East Sussex Healthcare
NHS Trust

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FOI REF: 24/795

3rd December 2024

FREEDOM OF INFORMATION ACT

I am responding to your request for information under the Freedom of Information Act. The answers to your specific questions are as follows:

1. **Please supply a copy of your guideline(s) relating to group B Strep during pregnancy, labour, and in newborn babies**

   Please see attached East Sussex Healthcare NHS Trust's (ESHT) 'Clinical Guideline for the Perinatal Management of Group B Streptococcus, and newborns at risk of early neonatal sepsis'.

   Please note that it is the Trust's FOI policy to only provide the names of staff that are grade 8a or above, therefore staff that are below that grade have been redacted from the attached policy.

2. **Please provide the date when your guidelines relating to group B Strep during pregnancy, labour, and in newborn babies were last updated**

   Please see the attached guideline as above.

3. **Please provide the date when your guidelines relating to group B Strep during pregnancy, labour, and in newborn babies are due to be updated**

   Please see the attached guideline as above.

4. **Do you provide information materials about group B Strep to all pregnant women and people as a routine part of antenatal care? (Yes/No)**

   We do not directly provide this information to all pregnant women at the start of their pregnancy; however we do have the ability to provide the attached leaflet, as recommended reading at any point of a service users pregnancy.

Cont…/

5. **If you do not provide information materials about group B Strep to all pregnant women and people, do you provide them to any of the following groups during antenatal care? (Select all that apply)**

   - **those who have previously had a baby who developed GBS infection**
   - **those where GBS was detected before the current pregnancy (swab or urine)**
   - **those where GBS was detected during the current pregnancy (swab or urine) those who are in preterm labour**
   - **those with preterm rupture of membranes**
   - **those with prolonged rupture of membranes**
   - **those who request information**

   Yes, to all the above.

6. **Please supply copies of the information materials (physical and/or digital) which are given to pregnant women and people about GBS as a routine part of antenatal care.**

   Please see attached.

7. **Do you offer testing specifically for maternal GBS carriage to any pregnant women or people in either late pregnancy or in labour? [By this we mean a test specifically intended to detect GBS carriage, rather than a general test for the presence of any microorganisms of interest] (Yes/No)**

   No, it is not ESHT policy to offer testing to all women as a routine.

8. **If you offer testing specifically for maternal GBS carriage in late pregnancy or in labour, do you offer: (Select all that apply) Testing late in pregnancy Testing in labour**

   Not applicable to ESHT.

Cont…/

9. **Do you offer GBS-specific testing for maternal GBS carriage to: (Select all that apply)**

- **All pregnant women and people**
- **Those who previously had a baby who developed GBS infection**
- **Those where GBS was detected in a previous pregnancy**
- **Those who request it**
- Those in other circumstances (for example, for reasons such as PPROM or vaginal discharge) ✓

  Some situations have HVS taken and GBS may be found as a consequence.
- **Other (please state)**

10. **If you undertake GBS-specific testing for maternal GBS carriage, which of the following specimen types do you collect (Select all that apply):**

- **Vaginal Swab alone**
- **Rectal Swab alone**
- **Both Vaginal and Rectal Swab(s)**
- **Other (please state)**

Not applicable to ESHT.

11. **If you undertake GBS-specific testing for maternal GBS carriage, which detection method is used by the Microbiology laboratory? (Select all that apply)**

- **Direct culture on non-selective, non-chromogenic media**
- Direct culture on selective &/or indicator media ✓
- **Broth enrichment with subculture onto non-selective, non-chromogenic media**
- **Broth enrichment with subculture onto selective &/or chromogenic media**
- **PCR (for example, Cepheid GeneXpert)**
- **Other (Please state)**

12. **Does your lab offer any of the following (Select all that apply):**

- **Enriched Culture Medium (ECM) as part of the routine lab test repertoire**
- **ECM offered, with samples referred to another lab**
- **PCR as part of the routine lab test repertoire**
- **PCR offered, with samples referred to another lab**
- **Other (please state)**

ESHT do not offer any of the above.

Cont…/

13. Do you provide training on group B Strep in labour to (Select all that apply)

Yes, this is part of the core competency framework, and much be delivered every 3 years as part of MIS 5.

We have delivered to Midwifery and Obstetric staff.

- Midwifery staff ✓
- Obstetric staff ✓
- **Neonatal staff**
- **Laboratory staff**
- **Others (please state)**

14. Do you use the Kaiser Permanente Neonatal Early-Onset Sepsis Calculator?

No. We have started works around implementing this in ESHT, but this has not yet been finalised.

14a. If yes to Q14, is there a prospective audit in place? (Yes/No)

There is no audit planned yet.

14b. If yes to Q14, from what gestation do you use the calculator? Please specify weeks and days e.g. 34+0

34 Weeks.

15. Do you use digital platforms to analyse your Trust/Board's rates of GBS infection [invasive neonatal or maternal infections - not non-invasive infections, or infections that are not neonatal/pregnancy-related] (Yes/No)

Yes.

16. If you use digital platforms to analyse your Trust/Board's rates of GBS infection as defined in Q15, do you use this for: (Select all that apply)

- Early-onset GBS infection ✓
- Late-onset GBS infection ✓
- Maternal GBS infection ✓
- Others (please state) ✓

    - Those who have previously had a baby who developed GBS infection.
    - Those where GBS was detected before the current pregnancy (swab or urine).
    - Those where GBS was detected during the current pregnancy (swab or urine).
    - Those who are in preterm labour.
    - Those with preterm rupture of membranes.
    - Those with prolonged rupture of membranes.
    - Those who request information.

Cont…/

17. Has your Trust adopted the NHS Complaint Standards as set out by the Parliamentary and Health Service Ombudsman?

Yes.

If I can be of any further assistance, please do not hesitate to contact me.

Should you be dissatisfied with the Trust's response to your request, you have the right to request an internal review. Please write to the Freedom of Information Department (esh-tr.foi@nhs.net), quoting the above reference, within 40 working days. The Trust is not obliged to accept an internal review after this date.

Should you still be dissatisfied with your FOI request, you have the right of complaint to the Information Commissioner at the following address:

The Information Commissioner's Office
Wycliffe House
Water Lane
Wilmslow
Cheshire SK9 5AF

Telephone: 0303 123 1113

Yours sincerely

Freedom of Information Department
esh-tr.foi@nhs.net

East Sussex Healthcare NHS Trust

Clinical Guideline for the Perinatal Management of Group B Streptococcus, and newborns at risk of early neonatal sepsis

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Date ratified:	November 2023
Name of author and title:	Gayle Clarke Quality improvement and Assurance lead Nurse/Midwife for Women and Children's Division Dr Mani Kandasamy Consultant Paediatrician Dr Wimal Nettikumara, Consultant Paediatrician Mr Pascall Consultant Obstetrician
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Compliance with CQC outcome	Regulation 9 Person centred Care Regulation 10 Dignity and Respect Regulation 11 Need for Consent Regulation 12 Safe Care and Treatment
Compliance with any other external requirements (e.g. Information Governance)	RCOG, NICE
Associated Documents:	***Clinical Guideline for the Management of Women with Pre-Labour Rupture of Membranes Pre-Term and after 37 Weeks*** ***Clinical Guideline for Pre-term Labour Including Antenatal Steroid Therapy and Tocolysis and Pre-term Birth***

Did you print this yourself?
Please be advised the Trust discourages retention of hard copies of the procedural document and can only guarantee that the procedural document on the Trust website is the most up to date version

Version Control Table

Version number and issue number	Date	Author	Reason for Change	Description of Changes Made
V1	September 2019	Gayle Clarke Dr Mani Kandasamy Dr Wimal Nettikumara Mr Pascall	New Guidance	New Guideline for management of Group B Strep, and Neonatal sepsis
V2.0	June 2024	Dr Mani Kandasamy Dr Wimal Nettikumara Mr Pascall	Clinical Review	New NICE guidance for Red flags, risk factors added/changed

Consultation Table

This document has been developed in consultation with the groups and/or individuals in this table:

Name of Individual or group	Title	Date
Women and children's Guideline Implementation Group		August 2019
[redacted])	Lead Pharmacist for Women's, Children and Sexual Health	August 2019
Women and Children's Governance and accountability meeting		September 2019
Antimicrobial Steering Group		December 2019
Medicines Optimisation Group		January 2020
Women and Children's Guideline Implementation group		June 2023
Women and Children's Governance and Accountability Members		July 2023
Antimicrobial Steering Group		September 2023
Medicines Optimisation Group		November 2023

This information may be made available in alternative languages and formats, such as large print, upon request. Please contact the document author to discuss.

Table of Contents

1. Introduction

Group B beta haemolytic Streptococcus (GBS) is commonly carried by 20-25% of women/people Who are of childbearing age? It is recognised to be associated with a higher risk of chorioamnionitis and neonatal disease. Although usually harmless, it can be passed from mother/parent to her baby around birth. Most babies do not develop group B Strep infection, but for those who do, it can be life-threatening. For the neonate Group B Strep is the UK's most common cause of severe bacterial infection in newborn babies and of meningitis in babies under 3 months.

One in every 2000 new-born babies in the UK and Ireland are diagnosed with GBS infection. Although the infection can make the baby very unwell, with prompt treatment the majority (7 out of 10 of diagnosed babies) recover fully. However, 2 in 10 babies with GBS infection will recover with some level of disability, and 1 in 10 infected babies will die. Overall, 1 in 17 000 new-born babies in the UK and Ireland die from the infection.

The risk of infection increases in the mother/parent when the duration between the rupture of the membranes and the onset of labour is more than 24 hours.

Neonatal infection is present in 8 of every 1000 live births and 71 of every 1000 neonatal admissions: 82% occur in premature babies (less than 37 weeks) and 81% in low birthweight babies (below 2500 grams).

Early-onset neonatal infection (arising within 72 hours) is present in 0.9 of every 1000 live births and 9 of every 1000 neonatal admissions. Group B *Streptococcus* and *Escherichia coli* are the most common organisms identified, accounting for 58% and 18% of infections respectively.

Late-onset neonatal infection (arising after 72hours from birth) is present in 7 of every 1000 live births and 61 of every 1000 neonatal admissions. Coagulase negative staphylococci, Enterobacteriaceae and *Staphylococcus aureus* are the most common organisms identified, accounting for 54%, 21% and 18% of infections respectively.

2. Rationale

Neonatal infection can lead to life-threatening sepsis and accounts for 10% of all neonatal mortality. Early-onset neonatal infection, although less common than late-onset neonatal infection, is often more severe. Therefore, ESHT neonatal services will be implementing and following the NICE guidance.

3. Scope

The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period.

4. Definitions

GBS – Group B Streptococcus

IAP – Intrapartum Antibiotics prophylaxis

EOGBS - early-onset neonatal group B streptococcal

CFU - colony-forming units

PROM - Prolonged Rupture of Membranes

Septicaemia - is a serious bloodstream infection.
Chorioamnionitis - also known as intra-amniotic infection (IAI) is an inflammation of the fetal membranes (amnion and chorion) due to a bacterial infection
NIPE – Newborn Infant Physical Examination
MATNEO - Maternity and Neonatal Safety Improvement Programme

5. Accountabilities

5.1. Midwives & Obstetricians, Paediatricians, Nursing staff SCBU and the Postnatal ward

- To access, read, understand, and follow this guidance
- To use their professional judgement in application of this guideline

5.2. Management

- To ensure the guideline is reviewed as required in line with the Trust and National guidelines.
- To ensure the guideline is accessible to all relevant staff.
- To monitor the audit process

6. Process – ANTENATAL / INTRAPATUM

6.1 Antenatal detection of GBS:

Routine bacteriological screening of all pregnant women/pregnant people for antenatal GBS carriage is NOT recommended.

The following women/people should be clearly identified in the antenatal period as eligible for intra-partum antibiotic therapy:

6.1.1 Group B strep on vaginal or rectal Swab (offer IAP)

Women found to have vaginal or rectal colonisation with GBS during pregnancy do not require treatment antenatally if asymptomatic.

6.1.2 Group B Strep on Urine culture (offer IAP)

Women/people with GBS urinary tract infection (growth of greater than 10^5 cfu/ml) during pregnancy should receive appropriate treatment at the time of diagnosis in pregnancy as well as IAP.

6.1.3 Women/people with previous baby affected by neonatal GBS disease (offer IAP)

6.1.4 Previous Pregnancy GBS positive with unaffected baby. (New 2016)

Explain to women/people that the likelihood of maternal GBS carriage in this pregnancy is 50%. Discuss options of IAP or bacteriological testing at 35-37 weeks.

Options:

- no testing – Offer IAP after a discussion with the woman/person.
- Positive test – Offer IAP after a discussion with the woman/person.
- Negative test between **35-37 weeks– No IAP required**

Women/people should be advised if test negative at 37 weeks unable to predict if it may become positive later in the pregnancy.

6.1.5 The need for antibiotics must be recorded on the '**Risk factors in the pregnancy summary page** and as an ALERT onto Badgernet system.

6.1.6 For all women/people who fit the above criteria they should have a personalised labour care plan for where place of birth should be.

6.1.7 Membrane sweeping is not contraindicated in women/people who are carriers of GBS.

6.1.8 Method of induction should not vary according to GBS carrier status.

6.2 Intrapartum Care – (for Antibiotics advice - See *Appendix B*.)

When antibiotics are administered during labour this must be signed for on the prescription chart and documented in the woman's intrapartum records.

Positive GBS result in pregnancy is not an indication for continuous **fetal monitoring in labour**

Birth in a pool is not contraindicated if the woman is a known GBS carrier provided she is offered appropriate IAP, [New 2017]

Positive GBS is not an absolute contraindication to delivery at EMU. This is confirmed on an individualised basis following the risk assessment at EMU.

6.3 Planned Caesarean section

Antibiotic prophylaxis specific for GBS is not required for women undergoing planned caesarean section in the absence of labour and with intact membranes. The risk of neonatal EOGBS disease is extremely low in this circumstance.

6.4 Antibiotics for women/people

For women/people who have accepted IAP, this should be administered as soon as possible after the onset of labour and given regularly until delivery.

Consider as part of the plan starting the antibiotics on the antenatal ward if the woman/person is a multip or nullip in early labour.
Timing of the antibiotics being commenced should be discussed with the Consultant or Middle Grade ASAP as part of an individualised care plan.

Which antibiotic should be used for intrapartum antibiotic prophylaxis?	
No history of penicillin allergy	**History of penicillin allergy**
Benzylpenicillin G (IV) 3 grams IV initial dose, then 1.5 grams every 4 hours until delivery **To optimise the efficacy of IAP, the first dose should be given at least 4 hours prior to delivery.**	**Please liaise with the medical staff regarding the chosen antibiotic in this situation** **Provided a woman has not had severe allergy to penicillin a cephalosporin should be used. If there is any evidence of severe allergy to penicillin, Vancomycin IV should be used (RCOG 2016)**
	The antibiotic chosen will depend on the confidence of the diagnosis of penicillin allergy and the severity of penicillin allergy. If the history suggests that the reaction described is not likely to be allergic in nature (e.g. vomiting only) then penicillin should be given. If the history suggests an allergy to beta-lactams, but one that is not severe (i.e. no anaphylaxis, angioedema, respiratory distress or urticaria), then a cephalosporin can be administered intravenously (e.g. cefuroxime, 1.5 gram loading dose followed by 750 mg every 8 hours). If the allergy to beta-lactams is severe then intravenous vancomycin (1 gram every 12 hours) is recommended.
	Clindamycin can no longer be recommended as the current resistance rate in the UK is 16%.

6.5 Women/people who decline IAP

Women/people with known GBS colonisation who decline IAP should be advised that the baby will require clinical evaluation at birth and vital signs closely monitored for 24 hours after birth and discouraged from seeking early discharge from the maternity hospital.

Women/people should be made aware that the risk of the baby developing EOGBS infection is higher than if they had received IAP. The overall risk remains low.

7. Neonatal Assessment Advice for the Paediatricians

7.1 Risk factors for infection and clinical indicators of possible infection

Paediatricians Use **Table 1** to identify MATERNAL risk factors for early-onset neonatal infection and ***table 2*** to identify NEONATAL clinical indicators of early-onset neonatal infection that should prompt a high level of concern regarding early-onset neonatal infection.

Table 1 MATERNAL: National Institute for health and Care Excellence, April 2021

	Table 1 Risk factor –	**Red Flag**	**Maternity action to be taken**
1	**Suspected or confirmed infection in another baby in the case of a multiple pregnancy.**	Yes ✓	
2	Invasive group B streptococcal infection in a previous baby.	Risk factor	In ESHT give IAP Benzylpenicillin with this 1 factor alone
3	Maternal group B streptococcal colonisation or infection in the current pregnancy. (vaginal, rectal or urine)	Risk factor	In ESHT give IAP Benzylpenicillin with this 1 factor alone
4	Preterm birth following spontaneous labour before *37 weeks'* gestation.	Risk factor	In ESHT give IAP Benzylpenicillin with this 1 factor alone
5	Confirmed prelabour rupture of membranes more than 24 hours in a term birth. Or pPROM for more than 18 hours before a preterm labour	Risk factor	Only offer IAP if a second risk factor from this table is evident **Or MECONIUM**
6	Intrapartum fever higher than 38°C, if there is confirmed or suspected bacterial infection / Clinical diagnosis of chorioamnionitis	Risk factor	In ESHT give IAP For chorioamnionitis See ***Clinical Guideline for the Management of Women with, Ruptured membranes before and after 37 weeks gestation*** with this 1 factor alone

7.1.1 Table 2 NEONATAL Clinical indicators of possible early-onset neonatal infection (observations and events in the baby), including 'red flags'

Table 2 Clinical indicator	Red flag
Apnoea	Yes ✓
Seizures	Yes ✓
Need for mechanical ventilation	Yes ✓
Need for CPR	Yes ✓
Signs of shock	Yes ✓
Altered behaviour or responsiveness, signs of neonatal encephalopathy, Altered muscle tone (for example, floppiness)	Risk factor
Feeding difficulties, feed refusal [leading to feed intolerance (vomiting, excessive gastric aspirates and abdominal distension)	Risk factor
Abnormal heart rate (bradycardia or tachycardia)	Risk factor
Signs of respiratory distress (including grunting, recession, tachypnoea)	Risk factor
Hypoxia (for example, central cyanosis or reduced oxygen saturation level)	Risk factor
Jaundice within 24 hours of birth	Risk factor
Persistent pulmonary hypertension (PPHN)	Risk factor
Persistent temperature instability (lower than 36°C or higher than 38°C) unexplained by environmental factors.	Risk factor
Unexplained excessive bleeding, thrombocytopenia, or abnormal coagulation	Risk factor
Altered glucose homeostasis (hypo or hyperglycaemia), Metabolic acidosis (base deficit of 10 mmol/litre or greater)	Risk factor

7.2 Neonatal Management Scenarios

The table below should help you to determine and if the mother should have been offered IAP as per NICE guidance and what actions need to be taken for the neonate taking into consideration if the woman had adequate or inadequate IAP.

Table 3. Management of Neonatal Scenarios

	SCENARIO	INTRAPARTUM PROPHYLAXIS *	ACTIONS
A	**Maternal (Table 7.1) or Neonatal (Table 7.1.1) Red Flag(s) or Any baby with Two or more Maternal or neonatal risk factors**	**N/A**	In these situations, the infant will always be treated *Immediate Neonatal Review* + take bloods + start antibiotics, Observations for the duration of treatment
B	**Unwell baby**	**N/A**	*Immediate Neonatal Review* + take bloods + start antibiotics, Observations for duration of treatment
C	**Well baby, No Red Flags, with one neonatal clinical indicator (table 7.1.1) or one maternal risk factor (table 7.1)**	**N/A**	**Use clinical judgement to decide:** 1. Whether it is safe to withhold antibiotics and whether baby's vital signs and clinical condition need to be monitored 2. If monitoring is needed, continue for at least 12hrs. 3. If decided to treat the baby using clinical judgement, take bloods, start antibiotics *NIPE check must be completed prior to discharge and the midwife happy with the condition of the baby including feeding*
E	**Well baby + mother GBS positive # *or* previous child with GBS (No other risk factors)**	**Adequate**	No observations + no bloods + no antibiotics. *NIPE check must be completed prior to discharge and the midwife happy with the condition of the baby including feeding*
F	**Well baby + mother GBS positive # *or* previous child with GBS (No other risk factors)**	**Inadequate**	Neonatal review + observations *for 12hrs* + no bloods + no antibiotics

**** Adequate =Correct intravenous antibiotic and dose ≥ 4 hours before birth***

 # GBS positive in past or present pregnancy.
Women with previous GBS positive with a negative swab in present pregnancy is considered GBS negative unless a repeat swab confirms GBS between 35 -37 weeks.

7.3 Observation without treatment:

Observations should be performed at:
1 & 2 hours old followed by **2 hourly observations** at least until **12 hours of age**. When observations are required for more than 12 hours, observations should continue 4 hourly until approved to discontinue by the paediatric team.

For babies on Frank Shaw (postnatal ward) or EMU at Eastbourne, the midwifery staff will be using the NEWS chart for the baby in their BadgerNet file chart for recording the observations for the baby this chart includes when to escalate to the paediatrician for review / advice.

All observations should include assessment of:

- Temperature
- Heart rate
- Respiratory rate
- Presence of grunting
- Significant subcostal recession
- Chest movements & nasal flare
- Skin perfusion assessed by capillary refill
- Muscle tone, general wellbeing and feeding.
- Presence of central cyanosis
- If any abnormalities are observed, ask a Paediatrician to assess the baby (transfer both the woman and baby if they are at home or in a freestanding midwifery unit. [NICE 2014]

If the baby triggers 2 yellows or 1 red, then the baby must be referred to the paediatricians immediately.

If the observations recorded trigger 1 yellow, then the midwife or staff nurse caring for the baby should seek advice from the senior midwife and a plan.

7.4 Investigations and Treatment:

In babies with any **red flags**, or with a combination of two or more 'non-red flag' risk factors or clinical indicators, perform investigations and start antibiotic treatment ***see Table 3***

Do not delay starting antibiotics whilst test results are pending.

If a baby needs antibiotic treatment it should be given as soon as possible and always within 1 hour of the decision to treat.

- **Investigations before treatment**

  - FBC, CRP, Blood culture (min 0.5 ml of blood required) before commencing antibiotics.
  - Do not do routine urine culture or microscopy.
  - Skin swabs-only if signs of local infection.
  - Lumbar puncture- if clinically indicated and the baby is stable enough to do so.

- **Investigations after starting treatment**

- Repeat CRP in 18-24h.
- Chest x-ray if chest pathology signs or symptoms are present.

- **Perform a Lumbar puncture if-**
  - there is a strong clinical suspicion of infection.
  - there are clinical signs or symptoms suggesting meningitis.
  - the CRP >20mg/l
  - there is a positive blood culture or no satisfactory response to antibiotic treatment.

7.5 Recommended antibiotic treatment (Trust antibiotic guidance): ***See Appendix B***

1	Well term baby from FSW-Routine antibiotic given for risk factors	**Cefotaxime 25 mg/kg BD**
2	Prophylaxis to preterm babies admitted to SCBU	**Cefotaxime 25mg/kg BD**
3	If baby already on Cefotaxime becomes unwell or high CRP >20mg/l	**Increase Cefotaxime to 50 mg/kg BD**
4	Unwell term, preterm babies admitted to SCBU, on O2/optiflow/CPAP/ventilated/awaiting transfer	**Benzylpenicillin 25 mg/kg BD*(1) and Gentamicin 5mg/kg every 36 hrs** The interval can be changed as benzylpenicillin every 8 hrs if baby becomes unwell and gentamicin interval can be shortened if baby becomes unwell or blood culture shows gram negative growth.
5	If a baby on Benzylpenicillin and Gentamicin gets better and goes to FSW	**To continue benzylpenicillin and review the need for gentamicin at 36 hrs (may not need the second dose)**

*__Benzylpenicillin administration__

IV Injection (recommended for doses less than 50mg/kg): Give as a slow IV injection. The maximum rate of administration is 300mg per minute

IV Infusion (recommended for doses greater than or equal to 50mg/kg): Infuse over 15-30 minutes. Administration by infusion for higher doses is required to avoid CNS toxicity.

- If there is microbiological evidence of Gram-negative bacterial sepsis, add another antibiotic to the benzylpenicillin and gentamicin regimen that is active against Gram-negative bacteria (for example, cefotaxime). If Gram-negative infection is confirmed, stop benzylpenicillin.

- If there is a strong suspicion of meningitis (abnormal neurology/seizures/positive CSF microscopy) treat with ***Amoxicillin and Cefotaxime*** (dosage as per BNF). If Gram negative is isolated in CSF (Gram stain or culture), stop ***Amoxicillin*** and continue ***Cefotaxime.***

- If GBS meningitis confirmed, ***Benzylpenicillin 50mg/kg BD*** for 14 days with ***Gentamicin 5mg/kg*** every 36 hours for 5 days.

- If the blood culture or cerebrospinal fluid culture is positive for listeria treat with ***Amoxicillin and Gentamicin.***

- *If the cerebrospinal fluid culture identifies a Gram-positive bacterium other than group B streptococcus or listeria, seek expert microbiological advice on management.*

- ***Gentamycin*** Trough level should be checked before the second dose and do not wait for the levels. Subsequently monitor trough levels immediately before every third dose. Aim for trough levels of less than 2mg/l. If the course lasts for more than three doses aim for trough levels <1mg/l

- Consider adding ***Aciclovir*** in case of suspected Herpes simplex Virus unusual skin rash, severe thrombocytopenia, abnormal liver function tests and/or unexplained encephalopathy

- *Flucloxacillin* for localised infections like omphalitis, *Chloramphenico*l eye drops for bacterial conjunctivitis.

A minimum of 36-48h of antibiotics is recommended in any case.

7.6 Timing of Antibiotic Review

7.6.1 STOP treatment after 36-48h if:

- blood culture is negative ***and***
- low level of suspicion ***and***
- well baby ***and***
- CRP is reassuring and no other abnormal laboratory markers.

If continuing antibiotics for longer than 36 hours despite negative blood cultures, review the need for antibiotic treatment at least once every 24 hours. On each occasion, using clinical judgement, consider whether it is appropriate to stop antibiotic treatment, taking account of:

- Level of initial clinical suspicion of infection.
- Baby's clinical progress and current condition.
- Levels and trends of C-reactive protein concentration.

Do not routinely give a five-day course of antibiotics for raised CRP only.

CONTINUE treatment***:***

- for as long as needed, if blood culture is negative, but baby is unwell (review need for antibiotics every 24h)
- For 7 days if blood culture is positive or a strong suspicion of sepsis even if the blood is culture negative.
- For 14 days if GBS meningitis present.
- If Gram-negative meningitis or any positive blood or CSF cultures should be discussed with Microbiology Consultant as required.

7.7 Information and support for parents

If clinical concerns about possible early-onset neonatal infection arise inform the baby's parents and carers the reason for the concern (including the nature of early-onset neonatal infection)

- Refer to the paediatricians so they can discuss the preferred options for management (for example, observation, investigations or if treatment is required).

- Give the baby's parents and carer's time to consider the information provided and offer further opportunities for discussion if necessary.

Reassure parents and carers that babies at increased risk of, or with, early onset neonatal infection can continue to breastfeed, and that every effort will be made to facilitate this. If a baby is temporarily unable to breastfeed, support the mother to express breast milk if she wishes to do so.

Offer parents and carers contact details of organisations that provide parent support, befriending, counselling, information, and advocacy. They may signpost families to other sources of help.

For example

- 'Group B Strep Support' *Preventing life threatening GBS infection in new-born babies* http://gbss.org.uk/

- Information for you **Group B streptococcus (GBS) infection in new-born babies** **https://www.rcog.org.uk/globalassets/documents/patients/patient-information-leaflets/pregnancy/pi-groupb-streptococcus-gbs-infection-in-newborn-babies.pdf**

7.8 Going Home

If there have been any concerns about early-onset neonatal infection before a baby is discharged, advise the parents and carers verbally and in writing that they should seek medical advice (for example, from their general practice, or an accident and emergency department) if they are concerned that the baby:

- is showing abnormal behaviour (for example, inconsolable crying or listlessness),
- is unusually floppy,
- has developed difficulties with feeding or with tolerating feeds,
- has an abnormal temperature unexplained by environmental factors (lower than 36°C or higher than ≥38°C),
- has rapid breathing, or
- has a change in skin colour.

When the baby is discharged from the hospital or midwifery-led unit (or in the immediate postnatal period in the case of babies born at home), inform the parents and carers and the baby's GP, verbally and in writing, if the baby is considered to be at increased risk of infection.

If a baby has been treated for suspected or confirmed early-onset neonatal infection: Please give Antibiotic information leaflet.

- inform the parents and carers about potential long-term effects of the baby's illness and likely patterns of recovery, and reassure them if no problems are anticipated
- take account of parents' and carers' concerns when providing information and planning follow-up.

8. Special Considerations

8.1 Private testing for GBS – If the woman/person has had private testing the result should be taken into consideration when making plans of care providing the laboratory is NHS approved.

8.2 The Kaiser Permanente neonatal sepsis calculator can be used as an alternative for babies born after 34+0 weeks of pregnancy who are being cared for in a neonatal unit, transitional care or postnatal ward. It should only be used if it is part of a prospective audit, which should record:

- total number of babies assessed using the calculator
- number of babies correctly identified by the calculator who develop a culture-confirmed neonatal infection
- number of babies incorrectly identified by the calculator who do not develop a culture-confirmed neonatal infection
- number of babies missed by the calculator who develop a culture-confirmed neonatal infection.

If using the Kaiser Permanente neonatal sepsis calculator to assess the risk of early-onset neonatal infection, use the classification given by the calculator to direct management decisions.

9. Evidence Base/References

Injectable Medicines Guide –Benzylpenicillin sodium. Website http://medusa.wales.nhs.uk/IVGuideDisplay.asp - last accessed 25th May 2018

Neonatal infection: antibiotics for prevention and treatment
NICE guideline [NG195]Published: 20 April 2021

NICE - Intrapartum care of for healthy women and babies. 2014 updated 2017

ESHT Neonatal sepsis audit results/report 2017, reaudited 2021

ESHT Microguide (Paediatric antimicrobial guide), version 2.3, published 07-08-2023

Preterm labour and birth NICE guideline Published: 20 November 2015

RCOG Green top guideline No 36 The prevention of Early-onset neonatal Group B Streptococcal Disease. September 2017

Hughes RG, Brocklehurst P, Steer PJ, Heath P, Stenson BM on behalf of the Royal College of Obstetricians and Gynaecologists. Prevention of early-onset neonatal group B streptococcal disease. Green-top Guideline No. 36. BJOG 2017;124:e280–e305.

10. Competencies and Training Requirements

Updates for staff will be provided by the MATNEO team members.

11. Monitoring Arrangements

Please see next page

Document Monitoring Table

Element to be Monitored	Lead	Tool for Monitoring	Frequency	Responsible Individual/Group/ Committee for review of results/report	Responsible individual/ group/ committee for acting on recommendations/action plan	Responsible individual/group/ committee for ensuring action plan/lessons learnt are Implemented
Percentage of eligible women with various risk factors receiving IAP	CU audit Lead	Audit tool and Datix	Every 3 years	Obs and Gynae and Paediatric Audit meeting	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons, Midwifery Education team
Percentage of women that receive IAP at least 4 hours prior to delivery	CU audit Lead	Audit tool and Datix	Every 3 years	Obs and Gynae and Paediatric Audit meeting	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons, Midwifery Education team
Percentage of infants being monitored for 12 -24 hours	CU audit Lead	Audit tool and Datix	Every 3 years	Obs and Gynae and Paediatric Audit meeting	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons, Midwifery Education team
Women who had IAP with: Previous invasive GBS disease	CU audit Lead	Audit tool and Datix	Every 3 years	Obs and Gynae and Paediatric Audit meeting	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons, Midwifery Education team

known GBS carrier (however detected)	CU audit Lead	Audit tool and Datix	Every 3 years	Obs and Gynae and Paediatric Audit meeting	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons, Midwifery Education team
GBS bacteriuria or GBS urinary tract infection in current pregnancy.	CU audit Lead	Audit tool and Datix	Every 3 years	Obs and Gynae and Paediatric Audit meeting	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons	CU lead, Consultant obstetricians and Paediatricians, HOM, service managers and Matrons, Midwifery Education team
Term babies admitted to SCBU for suspected or actual sepsis	Paediatric ATAIN lead and Obstetric ATAIN lead	ATAIN – network criteria	Monthly	ATAIN	ATAIN	Paediatric ATAIN lead and Obstetric ATAIN lead
Pre-term babies admitted to SCBU for suspected or actual sepsis	Paediatric and Obstetric leads for MATNEO project work	Badgernet data	Monthly	ATAIN	ATAIN	Paediatric ATAIN lead and Obstetric ATAIN lead

Appendix A: EIA Form

Equality Impact Assessment Form

1. Cover Sheet

Please refer to the accompanying guidance document when completing this form.

Strategy, policy, or service name	**Clinical Guideline for the Perinatal Management of Group B Streptococcus, and newborns at risk of early neonatal sepsis**
Date of completion	June 2023
Name of the person(s) completing this form	Gayle Clarke Quality improvement and Assurance lead Nurse/Midwife for Women and Children's Division Dr Mani Kandasamy Consultant Paediatrician Dr Wimal Nettikumara, Speciality Doctor-Paediatrics Mr Pascall Consultant Obstetrician
Brief description of the aims of the Strategy/ Policy/ Service	The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period.
Which Department owns the strategy/ policy/ function	Women and Children's
Version number	V2
Pre-Equality analysis considerations	
Who will be affected by this work? **E.g. staff, patients, service users, partner organisations etc.**	Women giving birth within ESHT service and the staff providing care
Review date	July 2026
If negative impacts have been identified that you need support mitigating please escalate to the appropriate leader in your directorate and contact the EDHR team for further discussion.	Name: Date:
Have you sent the final copy to the EDHR Team?	

2. EIA Analysis

<table>
<tr><td></td><td>☺ 😐 ☹</td><td>Evidence:</td></tr>
<tr><td>Will the proposal impact the safety of patients', carers' visitors and/or staff?

Safe: Protected from abuse and avoidable harm.</td><td>Choose:
Positive
Neutral
Negative</td><td>The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period.</td></tr>
<tr><td>Equality Consideration
Highlight the protected characteristic impact or social economic impact (e.g. homelessness, poverty, income, or education)</td><td></td><td>
<table>
<tr><td>Race</td><td>Gender</td><td>Sexual orientation</td><td>Age</td><td>Disability & carers</td></tr>
<tr><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td></tr>
<tr><td>Gender reassignment</td><td>Marriage & Civil Partnership</td><td>Religion and faith</td><td>Maternity & Pregnancy</td><td>Social economic</td></tr>
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<tr><td>Is the proposal of change effective?

Effective: Peoples care, treatment and support achieves good outcomes, that staff are enabled to work in an inclusive environment. That the changes are made on the best available evidence for all involved with due regards across all 9 protected Characteristics</td><td>Choose:
Positive
Neutral
Negative</td><td>The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.</td></tr>
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<tr><td>What impact will this have on people receiving a positive experience of care?</td><td>Choose:
Positive
Neutral
Negative</td><td>The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.</td></tr>
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<tr><td>Does the proposal impact on the responsiveness to people's needs?</td><td>Choose:
Positive
Neutral
Negative</td><td>The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.</td></tr>
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</table></td></tr>
<tr><td>What considerations have been put in place to consider the organisations approach on improving equality and diversity in the workforce and leadership?</td><td>Choose:
Positive
Neutral
Negative</td><td>The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.</td></tr>
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</table></td></tr>
</table>

Access

Could the proposal impact positively or negatively on any of the following:

• Patient Choice	Choose: Positive Neutral Negative	The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.
• Access	Choose: Positive Neutral Negative	The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.
• Integration	Choose: Positive Neutral Negative	The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.
Equality Consideration *Highlight the protected characteristic impact or social economic impact (e.g. homelessness, poverty, income, or education)*		**Race** ☐ | **Gender** ☐ | **Sexual orientation** ☐ | **Age** ☐ | **Disability & carers** ☐ **Gender reassignment** ☐ | **Marriage & Civil Partnership** ☐ | **Religion and faith** ☐ | **Maternity & Pregnancy** ☐ | **Social economic** ☐
Engagement and Involvement How have you made sure that the views of stakeholders, including people likely to face exclusion have been influential in the development of the strategy / policy / service:	Choose: Positive Neutral Negative	This document was approved via an MDT process
Equality Consideration *Highlight the protected characteristic impact or social economic impact (e.g. homelessness, poverty, income, or education)*		**Race** ☐ | **Gender** ☐ | **Sexual orientation** ☐ | **Age** ☐ | **Disability & carers** ☐ **Gender reassignment** ☐ | **Marriage & Civil Partnership** ☐ | **Religion and faith** ☐ | **Maternity & Pregnancy** ☐ | **Social economic** ☐

Duty of Equality Use the space below to provide more detail where you have identified how your proposal of change will impact.	Choose: Positive Neutral Negative	
Characteristic	**Rating** ☺ ☹ 😐	**Description**
Race	Choose: Positive Neutral Negative	N/A
Age	Choose: Positive Neutral Negative	The purpose of this guideline is to provide guidance for obstetricians, midwives, Maternity Staff Nurses, Paediatricians, Nursing staff SCBU, on the prevention of early-onset neonatal group B streptococcal (EOGBS) disease and its management during pregnancy and the neonatal period and is all inclusive.
Disability and Carers	Choose: Positive Neutral Negative	N/A
Religion or belief	Choose: Positive Neutral Negative	N/A
Sex	Choose: Positive Neutral Negative	N/A
Sexual orientation	Choose: Positive Neutral Negative	N/A

Gender re-assignment	Choose: Positive Neutral Negative	N/A
Pregnancy and maternity	Choose: Positive Neutral Negative	N/A
Marriage and civil partnership	Choose: Positive Neutral Negative	N/A
Human Rights Please look at the table below to consider if your proposal of change may potentially conflict with the Human Right Act 1998		

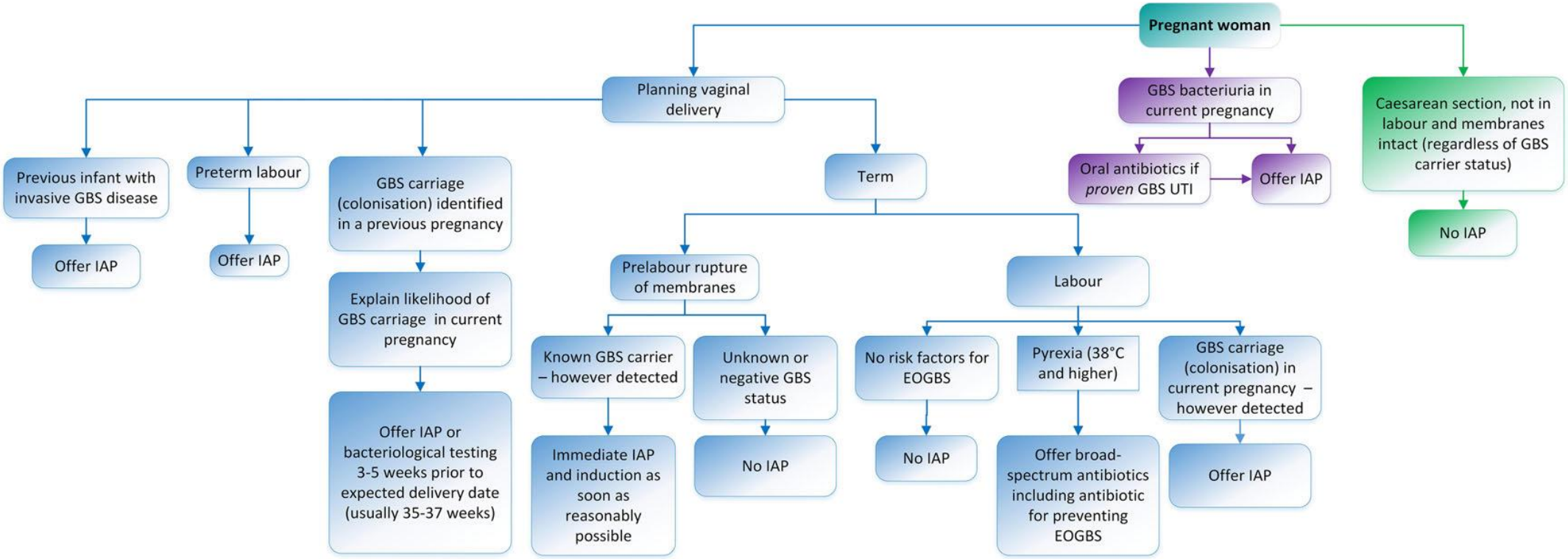
A2	Right to life	**N**
A3	Prohibition of torture, inhuman or degrading treatment	**N**
A4	Prohibition of slavery and forced labour	**N**
A5	Right to liberty and security	**N**
A6 &7	Rights to a fair trial; and no punishment without law	**N**
A8	Right to respect for private and family life, home, and correspondence	**N**
A9	Freedom of thought, conscience, and religion	**N**
A10	Freedom of expression	**N**
A11	Freedom of assembly and association	**N**
A12	Right to marry and found a family	**N**
Protocols		
P1.A1	Protection of property	**N**
P1.A2	Right to education	**N**
P1.A3	Right to free elections	**N**

Appendix B: Antibiotic therapy and when it is required

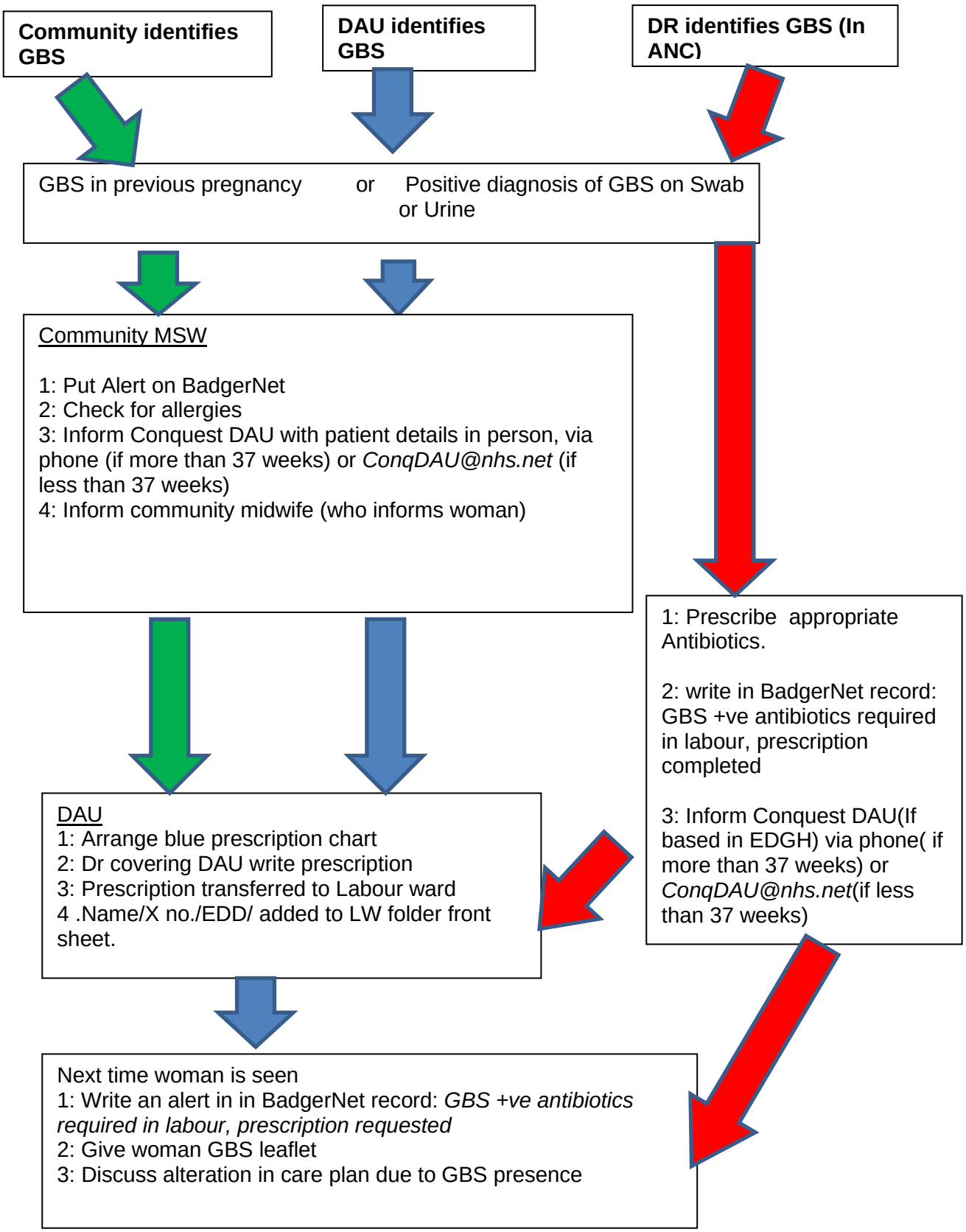
Antibiotic Therapy		
Management of GBS		
***YES* antibiotics are required**		***NO* antibiotics are NOT Required?**
Current Pregnancy GBS		***Prolonged Prelabour rupture of membranes at Term***
Yes – Advise the woman intrapartum antibiotic prophylaxis using intravenous benzylpenicillin (unless allergic) to prevent early-onset neonatal infection		Women presenting over 37 weeks with PROM over **24 hours** in established labour and ***NO other risk factors*** (i.e. any signs of infection with the women or the baby) should *NOT* routinely be offered IPA.
Previous baby with GBS		***Elective Caesarean Section (with intact membranes)***
Yes – Advise the woman intrapartum antibiotic prophylaxis using intravenous benzylpenicillin (unless allergic) to prevent early-onset neonatal infection		Women who are GBS positive and having an elective caesarean section do not require additional antibiotics above what is given during the elective procedure This Includes Pre – term RCOG
Previous pregnancy GBS positive and unaffected baby		
Options – no antenatal testing – Offer IAP Positive test antenatally– Offer IAP Negative test between **35-37 weeks– No IAP required**		

All Pre-Term		
***YES*– Advise the woman.** intrapartum antibiotic prophylaxis using intravenous benzylpenicillin to prevent early-onset neonatal infection for women in *preterm labour*		
Pyrexia *(≥38°C) in labour* ***- Suspected Chorioamnionitis***		
Give broad spectrum antibiotics to include GBS cover. Pyrexia, carrier status not known: ≥38ºc: Broad spectrum Antibiotics. **If negative swab in pregnancy – Antibiotics NOT indicated**		
Prolonged Prelabour rupture of membranes >24 hours and Meconium		
Offer IAP		
If there is evidence of infection in the woman, a full course of intravenous antibiotics should be prescribed.		

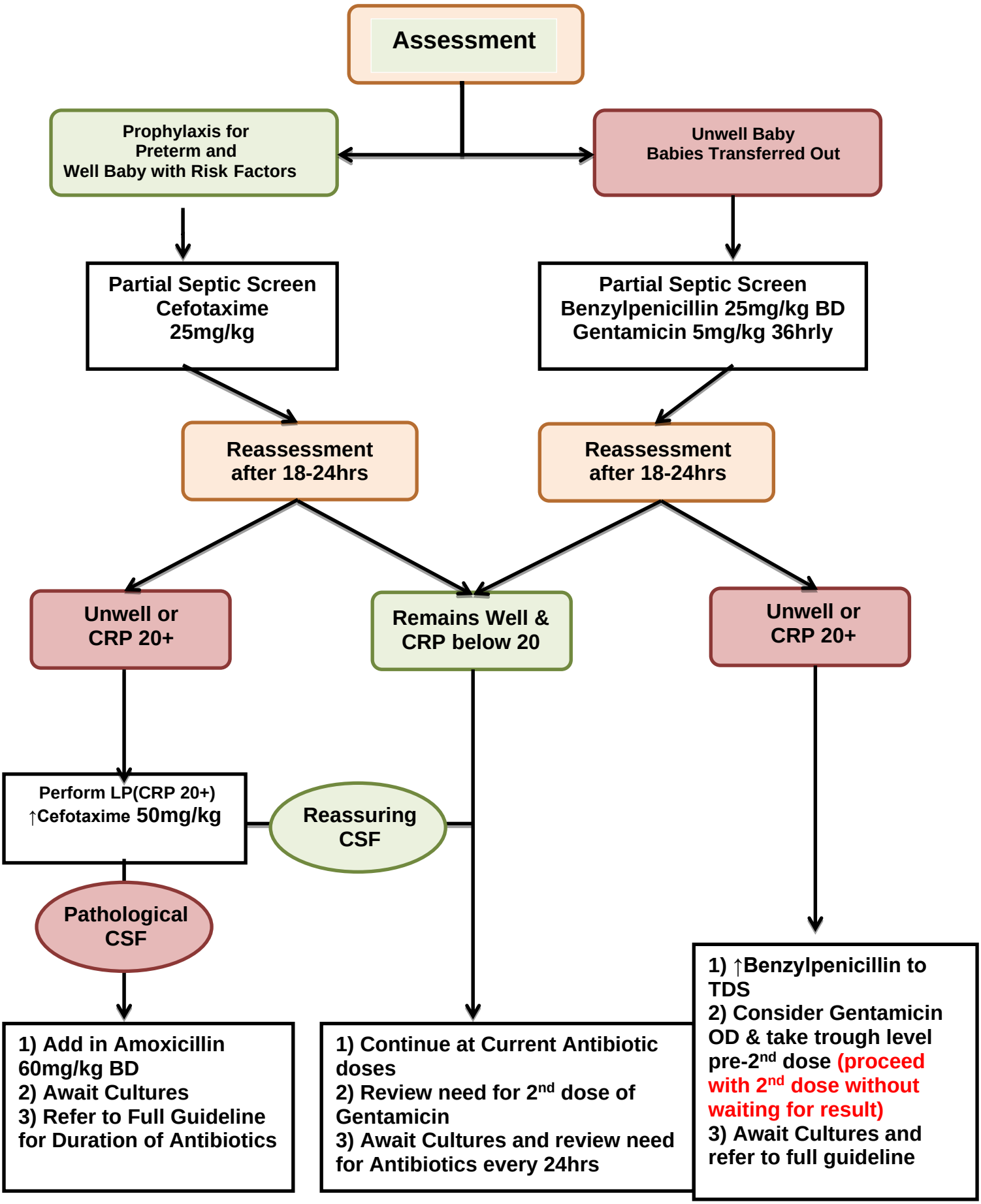
Appendix C: RCOG 2017 Pathway of care



Appendix D: Pathway to prescribe antibiotics following identification of GBS



Appendix E: Neonatal Early Onset Sepsis: Management Flow Chart



Health & care information you can trust
The Information Standard Certified Member

WORKING TO **STOP** GBS INFECTION IN BABIES.

Royal College of Obstetricians & Gynaecologists

Information for you

Published in December 2017 (next review date: 2020)

Group B Streptococcus (GBS) in pregnancy and newborn babies

About this information

This information is for you if you (or a friend or relative) are expecting a baby, planning to become pregnant or have recently had a baby. It tells you about group B Streptococcus (GBS) infection in babies in the first week after birth (known as early-onset GBS) and provides links to further information about late-onset GBS infection. It includes the current UK recommendations for preventing GBS infection in newborn babies.

A glossary of all medical terms is available on the RCOG website at: www.rcog.org.uk/en/patients/medical-terms.

Key points

- Group B Streptococcus (GBS) is one of the many bacteria that normally live in our bodies and which usually cause no harm.
- Screening for GBS is not routinely offered to all pregnant women in the UK.
- If you carry GBS, most of the time your baby will be born safely and will not develop an infection. However, it can rarely cause serious infection such as sepsis, pneumonia or meningitis.
- Most early-onset GBS infections are preventable.
- If GBS is found in your urine, vagina or rectum (bowel) during your current pregnancy, or if you have previously had a baby affected by GBS infection, you should be offered antibiotics in labour to reduce the small risk of this infection to your baby.
- The risk of your baby becoming unwell with GBS infection is increased if your baby is born preterm, if you have a temperature while you are in labour, or if your waters break before you go into labour.
- If your newborn baby develops signs of GBS infection, they should be treated with antibiotics straight away.

What is GBS?

GBS is a common bacterium (bug) which is carried in the vagina and rectum of 2–4 in 10 women (20–40%) in the UK. GBS is not a sexually transmitted disease and most women carrying GBS will have no symptoms. Carrying GBS is not harmful to you but it can affect your baby around the time of birth. GBS can occasionally cause serious infection in newborn babies, and, very rarely, during pregnancy and before labour.

How is GBS found?

GBS is sometimes found during pregnancy when you have vaginal or rectal swabs or a urine test.

In the UK, the NHS does not routinely offer all pregnant women screening for GBS. For more information about available tests, visit the Group B Strep Support (GBSS) website: www.gbss.org.uk/TestingforGBS.

What could GBS mean for my baby?

Many babies come into contact with GBS during labour or around birth. The vast majority of these babies will not become ill. However, if you carry GBS, there is a small chance that your baby will develop GBS infection and become seriously ill, or even die.

Around 1 in every 1750 newborn babies in the UK and Ireland is diagnosed with early-onset GBS infection. The infections that GBS most commonly causes in newborn babies are sepsis (infection of the blood), pneumonia (infection in the lungs) and meningitis (infection of the fluid and lining around the brain).

Although GBS infection can make your baby very unwell, with prompt treatment most babies will recover fully. However, of the babies who develop early-onset GBS infection, 1 in 19 (5.2%) will die and, of the survivors, 1 in 14 (7.4%) will have a long-term disability.

On average in the UK, every month:

- 43 babies develop early-onset GBS infection
- 38 babies make a full recovery
- 3 babies survive with long-term physical or mental disabilities
- 2 babies die from their early-onset GBS infection.

What puts my baby at higher risk of developing GBS infection?

Infection is more likely to happen if:

- your baby is born preterm (before 37 completed weeks of pregnancy) – the earlier your baby is born, the greater the risk
- you have previously had a baby affected by GBS infection
- you have had a high temperature or other signs of infection during labour
- you have had any positive urine or swab test for GBS in this pregnancy
- your waters have broken more than 24 hours before your baby is born.

How can the risk to my baby be reduced?

- A urine infection caused by GBS should be treated with antibiotic tablets straight away and you should also be offered antibiotics through a drip during labour.
- You should be offered antibiotics through a drip during labour if you have had a GBS-positive swab or urine test from an NHS or other accredited laboratory (see the GBSS website for further information: www.gbss.org.uk/TestingforGBS).

- If you have previously had a baby who was diagnosed with GBS infection, you should be offered antibiotics through a drip when you are in labour.
- If your waters break after 37 weeks of your pregnancy and you are known to carry GBS, you will be offered induction of labour straight away. This is to reduce the time that your baby is exposed to GBS before birth. You should also be offered antibiotics through a drip.
- Even if you are not known to carry GBS, if you develop any signs of infection in labour, you will be offered antibiotics through a drip that will treat a wide range of infections including GBS.
- If your labour starts before 37 weeks of your pregnancy, your healthcare professional will recommend that you have antibiotics through a drip even if you are not known to carry GBS.

What are my options for where I can have my baby?

You should discuss your planned place of birth with your healthcare professional during pregnancy to make sure that you can receive antibiotics as required in labour. If you choose to have antibiotics, they will be given through a drip and it may not always be possible to arrange this at home or in some midwifery-led units.

As soon as you go into labour or your waters break, contact your healthcare professional as it is important that you have antibiotics as soon as possible. You should always let your healthcare professional know if you have previously had a baby who had GBS infection or if you have tested positive for GBS in this pregnancy.

If GBS has been found, when should I have antibiotics?

If you are found to carry GBS in your vagina or rectum, treating you with antibiotics *before* your labour begins does not reduce the chance of your baby developing GBS infection. You do not need antibiotic treatment until labour starts, when you will be offered antibiotics through a drip to reduce the chance of your baby being infected. These antibiotics reduce the risk of your baby developing a GBS infection in their first week of life from around 1 in 400 to 1 in 4000.

If GBS is found in your urine then you will need antibiotics as soon as it is diagnosed to treat your urinary tract infection; you will also be offered antibiotics through a drip during labour to prevent GBS infection in your baby.

There are other situations where you will be offered antibiotics but these are not specifically related to GBS infection:

- If your waters break preterm (before 37 weeks) but you are not in labour, you may be offered a course of antibiotics. See the National Institute for Health and Care Excellence (NICE) guideline NG25 on *Preterm Labour and Birth*: www.nice.org.uk/guidance/ng25/ifp/chapter/If-your-waters-break-early.
- If you are having a planned caesarean section and you carry GBS, you do not need antibiotics to prevent GBS infection in your baby unless labour has started or your waters have broken. All women having a caesarean section will be offered antibiotics at the time of the operation to reduce the risk of a wide variety of infections.

If I had GBS in a previous pregnancy, should I be given antibiotics during labour?

- If a previous baby was affected with GBS infection then you should be offered antibiotics during labour in all following pregnancies, as there is an increased risk that a future baby may also be affected.
- If, however, GBS was found in a previous pregnancy and your baby was unaffected, then there is a 1 in 2 (50%) chance that you will be carrying it again in this pregnancy. To help you choose

whether you would like to have antibiotics in labour, you can have a specific swab test (known as the enriched culture medium or ECM test) to see whether you are carrying GBS when you are 35–37 weeks pregnant. If the result shows that:

- you are still carrying GBS at this stage of pregnancy then the risk of your baby developing early-onset GBS infection is increased to around 1 in 400 and you will be offered antibiotics in labour
- you are not carrying GBS at this stage of pregnancy then the risk of your baby developing early-onset GBS infection is much lower (1 in 5000) and you may choose not to have antibiotics.

What will my treatment during labour involve?

If you have been offered antibiotics to prevent GBS infection in your baby, these should be started as soon as possible after your labour begins, or after your waters have broken. They will be given through a drip and continued at regular intervals (usually 4-hourly) until your baby is born.

You should still be able to move around freely during labour and this should not stop you from having a water birth.

If your waters break before labour, your healthcare professional will talk to you about when you will need antibiotics and about the best time for your baby to be born. This will depend on your individual circumstances and on how many weeks pregnant you are.

The antibiotic that you will be offered to prevent GBS infection in your baby is usually penicillin. If you are allergic to penicillin then you will be offered a suitable alternative.

Can antibiotics in labour cause any harm?

Some women may experience temporary side effects such as feeling sick or having diarrhoea. Women can be allergic to certain antibiotics and in rare cases the reaction may be severe and life-threatening (**anaphylaxis**). Tell your healthcare professional if you know that you are allergic to penicillin or any other medications.

Your healthcare professional should discuss with you the benefits and risks of taking antibiotics in labour to prevent early-onset GBS infection in your baby.

If you choose not to have antibiotics in labour then your baby will be monitored closely for 12 hours after birth as they are at increased risk of developing early-onset GBS infection.

How will my baby be monitored after birth?

If your baby is born at full term (after 37 completed weeks) and you received antibiotics through a drip in labour at least 4 hours before giving birth then your baby does not need special monitoring after birth.

If your baby is felt to be at higher risk of GBS infection and you did not get antibiotics through a drip at least 4 hours before giving birth then your baby will be monitored closely for signs of infection for at least 12 hours. This will include assessing your baby's general wellbeing, heart rate, temperature, breathing and feeding.

If you have previously had a baby affected by GBS infection then your baby will be monitored for 12 hours even if you had antibiotics through a drip in labour.

The chance of your baby developing GBS infection after 12 hours is very low and neither you nor your baby will need antibiotics after this time unless you or your baby becomes ill.

What are the signs of GBS infection in my baby?

Most babies who develop GBS infection become unwell in the first week of life (which is known as early-onset GBS infection), usually within 12–24 hours of birth. Although less common, late-onset GBS infection can affect your baby up until they are 3 months old. Having antibiotics during labour does not prevent late-onset GBS. More information on late-onset GBS infection is available here: www.gbss.org.uk/infection.

Babies with early-onset GBS infection may show the following signs:

- grunting, noisy breathing, moaning, seeming to be working hard to breathe when you look at their chest or tummy, or not breathing at all
- be very sleepy and/or unresponsive
- be crying inconsolably
- be unusually floppy
- not feeding well or not keeping milk down
- have a high or low temperature and/or their skin feels too hot or cold
- have changes in their skin colour (including blotchy skin)
- have an abnormally fast or slow heart rate or breathing rate
- have low blood pressure*
- have low blood sugar.*

*identified by tests done in hospital

If you notice any of these signs or are worried about your baby, you should urgently contact your healthcare professional and also mention GBS. If your baby has GBS infection, early diagnosis and treatment is important as delay could be very serious or even fatal.

What tests and treatments are available for my baby?

If it is thought that your newborn baby has an infection, tests will be done to see whether GBS is the cause. This may involve taking a sample of your baby's blood, or a sample of fluid from around your baby's spinal cord (a lumbar puncture). This will be discussed fully with you before the tests are done.

Babies with signs of GBS infection or babies who are suspected to have the infection should be treated with antibiotics as soon as possible. Antibiotics can be life-saving when given to babies with suspected infection. Treatment will be stopped if there is no sign of infection after at least 36 hours, and all the tests are negative.

Can I still breastfeed?

It is safe to breastfeed your new baby. Breastfeeding has not been shown to increase the risk of GBS infection, and it offers many benefits to both you and your baby.

Why aren't all women tested for GBS during pregnancy in the UK?

The UK National Screening Committee does not recommend testing all pregnant women for the presence of GBS using vaginal and rectal swabs. This is because:

- many women carry the GBS bacteria and, in the majority of cases, their babies are born safely and do not develop an infection
- screening all women late in pregnancy cannot accurately predict which babies will develop GBS infection

- no screening test is entirely accurate: a negative swab test does not guarantee that you do not carry GBS
- many babies who are severely affected by GBS infection are born preterm, before the suggested time for screening (35–37 weeks)
- giving antibiotics to all women who carry GBS would mean that a very large number of women would receive treatment they do not need.

Further information

Group B Strep Support (GBSS): www.gbss.org.uk

RCOG Green-top Guideline No. 36, *Prevention of Early-onset Neonatal Group B Streptococcal Disease*: www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg36

NICE clinical guideline CG190, *Intrapartum Care for Healthy Women and Babies*: www.nice.org.uk/guidance/cg190

NICE clinical guideline CG149, *Neonatal Infection (Early Onset): Antibiotics for Prevention and Treatment*: www.nice.org.uk/guidance/CG149

UK National Screening Committee, recommendation on GBS screening in pregnancy: https://legacyscreening.phe.org.uk/groupbstreptococcus

A full list of useful organisations (including the above) is available on the RCOG website at: www.rcog.org.uk/en/patients/other-sources-of-help

Making a choice

Shared Decision Making

If you are asked to make a choice, you may have lots of questions that you want to ask. You may also want to talk over your options with your family or friends. It can help to write a list of the questions you want answered and take it to your appointment.

Ask 3 Questions

To begin with, try to make sure you get the answers to three key questions if you are asked to make a choice about your healthcare.

1. What are my options?
2. What are the pros and cons of each option for me?
3. How do I get support to help me make a decision that is right for me?

* Ask 3 Questions is based on Shepherd HL, et al. Three questions that patients can ask to improve the quality of information physicians give about treatment options: A cross-over trial. Patient Education and Counselling, 2011;84: 379-85

AQuA Advancing Quality Alliance

Right Care Shared Decision Making Programme

NHS

https://www.aquanw.nhs.uk/SDM

Sources and acknowledgements

This information has been developed by the RCOG Patient Information Committee in collaboration with Group B Strep Support (GBSS). It is based on the RCOG Green-top Guideline No. 36, *Prevention of Early-onset Neonatal Group B Streptococcal Disease*, published in September 2017. The Guideline contains a full list of the sources of evidence used. You can find it online at: www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg36.

This information has been reviewed before publication by women attending clinics in Wrexham and London, by the RCOG Women's Network and the RCOG Women's Voices Involvement Panel, and by Group B Strep Support and their networks.