National Women & Infants Health Programme

QUICK SUMMARY DOCUMENT

Prevention of Early-Onset Group B Streptococcal Disease in Term Infants

This Quick Summary Document (QSD) is a resource for all clinicians working in healthcare in Ireland who are involved in the prevention of Early-Onset Group B Streptococcal Disease in Term Infants

Following a comprehensive literature review a number of evidence-based recommendations for prevention of Early-Onset Group B Streptococcal Disease (GBS) in Term Infants were agreed upon.

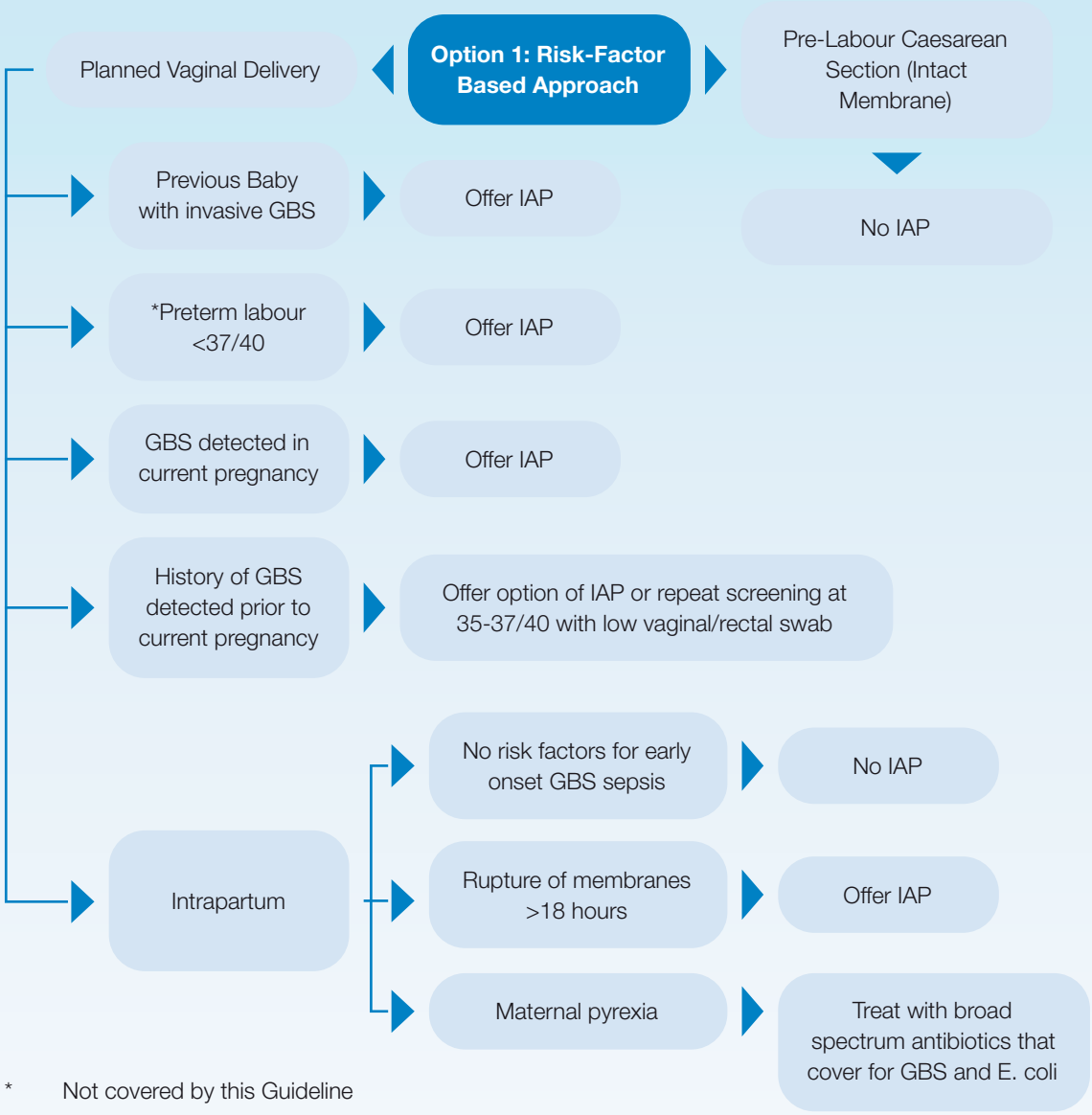
Key Recommendations

1. We recommend that each maternity unit should choose one of the following GBS screening options:
    1. Risk factor-based screening.
    2. Risk factor-based screening enhanced by RT-PCR testing of those at highest risk of prolonged Rupture of Membranes (ROM) e.g. induction of labour, pre-labour SROM.
    3. Universal culture-based screening at 35-37 weeks' gestation.
2. We recommend that intrapartum antibiotic prophylaxis (IAP) be offered for GBS bacteriuria of any colony count in the current pregnancy (if appropriate – see clinical question 2.10).
3. We recommend that both GBS UTI and asymptomatic GBS bacteriuria of >100,000 CFU requires antenatal treatment.
4. We recommend that GBS vaginal colonisation does not require antenatal treatment, but IAP should be offered if appropriate (see clinical question 2.10).
5. If a woman has a history of GBS detected before the current pregnancy, we recommend that they should be offered a choice of IAP or repeat GBS screening.
6. We recommend that if a woman is a known GBS carrier, with pre-labour term SROM, IAP should be offered, and they should be offered induction of labour as soon as reasonably possible.
7. We recommend that IAP should be offered in the following circumstances:
    a. GBS colonisation in current pregnancy (recto-vaginal swab/MSU) or previous GBS colonisation (either during or out with a previous pregnancy) if the women chooses to not be rescreened in the current pregnancy.
    b. Previous neonatal invasive GBS disease.
    c. Pyrexia in labour (a single temperature >38ºC).
    d. Positive intrapartum GBS PCR.
    e. Prolonged rupture of membranes >18 hours (if GBS status unknown).
    f. Consider if there is a history of maternal invasive GBS disease.
8. We strongly recommend that IV benzylpenicillin is the first line treatment for IAP for people who are not allergic to penicillin. The recommended dosage is 3g IV stat followed by 1.5-1.8g IV every 4 hours until delivery.
9. We recommend that IV cefuroxime (1.5g every 6 hours) is the antibiotic of choice for IAP in non-immediate hypersensitivity reaction to penicillin.
10. We suggest that if the history is suggestive of immediate hypersensitivity reaction to penicillin, IV clindamycin (900mg every 8 hours) should be offered if the GBS isolate is known to be clindamycin susceptible. Otherwise, vancomycin should be offered for IAP (15mg/kg every 12 hours, max dose 2g). Higher vacommycin doses can be used, check with local antimicrobial guidance.

11. We recommend that GBS recto-vaginal culture at 35-37 weeks' gestation (for clindamycin susceptibility testing) be considered for people who disclose an immediate hypersensitivity reaction to penicillin.
12. For intrapartum pyrexia, regardless of GBS status, we recommend commencing broad spectrum IV antibiotics that include coverage for both GBS & E Coli, as per local anti-microbial guidelines.
13. We recommend that specific antibiotic prophylaxis for GBS is generally not required for pre-labour Caesarean section where membranes are intact but discussion with neonatology is advised if there is a history of neonatal invasive GBS disease.
14. We recommend that maternal cases of confirmed GBS bacteraemia should be managed as per the national maternal sepsis guidelines and national antimicrobial Guideline.
15. We recommend that GBS colonisation should not be a contraindication to breastfeeding.
16. We suggest that investigations for a sepsis evaluation in an infant should include a blood culture obtained in a sterile fashion and a full blood count. Lumbar puncture to be considered.
17. We suggest that a regime of IV benzylpenicillin and IV gentamicin is usual for Early Onset Group B Streptococcal disease (EOGBS) prophylaxis in infants, refer to local guidelines in maternity unit for information on dosing.
18. We suggest commencing treatment with IV antibiotics (EOGBS prophylaxis) for any infant who is symptomatic. We also suggest commencing treatment with IV antibiotics for an infant where a sibling in a multiple birth has a positive blood culture. We suggest considering treatment where there is a history of invasive EOGBS in a previous sibling.
19. We recommend that each maternity unit should choose and implement one of the following GBS neonatal risk factor management options: A clinical risk-based approach (e.g.: NICE Guideline NG 195) or Kaiser Permanente Early Onset Sepsis Calculator.
20. We recommend that care for infants following assessment as per CQ2.18 should comprise either: regular monitoring of vital signs on the postnatal ward; or a sepsis evaluation and IV antibiotics.
21. We suggest observing vital signs of the infant on the postnatal ward. Frequency and duration of observations to be agreed locally, we suggest 4 to 6 hourly for a minimum of 24 hours. The overall condition of the infant should be monitored.
22. If a woman has GBS diagnosed on a vaginal swab within the first week of life, we suggest that the mother be notified of her result, and no further input is warranted if the infant remains well. If GBS UTI is identified on MSU we recommend maternal antibiotic treatment as described above. If the woman has been discharged the positive result can also be shared with her GP.
23. We recommend that each unit should audit their own incidence rate of EOGBS.
24. We recommend that laboratories should send GBS isolates from sterile sites to the IMSRL for further analysis and sequencing to help examine national trends. Laboratories should communicate with the IMSRL if the organism was not detected using molecular methods.

Algorithm (+/- other visuals/figures/tables)

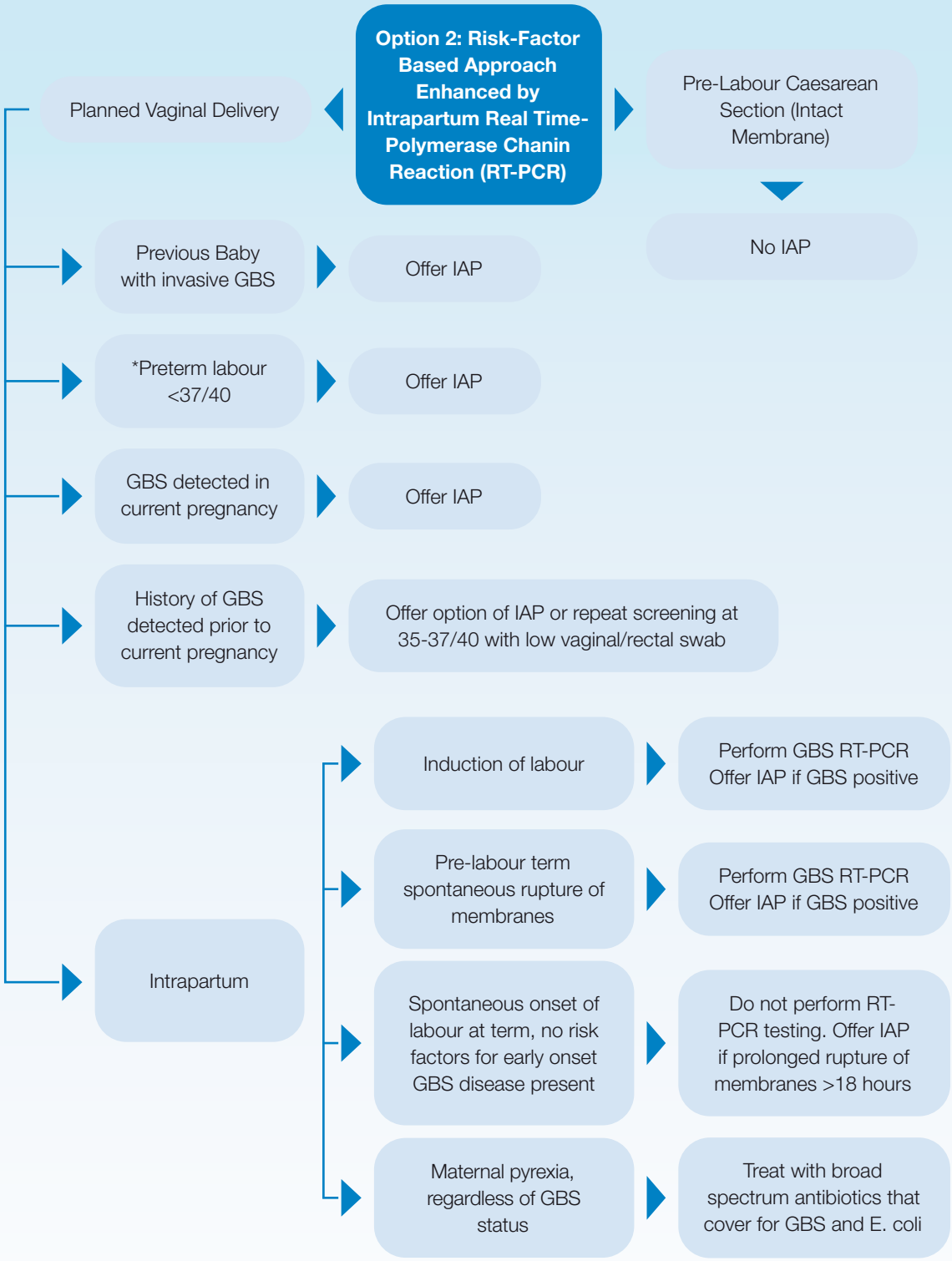
Algorithm 1: Risk Factor Based Screening. See section 1 for the evidence outlining each management option and see appendix 3 for an outline of the strengths & limitations of each option.



* Not covered by this Guideline

GBS group B streptococcus
IAP Intrapartum antibiotic prophylaxis

Algorithm 2: Risk-Factor Based Screening Enhanced by Intrapartum Real-Time Polymerase Chain Reaction (RT-PCR) Testing. See section 1 for the evidence outlining each management option and see appendix 3 for an outline of the strengths & limitations of each option.



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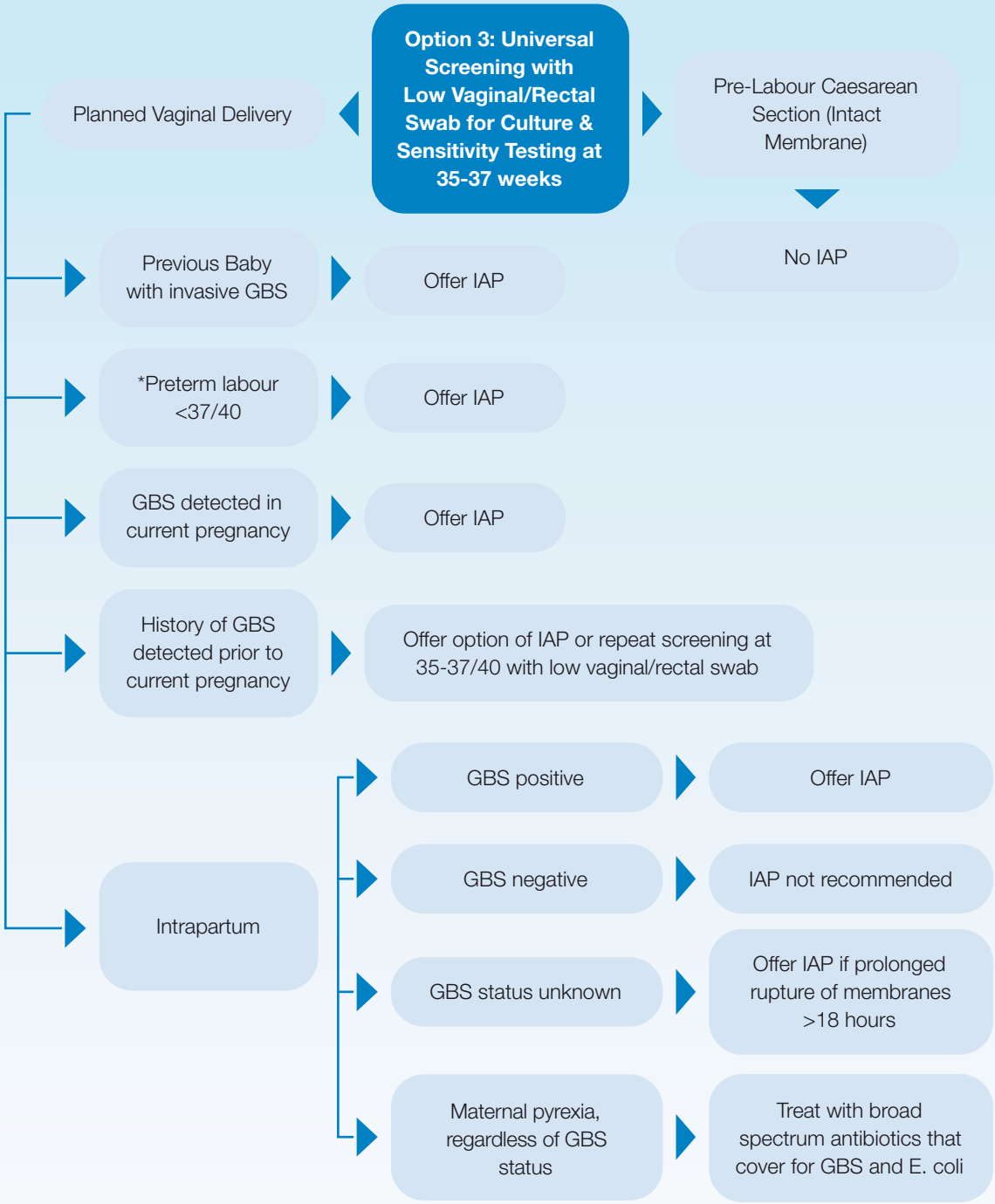
GBS group B streptococcus
IAP Intrapartum antibiotic prophylaxis

Algorithm 3: Universal Culture-Based Screening. See section 1 for the evidence outlining each management option and see appendix 3 for an outline of the strengths & limitations of each option.



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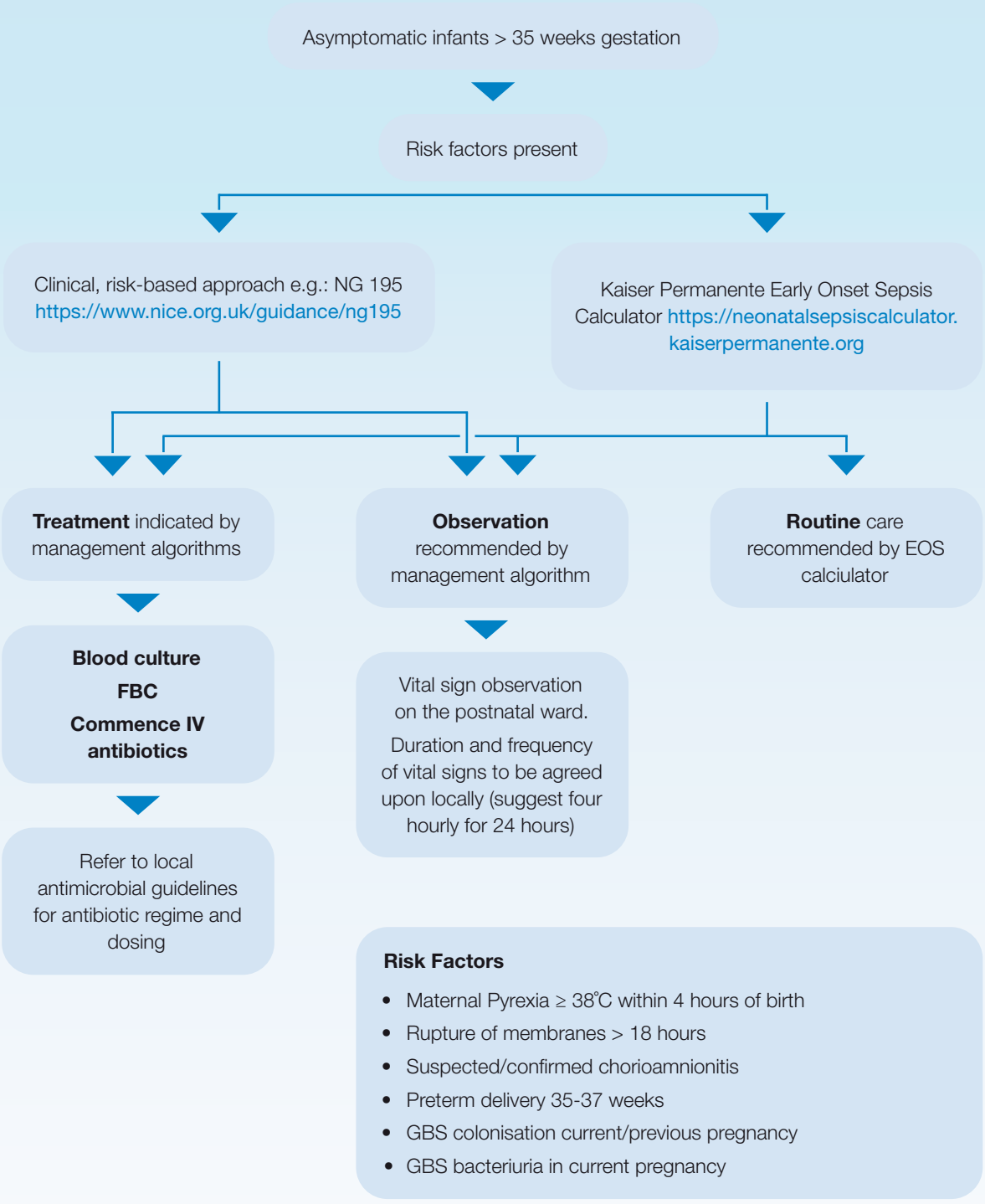
GBS group B streptococcus
IAP Intrapartum antibiotic prophylaxis

Algorithm 4: Suggested care pathways for asymptomatic infants with risk factors



Auditable standards

Audit using the key recommendations as indicators should be undertaken to identify where improvements are required and to enable changes as necessary, and to provide evidence of quality improvement initiatives.

Auditable standards for this Guideline include:

1. Each unit should know their own annual incidence rate of EOGBS
2. Ongoing clinical audit should be performed within sites to ensure compliance, safety & efficacy with the chosen maternal and neonatal strategies for prevention of EOGBS – this can include (but is not restricted to) timing of screening, availability of actionable results, timing and appropriateness of antibiotic therapy, timing and appropriateness of neonatal sepsis screening, timing and appropriateness of neonatal vital sign observation on the postnatal ward.
3. Audit of prevalence of clindamycin resistant GBS.

Recommended reading:

1. HSE Nomenclature for Clinical Audit – https://www.hse.ie/eng/about/who/nqpsd/ncca/nomenclature-a-glossary-of-terms-for-clinical-audit.pdf
2. HSE National Framework for developing Policies, Procedures, Protocols and Guidelines at https://www.hse.ie/eng/about/who/qid/nationalframeworkdevelopingpolicies/
3. Dakin A, Ferguson W, Drew R, McCallion N, Higgins MF, Eogan M. Assessing standards for prevention of early onset group B streptococcal (GBS) disease in Ireland. Ir J Med Sci [Internet]. 2021;(0123456789). Available from: https://doi.org/10.1007/s11845-021-02639-7
4. Hasperhoven GF, Al-Nasiry S, Bekker V, Villamor E, Kramer BWW. Universal screening versus risk-based protocols for antibiotic prophylaxis during childbirth to prevent early-onset group B streptococcal disease: a systematic review and meta-analysis. BJOG An Int J Obstet Gynaecol. 2020;127(6):680-91. https://pubmed.ncbi.nlm.nih.gov/31913562/
5. Fullston EF, Doyle MJ, Higgins MF, Knowles SJ. Clinical impact of rapid polymerase chain reaction (PCR) test for group B Streptococcus (GBS) in term women with ruptured membranes. Ir J Med Sci. 2019;188(4):1269-74. https://pubmed.ncbi.nlm.nih.gov/30706295/
6. Di Renzo GC, Melin P, Berardi A, Blennow M, Carbonell-Estrany X, Donzelli GP, et al. Intrapartum GBS screening and antibiotic prophylaxis: A European consensus conference. J Matern Neonatal Med [Internet]. 2015;28(7):766-82. Available from: http://dx.doi.org/10.3109/14767058.2014.934804
7. O'Sullivan CP, Lamagni T, Patel D, Efstratiou A, Cunney R, Meehan M, et al. Group B streptococcal disease in UK and Irish infants younger than 90 days, 2014-15: a prospective surveillance study. Lancet Infect Dis [Internet]. 2019 Jan 1 [cited 2022 May 18];19(1):83-90. Available from: https://pubmed.ncbi.nlm.nih.gov/30497953/
8. Neonatal early-onset infections: Comparing the sensitivity of the neonatal early-onset sepsis calculator to the Dutch and the updated NICE guidelines in an observational cohort of culture-positive cases. EClinicalMedicine. 2022;44:101270. https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(21)00551-4/fulltext
9. Achten NB, Plötz FB, Klingenberg C, Stocker M, Bokelaar R, Bijlsma M, et al. Stratification of Culture-Proven Early-Onset Sepsis Cases by the Neonatal Early-Onset Sepsis Calculator: An Individual Patient Data Meta-Analysis. J Pediatr. 2021;234:77-84.e8. Epub 20210203. doi: 10.1016/j.jpeds.2021.01.065. PubMed PMID: 33545190. https://pubmed.ncbi.nlm.nih.gov/33545190/

Authors

Dakin A., Loughlin L., Ferguson W., Babu S., Power L., Dempsey G., Meehan M., Knowles S., Drew R., Eogan M., National Clinical Practice Guideline: Prevention of Early Onset Group B Streptococcal Disease in Term Infants. National Women and Infants Health Programme and The Institute of Obstetricians and Gynaecologists. January 2023.

https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/

https://www.rcpi.ie/faculties/obstetricians-and-gynaecologists/national-clinical-guidelines-in-obstetrics-and-gynaecology/