NICE impact lung cancer

Lung cancer is the third most common cancer in England and is the leading cause of cancer death. In 2017, there were almost 39,000 new cases of lung cancer and just over 28,000 related deaths. This report considers how NICE’s evidence-based guidance can contribute to improvements in the care of people with lung cancer.

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Why focus on lung cancer?

NICE impact reports review how NICE recommendations for evidence-based and cost-effective care are being used in priority areas of the health and care system, helping to improve outcomes where this is needed most.

NICE provides evidence-based guidance and advice to help improve health and social care services. The uptake of NICE guidance is influenced by close relationships with partners across health and care, such as NHS England, NHS Improvement and Public Health England (PHE).

Since the publication of NICE's first guideline on lung cancer in 2005, we have produced a suite of lung cancer related guidance, which aim to improve outcomes by focusing on survival rates and ensuring the most effective tests and treatments are used.

In England, overall survival rates for cancers are improving but there is still a marked difference between lung cancer and other cancers. Between 2012 and 2016 more than 95% of people with breast or prostate cancer survived more than 1 year after their diagnosis, compared to less than 40% of people with lung cancer. There is an even greater difference between 5-year survival rates. More than 85% of people with breast or prostate cancer survived more than 5 years but just over 15% of people with lung cancer survived this long. When comparing with other countries in Europe, England’s long-term survival for people with lung cancer is poor, ranking 26th out of 29 countries.

The NHS Long Term Plan (LTP) focuses on the faster diagnosis of all cancer in order for people to have the best chance of curative treatment and improve long-term survival. This is set out with several milestones with the aim of diagnosing 75% of cancers at stage 1 or 2 by 2028.

We routinely collect data which give us information about the uptake of our guidance. To produce this report, we have worked with national partners to select data which tell us how NICE guidance might be making a difference in priority areas of lung cancer care. They also highlight areas where there is still room for improvement.
Prevention of lung cancer

Over 80% of lung cancer cases are associated with smoking and other risk factors, such as air pollution, workplace exposure and ionising radiation. Stopping people from being exposed to these risk factors can help to prevent lung cancer.

Helping people to stop smoking

NICE’s first public health guideline, published in 2006, was on brief interventions and referrals for people who smoke. Since then we’ve published a suite of guidance and advice covering interventions and strategies to prevent children and young people from taking up smoking, how to reduce harm from tobacco and how to help to help people who already smoke to quit. More recently we’ve published guidance on outdoor air quality, recommending a number of actions to reduce pollution from road traffic.

Smoking prevalence began to decline in the 1970s and has continued to do so. Smoking rates are highest among the most disadvantaged communities. In 2018, over a quarter of people in routine and manual occupations reported that they are current smokers, while just over 10% of people in professional and managerial roles smoked.

Smoking prevalence has continued to decline and more people who smoke have decided to quit

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**Percentage of adult population who smoke**

**Percentage of adults who smoke who have quit**

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<table>
<thead>
<tr>
<th>Year</th>
<th>Smoking Prevalence</th>
<th>Quit Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>2003</td>
<td>90%</td>
<td>5%</td>
</tr>
<tr>
<td>2004</td>
<td>80%</td>
<td>10%</td>
</tr>
<tr>
<td>2005</td>
<td>70%</td>
<td>15%</td>
</tr>
<tr>
<td>2006</td>
<td>60%</td>
<td>20%</td>
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<tr>
<td>2007</td>
<td>50%</td>
<td>25%</td>
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<tr>
<td>2008</td>
<td>40%</td>
<td>30%</td>
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<tr>
<td>2009</td>
<td>30%</td>
<td>35%</td>
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<td>2010</td>
<td>20%</td>
<td>40%</td>
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<tr>
<td>2011</td>
<td>10%</td>
<td>45%</td>
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<tr>
<td>2012</td>
<td>5%</td>
<td>50%</td>
</tr>
<tr>
<td>2013</td>
<td>2.5%</td>
<td>55%</td>
</tr>
<tr>
<td>2014</td>
<td>2%</td>
<td>60%</td>
</tr>
<tr>
<td>2015</td>
<td>1.5%</td>
<td>65%</td>
</tr>
<tr>
<td>2016</td>
<td>1%</td>
<td>70%</td>
</tr>
<tr>
<td>2017</td>
<td>0.8%</td>
<td>75%</td>
</tr>
<tr>
<td>2018</td>
<td>0.5%</td>
<td>80%</td>
</tr>
</tbody>
</table>

Since data collection started, there has been an overall increase in people reporting a return to their previous level of mobility at 30 and 120 days after admission.
The NICE quality standard on **smoking: supporting people to stop** states that healthcare practitioners should ask people if they smoke and offer advice on how to stop for those who do smoke. In 2016, 73% of people seen in secondary care were asked if they smoked by a healthcare practitioner, according to an audit **report on smoking cessation** from the British Thoracic Society (BTS). However, only 28% of people who smoked were asked if they'd like to quit and only 6% of people who smoked received advice on how to stop.

The picture in primary care is more promising. Data from NHS Digital's **Quality and Outcomes Framework (QOF)** show a steady increase in offers of support and treatment to current smokers. In 2018, almost 90% of smokers aged 15 or over who are registered with a GP had a record of an offer of support or treatment.

To support people to quit smoking the quality standard also says that people should be offered a referral to an evidence-based smoking cessation service. These services increase the likelihood that someone will quit smoking. In 2018 just over a third of all people who set a quit date through **NHS stop smoking services** successfully quit, as confirmed with carbon monoxide validation. This quit rate has remained steady over the last 4 years.

**Reducing air pollution**

Air pollution is associated with around **8% of all lung cancers**. Outdoor air pollution is a mixture of man-made pollutants, such as vehicle fumes, and natural substances like wind-blown dust. The **International Agency for Research on Cancer** (IARC) has linked tiny particles in the air to lung cancer, though it is not yet fully understood how these particles cause cancer.

The **NHS Long Term Plan (LTP)** outlines plans to reduce air pollution produced by the NHS, aiming for a 20% reduction in business mileage and fleet air pollutant emissions by 2023/24. The LTP adds that the overall reduction in air pollution is the responsibility of local government.

NICE’s **guideline** and **quality standard** on outdoor air pollution cover road-traffic related air pollution and its links to ill health. They make recommendations that will improve air quality through reduced emissions and initiatives such as clean air zones, with the aim of preventing a range of health conditions and deaths.
Recognition of lung cancer

Early detection of lung cancer is key to improving outcomes. This can be achieved through improved public awareness and quick referral to specialist care when lung cancer is suspected.

Symptoms of lung cancer can be vague and may be mistaken for other illnesses, such as chest infections. Delayed detection of lung cancer means that the disease has had more time to progress and is often at an advanced stage at the time of diagnosis. National Cancer Registration and Analysis Service (NCRAS) data show that almost half of all lung cancers are stage 4 at diagnosis, whereas the majority of breast and prostate cancers are stage 1 or 2 at diagnosis. Late diagnosis, where curative treatment is not possible, is a contributing factor to poor survival rates for people with lung cancer.

The late diagnosis of lung cancer can be a result of several factors, including a lack of awareness and recognition of symptoms, how quickly people visit a doctor and the speed at which cancer is suspected and then diagnosed. NICE’s guidelines and quality standards on suspected cancer and lung cancer have been developed to address these issues. They state that people should be made aware of lung cancer through coordinated public awareness campaigns and outline the criteria for referring people for relevant investigations or onto a suspected cancer pathway.

Implementation of these recommendations will raise public awareness of the signs and symptoms of lung cancer, which could encourage and empower people to seek advice from a healthcare professional. In addition, increasing primary care awareness and clear referral criteria can reduce the time from when lung cancer is first suspected by a clinician to the relevant investigations being undertaken, reducing the likelihood of late stage diagnosis.
The NHS Long Term Plan (LTP) has committed to extending a programme of lung health checks, which have produced strong results in Liverpool and Manchester by boosting the proportion of cancers detected at stage 1 and 2. NICE welcomes evidence arising from this programme.

**Public awareness campaigns**

To increase the number of lung cancers that are diagnosed at an earlier stage, NICE recommends that the public should be better informed on the signs and symptoms that are characteristic of lung cancer.

**Public awareness campaigns have been shown to increase early stage cancer diagnoses**

Results from the Be Clear on Cancer campaign show how successful public awareness campaigns can be. The campaign, led by Public Health England working in partnership with the Department of Health and Social Care, NHS England and Cancer Research UK, was set up in 2010 to promote awareness and early diagnosis of lung cancer. An estimated 700 additional cancers were diagnosed in the months surrounding campaign activity, compared to the same period in the previous year, and around 400 more people had their cancer diagnosed at an earlier stage.

**Referral to a specialist**

As well as increased public awareness of lung cancer, fast referral to a specialist for relevant investigations is also key to increasing diagnoses made at an earlier stage of disease. To ensure that people with any cancer are seen at the earliest opportunity, NICE developed a guideline on suspected cancer: recognition and referral. The guideline includes a section on the signs and symptoms of lung cancer which healthcare professionals should look out for to trigger an urgent referral to a specialist.

Data from NHS England’s Cancer Waiting Times annual report show that the proportion of people with suspected lung cancer seen by a specialist within 2 weeks, following an urgent GP referral, has remained at around 96% for the last 3 years. This exceeds the operational standard of 93% set by NHS England.
An associated outcome reported by the [National Cancer Patient Experience Survey](https://www.cancerresearchuk.org/cancer-info/cancerstats) (CPES) is how many times people saw their GP about the health problem caused by cancer, before they were referred to a specialist.

Over the last 4 surveys around a third of people with lung cancer could recall being referred to a specialist after just 1 GP appointment. This is lower than in the ‘all cancer’ population, where 43% of people recalled seeing their GP once before referral. In 2018 the proportion of people with lung cancer who recalled seeing their GP 5 or more times before referral was almost 8% compared with 6% for the ‘all cancer’ population.

To support GPs in recognising cancer symptoms, NICE has endorsed an online cancer education platform called [GatewayC](https://www.gatewayc.org). Using recommendations from our guideline on suspected cancer: recognition and referral, the interactive platform aims to improve cancer outcomes by facilitating earlier and faster diagnosis through supporting clinical decision making in primary care.

### Recognition of lung cancer in never-smokers

In the UK it is estimated that nearly 6,000 people who have never smoked die of lung cancer every year, making it the eighth most common cause of cancer-related death. While causes can be partly attributed to environmental factors such as air pollution, identifying the cause of the cancer in individuals can be difficult.

> ‘I had a bad back and it wasn’t getting any better so I went to see the GP, where he told me he was checking for cancer. This surprised me as I have never smoked. After 3 months of tests and scans, I was told that I had a tumour in my lung. I then had a lung biopsy and an MRI scan. Upon receiving results of the biopsy, my oncologist immediately started me on gefitinib, as it targets the EGFR mutation that I had tested positive for. While I was very satisfied with the people and the care I received, I wish they had implemented a faster diagnosis process. Greater Manchester have now instituted a faster 1-month diagnosis pathway and are in the process of rolling it out.’

Male, diagnosed at stage IV

Never-smokers generally refers to people who have smoked less than the equivalent of 100 cigarettes in their lifetime.

The latest Roy Castle awareness campaign [Like Me](https://www.roycastle.org/like-me), challenges the misconception that only certain people get lung cancer. The campaign highlights that lung cancer can affect anyone, which can lead to late diagnosis and increased mortality rates.
Diagnosis and staging

Minimising the number of steps in a diagnosis and staging pathway and completing them efficiently will reduce delays in care. NICE’s guideline on lung cancer makes a number of recommendations that optimise the diagnostic pathway and allow flexibility for managing a range of people that may present with symptoms of lung cancer.

Pathological confirmation and staging

NICE’s guideline and quality standard on lung cancer state that, when taking samples in people with suspected lung cancer, they should be adequate to permit pathological diagnosis, including tumour subtyping and assessment of predictive markers. A predictive cancer marker is anything present in or produced by cancer cells or other cells of the body in response to cancer. They can provide information on how aggressive the cancer is and whether it could be treated with a targeted therapy. Obtaining a pathological diagnosis and assessment of predictive markers ensures that the most appropriate treatment regimen is offered.

Data from the Royal College of Physicians’ National Lung Cancer Audit (NLCA) show that pathological confirmation rates in all stages of lung cancer dropped in 2014. They have since shown improvement but still remain below the 2013 rate.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pathological confirmation rates of lung cancer</th>
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<tbody>
<tr>
<td>2013</td>
<td>75%</td>
</tr>
<tr>
<td>2014</td>
<td>71%</td>
</tr>
<tr>
<td>2015</td>
<td>73%</td>
</tr>
<tr>
<td>2016</td>
<td>72%</td>
</tr>
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The latest report from the NLCA, published in May 2019, reports pathological confirmation rates in people with early stage lung cancer only. This is because some clinicians feel that people who have late stage lung cancer are unlikely to tolerate or benefit from an invasive biopsy. Similarly, NICE recommends that pathological diagnosis should only be performed without unacceptable risk to the person. In 2017, the pathological confirmation rate for people with stage I-II lung cancer who had a performance status of 0-1 was 89% in England.

To enable increased pathological diagnosis rates, the NHS Long Term Plan (LTP) details plans to increase capacity in diagnostic services by investing in new equipment and staff.

**Multidisciplinary team meetings**

Multidisciplinary team meetings (MDTs) are key to the effective diagnosis and staging of lung cancer. Bringing together a breadth of experience and knowledge from a range of healthcare professionals to form an MDT allows for rapid decisions around patient assessment and appropriate treatment. Lung cancer MDTs will often include a chest physician, radiologist, pathologist, specialist nurse, oncologist, surgeon and members of a palliative care team.

**Recent years have seen an increase in the proportion of people with lung cancer that are being discussed at multidisciplinary team meetings**

NICE recommends that the care of all people with suspected lung cancer should be discussed at a lung cancer multidisciplinary team (MDT) meeting. Data from the NLCA show that, in 2017, 87% of people with lung cancer were discussed at an MDT meeting. This is an increase from 82% in the 2015 audit.

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Performance status (PS) is a measure of how well a person is able to carry on ordinary daily activities while living with cancer and provides an estimate of what treatments a person may be able to tolerate. Someone whose PS is 0 or 1 can carry out most of their usual daily activities without help, whereas someone with a PS of 4 is usually confined to a bed or chair and needs help with all daily activities.
Treatment

Treatment for lung cancer includes surgery, chemotherapy, radiotherapy, immunotherapy and other targeted therapy drugs. People may be offered one or more different treatments depending on the stage and type of lung cancer as well as their general health.

Non-small-cell lung cancer (NSCLC) is the most common type of lung cancer, accounting for 87% of cases. NSCLCs can be broken down into 2 major sub-types: adenocarcinoma (sometimes referred to as non-squamous) and squamous cell carcinoma. With recent advances in scientific evidence, treatment for these subtypes is becoming increasingly different, with the identification of mutations in tumours being of particular importance in adenocarcinomas.

Small cell lung cancer (SCLC) is less common, accounting for around 12% of lung cancers. SCLC is an aggressive cancer which spreads at an early stage and so is nearly always advanced at the time of diagnosis, leading to limited curative-intent treatment options.

Surgery

Surgery for NSCLC has proven to be effective, with National Cancer Registration and Analysis Service (NCRAS) data showing that 45% of people with NSCLC were still alive 5 years post-surgery. Five-year survival rates for people with NSCLC who do not have surgery was 3%.

Over the last 10 years, surgery rates in NSCLC have doubled, from around 9% in 2006 to over 18% in 2017, exceeding the target of 17% set by the National Lung Cancer Audit (NLCA).

NICE recommends that people with non-small-cell lung cancer (NSCLC), who are well enough and for whom treatment with curative intent is suitable, should be offered a lobectomy (either open or thoracoscopic). It is encouraging that data from the National Lung Cancer Audit show that surgery rates for people with stage I-II lung cancer and a good performance status have increased from almost 52% in 2015 to almost 61% in 2017, though there does appear to be significant regional variation.
Surgery rates for people with stage I-II lung cancer and a good performance status vary across the country.

Overall surgery rates for NSCLC are increasing, but there is variation across the country.

Chemoradiotherapy for NSCLC

For more advanced NSCLC, surgery or radiotherapy alone is often not appropriate as the cancer has spread too far for it to be possible or effective. Even for more advanced cancers that have not spread too far, the curative potential of radiotherapy alone is low. A chemotherapy regimen is often added to radiotherapy to control small clusters of cancer cells that have spread to other parts of the body. Additionally, many chemotherapy agents make the cancer more sensitive to the radiotherapy.
NICE recommends that chemoradiotherapy should be considered for people with stage II or III NSCLC when surgery isn’t suitable or is declined.

Chemoradiotherapy for people with stage III NSCLC is steadily increasing. The National Lung Cancer Audit reports that 34% of people with stage IIIA NSCLC and good performance status received treatment with chemotherapy and either radical radiotherapy or surgery in 2017.

### Chemotherapy, radiotherapy and chemoradiotherapy

Chemotherapy is a whole-body treatment where drugs are used to kill cancer cells by disrupting their growth. For early stage cancer, it can be used to shrink a tumour before surgery, making it easier to remove or it can be used after surgery to reduce the risk of the cancer coming back.

For people with advanced lung cancer, chemotherapy can be used to stop the cancer from spreading further and help people live longer.

Radiotherapy uses high energy x-rays to destroy cancer cells to stop them growing and spreading.

Radiotherapy can be used in early stage NSCLC for people who cannot have surgery.

It can also be used after surgery if it was not possible to remove all the cancerous tissue. In late stage lung cancer, radiotherapy can be used to manage symptoms.

Chemoradiotherapy is a combination of chemotherapy and radiotherapy. This is generally offered to people with stage II or III NSCLC who are reasonably well as it can be difficult to tolerate the side effects of both treatments.

### Systemic anti-cancer treatment for NSCLC

Systemic anti-cancer treatments (SACT) include all treatments that are administered to the whole body, for example chemotherapy, immunotherapy and other medicines that disrupt the behaviour of the cancer cells. These treatments are more often used to treat advanced NSCLC. Clinical trials have demonstrated that people with advanced and incurable NSCLC can benefit from SACT, delivered to improve quality of life and to extend survival.

NICE has produced a number of recommendations relating to the treatment of NSCLC using targeted SACT and in March 2019 we published 2 algorithms for the treatment of squamous and non-squamous stage IIIB and IV NSCLC.

Baseline data from the NLCA show rates of SACT for people with advanced stage lung cancer (IIIB-IV) who have a good performance status are increasing, from almost 63% in 2016 to 66% 2017.
The Innovation scorecard estimates report is produced by NICE and published by NHS Digital. The report shows the trend in prescribing of NICE recommended first-generation (gefitinib and erlotinib) and second-generation (afatinib and osimertinib) tyrosine kinase inhibitors, which are indicated for the targeted treatment of adults with locally advanced or metastatic epidermal growth factor receptor (EGFR) mutation-positive NSCLC.

Prescribing data indicates that the second-generation medicines have become a more popular treatment choice once available. Emerging evidence suggests that the second-generation medicines may be better in terms of prolonging progression free survival.

For the last 2 years, approximately 1,700 people in England received treatment each year with one of the EGFR targeted medicines.
Treatment for small cell lung cancer

Around 30% of small cell lung cancer (SCLC) cases are detected at stage I–III. For those detected early enough, treatment with curative intent is an option. NICE recommends that twice-daily radiotherapy with concurrent chemotherapy should be offered to people with limited-stage disease SCLC. NICE also says that surgery should be considered in people with early-stage SCLC.

The NLCA shows that treatment with curative intent for people with SCLC has increased. In 2017, 42% of people with stage I–III SCLC with a performance status of 0–2 received treatment with chemotherapy and radical radiotherapy or occasionally surgery, which is a year on year increase since 2015.

For SCLCs that are detected at a late stage, chemotherapy and radiotherapy can be used to improve quality of life and chances of medium-term survival.

NICE recommends that people with limited-stage SCLC should be offered 4 to 6 cycles of cisplatin-based combination chemotherapy and that people with extensive-stage SCLC should be offered a platinum-based combination chemotherapy.

Data from the NCLA show that the proportion of people with SCLC who receive chemotherapy has remained steady for the last few years at around 70%, which meets the NLCA’s audit standard.

Changes in commissioning

Stereotactic ablative radiotherapy (SABR) is a type of radiotherapy used to treat cancers by directing narrow beams of radiation at the cancer from different angles. The tumour gets a high dose of radiation and the surrounding healthy tissues get a low dose, reducing the risk of damage to healthy tissue.

Oligometastatic disease occurs when cancer cells from the original (primary) tumour travel and form a small number of new (metastatic) tumours. SABR is not routinely commissioned for the treatment of oligometastatic disease and was selected by NHS England for the Commissioning through Evaluation (CtE), which is part of its Evaluative Commissioning Programme.

CtE enables a limited number of patients to access treatments that are not funded by the NHS but show significant promise for the future, while new clinical and patient experience data are collected. NICE is commissioned by NHS England to oversee individual CtE schemes. The updated policy which will contain a summary of the results of the CtE scheme will be published on the NHS England Specialised Commissioning document library once a decision has been made.
Patient experience

The NHS Constitution highlights the importance of people being at the heart of everything the NHS does. People should be treated with compassion, dignity and respect and involved in decisions about their care and treatment. These key themes are reflected in NICE’s guideline and quality standard on patient experience in adult NHS services.

Specialist nurse

Having a named specialist nurse who is easy to contact for information, advice and support can help people feel reassured that they are well informed and involved as much as they want to be in decisions about their care. The NICE guideline on the diagnosis and management of lung cancer recommends that a lung cancer clinical nurse specialist (CNS) is available at all stages of care.

Lung cancer CNS are nurses who have completed an accredited programme of study in lung cancer. They are a core member of the multidisciplinary team (MDT), contributing to decisions around assessment and care planning. They coordinate the patient pathway and often act as the key worker for patients referred to the team. Recent studies have shown that lung cancer CNS assessments are associated with higher rates of anti-cancer therapies.

In recent years, more people with lung cancer have been seen by a nurse specialist but this number remains lower than expected

According to the National Lung Cancer Audit (NLCA), the proportion of people seen by a lung cancer CNS has increased, from 55% in 2008 to 70% in 2017 and the National Cancer Patient Experience Survey (CPES) reports that, in 2018, 90% of people with lung cancer were given the name of a lung cancer CNS. The CPES also reports that more than three quarters of people with lung cancer found their CNS easy to contact.
Workforce data collected by Macmillan show that there has been a general increase in cancer CNSs. While the total number of lung cancer CNSs has increased, given its prevalence as the third most common cancer, it would be expected that the proportion specialising in lung cancer would be greater than 11%.

### Communication

People with lung cancer face an increasing amount of new and complex information at a time when their ability to process and understand it can be impaired by the stress of their illness.

‘Everything was made clear but I was too scared to think straight and was unable to take it all on board. I couldn’t make an informed decision because of the terror I felt at dying and just went along with what I was advised to do. This, obviously, as I’m still here was the right thing to do.’  
Shirley, diagnosed at stage IV

NICE recommends that people with lung cancer should be given accurate and easy-to-understand information and that they should have tests and treatment options explained, including potential survival benefits, side effects and effect on symptoms.

The latest CPES report shows that people with lung cancer are less likely to say that they were given easily understood, written information on their cancer compared with people with most other cancer types. Results for all other areas of communication that the cancer patient experience survey asks about are comparable between lung cancer and all other cancer types.

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### Compared to other cancers, people with lung cancer were less likely to be given written information that is easy to understand

<table>
<thead>
<tr>
<th></th>
<th>Lung cancer</th>
<th>Cancer average</th>
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<tbody>
<tr>
<td>Given written information about the type of cancer that was easy to understand</td>
<td>57%</td>
<td>65%</td>
</tr>
<tr>
<td>Treatment options explained before the treatment started</td>
<td>88%</td>
<td>87%</td>
</tr>
<tr>
<td>Possible side effects of treatment(s) explained in a way the patient understood</td>
<td>94%</td>
<td>93%</td>
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</table>
In England the average 5-year survival rate for people diagnosed with lung cancer between 1991 and 1993 was 5% but varied by Area Health Authority between 2% and 8.5%. The latest figures from the Office for National Statistics show that 5-year survival had tripled for people diagnosed in 2011 to 14% for males and 17.5% for females.

Before the National Cancer Plan and the NICE guidelines were published, cancer care was fragmented. The first NICE guideline on lung cancer was published in 2005, the same year that full data collection in the National Lung Cancer Audit (NLCA) began. Since then there has been the universal adoption of MDT working and a steady increase in the proportion of people receiving any active anti-cancer treatment, namely surgery, chemotherapy or radiotherapy. Of these the most important explanation of the improvement in 5-year survival is likely to be the more than doubling of the number of people undergoing surgical resection of their cancers. The quality of surgery has also improved over that period, with significant falls in peri-operative mortality, to some of the lowest levels reported internationally, despite surgery being carried out on older, less fit patients. That has been achieved by a doubling of the number of specialist thoracic surgeons since 2005.

Outcomes for people with lung cancer are improving but there is still work to be done to reduce regional variation and ensure adequate staffing levels

This has all been accompanied by much better diagnostic and staging techniques and the unprecedented increase in knowledge of the basic science and emergence of personalised medicine, based on advances in molecular pathology.

The development of NICE’s referral guidelines for GPs and the rapid referral pathways, combined with all the work on public and primary care awareness, have been associated with an increase in the proportion of people diagnosed at stages I and II from 19.5% in 2012 to 28% in 2017. Evidence of the effectiveness of lung cancer screening is now strong and the emergence of screening programmes in England is likely to have a major long-term impact on survival and mortality rates.
However, as is well demonstrated by the NLCA, wide variation in treatment and survival rates remain between different areas of the country. Apart from the limitations of current treatments, the main barrier to further progress in England is a shortfall in workforce, particularly in radiology, pathology and oncology, although there are many examples where, with better organisation and design of services, improvements in both the timeliness and quality of care can be achieved within current resources. The aim should be to achieve universal and timely access to optimal care delivered by specialist teams as described in NICE guidance, which would result in further improvement in outcomes, both in terms of survival and quality of life, for people with lung cancer.