1.0 OBJECTIVES

1.1 This will guide Rural Covenant Health Obstetrically trained staff in the management and treatment of Postpartum Hemorrhage (PPH).

2.0 POLICY STATEMENT

2.1 Postpartum hemorrhage is blood loss in excess of 500ml after a vaginal birth and in excess of 1000ml in a Cesarean section delivery.

2.2 Primary (immediate) postpartum hemorrhage is that which occurs in the first 24 hours after birth. The majority of the cases are caused by uterine atony. Secondary (late) postpartum hemorrhage can occur from 24 hours after delivery until 6 weeks postpartum. This is most commonly caused by retained products of conception, infection or both.

2.3 Prior to vaginal delivery, if 1 or more risk factors (see Appendix A) are recognized, it is safe practice to:
   - Obtain CBC and Type and Screen bloodwork
   - Establish intravenous access with a large-bore needle
   - Infuse crystalloid solution

3.0 ETIOLOGY

3.1 Consider the following “Four T’s” when assessing the cause of PPH:

   - Tone – uterine atony, distended bladder
   - Tissue – retained placenta or clots
   - Trauma – uterine, cervical or vaginal injury
   - Thrombin – pre-existing or acquired coagulopathy

3.2 Clinical risk factors (see Appendix A for a more complete list):

   - Polyhydramnios, multiple gestation, macrosomia
   - Rapid, prolonged or induced labor
   - High parity
   - Oxytocin use
   - Fever, prolonged rupture of membranes
4.0 **ACTIVE MANAGEMENT OF THIRD STAGE FOR PREVENTION OF PPH**

4.1 Ensure trained staff are in attendance.

4.2 Use uterotonic agents. Oxytocin may be given as:
   - 10 international units (IU) intramuscularly (IM) after delivery of the anterior shoulder, or
   - 20-40 IU in 1000ml normal saline as an intravenous (IV) infusion (100-150 ml/hour), or
   - 5-10 IU given slowly via direct IV over 1-2 minutes following a vaginal birth

4.3 Gentle controlled cord traction simultaneous with suprapubic support of the uterus

4.4 Carbetocin 100 micrograms given direct IV over 1 minute could be used instead of continuous oxytocin infusion for prevention of PPH in an elective Cesarean section.

5.0 **MANAGEMENT OF POSTPARTUM HEMORRHAGE**

Time is of essence in the management of PPH. In order to minimize the risk of morbidity and mortality, practitioners must have an organized plan of management that is instituted promptly. A readily available, standard equipment tray will facilitate the immediate management of hemorrhage

Remember that compensatory responses to blood loss in these women are excellent and may give caregivers a false sense of security.

**PROCEDURE**
5.1 Call for help. Notify the primary care giver.

5.2 Attempt to manage bleeding by:
   - Uterine massage
   - Express uterine clots
   - Empty bladder

5.3 Assess CAB – circulation, airway, breathing

5.4 Assess LOC, vital signs and urine output.

5.5 Start at least one large bore IV (minimum of #18 gauge). Infuse IV crystalloid bolus (preferably normal saline 0.9%).

5.6 Administer uterotonic medication and fluid volume replacement as per physician's order. See below for options of therapy.

5.7 Consider:
   - Supplementary oxygen
   - Inserting a foley catheter

5.8 Obtain CBC, cross-match and consider coagulation studies.

5.9 If atony persists after repeated doses of uterotonics, continue bimanual massage and consider:
   - Uterine tamponade
   - Vasopressin to the placental bed
   - Surgical options:
     - Compression sutures
     - Uterine artery ligation
     - Ovarian artery ligation
     - Internal iliac artery ligation
     - Hysterectomy
     - Laparotomy
   - Radiologic option of artery/internal iliac embolization
5.10 If uterus is firm, but bleeding persists, explore vagina, cervix and uterus. Look for lacerations, uterine inversion or rupture.

5.11 Assess volume of blood loss. Assess signs and symptoms, weigh linens and/or peri-pads.

Replace fluid loss according to physician’ order. Refer to Covenant Health policy VII-B-395 Transfusion of Blood Components and Products, as needed.

6.0 PHARMACOLOGICAL MANAGEMENT OPTIONS OF THERAPY
The following options are to be done while simultaneously assessing etiology and performing other required treatments:

6.1 Oxytocin / Syntocinon
- 10 units IM
- 5 units IV
- 20 to 40 units in 1000ml of normal saline 0.9% infused at 150 ml/hour

6.2 Misoprostol / Cytotec
- 200 micrograms orally or 400 micrograms sublingually with 400 micrograms rectally
- Combined dose of 800-1000 micrograms
- Oral and sublingual dose have more rapid response, rectal dose lasts longer

6.3 Hemobate / Carboprost
- 250 micrograms IM or intramyometrial
- May be repeated every 15-90 minutes
- Maximum cumulative dose of 2mg or 8 doses
- Asthma is a relative contraindication

6.4 Ergometrine / Ergonovine maleate / Ergot
- 0.25mg IM or IV
- Maximum every 5 minutes
6.5 Carbotocin / Duratocin

- 100 micrograms IV
- May be given IM

References:


The MoreOB Program (2014) access restricted to registered users, Module One, Postpartum Hemorrhage, accessed on August 13, 2015 from https://secure.moreob.com/en?t=/contentManager/onStory&e=UTF-8&i=1317992669064&l=0&ParentID=1205698412125&StoryID=1218485844354&highlight=1&keys=fetal+fibronecin&lang=0#_1__Fetal
### APPENDIX A

**Risk Factors for Postpartum Hemorrhage**

<table>
<thead>
<tr>
<th>Abnormalities of uterine contraction (<em>Tone</em>)</th>
<th>Etiologic Process</th>
<th>Clinical Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over-distended uterus</td>
<td>- <em>Polyhydramnios</em></td>
<td></td>
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<tr>
<td></td>
<td>- multiple gestation</td>
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<tr>
<td></td>
<td>- <em>Macrosomia</em></td>
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<tr>
<td>Uterine muscle exhaustion</td>
<td>- rapid labor</td>
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<tr>
<td></td>
<td>- prolonged labor</td>
<td></td>
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<tr>
<td></td>
<td>- high parity</td>
<td></td>
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<tr>
<td></td>
<td>- oxytocin use</td>
<td></td>
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<tr>
<td></td>
<td>- induction of labor</td>
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<tr>
<td>Intra-amniotic infection</td>
<td>- fever</td>
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<tr>
<td></td>
<td>- prolonged ROM</td>
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<td>Functional/anatomic distortion of the uterus</td>
<td>- <em>Fibroid</em> uterus</td>
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<tr>
<td></td>
<td>- <em>Placenta previa</em></td>
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<tr>
<td></td>
<td>- uterine anomalies</td>
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<tr>
<td>Uterine-relaxing medications</td>
<td>- halogenated anesthetics</td>
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<tr>
<td></td>
<td>- <em>Tocolytics</em> including nitroglycerin</td>
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<tr>
<td>Bladder distension, which may prevent uterine contraction</td>
<td>- abnormal placentation</td>
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<tr>
<td></td>
<td>- retained <em>Cotyledon</em> or <em>Succenturiate lobe</em></td>
<td></td>
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<tr>
<td>Retained Products of conception (<em>Tissue</em>)</td>
<td>- incomplete placenta at delivery</td>
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<tr>
<td></td>
<td>- previous uterine surgery</td>
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<tr>
<td></td>
<td>- high parity</td>
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<tr>
<td></td>
<td>- abnormal placenta on ultrasound (U/S)</td>
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<tr>
<td>Retained blood clots</td>
<td>- atonic uterus</td>
<td></td>
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<tr>
<td>Genital Tract Trauma</td>
<td>- precipitous delivery</td>
<td></td>
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<td></td>
<td>- operative delivery</td>
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</tbody>
</table>
### (Trauma)

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Risk Factors</th>
</tr>
</thead>
</table>
| Extensions, lacerations at cesarean section (C/S) | - malposition  
- deep engagement |
| Uterine rupture                     | - previous uterine surgery                        |
| Uterine inversion                   | - high parity  
- fundal placenta                               |

### Abnormalities of Coagulation (Thrombin)

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Risk Factors</th>
</tr>
</thead>
</table>
| Pre-existing states                | - Hemophilia A  
- Von Willebrand’s Disease[^16]  
- History of previous PPH          |
|                                   | - history of hereditary coagulopathies  
- history of liver disease          |
| Prior invasive treatment of PPH with embolization (39%) and ligation (26%)[^17] | |
| Acquired in pregnancy              | - [Idiopathic] thrombocytopenic purpura (ITP)  
- thrombocytopenia with [Pre-eclampsia]  
- disseminated intravascular coagulation (DIC)  
- gestational hypertension with adverse conditions  
- dead fetus in utero  
- severe infection  
- abruption  
- amniotic fluid embolus | - bruising  
- elevated BP  
- elevated BP  
- fetal demise  
- fever, neutrophilia or neutropenia  
- antepartum hemorrhage  
- sudden collapse |
| Other                              | - hX of thrombotic disease                        |

[^18]: BMI > 30

Table Source: MoreOB, Module One, Postpartum Hemorrhage. September 2014.
## APPENDIX B
### Treatment of PPH

| Call for Help | Resuscitation | Assess the ABC* | Oxygen by mask | IV line | Crystalloid, levotocico fluid replacement | Monitor BP, P, R, Stimulation | Complete blood count | Coagulation screen | Blood grouping | Initial assessment and treatment for primary PPH | Uterus soft and relaxed | Uterus not separated or partially separated (uterine atony) | Excess bleeding or shock shortly after birth, uterus contracted | Uterine fundus not felt abdominally or visible vaginally | | Uterine inversion | Coding according to the World Health Organization's Hemorrhage Technical Consultation Meeting Document - 4th Edition |
|---------------|----------------|----------------|----------------|--------|------------------------------------------|--------------------------------|---------------------|------------------|--------------|-----------------------------------------------|--------------------|---------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------| | | | | | | | | | | | | | | | | | | | | | | | Table Source: SOGC Clinical Practice Guideline. Active Management of the Third Stage of Labour. October 2009.