

# POSTPARTUM HAEMORRHAGE

MODULE: OBSTETRIC

TARGET: ANAESTHETIC CORE TRAINEES & ALL ANAESTHETISTS

## BACKGROUND:

In the last triennial CMACE report, haemorrhage was the sixth highest direct cause of maternal death. It is a common complication of vaginal deliveries as well as Caesarean Sections. Every trust will have local guidelines on the management of major obstetric haemorrhage and it is important that all anaesthetists who work on labour ward are familiar with these and manage these cases appropriately.

**RELEVANT AREAS OF THE ANAESTHETIC CURRICULUM**

IG_BS_08	<p>In respect of intravenous induction:</p> <ul style="list-style-type: none"> <li>• Makes necessary explanations to the patient</li> <li>• Demonstrates satisfactory practice in preparing drugs for the induction of anaesthesia</li> <li>• Demonstrates proper technique in injecting drugs at induction of anaesthesia</li> <li>• Manages the cardiovascular and respiratory changes associated with induction of general anaesthesia</li> </ul>
IG_BS_10	<p>In respect of airway management:</p> <ul style="list-style-type: none"> <li>• Demonstrates optimal patient position for airway management</li> <li>• Manages airway with mask and oral airways</li> <li>• Demonstrates hand ventilation with bag and mask</li> <li>• Demonstrates correct head positioning, direct laryngoscopy and successful oral intubation techniques and confirms correct tracheal tube placement</li> <li>• Demonstrates proper use of bougies</li> <li>• Demonstrates correct securing and protection of LMAs/tracheal tubes during movement, positioning and transfer</li> <li>• Correctly conducts RSI sequence</li> </ul>
IO_BS_07	Demonstrates role as team player and when appropriate leader in the intra-operative environment
IO_BS_08	Communicates with the theatre team in a clear unambiguous style
IO_BS_09	Able to respond in a timely and appropriate manner to events that may affect the safety of patients [e.g. hypotension, massive haemorrhage] [S]
ES_BS_01	Manages preoperative assessment and resuscitation/optimisation of acutely ill patients correctly
ES_BS_03	Manages rapid sequence induction in the high risk situation of emergency surgery for the acutely ill patient
CI_BS_01	Demonstrates good non-technical skills such as: [effective communication, team-working, leadership, decision-making and maintenance of high situation awareness]
CI_BS_02	Demonstrates the ability to recognise early a deteriorating situation by careful monitoring
CI_BS_05	Demonstrates ability to recognise when a crisis is occurring
CI_BS_06	Demonstrates how to obtain the attention of others and obtain appropriate help when in a crisis
4.3	Administers blood and blood products safely
OB_BS_01	Undertakes satisfactory preoperative assessment of the pregnant patient
OB_BS_02	Demonstrates the ability to clearly explain and prepare an obstetric patient for surgery
OB_BS_11	Demonstrates ability to recognise when an obstetric patient is sick and the need for urgent assistance
GU_IS_03	Demonstrates the ability to manage the effects of sudden major blood loss effectively
CI_IS_01	Demonstrates leadership in resuscitation room/simulation when practicing response protocols with other healthcare professionals
CI_IS_02	Demonstrates appropriate use of team resources when practicing response protocols with other healthcare professionals
OB_HS_03	Demonstrates the ability to be an effective part of a multidisciplinary team
OB_HS_06	Demonstrates skill in managing emergencies including pre-eclampsia, eclampsia, major haemorrhage

## INFORMATION FOR FACULTY

### LEARNING OBJECTIVES:

- Management of major obstetric haemorrhage including haematology, appropriate monitoring and anaesthetising the patient
- Recognition of potential complications including Disseminated Intravascular Coagulation
- Awareness of drugs acting on uterus

### SCENE INFORMATION:

- Location: Theatre (Maternity)

### EQUIPMENT & CONSUMABLES

- Pregnant simulation model and neonatal model
- Crash trolley – fully stocked
- Checked anaesthetic machine
- Airway trolley – fully stocked for intubation
- GA drugs drawn up – Thiopentone, suxamethonium
- Emergency drugs in ‘fridge’ – suxamethonium, atropine, metaraminol
- Suction bottle – full of blood
- Bloody swabs
- Simulated blood for transfusion (O-ve, and cross- matched blood)
- Resuscitaire

### PERSONS REQUIRED

- Anaesthetic Junior Trainee
- Anaesthetic Assistant
- Anaesthetic Senior Trainee (Optional)
- Obstetrician
- Scrub Nurse
- Theatre Assistant – runner (Optional)
- Paediatrician (Optional)
- Father (Optional)

### PARTICIPANT BRIEFING: (TO BE READ ALOUD TO PARTICIPANT)

You are the anaesthetist on call for labour ward. This lady has just had a category II LSCS as she went into labour having had 2 previous sections. The section was performed under spinal anaesthetic block. The baby has been delivered and is in the resuscitaire. She is otherwise fit and well.

She is numb to T4 bilaterally and the surgeon is continuing the procedure.

The anaesthetist who started the case has been called away urgently to open a second theatre for another emergency.

Please continue her anaesthetic from this point onwards.

**FACULTY BRIEFING:****'VOICE OF MANIKIN' BRIEFING:**

You are in the labour ward theatre having a semi-elective Caesarean Section. You were due to have your elective LSCS next week but went into labour earlier today. Your baby has been delivered and is with the midwife. Your husband has gone out to call your parents.

Indication for elective LSCS: 2 previous LSCS

Past medical history: Fit and well

Obstetric Hx: 38/40 Normal

pregnancy Drug history: Ferrous

sulphate Allergies – nil

At the start of the scenario, you are happy to chat to an anaesthetist. You start to feel quite sick after a while and become very anxious. You frequently ask where your baby and husband are. You overhear the surgeon panicking and that makes you more scared and you could become quite hysterical. If you are not anaesthetised midway through scenario, you come quite drowsy.

**VOICE OF THE TELEPHONE HELP BRIEFING:**

Help will arrive as soon as possible but the starred consultant is helping out in emergency theatres.

**OTHER IN-SCENARIO PERSONNEL BRIEFING:****OBSTETRIC REGISTRAR:**

This lady is bleeding uncontrollably due to uterine atony and a developing coagulopathy. You are initially focussed on gaining haemostasis (quiet and not easily distracted). Ask for ergometrine and haemabate.

As the blood loss becomes heavier you start to realise that you are reaching the limit of your ability to control the haemorrhage and become anxious. Ask the theatre team to call your consultant. Inform the anaesthetist that you are struggling to contain the blood loss – you are going to attempt a B-lynch suture, but have never done one before (volunteer this only if asked). You are worried that this may lead to the need for a hysterectomy.

**SCRUB TEAM:**

Be supportive of the surgeon, but increasingly concerned with the level of blood loss occurring. If the surgeon does not suggest calling the consultant, then the scrub nurse suggests it.

**BLOOD BANK (TELEPHONE)**

O -ve blood is immediately available. Type specific will take 10 minutes. Fully cross-matched blood will take 20 mins.

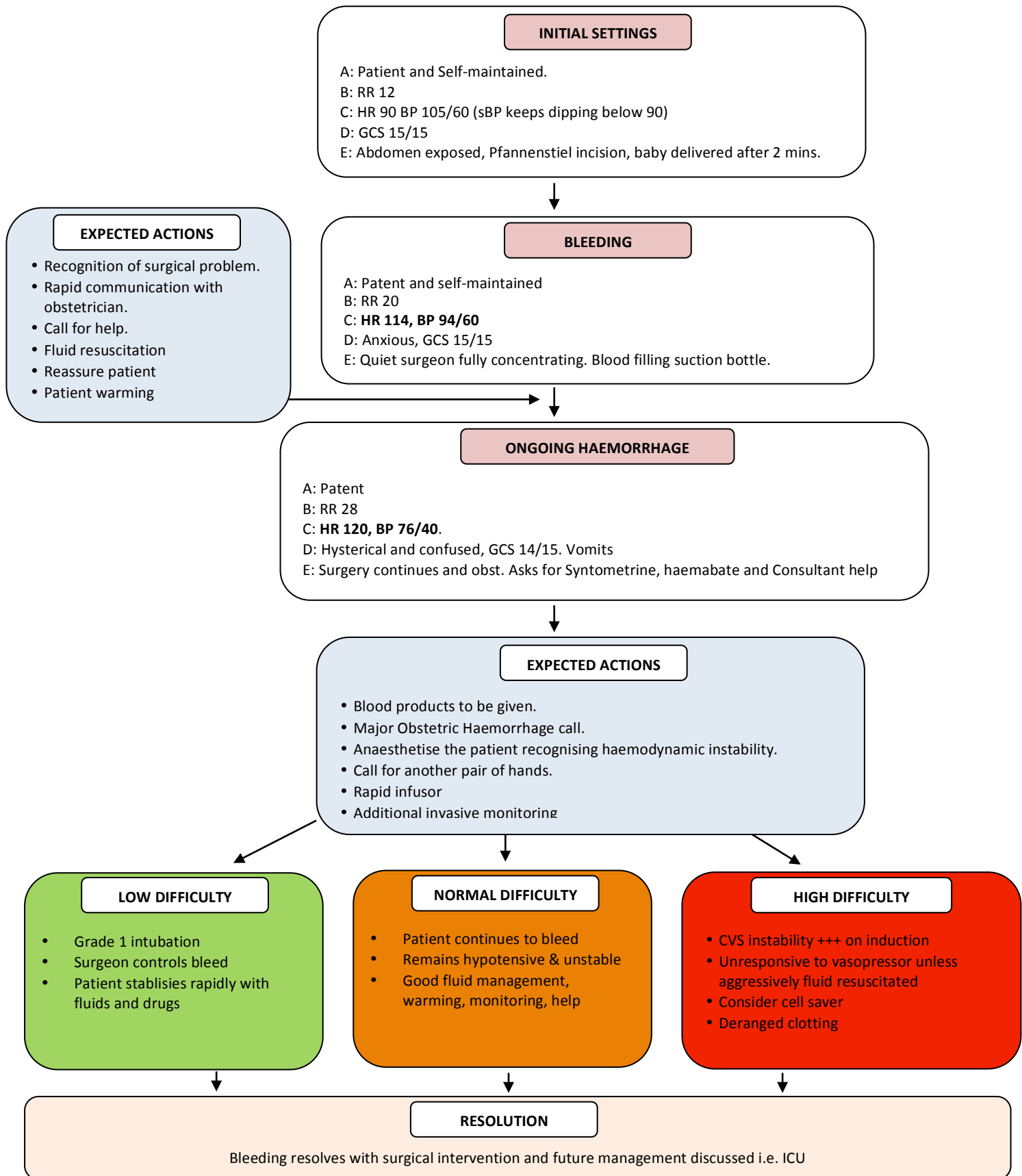
**SENIORS (TELEPHONE)**

Help will arrive soon as possible, but the consultant is helping out in emergency theatres

ADDITIONAL INFORMATION: ABG

<b>RADIOMETER ABL 9000 SERIES</b>				
ABL900 ED			00:00:00	08-1-2013
PATIENT REPORT	Syringe	S195uL	Sample#	90.....
<b>Patient ID</b>				
Patient First Name	Julia			
Patient Last Name	Childers			
Date of Birth	32 yrs old			
Sample type	Arterial			
Fi O <sub>2</sub>	1.0			
Department	ED			
Operator				
<b>Blood Gas Values</b>				
pH	7.46			[7.340 - 7.450]
pCO <sub>2</sub>	3.4	kPa		[4.70 - 6.00]
pO <sub>2</sub>	28	kPa		[10.0 - 13.3]
pO <sub>2</sub> (A-a)e		kPa		
<b>Oximetry Values</b>				
ctHb	5.4	g/dL		[12.0 - 16.0]
sO <sub>2</sub>	99	%		[95.0 - 98.0]
FO <sub>2</sub> Hb		%		[94.0 - 99.0]
FCOHb				[ - ]
FIHb		%		[ - ]
FmethHb		%		[0.02 - 0.06]
Hctc	0.24	%		
<b>Electrolyte Values</b>				
cK+	4.8	mmol/L		[ 3.0 - 5.0 ]
cNa+	137	mmol/L		[ 136 - 146 ]
cCa <sup>2+</sup>	1.10	mmeq/L		[1.15 - 1.29 ]
cCl-	99	mmol/L		[ 98 - 106 ]
<b>Metabolite Values</b>				
cGlu	6.9	mmol/L		[ 3.5 - 10.0 ]
cLac	2.1	mmol/L		[ 0.5 - 1.6 ]
<b>Acid Base Status</b>				
cBase(Ecf)c	-2.5	mmol/L		
cHCO <sub>3</sub> <sup>-</sup> (P,st)c	18	mmol/L		

CONDUCT OF SCENARIO



## DEBRIEFING

### POINTS FOR FURTHER DISCUSSION:

#### Technical:

- Management of major postpartum haemorrhage
  - Physical
  - Pharmacological
  - Anaesthetic strategies
  - Surgical techniques
- Performing emergency RSI in the obstetric patient

#### Non-technical:

- Based on established non-technical skills frameworks e.g. ANTS, NOTECHSetc
- Appropriate communication with patient, obstetric theatre team, blood bank and haematologists.

### DEBRIEFING RESOURCES

#### Management of obstetric haemorrhage

<http://www.frca.co.uk/article.aspx?articleid=100758>

#### Massive Haemorrhage in Pregnancy. Banks A, Norris

A. CEACCP 5 (6) 195-198. Dec 2005.

<http://ceaccp.oxfordjournals.org/content/5/6/195.full.pdf+html?sid=f09fcb24-f59a-43ef-9aab-10d2b607ea79>

#### Prevention and Management of Postpartum Haemorrhage

RCOG Green-top Guideline No. 52. May 2009.

<http://www.rcog.org.uk/files/rcog-corp/GT52PostpartumHaemorrhage0411.pdf>

## INFORMATION FOR PARTICIPANTS

### KEY POINTS:

- Management of major obstetric haemorrhage including haematology, appropriate monitoring and anaesthetising the patient
- Recognition of potential complications including Disseminated Intravascular Coagulation
- Awareness of drugs acting on uterus

### RELEVANCE TO AREAS OF THE ANAESTHETIC CURRICULUM

IG_BS_08	In respect of intravenous induction: <ul style="list-style-type: none"> <li>• Makes necessary explanations to the patient</li> <li>• Demonstrates satisfactory practice in preparing drugs for the induction of anaesthesia</li> <li>• Demonstrates proper technique in injecting drugs at induction of anaesthesia</li> <li>• Manages the cardiovascular and respiratory changes associated with induction of general anaesthesia</li> </ul>
IG_BS_10	In respect of airway management: <ul style="list-style-type: none"> <li>• Demonstrates optimal patient position for airway management</li> <li>• Manages airway with mask and oral airways</li> <li>• Demonstrates hand ventilation with bag and mask</li> <li>• Demonstrates correct head positioning, direct laryngoscopy and successful oral intubation techniques and confirms correct tracheal tube placement</li> <li>• Demonstrates proper use of bougies</li> <li>• Demonstrates correct securing and protection of LMAs/tracheal tubes during movement, positioning and transfer</li> <li>• Correctly conducts RSI sequence</li> </ul>
IO_BS_07	Demonstrates role as team player and when appropriate leader in the intra-operative environment
IO_BS_08	Communicates with the theatre team in a clear unambiguous style
IO_BS_09	Able to respond in a timely and appropriate manner to events that may affect the safety of patients [e.g. hypotension, massive haemorrhage] [S]
ES_BS_01	Manages preoperative assessment and resuscitation/optimisation of acutely ill patients correctly
ES_BS_03	Manages rapid sequence induction in the high risk situation of emergency surgery for the acutely ill patient
CI_BS_01	Demonstrates good non-technical skills such as: [effective communication, team-working, leadership, decision-making and maintenance of high situation awareness]
CI_BS_02	Demonstrates the ability to recognise early a deteriorating situation by careful monitoring
CI_BS_05	Demonstrates ability to recognise when a crisis is occurring
CI_BS_06	Demonstrates how to obtain the attention of others and obtain appropriate help when in a crisis
4.3	Administers blood and blood products safely
OB_BS_01	Undertakes satisfactory preoperative assessment of the pregnant patient
OB_BS_02	Demonstrates the ability to clearly explain and prepare an obstetric patient for surgery
OB_BS_11	Demonstrates ability to recognise when an obstetric patient is sick and the need for urgent assistance



GU_IS_03	Demonstrates the ability to manage the effects of sudden major blood loss effectively
CI_IS_01	Demonstrates leadership in resuscitation room/simulation when practicing response protocols with other healthcare professionals
CI_IS_02	Demonstrates appropriate use of team resources when practicing response protocols with other healthcare professionals
OB_HS_03	Demonstrates the ability to be an effective part of a multidisciplinary team
OB_HS_06	Demonstrates skill in managing emergencies including pre-eclampsia, eclampsia, major haemorrhage

#### FURTHER RESOURCES

Management of obstetric haemorrhage

<http://www.frca.co.uk/article.aspx?articleid=100758>

Massive Haemorrhage in Pregnancy. Banks A, Norris

A. CEACCP 5 (6) 195-198. Dec 2005.

<http://ceaccp.oxfordjournals.org/content/5/6/195.full.pdf+html?sid=f09fcb24-f59a-43ef-9aab-10d2b607ea79>

Prevention and Management of Postpartum Haemorrhage

RCOG Green-top Guideline No. 52. May 2009.

<http://www.rcog.org.uk/files/rcog-corp/GT52PostpartumHaemorrhage0411.pdf>

**PARTICIPANT REFLECTION:**

What have you learnt from this experience? (Please try to list 3 things)

How will your practice now change?

What other actions will you now take to meet any identified learning needs?

**PARTICIPANT FEEDBACK**

Date of training session:.....

Profession and grade:.....

What role(s) did you play in the scenario? (Please tick)

Primary/Initial Participant	<input type="checkbox"/>
Secondary Participant (e.g. 'Call for Help' responder)	<input type="checkbox"/>
Other health care professional (e.g. nurse/ODP)	<input type="checkbox"/>
Other role (please specify):	<input type="checkbox"/>
Observer	<input type="checkbox"/>

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I found this scenario useful					
I understand more about the scenario subject					
I have more confidence to deal with this scenario					
The material covered was relevant to me					

Please write down one thing you have learned today, and that you will use in your clinical practice.

How could this scenario be improved for future participants?  
 (This is especially important if you have ticked anything in the disagree/strongly disagree box)



**FACULTY DEBRIEF – TO BE COMPLETED BY FACULTY TEAM**

What went particularly well during this scenario?

What did not go well, or as well as planned?

Why didn't it go well?

How could the scenario be improved for future participants?