Antibiotic Stewardship Programme in Primary Care Guidance Notes
Acute Exacerbations of Chronic Obstructive Pulmonary Disease

1. Acute exacerbations of COPD can be precipitated by several factors. The most common causes are respiratory tract infections.

2. Usual causative pathogens include *Haemophilus influenzae*, *Moraxella catarrhalis* and *Streptococcus pneumoniae*. In advanced COPD, *Pseudomonas aeruginosa* and Enterobacteriaceae may cause infections.

3. In the outpatient settings, antibiotics should be given to patients
   (a) following three cardinal symptoms:
      - increased dyspnoea
      - increased sputum volume
      - increased sputum purulence

      or

   (b) with increased sputum purulence and one other cardinal symptom.

4. Amoxicillin-clavulanate, instead of amoxicillin, is recommended as the former is active against beta-lactamase-producing bacterial pathogens commonly encountered in such infections.

5. Fluoroquinolones may be considered when *P. aeruginosa* infection is suspected. However, due to concern for serious side effects involving tendons, muscles, joints, nerves and the central nervous system, they should be used to treat acute exacerbations of chronic bronchitis only if there are no alternative options.

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Table 1. Antibiotic recommendation for treatment of Acute Exacerbations of Chronic Obstructive Pulmonary Disease* -

Drug (Route)	Dosage and Frequency, Adults (Usual)	Duration (Usual)	Remarks
First line			
Amoxicillin-clavulanate or other BLBLIs# (oral)	1g (875 mg /125 mg) twice daily; or 625mg (500 mg/125mg) three times daily	5-7 days	Amoxicillin-clavulanate is active against beta-lactamase-producing organisms (e.g. *H. influenzae*, *M. catarrhalis* and methicillin-sensitive *Staphylococcus aureus*).
Second line			
Ceftriaxone (IV or IM)	50 to 100 mg/kg/ day IV or IM in 1 to 2 divided doses (maximum: 4000mg per day)	5-7 days	For non-type 1 penicillin allergy. Daily doses greater than 2g are divided into 2 doses.
Cefpodoxime (oral)	200 mg twice daily	7-10 days -	For non-type 1 penicillin allergy. Certain *S. pneumoniae* isolates may not be reliably covered by oral cephalosporins in the local setting.
Levofloxacin† (oral)	500 mg once daily	7-10 days	For outpatients who have either: -Failed the first line agent, or -Allergy (including type-1) to the first line agent, or -Documented infection by *S. pneumoniae* resistant to penicillin, or -Suspected *P. aeruginosa* infection.
Moxifloxacin† (oral)	400 mg once daily	5-10 days	

Beta-lactam-beta-lactamase inhibitor combinations e.g. ampicillin-sulbactam.

† Fluoroquinolones should be reserved for use in outpatients who have no other treatment options

Clinicians should tailor-make drug treatment based on clinical judgment. Definitive therapy should be based on microbiological and antibiotic sensitivity results if available.
Management of outpatients with infections should be individualised. Doctors should check, document and get outpatients well informed about antibiotic treatment

(e.g. indication, side effect, allergy, contraindication, potential drug-drug interaction, etc.). Outpatients should be reminded to take antibiotics exactly as prescribed by their family doctors.