Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Sepsis 6+1 for maternity patients

Images reproduced from the NCEC National Clinical Guideline No. 26 on Sepsis Management in Adults (including maternity) 2021

Take 3	Give 3
Blood cultures: Take blood cultures using aseptic (non-touch) technique prior to giving antimicrobials unless this leads to a delay > 45 minutes. Take other specimens as indicated by history and examination e.g. influenza swabs, wound swabs, sputum, urine etc.	**Oxygen:** Titrate supplementary oxygen to achieve oxygen saturations 94-96% (88-92% in patients with chronic lung disease).
Bloods: Check Point of Care lactate (venous or arterial) & full blood count, renal profile, liver profile +/- coag. Other test and investigations as indicated by history and examination.	**Fluids:** Women who present with hypotension should receive up to 30mls/kg of isotonic crystalloid within 1 hour of presentation. **Start vasopressors in women who are fluid unresponsive.** Women with hypoperfusion should receive fluid to restore perfusion using a bolus and review technique. Give 500ml bolus of isotonic crystalloid over 15mins up to 2 litres, reassessing frequently. Boluses may be amended based on clinical context- see fluid resuscitation algorithm. Call Anaesthesia/Critical Care if hypotensive or not fluid responsive. **Caution in pre-eclampsia.**
Urine output: : Assess urinary output as part of volume/perfusion status assessment. For patients with sepsis or septic shock start hourly urinary output measurement.	**Antimicrobials:** Give antimicrobials as per local antimicrobial guideline based on the site of infection, community or healthcare acquired and the patient's allergy status. Assess requirement for source control.
+1 If Pregnant, assess fetal wellbeing Note: There is no auto-regulation of the feto-placental unit. One of the earlier signs of maternal hypoperfusion may be fetal tachycardia. Resuscitating the mother resuscitates the baby.	

Sepsis Predisposition & Recognition

(ALWAYS USE CLINICAL JUDGEMENT)

There are separate sepsis criteria for non-pregnant adult patients

MATERNITY PATIENTS

Complete this form and apply if there is a clinical suspicion of infection.

I

Section 1:

Midwife Name:

Midwife Signature:

NMBI PIN:

IMEWS:

Date: Time:

Patient label here

Maternal Sepsis is a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion or postpartum period (WHO 2016).

S

Section 2: Are you concerned that the woman could have infection

- ☐ History of fevers or rigors
- ☐ Cough/sputum/breathlessness
- ☐ Flu like symptoms
- ☐ Unexplained abdominal pain/distension
- ☐ Pelvic pain
- ☐ Vomiting and/or diarrhoea
- ☐ Line associated infection/redness/swelling/pain
- ☐ Possible intrauterine infection
- ☐ Myalgia/back pain/general malaise/headache
- ☐ New onset of confusion
- ☐ Cellulitis/wound infection/perineal infection
- ☐ Possible breast infection
- ☐ Multiple presentation with non-specific malaise
- ☐ Others

B

Section 3: Obstetric History

Para:

Gestation:

Pregnancy related complaints:

Days post-natal:

Delivery:

- ☐ Spontaneous vaginal delivery (SVD)
- ☐ Vacuum assisted delivery
- ☐ Forceps assisted delivery
- ☐ Cesarean section

Risk factors

Pregnancy Related

- ☐ Cerclage
- ☐ Pre-term/prolonged rupture of membranes
- ☐ Retained products
- ☐ History pelvic infection
- ☐ Group A Strep. infection in close contact
- ☐ Recent amniocentesis

Non Pregnancy Related

- ☐ Age > 35 years
- ☐ Minority ethnic group
- ☐ Vulnerable socio-economic background
- ☐ Obesity
- ☐ Diabetes, including gestational diabetes
- ☐ Recent surgery
- ☐ Symptoms of infection in the past week
- ☐ Immunocompromised e.g. Systemic Lupus
- ☐ Chronic renal failure
- ☐ Chronic liver failure
- ☐ Chronic heart failure

Record observations on the Irish Maternity Early Warning (IMEWS) chart.

Request immediate medical review

if you are concerned the woman has INFECTION plus ANY 1 of the following:

A

Section 4:

1. ☐ IMEWS trigger for immediate review, i.e. **>2 YELLOWS** or **>1 PINK**
2. ☐ SIRS Response, i.e. ≥2 SIRS criteria listed below.

   SIRS criteria: Note - physiological changes must be sustained not transient.

   - ☐ Respiratory rate ≥ 20 breaths/min
   - ☐ Heart rate ≥ 100bpm
   - ☐ Fetal heart rate >160bpm
   - ☐ WCC < 4 or > 16.9 x 10^9/L
   - ☐ Temperature <36º or ≥ 38.3ºC
   - ☐ Acutely altered mental status
   - ☐ Bedside glucose > 7.7mmol/L *(in the absence of diabetes mellitus)*
3. ☐ At risk of neutropenia, due to bone marrow failure, autoimmune disorder or treatment including but not limited to, chemotherapy and radiotherapy, who present unwell.

R

Section 5:

If sepsis is suspected following screening, escalate to Medical review. Use ISBAR as outlined.

Doctor's Name: **Time Doctor Contacted:**

Midwife's Signature:

Sepsis 3 Maternity Version 1 - 13/08/2018

Sepsis Form - Maternity

(ALWAYS USE CLINICAL JUDGEMENT)

There are separate sepsis criteria for non-pregnant adult patients

If infection suspected following History and Examination, Doctor to complete and sign sepsis screening form

Section 6: Clinical Suspicion of Infection

Document site:

- ☐ Genital Tract
- ☐ Urinary Tract
- ☐ Skin
- ☐ Respiratory Tract
- ☐ Intra-abdominal
- ☐ Catheter/Device Related
- ☐ Central Nervous System
- ☐ Intra-articular/Bone
- ☐ Unknown
- ☐ Other suspected site:

☐ **No clinical suspicion of INFECTION**: proceed to section 9.

Section 7: Who needs to get the "Sepsis 6" – infection plus any one of the following:

1. ☐ SIRS Response, i.e. ≥2 SIRS criteria listed on page 1.
2. ☐ Clinically or biochemically apparent new onset organ dysfunction, i.e. any one of the following:
   - ☐ Acutely altered mental state
   - ☐ RR > 30
   - ☐ O_2 sat < 90%
   - ☐ HR > 130
   - ☐ Oligo or anuria
   - ☐ Pallor/mottling with prolonged capillary refill
   - ☐ SBP < 90
   - ☐ Non-blanching rash
   - ☐ Other organ dysfunction
3. ☐ Patients at risk of neutropenia, due to bone marrow failure, autoimmune disorder or treatment including but not limited to, chemotherapy and radiotherapy, who present unwell.

☐ **YES. Start Maternal Sepsis 6 + 1** Time Zero:

Section 8 **TAKE 3** **SEPSIS 6 + 1* – complete *within 1 hour*** **GIVE 3**

☐ **BLOOD CULTURES:** Take blood cultures before giving antimicrobials (if no significant delay i.e. >45 minutes) and other cultures as per examination.

☐ **BLOODS:** Check point of care lactate & full blood count, U&E +/- LFTs +/- Coag. Other test and investigations as indicated by history and examination.

☐ **URINE OUTPUT:** assess urinary output as part of volume/perfusion status assessment. For patients with sepsis or septic shock start hourly urinary output measurement.

***+1 If Pregnant, Assess Fetal Wellbeing** ☐

☐ **OXYGEN:** Titrate O_2 to saturations of 94 -98% or 88-92% in chronic lung disease. N/A ☐

☐ **FLUIDS:** Start IV fluid resuscitation if evidence of hypovolaemia. 500ml bolus of isotonic crystalloid over 15mins & give up to 2 litres, reassessing frequently. Call Anaesthesia/Critical Care if hypotensive or not fluid responsive. Caution in pre-eclampsia. N/A ☐

☐ **ANTIMICROBIALS:** Give IV antimicrobials according to the site of infection and following local antimicrobial guidelines.

Type: Dose: Time given:

Type: Dose: Time given:

Type: Dose: Time given:

Laboratory tests should be requested as EMERGENCY aiming to have results available and *reviewed within 1 hour*

Section 9 Following history and examination, and in the absence of clinical criteria or signs. Sepsis 6+1 is not commenced. If infection is diagnosed, proceed with usual treatment pathway for that infection.

☐ **NO.** Doctor's Name: Date: Time:

Section 10

Look for signs of new organ dysfunction after the Sepsis 6+1 bundle or from blood tests - any one is sufficient:

- ☐ Lactate ≥ 4 after 30mls/kg Intravenous therapy
- ☐ Cardiovascular - Systolic BP < 90 or Mean Arterial Pressure (MAP) < 65 or Systolic BP more than 40 below patient's normal
- ☐ Respiratory - New or increased need for oxygen to achieve saturation > 90% (note: this is a definition, not the target)
- ☐ Renal - Creatinine > 170 micromol/L **or** Urine output < 500mls/24 hrs – despite adequate fluid resuscitation
- ☐ Liver - Bilirubin > 32 micromol/L
- ☐ Haematological - Platelets < 100 x 10^9/L
- ☐ Central Nervous System - Acutely altered mental status

One or more new organ dysfunction due to infection:

☐ **This is SEPSIS.** Inform Registrar, Consultant and Anaesthetics immediately. Reassess frequently in 1st hour. Consider other investigations and management +/- source control if patient does not respond to initial therapy as evidenced by haemodynamic stabilisation then improvement.

No new organ dysfunction due to infection:

☐ **This is NOT SEPSIS** If infection is diagnosed proceed with usual treatment pathway for that infection.

Section 11

Look for signs of septic shock

(following adequate initial fluid resuscitation, typically 2 litres in the first hour unless fluid intolerant)

☐ Requiring inotropes/pressors to maintain MAP ≥ 65

☐ **This is SEPTIC SHOCK**

☐ Inform Consultant

☐ Contact CRITICAL CARE/Anaesthesia

Pathway Modification

All Pathway modifications need to be agreed by the Hospital's Sepsis Steering Committee and be in line with the National Clinical Guideline No 6 Sepsis Management.

Section 12 **Clinical Handover. Use ISBAR$_4$ Communication Tool**

This section only applies when handover occurs before the form is completed and is then signed off by the receiving doctor.

Doctor's Name (PRINT): Doctor's Signature: Doctor's Initials MCRN

Patient care handed over to: Time: Sections completed:

File this document in patient notes - Document management plan.

Doctor's Name: **Doctor's Signature:** **MCRN:** **Date:** **Time:**