GUIDELINE	
Protracted Bacterial Bronchitis, Chronic Suppurative Lung Disease and Bronchiectasis – Paediatric Empiric Guideline	
Scope (Staff):	Clinical Staff – Medical, Nursing, Pharmacy
Scope (Area):	Perth Children's Hospital (PCH)
Child Safe Organisation Statement of Commitment 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.	

This document should be read in conjunction with this DISCLAIMER

- These are paediatric empiric guidelines.
- Treatment in this group of patients is also guided by previous microbiology results and previous response to treatment.
- When not using the empiric guidelines due to either known microbiology or previous treatment response, please indicate this on the medication chart with reason.
- All patients should receive the annual influenza vaccine
- Please contact the Infectious Diseases Department or a Clinical Microbiologist to discuss treatment at any stage.

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES		Monitoring
		Patient NOT colonised with *Pseudomonas aeruginosa*	**Patient colonised with *Pseudomonas aeruginosa***	
Mild bronchiectasis and its precursors (initial presentation)	2-6 weeks	Oral amoxicillin/clavulanic acid 25mg/kg/dose (based on amoxicillin component - to a maximum of 875mg amoxicillin) given 12 hourly ***OR*** Oral cefuroxime: ≥ 3 months: 15mg/kg/dose (to a maximum of 500mg) ***OR*** For children ≥ 8 years old: Oral doxycycline 4mg/kg/dose (to a maximum of 200mg) for the first dose, then 2mg/kg/dose (to a maximum of 100mg) once daily thereafter.	Inhaled tobramycin: Children <6 years old 80mg twice daily via nebuliser for 2-4 weeks Children ≥6 years old: 300mg inhaled twice daily for 2-4 weeks ***OR*** Oral ciprofloxcin 15 -20mg/kg/dose (to a maximum of 750mg) 12 hourly rounded down to the nearest portion of a tablet.	For children on courses of oral antibiotics beyond 2 weeks of therapy including either a beta lactam or fluoroquinolone antibiotic, recommend Full Blood Count (FBC), Electrolytes, Urea and Creatinine (EUC), and Liver Function Tests (LFTs) be done monthly. If the cough persists beyond 4-6 weeks despite treatment, escalation of treatment +/- additional investigations may be indicated
Moderate to severe exacerbation of Non-Cystic Fibrosis (CF)	Up to 14 days	For further information on the management of bronchiectasis, refer to Thoracic Society of Australia and New Zealand Guidelines: Chronic Suppurative Lung Disease and Bronchiectasis in children and adults in Australia and New Zealand		

<table>
<tr><th rowspan="2">CLINICAL SCENARIO</th><th rowspan="2">Usual duration</th><th colspan="2">DRUGS/DOSES</th><th rowspan="2">Monitoring</th></tr>
<tr><th>Patient NOT colonised with Pseudomonas aeruginosa</th><th>Patient colonised with Pseudomonas aeruginosa</th></tr>
<tr><td rowspan="2">bronchiectasis
OR
Moderate to severe exacerbation of chronic suppurative lung disease
OR
Mild to moderate exacerbation of non-CF bronchiectasis with failure to respond to oral therapy.</td><td rowspan="2"></td><td>IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily

OR

Child >3 months old:
IV amoxicillin/clavulanic acid 25mg/kg/dose (based on amoxicillin component - to a maximum of 1000mg amoxicillin) given 8 hourly</td><td>IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly

Consideration may be given to continuous infusions of piperacillin/tazobactam (300mg/kg/day to a maximum of 12 grams piperacillin component in 24 hours) in suitable patients via Hospital in the Home (HiTH).</td><td>Weekly FBC, EUC and LFTs. If no port is available or peripherally inserted central catheter (PICC) line does not bleed back – contact treating team.</td></tr>
<tr><td colspan="3">For oral step down options refer to mild bronchiectasis and its precursors (initial presentation) listed above.
Course can be completed earlier than 14 days if a number of patient focused outcomes are met, including:
1) Improved cough character (wet to dry or cessation of cough)
2) Sputum volume and purulence return to baseline
3) General well-being and quality of life, return to baseline
4) Reduction in markers of systemic inflammation (e.g. C Reactive Protein (CRP))</td></tr>
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CLINICAL SCENARIO	Usual duration	DRUGS/DOSES		Monitoring
		Patient NOT colonised with *Pseudomonas aeruginosa*	**Patient colonised with *Pseudomonas aeruginosa***	
Frequent exacerbations (≥3 exacerbations or ≥2 hospitalisations in the preceding 12 months)	Up to 12 months	**CONSIDER** Oral azithromycin as an anti-inflammatory agent: Child ≥1 – 6 years: 10mg/kg/dose three times a week Child ≥ 6 years: 25-40kg: 250mg three times a week Child ≥ 6 years: ≥ 40kg: 500mg three times a week **OR** Children ≥1 year: 30mg/kg/dose (to a maximum of 1.5gram) once a week Exclude non-tuberculosis mycobacterial infection prior to initiation.		Clinical review to confirm benefit of azithromycin use e.g. lung function testing. FBC, EUC and LFTs after 2 – 4 weeks and if normal, no further monitoring unless clinically indicated.

Related internal policies, procedures and guidelines
Antimicrobial Stewardship Policy (PCH Website)
ChAMP Empiric Guidelines

References

1. Bronchiectasis [Internet]. BMJ Best Practice. 2020 [cited 09/04/2020]. Available from: http://bestpractice.bmj.com.pklibresources.health.wa.gov.au/best-practice/monograph/1007.html
2. Antibiotic Writing Group. Therapeutic Guidelines - Antibiotic. West Melbourne: Therapeutic Guidelines Ltd; 2019. Available from: http://online.tg.org.au.pklibresources.health.wa.gov.au/ip/.
3. Thoracic Society of Australia and New Zealand. Chronic Suppurative Lung Disease and Bronchiectasis: Clinical Practice Guideline. Sydney 2014.
4. Chang, A. B., et al. (2017). "Management of Children With Chronic Wet Cough and Protracted Bacterial Bronchitis: CHEST Guideline and Expert Panel Report." Chest **151**(4): 884-890.
5. Wilms E, Touw D, Heijerman HM, van der Ent C. Azithromycin maintenance therapy in patients with cystic fibrosis: A dose advice based on a review of pharmacokinetics, efficacy, and side effects. Pediatric Pulmonology. 2012;47(7):658-65.

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