Lower Respiratory Tract Infections

Prescribing information: these guidelines do not include all the prescribing information for all the drugs. Please refer to the BNF or consult a pharmacist for appropriate use in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breastfeeding.

Self-care: treatments marked as [OTC] are available to buy from pharmacies. Patients can be advised to purchase them as self-care where appropriate.

Guidelines about COVID-19: use COVID-specific guidance issued by NICE during the COVID pandemic.

COPD, acute exacerbation

Many exacerbations are not caused by bacterial infections so will not respond to antibiotics.

Treat exacerbations promptly with antibiotics if purulent sputum and increased shortness of breath, or increased sputum volume, or both. Risk factors for antibiotic resistant organisms include co-morbid disease, severe COPD, frequent exacerbations, antibiotics in last 3 months.

Where a person is receiving a long-term antibiotic for prophylaxis, treatment should be with an antibiotic from a different class.

Antibiotics are less effective if only one symptom present.

Note: low doses of penicillins are more likely to lead to resistance. Do not use fluoroquinolones (ciprofloxacin, ofloxacin) first line because they may have long term side effects and there is poor pneumococcal activity. Reserve all fluoroquinolones (including levofloxacin) for proven resistant organisms.

Laboratory testing: obtain sputum sample for culture wherever possible [2,4]. Review antibiotic choice with culture result.

NICE COPD (acute exacerbations) 2-page visual summary

Last updated: Dec 2019

First line: amoxicillin 500mg TDS for 5 days **or**
doxycycline 200 mg on day 1, then 100 mg daily for 5 days in total **or**
clarithromycin 500mg BD for 5 days.

Second line: use alternative first choice.

Alternative for people at higher risk of treatment failure: co-amoxiclav 500/125 mg TDS for 5 days **or**
levofloxacin (consider safety issues) 500mg OD for 5 days **or**
if unable to use any other antibiotic and only after discussion with a specialist, co-trimoxazole 960mg BD for 5 days.

Note: azithromycin may be recommended by a respiratory specialist for prevention of exacerbation of COPD. This recommended long-term use is for its immunomodulatory and lung remodelling properties and not its anti-infective action.

Bronchiectasis (non-cystic fibrosis), acute exacerbation

Empirical antibiotics should be started if there is worsening cough, increased sputum volume, viscosity or purulence, or increased breathlessness while awaiting sputum microbiology. If previous culture results are available, treat based on sensitivities.

People who may be at higher risk of treatment failure include people who've had repeated courses of antibiotics, a previous sputum culture with resistant or atypical bacteria, or a higher risk of developing complications.

Where a person is receiving a long-term antibiotic, treatment should be with an antibiotic from a different class. Do not routinely offer antibiotic prophylaxis to prevent exacerbations. Seek specialist advice for preventing exacerbations in people with repeated acute exacerbations.

Note: low doses of penicillins are more likely to lead to resistance. Do not use fluoroquinolones (ciprofloxacin, ofloxacin) first line because they may have long term side effects and there is poor pneumococcal activity. Reserve all fluoroquinolones (including levofloxacin) for proven resistant organisms.

Laboratory diagnosis: send a sputum sample for culture and susceptibility testing. [1,2,4]

NICE bronchiectasis (non-CF) 3-page visual summary

Last updated: Dec 2019

When current susceptibility data is available, choose antibiotics accordingly.

Select a course length based on severity of bronchiectasis, exacerbation history, severity of exacerbation symptoms, previous culture and susceptibility results, and response to treatment.

First choice (empirical): amoxicillin (preferred in pregnancy) 500mg TDS for 7-14 days **or**
doxycycline 200 mg on day 1, then 100 mg daily for 7-14 days in total **or**
clarithromycin 500mg BD for 7-14 days.

Alternative (empirical) for people at higher risk of treatment failure:
co-amoxiclav 500/125mg TDS for 7-14 days **or**
levofloxacin (consider safety issues, off-label use) 500 mg OD or BD for 7-14 days.

Cough, acute

Acute cough with upper respiratory tract infection: no antibiotic. **Acute bronchitis**: no routine antibiotic. Antibiotics of little benefit if there is no co morbidity. [2,3,4] **Acute cough and higher risk of complications** (at face-to-face examination): immediate or back-up antibiotic. **Acute cough and systemically very unwell** (at face to face examination): immediate antibiotic. **Do not** offer a mucolytic, an oral or inhaled bronchodilator, or an oral or inhaled corticosteroid unless otherwise indicated. TARGET respiratory tract infection leaflet NICE cough (acute) 2-page visual summary Last updated: Dec 2019	**First line**: self-care and safety netting advice. Symptoms can last 3 weeks. **First line antibiotic**: doxycycline 200 mg on day 1, then 100 mg daily for 5 days in total. **Alternative first line antibiotic**: amoxicillin (preferred in pregnancy) 500 mg TDS for 5 days **or** clarithromycin 500mg BD for 5 days **or** erythromycin (preferred in pregnancy) 500 mg QDS or 1000 mg BD for 5 days.

Pneumonia, aspiration

Last updated: Dec 2019	**First line**: metronidazole 400mg TDS for 7 days **and** amoxicillin 500mg TDS for 7 days. **Penicillin allergy**: clarithromycin 500 mg BD for 7 days and metronidazole 400 mg TDS for 7 days.

Pneumonia, community-acquired

COVID-19 Managing suspected or confirmed pneumonia in adults in the community [NG165]

Assess severity in adults based on clinical judgement guided by mortality risk score (CRB65).

- Low severity – CRB65 0 – suitable for home treatment.
- Moderate severity – CRB65 1 or 2 – consider hospital assessment.
- High severity – CRB65 3 or 4 – urgent hospital admission. If patient refuses, consider referral to Hospital@Home or contact microbiology.

CRB65 score is calculated by giving 1 point for each of the following prognostic features:

- Confusion (new onset).
- Respiratory rate ≥ 30 /min.
- BP systolic < 90 mmHg or diastolic ≤ 60 mmHg.
- Age ≥ 65.

Alternative first choice antibiotics should be considered if the first choice antibiotic is unsuitable, for example, for penicillin allergy or an atypical pathogen is suspected.

Laboratory diagnosis: send sputum for culture and sensitivity if CRB > 2 and managed in the community.

NICE pneumonia (community acquired) 3-page visual summary

Last updated: Aug 2020

Review antibiotic treatment after 5 days with the aim to stop. If slow clinical response, consider extending the course length. If clinical deterioration, consider hospital admission.

Low severity, first choice: amoxicillin 500 mg TDS for 5 days (higher doses can be used, see BNF).

Low severity, alternative first choice: doxycycline 200 mg on day 1, then 100 mg daily for 5 days in total **or**
clarithromycin 500 mg BD for 5 days **or**
erythromycin (preferred in pregnancy) 500 mg QDS for 5 days.

Moderate severity, first choice: amoxicillin 500 mg TDS for 5 days (higher doses can be used, see BNF) **and**
either clarithromycin 500 mg BD for 5 days or erythromycin (preferred in pregnancy) 500 mg QDS for 5 days.

Moderate severity, alternative first choice: doxycycline 200 mg on day 1, then 100 mg daily for 5 days in total **or**
clarithromycin 500 mg BD for 5 days

Tuberculosis

TB care should be provided directly by an infectious diseases or respiratory physician with experience in managing the disease. TB medications are dispensed by TB specialist doctors and nurses from community and hospital clinics. TB medications are not routinely prescribed or dispensed by other primary care providers. In the occasional circumstances where this is required, arrangements can be made in partnership with the TB clinical and specialist nursing team.

Important: TB drugs have many recognised drug interactions, side effects, and cautions. This is particularly important when the TB drugs are not prescribed or dispensed in primary care, as the drugs may not be recorded in the GP clinical system or pharmacy patient medication records and so alerts may not be issued.

TB drugs are occasionally used for other non-TB indications.

Laboratory diagnosis: if TB or mycobacterium suspected, send 3 early morning sputum samples for AFB testing.

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Discuss with specialist.

Whooping cough

Note: confirmed cases of pertussis should be notified to Public Health England, but treatment should be commenced as soon as possible and not withheld until advice is sought.

Laboratory testing
< 2 weeks from symptom onset, throat, pernasal, or nasopharyngeal swab for PCR **and** culture.

Between 2 and 3 weeks from symptom onset, throat, pernasal or nasopharyngeal swab for PCR **and** culture. Serology may also be sent.

> 3 weeks from symptom onset, serology (or oral fluid kit for children aged 2-17 years – discuss with local health protection team).

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Treatment should be given to:

- any person in whom the clinician suspects pertussis infection or
- any person with an acute cough lasting for ≥ 14 days without an apparent cause plus one or more of the following:
  - paroxysms of coughing,
  - post-tussive vomiting,
  - inspiratory whoop.

First line: clarithromycin 500 mg BD for 7 days

Macrolide allergy: co-trimoxazole (not in pregnancy) 960 mg BD for 7 days.