

RightCare community-acquired pneumonia scenario

Jim's story: The variation between optimal and suboptimal pathways of care



This guidance is supported by the Getting It Right First Time (GIRFT) programme

» Foreword

Respiratory disease affects one in five people in England and is the third biggest cause of death. Incidence and mortality rates for those with respiratory disease are higher in disadvantaged groups and areas of social deprivation, where there is often higher smoking incidence, exposure to higher levels of air pollution, poor housing conditions and exposure to occupational hazards.

Pneumonia, and particularly community-acquired pneumonia, continues to place a huge burden on the NHS. Despite being avoidable in many cases it is a leading cause of admission and subsequent readmission to hospital. Older people are disproportionately affected with incidence doubling for those aged 85-95 compared with 65-69.

The prompt assessment and diagnosis of pneumonia is important to ensure patients are cared for in the correct environment and antibiotics are commenced appropriately. The process behind this is well described in this scenario.

A key finding of the [National Audit Report: Adult Community Acquired Pneumonia Audit 2018-2019](#) (January 2020) by the British Thoracic Society found that although mortality has decreased and is at the lowest level in 10 years, readmissions 30-days post-discharge have risen steadily. The audit also found that the use of antibiotics in line with local guidance was just 58.4%. These are two key areas for improvement that this scenario will address.

I am pleased that respiratory disease, and more specifically pneumonia, has been recognised as a priority for the NHS and features in the [NHS Long Term Plan](#).

This tool is not to support the management of COVID pneumonia. Please visit [NICE](#) for further information on COVID management with pneumonia.



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“ Although mortality has decreased, readmissions 30-days post-discharge have risen steadily

» RightCare scenarios

RightCare scenarios put the person at the centre of the story. They use fictional patients to show the difference between a suboptimal, but realistic, pathway of care compared to an optimal one.

This pneumonia scenario is part of a series of RightCare scenarios that support local health systems to think strategically about designing optimal care for people (and their carers) with high impact conditions.

They help local systems understand how patient outcomes and quality of life can be improved as a result of shifting the care pathway from a suboptimal journey to one that consistently delivers timely, evidence-based excellence.

The suboptimal story in this scenario deliberately highlights where along the care pathway we know often requires improvement. We invite systems to consider the following questions when using this scenario:

- Do you recognise any elements of the patient journey highlighted in this scenario?
- Which journey best reflects the service within your area?
- What parts of the patient journey and experience can you improve?



This scenario has been developed with expert stakeholders using [RightCare methodology](#). The aim is to help clinicians and commissioners improve value and outcomes for this patient group. To see the full suite of RightCare products please visit the NHS England [website](#).

If you have any questions about this scenario or other RightCare products, please contact us at rightcare@nhs.net.

What is a RightCare scenario?



Use fictional patients to show the difference between optimal and suboptimal pathways of care

Put the person at the centre of the story



Spark strategic questions



- Do you recognise any elements of the patient journey?
- Which journey best reflects the service within your area?
- What parts of the patient experience can you improve?

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» Clinical introduction

Pneumonia is an inflammation of one or both lungs, usually caused by an infection. It causes the alveoli (air sacs) inside the lungs to fill with fluid, making it harder for them to work properly. The body sends white blood cells to fight the infection, and while this helps kill the germs it can also make it harder for the lungs to pass oxygen into the bloodstream.

Pneumonia can be caused by a number of factors but is usually the result of a bacterial infection, such as *Streptococcus pneumoniae* (or pneumococcus), or a virus such as coronavirus and influenza.

Prior to COVID-19, between 0.5% and 1% of adults in the UK will have community-acquired pneumonia each year. It is diagnosed in 5–12% of adults who present to GPs with symptoms of lower respiratory tract infection, and 22–42% of these are admitted to hospital, where the mortality rate is between 5% and 14% (NICE). More than half of pneumonia-related deaths occur in people older than 84 years¹.

Some people with low severity pneumonia can manage the condition at home by resting and taking antibiotics. For at-risk groups, such as elderly people, people who smoke, and people with other health conditions or a weakened immune system, pneumonia can be severe and may need to be treated in hospital. In hospital, staff can deliver supportive treatments such as oxygen, manage and treat complications, and monitor for deterioration requiring more intensive support.

The diagnosis of pneumonia can be difficult as it shares many symptoms with other conditions, such as common cold, bronchitis and asthma. Diagnosis is based on symptoms and signs of an acute lower respiratory tract infection and can be confirmed by a chest X-ray showing new shadowing that is not due to any other cause (such as fluid on the lungs or an obstruction to the blood supply).

It can take up to six months after starting treatment for most people to feel back to normal, though this depends on the severity of the pneumonia.

1 <https://www.nice.org.uk/guidance/cg191/chapter/Introduction>

» Between 0.5% and 1% of adults in the UK will have community-acquired pneumonia each year

» Introducing Jim

Jim is 63 years old and lives with his wife, Linda. They have been married for 39 years and have three grown up children who have now left home. They are both very sociable and lead busy lives.



Jim works full time as a self-employed taxi driver and Linda works part time in the local primary school. They both enjoy their jobs, especially the social aspect as they regularly see friends from work in their local pub.

Family is also very important to them. They have three grown-up children and four grandchildren whom they see as much as possible. Once a month the family gets together at Jim and Linda's house for Sunday lunch; it's chaotic but they love it! They babysit as often as they can and Linda regularly looks after some of the grandchildren during the week when their parents are at work.

Jim also loves his holidays. He's a member of the Caravan Club and they go away in the caravan as often as they can, usually one weekend every six weeks. They also have a family holiday abroad every year in the sun, somewhere with good entertainment for the children and where the parents can relax.

Jim was diagnosed with chronic obstruction pulmonary disease (COPD) two years ago and has recently been diagnosed with type 2 diabetes. He's tried to cut down on how much he drinks and eats but due to their busy social lives and the sedentary nature of his job, he's found it very difficult. He also smokes 20-30 cigarettes a day.

Both his COPD and diabetes are adequately managed and currently under control. Jim is on high dose inhaled steroids, equivalent to 1000mcg Beclomethasone Dipropionate (BDP), twice a day together with a long acting Beta agonist. He is also using a proton pump inhibitor for indigestion caused by his diabetes. Despite having COPD he has not been given a flu or pneumococcal vaccination nor has he chased his GP for it; he doesn't see the value in it and thinks they may make him feel ill afterwards which puts him off.

» The start of Jim's journey: symptoms

Jim started coughing at the weekend but tried to go into work on Monday. He shortly began to have difficulty breathing and was generally feeling unwell. He did not feel well enough to drive and went home sick.

He didn't think anything of it as it was December and there was a bug going around. Almost everyone had been ill at one point or another over the winter period, however Jim and his colleagues had been tested for COVID and were all negative. He was feeling guilty about being off work as he knows this will cause problems for his taxi company; they're already short-staffed and it's the busiest time of year. He hoped to be back in work the next day.

On Tuesday morning Jim got up to get ready for work but he felt worse. His breathing was still laboured and his cough was getting more frequent. As Tuesday progressed he noticed vague discomfort down the left side of his chest. He was reluctant to go to his GP as he thought it would go away by itself, besides, he didn't want to bother them. Linda was getting increasingly worried as he was getting confused so suggested they call NHS 111 instead.

Read on to see how Jim experiences two very different journeys and outcomes.

Look out for 'Information points' throughout the suboptimal and optimal journeys; these highlight the key themes of optimal care for pneumonia. More information about these can be found on page 13.

Day 1: Linda contacts NHS111

Linda calls NHS 111 on Tuesday evening and explains her concerns and Jim's symptoms. Due to the vague discomfort in Jim's chest they advise that Jim sees his GP as soon as possible.

First thing Wednesday morning Linda calls their GP practice to book an appointment for as soon as possible. The practice recognises that Jim rarely attends surgery other than for his annual COPD reviews and undertakes a phone triage and brings Jim in that afternoon.

Day 2: Jim receives incorrect diagnosis

It is very busy at the practice and appointments are running 30 minutes behind schedule. The GP does not take Jim's temperature and performs a cursory examination of his chest but doesn't find any abnormality. Limited interaction with Jim results in missing information that would inform the GP's decision making.

Jim is sent home with a diagnosis of 'self-limiting acute bronchitis', attributing the chest pain to coughing and told to come back if the symptoms don't improve in the next few days. Once home, Jim deteriorates quickly. The pain in his chest gets worse, as does his breathing, and Linda still thinks he seems a bit confused. She becomes very concerned and takes him to their local A&E department early Thursday morning.



Information point:
Antimicrobial resistance

As the department is very busy, he waits for several hours before being seen. He is triaged to the minors area of the emergency department and eventually a chest x-ray is performed.

No-one speaks to Linda about Jim's symptoms or history. As Jim's carer, good insight into the patient's health and concerns are missed.

The x-ray is thought to be normal as the junior doctor misses the shadowing behind the heart and there is no 'hot reporting' (radiologist and radiographer-led immediate reporting). A diagnosis of chest infection is made and there is no further review by a senior doctor.

Jim is not seen as a high-risk patient and is discharged with oral steroids for a COPD exacerbation (when in fact, it is the pneumonia causing the symptoms) and a course of antibiotics for his chest infection.

Day 4: Jim deteriorates and is admitted to hospital

Early Friday morning Jim deteriorates rapidly and the pain in his chest gets even worse. Again, Linda is very worried. This time she calls an ambulance that takes Jim back to his local A&E department.

At A&E another chest x-ray is performed together with some simple blood tests. Jim's white blood cells are elevated and the chest x-ray shows changes behind the heart which, in comparison to the previous x-ray, is worse.

A diagnosis of pneumonia is made and Jim is admitted to the acute medical unit and then a general medical ward where he is treated with intravenous broad spectrum for seven days. No sputum, urine or blood samples are taken to identify the cause of the pneumonia.

Jim is discharged the following Friday with no explanation of the problem or expected recovery time. Jim and Linda are confused about what has happened and Jim's treatment but relieved to be going home. The hospital advises Jim to see his GP for a sick note if he needs one and to organise a chest x-ray in six weeks' time.

They are not given any information about pneumonia (such as the NICE leaflet) or what to expect post-pneumonia.

Jim does not see his GP and although he is feeling tired and lethargic he returns to work two weeks after being discharged as he is self-employed and does not receive sick pay.

His symptoms never really go away and he hasn't had a follow-up review or x-ray to confirm whether the pneumonia has cleared or to check for other diagnoses.

2 Information point: Preventative measures

Although Jim has been advised to stop smoking during his treatment for COPD no support has been offered whilst being treated for pneumonia.

He has received no review of preventative measures to reduce the risk of getting pneumonia again and has not been offered a flu vaccination.



Day 81: Conclusion and impact of suboptimal care

Ten weeks after discharge Jim is still feeling unwell. His cough, which had been improving, feels like it's getting worse and the pain in his chest is back. He's been ill for so long he's beginning to feel very low. Linda has noticed a change in his behaviour and they have stopped going out and seeing friends. She books an appointment with his GP.

His GP consults Jim's discharge letter and reassures him that this is part of the normal recovery process as it can take 3-6 months to get back to normal.

Jim goes home but several days later he deteriorates with similar symptoms as before. Again, Linda calls an ambulance, and he has a very similar experience in A&E as his previous hospital admission.

No-one reviews Jim's previous x-rays and pneumonia is again diagnosed but they don't notice it's in the same place behind his heart.

Jim is admitted to a short stay ward where again he receives intravenous broad-spectrum antibiotics for five days before being discharged. Again, no samples are taken to identify the reason for the pneumonia.

Although it is suggested he has a follow-up chest x-ray no appointment is made for him.



Information point: Appropriate follow-up

Six months later Jim continues to feel ill and has had to take early retirement. Linda is concerned about his low mood and very worried about how they are going to cope financially.

He continues to cough and has marked malaise and significant weight loss. He has now started to cough up blood. Jim consults his GP who he has not seen since he was last discharged from hospital; the GP assumed all was well as they thought the hospital was organising a follow-up chest x-ray.

His GP is concerned by the symptoms and organises an urgent chest x-ray. The x-ray shows a mass behind the heart with enlarged hilar lymph nodes. A CT scan suggests a stage 3 cancer that is confirmed on further investigations to be inoperable.

Jim has chemotherapy but dies nine months later.

Let's see how Jim's journey could be so much better. We start at the same place as the suboptimal story...

Day 1: First interaction with NHS111

Linda calls NHS 111 on Tuesday evening. Due to the vague discomfort in Jim's chest they advise her that Jim sees his GP as soon as possible.

First thing Wednesday morning Linda calls their GP practice to book an appointment for as soon as possible. The practice recognises that Jim rarely attends surgery other than for his annual COPD reviews and undertakes a phone triage and brings Jim in that afternoon.

Day 2: Swift diagnosis and use of mortality risk assessments

The GP performs a detailed history, checks for signs of pyrexia (fever), which is present, and performs a thorough chest examination. Bronchial breathing and decreased percussion note is found at the left base.

Based on their observations the GP suspects community-acquired pneumonia (CAP).

To determine whether Jim is at low, intermediate or high risk the GP performs a CRB65 score. Jim has a raised respiratory rate (32 breaths per minute), saturations of 96% on air and normal blood pressure (100/65mmHg) which, together with his disorientation, gives him a score of 2. This indicates that he may need hospital assessment.



Information point: Use of mortality risk assessments - CRB65 and CURB65

As Jim is almost 65 and has other comorbidities, his GP recommends he go to the medical assessment unit (MAU) at the local hospital. The GP contacts the MAU and provides Jim with a letter documenting his findings and Jim's past medical history and treatment. The GP briefs Jim and Linda on the suspected diagnosis and talks through the options for treatment.

On arrival, Jim is given a NEWS2 ([National Early Warning Score](#)) assessment and is triaged for immediate medical review on the basis of the outcome. Given the clinical problems, Jim goes down the suspected COVID pathway. A history and examination is undertaken by a junior doctor who organises a chest x-ray and bloods for urea and inflammatory markers/C-reactive protein (CRP), together with blood cultures. In light of his pyrexia and symptoms, viral testing for COVID-19 and influenza is performed.

The rapid COVID swab comes back as negative and CAP is the working diagnosis. His CURB65 is assessed to determine the severity of the pneumonia which gives a score of 3; suggesting that Jim should be admitted as an inpatient and ICU should be considered. Broad spectrum parenteral antibiotics are administered as per NICE guidelines together with a macrolide.

A chest x-ray is performed promptly within four hours and reviewed prior to 'hot reporting' and shows patch changes behind the heart in-keeping with CAP.

A sputum sample is considered but Jim's cough is not productive. Urinalysis for legionella and pneumococcal antigen is requested.

Day 2: Jim is admitted to hospital where he receives effective treatment, safe discharge and follow-up care

Jim is transferred to the higher monitoring area on the MAU where he is reviewed by a respiratory consultant within 12 hours. The diagnosis of CAP is confirmed, and plans are made for Jim to go to the respiratory ward as his National Early Warning Score ([NEWS2](#)) is improving.

The following day, a urine sample tests positive for pneumococcal antigen and when Jim starts to produce sputum, *Streptococcus pneumoniae* is identified. IV antibiotics have already been switched to broad spectrum oral ones and the finding of pneumococcus after 48 hours allows the switch from empirical to narrow spectrum.

During his stay Jim is reviewed by the COPD team who administer the [COPD Care Bundle](#). The Care Bundle includes checking his inhaler technique, offering smoking cessation advice and pulmonary rehabilitation, and data is collected for the National Asthma and COPD Audit Programme (NACAP). They recommend that he reduces the inhaled corticosteroids (ICS) and adds in long-acting muscarinic antagonists (LAMA).

Jim makes good progress and is discharged four days after being admitted, having met NICE discharge criteria.

The CAP Care Bundle for admission and discharge has been followed and clear guidance and information is given to Jim regarding what to expect in terms of symptom resolution and how to prevent pneumonia. Jim and Linda are given written information and signposted where to go for support if he isn't feeling better.

5 Information point: CAP Care Bundle

A comprehensive discharge summary is completed and an appointment is made by secondary care for a follow-up chest x-ray.

Jim attends a follow up appointment with his GP two weeks after being discharged. His GP supports Jim with the following:

- » Advice regarding expected speed of recovery (as per NICE pneumonia guideline) - because of this he is able to plan a return-to-work date.
- » Support given to help quit smoking and referral to local smoking support services.
- » Confirmed the important role community pharmacists can have in providing medicines advice and on-going support in stopping smoking.
- » Review of long-term inhaled steroid medicine use and review of control of diabetes.
- » Review use of proton pump inhibitor which he is taking for his intermittent indigestion.
- » Ensuring pneumococcal and influenza vaccines are up to date.
- » Advice and support on undertaking suitable exercise.

Day 20: Conclusion and impact of optimal care

Jim starts to feel better and, having initially rested and then gradually increased his exercise tolerance, commences a phased return to work two weeks after the GP appointment, although he still has a cough and fatigue.

Because of the follow-up appointment with his GP and the information he received from the hospital, both Jim and Linda are aware that these are the last symptoms to resolve so are not concerned.

6 Information point:
Clear and timely patient information

Five weeks after being discharged Jim has successfully quit smoking with the help of the local service and support from his community pharmacist.

They have been able to get away in their caravan for a weekend which has been just what they both needed. For the first time in his adult life Jim starts taking regular exercise and is now walking 30 minutes twice a week.

Six weeks after discharge Jim attends hospital for a follow-up chest x-ray to confirm that the pneumonia has cleared. The consultant reviews the film which shows only partial resolution. Given Jim's history the consultant orders an urgent CT scan of the thorax.

The CT scan shows a patch of consolidation with abnormal narrowing of the bronchus to the left lower lobe with no lymph node enlargement. Bronchoscopy shows an abnormal area at entry to the bronchus, biopsy of which confirm a squamous cell carcinoma.

Subsequent investigations show no reason why surgery should not occur so Jim goes on to have a lobectomy and makes a full recovery from his surgery. He has recognised the importance of a healthy lifestyle and remains a non-smoker. He now feels less breathless so exercises daily and has even taken to cycling which he enjoys with his grandchildren.

This has helped him lose weight so his diabetes is now controlled by diet and his COPD is better managed. The weight loss has meant he can reduce his inhaler medication and the indigestion he suffered has gone so he no longer needs his proton pump inhibitors.

The family are looking forward to their annual holiday next month and Jim and Linda have been able to keep up with their busy social life.



» Information points

1 Information point: Antimicrobial resistance

The overuse of antimicrobials means that they're becoming less effective and has led to the emergence of antimicrobial-resistant bacteria. Antimicrobial stewardship is a key priority within the [NHS Long Term Plan](#) and aims to change prescribing practice to help slow the emergence of antimicrobial resistance and ensure that antimicrobials remain an effective treatment for infections.

NICE guideline 'Pneumonia (community-acquired): antimicrobial prescribing' ([NG138](#)) should be followed for effective use of antimicrobials in all patients with community-acquired pneumonia to ensure they are used appropriately.

2 Information point: Preventative measures

Specific strategies can be taken to reduce the risk of acquiring pneumonia in the community. These include improving behaviours such as the uptake of influenza and pneumococcal vaccinations, smoking cessation, better oral hygiene, reducing excess alcohol use and ensuring the home is both warm and free from moulds.

Local systems should ensure that those in high-risk groups are aware of these measures and that education and information is targeted appropriately.

3 Information point: Appropriate follow-up

All pneumonia patients should receive appropriate follow-up at around six weeks after completing treatment. This will often include a radiograph to ensure resolution of the consolidation. This may not always require a formal clinic appointment, but all parties should be informed of the chest x-ray result in a timely fashion. Where patients may be thought to be immunocompromised, for example, HIV or immunoglobulin deficiencies, or have structural problems with their lungs, outpatient follow-up in secondary care is recommended.

Please see the British Thoracic Society's [guidelines](#) for further information.

» Information points

4 Information point: Use of mortality risk assessments

Assessing mortality risk using the CRB65 score in primary care and the CURB65 score in hospitals informs clinical judgement and supports decision-making. This ensures that treatment is based on the severity of the infection and will improve treatment outcomes.

Please refer to NICE's quality statement; [Quality statement 1](#): Mortality risk assessment in primary care using CRB65 score; and [Quality statement 4](#): Mortality risk assessment in hospital using CURB65 score

5 Information point: CAP Care Bundle

The Community Acquired Pneumonia (CAP) Care Bundle was developed by the British Thoracic Society and is included in the 2022/23 Commissioning for Quality and Innovation framework (CQUIN). It is available for use by clinical teams and describes four high impact actions in secondary care that should happen within four hours of a patient being admitted. The aim is to ensure patient safety with timely prescribing and administration of oxygen followed by the timely administration of antibiotics after assessment of a chest x-ray and risk score.

The Care Bundle can be found on the British Thoracic Society's [website](#).

6 Information point: Clear and timely patient information

All pneumonia patients should receive appropriate follow-up at around six weeks after completing treatment. This will often include a radiograph to ensure resolution of the consolidation. This may not always require a formal clinic appointment, but all parties should be informed of the chest x-ray result in a timely fashion. Where patients may be thought to be immunocompromised, for example, HIV or immunoglobulin deficiencies, or have structural problems with their lungs, outpatient follow-up in secondary care is recommended.

Please see the British Thoracic Society's [guidelines](#) for further information.

» The 'bills' and how they compare

The costs for the suboptimal journey are almost twice as much over the course of Jim's treatment than in the optimal journey. But the biggest driver to implement an optimal pneumonia pathway is the shocking difference in outcomes for Jim and how this can be easily avoided.

Sector	Optimal (£)	Suboptimal (£)
Primary care	151	93
Secondary care	3,096	4,472
Ambulance service	0	584
Community pharmacy	98	0
Medicines	7	974
Total (£)	3,352	6,123

Estimated financial costs for the patient journeys

This is a scenario that clearly highlights the importance of early diagnosis and a risk stratification approach to treatment. If left untreated or there are delays in appropriate treatment, pneumonia can escalate quickly causing significant impact on patient outcomes and quality of life. Outcomes can be improved by ensuring all healthcare staff are aware of symptoms and, where appropriate, trained to use mortality risk assessments to identify those most at risk so that correct action can be taken.

In this suboptimal scenario there is poor communication between primary and secondary care. Roles and responsibility for ensuring that Jim receives timely follow up post-disease are unclear. This is a vital part of the treatment pathway as pneumonia is significantly associated with lung cancer as it shares similar symptoms and may be a feature of undiagnosed cancer. In the optimal journey Jim's follow up appointment helps to identify the early signs of lung cancer which, due to the early diagnosis, is treatable.

The table on the left summarises the financial costs calculated for the two pathways by health sector/area. National average costs and similar data sources have been used to calculate the indicative healthcare costs of two hypothetical pathways of care for an individual fictionalised 'typical' person, and therefore do not represent the local cost of service provision.

It is recommended that systems work with local clinical leaders and costing colleagues to map existing pathways, taking into account local circumstances and evidence, and reflecting the make-up of the local population and services already in place.

» Areas for systems to consider

At the integrated care system population level, there are likely to be thousands of people at risk from developing community-acquired pneumonia. The following statements and questions are some action areas that can lead to improvement within pneumonia services:



- » Who has overall responsibility for ensuring groups at risk of pneumonia are targeted and receive their pneumococcal and influenza vaccinations in a timely and appropriate manner?
- » Are clear diagnostic pathways in place for both primary and secondary care systems (to support early detection and diagnosis) to reduce inappropriate admissions to secondary care and improve experience of care and better patient outcomes?
- » Is there a consistent approach to risk stratification using severity assessments (CRB65 and CURB65 scores) in primary and secondary care to minimise avoidable death?
- » To support appropriate management and prescribing, systems should ensure that antimicrobial stewardship operates across all care settings as part of an antimicrobial stewardship programme.
- » Are there clear processes in place that include roles and responsibilities for the arrangements of post-disease follow up within primary or secondary care?
- » Is appropriate information given to all community acquired pneumonia (CAP) patients and their carers on the condition, its timescales of full recovery and how to minimise the risk of repeat CAP?
- » Who has responsibility for developing local expertise in pneumonia to drive change and improvement?

» Additional resources and tools

For more information about pneumonia, its management, guidelines, policy and tools, you may wish to look at the following resources:

Key resources

- RightCare Pneumonia Toolkit: This toolkit supports systems to understand the priorities in pneumonia care and the key actions to take. It contains a comprehensive list of tools, resources and a self-assessment, and can be found on the RightCare [website](#).
- RightCare data: Rightcare data allows systems to explore their performance across a range of indicators. By benchmarking the performance of systems with their most similar demographic peers nationally, systems can identify unwarranted variation and opportunities for improvement. Please contact rightcare@nhs.net for information on what respiratory data is available.
- Model Health System: A data-driven improvement tool that enables NHS health systems and trusts to benchmark quality and productivity. The [Model Health System](#) incorporates the Model Hospital, which provides hospital provider-level benchmarking.
- Getting It Right First Time (GIRFT) National Respiratory Report: This [report](#) draws on both the data analysis and the discussions with hospital trusts to identify opportunities for improvement across respiratory services.
- Atlas of Variation: Helps to identify unwarranted variation and assesses the value that healthcare provides to both populations and individuals. A second themed Atlas for respiratory was published in September 2019 and can be found on Public Health England's [website](#).

National Institute for Health and Care Excellence (NICE)

- Pneumonia in adults: diagnosis and management ([CG191](#)) - at time of publishing this clinical guideline is being updated, please see the [surveillance decision](#) for details
- Pneumonia in adults: Quality standard ([QS110](#))
- Pneumonia (community-acquired): antimicrobial prescribing ([NG138](#))
- COVID-19 rapid guideline: managing COVID-19 ([NG191](#))
- Lung cancer: diagnosis and management ([NG22](#))
- Patient experience in adult NHS services: improving the experience of care for people using adult NHS services ([CG138](#))
- Patient experience in adult NHS services ([QS15](#))

Third sector and national guidelines

- Asthma + Lung UK: Pneumonia [information page](#)
- Respiratory Futures: [Homepage](#)
- British Thoracic Society (BTS): [CAP Care Bundle](#)
- BTS Guidelines for the Management of Community Acquired Pneumonia in Adults: [update 2009](#)
- National Adult Community Acquired Pneumonia [Audit 2018/19](#)