

GLOUCESTERSHIRE HOSPITALS NHS FOUNDATION TRUST ANTIBIOTIC GUIDELINES

For children OVER 1 month of age. For preterm infants and babies under 1 month of age refer to neonatal unit guidelines

The regimes below are indicated for **initial treatment** and should be reviewed and modified according to culture results.

Review IV therapy on a daily basis. Where appropriate patients may be switched to oral treatment **before** culture results are available.

Doses should be rounded to practical and measurable amounts, and take account of drug presentation e.g. vial size.

Please refer to separate protocols for guidelines on the management of oncology patients and patients with cystic fibrosis.

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
CRITICALLY ILL CHILD WITH POSSIBLE SEPSIS OF UNKNOWN ORIGIN <u>GIVE ANTIBIOTICS PROMPTLY – DO NOT DELAY TREATMENT</u>	CEFTRIAXONE <u>1 - 3 MONTHS OF AGE</u> IV – 80mg/kg ONCE DAILY <u>> 3 MONTHS – 12 years of age and body weight < 50kg</u> IV – 80mg/kg ONCE daily (max 4g daily) <u>12 – 18 years or < 12 years and body weight >50kg</u> IV – 2 – 4 g ONCE DAILY PLUS GENTAMICIN – SINGLE DOSE > 1month of age 7mg/kg/dose	NOT APPROPRIATE	CONSIDER ADDING HIGH DOSE AMOXICILLIN <u>>1 month of age</u> 60mg/kg/dose TDS (max 4grams daily) Infuse Ceftriaxone over at least 30 minutes
MENINGO-ENCEPHALITIS	CEFTRIAXONE <u>1 month – 12 years of age and body weight <50kg</u> IV - 80mg/kg ONCE DAILY <u>12 – 18 years of age OR <12 yrs and body weight >50kg</u> IV - 2-4 g ONCE DAILY PLUS ACICLOVIR 500mg per m ² TDS	NOT APPROPRIATE	When PCR results available discuss with Consultant Paediatrician and Microbiologist Infuse Ceftriaxone over at least 30 minutes Infuse acyclovir over one hour Discuss length of course with Consultant Paediatrician and Microbiologist.

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
MENINGITIS (blind treatment pending microbiology results) <u>GIVE ANTIBIOTICS PROMPTLY – DO NOT DELAY TREATMENT</u> If pneumococcus suspected	CEFTRIAXONE <u>1 – 3 MONTHS OF AGE</u> <u>IV – 80mg/kg ONCE DAILY</u> If suspicion of <i>Listeria</i> ADD AMOXICILLIN <u>IV – 50mg/kg/dose every 4 – 6 hours</u> <u>> 3 MONTHS – 12 years of age and Body weight < 50kg</u> <u>IV – 80mg/kg ONCE DAILY(max 4g daily)</u> <u>IM – 50mg/kg ONCE DAILY</u> <u>12 – 18 years of age OR < 12 yrs and body weight >50kg</u> <u>IV – 2 – 4 g ONCE DAILY</u> <u>IM – dose as IV but if >1g need to be given in multiple sites</u> ADD BENZYL PENICILLIN <u>1 month – 18 years of age</u> 50mg/kg/dose every 4 – 6 hours (maximum of 2.4g every 4 hours)	NOT APPROPRIATE	Infuse Ceftriaxone over 30 minutes Continue treatment for 14 days Monitor Na ⁺ Infuse high dose benzylpenicillin over 30 minutes. Give benzylpenicillin every 4 hours for 48 hours.
PRE-SEPTAL CELLULITIS (discuss with ENT and Ophthalmology)	CEFTRIAXONE <u>1 month – 12 years and Body weight <50kg</u> 50mg/kg ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> 2 – 4 g ONCE DAILY <u>PLUS</u> FLUCLOXACILLIN <u>1 month – 18 years of age</u> 25mg/kg/dose QDS (max 1g qds) Double dose in severe infections PLUS METRONIDAZOLE <u>1 month – 18 years of age</u> 7.5mg/kg/dose (max 500mg) TDS	CO-AMOXICLAV <u>1 month – 1 year</u> 0.25mls/kg TDS of 125/31 suspension <u>1 – 6 years</u> 5mls TDS of 125/31 suspension OR 0.25mls/kg TDS of 125/31 suspension <u>6 -12 years</u> 5mls TDS of 250/62 suspension OR 0.15mls/kg TDS of 250/62 suspension <u>12 – 18 years</u> One tablet 250/125 strength TDS increase to One tablet 500/125 strength TDS for severe infections PLUS METRONIDAZOLE <u>1 month – 18 years of age</u> 7.5mg/kg/dose (max 400mg) TDS	If allergic to penicillin discuss with consultant microbiologist All doses of Co-amoxiclav suspension can be doubled in severe infection

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
ORBITAL CELLULITIS (discuss with ENT and Ophthalmology)	AS FOR PRE-SEPTAL CELLULITIS	AS FOR PRE-SEPTAL CELLULITIS	
ACUTE MASTOIDITIS (Discuss with ENT)	CEFTRIAXONE <u>1 month – 12 years and Body weight <50kg</u> 50mg/kg ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> 2 – 4 g ONCE DAILY If allergic to penicillin discuss with ENT and microbiology PLUS METRONIDAZOLE <u>1 month – 18 years of age</u> 7.5mg/kg/dose (max 500mg) TDS	CO-AMOXICLAV <u>1 month – 1 year</u> 0.25mls/kg TDS of 125/31 suspension <u>1 – 6 years</u> 5mls TDS of 125/31 suspension OR 0.25mls/kg TDS of 125/31 suspension <u>6 -12 years</u> 5mls TDS of 250/62 suspension OR 0.15mls/kg TDS of 250/62 suspension <u>12 – 18 years</u> One tablet 250/125 strength TDS increase to One tablet 500/125 strength TDS for severe infections If allergic to penicillin use CLARITHROMYCIN dose as for cervical lymphadenitis (see below) PLUS METRONIDAZOLE <u>1 month – 18 years of age</u> 7.5mg/kg/dose (max 400mg) TDS	All doses of Co-amoxiclav suspension can be doubled in severe infection

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
CERVICAL LYMPHADENITIS	<p>AMOXICILLIN <u>1 month – 18 years of age</u> 30mg/kg/dose (max 500mg) TDS Double dose in severe infection</p> <p>If secondary to skin infection ADD FLUCLOXACILLIN <u>1 month – 18 years of age</u> 25mg/kg/dose QDS (max 1g qds) Double dose in severe infections</p> <p>If allergic to penicillin use CLARITHROMYCIN <u>1 month – 12 years</u> 7.5mg/kg/dose BD <u>12-18 years</u> 500mg BD (If clinically appropriate give Clarithromycin orally)</p>	<p>AMOXICILLIN <u>1 month – 1 year of age</u> 62.5mg TDS <u>1 – 5 years of age</u> 125mg TDS <u>5 – 12 years of age</u> 250mg TDS <u>12 – 18 years of age</u> 500mg TDS All doses can be doubled for severe infection</p> <p>If allergic to penicillin use CLARITHROMYCIN <u>Child 1 month – 12 years of age</u> Body weight < 8kg : 7.5mg/kg BD “ “ 8 – 11kg : 62.5mg BD “ “ 12 – 19kg: 125mg BD “ “ 20 – 29kg: 187.5mg BD “ “ 30 – 40kg: 250mg BD</p> <p>Child 12 – 18 years of age Usual dose = 250mg BD Severe infection = 500mg BD</p>	
NECK SPACE ABSCESS	<p>CEFTRIAXONE <u>1 month – 12 years and Body weight <50kg</u> 50mg/kg ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> 2 – 4 g ONCE DAILY</p> <p>PLUS METRONIDAZOLE <u>All ages</u> 7.5mg/kg/dose (max 500mg) TDS</p>	<p>CO-AMOXICLAV <u>1 month – 1 year</u> 0.25mls/kg TDS of 125/31 suspension <u>1 – 6 years</u> 5mls TDS of 125/31 suspension OR 0.25mls/kg TDS of 125/31 suspension <u>6 -12 years</u> 5mls TDS of 250/62 suspension OR 0.15mls/kg TDS of 250/62 suspension <u>12 – 18 years</u> One tablet 250/125 strength TDS increase to One tablet 500/125 strength TDS for severe infections</p>	<p>If allergic to penicillin discuss with microbiology</p> <p>All doses of Co-amoxiclav suspension can be doubled in severe infection</p>

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
EPIGLOTTITIS	CEFTRIAXONE <u>1 month – 12 years and Body weight <50kg</u> 50mg/kg ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> 2 – 4 g ONCE DAILY	NOT INDICATED ACUTELY Discuss with Consultant Paediatrician/Microbiologist	If allergic to penicillin discuss with microbiology
BACTERIAL TRACHEITIS	FLUCLOXACILLIN <u>All ages</u> 50mg/kg/dose QDS (max 2g QDS) PLUS CEFTRIAXONE <u>1 month – 12 years and Body weight <50kg</u> 50mg/kg ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> 2 – 4 g ONCE DAILY	NOT INDICATED ACUTELY Discuss with Consultant Paediatrician/Microbiologist	
OTITIS MEDIA	CEFTRIAXONE <u>1 month – 12 years and Body weight <50kg</u> 50mg/kg ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> 2 – 4 g ONCE DAILY	AMOXICILLIN Doses as for tonsillitis If allergic to penicillin CLARITHROMYCIN Doses as for tonsillitis	Consider co-amoxiclav for H. Influenza isolates resistant to Amoxicillin If allergic to penicillin and require IV therapy discuss with ENT and microbiology
TONSILLITIS	BENZYL PENICILLIN <u>All ages</u> 25mg/kg/dose QDS (max 2.4g QDS) For severe infections 50mg/kg/dose every 4 – 6 hours (max 2.4g every 4 hours) If allergic to penicillin use CLARITHROMYCIN <u>1month – 12 years</u> : 7.5mg/kg/dose BD <u>12 – 18 years</u> : 500mg BD (If clinically appropriate give Clarithromycin orally)	AMOXICILLIN <u>Under 1 year</u> : 62.5mg tds <u>1-4 years</u> : 125 mg tds <u>5-12 years</u> : 250 mg tds <u>>12 years</u> : 250-500mg tds If allergic to penicillin CLARITHROMYCIN <u>Child 1 month – 12 years of age</u> Body weight < 8kg : 7.5mg/kg BD “ “ 8 – 11kg : 62.5mg BD “ “ 12 – 19kg: 125mg BD “ “ 20 – 29kg: 187.5mg BD “ “ 30 – 40kg: 250mg BD <u>Child 12 – 18 years of age</u> Usual dose = 250mg BD Severe infection = 500mg BD	Continue treatment for total of 10 days

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
PNEUMONIA (Community Acquired)	<u>Under 1 year</u> CEFTRIAXONE 50mg/kg/dose ONCE DAILY OR CLARITHROMYCIN 7.5mg/kg/dose BD (If clinically appropriate give Clarithromycin orally) <i>If Staphylococcal infection possible consider adding in IV</i> Flucloxacillin 12.5mg - 25mg/kg/dose QDS Dose can be doubled in severe infection, max 2g QDS <i>If evidence of Pneumococcal infection consider</i> BENZYL PENICILLIN as sole therapy (Discuss with consultant paediatrician or microbiologist) Usual dose = 25mg/kg/dose QDS Severe infection 50mg/kg/dose every 4 -6 hours (max 2.4g every 4 hours)	<u>1 month -1 year</u> AMOXICILLIN 125mg tds <i>If Staphylococcus suspected add</i> FLUCLOXACILLIN 62.5mg qds (doses can be doubled for severe infection) OR <i>If penicillin allergic use</i> CLARITHROMYCIN Body weight < 8kg : 7.5mg/kg BD “ “ 8 – 11kg : 62.5mg BD “ “ 12 – 19kg: 125mg BD	FOR PNEUMONIA FOLLOWING INFLUENZA PANDEMIC SEE SEPARATE GUIDELINES
	<u>Over 1 year</u> CEFTRIAXONE <u>1 – 12 yrs of age and Body weight <50kg</u> 50mg/kg/dose ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> Usual dose = 1g ONCE DAILY Severe infection = 2 – 4g ONCE DAILY OR <i>If allergic to penicillin</i> CLARITHROMYCIN <u>1month – 12 years :</u> 7.5mg/kg/dose BD <u>12 – 18 years:</u> 500mg BD (If clinically appropriate give Clarithromycin orally)	<u>Over 1 year</u> AMOXICILLIN <u>1-5 years:</u> 250mg tds <u>5-18 years:</u> 500mg tds OR CLARITHROMYCIN <u>Child 1 month – 12 years of age</u> Body weight < 8kg : 7.5mg/kg BD “ “ 8 – 11kg : 62.5mg BD “ “ 12 – 19kg: 125mg BD “ “ 20 – 29kg: 187.5mg BD “ “ 30 – 40kg: 250mg BD <u>Child 12 – 18 years of age</u> Usual dose = 250mg BD Severe infection = 500mg BD	FOR PNEUMONIA FOLLOWING INFLUENZA PANDEMIC SEE SEPARATE GUIDELINES
	POSSIBLE ATYPICAL ORGANISM Use CLARITHROMYCIN Doses as above in addition to other antibiotics (If clinically appropriate give Clarithromycin orally)	Use CLARITHROMYCIN Doses as above in addition to other antibiotics	

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
ENDOCARDITIS	DISCUSS WITH CONSULTANT PAEDIATRICIAN, PAEDIATRIC CARDIOLOGIST AND MICROBIOLOGIST		
SEPTIC ARTHRITIS/ OSTEOMYELITIS Always discuss with senior orthopaedic surgeon	<p>FLUCLOXACILLIN <u>All ages</u> 50 mg/kg/dose QDS (max 2g QDS)</p> <p>PLUS</p> <p>CEFTRIAZONE <u>1 – 12 yrs of age and Body weight <50kg</u> 50mg/kg/dose ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> Usual dose = 1g ONCE DAILY Severe infection = 2 – 4g ONCE DAILY</p> <p>Consider adding in <u>oral</u> Fusidic acid after discussion with Consultant Paediatrician/Microbiologist/Orthopaedic surgeon</p>	<p>If of unknown cause FLUCLOXACILLIN <u>1month – 2 years of age</u> 125mg QDS <u>2 – 10 years of age</u> 250mg QDS <u>10 – 18 years of age</u> 500mg QDS</p> <p>PLUS</p> <p>AMOXICILLIN <u>Under 1 year</u> : 125mg TDS <u>1 – 5 years</u> : 250mg TDS <u>5 – 18 years</u>: 500mg TDS</p> <p>PLUS</p> <p>FUSIDIC ACID <u>Doses for suspension(Fusidic acid 250mg/5ml)</u> <u>1 month – 1 year of age</u> : 15mg/kg/dose TDS <u>1 – 5 years of age</u>: 250mg TDS <u>5 – 12 years of age</u>: 500mg TDS <u>12 – 18 years of age</u>: 750mg TDS</p> <p><u>Dose for tablets (sodium fusidate 250mg /tablet)</u> <u>12 – 18 years of age</u> 500mg TDS</p> <p><u>If due to staphylococcus</u> FLUCOXACILLIN PLUS FUSIDIC ACID Doses as above</p>	<p>If allergic to penicillin discuss with microbiology</p> <p>Dose for tablets can be doubled in severe infection but requires close monitoring of LFTs and renal function. Dose should be reduced to 500mg TDS as soon as is clinically possible</p>

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
URINARY TRACT INFECTION	<p>CEFTRIAXONE <u>1 – 12 yrs of age and Body weight <50kg</u> 50mg/kg/dose ONCE DAILY <u>12 – 18 years of age OR <12yrs and Body weight >50kg</u> Usual dose = 1g ONCE DAILY Severe infection = 2 – 4g ONCE DAILY</p> <p>OR</p> <p>GENTAMICIN <u>>1 month of age</u> 7mg/kg/dose ONCE DAILY (Monitor levels)</p> <p>GENTAMICIN LEVELS MUST BE MONITORED</p>	<p><u>CYSTITIS</u> TRIMETHOPRIM <u>1 month – 18 years:</u> 4 mg/kg/dose BD (max 200mg BD)</p> <p>OR</p> <p>NITROFURANTION <u>3 months – 12 years of age</u> – 750 micrograms/kg/dose QDS <u>12 – 18 years of age</u> - 50mg QDS (100mg QDS in severe chronic recurrent infections)</p> <p><u>IF PYREXIAL, LOIN PAIN BUT OTHERWISE WELL</u></p> <p>TRIMETHOPRIM Dose as above</p> <p>OR</p> <p>If known allergy or previous resistance to Trimethoprim</p> <p>CO-AMOXICLAV <u>1 month – 1 year</u> 0.25mls/kg TDS of 125/31 suspension <u>1 – 6 years</u> 5mls TDS of 125/31 suspension OR 0.25mls/kg TDS of 125/31 suspension <u>6 -12 years</u> 5mls TDS of 250/62 suspension OR 0.15mls/kg TDS of 250/62 suspension <u>12 – 18 years</u> One tablet 250/125 strength TDS increase to One tablet 500/125 strength TDS for severe infections</p>	<p>FOR CYSTITIS NICE RECOMMENDS TREATING FOR THREE DAYS</p> <p>All doses of Co-amoxiclav suspension can be doubled in severe infection If allergic to Penicillin discuss with Consultant Paediatrician or Microbiologist Review antibiotic sensitivities after 48 hours. In child with history of recurrent UTI consider previous sensitivities in the absence of laboratory sensitivities e.g. no urine specimen.</p>

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
INFECTED ECZEMA (Always discuss with Consultant Dermatologist)	FLUCLOXACILLIN <u>All ages</u> 25mg/kg/dose QDS Dose may be doubled in serious infection (max 2g QDS) PLUS BENZYL PENICILLIN <u>All ages</u> 25mg/kg/dose QDS (max 2.4g QDS) Dose may be doubled in severe infection	FLUCLOXACILLIN <u>1 month – 2 years of age</u> 125mg QDS <u>2 – 10 years of age</u> 250mg QDS <u>10 – 18 years of age</u> 500mg QDS PLUS PHENOXYMETHYL PENICILLIN (PENICILLIN V) <u>1 month – 1 year</u> 62.5mg QDS <u>1 – 6 years</u> 125mg QDS <u>6 – 12 years</u> 250mg QDS Doses can be doubled in severe infections	Initiate treatment with both antibiotics pending swab results Discuss with Consultant Paediatrician and Dermatologist for appropriateness of IV therapy and timing of switch to oral therapy If allergic to penicillin discuss with Consultant Dermatologist and Microbiologist
SCALDED SKIN SYNDROME (Always discuss with Consultant Dermatologist)	FLUCLOXACILLIN <u>All ages</u> 25mg/kg/dose QDS Dose may be doubled in serious infection	DISCUSS WITH CONSULTANT PAEDIATRICIAN OR DERMATOLOGIST REGARDING TIMING OR SWITCH TO ORAL FLUCLOXACILLIN – DOSES AS FOR INFECTED ECZEMA ABOVE.	If allergic to penicillin discuss with Consultant Dermatologist and Microbiologist

INFECTION	IV THERAPY	ORAL SWITCH THERAPY	COMMENTS
IMPETIGO (Always discuss with Consultant Dermatologist)	Rarely needed	As for infected eczema above	As above
SUSPECTED PERITONITIS IN SURGICAL PATIENTS	AMOXICILLIN <u>1 month – 18 years</u> 20 – 30mg/kg/dose (max 500mg) TDS Double dose in severe infection PLUS <u>GENTAMICIN</u> <u>Over 1 month of age</u> 7mg/kg/dose ONCE DAILY PLUS METRONIDAZOLE <u>1 month – 18 years</u> 7.5mg/kg/dose (max 500mg) TDS	Discuss with Consultant Paediatrician, Surgeon and Microbiologist	<p>If allergic to penicillin discuss with Consultant Microbiologist</p> <p>GENTAMICIN LEVELS MUST BE MONITORED</p>
PELVIC INFLAMMATORY DISEASE (PID)	DISCUSS WITH CONSULTANT PAEDIATRICIAN, GYNAECOLOGIST AND MICROBIOLOGIST		
ACUTE DIARRHOEA	NOT INDICATED	NOT INDICATED	Discuss with infection control or microbiology
CLOSTRIDIUM DIFFICILE	DISCUSS WITH MICROBIOLOGY	AS FOR IV	
MRSA	DISCUSS WITH MICROBIOLOGY	DISCUSS WITH MICROBIOLOGY	

Prepared by: Paediatric Antibiotic Group, Gloucestershire Hospitals NHS Foundation Trust

Date: July 2007

References: BNF for Children 2006

Review Date: July 2008