Postpartum infection guideline
(GL893)

Approval

<table>
<thead>
<tr>
<th>Approval Group</th>
<th>Job Title, Chair of Committee</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternity &amp; Children’s Services Clinical Governance Committee</td>
<td>Chair, Maternity Clinical Governance Committee</td>
<td>6th February 2015</td>
</tr>
</tbody>
</table>

Change History

| Version | Date    | Author, job title                               | Reason                                           |
|---------|---------|------------------------------------------------|                                                 |
| 1.0     | May 2008| S Low & J Ablett (Consultant Obstetricians)     | Trust requirement                                |
| 2.0     | Sept 2010| J Siddal (Consultant Obstetrician)              | Reviewed                                        |
| 3.0     | Dec 2012| J Siddal (Consultant Obstetrician)              | Reviewed                                        |
| 4.0     | Dec 2014| J Siddal (Consultant Obstetrician)              | Reviewed and new Obstetric bundle & flowchart added (App 2) |
Overview: Puerperal pyrexia and sepsis are among the leading causes of preventable maternal morbidity and mortality in developed countries, as well as in developing countries.¹

Common sites of infection include:
- Uterus leading to Endometritis
- Perineum
- Caesarean Section wounds
- Breast tissue leading to Mastitis
- Urinary tract

Most infections manifest more than 24 hours after delivery. Predisposing factors include
- prolonged rupture of membranes,
- prolonged labour,
- multiple vaginal examinations in labour,
- caesarean section,
- obstetrical manoeuvres
- post-partum haemorrhage
- obesity,
- low socio-economic status,
- poor nutrition,
- primiparity,
- anaemia,¹

Maternal complications include septicaemia, endotoxic shock, peritonitis or abscess formation. Early diagnosis and treatment is therefore vital.

Diagnosis and Investigation:
Timely diagnosis is required in all patients with suspected infection, particularly in patients with any of the following:
- Temperature >37.5°C or <36°C
- HR >90bpm
- RR >20 breaths/min
- Possible perineal or abdominal wound infection
In these patients, perform the following:

- Full set of observations, including BP, RR, HR and Temperature
- Obtain a complete history, including details of possible infection in the baby
- Full physical examination by medical staff, including chest, breast, leg (to exclude DVT) examinations and abdominal +/- wound inspection
- MSU
- FBC
- CRP
- LVS/HVS

Further investigations may be required in selected groups of patients:

**Suspected wound/perineal infection**

- Commence the ‘RBH wound and perineal infection checklist’. (in stationery section)
- Perineal +/- abdominal wound swab

**Post-partum pyrexia >38°C or <36°C or other signs of sepsis**

- Commence the ‘RBH Postnatal sepsis checklist’ (in stationery section)
- Perineal +/- abdominal wound swab (if appropriate)
- Blood cultures

**Mastitis**

- Pus or aspirate for MC&S

All relevant microbiological culture specimens must be collected before the start (or change) of antimicrobial treatment.

**Treatment:**

**Sepsis:**

Septic patients require urgent review by senior Obstetric and Anaesthetic staff. Severely septic patients may require ITU support.

*Sepsis* is a suspected or known infection, accompanied by 2 or more of the SIRS (Systemic Inflammatory Response Syndrome) criteria.

*Severe Sepsis* is sepsis associated with organ dysfunction, hypotension or poor tissue perfusion.

*Septic shock* is severe sepsis with hypotension which does not respond to fluid resuscitation.

The ‘Surviving Sepsis Campaign’ was initiated by the Institute of Health Improvement to help improve treatment, early recognition and reduce death rates associated with sepsis. More information can be found on the Intranet.
If any TWO OR MORE of the following are present:

- Temperature >38.3°C or <36°C
- Tachycardia >90 bpm
- Tachypnoea >20 bpm
- WCC>12 or <4

WITH or WITHOUT any of the following:

- Chills with rigors
- Acutely altered state
- Glucose >6.6

The patient has SEPSIS. Inform the on-call Consultant Obstetrician and Anaesthetist and refer to the ‘Sepsis identification and management April 14.pdf’ found on the Intranet.

Commence the sepsis bundle

Manage these patients as per the 6 steps of Management for Sepsis:

1. Documentation and discussion
2. Blood cultures
3. Antibiotics
4. Lactate measurement
5. Initial fluid bolus for resuscitation
6. Senior review for ongoing management

(See document titled, ‘A Focus on Sepsis management in Obstetrics – July 2012’)

See also – Surviving Sepsis Campaign Report on the Critical Care Intranet site

In less severe cases of infection, empirical treatment may be commenced but must be reviewed within 48 hours, in light of clinical response and/or results of microbiological tests.

Depending on the clinical condition of the patient and, where possible, use oral antibiotics (Refer to the trust ‘IV-to-oral Switch Therapy’ policy)

The prescribed antimicrobial treatment must be clearly documented in the patient’s noted and clearly written on the patient’s drug chart.

All antimicrobial therapy should be reviewed daily by a member of the clinical team. Check ‘Pathology reports’ for microbiology reports daily and rationalise therapy accordingly.

Antimicrobial treatment should be given for the shortest recommended duration to minimise the risk of super-infection with drug-resistant bacteria and antibiotic-associated diarrhoea or Clostridium difficile associated disease.
If the patient is not responding to treatment adequately within 48 hours of the commencement of treatment, the Consultant Obstetrician and Consultant Microbiologist must be involved.

Treatment of specific conditions:
Refer to [Antimicrobial Treatment and Prophylaxis Guidelines for Obstetrics (GL787)](#) for more information, but the ‘basics’ are described below:

**Wound infection**
- Co-amoxiclav 625mg po tds or 1.2g IV tds +/- Gentamicin
- If penicillin allergic: Cephradine/ clindamycin po or Teicoplanin IV 400mg 12 hourly x3 doses, followed by 400mg once a day

**Endometritis**
- Co-amoxiclav 625mg po tds or 1.2g IV tds +/- Gentamicin
- If penicillin allergic: Cephradine/ clindamycin po or Teicoplanin IV 400mg 12 hourly x3 doses, followed by 400mg once a day

**Mastitis with abscess**
- Incision and drainage
- Flucloxacillin 1g IV 6 hourly
- If penicillin allergic: Clindamycin 450mg po 6 hourly

**UTI**
- Amoxicillin 500mg po 8 hourly for 7 days or Co-amoxiclav 625mg po tds for 5-7 days
- If penicillin allergic: Cephradine 500mg po 12 hourly

References:
1. Maharaj D. Puerperal pyrexia: a review. Obstet gynecol survey 62;no 6; June 2007; 393-399

Authors: Samantha Low (Consultant Obstetrician) Jill Ablett (Consultant in fetomaternal medicine) May 2008

Reviewed: September 2010, December 2012, December 2014 (Jane Siddall)
Review due: February 2017
Appendix 1 – Suspected postnatal Infection flowchart

Suspected Postnatal Infection

Community Midwife:
• Assess
• Swabs (Wound; Perineum)
• MSU

GP Review
• Assess
• Swab results

Treatment with antibiotics

No response to treatment or Deterioration

GP Review

THINK SEPSIS
See RBH guideline

Registrar Review:
• Complete history
• Full physical examination

Out-patient management

Admit

Treatment with antibiotics

No improvement

Discuss with Microbiology

Consultant review

Review by DAU midwife:
• Observations
• Check swab results
• Take swabs if no results
• MSU if no result
• FBC + CRP + Blood cultures
• Commence checklist
  o Wound & perineal infection
  o Postnatal sepsis

Discuss with Paediatricians:
Is baby unwell?

Discuss with Microbiology

Refer to DAU
Appendix 2 – Obstetric Sepsis bundle & pathway

**OBSTETRIC SEPSIS IDENTIFICATION & MANAGEMENT TOOL**

Early recognition of sepsis may prevent maternal and fetal complications. Need to take into account the normal physiological changes on maternal status throughout the various stages of pregnancy.

**ASSUME SEPSIS UNTIL DEMONSTRATED OTHERWISE**

Are any two of the following criteria present?

- Temperature <36°C or >38°C
- Heart rate >100 bpm (be aware of patients on beta-blockers)
- WCC >12 or <4 x 10⁹/l
- Respiratory rate >20 min
- Acutely altered mental state
- Hyperglycaemic in the absence of diabetes

If yes, your patient has SIRS

Does your patient have SIRS + history or signs suggestive of an infection?

- Cough/ sputum/ chest pain
- Abdo pain/ distension/ diarrhoea & vomiting
- Line infection
- Endocarditis
- Headache with neck stiffness
- Cellulitis/ wound infection / perineum / breast
- Joint / bone infection

If yes, your patient is SEPTIC

Start the clock ................. (time)

Any signs of organ dysfunction?

- 3DF <90mmHg or MAP<65mmHg
- Urine output =<0.5ml/kg/hr for 2hrs
- INR >1.5
- Bilirubin >34μmol/l
- Lactate >2mmol/l
- Need for oxygen to keep SpO₂ >90%
- Platelets <100 x 10⁹/l
- Creatinine >177mmol/l

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### Appendix 3 – Multi-disciplinary wound care

<table>
<thead>
<tr>
<th>Multi Disciplinary Wound Assessment and Care Plan</th>
<th>ID LABEL</th>
<th>Name</th>
<th>MRN</th>
<th>DOB</th>
<th>NHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE OF WOUND: Abdominal / Perineum</td>
<td>Date of referral:</td>
<td>Referred by:</td>
<td>Date &amp; time of review:</td>
<td>type of delivery:</td>
<td>Date postnatal problem first identified:</td>
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<tr>
<td>Wound swab taken today</td>
<td>Y / N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antibiotic treatment received &amp; dates:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post natal Hb/date (take if none available)</td>
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<tr>
<td>E/P</td>
<td>Temp</td>
<td>Pulse</td>
<td>resp</td>
<td>MOWS</td>
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</tr>
<tr>
<td>Wound Assessment</td>
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<td></td>
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</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>Description</td>
<td></td>
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</tr>
<tr>
<td>Treatment used:</td>
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</tr>
<tr>
<td>Follow up plan:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sign:</td>
<td>PRINT:</td>
<td></td>
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</tr>
<tr>
<td>Dressings required</td>
<td>Y / N</td>
<td>Packing required</td>
<td>Y / N</td>
<td>Type used:</td>
<td></td>
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<tr>
<td>Prescription given for antibiotics</td>
<td>Y / N</td>
<td>(state antibiotics dose, frequency and duration)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Follow up appointment arranged</td>
<td>Y / N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• District nurse</td>
<td>Date:</td>
<td>time:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Practice nurse</td>
<td>Date:</td>
<td>time:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>DAU appointment give to follow up woman</td>
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<tr>
<td>Notes left in DAU drawer</td>
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<tr>
<td>Wound care advice given to woman</td>
<td>Y / N</td>
<td></td>
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</tr>
</tbody>
</table>

Sept 2014 (T Haxton)