

Key messages

- To guide decision making about antibiotics, use
 - antibiotic prescribing table 1 for patients with suspected community-acquired pneumonia (that is, pneumonia that has developed before or within 48 hours of admission).
 - antibiotic prescribing table 2 for patients with suspected hospital acquired pneumonia (that is, pneumonia that develops 48 hours or more after admission and that was not incubating at admission).
- When choosing antibiotics, also take account of local antimicrobial resistance data and other factors such as their availability.
- Give oral antibiotics if the patient can take oral medicines and their condition is not severe enough to need intravenous antibiotics.
- Review all antibiotics at 24 to 48 hours or as soon as test results are available.
- Stop antibiotics if the pneumonia is due to COVID-19 and there is no evidence of bacterial infection (see section 4 in the COVID-19 rapid guideline on antibiotics for pneumonia in adults in hospital for more information).
- Review antibiotic choice based on microbiological results and switch to a narrower spectrum antibiotic when appropriate.
- If antibiotics are continued, give them for a total of 5 days, then stop them unless there is a clear indication to continue.
- Review intravenous antibiotic use within 48 hours and think about switching to oral antibiotics.
- See the [BNF for appropriate use and dosing in specific populations](#), for example, for hepatic impairment, renal impairment, pregnancy and breast-feeding, and when administering intravenous antibiotics.

Table 1 Antibiotics for people 18 and older with suspected community-acquired pneumonia

Empirical treatment	Antibiotics and dosage (oral doses are for immediate-release medicines)
Oral antibiotics for moderate or severe pneumonia	<p>Options include:</p> <p>Doxycycline: 200 mg on first day, then 100 mg once a day</p> <p>Co-amoxiclav: 500 mg/125 mg three times a day <u>with</u> Clarithromycin: 500 mg twice a day</p> <p>In severe pneumonia, and if the other options are unsuitable:</p> <p>Levofloxacin: 500 mg once or twice a day (consider the safety issues with fluoroquinolones)</p>
Intravenous antibiotics for moderate or severe pneumonia	<p>Options include:</p> <p>Co-amoxiclav: 1.2 g three times a day <u>with</u> Clarithromycin: 500 mg twice a day</p> <p>Cefuroxime: 750 mg three or four times a day (increased to 1.5 g three times a day if infection is severe) <u>with</u> Clarithromycin: 500 mg twice a day</p> <p>In severe pneumonia, and if the other options are unsuitable:</p> <p>Levofloxacin: 500 mg once or twice a day (consider the safety issues with fluoroquinolones)</p>

There are no validated tools to assess the severity of community-acquired pneumonia in the context of the COVID-19 pandemic; severity should be based on clinical judgement.

Consult a local microbiologist for alternative options, including for pregnant women.

If there is a penicillin allergy, avoid using co-amoxiclav and use cefuroxime with caution.

For safety issues with fluoroquinolones, see the [Medicines and Healthcare products Regulatory Agency advice](#). This covers restrictions and precautions for using fluoroquinolone antibiotics because of very rare reports of disabling and potentially long-lasting or irreversible side effects affecting musculoskeletal and nervous systems. Warnings include: stopping treatment at the first signs of a serious adverse reaction (such as tendonitis), prescribing with special caution for people over 60 years and avoiding coadministration with a corticosteroid (March 2019).

Table 2 Antibiotics for people 18 and older with suspected hospital-acquired pneumonia

Empirical treatment	Antibiotics and dosage (oral doses are for immediate-release medicines)
<p>Oral antibiotics for non-severe pneumonia when there is not a higher risk of resistance</p>	<p>Options include:</p> <p>Doxycycline: 200 mg on first day, then 100 mg once a day</p> <p>Co-amoxiclav: 500 mg/125 mg three times a day</p> <p>Co-trimoxazole: 960 mg twice a day (see the BNF for information on monitoring of patient parameters)</p> <p>If the other options are unsuitable:</p> <p>Levofloxacin: 500 mg once or twice a day (consider the safety issues with fluoroquinolones)</p>
<p>Intravenous antibiotics for severe pneumonia (for example, symptoms or signs of sepsis or ventilator-associated pneumonia) or when there is a higher risk of resistance</p>	<p>Options include:</p> <p>Piperacillin with tazobactam: 4.5 g three times a day, increased to 4.5 g four times a day if infection is severe</p> <p>Ceftazidime: 2 g three times a day</p> <p>If the other options are unsuitable:</p> <p>Levofloxacin: 500 mg once or twice a day (use a higher dosage if infection is severe; consider the safety issues with fluoroquinolones)</p>
<p>Antibiotic to be added if methicillin-resistant <i>Staphylococcus aureus</i> infection is suspected or confirmed (dual therapy with an intravenous antibiotic listed above)</p>	<p>Vancomycin: 15 mg/kg to 20 mg/kg two or three times a day intravenously, adjusted according to serum vancomycin concentration. Maximum 2 g per dose (see the BNF for information on patient parameter and therapeutic drug monitoring)</p> <p>Teicoplanin: Initially 6 mg/kg every 12 hours for 3 doses intravenously, then 6 mg/kg once a day (see the BNF for information on patient parameter and therapeutic drug monitoring)</p> <p>Linezolid: 600 mg twice a day orally or intravenously (with specialist advice only; see the BNF for information on monitoring of patient parameters)</p>

There are no validated tools to assess the severity of hospital-acquired pneumonia in the context of the COVID-19 pandemic; severity should be based on clinical judgement.

Consult a local microbiologist for alternative options, including for pregnant women.

If there is a penicillin allergy, avoid using co-amoxiclav and piperacillin with tazobactam, and use cefuroxime and ceftazidime with caution.

Higher risk of resistance includes symptoms or signs starting more than 5 days after hospital admission, relevant comorbidity such as severe lung disease or immunosuppression, recent use of broad-spectrum antibiotics, colonisation with multidrug-resistant bacteria, and recent contact with a health or social care setting before current admission.

For antibiotics not licensed for hospital-acquired pneumonia (co-trimoxazole, levofloxacin), use would be [off-label](#). See [NICE's prescribing medicines](#) for more information.

For safety issues with fluoroquinolones, see the [Medicines and Healthcare products Regulatory Agency advice](#). This covers restrictions and precautions for using fluoroquinolone antibiotics because of very rare reports of disabling and potentially long-lasting or irreversible side effects affecting musculoskeletal and nervous systems. Warnings include: stopping treatment at the first signs of a serious adverse reaction (such as tendonitis), prescribing with special caution for people over 60 years and avoiding coadministration with a corticosteroid (March 2019).