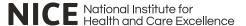
Pneumonia (community-acquired): antimicrobial prescribing





Severity of pneumonia

In adults, severity is assessed by clinical judgement guided by mortality risk score (CRB65 or CURB65) when calculated:

- low severity CRB65 score 0 or CURB65 score 0 or 1
- moderate severity CRB65 score 1 or 2 or CURB65 score 2
- high severity CRB65 score 3 or 4 or CURB65 score 3 to 5

In children and young people, severity is assessed by clinical judgement.



Prescribing considerations

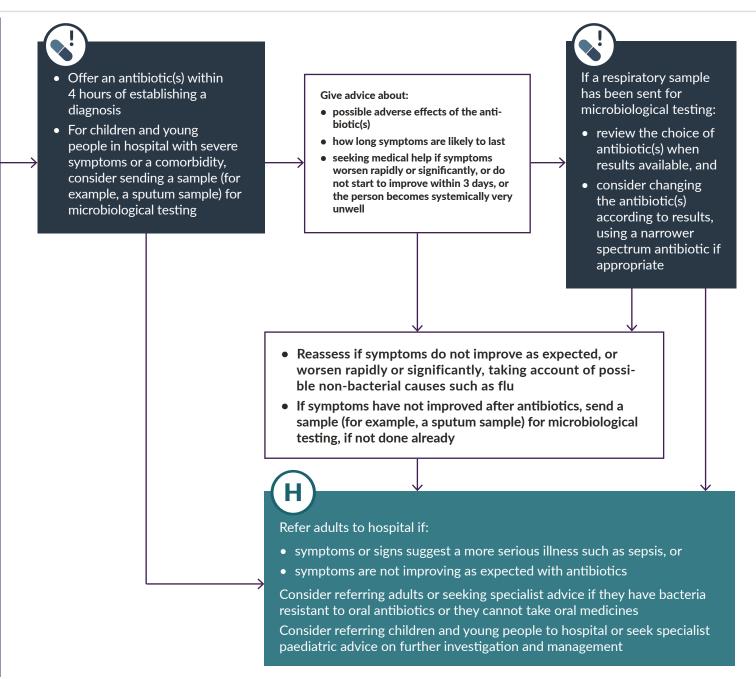
Pneumonia (community-acquired)

When choosing an antibiotic(s), take account of:

- the severity assessment (adults), or the severity of symptoms or signs (children and young people); see above
- the risk of complications, for example, a relevant comorbidity (such as severe lung disease or immunosuppression)
- local antimicrobial resistance and surveillance data (such as flu and Mycoplasma pneumoniae infection rates)
- recent antibiotic use
- previous microbiological results, including colonisation with multi-drug resistant bacteria

Give oral antibiotics first line if possible Review intravenous antibiotics by 48 hours and consider switching to oral antibiotics if possible

September 2019



Pneumonia (community-acquired): antimicrobial prescribing



Choice of antibiotic: adults aged 18 years and over

Antibiotic ¹	Dosage and course length	
First choice oral antibiotic if low severity (based on clinical judgement and guided by CRB65 score 0 or CURB65 score 0 or 1 when calculated) ²		
Amoxicillin	500 mg three times a day (higher doses can be used - see BNF) for 5 days³	
Alternative oral antibiotics if low severity, for penicillin allergy or if amoxicillin unsuitable (for example, atypical pathogens suspected6) ²		
Doxycycline	200 mg on first day, then 100 mg once a day for 4 days (5-day course in total)³	
Clarithromycin	500 mg twice a day for 5 days³	
Erythromycin (in pregnancy)⁴	500 mg four times a day for 5 days³	
First choice oral antibiotics if moderate severity (based on clinical judgement and guided by CRB65 score 1 or 2, or CURB65 score 2 when calculated); guided by microbiological results when available ²		
Amoxicillin with (if atypical pathogens suspected ⁵):	500 mg three times a day (higher doses can be used – see BNF) for 5 days³	
Clarithromycin ⁶ or	500 mg twice a day for 5 days³	
Erythromycin ⁶ (in pregnancy) ⁴	500 mg four times a day for 5 days³	
Alternative oral antibiotics if moderate severity, for penicillin allergy; guided by microbiological results when available ²		
Doxycycline	200 mg on first day, then 100 mg once a day for 4 days (5-day course in total)³	
Clarithromycin	500 mg twice a day for 5 days³	
First choice antibiotics if high severity (based on clinical judgement and guided by CRB65 score 3 or 4, or CURB65 score 3 to 5 when calculated); guided by microbiological results when available ²		
Co amoxiclav with:	$500/125$ mg three times a day orally or 1.2 g three times a day IV 7 for 5 days 3	
Clarithromycin <i>or</i>	500 mg twice a day orally or IV ⁷ for 5 days³	
Erythromycin (in pregnancy)⁴	500 mg four times a day orally for 5 days³	
Alternative antibiotic if high severity, for penicillin allergy; guided by microbiological results when available ²		
Levofloxacin ⁸ (consider safety issues)	500 mg twice a day orally or IV ⁷ for 5 days³	
Consult local microbiologist if fluoroquinolone not appropriate		

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¹See BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breast-feeding, and administering intravenous (or, where appropriate, intramuscular) antibiotics.

²Give oral antibiotics first-line if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics.

 $^{^{\}circ}$ Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course is needed or the person is not clinically stable (fever in the past 48 hours, or more than 1 sign of clinical instability [systolic BP <90 mm Hg, heart rate >100/min, respiratory rate >24/min, arterial oxygen saturation <90% or PaO $_{2}$ <60 mmHg in room air]).

⁴Erythromycin is preferred if a macrolide is needed in pregnancy, for example, if there is true penicillin allergy and the benefits of antibiotic treatment outweigh the harms.

See the Medicines and Healthcare products Regulatory Agency (MHRA) Public Assessment Report on the safety of macrolide antibiotics in pregnancy.

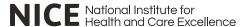
⁵Mycoplasma pneumoniae infection occurs in outbreaks approximately every 4 years.

⁶Consider adding a macrolide to amoxicillin if atypical pathogens suspected. Review when microbiological results available.

⁷Review intravenous antibiotics by 48 hours and consider switching to oral antibiotics if possible.

 $^{^8}$ See MHRA advice for restrictions and precautions for using fluoroquinolones due to very rare reports of disabling and potentially long-lasting or irreversible side effects affecting musculoskeletal and nervous systems. Warnings include stopping treatment at first signs of a serious adverse reaction (such as tendonitis), prescribing with special caution in people over 60 years and avoiding coadministration with a corticosteroid (March 2019). C(U)RB65, confusion, (urea >7 mmol/l), respiratory rate ≥ 30/min, low systolic [<90 mm Hg] or diastolic [≤60 mm Hg] BP, age ≥65; IV, intravenous; PaO₂, partial pressure of oxygen

Pneumonia (community-acquired): antimicrobial prescribing



Choice of antibiotic: children and young people over 1 month and under 18 years

Antibiotic ¹	Dosage and course length ²	
First choice oral antibiotic if non-severe symptoms or signs (based on clinical judgement) ³		
Amoxicillin	1 to 11 months, 125 mg three times a day for 5 days ⁴ 1 to 4 years, 250 mg three times a day for 5 days ⁴ 5 to 17 years, 500 mg three times a day for 5 days (higher doses can be used for all ages - see BNFC) ⁴	
Alternative oral antibiotics if non-severe symptoms or signs (based on clinical judgement), for penicillin allergy or if amoxicillin unsuitable (for example, atypical pathogens suspected ⁵) ³		
Clarithromycin	1 month to 11 years: Under 8 kg, 7.5 mg/kg twice a day for 5 days ⁴ 8 to 11 kg, 62.5 mg twice a day for 5 days ⁴ 12 to 19 kg, 125 mg twice a day for 5 days ⁴ 20 to 29 kg, 187.5 mg twice a day for 5 days ⁴ 30 to 40 kg, 250 mg twice a day for 5 days ⁴ 12 to 17 years: 250 mg to 500 mg twice a day for 5 days ⁴	
Erythromycin (in pregnancy) ⁶	8 to 17 years, 250 mg to 500 mg four times a day for 5 days⁴	
Doxycycline ⁷	12 to 17 years, 200 mg on first day, then 100 mg once a day for 4 days (5-day course in total)⁴	
First choice antibiotic(s) if severe symptoms or signs (based on clinical judgement); guided by microbiological results when available ³		
Co-amoxiclav	Oral doses: 1 to 11 months, 0.5 ml/kg of 125/31 suspension three times a day for 5 days ⁴ 1 to 5 years, 10 ml of 125/31 suspension three times a day or 0.5 ml/kg of 125/31 suspension three times a day for 5 days ^{4,8} 6 to 11 years, 10 ml of 250/62 suspension three times a day or 0.3 ml/kg of 250/62 suspension three times a day for 5 days ⁴ 12 to 17 years, 500/125 mg three times a day for 5 days ⁴ IV dose ⁹ : 1 to 2 months, 30 mg/kg two times a day ⁴ 3 months to 17 years, 30 mg/kg three times a day (maximum 1.2 g per dose three times a day) ⁴	
with (if atypical pathogen suspected ⁵): Clarithromycin or	Oral doses: see above for clarithromycin, for 5 days ⁴ IV doses ⁹ : 1 month to 11 years, 7.5 mg/kg twice a day (maximum 500 mg per dose) ⁴ 12 to 17 years, 500 mg twice a day ⁴	
Erythromycin (in pregnancy) ⁶	See oral doses for erythromycin; for 5 days⁴	
Alternative antihistics if account a mantane and is a live and an alicial independent for manifolding allergy and and by misuchial size and a possible of a consult lead misuchial size		

Alternative antibiotics if severe symptoms or signs (based on clinical judgement), for penicillin allergy; guided by microbiological results when available³ - consult local microbiologist

¹See BNFC for use and dosing in hepatic impairment, renal impairment, pregnancy and breast-feeding, and administering intravenous (or, where appropriate, intramuscular) antibiotics.

²The age bands apply to children of average size and, in practice, the prescriber will use the age bands in conjunction with other factors such as the severity of the condition being treated and the child's size in relation to the average size of children of the same age.

³Give oral antibiotics first-line if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics.

⁴Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course length is needed or the person is not clinically stable.

⁵Mycoplasma pneumoniae infection occurs in outbreaks approximately every 4 years and is more common in school-aged children.

Erythromycin is preferred if a macrolide is needed in pregnancy, for example, if there is true penicillin allergy and the benefits of antibiotic treatment outweigh the harms.

See the Medicines and Healthcare products Regulatory Agency (MHRA) Public Assessment Report on the safety of macrolide antibiotics in pregnancy.

⁷See BNFC for use of doxycycline in children under 12.

⁸Or 5 ml of 250/62 suspension.

Review intravenous antibiotics by 48 hours and consider switching to oral antibiotics if possible.