Appendix A: Antibiotic dosing guidelines

NB Antibiotic doses in this guideline are appropriate for empirical treatment or sensitive organisms only. For any organism categorised as 'I' (Susceptible – increased exposure), seek further advice or refer to local policy for appropriate dose selection' (see NHS GGC Clinical Guidelines Portal)

Piperacillin/Tazobactam (formerly Tazocin®):

Dosing & Scheduling:	○ 90 mg/kg (max 4.5 g) four times a day (dose banded as per pharmacy chart) ○ Vial size 2.25 g, 4.5 g ○ Given by IV bolus over 3-5 mins* * In cases where isolate is reported as 'I' (increased exposure), prolonged infusion may be required ○ Renal Impairment: ▪ Dose adjustments required for GFR 50ml/min or less. Refer to Renal Drug Database

Gentamicin:

Dosing & Scheduling:	Gentamicin dosing in patients with normal renal function: ○ Gentamicin 7mg/kg/once daily (max 500mg/dose) ○ Overweight/obese patients: Dose as per ideal or ideal adjusted body weight (Consult Pharmacy for further advice) ○ Trisomy 21 patients - ***use with caution, discuss before prescribing***: ○ In patients treated with platinum compounds or high dose Methotrexate regimens, use only when clinically indicated ○ Given by IV infusion in 50 – 100 ml Sodium Chloride 0.9% over 30 minutes ○ Measure level after 1st dose Trough: Plasma samples at 18-24 hrs post-dose ○ If trough level is >1mg/L, the dosing interval is normally increased by 12 hours. Please discuss further dosing with pharmacy/microbiology ○ If trough level >2mg/L, patient is unsuitable for pulsed dosing regimen, and subsequent doses should be guided by levels ○ Review Gentamicin regularly and stop as soon as possible ○ If there is no change in dosage regimen or renal function, repeat trough and review regularly. Stop as soon as possible Renal Impairment: ○ Use with caution. Dose reduction required for GFR 70ml/min or less ○ Initial dose: ▪ In AKI, give a single dose of 5 mg/kg, await trough before prescribing any further doses ▪ In chronic renal failure, give a single dose of 2.5 mg/kg. Consult renal/pharmacy for monitoring and further dosing advice.

Meropenem:

Dosing & Scheduling:	• 20 mg/kg TDS (max 1g/dose). Can increase to 40 mg/kg in severe infections (max 2g/dose). • Give as IV bolus over 5 minutes or infuse over 15 – 30 minutes (dilute 1g in at least 50 ml Sodium Chloride 0.9% or Glucose 5%) • *Renal Impairment:* Dose adjustments required for GFR 50 ml/min or less. Refer to Renal Drug Database.

Ciprofloxacin:

Dosing & Scheduling:	• Ciprofloxacin may be used in children where the benefit is considered to outweigh any potential risk. • **NB: Committee on Safety of Medicines (CSM) warning: Quinolone antibiotics may lower seizure threshold & may induce convulsions in patients with or without previous history. There are rare reports of aortic aneurysm/dissection. In patients with known heart valve disease, careful benefit/risk assessment is essential** • Tendon damage is a rare side effect of quinolone antibiotics. This risk is increased by concomitant use of steroids. If tendinitis is suspected, discontinue immediately. • Ciprofloxacin can prolong the QT interval – consider additive effect when used alongside other supportive therapies • Dosing regimen for treatment: ▪ Intravenous: 1 month – 18 years - 10mg/kg three times a day (maximum dose of 40 0mg) ▪ Oral: 20 mg/kg BD (max 750 mg/dose) ○ Available preparations: – Tablets: 100 mg, 250 mg, 500 mg, 750 mg tablets; – Oral Suspension: 250 mg/5 ml – Premixed solution for IV infusion: 2mg/ml (50 ml & 100 ml bags available) ▪ Oral absorption is good but do not use with oral Magnesium, Calcium, or Iron supplements as these affect absorption. Nasogastric feeds should be stopped for 2 hours before and after each dose. ▪ Infuse undiluted IV over 30-60 minutes - flush with Sodium Chloride 0.9%. • Renal Impairment: ▪ Dose adjustments required for GFR 30ml/min or less. Refer to Renal Drug Database

Vancomycin:

Dosing & Scheduling:	***Intermittent Infusion – use Paediatric Vancomycin Infusion Chart*** *Loading dose: <6 mo 15mg/kg, 6 mo-18 y 20mg/kg* *Maintenance dose: 0-6 mo 10 mg/kg 6 hrly* *>6 mo-≤12 y 15 mg/kg 6 hrly* *12-18 y 15 mg/kg 8 hrly* *Prescribe on inpatient drug administration chart as 'see chart for dosing'. Prescribe all doses as per guidance on Vancomycin chart.* *Trough before 3rd dose, thereafter every 2-3 days* *Infuse over 2-3 hours* • Target trough: 15-20 mg/L ***Continuous Infusion*** *Loading dose as for Intermittent Infusion (if switching from intermittent infusion, give 15 mg/kg when next scheduled dose is due)* *Maintenance dose: start at 50 mg/kg/24 hrs immediately after loading dose* *Prescribe on inpatient drug administration chart as 'see chart for dosing'. Re-prescribe each day on the appropriate administration chart (ie fluid/Vancomycin dosing) according to levels.* *Trough 18-24 hours after starting maintenance infusion* • Target trough: 15-20 mg/L • Renal Impairment: ▪ Use with caution. Dose reduction required for GFR 50ml/min or less

Teicoplanin:

Dosing & Scheduling:	• Child > 2 months: 10 mg/kg every 12 hours for 3 doses then 10 mg/kg daily. Child < 2 months: 16 mg/kg for 1 dose, then 8 mg/kg daily 24 hours after loading dose. • For *empirical* use, no proven organism – Max dose 800 mg • For treatment of proven sensitive organism – Max dose 1200 mg • Administration: Slow IV bolus or infusion over 30 mins diluted in Sodium Chloride. • Renal impairment: ▪ Dose adjustments required for GFR 80ml/min or less. Refer to Renal Drug Database ▪ No monitoring routinely required unless requested by microbiology

AmBisome:

Dosing & Scheduling:	• Dosing regimen: dependent on clinical situation. • 3 mg/kg/day with proven or highly suspicious fungal infection (doses of up to 5 mg/kg/day have been used for proven infections). • Infuse in Glucose 5% ONLY at a concentration of 0.2-2.0 mg/ml. If dose ≥5mg/kg infuse over 2 hours otherwise 1 hour. • Renal impairment: ▪ No dose adjustments regardless of degree of renal impairment. Due to the size of AmBisome liposomes, there is no renal elimination

Co-Amoxiclav (Augmentin) *(oral use only for maximum 5 days):*

Dosing & Scheduling:	Dosing regimen for treatment: • Available preparations (TTO packs) ▪ Tablets: 325mg, 625mg, ▪ Oral Suspension: 125/31mg/5ml, 250 mg/5 ml ○ Dose: *Tablets (child 12-17y)* – 375-625mg three times a day *Oral suspension 125/31mg in 5ml* – Neonate: 0.25ml/kg three times a day – Child 1-11months: 0.25ml/kg three times a day (doubled if necessary) – Child 1-5y: 0.25ml/kg three times a day (doubled if necessary) OR 5-10ml three times a day. *Oral suspension 250/62mg in 5ml:* – Child 6-11y: 0.15ml/kg three times a day (doubled if necessary) OR 5-10ml three times a day • Renal Impairment: ▪ Dose adjustments required for GFR 30ml/min or less. Refer to Renal Drug Database

Clarithromycin *(oral use only for maximum 5 days):*

Dosing & Scheduling:	Dosing regimen for treatment: • Available preparations (TTO packs) ▪ Tablets: 500mg ▪ Oral Suspension: 125mg/5ml, 250 mg/5 ml ○ Dose: **Neonate:** 7.5 mg/kg twice daily. **Child 1 month–11 years (up to 8 kg):** 7.5 mg/kg twice daily. **Child 1 month–11 years (8–11 kg):** 62.5 mg twice daily. **Child 1 month–11 years (12–19 kg) :** 125 mg twice daily. **Child 1 month–11 years (20–29 kg):** 187.5 mg twice daily. **Child 1 month–11 years (30–40 kg):** 250 mg twice daily. **Child 12–17 years (>40kg):** 250-500mg twice daily • Renal Impairment: ▪ Dose adjustments required for GFR 30ml/min or less. Refer to Renal Drug Database