

Registered Nurse Initiated Activities

Decision Support Tool No. 7:

Postpartum Hemorrhage

Decision support tools are evidenced-based documents used to guide the assessment, diagnosis and treatment of client-specific clinical problems. When practice support tools are used to direct practice, they are used in conjunction with clinical judgment, available evidence, and following discussion with colleagues. Nurses also consider client needs and preferences when using decision support tools to make clinical decisions.

The Nurses (Registered) and Nurse Practitioners Regulation:	Regulation: (6)(1)(h.1) authorizes registered nurses to “manage labour in an institutional setting if the primary maternal care provider is absent.”
Indications:	When RNs are caring for a woman experiencing postpartum hemorrhage
Related Resources, Policies, and Standards:	SOGC Clinical Practice Guideline 2000, Prevention and Management of Postpartum Hemorrhage; PSBC (1998/07) Form PSBC 1592. British Columbia Postpartum Clinical Path or institutional specific documents International Joint Policy Statement Management of 3 rd Stage of Labour (November, 2003)
Definitions and Abbreviations:	Postpartum Hemorrhage (PPH) – Blood loss in excess of 500 mls in vaginal deliveries and 1000 mls in caesarean births or any blood loss that causes a major physiological change/produces hemodynamic instability as determined by pre-existing conditions of the woman (anemia or decreased blood volume) Early PPH –Typically occurs within 24 hours following birth. Uterine atony is the most common cause Late PPH –Occurs between 24 hrs and the sixth week postpartum. Retained placental tissue is one of the most common causes Abdominal Bimanual Uterine Massage –Massaging fundus with upper hand cupped over fundus and lower hand dipping in above symphysis pubis and supporting uterus Active Management of the Third Stage of Labour –The combination of administering oxytocin at delivery and providing controlled cord traction and counter tension on the uterus in assisting with the delivery of the placenta

Assessment

- Before birth, obtain an accurate history from the woman including previous obstetrical, prenatal and antepartum history
- Anticipate the problem, look for risk factors associated with postpartum hemorrhage (4 Ts= Tone, Trauma, Tissue, Thrombin –see Appendix 1)
- Ongoing frequent assessment, maternal vital signs, fundus and flow as determined by woman's signs and symptoms, q 15 min x 1 hour after birth and at 2 hrs
- Consider possible signs and symptoms of PPH, notify PCP if:
 - Fundus – Poor tone (normally firm, midline, at umbilicus)
 - Lochia – ↑ volume, colour, consistency and bleeding pattern (normally scant to moderate, rubra)

- Trauma/lacerations occurring during birth (constant lochia trickle with firm fundus)
- Vital signs
 - ◊ Tachycardia, weak or irregular pulse (normal pulse – 55–100 bpm, regular and strong)
 - ◊ Tachypnea (normal respirations 12–24 – not laboured)
 - ◊ Elevated or stable BP followed by hypotension (normal BP – systolic 90–140; diastolic 50–90)
- Decreased urine output (normally voiding sufficient quantity)
- Increasing abdominal girth – may be a sign of occult bleeding
- Signs of hypovolemic shock (restlessness, anxiety, cool, clammy, pale, or ashen skin)
- Increasing abdominal pain
(PSBC, 2011; AWHONN, Johnson & Johnson, 2006).
- Decreased level of consciousness

Nursing Diagnosis

- Excessive postpartum blood loss due to uterine atony, lacerations, retained placenta or coagulopathy (see Appendix 1)

Special Consideration and Precautions

- Primary goal for PPH is to identify and correct the source(s) of bleeding, restore blood volume, and stabilize maternal vital signs and level of consciousness (SOGC, MORE^{OB}; ALARM 2010)
- PPH is life threatening (a leading cause of maternal morbidity and mortality) and requires early recognition, prompt intervention and team work
- Time is of the essence as PPH emergencies often occur unexpectedly leading to hemorrhagic shock (AWHONN, Johnson & Johnson, 2006; SOGC, MORE^{OB}; ALARM, 2010)
- Management of ongoing PPH requires a multidisciplinary approach that involves maintaining hemodynamic stability while simultaneously identifying and treating the cause of blood loss (SOGC, MORE^{OB}, ALARM 2010)
- Active management of labour (combining oxytocin and controlled cord traction) reduces the incidence and severity of PPH
- Administration of oxytocin with delivery is most beneficial in prevention of PPH (effective protocols 10 units IM or 5 units IV push) (SOGC, 2000; SOGC, MORE^{OB}; ALARM 2010)
- The longer the 3rd stage the greater the risk of PPH
- Maternal vital signs may initially be normal because pregnant women can lose up to 40% of blood volume without showing signs of shock (Lowdermilk & Perry, 2012)
- A constant trickle of blood can be as serious as an obvious hemorrhage
- Every obstetrical unit should have a readily available tray with all the necessary equipment (SOGC, MORE^{OB}, ALARM 2010). Contents of the tray may include:

Postpartum Hemorrhage Tray	
<ul style="list-style-type: none"> • Airway and breathing <ul style="list-style-type: none"> ▪ Adult airways ▪ Oxygen mask and tubing • Drugs <ul style="list-style-type: none"> ▪ oxytocics ▪ Medication labels • Sutures • Intravenous <ul style="list-style-type: none"> ▪ Large bore intravenous cannula ▪ Intravenous tubings ▪ Crystalloid intravenous solutions ▪ Blood Transfusion set ▪ Syringes and needles ▪ Blood collection tubes and syringes 	<ul style="list-style-type: none"> • Foley catheter • Packing forceps Gauze, tape • Uterine packing • Pelvic speculum • Intrauterine inflatable balloon

Interventions

1. Stay with the woman, call for help, notify PCP
2. Keep woman NPO
3. Establish venous access with large bore catheter – #18 gauge or larger (Normal Saline) – may need 2 large bore IV lines; monitor and record intake and output
4. Administer oxytocin
 - Prepare IV infusion of oxytocin, add 20 units of oxytocin to 1000 mL of Normal Saline
 - Infuse at 150–250 mL per hour to control bleeding until further order can be obtained from PCP
5. If fundus is not firm provide abdominal bimanual uterine massage
 - Note effects of massage (firming of fundus) and presence of clots
6. Perform maternal vital signs q 15 min (BP, P, R) including level of consciousness, fundal height and tone, amount of blood loss – until stable as per woman's condition
7. Administer oxygen at 8 -10 L/min prn – monitor oxygen saturation ($\geq 95\%$) with pulse oximeter
8. Empty bladder – may require indwelling catheter- monitor output q 1 h
9. Measure and record amount and type of bleeding
 - weigh & count pads/linen (usually 1 g of weight = 1 mL of blood loss, however there is evidence that this method may still underestimate blood loss depending on the dryness and consistency of the clots)
10. Determine the onset and duration of blood loss
11. Assess possible sources of bleeding (4 Ts – Tone, Trauma, Tissue, Thrombin (see Appendix 1)
12. If placenta in, promote delivery of placenta by asking the woman to assume upright (squatting) position if she is able
13. If placenta out, prepare for operating room. Consult PCP to inform of progress, additional orders or interventions
14. Anticipate blood work e.g. type and screen, complete blood count – hemoglobin, platelet count, Prothrombin time (PT), International Normalized ration (INR), Partial Thromboplastin Time (PTT), Fibrinogen level
15. Anticipate orders for other medications e.g. hemabate, misoprostol, ergometrine (see Appendix 2)
16. Encourage the woman to breastfeed if she is able

Intended Clinical Outcomes

- There is an early recognition of the signs and symptoms of PPH
- Timely and effective communication of blood loss and variances/complications are given to the PCP
- Accurate blood loss is determined
- Absence of disseminated intravascular coagulation
- The woman will maintain normal vital signs and laboratory values and minimize complications related to excessive bleeding
- Woman feels supported and timely care has been provided
- Minimize maternal and newborn separation

Client Education

- Provide information to the woman and her support person(s) regarding PPH, plan of treatment, and implications (e.g. fatigue, breastfeeding)
- Explain all treatment modalities and reasons for each
- Allow time for the woman and her support person(s) to communicate fears and concerns
- Provide debriefing as necessary

Documentation

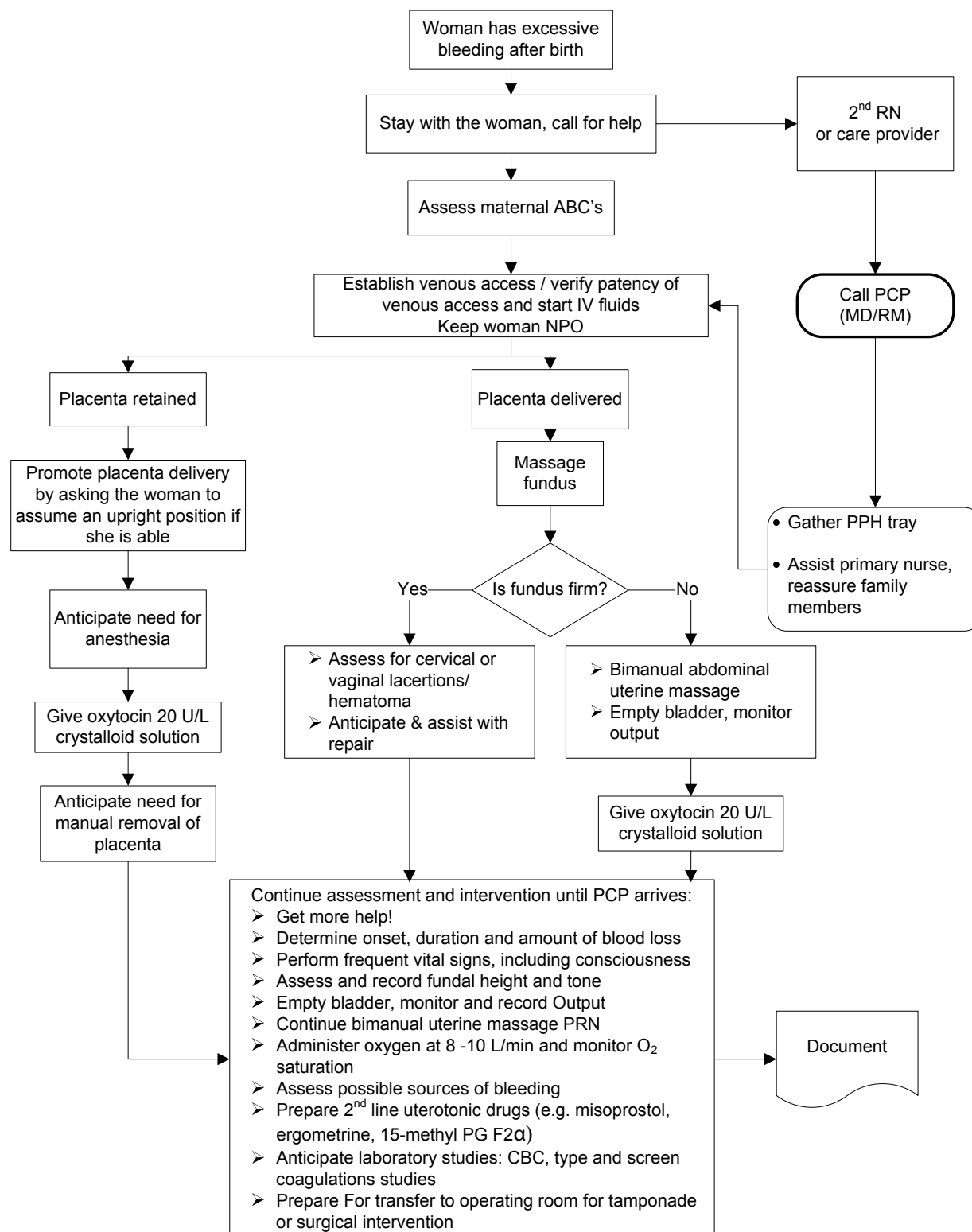
Documentation on the PSBC Forms - Labour Partogram (PSBC 1583), Labour and Birth Summary Record (PSBC 1588), British Columbia Postpartum Clinical Path (PSBC 1592), Interprofessional Notes, Fluid balance record, and/or specific institutional records

Documentation to include the following:

- Events leading up to PPH
- Time of delivery of placenta
 - Completeness of placenta
- Time of excessive bleeding identified
 - Amount, colour, consistency and pattern of bleeding
 - Source, type and duration of bleeding
- Ongoing Maternal status
 - Tone and position of fundus
 - Serial vital signs including level of consciousness
 - Any variances such as
 - ◇ Abnormalities of uterine contraction
 - ◇ Retained products of conception
 - ◇ Genital tract trauma
 - ◇ Abnormalities of coagulation
 - Emotional status
- Time and sequence of interventions
 - Venous access established – gauge of catheter, type, amount of fluid
 - ◇ Accurate documentation on fluid balance record
 - Medications and oxygen given
 - ◇ Dose, route, maternal response
 - Blood work drawn
 - Blood product replacement therapy
 - Urinary catheter inserted
 - Repair of lacerations and/or surgical interventions
- Responses to interventions
- Staff in attendance and the time they arrived

Decision Support Tool:

Postpartum Hemorrhage



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- SOGC Clinical Practice Guideline No. 235. (October 2009). Active management of third stage of labour: Prevention and treatment of postpartum hemorrhage.

Appendix 1

Most Common Causes and Risk Factors of PPH in terms of the four T's

TONE Abnormalities of uterine contraction	TRAUMA Genital tract	TISSUE Retained products of conception	THROMBIN Abnormalities of coagulation
<ul style="list-style-type: none"> • Over distended uterus • Polyhydramnios • Multiple gestation • Macrosomia • Uterine muscle exhaustion <ul style="list-style-type: none"> ▪ Rapid labour ▪ Prolonged labour ▪ High parity ▪ Oxytocin use-induction • Intra-amniotic infection <ul style="list-style-type: none"> ▪ Fever ▪ Prolonged ROM • Functional/anatomic distortion of uterus <ul style="list-style-type: none"> ▪ Fibroid uterus ▪ Placenta previa ▪ Uterine anomalies • Uterine-relaxing medications <ul style="list-style-type: none"> ▪ Halogenated anesthetics ▪ Nitroglycerin • Distended bladder 	<ul style="list-style-type: none"> • Lacerations of cervix, vagina or perineum <ul style="list-style-type: none"> ▪ Precipitous delivery ▪ Operative delivery • Extensions, lacerations at C/S <ul style="list-style-type: none"> ▪ Malposition ▪ Deep engagement • Uterine rupture <ul style="list-style-type: none"> ▪ Previous uterine surgery • Uterine inversion <ul style="list-style-type: none"> ▪ High parity ▪ Fundal placenta 	<ul style="list-style-type: none"> • Retained Products –abnormal placentation <ul style="list-style-type: none"> ▪ Accreta, increta, percreta ▪ Retained cotyledon or succinuriate lobe ▪ Incomplete placenta at delivery • Previous uterine surgery • High parity • Abnormal placenta on ultrasound • Retained blood clots • Atonic uterus 	<ul style="list-style-type: none"> • Pre-existing states • Hemophilia A • Von Willebrand's Disease (vWD) • Idiopathic Thrombocytopenic purpura • History of liver disease • Disseminated Intravascular Coagulation (DIC)

(SOGC, 2009; SOGC, MORE^{OB}, ALARM, 2010)

Appendix 2

Medical Management of Postpartum Hemorrhage

Sources of Bleeding	Treatment of PPH
TONE – Soft Boggy Uterus	Uterine massage (bimanual) Empty bladder Insert IV Draw blood work – Cross match (packed cells), CBC (hemoglobin, platelet count) Prothrombin Time (PT), International Normalized Ratio (INR), Partial Thromboplastin Time (PTT), Fibrinogen level Uterotonic Medications: <ol style="list-style-type: none"> 1) Oxytocin <ul style="list-style-type: none"> <input type="checkbox"/> 10 U IM <input type="checkbox"/> 5 U IV bolus <input type="checkbox"/> 20 U in 1000 mL N/S – Infuse at 150 – 250 mL per hour to control bleeding until further order from PCP 2) Misoprostol (Cytotec) <ul style="list-style-type: none"> <input type="checkbox"/> 600–800 microgram (mcg) PO/SL/rectal Note: pyrexia is more common with doses over 600 mcg 3) 15-methyl F2α (Hemabate, Carboprost) <ul style="list-style-type: none"> <input type="checkbox"/> 250 ug IM or intramyometrial (IMM) q 15 min maximum of 2 mg (8 doses) 4) Ergometrine <ul style="list-style-type: none"> <input type="checkbox"/> 0.2 mg IM/IV q 5 min maximum of 1.5 mg (limited supply) 5) Carbetocin <ul style="list-style-type: none"> <input type="checkbox"/> 100 mcg IM/IV over 1 min (↓ bleeding with C/S only) May Require Blood Component Replacement Therapy <ul style="list-style-type: none"> <input type="checkbox"/> Fresh frozen plasma (FFP) <input type="checkbox"/> Cryoprecipitate <input type="checkbox"/> Platelets <input type="checkbox"/> Packed Red Blood Cells (PRBC) <input type="checkbox"/> Fresh Whole Blood May need to prepare woman for surgical intervention May require further emergency therapy for uterine atony e.g. Tamponade with catheter
TRAUMA – Genital Laceration, Hematoma Uterine Inversion	Inspect vagina and cervix for bleeding <ul style="list-style-type: none"> <input type="checkbox"/> Repair of laceration(s) <input type="checkbox"/> May require drainage of hematoma May use packing May need to prepare woman for surgical intervention
TISSUE – Retained Placenta	Inspect placenta for missing segments Manual removal of placenta may be required Curettage may be required
THROMBIN – clotting disorder	Draw blood work May Require Blood Component Replacement Therapy <ul style="list-style-type: none"> <input type="checkbox"/> Fresh frozen plasma (FFP) <input type="checkbox"/> Cryoprecipitate <input type="checkbox"/> Platelets <input type="checkbox"/> Packed Red Blood Cells (PRBC) <input type="checkbox"/> Fresh Whole Blood

If bleeding continues despite the above interventions surgery may be required

- Ligation of uterine or iliac arteries
 - Uterine artery embolization
 - Hysterectomy
- (SOGC, 2009; ALARM, 2010)