**AvonCAP General Practice Study: Diagnostic and clinical pointers for acute respiratory infections**

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| **Lower respiratory tract infections**  | **General respiratory tract infections**  | **Upper respiratory tract infections**  |
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| [Acute lower respiratory tract infection](#aLRTI)[Acute bronchitis](#bronchitis)[Acute infective exacerbation of asthma](#asthma) |
| [Acute infective exacerbation of chronic obstructive airways disease](#COPD)[Acute exacerbation of bronchiectasis](#Bronchiectasis)[Community acquired pneumonia](#CAP) |
| [Bronchiolitis](#Bronchiolitis) |
| [Viral wheeze](#wheeze) |

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| [Flu-like illness](#flu) |

 [Suspected coronavirus infection](#sCOVID) [COVID-19](#COVID) | [Infective conjunctivitis](#conjunctivitis)[Acute otitis media](#otitism)[Acute suppurative otitis media](#otitism)[Acute sinusitis](#sinusitis)[Acute pharyngitis](#pharyngitis)[Acute tonsillitis](#tonsilitis)[Acute laryngitis](#laryngitis)[Acute croup](#croup)Viral upper respiratory tract infection |

[BNSSG antibiotic prescribing guidelines](https://remedy.bnssgccg.nhs.uk/media/4302/antimicrobial-rx-guidelines-for-bnssg-2019-version-72-including-covid.pdf)

[Other useful guidelines](#other)

**Summary table: Diagnostic and clinical pointers**

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| **Lower respiratory tract infections**  |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Acute lower respiratory tract infection](https://www.nice.org.uk/guidance/ng120/resources/visual-summary-pdf-6664861405)a | * Productive cough
* Other symptoms and signs: fever, chills, temperature >38.2°C or <35°C, shortness of breath, tachypnoea
* No known asthma/COPD
* No focal chest signs (suggests pneumonia)
 | *Consider immediate or delayed antibiotic for:** Systemically unwell on face-to-face assessment
* Pre-existing comorbidities
* Young children born prematurely
* >65 years with 2 or more of or >80 years with 1 or more of:
	+ hospital admission within last year
	+ diabetic
	+ heart failure
	+ on oral steroids

*No antibiotic needed:*Patient is not systemically unwell or at high risk of complications. Acute coughs are usually self-limiting and can last 3-4 weeks.  |
| [Acute bronchitis](https://uob.sharepoint.com/teams/grp-AvonCAPGPstudy/Shared%20Documents/General/Diagnostic%20and%20clinical%20pointers/a.%09https%3A/www.nice.org.uk/guidance/ng120/resources/visual-summary-pdf-6664861405) a | * acute bronchitis is a lower respiratory tract infection which is usually viral but can be bacterial.
* Not systemically very unwell
* Productive cough
* Other symptoms and signs: fever, chills, temperature >38.2°C or <35°C, shortness of breath, tachypnoea
* No known asthma/COPD
* No focal chest signs (suggests pneumonia)
 | * Do not routinely offer an antibiotic
* Advise on:
	+ the usual course of acute cough (up to 3 or 4 weeks)
	+ seek help if become more unwell or ongoing symptoms after 3 or 4 weeks
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1. <https://www.nice.org.uk/guidance/ng120/resources/visual-summary-pdf-6664861405>

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| **Lower respiratory tract infections**  |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Acute infective exacerbation of asthma](https://cks.nice.org.uk/topics/asthma/management/acute-exacerbation-of-asthma/)b | * Increase in asthma symptoms AND productive cough (increase or change in sputum colour)
 | *Acute severe asthma:** PEFR 33-50% best or predicted
* Sats > 92%
* Respiratory rate outside of range (>25/min in adult)

*Life threatening:* * PEFR < 33% best or predicted
* Sats < 92%
* Confused, exhausted, poor respiratory effort

*Low threshold for admission:* <18 years; recent hospital admission; previous severe attack; lives alone; pregnant*Treatment in community:** Ventolin via spacer up to 10 puffs

Consider quadrupling inhaled corticosteroid (ICS) for up to 14 days to reduce need for oral steroids. If already on high dose ICS, may need oral steroids. If on combined inhaler, can add in ICS for exacerbation |

1. <https://cks.nice.org.uk/topics/asthma/management/acute-exacerbation-of-asthma/>

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| **Lower respiratory tract infections**  |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Acute infective exacerbation of chronic obstructive airways disease](https://www.nice.org.uk/guidance/ng114/resources/guide-to-resources-pdf-6602624893)c | * Increase in COPD symptoms AND productive cough (increase or change in sputum colour)
 | *Consider hospital admission:** Severe breathlessness
* Acute confusion
* Oxygen sats < 90%
* Not responding to initial treatment

*Treatment in community:** Antibiotics (e.g. change in sputum colour or volume)
* Do not routinely send sputum. Consider if poor response to antibiotics.
* 5 days oral steroids if increase in breathlessness
* Ask patient to seek help if no improvement after 2-3 days

Note: if 3-4 courses oral steroids per year consider bone protection. |
| [Acute exacerbation of bronchiectasis](https://www.nice.org.uk/guidance/ng117/resources/visual-summary-pdf-6606081325)d | * Productive cough (increase or change in sputum colour)
 | * Send a sputum sample
* Offer an antibiotic

Note: antibiotic prophylaxis only if advised by a specialist. |

1. <https://www.nice.org.uk/guidance/ng114/resources/guide-to-resources-pdf-6602624893>
2. <https://www.nice.org.uk/guidance/ng117/resources/visual-summary-pdf-6606081325>

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| **Lower respiratory tract infections** |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Community acquired pneumonia](https://www.nice.org.uk/guidance/ng138/resources/visual-summary-pdf-6903410941)e,f | * Focal chest signs (e.g. crepitations) AND/OR consolidation on chest x-ray
* Other symptoms: fever (>38.0°C), hypothermia (<35.5°C), chills or rigors, pleuritic chest pain, new or worsening cough, sputum production, shortness of breath, tachypnoea (RR>20/min), malaise
* Diagnosis requires face-to-face assessment
* Infection not acquired during hospital admission.

Note: a bacterial pneumonia is more likely than COVID-19 pneumonia if:* rapid onset of symptoms over a few days
* pleuritic pain
 | Treatment in community:* antibiotic if likely bacterial pneumonia or unclear whether viral or bacterial

When discussing hospital admission with frail older patients and relatives explain:* benefits include better diagnostic tests, respiratory support
* disadvantages include risk of spreading or catching COVID-19 and loss of contact with families
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1. <https://www.nice.org.uk/guidance/ng138/resources/visual-summary-pdf-6903410941>
2. <https://www.nice.org.uk/guidance/ng165/chapter/3-Diagnosis-and-assessment>

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| **Lower respiratory tract infections**  |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Bronchiolitis](https://www.nice.org.uk/guidance/ng9/chapter/1-Recommendations%22%20%5Cl%20%22assessment-and-diagnosis)g | * < 2 years. Most common <1 year, peaks 3-6 months.
* Symptoms: Cough AND shortness of breath. 30% have fever (usually <39). Poor feeding is common.
* Signs: tachypnoea, increased work of breathing, wheeze or creps.
* Young infants (< 6 weeks) may present with apnoea without other clinical signs.

Note: if high temp (>39) and/or focal creps think about pneumonia. | *Admit to hospital:** Exhausted (e.g. listless, decreased respiratory effort)
* Recurrent apnoea
* Oxygen sats <92% on air
* RR >60 breaths/minute
* Clinical dehydration or inadequate fluid intake (<50% of normal)

*Low threshold for admission: l*ung disease (e.g. bronchopulmonary dysplasia); congenital heart disease; young infant (< 3 months); neuromuscular disorder; immunodeficiency*Treatment in community:** Do not use antibiotics, salbutamol or hypertonic saline
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g. <https://www.nice.org.uk/guidance/ng9/chapter/1-Recommendations#assessment-and-diagnosis>

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| **Lower respiratory tract infections**  |
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| [Viral wheeze](https://cks.nice.org.uk/topics/cough-acute-with-chest-signs-in-children/management/viral-induced-wheeze-possible-asthma/)h | * 6 months to 5 years
* Wheezing associated with infection

Note: it can be difficult to distinguish between viral wheeze and infective exacerbation of asthma in children < 5 years. Note: if high temp (>39) and/or focal creps think about | *Admit to hospital:** Exhausted (e.g. listless, decreased respiratory effort)
* Oxygen sats <92% on air
* Confused
* Poor response to Ventolin via spacer

*Low threshold for admission:* lung disease (e.g. bronchopulmonary dysplasia); congenital heart disease; young infant (< 3 months); neuromuscular disorder; immunodeficiency*Child not needing admission:** Up to 10 puffs Ventolin via large volume spacer (mask if <3 years)
* Reassess. If poor response, consider admission. If good response, prescribe for home use.
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1. <https://cks.nice.org.uk/topics/cough-acute-with-chest-signs-in-children/management/viral-induced-wheeze-possible-asthma/>

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| **General respiratory tract infections**  |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Flu-like illness](https://cks.nice.org.uk/topics/influenza-seasonal/)i | * Abrupt onset of symptoms
* More likely if flu known to be circulating
* Cough, fever, gastroentestinal symptoms, headache, malaise, mylagia, arthralgia, sore throat
 | * Stay off work or school if they feel unable to attend — for most people, about 1 week will be adequate.
* Fever and associated systemic symptoms usually resolve after about 1 week, although some symptoms (such as cough and fatigue) may persist for up to 2 weeks after resolution of fever.
* Seek medical advice if become more unwell or symptoms don’t settle
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1. <https://cks.nice.org.uk/topics/influenza-seasonal/>

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| **General respiratory tract infections**  |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Suspected coronavirus infection](https://cks.nice.org.uk/topics/coronavirus-covid-19/diagnosis/diagnosis/)j | * The commonest symptoms are fever, cough, shortness of breath and loss of or change in sense of smell or taste
* Other symptoms include headache, muscle pain, confusion, chest pain, vomiting and diarrhoea, loss of sense of smell, skin rashes (especially in younger people).
* The illness is variable in severity from asymptomatic, to mild upper respiratory tract infection in some people to severe pneumonia in others
 | High risk groups:* Over 70s
* Under 70s with
	+ Lung condition (e.g. asthma, COPD)
	+ Heart disease (e.g. heart failure)
	+ Chronic kidney disease
	+ Neurological condtions (e.g. Parkinson’s)
	+ Diabetes
	+ Spenectomy or sickle cell disease
	+ BMI >40 (associated with higher mortality in patients with COVID admitted to ITU)
	+ Immunodeficiency (e.g. HIV, chemotherapy)
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| [COVID-19](https://cks.nice.org.uk/topics/coronavirus-covid-19/diagnosis/diagnosis/)j | * Laboratory testing has confirmed COVID-19 infection
 | * Symptoms and signs of severe infection
	+ Severe shortness of breath at rest or difficulty breathing.
	+ Coughing up blood.
	+ Blue lips or face.
	+ Feeling cold and clammy with pale or mottled skin.
	+ Collapse or fainting (syncope).
	+ New confusion.
	+ Becoming difficult to rouse.
	+ Little or no urine output
	+ Oxygen saturation < 92%
* Consider antibiotics if they are at high risk of complications (e.g. frail, pre-existing long-term conditions). Firstline: Doxycycline. Secondline: Amoxicillin
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1. <https://cks.nice.org.uk/topics/coronavirus-covid-19/diagnosis/diagnosis/>

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| **Upper respiratory tract infections**  |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Infective conjunctivitis](https://cks.nice.org.uk/topics/conjunctivitis-infective/)k,l | * Bacterial conjunctivitis may be associated with:
	+ purulent or mucopurulent discharge with crusting of the lids which may be stuck together on waking
	+ pre-auricular lymphadenopathy
* Herpes simplex typically presents as unilateral red eye with vesicular lesions visible on the eyelid and watery discharge
 | * Most conjunctivitis (viral or bacterial) is self-limiting and does not require antibiotics
* Infectious for up to 14 days from onset (wash hands, don’t share towels/flannels)
* Artificial tears can help with grittiness

Red flags:* Contact lens wearer: topical fluorescein, refer to ophthalmology if any corneal involvement and advise to take lenses with them to appointment, if not stop using lenses
* Neonate (up to 21 days old): consider chlamydial or gonococcal infection
* If discharge is mucopurulent and copious, infection with Neisseria gonorrhoeae should be considered
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1. <https://www.nice.org.uk/guidance/ng120/resources/visual-summary-pdf-6664861405>
2. <https://cks.nice.org.uk/topics/conjunctivitis-infective/>

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| **Upper respiratory tract infections (adults and children)** |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Otitis media or Acute suppurative otitis media](https://www.nice.org.uk/guidance/ng91/resources/visual-summary-pdf-4787282702)[m](https://www.nice.org.uk/guidance/ng91/resources/visual-summary-pdf-4787282702) | * In younger children — holding, tugging, or rubbing of the ear, or non-specific symptoms such as fever, crying, poor feeding, restlessness, behavioural changes, cough, or rhinorrhoea.

On otoscopic examination:* A distinctly red, yellow, or cloudy tympanic membrane.
* Moderate to severe bulging of the tympanic membrane, with loss of normal landmarks and an air-fluid level behind the tympanic membrane (indicates a middle ear effusion).
* Perforation of the tympanic membrane and/or discharge in the external auditory canal.
 | * Usually lasts 3 days but can be up to 1 week
* Complications (e.g. mastoiditis) are rare with or without antibiotics

Consider antibiotics for:* Under 2 years, bilateral otitis media
* Child or young person with otorrhoea (discharge following ear drum perforation)
* Systemically very unwell
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| [Acute sinusitis](https://www.nice.org.uk/guidance/ng79/resources/visual-summary-pdf-4656316717)n | * Nasal blockage (obstruction/congestion) or nasal discharge (anterior/posterior nasal drip) with facial pain/pressure (or headache) and/or reduction (or loss) of the sense of smell.
* Other features suggestive (but not diagnostic) include:
	+ Altered speech indicating nasal obstruction.
	+ Tenderness, swelling, or redness over the cheekbone or periorbital areas.
	+ Cough.
 | * Antibiotics make little difference to how long symptms last
* Usually lasts 2-3 weeks
* Symptoms <10 days – do not offer antibiotics unless very unwell

Bacterial cause more likely if several of the following are present:* Symptoms >10 days
* Discoloured or purulent nasal discharge
* Severe localised unilateral pain (particularly pain over teeth and jaw)
* Fever
* Marked deterioration after initial milder phase
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1. <https://www.nice.org.uk/guidance/ng91/resources/visual-summary-pdf-4787282702>
2. <https://www.nice.org.uk/guidance/ng79/resources/visual-summary-pdf-4656316717>

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| **Upper respiratory tract infections (adults and children)** |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Acute tonsillitis](https://www.nice.org.uk/guidance/ng84/resources/visual-summary-pdf-4723226606)o,p | * Inflammation of the tonsils
 | * FeverPAIN score (Fever, Purulence, Attend within 3 days or less, Severely Inflamed tonsils, No cough or coryza. 1 point for each)

 * Centor score (Tonsillar exudate, Tender anterior cervical lymphadenopathy or lymphadenitis, History of fever (>38°C), No cough. 1 point for each)
* Consider antibiotics if FeverPAIN ≥2 or Centor ≥3
* Acute Group A streptococcal pharyngitis/tonsillitis:
	+ common in children and adolescents aged 5 to 15 years
	+ more common in the winter (or early spring) in temperate climates.
	+ Symptoms: fever > 38.5°C, exudate on the pharynx/tonsils, anterior neck lymphadenopathy, absence of cough, scarlatiniform (red sandpaper) rash.
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| [Acute pharyngitis](https://www.nice.org.uk/guidance/ng84/resources/visual-summary-pdf-4723226606)p,q | * Acute pharyngitis: inflammation of the part of the throat behind the soft palate (oropharynx)
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| [Laryngitis](https://www.nhs.uk/conditions/laryngitis/) r | * Hoarse voice, irritating cough, needing to clear your throat
 | * Usually viral, symptoms resolve in 1-2 weeks
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1. <https://cks.nice.org.uk/topics/sore-throat-acute/background-information/definition/>
2. <https://www.nice.org.uk/guidance/ng84/resources/visual-summary-pdf-4723226606>
3. <https://www.nhs.uk/conditions/laryngitis/>

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| **Upper respiratory tract infections (adults and children)** |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Acute croup](https://cks.nice.org.uk/topics/croup/)[r](https://cks.nice.org.uk/topics/croup/) | * Child with sudden-onset seal-like barking cough, often with stridor and chest wall (intercostal) or sternal indrawing
* Symptoms typically worse at night and increase with agitation.
* Prodromal, non-specific upper respiratory tract symptoms (coryza, non-barking cough, mild fever) may have been present for between 12 and 48 hours.
* Hoarse voice is also common.
* In moderate or severe cases, the child may be showing signs of respiratory distress or failure, such as:
	+ Persistent agitation.
	+ Lethargy/fatigue
	+ Asynchronous chest wall and abdominal movement.
	+ Pallor or cyanosis.
	+ Decreased level of consciousness.
 | * Take care not to frighten the child as agitation can cause worsening of symptoms
* Categorise the severity of the symptoms:
	+ Mild – seal-like barking cough but no stridor or sternal/intercostal recession at rest.
	+ Moderate – seal-like barking cough with stridor and sternal recession at rest; no agitation or lethargy.
	+ Severe – seal-like barking cough with stridor and sternal/intercostal recession associated with agitation or lethargy.
	+ Impending respiratory failure – increasing upper airway obstruction, sternal/intercostal recession, RR> 70, asynchronous chest wall and abdominal movement, fatigue, pallor or cyanosis, decreased level of consciousness or tachycardia. The degree of chest wall recession may diminish with the onset of respiratory failure as the child tires.
* Admit all children with features of moderate or severe illness, impending respiratory failure. Give oxygen and oral dexamethasone (0.15mg/kg). If the child is too unwell to receive medication, inhaled budesonide (2 mg nebulised as a single dose)
* If hospital admission is not required (mild illness) prescribe a single dose of oral dexamethasone (0.15 mg/kg) to be taken immediately, and safety net with [patient information leaflet](https://patient.info/chest-lungs/cough-leaflet/croup).
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1. <https://cks.nice.org.uk/topics/croup/>

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| **Upper respiratory tract infections (adults and children)** |
| **Snowmed code** | **Diagnostic pointers** | **Clinical pointers** |
| [Viral upper respiratory tract infection](https://cks.nice.org.uk/topics/common-cold/)[s](https://cks.nice.org.uk/topics/common-cold/) | * Mild, self-limiting
* Nasal problems common
* Fever, fatigue, and myalgia are less common and/or less severe.

  | * No known treatment improves the time course of infection.
* Adults experience an average of 2–3 viral upper respiratory tract infections (URTIs) a year.
* Young children attending primary school or preschool have an average of 5–8 viral URTIs a year.
* In adults and older children, symptoms tend to last about a week although cough can persist for up to 3 weeks.
* In younger children, symptoms typically last 10–14 days.

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1. <https://cks.nice.org.uk/topics/common-cold/>

**Other useful guidelines**

**Identifying those patients with RTIs who are likely to be at risk of developing complications**t

**1.7 An immediate antibiotic prescription and/or further appropriate investigation and management should only be offered to patients (both adults and children) in the following situations:**

* if the patient is systemically very unwell
* if the patient has symptoms and signs suggestive of serious illness and/or complications (particularly pneumonia, mastoiditis, peritonsillar abscess, peritonsillar cellulitis, intraorbital and intracranial complications)
* if the patient is at high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis, and young children who were born prematurely
* if the patient is older than 65 years with acute cough and two or more of the following criteria, or older than 80 years with acute cough and one or more of the following criteria:
* hospitalisation in previous year
* type 1 or type 2 diabetes
* history of congestive heart failure
* current use of oral glucocorticoids.
* For these patients, the no antibiotic prescribing strategy and the delayed antibiotic prescribing strategy should not be considered.
1. <https://www.nice.org.uk/guidance/CG69/chapter/1-guidance#identifying-those-patients-with-rtis-who-are-likely-to-be-at-risk-of-developing-complications>

Acute cough:

<https://www.nice.org.uk/guidance/ng120/resources/visual-summary-pdf-6664861405>

Summary of antimicrobial prescribing guidance – managing common infections

<https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-guidance/antimicrobial%20guidance/summary-antimicrobial-prescribing-guidance.pdf>