



GUIDELINE	
Enteral Infections: Paediatric Empiric Guidelines	
Scope (Staff):	Medical, Nursing and Pharmacy
Scope (Area):	Perth Children's Hospital (PCH)
Child Safe Organisation Statement of Commitment	
<p>The Child and Adolescent Health Service (CAHS) commits to being a child safe organisation by meeting the National Child Safe Principles and National Child Safe Standards. This is a commitment to a strong culture supported by robust policies and procedures to ensure the safety and wellbeing of children at CAHS.</p>	

This document should be read in conjunction with this [DISCLAIMER](#)

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES
		Standard Protocol
<ul style="list-style-type: none"> Consideration should be given to the appropriate exclusion periods for patients and carers; refer to: Guidelines for exclusion of people with enteric infections and their contacts from work, school and child care settings for further information <ul style="list-style-type: none"> For all below infections, rehydration is the mainstay of therapy 		
Mild <i>Salmonella</i> enteritis (Non-typhoidal)	Nil	<i>Salmonella</i> enteritis is self-limiting in many patients and no therapy is indicated for mild cases in children ≥ 3 months of age.
Uncomplicated <i>Salmonella</i> enteritis (Non-typhoidal)	5 days	<p><i>Salmonella</i> enteritis is self-limiting in many patients.</p> <p>Antibiotic therapy is recommended in:</p> <ul style="list-style-type: none"> Neonates and children < 3 months Severe diarrhoea in patients of any age Invasive disease, sepsis or bacteraemia (see below for IV recommendation) Patients with prosthetic vascular grafts or haemoglobinopathies Immunocompromised patients <p>In febrile patients < 12 months of age, a blood culture +/- CSF is strongly recommended.</p> <p>For uncomplicated <i>Salmonella</i> enteritis use:</p> <p>Child ≥ 1 month: Oral azithromycin 20mg/kg/dose (to a maximum of 1 gram) on day one, followed by 10mg/kg/dose (to a maximum of 500mg) once daily for a further 4 days.</p> <p>For dosing in Neonates refer to Infectious Diseases.</p>

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES
		Standard Protocol
Complicated <i>Salmonella</i> enteritis (Non-typhoidal)	5 to 7 days	<p>IV therapy is recommended if:</p> <ul style="list-style-type: none"> • Oral therapy not tolerated • Neonates and children <3 months • Invasive disease, sepsis or bacteraemia (including endovascular infection, meningitis and osteoarticular infection) <p>In febrile patients <12 months of age, a blood culture +/- CSF is strongly recommended.</p> <p>Child ≥1 month: IV ceftriaxone 50mg/kg/dose (to a maximum of 1 gram) 12 hourly.</p> <p>An Infectious Diseases referral is recommended for neonates and/or any patient with invasive disease, endovascular or osteoarticular infection</p>
Enteric fever – typhoid and paratyphoid (<i>Salmonella</i> – typhi or paratyphi) Children < 1 year	7-10 days (all IV)	<p>In children < 3 months of age CSF should be collected to exclude neurological disease.</p> <p>Child < 1 month: IV cefotaxime: dosing as per neonatal guidelines</p> <p>Child ≥1 month: IV ceftriaxone 50mg/kg/dose (to a maximum of 1 gram) 12 hourly.</p> <p>For patients with severe disease who have travelled to Pakistan, consider empiric use of a carbapenem to cover XDR typhoid. Discuss with Infectious Diseases team.</p> <p>Duration of IV therapy (NO oral step down):</p> <p>Children <3 months old: 10 days</p> <p>Children ≥3 months and <12 months: 7 days</p>
Enteric fever – typhoid and paratyphoid (<i>Salmonella</i> – typhi or paratyphi) Children ≥ 1 year	7-10 days (IV and oral)	<p>IV ceftriaxone 50mg/kg/dose (to a maximum of 1 gram) 12 hourly.</p> <p>Step down to oral azithromycin 20mg/kg/dose (to a maximum of 1 gram) once daily if proven susceptible.</p> <p>For patients with severe disease who have travelled to Pakistan, consider empiric use of a carbapenem to cover XDR typhoid. Discuss with Infectious Diseases team.</p>

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES
		Standard Protocol
Mild <i>Shigella</i> enteritis	5 days	Due to high resistance rates empiric therapy should not be commenced except in severe disease or immunocompromised patients. Await results of susceptibility testing before starting oral treatment. In selected patient groups with mild disease: <ul style="list-style-type: none"> • Children < 6 years • Food/healthcare/childcare workers • People working or living in aged care facilities Child ≥1 month: Oral co-trimoxazole 4mg/kg/dose of trimETHOPRIM component (to a maximum of 160mg) 12 hourly may be considered as an empiric agent. This should be further guided by results of susceptibility testing or discussion with Infectious Diseases or Clinical Microbiology
Severe disease or immune-compromised patient <i>Shigella</i> enteritis	5 days	In severe disease or immunocompromised patients: Child ≥1 month: IV ceftriaxone 50mg/kg/dose (to a maximum of 2grams) once daily while awaiting results of susceptibility testing.
<i>Campylobacter</i> enteritis	3 days	<i>Campylobacter</i> enteritis is self-limiting in many patients. Consider antibiotic therapy in infants, immunocompromised children or if enteritis is severe or prolonged. Child ≥1 month: Oral azithromycin 10mg/kg/dose (to a maximum of 500mg) once daily. OR Child ≥1 month: Oral ciprofloxacin ^b 12.5mg/kg/dose (to a maximum of 500mg) twice daily
<i>Giardiasis</i>	3 - 5 days	Consider treatment in symptomatic patients. Child ≥1 month: Oral metronidazole 30mg/kg/dose (to a maximum of 2 grams) once daily for 3 days. OR Child ≥1 month: Oral metronidazole 10mg/kg/dose (to a maximum of 400mg) three times a day for 5 days.

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<p>Mild to moderate <i>Clostridium difficile</i></p>	<p>10 days</p>	<ul style="list-style-type: none"> Asymptomatic colonisation of young infants is common. Treatment of children < 2 years old should be discussed with Infectious Diseases or Clinical Microbiology services. Precipitating factors (e.g. broad-spectrum antibiotics such as 3rd generation cephalosporins, carbapenems or fluoroquinolones), should be modified or ceased, where possible. Proton pump inhibitors (e.g. esomeprazole) should be avoided where possible. <p>In children with mild disease, stopping antibiotic therapy is usually sufficient to resolve symptoms.</p> <p>Child ≥1 month: Oral metronidazole 10mg/kg/dose (to a maximum of 400mg) 8 hourly.</p>
<p>Severe or recurrent <i>Clostridium difficile</i></p>	<p>Refer to Oral Vancomycin monograph</p>	<ul style="list-style-type: none"> Treatment of children < 2 years old should be discussed with Infectious Diseases or Clinical Microbiology services. Alternative causes (e.g. rotavirus or norovirus) should be excluded prior to treatment Precipitating factors (e.g. broad-spectrum antibiotics such as 3rd generation cephalosporins, carbapenems or fluoroquinolones), should be modified or ceased, where possible. Proton pump inhibitors (e.g. esomeprazole) should be avoided where possible. <p>Severe disease includes patients with:</p> <ul style="list-style-type: none"> fever >38.5°C haemodynamic instability severe abdominal pain (or evidence of bowel perforation) ileus or toxic megacolon white cell count >15 x 10⁹/L and <20% neutrophils elevated creatinine elevated lactate low albumin <p>Discuss all severe or recurrent patients with Infectious Diseases or Clinical Microbiology services.</p> <p>Child ≥ 2 years of age: Oral vancomycin^c 10mg/kg/dose (to a maximum of 125mg) four times a day.</p> <p>In complicated patients (e.g. hypotension, shock or ileus).</p> <p>ADD</p> <p>Child ≥1 month: IV metronidazole 12.5mg/kg/dose (to a maximum of 500mg) 8 hourly.</p>

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<i>Helicobacter pylori</i>	7 days	<p><i>Helicobacter pylori</i> infection is less common in children than in adults, with a prevalence of <5%. Children should only be tested for <i>H. pylori</i> when their symptoms are strongly suggestive and should be confirmed with endoscopy.</p> <p>Consider</p> <p>Child ≥1 month: Oral amoxicillin 25mg/kg/dose (to a maximum of 1 gram) twice daily.</p> <p>AND</p> <p>Child ≥1 month: Oral clarithromycin 7.5mg/kg/dose (to a maximum of 500mg) twice daily.</p> <p>AND</p> <p>a proton pump inhibitor (e.g. omeprazole or esomeprazole)</p> <p>In high or low risk penicillin allergy use oral metronidazole 10mg/kg/dose (to a maximum of 400mg) twice daily instead of amoxicillin. Alternatively, consider amoxicillin oral challenge for patients with low risk penicillin allergy in discussion with immunology</p>
Perianal and fistulising disease in Crohn's disease	variable	<p>Child ≥1 month: Oral metronidazole 10mg/kg/dose (to a maximum of 400mg) twice daily.</p> <p>OR</p> <p>If refractory to metronidazole:</p> <p>Child ≥1 month: Oral ciprofloxacin^b 12.5mg/kg/dose (to a maximum of 500mg) twice daily.</p>

a) Refer to the [ChAMP Beta-lactam Allergy Guideline](#):

- Low risk allergy: a delayed rash (>1hr after initial exposure) without mucosal or systemic involvement (without respiratory distress and/or cardiovascular compromise).
- High risk allergy: an immediate rash (<1hr after exposure); anaphylaxis; severe cutaneous adverse reaction {e.g. Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) and Stevens – Johnson syndrome (SJS) / Toxic Epidermal Necrolysis (TEN)} or other severe systemic reaction.

b) Oral [ciprofloxacin](#) should only be used in those patients able to swallow tablets as ciprofloxacin is extremely unpalatable. Doses should be rounded to the nearest portion of a tablet. (Tablet strengths are 250mg and 500mg).

c) [Oral vancomycin](#) – IV solution may be administered orally in those unable to swallow capsules or for doses <125mg.

Related CAHS internal policies, procedures and guidelines
Antimicrobial Stewardship Policy
ChAMP Empiric Guidelines and Monographs

References and related external legislation, policies, and guidelines (if required)

1. Antibiotic Writing Group. Therapeutic Guidelines - Antibiotic. West Melbourne: Therapeutic Guidelines Ltd; 2014. Available from: <http://online.tg.org.au.pklibresources.health.wa.gov.au/ip/>.
2. Committee on Infectious Diseases, editor. Red Book 2015. Illinois: American Academy of Pediatrics; 2015.
3. Salmonellosis [Internet]. BMJ Publishing Group 2017 [cited 16/07/2020]. Available from: <https://bestpractice-bmj-com.pklibresources.health.wa.gov.au/topics/en-gb/817>.
4. Trubiano JA, Cheng AC, Korman TM, Roder C, Campbell A, May MLA, et al. Australasian Society of Infectious Diseases updated guidelines for the management of Clostridium difficile infection in adults and children in Australia and New Zealand. Internal Medicine Journal. 2016;46(4):479-93.
5. Wen S, Best E, Nourse C. Non-typhoidal Salmonella infections in children: Review of literature and recommendations for management Journal of Paediatric and Child Health. 2017;53:936-41.

Useful resources (including related forms)

[Guidelines for exclusion of people with enteric infections and their contacts from work, school and childcare settings.](#)

This document can be made available in alternative formats on request for a person with a disability.

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