

## **Sepsis Postnatal Facilitator Resource Kit**





**Clinical Skills Development Service** 

The resources developed for Maternity Education Program (MEP) are designed for use in any Queensland Health facility that care for patients/women who are pregnant/birthing or postnatal. Each resource can be modified by the facilitator and adapted to the needs of the learner and the environment in which the education is being delivered—from tertiary to rural and remote facilities.



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#### Sepsis Postnatal – Facilitator Resource Kit

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#### Who is this resource kit for?

This resource kit provides healthcare workers with knowledge and skills on assessing and managing maternal sepsis in the postnatal period.

#### **Target audience**

Midwifery and medical staff providing maternity care

#### Duration

45 mins (including setup, simulation and debrief)

### Group size

Suited to small groups (6 - 8)

#### Learning objectives

By the end of the session the learner should be able to:

- Give telephone advice to an unwell woman at home.
- Recognise and respond to a clinically deteriorating patient.
- Demonstrate the clinical management for maternal collapse.
- Assess the possible cause of the maternal sepsis (postnatal) and its management.

#### Facilitation guide

- 1. Provide Participant Resource Kit to the learner.
- 2. Utilise care of deteriorating patient with postnatal sepsis flowchart.
- 3. Utilise scenario to conduct a simulated postnatal sepsis case.
- 4. Conduct group debrief following simulation.

#### Supporting documents

- Participant Resource Kit
- List of further readings
- SOMANZ Flowchart for assessment and management of sepsis in pregnancy
- Maternal blood sampling values
- Postnatal sepsis simulation



## Overview

Despite an overall decline in maternal mortality in Australia, the maternal mortality rate from sepsis has increased. In the period 2008–2012, sepsis accounted for 11.4% of maternal deaths in Australia.

Group A beta haemolytic streptococcal (GAS) infection is the most common pathogen, resulting in 25% of maternal deaths from sepsis in Australia. Sepsis continues to be one of the major causes of maternal mortality among Aboriginal and Torres Strait Islander women<sup>1</sup>.

Despite significant advances, understanding of the pathobiology of sepsis remains incomplete and currently no gold standard diagnostic test exists to confirm the presence of sepsis. Sepsis is broadly defined as life-threatening organ dysfunction caused by a dysregulated host response to infection. Early detection of sepsis is essential for appropriate multidisciplinary management to ensure the best outcomes for the mother and her baby. Septic patients may progress to develop septic shock, multi-organ failure and death.

Recognising the patient with sepsis is paramount and is the first step in appropriate assessment and management.

**Obstetric Emergency** is any clinical situation involving a maternity patient where immediate medical/ midwifery assistance is required.

1 SOMANZ Guideline for the Management of Sepsis in Pregnancy 2017

## **Further Readings**

## SOMANZ Guidelines for the Investigation and Management of Sepsis in Pregnancy – Society of Obstetric Medicine Australia and New Zealand

The document addresses the issue of sepsis in the peri-partum period. It contains a number of recommendations to guide clinical practice and improve patient outcomes. We have identified several key outcomes that can be audited allowing individual centres to assess their performance in implementation of these guidelines.

https://www.somanz.org/downloads/2017SepsisGuidelines.pdf

### Bacterial Sepsis in Pregnancy Green-top Guideline No. 64a April 2012

The scope of this guideline covers the recognition and management of serious bacterial illness in the antenatal and intrapartum periods, arising in the genital tract or elsewhere, and its management in secondary care.

https://www.rcog.org.uk/globalassets/documents/guidelines/gtg\_64a.pdf

### SMFM Consult Series #47: Sepsis during pregnancy and the puerperium

The purpose of this guideline is to summarize what is known about sepsis and to provide guidance for the management of sepsis in pregnancy and the postpartum period. https://www.ajog.org/article/S0002-9378(19)30246-7/pdf

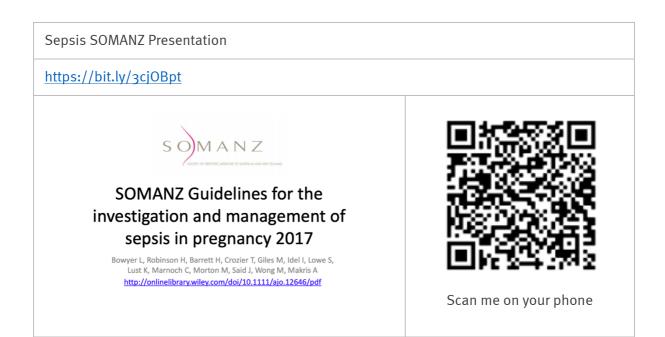
#### The Glasgow Structured Approach to Assessment of the Glasgow Coma Scale

The Glasgow Coma Scale provides a practical method for assessment of impairment of conscious level in response to defined stimuli.

https://www.glasgowcomascale.org/



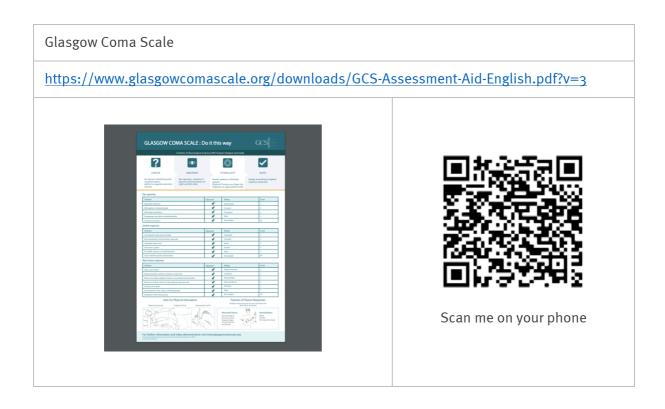
## Emergency Management



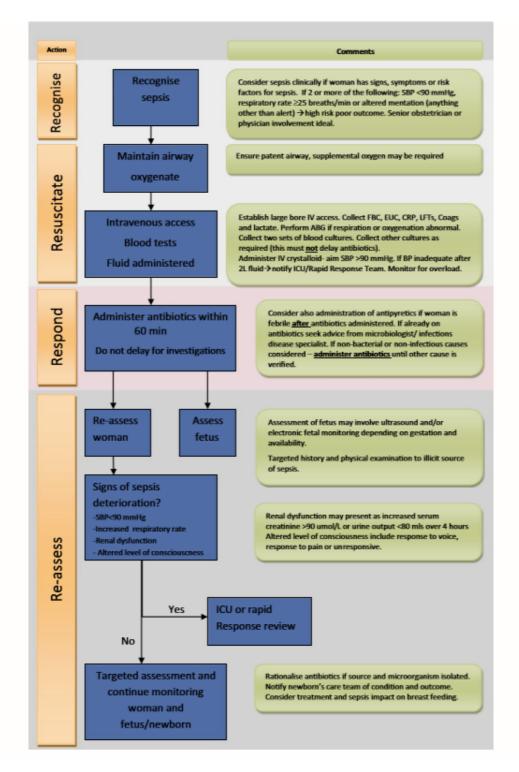




## Emergency Management



## **SOMANZ Flowchart for assessment and management of sepsis in pregnancy**





## Emergency Management

Glasgow Coma scale video

https://www.glasgowcomascale.org/#video





Scan me on your phone

## Sepsis (Postnatal)

## Simulation Event

This section contains the following documents:

- 1. Pre-simulation briefing poster
- 2. Immersive in-situ scenario
- 3. Physical resources
- 4. Human resources
- 5. Simulated patient script information
- 6. Handover card
- 7. Additional information
- 8. Stage 1 Initial assessment
- 9. Stage 2 Ongoing management
- 10. Stage 3 Resolution



# Pre-simulation Briefing

## Establishing a safe container for learning in simulation.

### Clarify objectives, roles and expectations

- Introductions.
- Learning objectives.
- Assessment (formative vs summative).
- Facilitators and learners' roles.
- Active participants vs observers.



## Maintain confidentiality and respect

- Transparency on who will observe.
- Individual performances.
- Maintain curiosity.

### **Establish a fiction contract**

Seek a voluntary commitment between the learner and facilitator.

- Ask for buy-in.
- Acknowledge limitations.

## Conduct a familiarisation

- Manikin/simulated patient.
- Simulated environment.
- Calling for help.

### Address simulation safety

Identify risks.

- Medications and equipment.
- Electrical or physical hazards.
- Simulated and real patients.





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**Note:** Adjust the pre-simulation briefing to match the demands of the simulation event, contexts or the changing of participant composition.

Adapted from Rudolph, J., Raemer, D. and Simon, R. (2014). Establishing a Safe Container for Learning in Simulation. Simulation in Healthcare: Journal of the Society for Simulation in Healthcare, 9(6), pp.339-349.

## Scenario

Туре	Immersive in-situ scenario			
Target audience	Obstetric medical staff and midwive	25		
Overview	Maternity Review Centre or assessment area			
	<b>Situation:</b> Pam presents 6 days post-partum feeling unwell, reports a temperature of 37.8°C at home.			
	Background: 26-year-old Para 1. SVD with a shoulder dystocia and PPH of 2 litres. GDM on insulin now ceased. Had an Epidural and oxytocin infusion for labour and birth. Perineum episiotomy that was sutured, last Hb 86 on day 3 on discharge home. Breast feeding her baby who was 4000gm at birth.			
	Assessment: Obs. reported temperature of 37.8°C Appears flushed and looks unwell. Recommendation:			
	Full postnatal assessment and refer to MO as required.			
Learning objectives	<ul> <li>By the end of the scenario the learner should be able to:</li> <li>Provide telephone advice to an unwell woman at home</li> <li>Recognise and respond to the clinically deteriorating patient</li> <li>Demonstrate the clinical management for maternal collapse</li> <li>Assess the possible cause of the maternal sepsis (PN) and its management.</li> </ul>			
Duration	Pre-brief: 10 minutes Orientation: 5 minutes Simulation: 15 mins Debrief: 15 mins	Total: 45 mins Allow 15 minutes for set up		

## **Physical resources**

Room set up	Standard assessment area			
Simulator/s and setup	Simulated patient or manikin (including software)			
	<b>If using a simulated patient</b> – simulated patient in normal clothes wearing skin colour bike pants with suture perineum attached with pus on sutures and perineum broken down. Simulated patient is waiting outside the simulation room.			
	<b>If using a manikin</b> – manikin wearing skin colour bike pants with suture perineum attached with pus on sutures and perineum broken down. Manikin is in bed.			
Clinical equipment	Standard assessment room with routine set up			
Access	Nil			
Other	<ul> <li>Paperwork for emergency management – P/N assessment sheet and P/N QMEWT</li> <li>Patient records on ieMR</li> </ul>			

## **Human resources**

Faculty	Facilitators x2 to take on roles of scenario lead and primary debriefer (Obstetric Reg/Consultant and midwife with debriefing experience).			
Simulation Coordinators	<b>If using a manikin</b> – Sim Co x1 for set up and control manikin software during scenario.			
Confederates	<b>If using a simulated patient</b> – simulated patient x1, plus the facilitator to be the woman on the telephone gaining advice from home and then as a QAS officer providing a handover.			
	<b>If using a manikin</b> – Facilitator to provide QAS handover at the bedside.			
Other	<b>If using a simulated patient</b> – Midwife x1 is present in the simulation room, preparing for the woman's arrival following the phone consultation. The other midwives and doctors are outside the room, to be called in as needed.			
	<b>If using a manikin</b> – Midwife x1 is present in the simulation room to receive handover from QAS officer. The other midwives and doctors are outside the room, to be called in as needed.			

## **Simulated patient script information**

### Phone call: Performed in another room away from participants.

A woman calls the assessment area feeling unwell. She has taken her temperature 37.8°C and is feeling hot, shivery, nauseated and dizzy. She is at home alone. Her husband is at work an hour away. She doesn't feel well enough to drive and has tried calling a few people to see if they could take her to hospital, but they are either unavailable or at work. She is very distressed. The baby is well; there are no issues with the baby.

### Simulated script

### You are Pamela (Pam) Little. You had your baby six (6) days ago.

It was a normal birth but the baby's shoulder got stuck and baby needed some help being born. After the birth, I lost a lot of blood. I had to have some blood because my iron was really low. I wasn't feeling that great yesterday. My bottom has been really sore and I needed to take pills regularly just to be able to move about. I woke up this morning and I was sweating and shaking. I took my temperature and it said 37.8°C. I rang my GP but he said I needed to come to hospital.

#### This is Pam, this is ... <staff name> Introduction S Situation Transferred by QAS with a history of being unwell, pyrexia. В Background Baby was born six (6) days ago, normal birth complicated by a shoulder dystocia and a 2 litre PPH. Its Pams first (1<sup>st</sup>) baby, breast feeding baby well. Nil medical or social history, partner is on his way in but will be an hour. Assessment Obs. Temperature 37.8°C Α • RR – 22 HR – 102 B/P 110/70 GCS 15/15 R Recommendations • Observations reported to T/L and MO as temperature of 37.8°C. • Appears flushed and looks unwell. • Closely observe. Paracetamol for temperature. Thanks for looking after her.

## Handover card from QAS caring for Pam

## Additional information

Name	Pamela Little	
Age	36 years old	
Sex	Female	
Weight	95 kg	
Allergies	Nil known	
Medications	Iron and Vitamin C	
Medical/Surgical	Endometriosis & laparoscopy last year	
History	Nil	
Social History/Employment	Administration Officer on maternity leave	
Partner's name	John	
Pregnancy history	G2P1 (miscarriage)	
Blood Group	A Pos antibodies Neg	
Hb	83 – 3 days ago	
Serology	Neg	
Rubella	Immune	
GBS	Unknown	

State 1: Initial asse	essment			
Vital signs		Script	Details	Expected actions
RR SPO <sup>2</sup> BP HR Temp. Consciousness Sedation score Breasts Fundus PV loss Perineum Legs Urine/ Bowels	22         98%         100/70         106         38.3°C         Alert but hot         Full NAD         Firm non tender         Brown non offensive         Red swollen pus present         NAD         NAD	Pam has arrived via QAS with her baby – her husband is on his way from work. Pam has her baby with her. Pam (Mum) Feeling hot, achy and shivery. "I just want to lay down."	<ul> <li>Introduction This is Pam, this is <staff name=""></staff></li> <li>Situation Pam has just arrived after self-referral, 6 days P/N with a reported Temp of 37.8°C</li> <li>Background G2P1 SVD with a shoulder dystocia and PPH of 2 L, requiring a blood transfusion. Was GDM on insulin. Went home 3 days ago B/F. Bloods - last Hb 83</li> <li>Assessment Obs. need to be taken</li> <li>Recommendation Set of Obs. required Full P/N assessment Once Obs. performed then MO review</li> </ul>	<ul> <li>Establishes rappor with woman</li> <li>Listens/asks for history</li> <li>Perform full P/N assessment</li> <li>Discuss pain relief plan of care</li> <li>Calls for assistance as situation becomes more intense</li> <li>Makes a plan including next set of Obs. IVC. Blood cultures</li> <li>Plan antibiotic therapy</li> </ul>

Vital signs		Script	Details	Expected actions
RR SPO <sup>2</sup> BP HR Temp Consciousness Sedation score	24         96%         90/45         120         39.5°C         Sleepy now shivering.         Responsive when spoken to.	Pam (Mum) "I have a terrible headache. Can I have some Panadol?" 5 minutely obs. See next page.	<ul> <li>Pam shivering but hot to touch</li> <li>Asking for more blankets</li> <li>Complaining of a headache.</li> </ul>	<ul> <li>Call a MERT / Code</li> <li>Call for HELP</li> <li>Call senior clinicians (Consultant)</li> <li>Explanation to mother</li> <li>IVC - if not already performed x2</li> <li>Bloods to lab</li> <li>FBC/ Chem 20/ Coags</li> <li>Blood cultures</li> <li>DRABC – lay her flat</li> <li>IDC – hourly urine</li> <li>Urine to lab</li> <li>Swabs of perineum</li> <li>Venous blood gas</li> <li>Commence antibiotic therapy</li> <li>Fluid resuscitation</li> <li>Facial O<sup>2</sup> if sats. drop</li> <li>Ensure baby is safe.</li> </ul>

State 2: On going	State 2: On going management				
Vital signs	5 mins QMEWT= 13	10 mins QMEWT=13	<b>15 mins</b> QMEWT=6	<b>20 mins</b> QMEWT=4	
RR	28	26	18	14	
SPO <sup>2</sup>	94	96	97	98	
O2 Flow	2L	2L	RA	RA	
BP/ART	88/40	90/50	100/60	110/70	
HR	122	122	115	105	
ТЕМР	39.9°C	39.6°C	39°C	38°C	
GCS Consciousness	Hot uncomfortable	Sleepy rousable	Sleepy but rousable	Awake	
BSL	5.6				
ECG	Sinus Tachycardia				

State 3: Resolutio	on			
Vital signs		Script	Details	Expected actions
RR SPO2 BP	16 97% 110/55	Pam (Mum) Still a bit lightheaded. "Would like something to eat and drink."	<ul> <li>Urine concentrated in IDC but &gt;30mls</li> <li>Antibiotics in progress (Golden hour)</li> <li>Baby has no problems</li> </ul>	<ul> <li>Recap of treatment and care</li> <li>Explanation to Pam of what happened and why</li> <li>Debrief to family</li> </ul>
HR Temp	105 38.2°C	Remains hot but not shivering.		<ul> <li>Documentation of events</li> <li>Ongoing plan of care – Pam now improving, where shoul her care continue</li> </ul>
Consciousness sedation score	Alert			<ul><li>ICU</li><li>Birth suite</li></ul>



## Supporting Resources

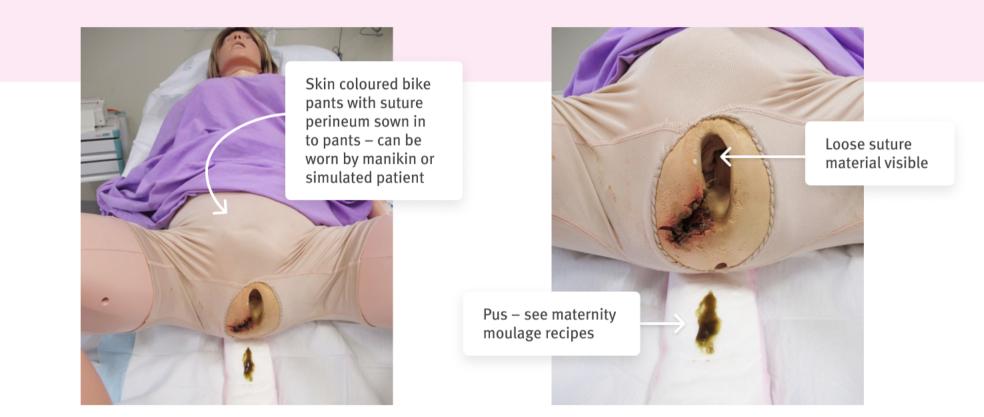
This section contains the following resources that will be essential in the delivery of this learning package:

- 1. Manikin set-up guide
- 2. Laboratory reports
- 3. CTG on admission
- 4. Current CTG.  $2^{nd}$  stage pushing
- 5. Simulation debriefing poster
- 6. Debriefing guide

## Manikin set-up guide



## Postnatal sepsis



Admission bloods DATE: PATIENT: DOB:

Test	Result	Reference	Comment
Haemoglobin	87 g/dL	13.7-17.7g/dL	
WCC	18.0 L	3.9-10.6 x 109/L	
Platelets	186 L	150-440 x 109/L	
Haematocrit	0.35	0.39 - 0.52	
RCC	3.85 L	4.50 - 6.0x10 <sup>12</sup> /L	
MCV	90 fL	80 - 100 fL	
Neutrophils	(83%) 9.15	$2.0 - 8.0 \times 10^9 / L$	
Lymphocytes	(10%) 1.15	$1.0 - 4.0 \times 10^9 / L$	
Monocytes	(6%) 0.65	$0.1 - 1.0 \times 10^9 / L$	
Eosinophils	(0%) 0.01	<0.60x10 <sup>9</sup> /L	
Basophils	(0%) 0.03	<0.20x10 <sup>9</sup> /L	
CRP	156	<5	

Admission bloods DATE: PATIENT: DOB:

Test	Result	Reference	Comment
Sodium	135	135 - 145 mmol/L	
Potassium	3.1	3.5 - 5.1 mmol/L	
Chloride	109	100 - 110 mmol/L	
Bicarbonate	24	22 - 32 mmol/L	
Anion gap	13	4 - 13 mmol/L	
Urea	4.1	2.1 - 7.1 mmol/L	
Creatinine	50	73 - 108 umol/L	
Urea/Creat	42	40 - 100	

Admission bloods DATE: PATIENT: DOB:

Test	Result	Reference	Comment
Protein (total)	70 g/L	60 - 83 g/L	
Albumin	40 g/L	35 - 50 g/L	
Bilirubin (total)	5 umol/L	<20 umol/L	
Bilirubin (conj)	2 umol/L	<4 umol/L	
Gamma GT	60 umol/L	<55 U/L	
AST	40 U/L	<35	
ALT	40 U/L	<45	
ALP	110 U/L	(56-119)	

Admission bloods DATE: PATIENT: DOB:

Test	Result	Reference	Comment
Coagulation profile	Pending		
Blood cultures	Pending		

Admission Bloods DATE: PATIENT: DOB:

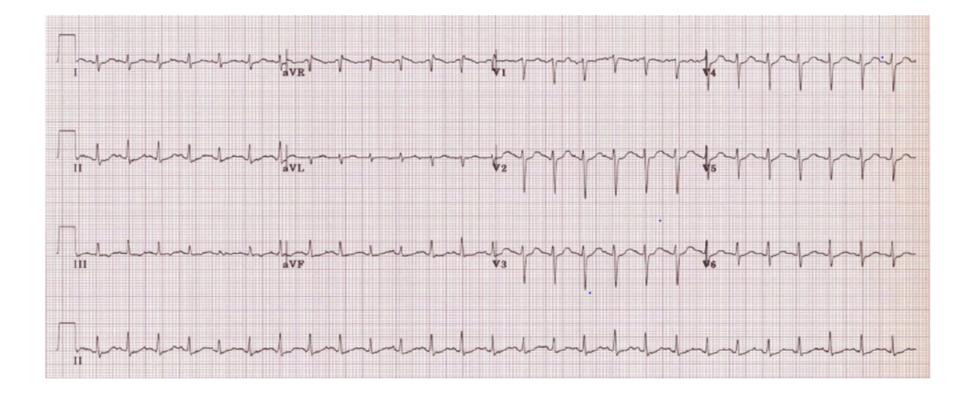
Test	Result	Comment
Group and Antibody Screen		
Group	O Rh (D) Positive	
Antibody	Negative	
		Nil
Expires in 7 days		

RADIOMETRY ABL800 FLEX					
ABL800 RH~RB 1 PATIENT REPORT SYRINGE-S250uL SAMPLE # 16538					
IDENTIFICATI	ON				
Patient ID Patient Last Name Patient First Name Sample type T FO2 (I) Operator		Arterial 36.4 50% CSDS Simulation			
Blood Gases					
Test	Result	Reference	Test	Result	Reference
рН	7.45	7.350-7.450	Electrolyte values		
pCO2	25 mmHg	35.0-45.0	cNa+	135 mmo/L	135-145
p02	65 mmHg	75.0-100	cK+	31 mmo/L	3.2-4.5
сНСО3-(Р)с	17 mmol/L	21.0-27.0	cCl-	109 mmo/L	100-110
cBase(B)c	-5.2 mmol/L	-3.0-3.0	cCa2+	1.20 mmo/L	1.15-1.36
P50c	40 mmHg		AnionGap K+c	13 mmo/L	
Baro		mmHg	Metabolit	e values	
Oximetry val	cGlu 11.1 mmo/L 3.0-7.8		3.0-7.8		
a02	94%		cLac	5.5 mmo/L	0.7-2.5
clHb	87 g/L	105-135	cCrea	umo/L	36-82
Hcl	90		Temperature corrected values		
F02Hb	00	94.0-98.0	рН(Т)	mmHg	
FCOHb	00	0.0-1.5	рСО2(Т)	mmHg	
FMelHb	8		р02(Т)	mmHg	
FHHb	00				
Notes:					

Admission Urine DATE: PATIENT: DOB:

Test	Result	Comment
Urine Dipstick	Leucocytes +++	
	Nitrates +	
	Glucose Nil	
	Protein ++	
	Ketones +++	
	Blood +++	
	Leucocytes +++	
Culture pending		

## ECG – Sinus Tachycardia



# Simulation Debriefing

## Establishing a safe container for learning in simulation.

### Reaction phase - "vent"

- How was that?
- How are you feeling?
- Any other initial reactions?
- Learners may reveal key areas that are important to them.



### **Description phase**

- Clinical summary of the case.
- Can be shortened if it appears there is shared understanding of the case.

### **Analysis phase**

Select which strategy is suited.

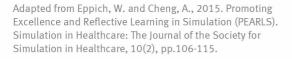
• Learner Self-Assessment - learner generates objectives

What went well/what would you change? What well/did not go well and why?

• Focused Facilitation - analyse performance related to objective



- Discuss take-home learning points
- Learner guided approach or
- Facilitator guided approach







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## **Debriefing guide**

Scenario objectives	<ul> <li>Participants are required to:</li> <li>Provide telephone advice to an unwell woman at home</li> <li>Recognise and respond to the clinically deteriorating patient</li> <li>Demonstrate the clinical management for maternal collapse</li> <li>Assess the possible cause of the maternal sepsis (PN) and management</li> </ul>
Vent phase	<ul> <li>Example questions:</li> <li>Initial thoughts of how the simulation went?</li> <li>Acknowledge emotions (note body language and tone of participants)</li> </ul>
What happened (phases)?	<ul> <li>Example questions:</li> <li>Tell us about your patient and what were your initial priorities?</li> <li>What led to your decision to escalate management?</li> <li>What clinical signs and symptoms led you to become concerned?</li> </ul>
What was done well and why?	Example questions: • What could have been better at each phase?
Relevance to experience	<ul><li>Example questions:</li><li>How would you transfer knowledge from today into your workplace?</li></ul>
What has been learned?	<ul><li>Example questions:</li><li>What actions will you take to enhance your skills and knowledge post simulation?</li></ul>
Transfer to clinical settings	<ul> <li>Example questions:</li> <li>Can you give an example of how you may apply new skills or knowledge gained during this session?</li> <li>What will you take away from this session?</li> </ul>
Key moments	<ul> <li>Recognition of post-natal sepsis (potential / actual)</li> <li>Calling for HELP early</li> <li>Having key team members present</li> <li>Preparing and plan for ongoing adverse event</li> </ul>

## Acronyms and abbreviations

Term	Definition
BF	Breast feeding
BGL	Blood glucose level
CSDS	Clinical Skills Development Service
DRABC	Danger Response Airway Breathing Circulation
ECG	Electrocardiograph
FBC	Full blood count
GAS	Group A beta haemolytic streptococcal
GCS	Glasgow coma scale
GDM	Gestational diabetes mellitus
Hb	Haemoglobin
IDC	Indwelling catheter
ieMR	Integrated electronic medical records
IOL	Induction of labour
IVC	Intra venous cannula
MERT	Medical emergency response team
МО	Medical Officer
NAD	Nothing abnormal detected
Obs.	Observations
PHR	Pregnancy Health Record
PN	Postnatal
РРН	Postpartum haemorrhage
PV	Per vagina
QAS	Queensland Ambulance Service

## Sepsis Postnatal

QMEWT	Queensland Maternity Early Warning Tool
RCOG	Royal College of Obstetricians and Gynaecologists
SMFM	Society for Maternal – Fetal Medicine
SOMANZ	Society of Obstetric Medicine of Australia & New Zealand
SVD	Spontaneous vaginal delivery
USS	Ultrasound scan
VE	Vaginal examination

Sepsis Postnatal

## References

This resource kit has been inspired by the Optimus BONUS project of the Children's Health Queensland's Simulation Training Optimising Resuscitation for Kids (STORK) service. To know more information about STORK and their Optimus project, visit their website.

- Children's Health Queensland. 2020. Queensland Paediatric Emergency Care Education | CHQ. [online] Available at: <<u>https://www.childrens.health.qld.gov.au/research/education/queensland-paediatric-</u> emergency-care-education/> [Accessed 24 July 2020].
- 2. SOMANZ Guideline for the Management of Sepsis in Pregnancy 2017
- 3. Royal College of Obstetricians and Gynaecologists. Bacterial Sepsis in Pregnancy. Greentop Guideline No. 64a. RCOG. 2012. Available from: www.rcog.org.uk/globalassets/documents/ guidelines/gtg\_64a.pdf

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The survey should take no more than 5 minutes to complete. Scan the QR code with your device or visit this link

https://www.surveymonkey.com/r/Z8Q398N



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