

Reference Number: Version Number: 5	Date of Next Review: Previous Trust/LHB Reference Number: N/A
Infection and Sepsis in Pregnancy	
Introduction and Aim To provide guidance on care for pregnant individuals with suspected infection and sepsis.	
Objectives <ul style="list-style-type: none"> - To provide guidance on care for infection and sepsis in pregnancy. - To provide guidance on the screening for and treatment of urinary tract infection in pregnancy and the intrapartum period. 	
Scope This procedure applies to all our staff in all locations including those with honorary contracts.	
Equality Health Impact Assessment	An Equality Health Impact Assessment (EHIA) has not been completed.
Documents to read alongside this Procedure	
Approved by	Maternity Professional Forum Quality and Safety, Directorate of Obstetrics and Gynaecology

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Disclaimer	

Document Title: <i>Infection and Sepsis in Pregnancy</i>	2 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

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Summary of reviews/amendments			
Version Number	Date of Review Approved	Date Published	Summary of Amendments
1	Dec 2005	Dec 2005	New Document 'Infection in Maternity Services'
2	Dec 2008	Dec 2008	Reviewed and amended by Juloia Sanders
3	Dec 2011	Jan 2012	Reviewed and amended by Pina Amin
4	6/9/2019	9/9/2019	Re-written as 'Sepsis in Maternity Services' by Simran Sharma
5	MAY 2022	July 2022	Rewritten as 'Infection and Sepsis in Pregnancy'. Inclusion of: Management of positive nitrites on urine dip in labour; screening for asymptomatic bacteruria; management of suspected UTI in the antenatal period.

Document Title: <i>Infection and Sepsis in Pregnancy</i>	3 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

1 Table of Contents

Contents

1	Table of Contents	3
2	Introduction	4
2.1	Definitions	4
2.2	Why is Sepsis Important?.....	4
2.3	Risk Factors	5
3	Sepsis in Pregnancy	6
3.1	Clinical Features	6
3.2	Sepsis Proforma.....	9
3.3	Investigations	12
3.4	Management	12
3.4.1	Antenatal	13
3.4.2	Peripartum	13
4	Suspected Sepsis in Labour.....	14
5	Urinary Tract Infection (UTI) in Pregnancy and Labour.....	17
5.1	Urinary Tract Infection in Labour	17
5.1.1	Flowchart for the management of positive nitrites on urine dip for women admitted in labour.	19
5.1.2	Post-natal Management of UTI Diagnosed in labour	20
5.2	Urinary Tract Infection in the Antenatal Period.....	20
5.2.1	Flowchart: Urine Screening in Asymptomatic Women	23
5.2.2	Flowchart: Management of Women with Symptoms of UTI in the Antenatal Period.....	24
6	Sepsis in the Puerperium	25
6.1	Introduction	25
6.2	Possible Pathogens.....	25
6.3	Clinical Features and Possible Sources	25
6.4	Management	26
7	Electronic discharge advice letters.....	27
8	Auditable Standards.....	28
9	References.....	29

Document Title: <i>Infection and Sepsis in Pregnancy</i>	4 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

2 Introduction

2.1 Definitions

Maternal Infection	Infection occurring during pregnancy or immediately postnatal. Examples include urinary tract infection, respiratory tract infection, chorioamnionitis. This may or may not progress to maternal sepsis, which may involve the fetus.
Maternal Sepsis	A life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion, or postpartum period.
Septic Shock	Sepsis associated with hypoperfusion (persistent hypotension requiring vasopressors to maintain mean arterial pressure \geq 65mmHg and lactate $>$ 2mmol/L), despite adequate fluid resuscitation.

Table 1 Definitions of Infection and Sepsis

[Back to Contents](#)

2.2 Why is Sepsis Important?

Sepsis is an important cause of maternal mortality in the UK. It was the leading direct cause of maternal death between 2006 and 2008. Improvements have been seen following campaigns such as 'Surviving Sepsis Campaign'; with the mortality rate of direct sepsis dropping from 26 per 100,000 maternities in 2006-2008 to 0.44 per 100,000 maternities in 2015-2017.

However, in the recent 2019 MMBRACE report, sepsis still accounts for 10% of the total maternal mortality in the UK [1].

Diagnosis of maternal sepsis is challenging, and continued effort is required in early recognition and prompt management of sepsis in maternity services.

In addition, pregnant women are presenting with increasingly complex pre-existing comorbidities such as diabetes, post-transplant patients, patients with HIV. They are at higher risk of infection and can be challenging to manage.

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	5 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

2.3 Risk Factors

Risk Factors for Maternal Sepsis [3]
Pre-existing Conditions
Obesity
Impaired glucose tolerance/ diabetes
Impaired immunity/ immunosuppressant medication
Anaemia
History of pelvic infection
Black or minority ethnic group origin
Antenatal/Intrapartum Events
Amniocentesis and/or other invasive procedures such as cervical cerclage
Continued vaginal bleeding or offensive vaginal discharge
Prolonged Spontaneous Rupture of Membranes
Vaginal Trauma
Caesarean Section [7]
Wound haematoma
Retained products of conception
Acquisition or carriage of Group A Streptococcus (GAS) infection, or GAS in close contacts/family members.

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	6 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

3 Sepsis in Pregnancy

All healthcare professionals caring for pregnant women should maintain a low threshold of suspicion for sepsis. If there is any suspicion of sepsis, the sepsis proforma (Section3.2) should be started EARLY.

If a woman presents in the community with symptoms or signs of infection, the Screening Tool +/- Risk Assessment of the Sepsis Proforma should be completed, and management guided by this pathway. Early referral to hospital should be considered.

3.1 Clinical Features

A full history and examination, including full systems examination, should be completed.

Suspect sepsis if any of the following are present:

System	Features	Comment
Observations NB: These should be recorded on a maternity early warning score (MEWS) chart. Observations should be repeated at minimum 2 hourly in any woman suspected of sepsis.	Pyrexia or hypothermia Tachycardia Tachypnoea Hypoxia Hypotension Impaired consciousness Reduced urine output	Pyrexia is frequently observed in sepsis, but a normal temperature does not exclude sepsis. Paracetamol or other analgesics may mask pyrexia. Hypothermia is a significant finding that may indicate severe infection. A swinging pyrexia or failure to respond to broad-spectrum intravenous antibiotics is suggestive of a persistent focus of infection or abscess. Persistent tachycardia > 100bpm Tachypnoea >20 BPM Oxygen saturation <94% on air Systolic BP <100mmHg

Document Title: <i>Infection and Sepsis in Pregnancy</i>	7 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

Respiratory	Cough Shortness of Breath Sore throat Loss of smell	If suspecting COVID-19 or other infections including TB/influenza, commence isolation and liaise with microbiology and Infection Prevention and Control (IPC) for advice.
Abdomen	Pain and tenderness Urinary symptoms (dysuria, frequency, urgency, suprapubic pain) Diarrhoea, nausea or vomiting	
Urinary Tract	Dysuria Frequency Urgency Suprapubic pain	
Skin	Rash Cellulitis	
Neurological	Headache/neck stiffness/photophobia	
Fetus	Fetal tachycardia (indicated as a baseline increase of 15% or fetal heart rate >160bpm) Abnormal antenatal/intrapartum CTG	
Obstetric	Tender uterus (suspect chorioamnionitis) Prolonged rupture of membranes	

Document Title: <i>Infection and Sepsis in Pregnancy</i>	8 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

	Offensive vaginal discharge (smelly suggests anaerobes; serosanguinous suggests streptococcal infection) Breast tenderness/changes	
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[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	9 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

3.2 Sepsis Proforma

Starts on next page.

This is also available on [Hospital Microguide](#).

Copies are available on all Maternity Wards and should be used in any pregnant or recently pregnant woman with suspected sepsis, regardless of where she is being managed.

Recent departmental audit looking at the compliance of sepsis proforma between June – July 2020 showed good compliance in using the proforma in guiding investigation and management of suspected septic patients. The data showed 95% completion rate for the ‘screening tool’ section, 94.7% completed ‘risk assessment’ section, 96.9% completed ‘high risk assessment section’ and 88% completed ‘sepsis six’ section.

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	10 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

	Date: Time:	Date: Time:	Date: Time:	Date: Time:	Date: Time:	Date: Time:	Date: Time:	Date: Time:
Lactate								
pH								
WBC								
Neut								
Hb								
Na								
K								
Creat								
Urea								
CRP								

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CHERRY HOLLER
PROMPT
PROFESSORIAL
MEETING

Patient addressograph

Maternal Infection & Sepsis Proforma

Adapted from PROMPT Manual (3rd Ed 2017) to be used with women who are pregnant or up to 6 weeks post-partum. This is not a comprehensive guideline but a proforma to facilitate an appropriately escalating multidisciplinary team approach to maternal infection & sepsis and to prompt investigation.

Screening Tool

COVID-19 Screen – Close COVID-19 contact, Temp >37.8, New continuous cough, Loss or change in sense of smell/taste

If you suspect Maternal Infection use this tool EARLY

Screening Questions	circle	Possible Source(s) of Infection	Tick all that apply
Could the woman have an infection?	Yes	Chorioamnionitis	
Does the woman feel unwell?	Yes	Urinary Tract Infection	
Is the fetal heart rate >160bpm	Yes	Wound Infection	
Is there a concern about the CTG?	Yes	Upper / Lower Respiratory Tract <small>inc. influenza</small>	
Does the woman score on the MEOWS?	Yes	Mastitis / breast abscess	
		Abdominal pain or distension	
		Yes, but the source is unclear at present	

If YES to ANY of the above then complete a risk assessment

Completed by: _____ (Please print)
Date: _____ Time: ____:____ Location _____

Review All Assessment Criteria				Triggers		Action
Respiratory Rate	Record & cup Values	___ /min	>21 /min	Yes	<p>If it fulfils ANY criteria: Complete Initial Management and High Risk Assessment</p> <p>If in the community:</p> <ul style="list-style-type: none"> - Inform Obstetric Unit - Ambulance requested for transfer - Ambulance arrived at Obstetric Unit 	
Heart Rate		___ bpm	>100 bpm	Yes		
Systolic Blood Pressure		___ mmHg	<100 mmHg	Yes		
Temperature		___ °C	<36 or >37.5 °C	Yes		
Abnormal Mental State			No	Yes		
Looks unwell			No	Yes		
Abnormal CTG or Concern about fetal well being			No	Yes		
Concern about Urine Output			No	Yes		

Completed by: _____ (Please print) Date: _____ Time: _____ Location: _____

If NONE of the above criteria are present: Relevant Blood Results

Document clinical Impression

Frequency of MEOWS _____ hourly

Next clinical review Date / / Time : _____

Completed by: _____ (Please print) Date: _____ Time: _____ Location: _____

Document Title: <i>Infection and Sepsis in Pregnancy</i>	11 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

Initial Management	Performed by	Time	Initial
Record Patient MEOWS			
IV Access			
Take Bloods <ul style="list-style-type: none"> - Blood Cultures - Point of care: venous lactate - Laboratory: FBC, U&E, CRP, LFT, Coag, TCOVID bloods 			
Monitor CTG (if antenatal)			
Alert Midwife in Charge & Highlight on Handover Board			
Completed by: _____ (Please print) Date: _____ Time: _____ Location: _____			

HIGH Risk Assessment - Review and circle all applicable Assessment Criteria			
Altered Mental State (Only responds to voice or pain)	Yes	If ONE RED criterion: Immediate MDT review Consider 2222 Emergency call and commence SEPSIS SIX⁺	Time Initial
Unresponsive	Yes		
Non-blanching rash / mottled / cyanotic	Yes		
Observations - Record ALL Actual Values			
Low Urine Output	Last two hour UO _____ ml / _____	<0.5ml/kg/hr	Yes
Venous Lactate*	_____ mmol/L	≥2.0 mmol/L	Yes
SpO ₂ without Oxygen	_____ %	<94%	Yes
Respiratory Rate	_____ /min	≥25 /min	Yes
		21-24 /min	Yes
Heart Rate	_____ bpm	>130 bpm	Yes
		100-130 bpm	Yes
Systolic Blood Pressure	_____ mmHg	≤90 mmHg	Yes
		91-100 mmHg	Yes
Temperature	_____ °C	<36 or >38.5 °C	Yes
Fetal Heart Rate (baseline)	_____ bpm	>160 bpm or >15% increase	Yes
Urine Output – abnormally low for 12-18 hours			Yes
Abnormal CTG			Yes
Prolonged rupture of membranes (>24hrs)			Yes
Recent invasive procedure (in last 6 weeks)			Yes
Bleeding / wound infection / vaginal discharge / abdo pain			Yes
Close contact with Group A Strep (eg sore throat)			Yes
Concern (inc. relatives) about mental / functional status			Yes
Diabetes / gestational diabetes / immunosuppression			Yes
BMI >40			Yes
If ≤1 YELLOW criterion is present: Document clinical impression			
Other Relevant Blood Results			
Antimicrobials Reviewed Yes / No			
Frequency of MEOWS _____ hourly			
Next clinical review Date: / / Time: _____			
Completed by: _____ (Please print) Date: _____ Time: _____ Location: _____			

*NB: Lactate measurement may be transiently elevated during and immediately after labour and birth. If unsure or concerned then repeat sample

Page 2

SEPSIS SIX ⁺ Complete ALL Actions within ONE hour TIME ZERO _____			
Commence Maternal Critical Care Chart (Complete patient observations every 15mins for first hour)			
CALL FOR HELP			
MW in charge	Name: _____ time: _____	Other staff:	Time arrived: _____
Obstetrician	Name: _____ time: _____	Name: _____ Designation: _____ time: _____	
Anaesthetist	Name: _____ time: _____	Name: _____ Designation: _____ time: _____	
HCA	Name: _____ time: _____	Name: _____ Designation: _____ time: _____	
1. Administer 100% OXYGEN <ul style="list-style-type: none"> Initial 15L/min via non-rebreather mask Aim for SpO₂ ≥94%. If SpO₂ <94% inform anaesthetist 			
2. Ensure BLOOD CULTURES taken <ul style="list-style-type: none"> Do not delay administering antibiotics Take other cultures (sputum / high vaginal swab / throat swab / breast milk / stool sample / wound swab / placental swabs or tissue etc.) 			
3. Give IV ANTIBIOTICS <ul style="list-style-type: none"> Review known drug allergies IV, broad spectrum agent(s) as per Local Microbiology Protocol 			
4. Give IV FLUIDS <ul style="list-style-type: none"> If hypotensive give 500ml Crystalloid Bolus Caution in PET – ensure discussion with anaesthetic & obstetric team 			
5. Measure URINE OUTPUT <ul style="list-style-type: none"> Consider urinary catheter Strict measurement of hourly fluid balance 			
6. Review LACTATE			
If venous lactate ≥2 mmol/L <ul style="list-style-type: none"> 1. If remains hypotensive give 500ml Crystalloid Bolus 2. Repeat blood gas after 10ml/kg fluid given 			
If venous lactate ≥4 mmol/L <ul style="list-style-type: none"> 1. Give additional 500ml Crystalloid Boluses Up to 30ml/kg (Approx 2.5 for 70kg woman) 2. Inform consultant obstetrician 3. Inform consultant anaesthetist 4. Repeat blood gas after every 10ml/kg fluid given 			
Repeat Blood Gas Results Recorded by: _____ (Please print) Date: _____ Time: _____			
Lactate = _____			
Review Suspected Source of Infection (Be aware there may be >1) (circle all suspected) Chorioamnionitis/Vaginal/Urinary Tract/Chest (inc. influenza)/Intrabdominal/Skin/Breast/CNS/Other _____			
Remove Source of Infection – eg. Retained products, Expedited delivery, Radiological drainage			
Review DVT/PE prophylaxis			
Completed by: _____ (Please print) Date: _____ Time: _____ Location: _____			
If after SEPSIS SIX ⁺ Resp Rate >25, Systolic BP <90mmHg, Altered Consciousness, Lactate still high - Refer to Critical Care			

Page 3

Document Title: <i>Infection and Sepsis in Pregnancy</i>	12 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

3.3 Investigations

Please refer to Section 3.2– maternal infection and sepsis proforma ‘initial management’ for blood tests to request.

Consider sources of infection and send swabs/ cultures as appropriate:

- Blood cultures
- MSU
- Vaginal swab (High vaginal swab preferable if indicated)
- Throat swab (MC&S, COVID swab and Respiratory virus screen)
- Wound swab
- Placental swab
- Placental histology (please see placental guideline) – if suspicion of chorioamnionitis.

Consider chest X-ray if suspecting chest infection/Covid-19 symptoms.

Consider abdominal ultrasound or CT abdomen/pelvis if suspecting other intra-abdominal pathology or potential abscess.

Any radiology investigations should be discussed with the woman prior to requesting, including discussion of the risks of radiation to the woman and fetus, if relevant. This discussion should be clearly documented in the maternity record.

[Back to Contents](#)

3.4 Management

Please refer to Section 3.2 – Maternal infection and sepsis proforma for Sepsis Six management.

In case of septic shock, inform on call consultant anaesthetist and obstetrician.

Once commenced on sepsis pathway, an obstetric review (ST3 and above) should take place within the first hour.

Once commenced on the ‘sepsis six’ obstetric review of response to treatment should take place within an hour.

All women who were on the sepsis pathway during labour should be discussed with the obstetric consultant on the postnatal ward round to assess the need to carry on antibiotics and review investigation results before discharge.

Document Title: <i>Infection and Sepsis in Pregnancy</i>	13 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

Thromboprophylaxis screening should be carried out considering sepsis, dehydration, PPH (postpartum haemorrhage) and any operative procedures. See [VTE risk assessment](#).

[Back to Contents](#)

3.4.1 Antenatal

If the source of infection is unknown, broad-spectrum antibiotics should be given. Please refer to [Hospital Microguide](#) for antibiotic choice.

Where a specific source of infection is suspected, appropriate antibiotics should be given according to [Hospital Microguide](#).

If there is maternal clinical deterioration or fetal concern (antenatally or peripartum), expedited delivery should be considered after discussion with a senior obstetrician. In case of intrauterine death, the safest and quickest way of delivery should be chosen. The decision is made jointly by the on-call senior obstetrician and anaesthetist.

[Back to Contents](#)

3.4.2 Peripartum

A full review of the woman should take place as triggered by the sepsis proforma. The most likely source of sepsis should be considered (often chorioamnionitis for women in labour) and appropriate antibiotics should be started according to [Hospital Microguide](#).

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	14 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

4 Suspected Sepsis in Labour

4.1 Chorioamnionitis

Infection of the fetal membranes and amniotic cavity (chorioamnionitis) occurs in 1-5% of all term pregnancies and many will present with pyrexia in labour. The incidence of chorioamnionitis is 30% in preterm prelabour rupture of membranes (PPROM). [8]

Chorioamnionitis can increase the risk of operative intervention, dehydration, sepsis and PPH for the mother. It can also increase the risk of neonatal GBS, pneumonia and cerebral palsy.

Fetal tachycardia can be associated with chorioamnionitis, hence its inclusion in the maternal sepsis risk assessment. If fetal tachycardia (increase of 15% of HR baseline or HR >160bpm) is identified in the antenatal or intrapartum period, the Screening Tool and Risk Assessment of the Sepsis Proforma should be completed.

Please refer to the 'peripartum' section of [Hospital Microguide](#) for the choice of antibiotics if meeting criteria. When suspecting sepsis in labour, it is important to try and locate the source of infection so targeted antibiotic treatment can be started.

Discussion and/or postnatal review should be carried out on the postnatal ward round to aid stepping down of IV antibiotics or stopping antibiotics if appropriate, and to reduce the risk of antibiotic resistant organisms.

[Back to Contents](#)

4.1.1 Risk factors for chorioamnionitis: [7,9]

- Prolonged rupture of membranes (including PPRM)
- Prolonged labour
- Group B Streptococcus
- Multiple digital examinations
- Internal monitoring
- Meconium stained amniotic fluid
- Tobacco or alcohol use

[Back to Contents](#)

4.1.2 Implications:

Maternal implications	Neonatal Implications
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Document Title: <i>Infection and Sepsis in Pregnancy</i>	15 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

Increased risk of Caesarean Section (2-3 fold)	Asphyxia
Endometritis	Pneumonia
Pelvic Abscess	Early onset sepsis
Post-partum Haemorrhage	Intraventricular haemorrhage
Wound Infection	Perinatal death
Bacteraemia	
Sepsis, DIC, ARDS, Death (rare)	

Table 2 Implications of Chorioamnionitis. DIC - Disseminated Intravascular Coagulopathy; ARDS - Acute Respiratory Distress Syndrome.

[Back to Contents](#)

4.1.3 Diagnosis [7,9]

Whenever suspicion of chorioamnionitis arises, especially in the presence of risk factors, a clinical review is indicated, considering the following:

- Maternal pyrexia
- Maternal tachycardia
- Fetal tachycardia
- Uterine tenderness
- Colour of liquor
- Offensive vaginal discharge

[Back to Contents](#)

4.1.4 Management

Chorioamnionitis is an indication to expedite delivery. Maternal resuscitative measures have minimal effect on fetal wellbeing therefore early delivery may be protective for the neonate.

Please refer to the 'sepsis proforma' for investigations. If sepsis is highly suspected, start the sepsis six. If blood results are delayed, please chase up with the lab and escalate if needed, considering the clinical picture for decision making.

Please refer to [Hospital Microguide](#). '**chorioamnionitis**' for broad spectrum antibiotics use.

After delivery, placental swabs need to be taken and sent for microbiology. Consider sending the placenta for histology if there is a suspicion of chorioamnionitis and especially if the delivery is less than 37 weeks gestation, or if the baby is admitted to the Neonatal Unit (NNU) with fetal acidosis. (Please see Placental Examination Guideline 2020).

Document Title: <i>Infection and Sepsis in Pregnancy</i>	16 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	17 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

5 Urinary Tract Infection (UTI) in Pregnancy and Labour

5.1 Urinary Tract Infection in Labour

Pregnancy increases the risk of having a urinary tract infection due to the physiological and anatomical changes of pregnancy, chorioamnionitis, anaemia, low birth weight, perinatal mortality, and developmental delay. Therefore, urinary tract infection should be treated aggressively in pregnancy. The most common organism is E. Coli (80-90%), but gram-negative organisms can also be present such as Proteus Mirabilis, and Klebsiella Pneumoniae [2].

During labour, urinary tract infection can coexist with rupture of membrane; this increases the risk of ascending chorioamnionitis and sepsis. Clinical suspicion of sepsis associated with UTI should prompt use of the sepsis proforma and treatment with IV antibiotics.

The presence of nitrites in the urine of **symptomatic** women is strongly suggestive of significant bacteriuria [2], provided the sample collected is of adequate volume (minimum 0.7mls) and collected using aseptic technique. If a sample is less than 0.7 mls or contaminated, repeat the sample with a clean catch/ aseptic technique. This may require an in/out catheter.

Positive nitrites on urine dipstick (from an adequate sample) in women admitted in labour with **symptoms** of UTI should prompt obstetric review and consideration of IV antibiotic treatment. A sample (minimum 0.7 mls in a boric acid container) should always be sent for MSU as per the urine dipstick flowchart below. Reagent strip analysis lacks the sensitivity to be used for asymptomatic bacteriuria screening.

However, asymptomatic bacteriuria can happen with a single positive nitrite on urinalysis in a well mother, in which case consideration should be given to oral antibiotics with verbal information to the mother with signs of systemic infection. Women presenting to the MLU with no symptoms but a single urinalysis positive for nitrites do not need to be transferred to the Obstetric Led Unit (OLU). If not in labour these women could go home with verbal information as above. If the woman becomes symptomatic of UTI or develops systemic signs of infection there should be transfer to the OLU. **Please use the sepsis proforma 'Screening tool' section to guide management.**

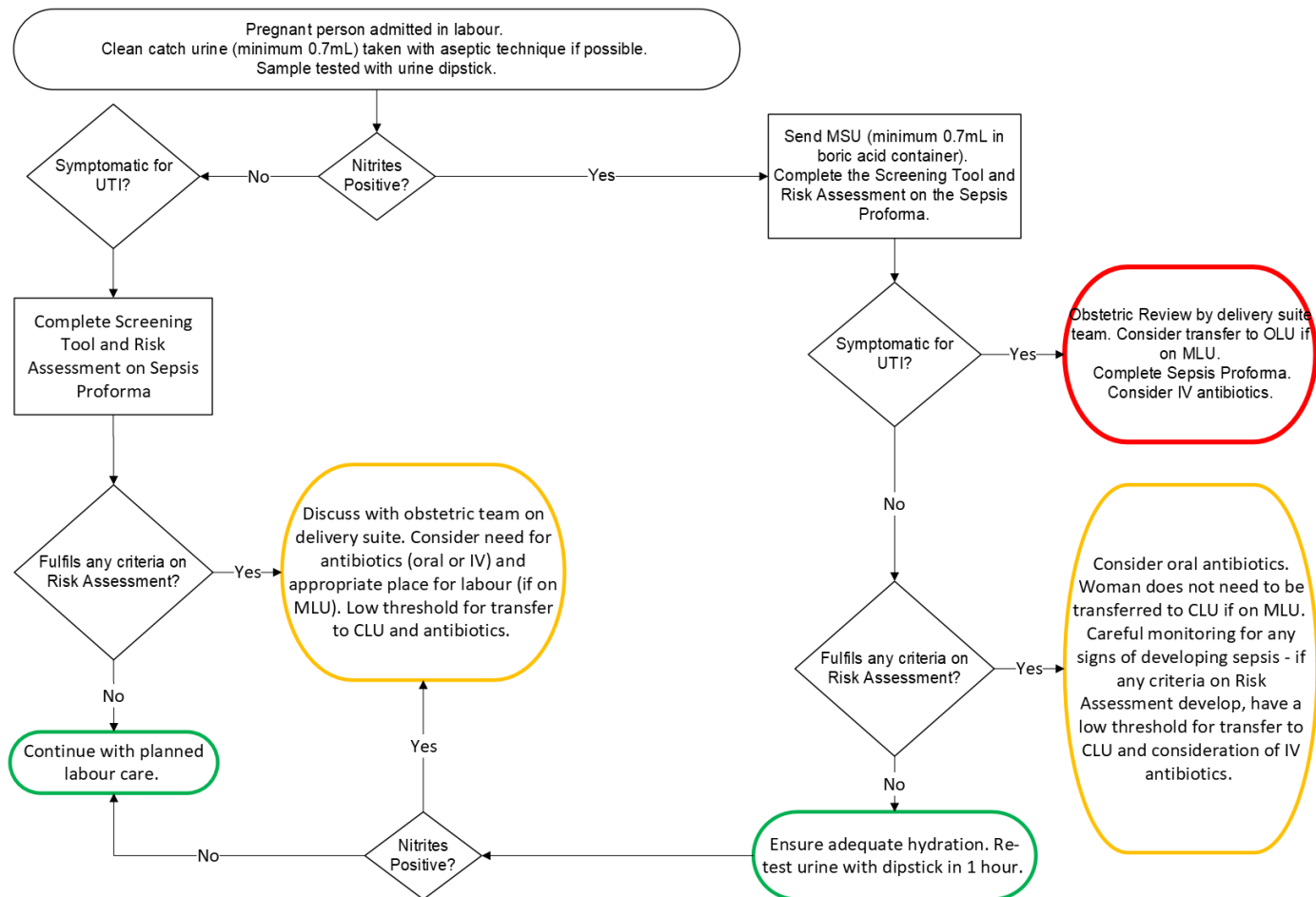
Document Title: <i>Infection and Sepsis in Pregnancy</i>	18 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

An audit undertaken in July 2020 to look at the outcome of positive nitrite urine dipstick in labour revealed that 33 nitrite positive women were identified in the month on delivery suite and the midwifery led unit. 7 (21%) of them were started on antibiotics (oral or IV), 4 (12.5%) had positive MSU, 3 (9%) were started on the sepsis pathway workup. Of the 4 ladies who had positive nitrites in the urine detected on MLU, 2 of them transferred to delivery suite.

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	19 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

5.1.1 Flowchart for the management of positive nitrites on urine dip for women admitted in labour.



Document Title: <i>Infection and Sepsis in Pregnancy</i>	20 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

[Back to Contents](#)

5.1.2 Post-natal Management of UTI Diagnosed in labour

Discussion of and/or review of the woman should occur by a senior obstetrician within 24 hours of delivery with results of the MSU. If MSU negative, and woman well, antibiotics can be stopped. If MSU positive, no evidence of pyelonephritis or other complications and a well woman, a 3 day course of oral antibiotics should be adequate.

[Back to Contents](#)

5.2 Urinary Tract Infection in the Antenatal Period

Women should be asked about symptoms of urinary tract infection at every antenatal contact. These symptoms include frequency of urine, dysuria and/or abdominal pain. Symptoms of UTI may be non-specific in pregnancy.

The UK National Screening Committee [3] does not recommend screening for asymptomatic bacteruria routinely in pregnancy. Asymptomatic bacteruria is defined as a positive culture of the same uropathogen on two occasions in a patient without urinary symptoms [3]. Due to the increased risk of progression to pyelonephritis in pregnancy (which is in turn associated with adverse maternal and fetal outcomes), we have opted to continue screening for asymptomatic bacteruria at booking. All women are asked to bring a urine sample in a boric acid (red top) container to their first face to face booking appointment with maternity services, which is sent for urine culture in agreement with the microbiology department.

NICE Antenatal Care guidelines recommend screening for pre-eclampsia at every antenatal contact, which includes urine dip for proteinuria. Our use of computerised urinalysis means that we simultaneously receive reports of leucocytes and nitrites in the urine. Leucocytes are non-specific and their presence is not diagnostic of UTI or bacteruria. Positive leucocytes with negative nitrites on urine dip does not require further investigation or treatment.

Document Title: <i>Infection and Sepsis in Pregnancy</i>	21 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

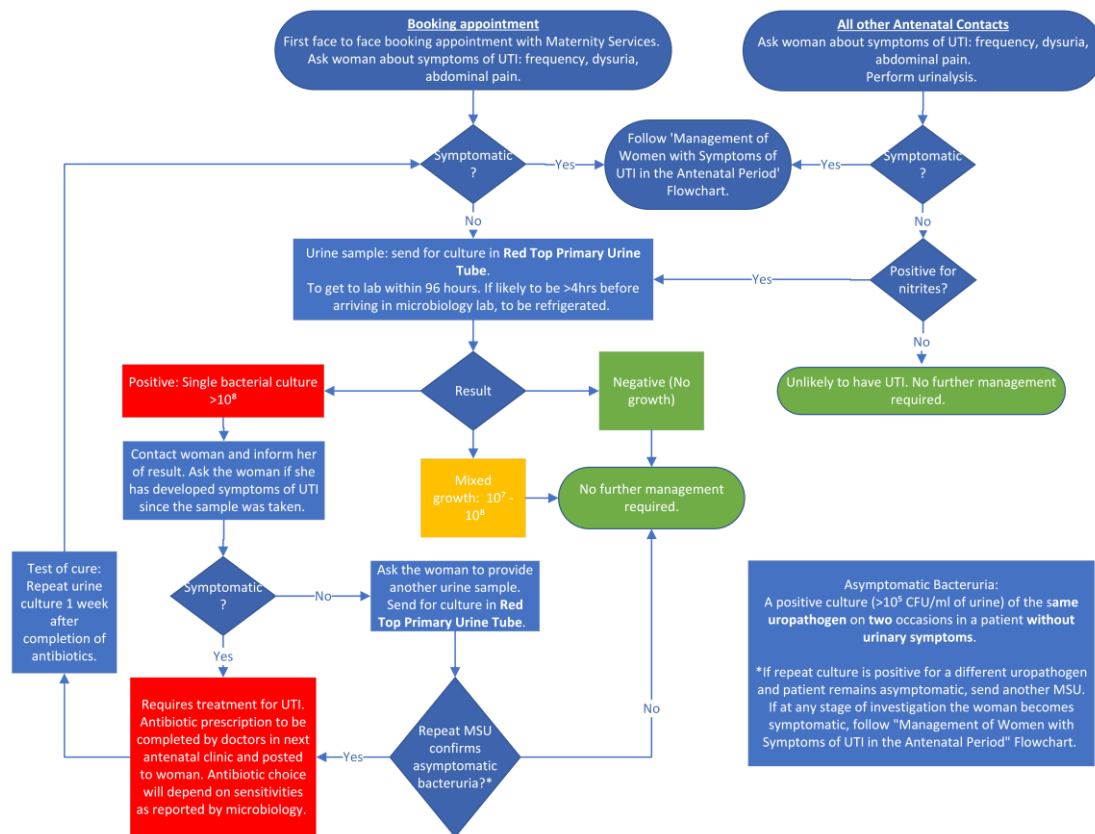
Positive nitrites in women with **symptoms** of UTI is strongly suggestive of bacteruria. Empirical antibiotic treatment should be started in line with [Hospital Microguide](#), and a urine culture sent. In **asymptomatic** women positive nitrites in the urine should prompt further investigation with a urine culture.

Document Title: <i>Infection and Sepsis in Pregnancy</i>	22 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	23 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

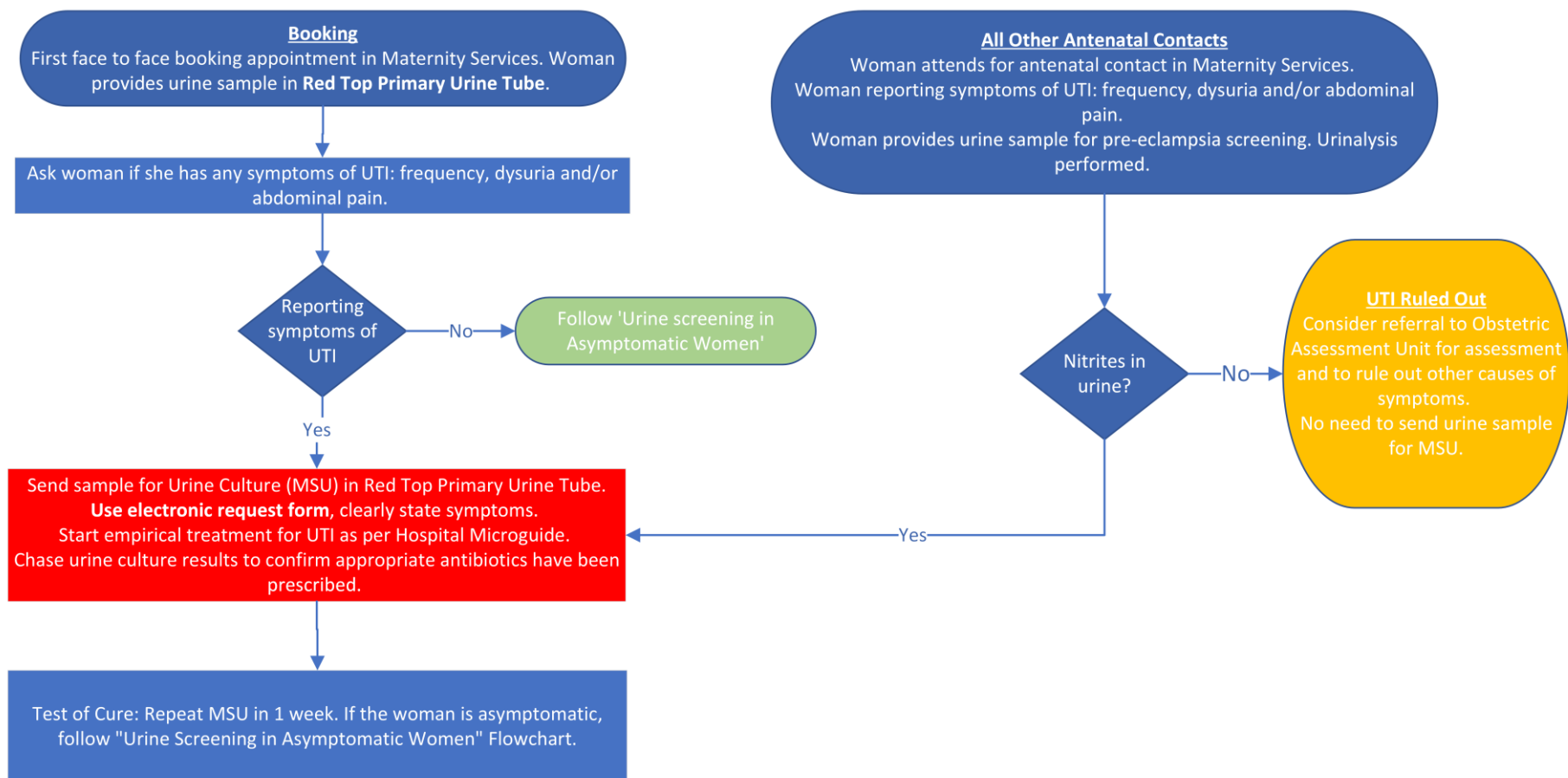
5.2.1 Flowchart: Urine Screening in Asymptomatic Women



[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	24 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

5.2.2 Flowchart: Management of Women with Symptoms of UTI in the Antenatal Period



[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	25 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

6 Sepsis in the Puerperium

6.1 Introduction

Puerperal sepsis is infection of the genital tract occurring at any time between rupture of membranes or labour, and the 42nd day postpartum, in which two or more of the following are present.

- Feeling generally unwell
- Pelvic pain
- Fever/rigors
- Abnormal vaginal discharge/ abnormal smell of discharge
- Delay in reduction of size of uterus.

[Back to Contents](#)

6.2 Possible Pathogens

Possible pathogens causing sepsis in the puerperium are:

- GAS (Group A Streptococci), also known as streptococcus pyogenes
- Escherichia coli
- Staphylococcus Aureus
- Streptococcus pneumoniae
- Methicillin-resistant S. aureus (MRSA), Clostridium septicum and Morganella morganii

[Back to Contents](#)

6.3 Clinical Features and Possible Sources

This is not an exhaustive list of differential diagnoses or features.

System	Features	Potential Source
Respiratory	Cough Shortness of breath Hypoxia	Pneumonia. COVID-19 or other respiratory virus.
Breast	Engorgement and tenderness. Skin induration. Abscess.	Mastitis
Abdomen	Nausea/ vomiting/ diarrhoea. Abdominal pain. Acute abdomen.	Gastroenteritis. Abdominal/ pelvic abscess. Cholecystitis. Appendicitis.
Genital Tract	Increased bleeding/ clots.	Retained products of conception.

Document Title: <i>Infection and Sepsis in Pregnancy</i>	26 of 26	Approval Date: 18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication: 18 JUN 2022
Approved By: Maternity Professional Forum		

	Offensive and/or discoloured discharge. Increased lower abdominal pain.	Pelvic abscess. Endometritis.
Urinary Tract	Dysuria/ frequency. Renal angle pain/ tenderness.	Lower or upper UTI.
Skin and Soft tissue	Perineal wound breakdown. Discharge from wound (abdominal or perineal). Increased wound pain.	Wound infection (abdominal or perineal).
Lower limb	Inflamed/ red/ congested/ tender veins.	Thrombophlebitis
Anaesthetic	Back pain at site of spinal/epidural.	Spinal/ epidural site infection.

[Back to Contents](#)

6.4 Management

Please refer to 'Maternal Infection and Sepsis Proforma' (Section 3.2) for initial investigation and management of postnatal women presenting with signs or symptoms of sepsis. Antibiotic choice should be in line with Hospital **Microguide**.

Maternal observations should be recorded on a **maternity** early warning score (MEWS) chart.

If postnatal readmission is required, it is important to review the birth history. Intrapartum sepsis is an important finding and will have cultures and sensitivity results to aid antibiotic choice if the woman presents with sepsis postnatally. **All women requiring readmission in the postnatal period must be reviewed by a consultant obstetrician within the first 24 hours of admission.**

During the postnatal period, it is important to reassess the need for thromboprophylaxis.

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	27 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

7 Electronic discharge advice letters

All women experiencing sepsis in the intrapartum or postnatal period requiring antibiotic treatment and/or readmission must have an electronic postnatal discharge advice letter generated prior to discharge.

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	28 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

8 Auditable Standards

- 1, Repeat audit on compliance of sepsis proforma (Standard: 100%)
2. Relevant bloods including lactate and blood cultures when started on sepsis pathway. (Standard: 100%)
3. Discussion with or review by a consultant on postnatal ward round regarding continuation/stopping antibiotics for women commenced on the sepsis pathway. (Standard: 100%)
4. Discharge summary for women on sepsis pathway in labour or women with postnatal readmission (Standard: 100%)

[Back to Contents](#)

Document Title: <i>Infection and Sepsis in Pregnancy</i>	29 of 26	Approval Date:18 MAY 2022
Reference Number: UHBOBS124		Next Review Date: 18 MAY 2025
Version Number: 5		Date of Publication:18 JUN 2022
Approved By: Maternity Professional Forum		

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[Back to Contents](#)