ANTIBIOTIC PRESCRIBING WITHIN THE PAEDIATRIC DIRECTORATE

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Key amendments

Date	Amendment	Approved by:
11/10/17	New section for neonatal sepsis reflecting BNFC cefotaxime dosing Added (facial) to periorbital cellulitis Added Prescribing of Antibiotics paragraph	
June 2018	Document extended for 3 months as per TLG recommendation	TLG
August 2018	Document extended for three months whilst approval is complete	Dr T Dawson
October 2018	Document approved with no amendments	Paediatric Clinical Governance
26th March 2021	Approved with no amendments	Paediatric Guideline Review Day Meeting
9th Feb 24	Approved with no amendments	Paediatric Guideline Review Day Meeting

INTRODUCTION

This guideline is for the use of all staff treating paediatric patients with suspected or confirmed infections to guide treatment with appropriate antibiotics based on local microbiological data.

THIS GUIDELINE IS FOR USE BY THE FOLLOWING STAFF GROUPS :

All staff prescribing antibiotics for children.

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INTRODUCTION

This guideline is an aid to all staff prescribing antibiotics for children with suspected or proven infections. Treatment decisions should be based on sensitivities from microbiological specimens. For this reason, it is best practice to obtain microbiological samples prior to commencing antibiotic therapy. Antibiotics should not be unduly delayed in severe infection to allow for collection of specimens, however it should be possible to collect a blood culture in most cases. Antibiotics are often commenced before these sensitivities are available. In these instances, the choice of antibiotic should be based upon the likely pathogens and local resistance data. Previous culture results should also be reviewed on ICE to help determine antibiotic choice.

This does not provide an exhaustive list of all conditions or antibiotics which may be used but is designed as an aid to the clinical team caring for the patient.

If the patient is under one month of age please refer to the BNFC and neonatal formulary as the dosage and frequency of administration of antibiotics for this group may be different.

Duration of treatment has been suggested for some conditions when insufficient or prolonged courses may promote antibiotic resistance.

The guideline also aims to limit the use of antibiotics to those children who will benefit from them. If a condition is not included in the list below, this means that they do not **routinely** need antibiotics. If there is any doubt, please discuss with a senior colleague.

If the patient is allergic to the recommended first-line antibiotic choices, please discuss with the on-call microbiologist. There is always a senior microbiologist available for advice.

Only doctors of middle grade and above should be contacting the microbiologist.

TIMING OF ANTIBIOTICS

In patients who are septic or with suspected febrile neutropenia, it is important to give the first dose of IV antibiotics as soon as possible and certainly within an hour of diagnosis. Do not wait for the full blood count result before administering antibiotics in suspected febrile neutropenia.

PRESCRIBING OF ANTIBIOTICS

When prescribing antibiotics it is important to document clearly in the notes the indication for antibiotics and the review date. The review date should also be documented on the drug chart. This makes it clear to all staff the indication and duration of antibiotics expected. All patients on intravenous antibiotics should have their prescription reviewed within 72 hours of initiation by a senior paediatrician and one of the following decisions documented:

stop antibiotics,

de-escalate to a more narrow spectrum IV agent based on culture results,

continue same IV therapy with new review date,

escalate to broader spectrum agent with new review date,

convert to outpatient parenteral antimicrobial therapy with new review date

or switch to an oral preparation for a specified duration.

DETAILS OF GUIDELINE

Infection	Initial Antibiotic	Dose (mg/Kg)	Route	Frequency	Comments	Duration (days)
Cellulitis (non-facial) If poor response to IV flucloxacillin or penicillin-allergic	Flucloxacillin Clindamycin	As per BNFC 3-6	PO IV	QDS QDS	Consider 50 mg/kg/ dose QDS IV if systemically unwell or failed oral treatment. Maximum 2 g / dose Clindamycin is well-absorbed orally; switch to oral preparation as soon as clinical condition permits Maximum 450 mg QDS.	5-7
Periorbital cellulitis (Pre-septal) Or **Facial Cellulitis**	Co-amoxiclav Cefotaxime	As per BNFC 50	PO IV	TDS (BD if < 3months) TDS	See Trust Guideline WHAT-PAE-062 If no improvement after 24 hours change to cefotaxime	7 – 10
Orbital cellulitis	Cefotaxime +/- metronidazole	50 7.5	IV IV	QDS TDS	See Trust Guideline WHAT-PAE-069 Metronidazole if no improvement in 12-18 hours	7 – 14 (consider switching to oral co-amoxiclav after 48 hours) NB: metronidazole well-absorbed orally
Meningitis <3 months	Cefotaxime **AND** Amoxicillin	50 50	IV IV	QDS QDS	Consider aciclovir if concern re disseminated HSV infection or HSV encephalitis	Depends upon causative organism – see NICE guideline CG102
Meningitis >3 months	Cefotaxime	50	IV	QDS (max 12 g daily)	Consider Dexamethasone – see NICE guideline CG102 for further details Consider change to ceftriaxone to facilitate discharge If cefotaxime is used for the entire duration of treatment, a single dose of ciprofloxacin should be given to eradicate meningococcal nasopharyngeal carriage.	Depends upon causative organism – see NICE guideline CG102

Infection	Initial Antibiotic	Dose (mg/Kg)	Route	Frequency	Comments	Duration (days)
Influenza	Oseltamivir	75 mg doses (>40 kg or >12 years) 60 mg doses (23-40 kg) 45mg doses (15-23 kg) 30 mg doses (<15 kg) 3 mg/kg/dose 0-12 months 1 mg/kg/dose (<36 weeks corrected gestational age)	PO PO PO PO PO PO	BD BD BD BD BD BD	See PHE treatment Guidance https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/648758/PHE_guidance_antivirals_influenza_201718_FINAL.pdf See PHE treatment guidance above for post exposure prophylaxis. Note prophylaxis is once daily for 10 days. At risk groups Page 6, Doses Page 19.	5 5 5 5 5 5
Epiglottitis / bacterial tracheitis	Ceftriaxone	50	IV	OD	Seek urgent senior support. For patients >12 years use a dose of 2 to 4 grams daily	7
Neonatal sepsis (first line) (neonatal unit)	Benzylpenicillin **AND** Gentamicin	25-50 5	IV IV	Neonatal formulary for age/ gestation	Gentamicin on front of drug chart (first dose) See Guidelines GBS WAHT–NEO-001 & Gentamicin WHAT-NEO-050	Review at 36 hours – stop if well and negative blood culture.
Neonatal sepsis (second line) (neonatal unit)	Flucloxacillin **AND** Gentamicin	25-50 5	IV IV	Neonatal formulary For age / gestion	Consider vancomycin (to replace flucloxacillin) if central access in situ See Guidelines GBS WAHT–NEO-001 & Gentamicin WHAT-NEO-050	Review at 36 hours – stop if well and negative blood culture

Infection	Initial Antibiotic	Dose (mg/Kg)	Route	Frequency	Comments	Duration (days)
Neonatal Sepsis (Paediatric Ward)	Cefotaxime **AND** Amoxicillin	50 50	IV IV	TDS See comments TDS	**Note regarding cefotaxime:** < 1 week doses = 12 hourly 1-3 weeks doses = 8hourly >3 weeks doses = 6 hourly QDS **Note regarding amoxicillin:** < 1 week dose = 12 hourly > 1 week dose = 8 hourly	5 (consider stopping at 48 hours if well and blood cultures negative)
Febrile Neutropenia (see local guideline)	Piperacillin/ Tazobactam	90	IV	QDS	Haemodynamically stable. Maximum 4.5g Vancomycin if line infection – see local guideline	Review at 48 hours
	Meropenem	20	IV	TDS	Haemodynamically unstable	Review at 48 hours
Otitis Media	None Amoxicillin **or** Clarithromycin	 15 As per BNFC	 PO PO	 TDS BD	Symptoms for <3/7 Symptoms for >3/7 Symptoms for >3/7	 5 days 5 days
Peritonitis	Cefotaxime **+/-** Metronidazole	50 7.5	IV IV	TDS-QDS TDS	Urgent surgical r/v Note BD if age < 2 months	Review at 5 days (consider switching to oral co-amoxiclav after 48 hours) NB: metronidazole well-absorbed orally
Pneumonia	Amoxicillin Consider Clarithromycin	As per BNFC As per BNFC	PO PO	TDS BD	Non-toxic, no respiratory distress. Add clarithromycin if atypical/no response > 11 years 250 mg BD	5 5
	Co-amoxiclav Clarithromycin	30 As per BNFC	IV PO	TDS BD	If toxic/unwell with signs of respiratory distress	5-7 (consider PO after 48 hours if stable) 5-7
Suspected Sepsis >1 month of age and <3 months (not developing on neonatal unit)	Cefotaxime **AND** Amoxicillin	50 50	IV IV	QDS TDS	No focus. 1st dose within 1 hour. Remember Sepsis Six.	5 (consider stopping at 48 hours if well and blood cultures negative) 5

Infection	Initial Antibiotic	Dose (mg/Kg)	Route	Frequency	Comments	Duration (days)
Sepsis >3 months	Cefotaxime	50	IV	QDS	No focus 1st dose within 1 hour. Remember Sepsis Six.	5 (consider stopping at 48 hours if well and blood cultures negative)
Septic arthritis/ osteomyelitis <5 years	Cefuroxime	50	IV	QDS	Urgent T&O review	Discuss with T&O/micro
Septic arthritis/ osteomyelitis >5 years	Flucloxacillin	50	IV	QDS	Urgent T&O review	Discuss with T&O/micro
Sinusitis	None Amoxicillin	 As per BNFC	 PO	 TDS	Symptoms <10/7 Symptoms >10/7	 10
Suppurative cervical lymphadenopathy	Co-amoxiclav	30	IV	TDS	Consider Mycobacteria	7 (consider PO after 48 hours if stable)
Tonsillitis	None				If patient well. Perform throat swab to check no growth	
	Benzylpenicillin	25-50	IV	QDS	Systemically unwell. Consider adding clindamycin, if toxic.	10 (consider PO phenoxymethlypenicllin (penicillin V) after 48 hours if stable)
	Amoxicillin	As per BNFC	PO	TDS	Group A Strep	10
UTI - Upper	Cefotaxime	50	IV	TDS		7 (consider PO co-amoxiclav after 48 hours if stable)
UTI - lower	Trimethoprim	As per BNFC	PO	BD	Confirm infection by sending MC&S prior to starting treatment and dip stick	3 (girls with normal urinary tract anatomy) 7 (boys or children with abnormal renal tract anatomy)

MONITORING TOOL

Monitoring will be carried by regular audit of prescribing practice against the guidelines.

STANDARDS	%	CLINICAL EXCEPTIONS
Audit by pharmacist		
Antibiotic Prescriptions 12 monthly	95	
IV to Oral switch 12 monthly	95	
Adherence to treatment prescribing Guidelines 3 monthly	95	
Sepsis audit 12 monthly	95	

REFERENCES

Paediatric Guidelines. Heart of England NHS Foundation Trust. 2012.

NICE Guidline: Urinary tract infection in children.
http://guidance.nice.org.uk/CG54

NICE Guideline: Feverish illness in children.
http://guidance.nice.org.uk/CG47

NICE Guideline: Meningitis (bacterial) and meningococcal septicaemia in under 16s: recognition, diagnosis and management.
https://www.nice.org.uk/guidance/CG102

Community acquired pneumonia in children: What's new? Thomson A, Harris M. *Thorax* 2011; 66: 927-928

Kerrison C, Riordan FAI. How long should we treat this infection for? *Archives of Disease in Childhood, Education and Practice* 2013; 98: 136-140

CONTRIBUTION LIST

Key individuals involved in developing the document

Name	Designation
Dr Tom C Dawson	Clinical Director/Consultant Paediatrician
Dr H Morton	Consultant Microbiologist
Sarah Scott	Clinical Pharmacist

Circulated to the following individuals for comments

Name	Designation
Dr N Ahmad	Consultant Paediatrician
Dr M Ahmed	Consultant Paediatrician
Dr T Bindal	Consultant Paediatrician
Dr D Castling	Consultant Paediatrician
Dr A Short	Consultant Paediatrician
Dr A Gallagher	Consultant Paediatrician
Dr M Hanlon	Consultant Paediatrician
Dr L Harry	Consultant Paediatrician
Dr J West	Consultant Paediatrician
Dr B Kamalarajan	Consultant Paediatrician
Dr K Nathavitharana	Consultant Paediatrician
Dr C Onyon	Consultant Paediatrician
Dr J E Scanlon	Consultant Paediatrician
Dr P Van der Velde	Consultant Paediatrician
Dr V Weckemann	Consultant Paediatrician
Dr H Morton	Consultant Microbiologist
D Picken	Matron, Paediatrics
N Pegg	Ward Manager, Riverbank
L Greenway	Ward Manager, Ward 1
S Courts	Orchard Services Manager
M Chippendale	Advanced Nurse Practitioner
A Gerrard	Antimicrobial Stewardship Pharmacist

Circulated to the chair of the following committees / groups for comments

Name	Committee / group
