Low blood sugar as defined in the Newborn Glucose Management Protocol.
- **Respiratory:** apnea, stridor, unequal breath sounds, and increased work of breathing, cyanosis.
- **Heart:** A heart murmur associated with other signs & symptoms of congenital heart disease.
- **Integumentary:** Petechial rash, vesicular rash.
- **Vital Signs:** Any abnormalities after the first 4 hours of life (transition). See Care of the Newborn Practice Guideline for normal parameters & deviation from defined limits of normal assessments.
- **Circumcision:** complications (e.g. bleeding not responsive to RN interventions).
- **Gastrointestinal**: spontaneous green emesis, bloody emesis, blood per rectum, abdominal distention, Latch Score < 7 at time of discharge, or no void/stool documented by 48 hours or by the time of d/c.
- **Weight Loss**: Call in AM if newborn clinically stable.
  - > 7% for late preterm and SGA newborns
  - > 10% for term newborn

Labs: In general, all lab work ordered by attending LIP should be personally called back to the LIP unless a different plan is discussed when the test is ordered. However, certain lab tests such as the WBC and differential are so variably interpreted that there is no substitute for the LIP interpreting these results in the clinical context of the newborn.

11/18/2022

Term Newborn (cont)

Provider Notification Guidelines Cont.

Therefore, **the RN will always call a CBC result to the ordering LIP.** When receiving **critical lab values**, a call to the LIP and a documented response will be **charted within 1 hour** of receipt of critical lab value.

Bilirubin results:

- If newborn appears jaundiced within the first 24 hours: Screen with total serum bilirubin test (TSB) and contact the LIP immediately with results.
- If TcB results indicate recommendation of phototherapy, optional phototherapy, or recheck bili in 4-24 hours the RN will release, collect, and send a total serum bilirubin to the lab for confirmation prior to notifying the LIP of the results.
- If Follow-up recommendations indicate "Phototherapy" or "Optional phototherapy" then notify LIP immediately and obtain orders including a follow up bilirubin order.
- If Follow-up recommendations indicate "Recheck bili in 4-24 hours" (unless otherwise ordered):
    - Notify the LIP immediately if resulted between 0800 – 1700 and obtain a repeat bilirubin order or plan for follow up after discharge.
    - Notify the LIP during morning rounds if resulted between 1700-0800 and obtain a repeat bilirubin order or plan for follow up after discharge.

Safe Sleep/Newborn Falls

For additional information refer to full Policy: *Newborn Fall Prevention Practice Guidelines (Perinatal, Pediatrics, & NICU)* in PolicyStat

Provide education to mother and family on the following:

1. While in the hospital it is not permitted to sleep with newborn in the maternal bed or while sitting or lying on other furniture. Explain rationale and safety risk.
2. If they become sleepy, dizzy, or unsteady call for assistance to place newborn in crib/bassinet/isolette.
3. Inform parent/family if you find them asleep while holding their newborn, staff will transfer newborn to crib/bassinet/isolette.
4. Do not to leave newborn unattended on bed or couch.
5. Use of prescribed pain medications, increased blood loss, fatigue from labor and delivery, and bed positioning may increase risk mother will fall asleep and newborn will fall from hospital bed to the floor.
6. Leave bed in lowest position with side rails up during feedings.
7. If mother is using patient controlled analgesia, other sedating medications, or on seizure precautions she should have another responsible person for the newborn to remain in the room.

- Keep sides of crib/bassinet/isolette in up position close to maternal hospital bed to promote closeness and attachment. Check on mother frequently when newborn is in maternal hospital bed.
- All newborns must be transported in their cribs or bassinet lying flat with sides up or in an isolette. Newborn may be in mother's arms on stretcher and/or wheelchair if mother is stable.
- Staff members to make safety assessments during all rounds and every time they enter room.
- If parent/family declines to follow recommendations, document education and non-compliance in their electronic health record (EHR).

If a newborn fall does occur, call your lead nurse for support on the next steps and reporting.

Post-Fall Management:

- Registered Nurse (RN) obtains vitals signs (VS), performs physical assessment, and notifies provider immediately of fall.
- Physical assessment by newborn provider should be done as soon as possible and should include:
  - Full visible inspection for any evidence of trauma, with particular attention to the skull.
  - Neurologic assessment to include tone, alertness, movement.
- Frequent observation of newborn is recommended for a minimum of 12-24 hours.
- After initial assessment, vital signs and neuro assessment to include tone, responsiveness, reflexes, and fontanelle status or as ordered:
  - Every hour x 2
  - Every 4 hours x 2
- After initial assessment, head circumference hourly x 4

Post-Fall Management Cont.

- Pediatric provider should be immediately notified if any of the following occur:
    1. VS abnormalities
    2. Changes to behavior, movement, or neurologic status
    3. New physical findings suggestive of injury
    4. Vomiting
    5. Any additional concerns

Newborn Feeding

For additional information refer to full Policy: *Breastfeeding* in PolicyStat and *Donor Human Milk Administration (Perinatal, Pediatrics & NICU)* in PolicyStat

Donor milk

Administration of Donor Human Milk (DHM):

1. If use of DHM is acceptable to mother/parents:
    a. LIP will place order for donor milk.
    b. Order may be placed by Perinatal RN for indication as "per policy/Co-sign required" if needed according to:
        i. PSJH *Newborn Glucose Management* protocol, or
        ii. PSJH *Care of the Newborn - Term* or *Late Preterm Practice* guidelines [*Supplementation Plan for Late Preterm (LPI) and Small for Gestational Age (SGA) Newborns* contained within]
2. Confirm assent/consent has been obtained and documented:
    a. **Perinatal and Pediatrics Units** - ensure *Consent for Infant Nutritional Supplementation* form (Addendum A - English or Spanish version) has been completed by parent/legal guardian
    b. **NICU** - assent is documented as PARQ in LIP note:
        - If baby is transferred out of NICU to a perinatal or pediatric unit, it is not necessary to have parents sign *Consent for Infant Nutritional Supplementation* form if NICU LIP has already completed a PARQ and assent is previously documented.

*** If you need assistance with preparing/warming/thawing DHM please reach out to your nurse leader on the unit and refer to the Policy: *Donor Human Milk Administration* in PolicyStat.

Newborn Glucose Management

For additional information refer to full Policy: *Newborn Glucose Management* in PolicyStat

NEONATAL HYPOGLYCEMIA PROTOCOL: SCREENING AND MANAGEMENT (≥35 WEEKS GESTATIONAL AGE)

Initiate for any newborn with risk factors or symptoms

RISK FACTORS

- LGA, SGA, or IUGR
- Birth weight <2500 grams or >4500 grams
- Infant of diabetic mother
- < 37 weeks
- APGAR < 6 at 5 min
- Cord pH ≤7.0
- Suspected sepsis/symptomatic of sepsis

SYMPTOMS

- Jitteriness
- Lethargy
- Decreased muscle tone
- Poor suck
- Temp instability (≥38.0 or <36.4)
- Irritability
- High pitched cry
- Respiratory distress
- Pallor/diaphoresis
- Seizures

SYMPTOMATIC NEWBORNS: Check glucose, treat per algorithm, & notify LIP for further management.

Skin to skin ASAP after birth and breastfeed/feed within 60 minutes of birth.
Check glucose level 30 minutes after completion of first feed or at 60 minutes of life if unable to feed.

First CBG and up to 4 hours of Age

Glucose ≥ 45 mg/dL	Glucose 25-44 mg/dL	Glucose <25 mg/dL
1. Check CBG prior to each feeding 2. Feed at least every 3 hours and encourage skin to skin	1. Follow Treatment Plan	1. Notify LIP 2. Follow Treatment Plan

All Subsequent CBGs ≥ 4 hours of Age

Glucose ≥ 50 mg/dL	Glucose 45-49mg/dL	Glucose 25-44 mg/dL	Glucose <25 mg/dL
1. Check CBG prior to each feeding 2. Feed at least every 3 hours and encourage skin to skin 3. Continue glucose monitoring until a total of 4 consecutive CBGs have been in the green zone	1. If this is the first CBG in this range, feed and perform CBG prior to next feeding 2. If this is the second or more consecutive CBG in this range, proceed to Treatment Plan	1. Follow Treatment Plan	1. If this is the first occurrence in this range, notify LIP and follow Treatment Plan 2. If this is the second consecutive occurrence in this range: • Level I Nursery: Contact LIP to manage hypoglycemia, consider transfer if appropriate • Nursery with NICU: Contact LIP to transfer to NICU • NICU: Contact LIP to manage hypoglycemia

Treatment Plan

1. **Glucose oral gel (40%) 0.5ml/kg PO massage into buccal mucosa**
2. **Immediately breastfeed AND supplement with EBM/DM or formula (NICU may gavage feed):**

Yellow zone	At least 5-10 mL
Red zone	At least 10-15 mL

3. **Recheck glucose level 1 hour after completion of gel and feeds and follow appropriate subsequent CBG column**
4. Notify LIP after 2nd glucose oral gel dose is administered; LIP may consider repeating gel process up to max of 6 total doses of glucose gel

Level I Nursery: At discretion of LIP, consider IV dextrose, consider transfer to NICU after 6 total glucose oral gel doses

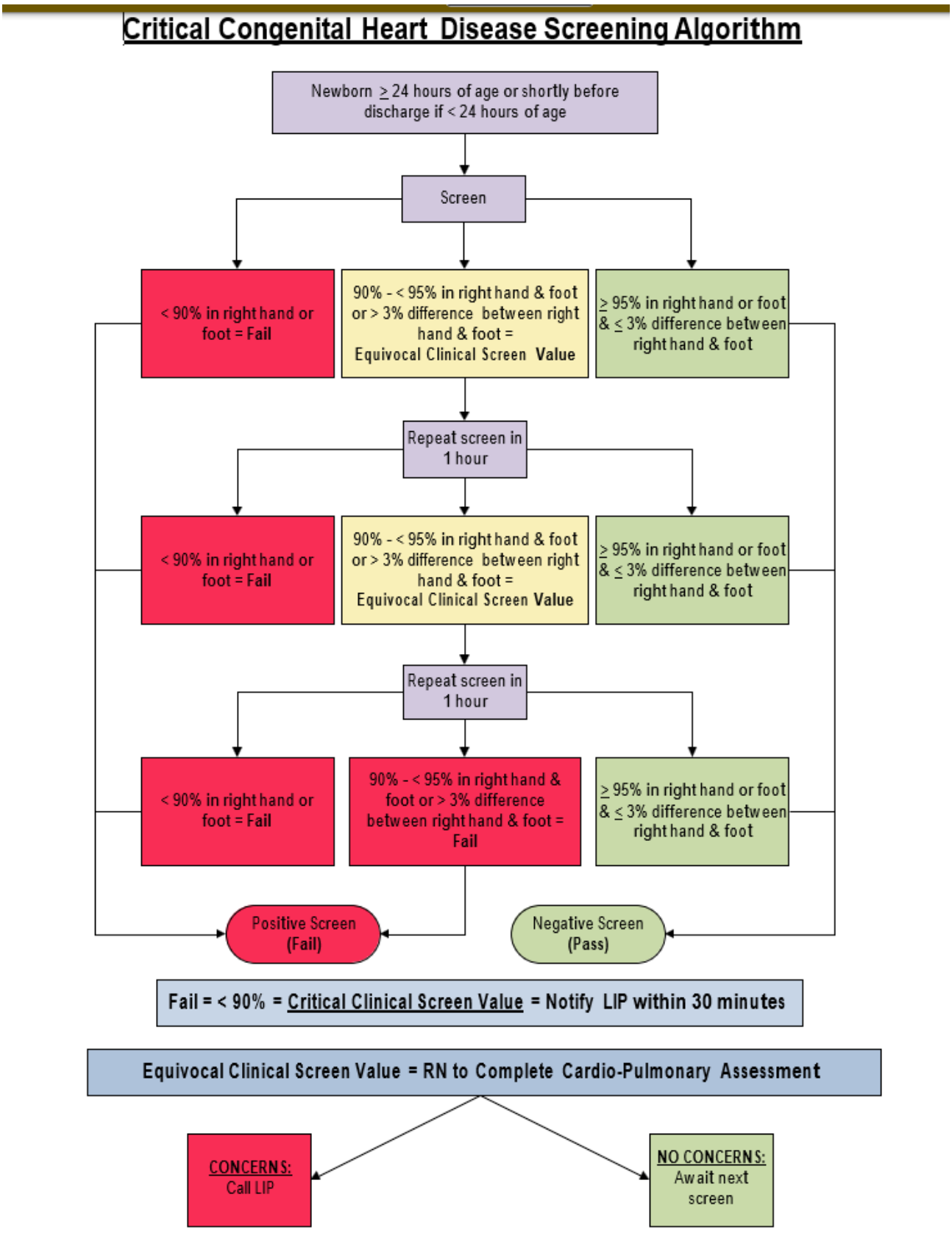
Nursery with NICU: Contact LIP to transfer to NICU after 6 total glucose oral gel doses

NICU: Contact LIP to manage hypoglycemia after 6 total glucose oral gel doses

632380 (5/7/19)

Critical Congenital Heart Disease (CCHD) Screening

For additional information refer to full Policy: *Critical Congenital Heart Disease (CCHD) Screening for the Newborn (Perinatal, NICU, Pediatrics)* in PolicyStat



Newborn Blood Screening

For additional information refer to full Policy: *Newborn Blood Screening* in PolicyStat and The Northwest Regional Newborn Screening Program (oregon.gov)

SPECIAL CONSIDERATIONS

1. State law requires that all newborns be tested, and designates practitioners as being responsible for specimen collection. The definition of "practitioner" includes physicians, nurses, advanced practice registered nurses, and midwives who deliver or care for infants. Oregon law also specifies that parents are responsible to ensure that their infants are tested.
2. Testing must be done before discharge even if discharge occurs before the recommended time for testing. Failure to collect a specimen before discharge may result in a significant liability on both the facility and responsible practitioner if an affected infant is missed.
3. Oregon Administrative Rules (OAR) specify that infants who are transferred to another unit within 48 hours of birth should be tested by the receiving facility. See Age of Infant at Specimen Collection (Table below).

Age of Infant at Specimen Collection

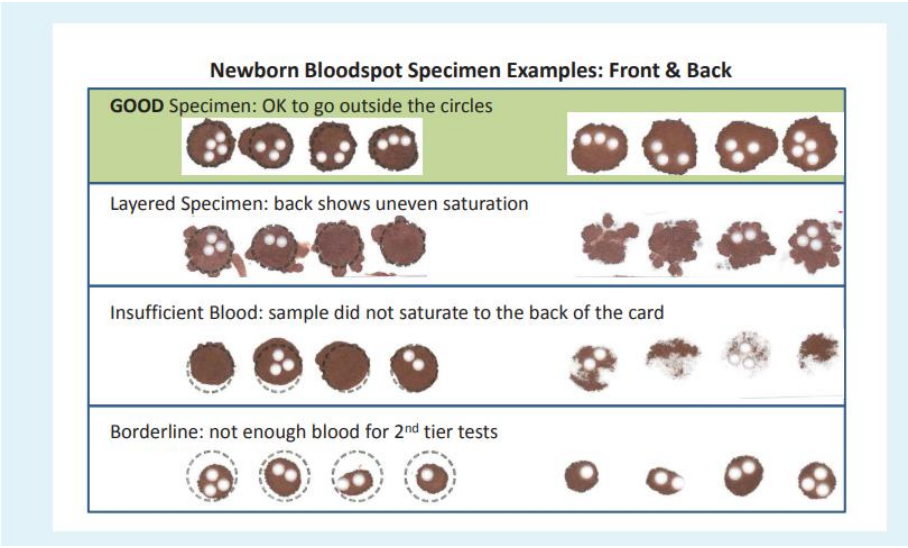
	Collection Kit	First Specimen	Second Specimen	Third Specimen
Routine Birth	Double Kit	As soon as possible after 24 hours of age but before 48 hours of age	10-14 days	Not collected
NICU infants transfused prior to 24 hours of age	Triple Kit	Prior to transfusion	48-72 hours after birth	~1 month, no sooner than 28 days
NICU infants not transfused prior to 24 hours of age	Triple Kit	As soon as possible after 24 hours of age but before 36 hours of age and prior to transfusion	10-14 days of age (11-15 days of life)	~1 month, no sooner than 28 days

Specimen Collection

a. Obtain blood sample.
b. To prevent specimen contamination, do not touch any part of the filter paper circles with either your skin or the newborn's skin before, during, or after collection.
c. Apply blood to only one side of the filter paper. Blood should soak all the way through the paper such that the blood spots look similar on both sides.
d. Complete and even saturation of the entire circle is essential for accurate testing.
e. Do not superimpose the blood drops on top of each other. Let each drop touch the paper about 1/8 inch away from each other. This may prevent layering and uneven saturation, one cause of false results.
f. Collect the blood in all circles. A minimum of three circles is necessary to complete the screening panels. If there are problems with sufficient blood flow, it is better to fill three circles completely, than to fill four circles inadequately.

Newborn Blood Screening Cont.

g. Follow facility process for handling and processing specimen. Air dry specimens at room temperature for 2-4 hours in a horizontal position with the blood spots exposed.
h. Mail completed, dried sample in non-plastic envelope and mail within 4-12 hours of collection and no later than 24 hours after collection.
i. Follow facility specific process for delivering additional specimen kit (2nd and 3rd specimen if applicable). If parent is taking screening kit (which is located in the red envelope given to parent at discharge), instruct them to bring this to the office/clinic for the follow-up newborn appointment.



Late Preterm and Small for Gestational Age Care

For additional information refer to full Policy: *Care of the Newborn- Late Preterm and Car Safety Seat and Car Bed Evaluation* in PolicyStat

Attachment B: Supplementation Plan

The following guideline is intended to support breastfeeding for late preterm (LPI) and small for gestational age (SGA) newborns

Most late preterm infants (LPIs) are at risk for breastfeeding difficulties until they reach 38-40 weeks of corrected gestational age. Supplementation is recommended until evaluation of feeding effectiveness by test weights can take place in the outpatient setting after the mother's milk supply is established. Mothers of LPIs are at risk for discontinuing breastfeeding when their newborns fail to gain weight. This guideline outlines a supplementation plan to prevent weight loss, en-sure an adequate milk supply, and support a transition to full feedings at breast when the LPI is developmentally ready. **It is acceptable to make appropriate adjustments if the LPI is demonstrating adequate milk intake at breast.** Some small for gestational age (SGA) infants may benefit from use of this supplementation plan.

	At Delivery	First 24 Hours	24-96 Hours
Skin to skin support	Skin to skin until first breastfeed	Continue frequent skin to skin	
Feeds at Breast	Offer breast and attempt latch. If baby latches, remind mother to use breast compression to maximize intake by the newborn. In general, limit feeds to 30min to decrease fatigue. Use of a nipple shield may improve the LPI's ability to sustain a latch at breast.		
Supplementation: May include SNS, feeding tube/syringe, spoon, or bottle	After feeding attempt: • Hand express and spoon feed colostrum or breast milk to the newborn.	LPI: • Feed per feeding cues, at least 8-12 feedings per 24hrs. Supplement with 5-10mls (colostrum, donor milk, or formula) regardless of feeding effort or normal glucose. • Increase supplementation per newborn cues or provider order.	LPI: • Feed per feeding cues, at least 8-12 feedings per 24hrs. • Continue supplementation regardless of feeding effort. • Increase supplementation amounts to 10-30ml and increase if newborn continues to show feeding cues.
		SGA: • Feed per feeding cues, at least 8-12 feedings per 24hrs. • With normal glucose and ineffective breastfeed*, supplement with 5-10mls (colostrum, donor milk, or formula). • Increase supplementation per newborn cues or provider order.	SGA: • Obtain LC Consult • Continues supplementation if ineffective feeding* noted • Supplement volumes from to 10-30ml per feed • Increase volumes per newborn cues or provider order
	Monitor blood glucose and adjust supplement volume according to current glucose management protocol for hypoglycemia, LIP order, and newborn feeding cues. *Ineffective feeding: poor/absent feeding cues, latch score $\leq$ 1, unable to latch after 10min no rhythmic suckling or areolar tissue moving inward, no swallowing heard or visualized.		
Breast stimulation to maximize milk supply	Hand expression during delivery recovery period	Hand expression after every feeding attempt. Goal 8x/24hrs	Continue hand expression and add breast pumping after feedings
Weight Assessment	Goal: initial weight by 2hrs of age	Daily weights and within 4-6 hours of discharge. If $\geq$ 7% weight loss notify the provider	
Care Plan	Refer to lactation team according to availability per facility	Continue to assess weight and ability to feed. Adjust supplementation plan with parent input	Prior to discharge, verify follow-up apt in 1-2 days with lactation or provider. Outline feeding plan with mothers input. May include higher supplementation volumes.

Car seat evaluation may be considered in consultation with a Licensed Independent Practitioner (LIP) to determine if a car seat evaluation is needed. RN to document in newborn provider notification in electronic medical record. A LIP order is required for possible indications:

I. Small for gestational age
II. Congenital low muscle tone (e.g. trisomy 21)
III. Pierre Robin Sequence
IV. Congenital heart defects
V. Cleft lip and/or palate
VI. Neuromuscular deficits
VII. Significant documented apnea, bradycardia or oxygen desaturation
VIII. Newborns at high risk for apnea, bradycardia or oxygen desaturation due to other medical conditions, such as hypotonia, bronchopulmonary dysplasia or severe reflux

Hyperbilirubinemia

For additional information refer to full Policy: *Transcutaneous Bilirubin Measurement and Care of the Newborn Under Phototherapy* in PolicyStat

Assessments Include:

I. All newborns have visual assessment of jaundice by registered nurse (RN) at each shift assessment
   A. Assess infant in natural daylight, if possible, or use an overhead exam light or warmer light.
   B. Apply gentle pressure to skin, blanching it to reveal underlying color of skin and subcutaneous tissue.

II. Obtain Transcutaneous Bilirubin (TcB) measurements:
   A. At approximately 24 hours of age (may perform as early as 18 hours if discharging home) prior to newborn screening
   B. TcB cannot be used if measurements are >15 mg/dL
   C. TcB cannot be used once infant has received phototherapy

III. Interpret all bilirubin measurements:
   A. According to the newborns age in hours (use biligram in EPIC or bilitool.org)
   B. For perinatal units, refer to PSJH *Care of the Newborn* policy
   C. If patient in NICU or Pediatrics, notify provider for orders.

Phototherapy

A. Undress newborn down to diaper to allow maximum skin exposure.
B. Before turning on phototherapy light (blankets or overhead), cover newborn's eyes securely with eye patches.
   1. Be sure eyelids are closed to prevent corneal scarring.
C. Obtain serum bilirubin or transcutaneous levels as ordered. Turn off phototherapy lights when drawing sample or measuring transcutaneous bilirubin. Expect bilirubin levels to decrease after 4–6 hours of therapy.
D. Document bilirubin level results in EHR using the Biligram postnatal age nomogram.
E. Once phototherapy is initiated:
   1. Record vital signs every hour until stable. Then assess and document temperature at least every 3-4 hours. Other VS as ordered by LIP.
   2. Assess newborn for early signs of early bilirubin encephalopathy, such as changes in sleeping, inconsolable crying, or deteriorating feeding pattern.
   3. Monitor intake and output closely.
   4. Weigh newborn daily.
   5. Cleanse eyes daily. If irritation or drainage is present, notify LIP.
   6. Remove eye patches for 5-10 minutes every 4 hours to observe for irritation or drainage.
   7. Remove eye patches for short periods during parent visits to encourage bonding.
   8. Document phototherapy source and eye care in the appropriate EHR flowsheet.
   9. Leave newborn exposed to phototherapy at all times, except for feeding, unless otherwise ordered by LIP. Feedings should be limited to no more than 30 minutes (if not using biliblanket).
F. Educate parents/caregivers about phototherapy. Provide Krames P*hototherapy for the Newborn Jaundice* education or other approved patient education handout.

Newborn Comfort Care or Loss

Refer to full Policies: *Newborn Comfort Care in the Final Hours* and/or *Perinatal Loss* in PolicyStat for required steps for any neonatal or newborn comfort care or loss

***Please call your nurse leader on the unit for support and resources available to support you and the family.

- The appropriate checklist is listed within the policy under attachments, select the facility checklist for your location.