Neonatal Unit Antibiotic Guidelines

These are intended to be the usual choice for antibiotics. They may be deviated from for specific clinical considerations. These should be discussed with consultant responsible for the case and may warrant discussion with the microbiologists.
Most infants should have a full septic screen prior to commencing antibiotics. As a minimum they must have blood cultures taken, a lumbar puncture may be deferred because the infant is too sick, has deranged clotting, thrombocytopenia, respiratory distress etc. In infants with signs of respiratory distress perform a CXR before performing a lumbar puncture in case they have a pneumothorax (which may cause sudden decompensation during the LP).
The administration of antibiotics must not be delayed once the decision that they are needed has been taken.

General points

- Attempt to keep antibiotic prescribing simple.
- Use as few different antibiotics as you can and attempt to use antibiotics less likely to cause resistance to develop.
- Just because a baby has been on an antibiotic before does not automatically mean it needs a different one on a second occasion.
- During the first week of life infants are colonised with maternal vaginal flora. This is almost always covered by penicillin and gentamicin.
- The blood–brain barrier is readily crossed by both penicillin and gentamicin in newborn infants due to the lack of myelination at this age. This combination of drugs is adequate for treating neonatal bacterial meningitis with few exceptions. Although the recognised treatment for listeria infection is amoxycillin and gentamicin, penicillin is active against listeria and the condition is rare in Britain.
- There is no benefit in using cefotaxime and it probably is not necessary to use this drug in newborn infants.
- Teicoplanin should be reserved for likely coagulase negative staphylococcal infections; these are most likely to occur in infants of greater than 2 weeks. Where possible in-dwelling catheters should be removed. If this is not possible teicoplanin can be locked into the line. Ensure that only part of the dose is left in the line and that at least half the dose is infused into the baby so that the baby receives systemic teicoplanin as well as disinfecting the line.
- Teicoplanin does not penetrate the CSF effectively.
- After the first week of life it is necessary to provide cover for staphylococci hence the change to flucloxacillin for suspected sepsis of unknown cause.
- Some low birth weight and premature babies may also need fungal prophylaxis if on broad spectrum antibiotics, please refer to separate policy.

NEW BORN INFANTS FOLLOWING SEPTIC SCREEN AND FOR 1st WEEK OF LIFE

1st choice (*See Neonatal Gentamicin guidelines for dosing information)	Benzylpenicillin 50mg/kg/dose IV 12 hourly (8 hourly when > 7days of age) **plus** Gentamicin*: >1.5kg or 30+ weeks – 4mg/kg/dose IV 24 hourly <1.5kg or <30 weeks – 4mg/kg/dose IV 36 hourly

Infants below 1 week of age already on Pencillin and Gentamicin with indwelling catheters, if possible, remove catheters and re-culture. Commence on therapy as below:

1st choice (*See Neonatal Gentamicin guidelines for dosing information)	Flucloxacillin 50mg/kg IV 12 hourly **plus** Gentamicin*: >1.5kg or 30+ weeks – 4mg/kg/dose IV 24 hourly <1.5kg or <30 weeks – 4mg/kg/dose IV 36 hourly
If unwell or if catheter cannot be removed	Ceftazidime 50mg/kg IV 24 hourly **plus** Teicoplanin 16mg/kg IV stat, then 8mg/kg IV 24 hourly

INFANTS MORE THAN 1 WEEK OF AGE

1st choice (*See Neonatal Gentamicin guidelines for dosing information)	Flucloxacillin 50mg/kg/dose IV 8 hourly **plus** Gentamicin*: >1.5kg or 30+ weeks – 4mg/kg/dose IV 24 hourly <1.5kg or <30 weeks – 4mg/kg/dose IV 36 hourly
For those with indwelling catheters	Ceftazidime 50mg/kg IV 12 hourly **plus** Teicoplanin 16mg/kg IV stat, then 8mg/kg IV 24 hourly

Meropenem should be reserved for babies in whom there is infection with an organism known to be resistant to any of the antibiotics above.

UREAPLASMA INFECTIONS

1st choice Erythromycin 12.5mg/kg IV 6 hourly for 3 weeks

FUNGAL INFECTION

May be difficult to prove. Perform blood cultures, request urine microscopy to look for hyphea (use an SPA to avoid skin contamination). Obtain ultrasound scans of heart, brain, liver and kidneys.

1st choice	Ambisome Empirical treatment: 3mg/kg IV 24 hourly Proven fungal infection: 5mg/kg IV 24 hourly If proven infection, treat for at least 2 weeks and discuss continuation of treatment with Microbiology
If invasive fungal infection likely discuss use of flucytosine with consultant	Flucytosine 50mg/kg IV 12 hourly starting dose. Take trough level before fourth dose.

NEC

1st choice (*See Neonatal Gentamicin guidelines for dosing information)	Benzylpenicillin 50mg/kg/dose IV 12 hourly (8 hourly when > 7days of age) **plus** Gentamicin >1.5kg or 30+ weeks – 4mg/kg/dose IV 24 hourly <1.5kg or <30 weeks – 4mg/kg/dose IV 36 hourly **plus** Metronidazole 15mg/kg IV loading, then after 24 hours 7.5mg/kg IV 12 hourly if less than 7 days or 8 hourly if more than 7 days

OPHTHALMIA NEONATORUM

Do not use chloramphenicol or tetracyclines. Exclude gonorrhoea and chlamydia.

While waiting for result swabs	Neomycin eye ointment / drops Refer to Childrens BNF for doses.
Proven *Chlamydia*	Local eye toilet until discharge stops **plus** Erythromycin 12.5mg/kg IV/PO 6 hourly for 3 weeks
Proven Gonorrhoea	Benzylpenicillin 50mg/kg IV 12 hourly (8 hourly when > 7 days of age)