# East of England Neonatal Antibiotic Policy

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**For use in:** Eastern Neonatal Units
Guidance specific to the care of neonatal patients

**Used by:** Medical Staff, Neonatal Nurse Practitioners, pharmacists, microbiologists and infection prevention and control teams.

**Key Words:** Signs & symptoms, high risk sepsis, central lines, bacteraemia, NICE early onset sepsis recommendations

**Date of Ratification:** 24th October 2019

**Review due:** September 2022

**Guideline amended:** February 2020

**Registration No:** NEO-ODN 2019-3

**Approved by:**

| | |
|---|---|
| Clinician Lead for East of England Neonatal ODN | **Date:** 24th October 2019<br><br>**Signed: Matthew James** |

**CONTENTS**



The purpose of this policy is to standardise the antibiotic treatment used in treating suspected or confirmed sepsis. The policy includes indications for use, dosing arrangements and monitoring of therapeutic levels where applicable.

## 1. INTRODUCTION

1.1 This policy sets out the regional agreement on antibiotic use for the management of suspected or confirmed neonatal sepsis. It has been developed in agreement with regional microbiologists, infection prevention and control nurses, neonatal nurses and a pharmacist. This has been developed as part of a regional approach to standardising the use of antimicrobial therapy in the neonatal population within the east of England.

1.2 This policy should be read in conjunction with the NICE documents

- "Antibiotics for early-onset neonatal infection". (NICE clinical guideline 149, guidance.nice.org.uk/cg149)
- Quality Standard (QS75) Neonatal infection

1.3 This policy is designed to be used in conjunction with and not as a replacement for clinical assessment of the baby where decisions are made about the management of suspected and confirmed sepsis.

## 2. AUDIT STANDARDS

2.1 100% of babies should have a blood culture and CRP taken before starting antibiotics

2.2 100% of babies should have their CRP checked at 24 hours following commencement of antibiotic treatment

2.2 100% of babies who become unwell and start antibiotics after 72 hours of age should have CSF sampling (unless there is a specific contraindication).

## 3. BACKGROUND

3.1 Mortality and morbidity from neonatal sepsis remain significant, with early recognition and treatment likely to improve outcomes. As symptoms and signs of sepsis can be subtle, empirical antibiotic treatment should be started in any neonate who is unwell and in some cases for infants with significant risk factors.
**Please see separate policy for management of MRSA colonisation.*
**This policy does not specifically address maternal Group B Streptococcus – see RCOG – Green-Top Guideline No.36 (13/09/2017) or local policy[1].*

## 4. INDICATIONS FOR STARTING ANTIBIOTICS

4.1 The opinion of an experienced neonatal nurse/midwife should be taken very seriously as should parental concerns about their own infants' condition.

4.2 Respiratory distress in the first 24 hours of life should be treated with antibiotics even if felt likely to be due to surfactant deficiency or retained lung fluid. Sepsis may be contributing or may be the primary cause, even if there are no known risk factors.

4.3 A with baby respiratory symptoms persisting 4 hours after birth should be treated with antibiotics.

4.3 **Babies at high risk of sepsis**

a. Prematurity (<37 weeks)[1] plus prolonged rupture of membranes
b. Maternal chorioamnionitis
c. Previous infant with invasive GBS disease
d. Pyrexia in labour

4.3 Use tables 1 and 2 (NICE, 2012) to identify red flags (risk factors and clinical indicators that should prompt a high level of concern regarding early-onset neonatal infection).

4.4 Review the maternal and neonatal history and carry out a physical examination of the baby including an assessment of the vital signs.

4.5 Use the following framework based on risk factors and clinical indicators, including red flags (see tables 1 and 2), to direct antibiotic management decisions:

- 4.5.1 In babies with any red flags, or with two or more 'non-red flag' risk factors or clinical indicators (see tables 1 and 2), perform investigations and start antibiotic treatment.

- 4.5.2 Do not delay starting antibiotics, these should be administered within a hour of the decision to treat.

4.6 In babies without red flags and only one risk factor or one clinical indicator, using clinical judgment, consider:

- whether it is safe to withhold antibiotics, and whether it is necessary to monitor the baby's vital signs and clinical condition – if monitoring is required continue it for at least 12 hours (at 0, 1 and 2 hours and then 2-hourly for 10 hours).

**Table 1:**

**Risk factors for early-onset neonatal infection, including 'red flags'**

| Risk factor | Red flag |
|---|---|
| Invasive group B streptococcal infection in a previous baby | |
| Maternal group B streptococcal colonisation, bacteriuria or infection in the current pregnancy | |
| Prelabour rupture of membranes | |
| Preterm birth following spontaneous labour (before 37 weeks' gestation) | |
| Suspected or confirmed rupture of membranes for more than 18 hours in a preterm birth | |
| Intrapartum fever higher than 38°C, or confirmed or suspected chorioamnionitis | |
| Parenteral antibiotic treatment given to the woman for confirmed or suspected invasive bacterial infection (such as septicaemia) at any time during labour, or in the 24-hour periods before and after the birth [This does not refer to intrapartum antibiotic prophylaxis] | Yes |
| Suspected or confirmed infection in another baby in the case of a multiple pregnancy | Yes |

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

| Clinical indicator | Red flag |
|---|---|
| Altered behaviour or responsiveness | |
| Altered muscle tone (for example, floppiness) | |
| Feeding difficulties (for example, feed refusal) | |
| Feed intolerance, including vomiting, excessive gastric aspirates and abdominal distension | |
| **Clinical indicator** | **Red flag** |
| Signs of respiratory distress | |

| | |
|---|---|
| Respiratory distress starting more than 4 hours after birth | **Yes** |
| Hypoxia (for example, central cyanosis or reduced oxygen saturation level) | |
| Jaundice within 24 hours of birth | |
| Apnoea | |
| Signs of neonatal encephalopathy | |
| Seizures | **Yes** |
| Need for cardio–pulmonary resuscitation | |
| Need for mechanical ventilation in a preterm baby | |
| Need for mechanical ventilation in a term baby | **Yes** |
| Persistent fetal circulation (persistent pulmonary hypertension) | |
| Temperature abnormality (lower than 36°C or higher than 38°C) unexplained by environmental factors | |
| Signs of shock | **Yes** |
| Unexplained excessive bleeding, thrombocytopenia, or abnormal coagulation (International Normalised Ratio greater than 2.0) | |
| | |
| Oliguria persisting beyond 24 hours after birth | |
| Altered glucose homeostasis (hypoglycaemia or hyperglycaemia) | |
| Metabolic acidosis (base deficit of 10 mmol/litre or greater) | |
| Local signs of infection (for example, affecting the skin or eye) | |

4.7 **Group B Streptococcus (GBS)**

The use of antibiotics for the asymptomatic infant of a GBS colonised mother remains controversial as up to 20% of pregnant women are GBS carriers[2]. However the incidence increases with other risk factors for early onset sepsis (when presenting with clinical disease):

- Previous infant with invasive GBS disease
- Preterm (<37 weeks gestation)
- Pyrexia in labour
- Rupture of membranes for > 18 hours
- No antibiotics or insufficient antibiotics given to mother[1]

## 5. INVESTIGATIONS PRIOR TO STARTING ANTIBIOTICS

5.1 Blood cultures and a CRP should *always* be taken before starting treatment.

5.2 Decision for treatment and management should not be based on CRP levels alone. In addition to interpretation of the CRP level, consider white cell count (both high and low WCC could be significant) as well as the infants broader clinical picture.

5.3 Perform a lumbar puncture to obtain a cerebrospinal fluid sample in a baby who did not have a lumbar puncture at presentation who is receiving antibiotics, if it is thought safe to do so and if the baby:

- has an initial C-reactive protein concentration of 20 mg/litre or greater or
- has clinical signs suggestive of meningitis
- has a positive blood culture, or
- does not respond satisfactorily to antibiotic treatment.

5.4 Babies with an initial CRP between 10 -20 mg/litre should be discussed with a consultant paediatrician and the need to perform an LP considered taking into account the overall clinical picture. Decisions should be clearly documented in the baby's notes.

5.5 Other useful investigations include FBC and CXR. *In cases of suspected chorioamnionitis the placenta should be sent for histological* examination and culture.

6 Lumbar puncture (LP) should be done in **all cases of suspected late onset sepsis ( i.e. after 72 hours following delivery)** and should be **considered** in the clinically unwell infant.5.

5.7 Inability to obtain a CSF sample should not delay treatment. On occasion this may need to be delayed but most babies can tolerate a LP if supervised appropriately during the procedure.

5.8 **It is possible to send CSF for PCR diagnostics if antibiotics have already been given[10,11].**

5.9 Do not undertake a LP if platelets are <50 x $10^9$/l or if the baby is coagulopathic. In these situations, consider correction prior to the procedure being undertaken.

5.10 For late onset sepsis undertake a comprehensive septic screen appropriate to the clinical condition of the baby.

5.11 Assess renal function based prior to starting antibiotics. If renal compromise suspected or confirmed, then gentamicin to be replaced with cefotaxime.

## 6. DURATION OF ANTIBIOTICS

6.1 The usual duration of antibiotic treatment for babies with a positive blood culture, and for those with a negative blood culture but in whom there has been strong suspicion of sepsis, should be 7 days.

6.2 Consider continuing antibiotic treatment for more than 7 days if:

- the baby has not yet fully recovered
- based on the pathogen identified on blood culture (seek expert microbiological advice if necessary).

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

- the level of initial clinical suspicion of infection
- the baby's clinical progress and current condition, and
- the levels and trends of C-reactive protein concentration.

6.4 Antibiotics should usually be stopped at 36 hours if cultures are negative and if the baby's clinical condition is reassuring with no clinical indicators of possible infection, and the levels and trends of C-reactive protein concentration are reassuring.

6.5 However, if there was a significant CRP rise or the baby was particularly unwell, a minimum 5 day empirical antibiotic course should be prescribed.

6.6 Confirmed cases of neonatal meningitis should be discussed with the local *microbiologist. A course of treatment of 10-14 days is usually recommended however* treatment for up to 21 days may be required for Gram negative infections.

6.7 Check viral PCR on CSF if no bacterial growth.

6.8 A decision to repeat the LP prior to stopping antibiotics should be made locally. Good practice will include an indication for the antibiotic and a review date for the prescription, on the prescription chart.

## 7. REMOVAL OF CENTRAL LINES

7.1 Removal of central lines should be considered in any septic infant who fails to improve.

7.2 Central lines should ideally be removed in the presence of culture positive sepsis.

7.3 If the baby has suspected or proven coagulase negative staphylococcus in the presence of a long line, vancomycin or Teicoplanin should be administered via the long line.

7.4 Repeated bacteraemia relating to line sepsis should result in the removal of the central line.

7.5 Surgical or long-term intensive care babies may become colonised with **resistant organisms.** When treating sepsis in these babies consider administering antibiotics which cover their resistant organism. The choice of antibiotic for use as second line antibiotic may depend on local sensitivity pattern particularly during confirmed outbreaks.

7.6 Where the central line has been removed for any of the above reasons, the tip should be sent for MC&S.

7.7 In cases of fungal sepsis where a long line is in situ– treat for 2 weeks with anti fungal and discuss with local microbiologist.

## 8. THERAPEUTIC DRUG MONITORING

**Gentamicin:**

8.1 Check the trough levels prior to the second and the fifth dose. Once levels have been taken and if renal function is assessed as being satisfactory, give the dose of gentamicin.

8.2 If there are any concerns about renal function, withhold the dose of gentamicin until the level has been reported and is <2mg/Litre (up to the first three doses) and <1mg/Litre (if more than three doses are given). If there are serious concerns about renal function, consider the use of cefotaxime.

8.3 The third dose of Gentamicin should not be given unless a normal gentamicin level has been received and is documented.

8.4 For extended dosing interval regimens normal levels are <2mg/Litre (pre dose trough) for courses that last for up to 3 doses and <1mg/L for courses of more than 3 doses. If levels are higher than this increase the intervals between doses as indicated on the gentamicin prescription chart and protocol.

8.5 Generally levels should be checked every third dose unless more frequent monitoring is indicated.

8.6 If a trough level result is reported as being >2mg/L (for courses up to 3 doses) OR >1mg/L for courses of more than 3 doses, these babies will require urea and electrolytes testing. All babies receiving gentamicin will require hearing screening. Those with high levels will require an additional screen at 8 months.

**Vancomycin:**

8.7 Vancomycin levels should be measured just prior to the 3rd dose and every 5th dose thereafter aiming for trough levels between 10-20 mg/L.

## 9. UNIT SPECIFIC SENSITIVITIES

9.1 Individual units may have specific resistant organisms. Units should review their individual sensitivities on a 6 monthly basis in conjunction with their microbiology and infection control teams and provide a risk management plan to tackle such issues.

## 10. PARENT INFORMATION

10.1 If considering antibiotic treatment because of clinical concerns about possible early-onset neonatal infection, discussions with parents should include:

- the rationale for the treatment
- the risks and benefits in the individual circumstances
- the observations and investigations that may be needed to guide clinical
- management (for example, when to stop treatment)
- the preferred antibiotic regimen and likely duration of treatment
- the impact, if any, on where the woman or her baby will be cared for
- potential long-term effects of the baby's illness and likely patterns of recovery
- Provide reassurance if no problems are anticipated

10.2 When a baby who has had a group B streptococcal infection is discharged from hospital:

- advise the woman that if she becomes pregnant again:
- there will be an increased risk of early-onset neonatal infection
- she should inform her maternity care team that a previous baby has had a
- group B streptococcal infection
- antibiotics in labour will be recommended
- inform the woman's GP in writing that there is a risk of:
- recurrence of group B streptococcal infection in the baby, and
- group B streptococcal infection in babies in future pregnancies.

10.3 If a woman has had group B streptococcal colonisation in the pregnancy but without infection in the baby, inform her that if she becomes pregnant again, this will not affect the management of the birth in the next pregnancy (NICE, 2012).

## 11. ANTIBIOTIC SCHEDULE

### 11.1 Early onset sepsis – up to 72 hours of age

| Indication | Drug, dose and route | Dose interval | Notes |
|---|---|---|---|
| Early onset | **BENZYLPENICILLIN 25mg/kg IV**<br><br>**BENZYLPENICILLIN 50mg/kg IV**<br><br>****If the baby appears very ill OR meningitis is suspected**** | **12 hourly up to 7days**<br><br>**8 hourly 7-28 days**<br><br>**6 hourly from 1 month** | • Usually started at birth.<br><br>• Use intravenous Benzylpenicillin with gentamicin as the first-choice antibiotic regimen for empirical treatment of suspected infection unless microbiological surveillance data reveal local bacterial resistance patterns indicating a different antibiotic.<br><br>• Higher dose of Benzylpenicillin (50mg/kg) is recommended for babies who appear very unwell or where there are concerns about serious bacterial infection.<br><br>• Higher dose of Benzylpenicillin (50mg/kg) is recommended to achieve bactericidal concentration in the CSF.<br><br>• There are no clinical trials comparing Benzylpenicillin to Cefotaxime for GBS sepsis. In vitro and animal studies, (but no clinical trials), support the combination of an aminoglycoside used with Benzylpenicillin.<br><br>• Care is needed with prescribing times and trough levels (see appendix 1 & 2) |
| | **+ GENTAMICIN 5mg/kg IV**<br><br>*See later guidance on drug monitoring | **Up to 7 days 5mg/kg every 36 hours**<br><br>**≥7days 5mg/kg every 24 hours (BNF-C)** | |

| | | | |
|---|---|---|---|
| **Suspected CSF involvement** | **AMOXICILLIN 100MG/KG**<br><br>**and** | **12 hourly up to 7 days**<br><br>**8 hourly 7-28 days** | • Decision to be made by a senior clinician, especially if blood stained CSF.<br><br>• Change to Amoxicillin and Cefotaxime if pus present in LP.<br><br>• If there is microbiological evidence of Gram-negative bacterial sepsis, add Cefotaxime. If Gram-negative infection is confirmed stop Benzylpenicillin.<br><br>• If GpB Strep is confirmed then antibiotics should be changed to Benzylpenicillin, giving a dose of 50mg/kg and gentamicin 5mg/kg. Treatment using Benzylpenicillin should be continued for 14 days. Gentamicin to be given for 5 days.<br><br>• Cephalosporins increase the proportion of infants with sterile CSF after 48-72 hrs of treatment for meningitis, but have not been shown to reduce morbidity or mortality compared to penicillin and an aminoglycoside.<br><br>• Do not stop penicillin until Listeria has been excluded.<br><br>• Add Cefotaxime if poor response to Benzyl Penicillin and gentamicin after 48 hours.<br><br>• Define the patient's suspected condition prior to commencing Cefotaxime. |
| | **CEFOTAXIME 25mg/kg IV BUT 50mg/kg in severe infection** | **12 hourly up to 7days**<br><br>**8 hourly 7-20 days**<br><br>**6 hourly 21-28 days** | |
| **E-Coli infections**<br><br>**If no improvement after 48 hours.** | **CEFOTAXIME 25mg/kg IV BUT 50mg/kg in severe infection** | **12 hourly up to 7days**<br><br>**8 hourly 7-20 days**<br><br>**6 hourly 21-28 days** | |

11. 2 **First line, late onset sepsis: after 72 hours with no central access**

<table>
<tr><th>Indication</th><th>Drug, dose and route.</th><th>Dose interval</th><th>Notes</th></tr>
<tr><td rowspan="3">1st line, late onset<br><br>after 72 hours with no central access</td><td>FLUCLOXACILLIN 50mg/kg IV</td><td>Up to 7 days 12 hourly<br><br>7-20 days 8 hourly<br><br>21- 28 days 6 hourly</td><td rowspan="2">• Must have CSF sampled. Where the condition of the baby does not allow for this, LP should be undertaken as soon as possible.<br><br>• Inability to gain a sample should not delay treatment)<br><br>• Intrapartum antibiotic treatment of mother will not prevent late onset GBS in the infant. Where late onset GBS is suspected, add Benzylpenicillin to this regimen.<br><br>• Early onset meningitis is likely to have associated bacteraemia, but later onset may have no positive cultures outside CSF.<br><br>• Flucloxacillin & Gentamicin are the best choice for suspected late sepsis in the absence of endemic MRSA colonisation and when CSF is normal[6]<br><br>• Define the patient’s suspected condition.</td></tr>
<tr><td>+ GENTAMICIN 5mg/kg IV</td><td>up to 7 days 5mg/kg every 36 hours<br><br>≥7 days 5mg/kg every 24 hours</td></tr>
<tr><td colspan="2">If any signs of CSF involvement consider Cefotaxime and Gentamicin</td><td></td></tr>
</table>

11.3 **Second line, late onset sepsis WITH a central line or with a known MRSA infection**

<table>
<tr><th>Indication</th><th>Drug, dose and route</th><th>Dose interval</th><th>Notes</th></tr>
<tr><td rowspan="2">2nd line, late onset<br><br>With a central line or a known MRSA infection</td><td>VANCOMYCIN<br>15mg/kg IV<br><br>OR<br><br>TEICOPLANIN<br>16mg/kg loading dose then<br>8mg/kg 24 hours later<br>IV</td><td>Up to 29weeks every 24 hours<br><br>29-35 weeks every 12 hours<br><br>≥35 weeks every 8 hours (BNF-C)<br><br>24 hourly</td><td rowspan="2"><ul><li>The use of broad spectrum Cephalosporins should be limited as far as possible, aiming to reduce the incidence of MRSA and of invasive fungal sepsis.</li><li>As coagulase negative sepsis generally has a low mortality and morbidity, it may be justifiable to reserve Vancomycin for cases known to be Flucloxacillin/Penicillin resistant[7].</li><li>MRSA bacteraemia in preterm infants is associated with an indwelling IV line in 80% cases, and almost always with previous antibiotic exposure[8,9].</li><li>If Pseudomonas isolated change Cefotaxime to Ceftazidine</li></ul></td></tr>
<tr><td>+ Gentamicin<br>5mg/kg<br>IV</td><td>Up to 7 days 5mg/kg every 36 hours<br><br>≥7 days 5mg/kg every 24 hours (BNF-C)</td></tr>
<tr><td colspan="3">If concerns about renal toxicity, use Cefotaxime instead of gentamicin.</td><td></td></tr>
</table>

## 11.4 Second line, late onset with respiratory disease

| Indication | Drug, dose and route | Dose interval | Notes |
|---|---|---|---|
| **2nd line late onset**<br><br>**Late onset with respiratory disease**<br><br>**OR**<br><br>**Suspected Herpes Simplex at any time.**<br><br>**OR**<br><br>**Any sepsis not responding to treatment at any time.** | **ACICLOVIR 20mg/kg IV** | **8 hourly for 21 days** | • Neonatal Herpes Simplex is a rare severe infection which should be treated promptly<br><br>• Add aciclovir for any sepsis not responding to treatment. |

## 11.5 Suspected abdominal pathology at any stage

<table>
<tr><td>Suspected abdominal pathology at any stage</td><td colspan="2">METRONIDAZOLE<br><u>Up to 26 weeks corrected gestational age.</u><br>15mg/kg as a single dose followed after 24 hours by 7.5mg/kg daily<br><br><u>26-34 weeks corrected gestational age</u><br>15mg/kg as a single loading dose followed after 12hours by 7.5mg/kg every 12 hours<br><br><u>Neonate ≥ 34 weeks corrected gestational age</u><br>15mg/kg as a single dose followed after 8 hours by 7.5mg/kg every 8 hours.</td><td rowspan="2">• Increase the dosing interval of Metronidazole in hepatic but not renal failure<br><br>• Babies with suspected or confirmed Necrotising Enterocolitis should be treated with Metronidazole and Gentamicin <u>plus:</u><br><br>Penicillin<br><br><u>OR</u><br><br>Vancomycin<br>- if coagulase negative staphs are being covered, where there is possible line associated sepsis or where there is Penicillin allergy.</td></tr>
<tr><td>Necrotising Enterocolitis</td><td>+ GENTAMICIN 5mg/kg IV</td><td>Up to 7 days 5mg/kg every 36 hours<br><br>≥7 days 5mg/kg every 24 hours (BNF-C)</td></tr>
</table>

| | | | |
|---|---|---|---|
| | **+ BENZYLPENICILLIN 25mg/kg IV**<br><br>**OR**<br><br>**VANCOMYCIN 15mg/kg IV** | **12 hourly up to 7days**<br><br>**8 hourly 7 – 28 days**<br><br>**6 hourly from 1 month**<br><br>**Up to 29weeks every 24 hours**<br><br>**29-35 weeks every 12 hours**<br><br>**≥35 weeks every 8 hours (BNF-C)** | |

## 11.6 Fungal prophylaxis

| | | | |
|---|---|---|---|
| **Prophylactic antifungal**<br><br>**(Consider with use of Cefotaxime and Vancomycin)** | **Nystatin suspension.**<br><br>**Prophylactic dose 25,000 units (0.25mls)**<br><br>**Treatment dose is 100,000u (1ml)**<br><br>**ORALLY** | **6 hourly** | • If giving Fluconazole stop Nystatin<br><br>• Prophylactic use of systemic Fluconazole reduces the incidence of invasive fungal infections in VLBW infants but further trials are needed to assess the affect on mortality, neurodevelopment and emergence of antifungal resistance.<br><br>• Prophylactic use of antifungal should be considered in the following babies:<br>○ Babies <750g<br>○ Babies with multiple lines in situ<br>○ Babies with Candida Albicans |

| | | | |
|---|---|---|---|
| | | | ○ Babies with a prolonged length of stay. |

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NAME OF YOUR HOSPITAL TO GO HERE

East of England Neonatal ODN NHS

Hospital Number:
Surname:
First Names:
Date of birth:
NHS no: ___ / ___ / ____
Use Hospital identification label

## PRESCRIPTION CHART FOR IV GENTAMICIN ONLY – (Staple to main Drug Chart)

**Dose and frequency:**
- **5mg/kg**
- up to 7 days after birth – ONE dose every 36 hours
- ≥7days after birth– ONE dose every 24 hours

**Monitoring:**
- Trough level pre 2nd dose (and give 2nd dose if renal function satisfactory) and pre-5th dose unless more frequent monitoring is indicated. Generally, levels should be checked every 3rd dose.

**Expected trough level:**
- *For courses of **UP TO** 3 doses* level **<2mg/L**
- *For courses **of 3 doses*** or more level **≤1mg/L**

| **Dose adjustments if levels >2mg/L (up to 3 doses given); >1mg/L (more than 3 doses given):** | |
|---|---|
| If on 24 hourly dosing | Extend interval to 36 hourly – then perform level and hold before next dose – level must be <2mg/L if less than 3 doses given; <1mg/L if 3 or more doses given before giving the next dose) |
| If on 36 hourly dosing | Extend interval to 48 hourly (level and hold before next dose – level must be <2mg/L if less than 3 doses given; <1mg/L if 3 or more doses given before giving the next dose ) |

**Weight:** …… **Corrected gestational age at start of treatment:**……...weeks

| Date | Time to be given | Drug | I.V Dose | IV route i.e. PVL or LL | Frequency of administration | Signature of Prescriber | Printed Name of Prescriber | Write **'LEVEL and GIVE'** or **'LEVEL and HOLD'**. | Double checking prompt used* | Given by | | LEVELS | | Pharm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Initials* | Time | Initial when level taken | Result of level | |
| __ / __ / __ | __ : __ | Gentamicin | mg | | | | | | | | __ : __ | | | |
| __ / __ / __ | __ : __ | Gentamicin | mg | | | | | **LEVEL AND** …… | | | __ : __ | | | |
| __ / __ / __ | __ : __ | Gentamicin | mg | | | | | | | | __ : __ | | | |
| __ / __ / __ | __ : __ | Gentamicin | mg | | | | | | | | __ : __ | | | |
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| __ / __ / __ | __ : __ | Gentamicin | mg | | | | | | | | __ : __ | | | |
| __ / __ / __ | __ : __ | Gentamicin | mg | | | | | | | | __ : __ | | | |

*** Lead checker to sign uppermost section of box.**

Name of your hospital here

East of England Neonatal ODN

## Reasons for non-compliance with double checking prompt

Nursing staff to detail reasons for non-conformance with NPSA double checking prompt below.

Shaded columns to be entered by auditor only.

| Date | Time | Details of non-conformance with double checking prompt | Signature | Measurement Extranet | |
|---|---|---|---|---|---|
| | | | | Date entered | Signature |
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Name of your unit in here

East of England Neonatal ODN

# PRESCRIPTION SHEET FOR I.V VANCOMYCIN ONLY

**(Staple to main Drug Chart)**

**DOSING AND MONITORING OF IV VANCOMYCIN**

**Dose** 15mg/kg/dose

**Frequency of administration**: up to 29 weeks every 24 hours
29-35 weeks every 12 hours
≥35 weeks every 8 hours

**Monitoring:**

Take trough level pre-3rd dose and pre-8th dose unless more frequent monitoring is indicated. Generally, levels should be checked every 5th dose

**Expected trough level**: 10-20mg/l

Addressograph

# VANCOMYCIN ONLY

Weight .....

| Date | Time to be given | Drug | I.V Dose | IV Route i.e. PVL or LL | Frequency of administration | Signature of Doctor | Write **'LEVEL and GIVE'** or **'LEVEL and HOLD'**.* | Sign when level taken | Result of level | Given by | | Pharm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Initials | Time | |
| | | Vancomycin | mg | | | | | | | | | |
| | | Vancomycin | mg | | | | | | | | | |
| | | Vancomycin | mg | | | | | | | | | |
| | | Vancomycin | mg | | | | | | | | | |
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| | | Vancomycin | mg | | | | | | | | | |
| | | Vancomycin | mg | | | | | | | | | |
| | | Vancomycin | mg | | | | | | | | | |

***LEVEL and GIVE** indicates that a level is to be taken, and that the next prescribed dose may be given without waiting for the result.
**LEVEL and HOLD** indicates that a level is to be taken, and no further doses are to be given until the result is obtained.

# Exceptional Circumstances Form

Form to be completed in the **exceptional** circumstances that the Trust is not able to follow ODN approved guidelines.

| Details of person completing the form: | |
|---|---|
| Title: | Organisation: |
| First name: | Email contact address: |
| Surname: | Telephone contact number: |
| Title of document to be excepted from: | |
| Rationale why Trust is unable to adhere to the document: | |
| Signature of speciality Clinical Lead:<br><br>Date: | Signature of Trust Nursing / Medical Director:<br><br>Date: |
| Hard Copy Received by ODN (date and sign): | Date acknowledgement receipt sent out: |

Please email form to: mandybaker6@nhs.net requesting receipt.
Send hard signed copy to: Mandy Baker
EOE ODN Executive Administrator
Box 93
Cambridge University Hospital
Hills Road
Cambridge CB2 0QQ