Approved by Quality & Patient Safety Committee
21/6/12

# GROUP B STREPTOCOCCUS INFECTION – MONITORING AND MANAGEMENT OF NEONATES

*This LOP is developed to guide clinical practice at the Newborn Care Centre, Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP. This LOP has been developed in partnership with Infectious Diseases Team at Sydney Children's Hospital*

## 1. AIM

- Secondary Prevention of early-onset Group B Streptococcal (GBS) disease among newborns

## 2. PATIENT

- Neonates

## 3. STAFF

- Registered Midwives
- Student Midwives
- Registered Nurses
- Medical Staff

## 4. EQUIPMENT

- Stethoscope
- Thermometer

## 5. CLINICAL PRACTICE

Routine care is advised for the following groups:

- Mother unknown GBS status but NO risk factors for sepsis and NO maternal intrapartum antibiotics:
- Mother known GBS status and received appropriate chemoprophylaxis
- Elective Caesarean Section at term with intact membranes, irrespective of maternal GBS status:

Additional observations 3-4 hourly in hospital for the first 48 hours of age are advised for the following groups:

- Mother known GBS carrier and received inadequate (IV antibiotics <4 hrs prior to delivery) or no intrapartum antibiotics:
- Mother unknown or negative GBS status AND other risk factors for sepsis present including gestation <37 weeks, ruptured membranes (ROM) for ≥18 hrs, maternal fever ≥ 38°C)
- If any symptoms/signs develop- contact pediatric team for full diagnostic work-up and urgent intravenous (IV) antibiotics

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## GROUP B STREPTOCOCCUS INFECTION – MONITORING AND MANAGEMENT OF NEONATES cont'd

- Well-appearing newborns whose mothers had suspected chorioamnionitis: (Maternal fever ≥38°C, P(ROM) for ≥18 hr +/- maternal tachycardia. Contact pediatric team to investigate (FBC and Blood Culture) and commence IV antibiotics pending culture reports
- Initial antibiotics of choice: Benzylpenicillin and Gentamicin
- If investigations negative for GBS after 48 hours, cease antibiotics

Mother had a previous baby with GBS disease:

- Contact pediatric team for review and Full Blood Count (FBC) and blood culture
- 3-4 hourly observations for the first 48 hours of age
- IV Benzylpenicillin
- If investigations negative for GBS after 48 hrs, antibiotics can be ceased

Baby with clinical signs of sepsis:

- Contact pediatric team for urgent full diagnostic work-up (FBC, Blood Culture +/- Chest X-ray (CXR) and Lumbar Puncture (LP) if baby stable) irrespective of maternal GBS status **and** IV antibiotics.
- Initial antibiotics of choice: Benzylpenicillin and Gentamicin

- We recommend observations should continue in the hospital for up to 48 hours. However, if ≥37 weeks gestation and if other discharge criteria are met, observations may occur by the parents at home after 24 hours, provided access to medical care is readily available and the parents are able to comply fully with instructions for home observation. Please give and explain to the parents GBS leaflet (Appendix 1) that provides instructions for parents on neonatal observations.

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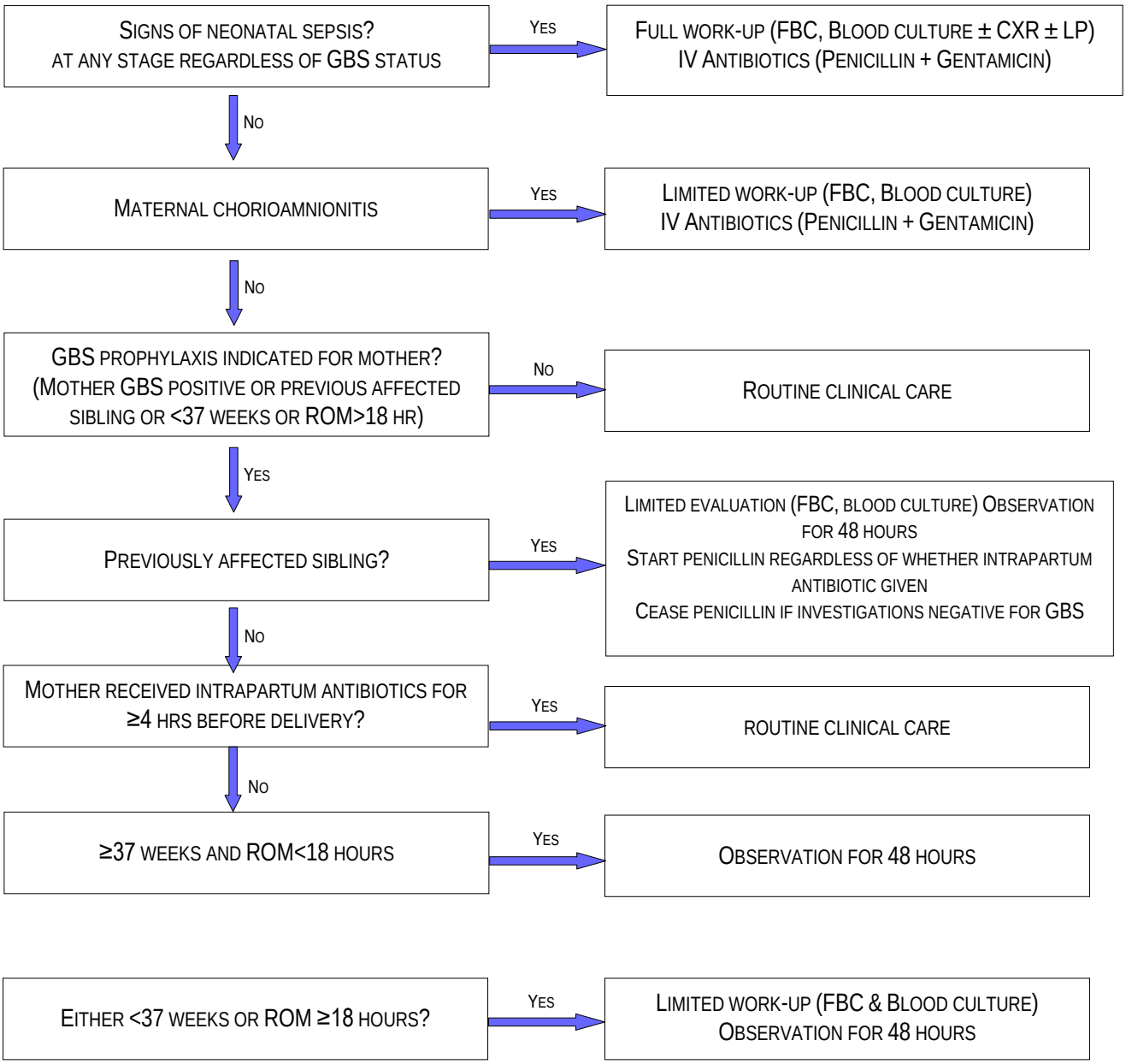
## GROUP B STREPTOCOCCUS INFECTION – MONITORING AND MANAGEMENT OF NEONATES cont'd

See the algorithm below:

**SECONDARY PREVENTION OF EARLY-ONSET GBS AMONG NEWBORNS**

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**ROYAL HOSPITAL FOR WOMEN**

LOCAL OPERATING PROCEDURE

**CLINICAL POLICIES, PROCEDURES & GUIDELINES**

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## GROUP B STREPTOCOCCUS INFECTION – MONITORING AND MANAGEMENT OF NEONATES cont'd

### 6. DOCUMENTATION

- Integrated Clinical Notes
- Medication chart
- Standard Paediatric Observation Chart Neonatal/Under 1 Month (Corrected)
- ObstetriX

### 7. EDUCATIONAL NOTES

- Approximately 10%–30% of pregnant women are colonized with GBS in the vagina or rectum.
- An estimated 1%–2% of infants born to colonized mothers develop early-onset GBS (EOGBS) infections
- As a result of prevention efforts, incidence of GBS has declined dramatically over the past 15 years, from 1.7 cases per 1,000 live births in the early 1990s to 0.34–0.37 cases per 1,000 live births
- The EOGBS associated mortality rate is 5 to 20%. In the UK, mortality has been reported as 6% in term infants and 18% in preterm infants
- The following neonates are at risk of GBS infection:
  - Mother with GBS colonisation (positive culture or GBS bacteriuria)
  - Preterm labour (spontaneous or induced) at less than 37 weeks
  - Mother febrile in labour ($38^0$C or more)
  - Prolonged (18 hours or more) rupture of membranes (PROM)
  - Previous sibling with GBS disease
- Early-onset infections are acquired vertically through exposure to GBS from the vagina of a colonized woman. Neonatal infection occurs primarily when GBS ascends from the vagina to the amniotic fluid after onset of labor or rupture of membranes, although GBS also can invade through intact membranes. GBS can be aspirated into the fetal lungs, which in turn can lead to bacteraemia
- Infants also can become infected with GBS during passage through the birth canal; infants who are exposed to the organism through this route can become colonized at mucus membrane sites in the gastrointestinal or respiratory tracts, but these colonized infants most commonly remain healthy
- Infants with early-onset GBS disease generally present with respiratory distress, apnea, or other signs of sepsis within the first 24–48 hours of life. The most common clinical syndromes of early-onset disease are sepsis and pneumonia; less frequently, early-onset infections can lead to meningitis
- Intrapartum chemoprophylaxis is the best option to minimize the risk of EOGBS infection of the neonate
- Adequate Intrapartum prophylaxis is defined as administering IV antibiotics to mother for ≥4 hours prior to delivery

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## GROUP B STREPTOCOCCUS INFECTION – MONITORING AND MANAGEMENT OF NEONATES cont'd

- Approximately 90% of infants with EOGBS disease, irrespective of whether mother received intrapartum antibiotic prophylaxis or not, manifest within the first 24 hours of life. About 5% of cases may manifest in the second 24 hours
- Rarely, babies may take up to 6 days of life to manifest symptoms
- Preterm infants are more likely to develop symptoms soon after delivery (within 6 hours)

## 8. RELATED POLICIES/ PROCEDURES / CLINICAL LOPs

- Intrapartum Group B Streptococcus (GBS) prophylaxis

## 9. REFERENCES

1 RANZCOG College Statement: Screening and Treatment for Group B Streptococcus in Pregnancy and GBS swab sheet C-Obs19 July 2009 www.ranzcog.edu.au/publications/statements/C-obs19.pdf and www.ranzcog.edu.au/publications/statements/GBS%20SWAB%20SHEET.pdf Accessed 3 May 2011

2 Centers for Disease Control (CDC) and Prevention. Prevention of Perinatal Group B Streptococcal Disease: Revised Guidelines from CDC 2010. MMWR Vol 59 No RR-10 Nov 19. URL: www.cdc.gov/groupbstrep/index.html Accessed 3 May 2011

3 Queensland Statewide Maternity and Neonatal Clinical Network Clinical Guidelines Program. Early onset Group B streptococcal disease. November 2010
URL: www.health.qld.gov.au/cpic/resources/mat_guidelines.asp Accessed 3 May 2011

4 3centres Collaboration Victoria (Mercy Hospital for Women, Monash Medical Centre (Southern Health) and The Royal Women's Hospital). Consensus Guidelines on Antenatal Care: Prevention of Early-Onset Group B Streptococcal Disease (EOGBS). URL: www.3centres.com.au Accessed 3 May 2011

5 SA Perinatal Practice Guidelines. Chapter 10: Prevention and treatment of neonatal sepsis including maternal GBS colonisation. Department of Health South Australia. URL: www.health.sa.gov.au/ppg Accessed 3 May 2011

6 King Edward Memorial Hospital Women and Newborn Health Service. Obstetrics and Midwifery Guidelines. 1. Antepartum Care. 1.4 Infections in Pregnancy. 1.4.1 Group B Streptococcal Disease (September 2010)
URL: www.kemh.health.wa.gov.au/development/manuals/O&G_guidelines/sectionb/1/1.4.1.pdf Accessed on 3 May 2011

7 Campbell Norma, Alison Eddy, Brian Darlow, Peter Stone, Keith Grimwood. The prevention of early-onset neonatal group B streptococcus infection: technical report from the New Zealand GBS Consensus Working Party. Journal of the New Zealand Medical Association, 20-August-2004, Vol 117 No 1200 URL: http://www.nzma.org.nz/journal/117-1200/1023/

8 Canadian Paediatric Society. Position Statement (FN 2007-03): Management of the infant at increased risk for sepsis. Paediatr Child Health 2007 vol 12 No 10, 893-898

## REVISION & APPROVAL HISTORY

Endorsed Neonatal Services Management Committee 16/5/12
Previous title : Group B Streptococcus Infection – Monitoring of Neonates at Risk
Approved Quality Council 19/9/05

**FOR REVIEW:** JUNE 2017

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**APPENDIX 1**

**Information for parents who are taking a baby home who may be at increased risk of developing Group B Streptococcus (GBS) infection**

We recommend that you stay in hospital for 48 hours because your baby has an increased chance of developing Group B Streptococcus (GBS) infection. During this 48 hour stay the staff will perform some additional observations on your baby to detect early signs of GBS infection. If you have decided to go home before your baby is 48 hours old we recommend that you monitor your baby and contact the hospital immediately if you have any concerns.

**Why have we recommended that you and your baby stay in hospital for 48 hours?**

About 1 per 100 babies whose mothers tested positive to GBS may develop an infection. However, antibiotic treatment given to the mother in labour will reduce this risk. Babies who develop the GBS symptoms usually do so during the first 24 hours of birth, however some will not occur until 24-48 hours after birth and very rarely up to one week old or more. While the risk of infection is small occasionally babies who develop GBS infection may develop pneumonia or meningitis. If this is unrecognised and untreated or treated late this can be fatal.

**We have recommended you stay in hospital because:**
You tested positive for GBS and

- received no antibiotics in labour or
- did not receive them at least 4hours before the birth

**OR**

You tested negative or positive for GBS during pregnancy, or do not know the result, but have other risk factors which may increase the risk of your baby developing GBS, such as:

- Your waters were broken for more than 18hours before the birth
- Your baby was less than 37 weeks gestation
- You developed a fever in labour of more than 38degrees
- You have had a previous baby that developed GBS infection

**How can you monitor your baby for signs of GBS?**
Parents are the best people to notice any changes in their baby's behaviour. However sometimes changes can be subtle and we recommend that you document the observations on the chart below to help you become aware of any significant changes.

1) Take your baby's temperature and breathing rate approximately every 4 hours (prior to feed) until baby is 48 hours old

   *(The most common sign of GBS infection is a fast breathing rate - baby may appear to be panting)*

2) Watch for any signs of difficulty with breathing *eg baby is working hard to breathe, or making a persistent grunting noise or the chest wall appears to be sucked in when baby takes a breath in.*

3) Watch for any signs of baby's skin colour changing *(becoming pale, white or less pink)*

4) Your baby may appear to be unusually drowsy (eg. difficult to wake to feed) or seems unwell.

For more information on GBS see:
http://www.groupbstrep.org/resources/pamphlet.pdf
http://www.babycenter.com.au/pregnancy/antenatalhealth/physicalhealth/groupbstrep/

Observations for baby _____ born at _____ on _____

A normal temperature for a newborn when taken under the armpit is 36.5-37.2°Celsius (If you are unsure how to measure these in your baby, please seek advice from the nurse looking after you at the hospital)

A normal breathing rate for a newborn is between 40-60 beats per minute

*Do not count breathing rate when baby has just been crying*

| BABY'S AGE IN HOURS | TIME OBSERVATIONS DONE | TEMPERATURE<br>ALERT IF LESS THAN 36 OR MORE | BREATHING<br>ALERT IF MORE THAN 60 PER MIN | ARE THERE ANY BREATHING DIFFICULTIES? *(SEE POINT 2 ABOVE)* | ARE THERE ANY SKIN COLOUR CHANGES? *(SEE POINT 3 ABOVE)* | IS BABY DIFFICULT TO WAKE OR UNUSUALLY DROWSY? |
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Please call your midwife or the hospital straight away if you have any concerns at all or any of the observations are within the normal range.

Contact numbers:
**Midwifery Group Practice**
If you are receiving care from the MGP please call your designated midwife

All other women
Please call the midwives on the postnatal ward that you were on, or if went straight home from the Delivery suite, please call: Oxford Ward 9382 6398 or Paddington Ward 9382 6348

**Instructions given to parent/s regarding taking of observations by**
**Midwife or Doctor's name and signature:** _____

**I understand the information in this leaflet and how to take my baby's observations.**
**Patient's name and signature:** _____