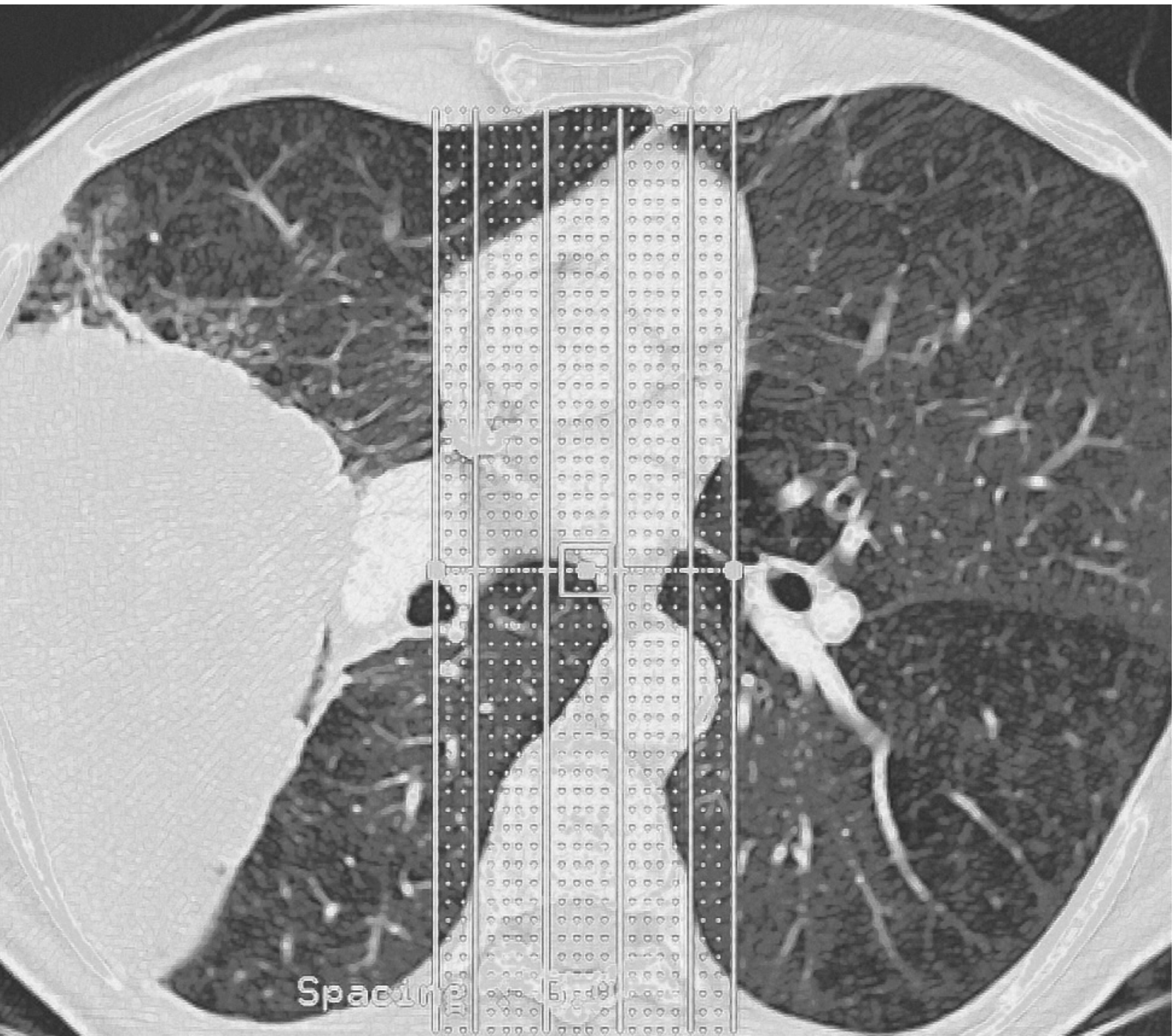
National Lung Cancer Audit Report 2014

Report for the audit period 2013



The Healthcare Quality Improvement Partnership (HQIP)
The National Audit of Lung Cancer is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit Programme (NCA). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement, and in particular to increase the impact that clinical audit has on healthcare quality in England and Wales. HQIP holds the contract to manage and develop the NCA Programme, comprising more than 30 clinical audits that cover care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual audits, also funded by the Health Department of the Scottish Government, DHSSPS Northern Ireland and the Channel Islands.

Health and Social Care Information Centre (HSCIC) is the trusted source of authoritative data and information relating to health and care. HSCIC's information, data and systems play a fundamental role in driving better care, better services and better outcomes for patients. HSCIC managed the publication of this Annual Report.

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Contents

Acknowledgements

The National Lung Cancer Audit (NLCA) Project Team, Mick Peake, Paul Beckett, Ian Woolhouse, Kimberley Greenaway, Arthur Yelland, Claire Meace and Anne Cerchione, would like to thank all the organisations that have made this report possible. These include the Healthcare Quality Improvement Partnership (HQIP), The Royal College of Physicians (The RCP), Health and Social Care Information Centre (HSCIC), The University of Nottingham, The Cancer Information System Cymru (CaNISC), Informing Healthcare (Wales), Welsh Cancer Intelligence and Surveillance Unit (WCISU), South-East Scotland Cancer Network (SCAN), North of Scotland Cancer Network (NoSCAN), West of Scotland Cancer Network (WoSCAN). Thanks must also go to all the lung cancer teams who have contributed data to the audit as without their considerable efforts this report would not be possible.

Foreword

It is rewarding for all involved to see the publication of this, the tenth Annual Report of the National Lung Cancer Audit (NLCA). The lung cancer clinical community have come a long way over the period since the first report was published, with significant improvements being seen in the organisation and quality of services in the UK and now a report from the National Cancer Intelligence Network[1] has shown a significant improvement in survival. I believe the NLCA has been an important factor in driving these improvements and has certainly changed the culture of the professionals involved. An external report commissioned by the Roy Castle Lung Cancer Foundation[2] has demonstrated the wider impact of the audit. An important factor has been that the data has been open to the public from the outset and information on the performance of each hospital in England and Wales is available to patients and the public in a user-friendly way in a 'Lung Cancer Map' accessible via the Roy Castle Lung Cancer Foundation's website[3].

The population coverage and data completeness for 2013 are impressive, with again every hospital entering data and, as near as we can estimate, data being recorded on 100.0 per cent of all patients who get to secondary care. The completeness levels of the key fields of Performance Status, Stage and Treatment are nearing 95.0 per cent, a tribute to all those in the Multi-Disciplinary Teams around the nation who assiduously collect the data. The year-on-year improvements in the headline indicators that we have seen over previous years have, as one might predict, begun to plateau, although there continue to be improvements in the proportion of patients seen by a Clinical Nurse Specialist (now at 84.0 per cent). A new feature this year is an organisational audit which we believe adds important contextual information to the activity and performance data.

The range and depth of data that are becoming available as a result of the redevelopment of the National Cancer Registration Service and the establishment of the National Cancer Intelligence Network is radically changing the context in which we work and in which the NLCA was first conceived and developed around 15 years ago. So now is a time for reflection and re-design. At the time of writing a re-tendering process is underway for the NLCA and it is not certain at this stage which organisation will be commissioned to take it forward. Whoever is appointed to take over the management of the audit will be building on a very sound base and will have the opportunity to find novel ways of supporting commissioners, providers and the public in their efforts to continue to drive up standards of care and patient outcomes which, after all is what it is all about.

Mick Peake
Clinical Lead, National Lung Cancer Audit

Purpose

The purpose of this document, the tenth Annual Report of the National Lung Cancer Audit (NLCA), is to summarise the key findings of the audit for patients diagnosed with lung cancer who were first seen in secondary care in 2013. The history, purpose and methodology of the audit have been extensively documented and further details can be obtained from the HSCIC website (www.hscic.gov.uk/lung). More extensive analyses on the 2013 data, including case-mix adjusted data in an electronic spreadsheet format will be available from the HSCIC website in due course.

Every Trust or Health Board in England and Wales and Scotland have participated in the audit, although because of differences in reporting schedules, standards and targets the Scottish data are tabulated separately. Unfortunately, the data for Northern Ireland and Guernsey was not available in time to be included in this report and therefore will be published electronically at a later date. Details of care provided by individual organisations in this report are based on "place first seen" in secondary care. Place first seen is chosen since in the vast majority of cases it represents the location of the Multi-Disciplinary Team that co-ordinates the investigation and treatment of the individual patient. As a result some tertiary centres may appear to have little input into the care of lung cancer and to submit little data to the audit, however, on the contrary, they usually provide the most complex care for the most difficult patients and submit treatment data on behalf of other Trusts. Information about the number and types of treatment provided by these Trusts is provided in Figure 28.

For this year's report, we have made some changes to reflect the new commissioning structures in the NHS. In previous years we have reported the results of the NLCA at National, Cancer Network, and Hospital Trust level. With the abolition of the cancer networks and the introduction of Strategic Clinical Networks (SCN) in England, different organisations have established different arrangements, with some maintaining their old network structure, others moving to the new SCN boundaries, and some taking a mixed approach. Since the audit is not resourced to produce multiple reports with different groupings for the middle tier to suit individual preferences, we have decided to report the middle tier according to the SCN boundaries. We understand that this may cause difficulties in comparison with previous year's data in some cases.

Some regions have not been reported by SCN. London SCN has been split into its two constituent Integrated Cancer Systems (ICS), London Cancer and London Cancer Alliance, which were instigated in April 2012. An ICS is defined as a group of providers that come together in a formal, governed way to provide comprehensive, seamless cancer patient pathways[4]. Because the SCN structure covers England only, Wales and Scotland have been split into the same cancer networks as for previous reports: North Wales and South Wales and North of Scotland, South East of Scotland and West of Scotland.

In common with the last report and following favourable feedback, data completeness reporting will be available in online format only. We are currently working with the cancer registries to update the expected number of cases allocated to each individual organisation, as over time these estimates have become inaccurate and potentially misleading. Data completeness and quality are still key to the ongoing success of the NLCA and we would encourage audit participants to view their data at www.hscic.gov.uk/lung.

Similarly, we have excluded mesothelioma from the main report, having published a mesothelioma-specific report earlier in 2014.

Key Messages

The audit has collected data on 39,203 patients in Great Britain for this audit period, representing approximately 100.0 per cent of the cases of lung cancer presenting to secondary care.

Overall measures of the standards of care have been sustained and in some areas have marginally improved compared to previous years, with small rises in the proportion of patients having their cancer subtyped, the proportion of patients with small cell lung cancer receiving chemotherapy, and in the proportion having access to a lung cancer nurse specialist (LCNS). In many cases the measures of treatment approach those seen in other western healthcare systems. Despite these improvements, there remains marked variation across Trusts and Networks and differences in case-mix do not appear to explain the whole of this variation. For example, the proportion of patients with early stage lung cancer who receive surgery varies from 33.3 per cent to 62.9 per cent when measured at Network level (with even greater variation at Trust level). Since surgical treatment represents the best chance of cure of the disease, these data suggest that a substantial number of patients are needlessly dying of lung cancer as a result of local variation in care. A similar picture emerges for fitter patients who have advanced and incurable disease – in this group chemotherapy is known to extend life expectancy and improve quality of life, yet treatment rates vary 47.5 per cent to 62.9 per cent across the Networks.

Ensuring that all organisations provide the same standard of care as that provided in the best performing units is likely to cure more patients, and improve quality of life for those patients who cannot be cured. Trusts are encouraged to critically appraise their own results and perform reviews of lung cancer pathways and/or clinical cases where investigation or treatment rates are below the national average.

[1] Based on Cancer Research UK (CRUK) data 2009.

Recommendations

England and Wales

1. All Hospitals, Trusts and Health Boards should participate in this national audit, should submit data on all patients presenting to secondary care diagnosed with either lung cancer, and should complete all relevant data fields for each individual patient.
2. All hospitals, Trusts and Health Boards are encouraged to submit validated data for future rounds of organisational audit.
3. Data completeness for key fields should exceed 85.0 per cent and for MDT completeness should exceed 95.0 per cent (See Appendix 2 Local Action Plan).
4. To improve risk-adjustment models, we recommend that for those patients who do not receive the first choice treatment due to a co-morbidity, details of the co-morbidity should be provided in at least 85.0 per cent of cases; and for patients with Stage I-II and PS 0-1, completeness for FEV1 and FEV1% should exceed 75.0 per cent.
5. Maintain the level of 95.0 per cent of patients submitted to the audit being discussed at a Multi-Disciplinary Team (MDT) Meeting.
6. Histological/cytological confirmation rates below 75.0 per cent should be reviewed to determine whether best practice is being followed and whether patients have access to the whole range of biopsy techniques.
7. Non-Small Cell Lung Cancer, not otherwise specified (NSCLC NOS) rates of more than 20.0 per cent should be reviewed to ensure that best practice histological diagnostic techniques including immunohistochemistry are being followed, in order that patients receive appropriate chemotherapy regimens.
8. At least 80.0 per cent of patients are seen by a Lung Cancer Nurse Specialist (LCNS); at least 80.0 per cent of patients should have a Lung Cancer Nurse Specialist present at the time of diagnosis (note that these data are not available for Wales).
9. For patients undergoing bronchoscopy at least 95.0 per cent should have a CT scan prior to the procedure.
10. Surgical resection rates for NSCLC below the England and Wales average of 16.0 per cent should be reviewed. Furthermore, for early stage (I and II) disease, rates below 52.0 per cent should be reviewed to ensure that patients on the margins of operability/ resectability are being offered access to specialist thoracic surgical expertise (including second opinions).
11. Active anti-cancer treatment rates below the England and Wales average of 60.0 per cent should be reviewed.
12. Chemotherapy rates for small cell lung cancer below the England and Wales average of 70.0 per cent should be reviewed.
13. Chemotherapy rates for good Performance Status (0-1) Stage IIIB / IV NSCLC below the England and Wales average of 60.0 per cent should be reviewed.

A Local Action Planning toolkit (LAP) is provided in Appendix 2 to assist organisations in benchmarking against these quality measures. All organisations are encouraged to use the audit data to drive their service development in order to improve the standard of care for lung cancer patients. Trusts whose results in 2013 meet these recommendations should work to maintain their high standards and exceed them where appropriate. Performance against some of these recommendations is highlighted by a system of colour coding in the data Tables 1a and 2a.

It is important to stress that these quality measures are not targets, since in some cases there will be valid reasons for variation, such as case-mix and patient choice. Where applicable, organisations should take the case-mix adjusted results (published separately) into consideration in the evaluation of their service, although it is noted that in general case-mix does not explain the whole of the variation in practice across organisations.

Scotland

The above recommendations do not apply to Scotland; therefore the data in the Tables are not colour coded. NHS Quality Improvement Scotland published National Lung Cancer Standards in March 2008. NHS Boards in all Scottish Networks participate in comparing 2012 results measured against these Standards, and where variance is shown action plans can be developed by Networks and NHS Boards and monitored by Regional Cancer Advisory Groups.

As part of the Scottish Government's National Cancer Quality Programme new Quality Performance Indicators (QPIs) for Lung Cancer were implemented for all patients diagnosed on, or after, 1 July 2013. Performance against these QPIs will be monitored following one year of implementation and will be subject to a robust governance process through Regional Cancer Networks, the Scottish Government and Healthcare Improvement Scotland.

Accuracy of Data in this Report

Data submitted to the National Lung Cancer Audit need to be as complete as possible in terms of healthcare organisation participation, population coverage and data field completeness both to ensure the representative nature of the information and to make case-mix adjustment possible. Please refer to previous versions of the Annual Report for a full explanation of this issue.

Healthcare Organisation Participation

In 2013, every Trust or Health Board in England and Wales and every Health Board in Scotland has participated in the audit.

Population Coverage

In 2013 there were 34,468 patient records submitted from England and Wales (see Figure 1), and 4,735 submitted from Scotland (Figure 2). This is estimated to represent around 98.0 per cent of the expected annual incidence and probably almost all of those cases presenting to secondary care (some cases are diagnosed and treated in primary care, or are diagnosed at a post-mortem), as has been the case for several years (see Figure 3).

Of these records, 199 of the cases submitted from England were not suitable for further analysis and predominantly due to no 'date first seen' being recorded, meaning that it was not possible to be certain that these were cases from 2013.

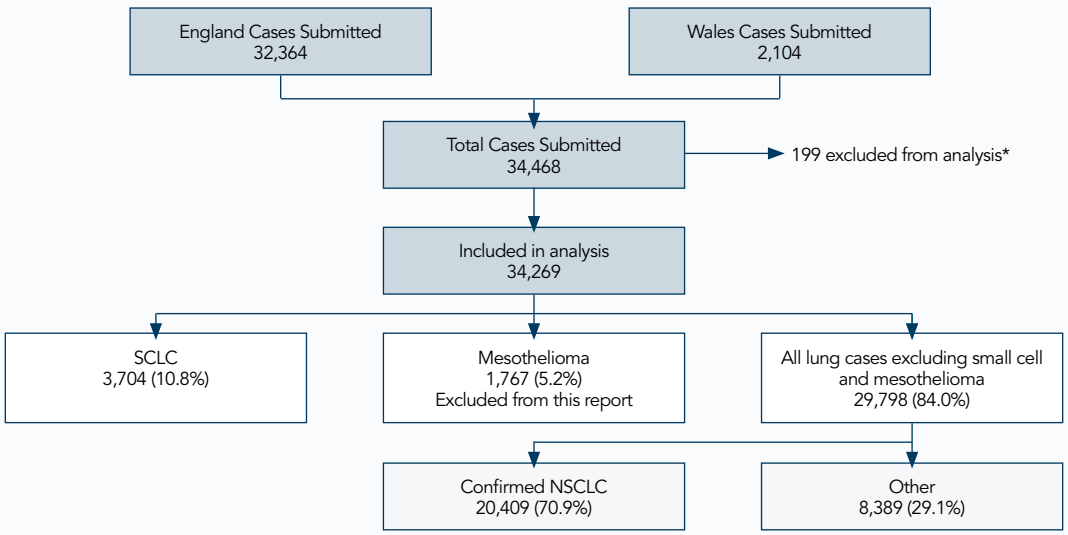
Submission of data to the audit has become an established part of the practice of lung cancer teams and serves as a model for other cancers. The annual trend in population coverage is shown in Figure 3 and demonstrates continued submission of around 100.0 per cent of the expected number of cases for several years.

In common with the last report and following favourable feedback, population coverage reporting by organisation will be available in online format only. As mentioned earlier, we are working with the cancer registries to update the expected number of cases allocated to each individual organisation.

Data Field Completeness

As previously stated data completeness for individual organisations are available online only this year. Overall recording of key data items continues to be of a very high standard, with 93.7 per cent of cases including Stage and 92.9 per cent of cases including Performance Status (PS). The improvements in recording of these items over the audit lifespan are shown in Figure 4. However, some individual organisations continue to record these data items in less than 85.0 per cent of the cases they submit. As in previous years, we recommend that organisations performing below this benchmark should use the LAP toolkit (Appendix 2) to improve their data submissions.

Figure 1
Number of patient records submitted to the NLCA – England and Wales



* In this year's report, patients have been excluded for two reasons: missing date first seen (155 cases) and duplicate patient records (44 cases)

Figure 2
Number of patient records submitted to the NLCA – Scotland

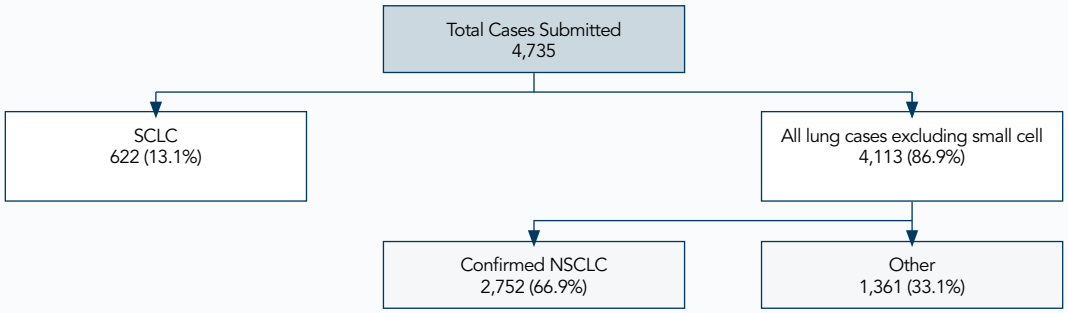
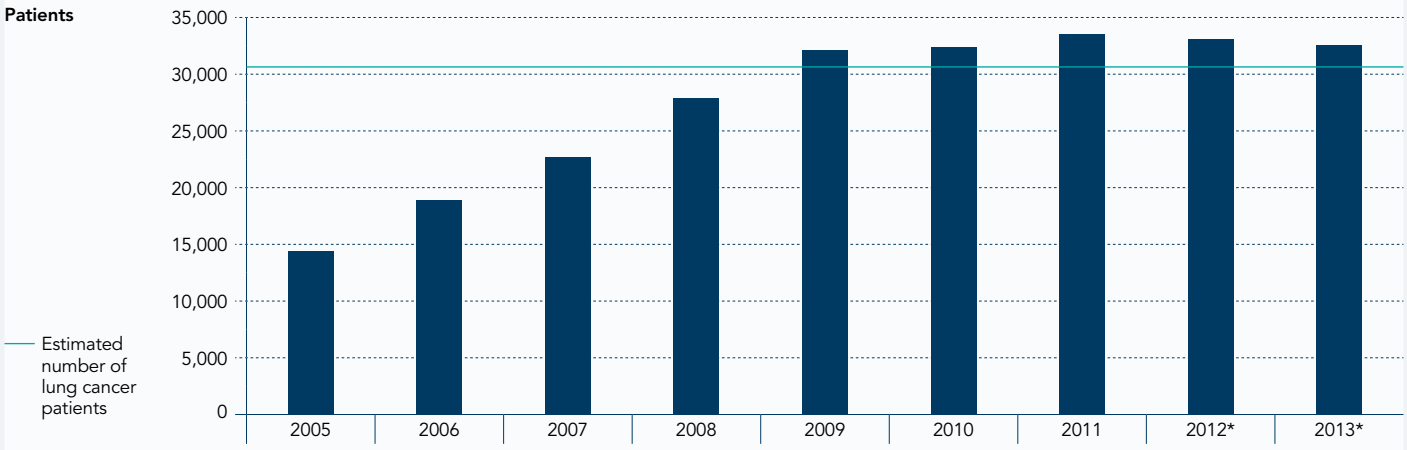
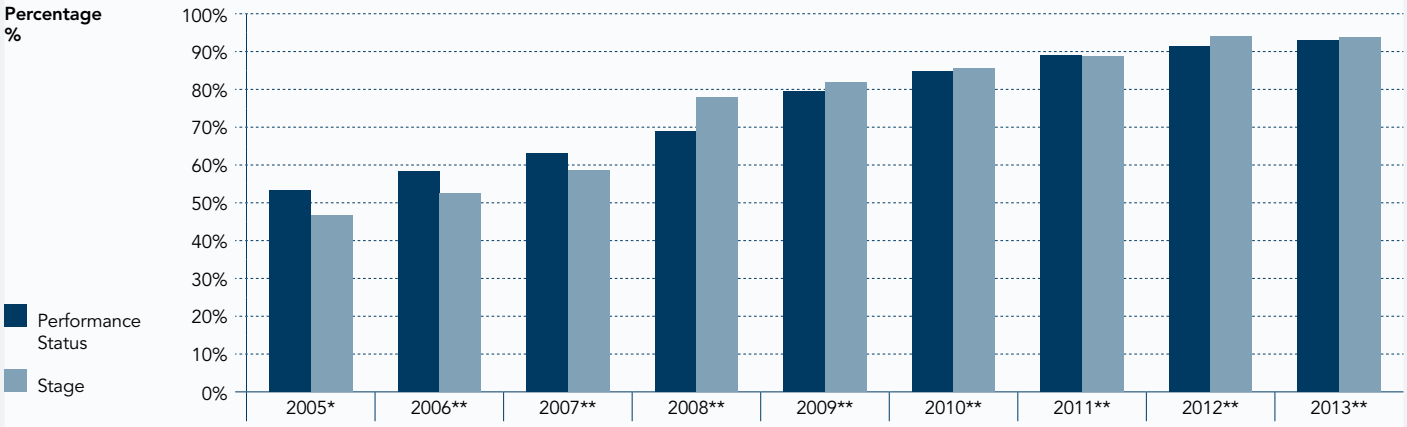


Figure 3
Population Coverage - England and Wales (2005-2013)



* Excluding mesothelioma

Figure 4
Stage and Performance Status Data Completeness - England and Wales (2005-2013)



* England only ** England and Wales

Data completeness and quality are still key to the ongoing success of the NLCA and we would encourage audit participants to view their data at www.hscic.gov.uk/lung.

Overall Standards of Care

For England and Wales, the main measures of the standards of care provided to patients show little change compared to the previous year. 95.6 per cent of patients are discussed at an MDT (Figure 5), the proportion of patients who receive a CT scan prior to a bronchoscopy procedure is 91.2 per cent (Figure 6), and 75.0 per cent of patients have a histo-cytological confirmation of their diagnosis (Figure 7). For those patients with histologically-confirmed NSCLC the proportion whose tumours are not further subtyped ("not-otherwise specified") has fallen from 15.8 per cent to 12.9 per cent.

The anti-cancer treatment rate has shown a marginal decrease to 60.1 per cent (Figure 8) and the overall surgical treatment rate is static at 15.1 per cent (Figure 9), whereas the proportion of patients with small cell tumours who receive chemotherapy has risen slightly from 67.9 per cent to 69.7 per cent. Access to lung cancer nurse specialists (LCNS) appears to have improved with the proportion of patients seeing a LCNS rising from 82.3 per cent to 83.9 per cent, and the proportion who have a LCNS present at the time of diagnosis (data available for England only) has risen from 61.2 per cent to 65.3 per cent (Figure 10).

Figure 5
Percentage of patients discussed at MDT

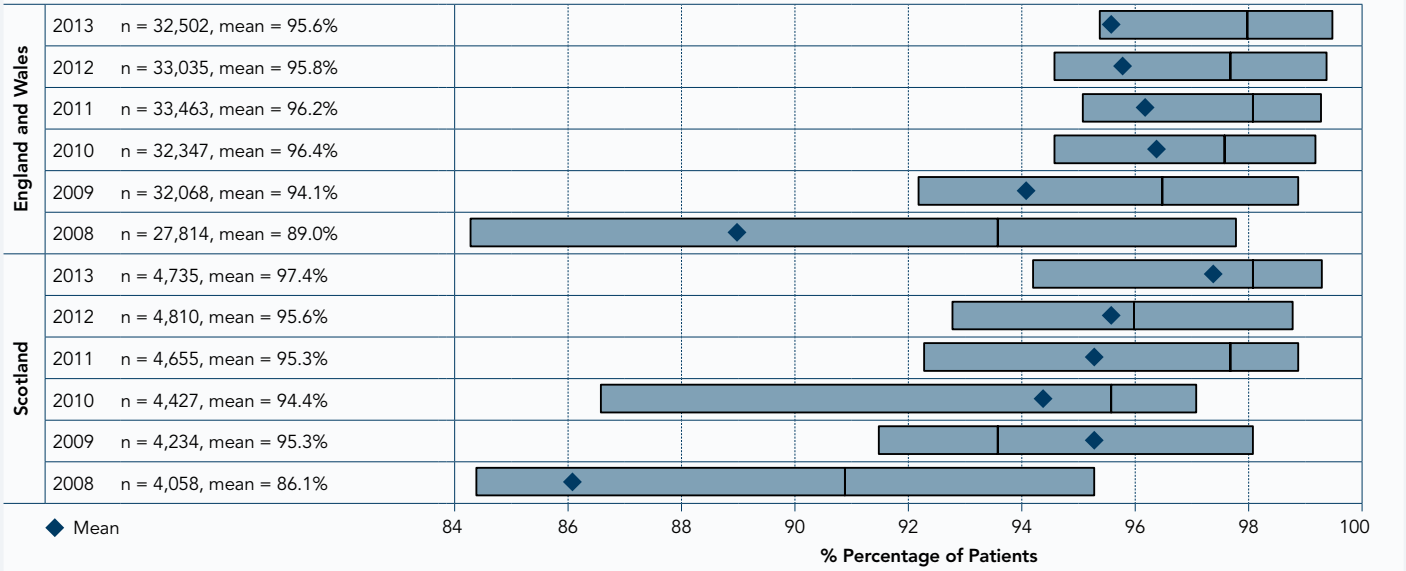


Figure 6
Percentage of patients receiving a CT scan before bronchoscopy

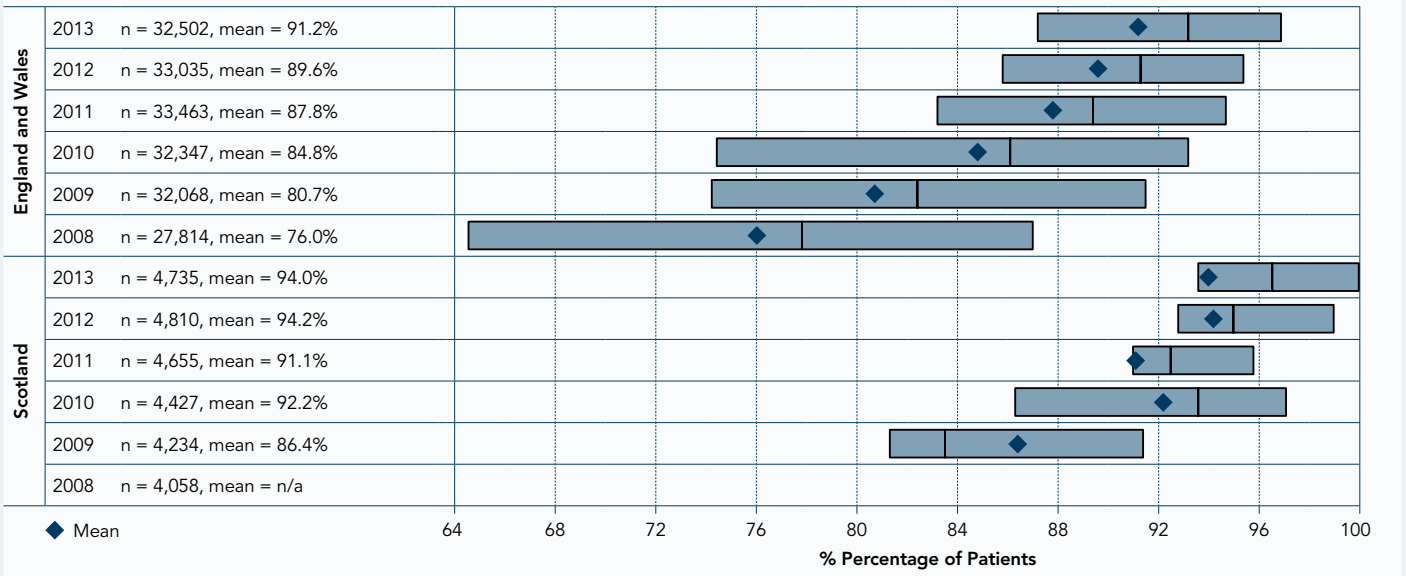


Figure 7
Percentage of patients receiving a histological / cytological diagnosis

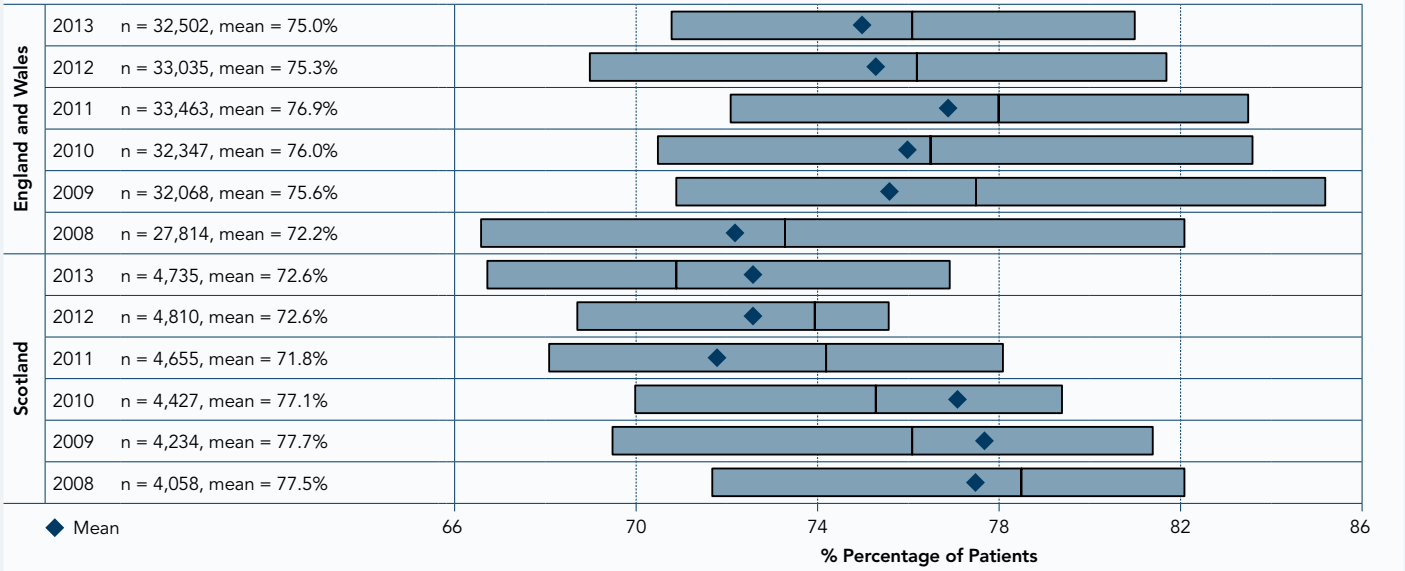


Figure 8
Percentage of patients receiving any anti-cancer treatment

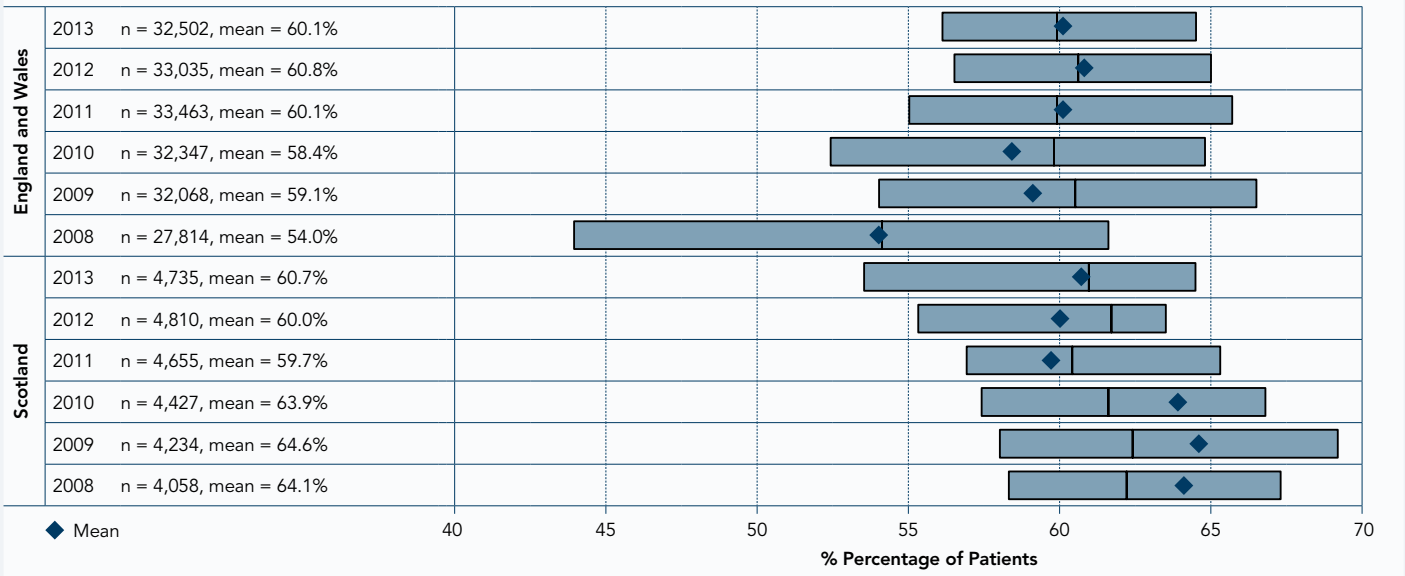


Figure 9
Percentage of patients receiving an operation

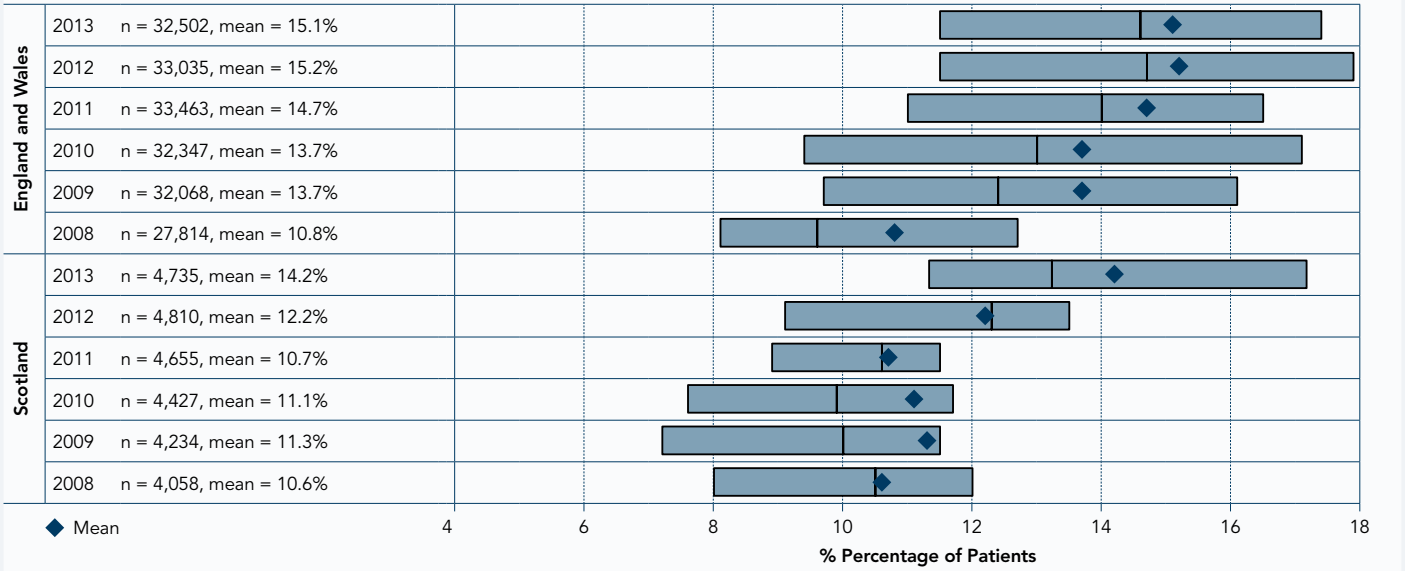
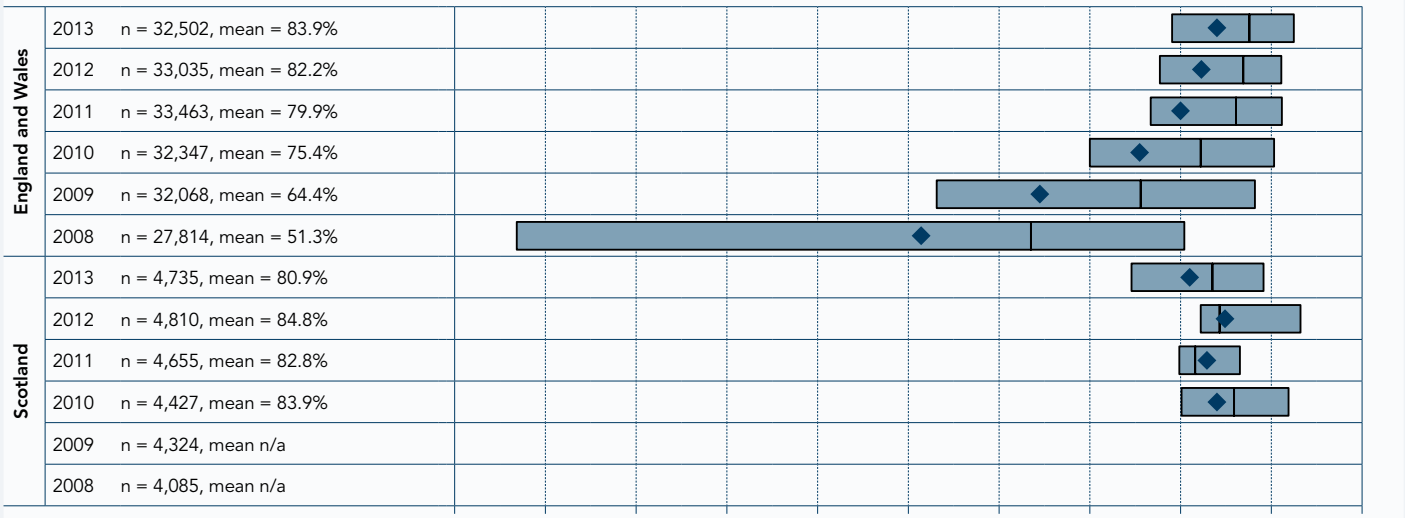


Figure 10
Percentage of patients seen by nurse specialist



Standards of Care for Organisations

Data on key process and outcome measures ("Headline Indicators") relating to the care of patients with lung cancer across England and Wales are given in Table 1a (Process and Clinical Outcomes for England and Wales 2013) by Network and by Trust (key to codes given in Appendix 1). These indicators have been chosen to reflect the overall standard of care provided to patients. Similar data for Scotland are shown in Table 2a.

Interpretation of the Data

In interpreting these figures, the population coverage and data field completeness must be considered and can be cross-referenced using the on-line data tables. Furthermore, the results as presented do not take into account the case-mix of patients (for example some organisations might legitimately claim that lower treatment rates reflected an older population, or patients presenting with more advanced disease). Adjustments to the results to account for such case-mix will be available from the HSCIC website in due course. Where applicable, organisations should take the case-mix adjusted results into consideration in the evaluation of their service since although case-mix does not explain the whole of the variation in practice across organisations, it may show a particular result to be, or not to be, a statistical outlier.

The colour coding in the Tables 1a and 2a reflects performance by organisations compared to the targets set in the 2012 Local Action Plan (LAP). LAP targets do not apply to Scotland; hence the data are not colour coded. National Lung Cancer Standards published by NHS Quality Improvement Scotland in 2008 include Standards for rate of histological confirmation (minimum 75.0 per cent) and percentage of SCLC having chemotherapy (minimum 60.0 per cent) however these do not specify rates of resection or anti-cancer treatment.

Understanding Variation

It is clear from Table 1a and Table 2a that there is considerable variation in the outputs that the audit measures across organisations (notwithstanding earlier comments regarding case-mix adjustment of the data). This is apparent both at Strategic Clinical Network and even more markedly at Hospital Trust level. In the latter case, some of the more extreme variation is explained by low numbers of cases, or poor quality data, so a useful way of reporting the variation is the "interquartile range" (IQR), describing the range of values in the middle 50.0 per cent.

In England and Wales, the IQR for histological/cytological confirmation is 70.8-81.0 per cent, for surgical treatment it is 11.5-17.4 per cent, for receipt of anti-cancer treatment it is 56.1-64.5 per cent, and for patients being seen by a specialist nurse it is 78.9-92.4 per cent. Similar variation is apparent for Scotland. These data are represented graphically in Figures 5-10.

Converting the Data into Service Improvement

Collecting data is only part of the audit process and it is important that the data is used to improve the services provided to patients and the outcomes of their treatment. There are numerous examples of local organisations doing just this. Furthermore, national organisations such as the National Institute for Health and Clinical Excellence (NICE), the British Thoracic Society and the National Cancer Peer Review Programme have all utilised data from the audit in their work programmes for lung cancer.

Comment from Dr Adam Dangoor
Consultant in Medical Oncology
Bristol Cancer Institute
Bristol Haematology and Oncology Centre

Prior to LUCADA it was difficult to gather data on our practice, outcomes, or how we compared to other units regionally or nationally. The audit provides motivation for the local collection of more accurate and comprehensive data which is essential for maintaining and improving standards. Without a national audit this data collection can unfortunately fall down the list of priorities of NHS providers due to the competing demands on resources. In our own case the collection of data has supported the expansion of our thoracic surgical services from two to five consultants. In addition we have prioritised expansion of clinical nurse specialist support which is underway. It has been reassuring to note that on most measures our service is in a good position and this in itself is motivation for maintaining our performance.

Comment from Dr Angela Morgan
Consultant Respiratory Physician and Clinical Lead for Lung Cancer
The Royal Wolverhampton NHS Trust

We picked up various issues, but the main ones were:

a) Our low rate of radiotherapy

This Trust is the lowest in the network, giving radiotherapy in 18.9 per cent of cases, against a national average of 30.0 per cent. (our Figures for 2013 suggest a possible increase to 22.0 per cent).

Action: We now have a clinical oncologist attending our MDT (as well as medical oncologist). This year an acute clinic slot has been created each week for urgent patients requiring urgent radiotherapy as there was a perception that perhaps patients were deteriorating prior to assessment resulting in being unable to have treatment. We look forward to the most recent results with interest.

b) Small cell lung cancer treatment rates

68.4 per cent of patients with small cell lung cancer were treated with chemotherapy which is slightly higher than the national average of 67.9 per cent. An audit of the six patients not receiving chemotherapy shows that all had a performance status of 3 or above.

Action: Our pathologist team now inform us as soon as they diagnose small cell lung cancer so that we can expedite clinic appointments to ensure that there is minimal delay in assessing these patients for treatment as the perception was that perhaps they were deteriorating quickly and thus became unsuitable for treatment. Again we await the impact of this intervention.

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 1

Place first seen	Actual number	Discussed at MDT (%)	% of patients receiving CT before bronchoscopy	Patient seen by nurse Specialist (%)	Nurse specialist present at diagnosis (%)	Histological diagnosis (%)	% having active treatment	% receiving surgery all cases	% receiving radiotherapy
Cheshire and Merseyside	**1,692** ●	**88.8** ▲	**95.2** ●	**81.8** ●	**54.4** ▲	**69.4** ▲	**57.7** ▲	**18.6**	**27.5**
LLCU	385 ●	99.2 ●	99.4 ●	94.0 ●	81.6 ●	80.5 ●	65.2 ●	19.5	33.8
RBL	256 ●	98.0 ●	97.1 ●	90.2 ●	73.4 ▲	66.4 ▲	59.0 ▲	19.5	29.3
RBN	265 ●	76.6 ▲	99.1 ●	85.3 ●	50.2 ▲	68.7 ▲	56.2 ▲	17.7	23.0
REM	315 ●	96.8 ●	90.8 ▲	70.2 ▲	6.7 ▲	74.9 ▲	58.7 ▲	21.0	27.6
RJR	142 ●	76.8 ▲	88.9 ▲	73.9 ▲	60.6 ▲	50.7 ▲	57.7 ▲	17.6	26.8
RVY	147 ●	74.8 ▲	93.9 ▲	84.4 ●	61.2 ▲	60.5 ▲	48.3 ▲	15.0	27.2
RWW	177 ●	78.5 ▲	85.7 ▲	65.0 ▲	49.7 ▲	62.7 ▲	46.9 ▲	14.1	19.2
East Midlands	**2,348** ●	**93.5** ▲	**93.6** ▲	**83.6** ●	**61.5** ▲	**72.6** ▲	**58.3** ▲	**14.1**	**26.3**
RJF	134 ●	97.8 ●	88.6 ▲	89.6 ●	54.5 ▲	70.1 ▲	47.0 ▲	0.7	20.9
RK5	252 ●	94.0 ▲	93.6 ▲	98.4 ●	95.6 ●	75.0 ●	58.7 ▲	14.3	27.4
RNQ	195 ●	96.4 ●	96.4 ●	93.3 ●	88.7 ●	69.2 ▲	50.8 ▲	17.4	13.3
RNS	167 ●	100.0 ●	94.9 ▲	94.6 ●	79.6 ▲	74.9 ▲	61.1 ●	14.4	27.5
RTG	325 ●	80.9 ▲	96.7 ●	81.2 ●	62.2 ▲	70.8 ▲	56.9 ▲	22.8	20.3
RWD	350 ●	82.0 ▲	90.7 ▲	71.7 ▲	42.6 ▲	74.9 ▲	60.3 ●	12.9	34.3
RWE	490 ●	99.6 ●	97.3 ●	81.4 ●	45.5 ▲	64.3 ▲	59.2 ▲	13.7	27.8
RX1	433 ●	100.0 ●	90.3 ▲	78.1 ▲	57.3 ▲	81.3 ●	61.9 ●	11.5	28.6

Key
◆ Tertiary Trust

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 1

Place first seen	Actual number	Discussed at MDT (%)	% of patients receiving CT before bronchoscopy	Patient seen by nurse Specialist (%)	Nurse specialist present at diagnosis (%)	Histological diagnosis (%)	% having active treatment	% receiving surgery all cases	% receiving radiotherapy
East of England	**2,885**	**94.5**	**94.2**	**80.2**	**61.4**	**78.2**	**59.2**	**14.6**	**30.1**
RAJ	221	99.5	97.2	85.1	67.0	77.4	54.3	14.0	19.0
RC1	99	92.9	81.5	78.8	76.8	64.6	55.6	11.1	24.2
RC9	131	93.9	90.3	65.6	47.3	75.6	32.1	13.0	6.9
RCX	142	99.3	90.8	84.5	47.2	81.0	64.8	16.9	30.3
RDD	198	100.0	92.9	79.3	59.6	81.8	52.5	13.1	12.6
RDE	255	100.0	97.5	89.0	81.6	83.5	74.9	14.1	40.0
RGM	23	91.3	100.0	87.0	87.0	87.0	78.3	52.2	21.7
RGN	171	99.4	94.6	90.1	44.4	76.0	67.8	19.9	42.7
RGP	146	81.5	93.6	65.8	37.0	72.6	65.1	9.6	36.3
RGQ	179	96.6	91.5	83.2	56.4	83.8	74.9	12.8	57.0
RGR	160	98.1	94.1	71.9	64.4	76.9	45.6	15.6	13.8
RGT	178	99.4	100.0	94.9	94.9	83.1	72.5	23.6	38.2
RM1	342	82.5	93.9	71.3	46.8	71.3	62.0	10.5	37.7
RQ8	175	100.0	98.1	61.1	51.4	85.1	63.4	15.4	37.7
RQQ	66	100.0	100.0	75.8	72.7	63.6	69.7	18.2	37.9
RWG	186	81.7	0.0	97.3	74.2	79.6	28.5	11.3	13.4
RWH	213	96.7	93.6	81.2	62.9	80.3	54.5	13.6	26.3
London Cancer	**1,446**	**95.7**	**87.9**	**88.6**	**71.7**	**85.0**	**63.9**	**16.9**	**28.8**
R1HKH	122	91.8	90.5	89.3	77.0	86.1	68.9	18.0	18.0
R1HM0	121	96.7	95.3	90.9	59.5	90.9	58.7	14.9	29.8
R1HNH	72	97.2	82.9	90.3	66.7	88.9	59.7	9.7	26.4
RAL	103	100.0	96.2	99.0	97.1	90.3	63.1	31.1	21.4
RAP	90	97.8	100.0	98.9	97.8	80.0	64.4	11.1	46.7
RF4	280	88.6	74.2	82.9	52.9	80.4	50.4	11.8	20.4
RKE	92	97.8	96.3	47.8	37.0	76.1	65.2	14.1	40.2
RQW	158	99.4	93.7	94.3	88.6	81.6	64.6	20.9	26.6
RQX	92	100.0	94.7	93.5	77.2	83.7	59.8	21.7	27.2
RRV	131	100.0	94.4	92.4	55.0	88.5	85.5	21.4	41.2
RVL	183	95.6	77.0	94.5	92.3	91.3	72.1	15.8	32.2
London Cancer Alliance	**2,006**	**93.7**	**91.9**	**78.6**	**60.4**	**80.6**	**62.3**	**14.2**	**27.4**
RAS	124	93.5	97.9	88.7	79.0	58.1	52.4	10.5	33.1
RAX	122	95.9	90.9	92.6	59.0	76.2	60.7	15.6	25.4
RC3	65	98.5	82.4	72.3	66.2	55.4	46.2	6.2	36.9
RFW	94	98.9	97.3	2.1	1.1	78.7	45.7	10.6	22.3
RJ1	111	100.0	94.8	91.9	55.0	100.0	87.4	21.6	39.6
RJ2	304	97.7	79.1	83.9	67.1	78.3	58.9	10.9	20.1
RJ6	121	95.0	92.5	97.5	96.7	85.1	61.2	9.9	28.9
RJ7	136	84.6	81.8	49.3	35.3	83.8	56.6	17.6	4.4
RJZ	137	99.3	88.1	86.9	86.1	84.7	61.3	12.4	38.0
RQM	72	94.4	90.9	77.8	58.3	91.7	61.1	18.1	12.5
RT3	23	21.7	100.0	82.6	56.5	95.7	87.0	69.6	0.0
RV8	94	96.8	95.8	90.4	63.8	86.2	67.0	16.0	33.0
RVR	181	76.2	92.5	76.2	40.9	73.5	59.7	8.3	19.3
RYJ	249	100.0	95.9	74.3	51.8	86.7	73.1	20.5	42.2
RYQ	170	95.9	91.1	92.4	76.5	81.8	62.4	10.6	31.2

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 1

Place first seen	Actual number	Discussed at MDT (%)	% of patients receiving CT before bronchoscopy	Patient seen by nurse Specialist (%)	Nurse specialist present at diagnosis (%)	Histological diagnosis (%)	% having active treatment	% receiving surgery all cases	% receiving radiotherapy
Manchester, Lancs and S Cumbria	**3,373** ●	**93.5** ▲	**92.2** ▲	**84.3** ●	**73.4** ▲	**73.5** ▲	**61.4** ●	**17.7**	**27.7**
RBT	189 ●	99.5 ●	85.1 ▲	89.9 ●	66.1 ▲	60.8 ▲	59.8 ▲	16.4	37.6
RJN	127 ●	98.4 ●	100.0 ●	99.2 ●	91.3 ●	78.7 ●	66.9 ●	20.5	35.4
RM2 ◆	194 ◆	95.9 ◆	93.5 ◆	79.9 ◆	75.8 ◆	90.2 ◆	74.7 ◆	31.4 ◆	24.2 ◆
RM3	193 ●	97.9 ●	93.4 ▲	86.5 ●	82.4 ●	76.2 ●	63.2 ●	20.7	38.3
RMC	213 ●	87.8 ▲	96.4 ●	93.0 ●	81.2 ●	60.6 ▲	61.5 ●	17.4	34.3
RMP	165 ●	88.5 ▲	94.9 ▲	93.9 ●	43.0 ▲	74.5 ▲	62.4 ●	15.8	33.9
RRF	247 ●	98.0 ●	93.8 ▲	84.6 ●	80.6 ●	75.7 ●	60.3 ●	14.6	32.8
RTX	151 ●	91.4 ▲	98.1 ●	23.8 ▲	11.3 ▲	53.0 ▲	50.3 ▲	15.9	13.2
RW3	212 ●	97.6 ●	92.0 ▲	92.5 ●	83.0 ●	82.1 ●	70.3 ●	15.6	38.2
RW6	634 ●	87.4 ▲	82.1 ▲	79.2 ▲	70.2 ▲	71.5 ▲	60.7 ●	21.0	26.8
RWJ	213 ●	94.4 ▲	88.8 ▲	86.4 ●	76.1 ▲	74.6 ▲	60.6 ●	16.0	26.8
RXL	240 ●	100.0 ●	98.0 ●	96.3 ●	88.8 ●	79.2 ●	61.3 ●	9.2	16.3
RXN	240 ●	85.0 ▲	94.0 ▲	88.3 ●	72.1 ▲	77.9 ●	59.6 ▲	21.7	24.6
RXR	355 ●	97.5 ●	99.4 ●	85.6 ●	84.5 ●	73.5 ▲	54.6 ▲	11.5	17.2
Northern England	**2,615** ●	**98.8** ●	**89.3** ▲	**90.7** ●	**73.5** ▲	**75.6** ●	**62.4** ●	**12.9**	**32.5**
RE9	135 ●	100.0 ●	98.3 ●	93.3 ●	85.9 ●	68.9 ▲	55.6 ▲	13.3	22.2
RLN	264 ●	98.9 ●	82.0 ▲	88.3 ●	79.9 ▲	78.8 ●	59.5 ▲	15.5	35.2
RNL	235 ●	99.6 ●	92.6 ▲	97.0 ●	81.7 ●	74.9 ▲	59.1 ▲	9.8	33.2
RR7	217 ●	94.9 ▲	95.8 ●	96.3 ●	69.6 ▲	67.3 ▲	52.1 ▲	13.8	19.8
RTD	345 ●	98.3 ●	85.5 ▲	89.3 ●	72.5 ▲	74.8 ▲	67.5 ●	18.3	28.7
RTF	358 ●	98.9 ●	84.0 ▲	87.4 ●	51.4 ▲	77.9 ●	64.5 ●	12.3	25.7
RTR	351 ●	99.7 ●	94.3 ▲	93.7 ●	91.5 ●	79.5 ●	63.5 ●	9.1	39.6
RVW	297 ●	98.0 ●	88.7 ▲	88.2 ●	66.3 ▲	75.4 ●	72.7 ●	12.8	48.8
RXP	413 ●	100.0 ●	92.4 ▲	88.1 ●	72.4 ▲	76.3 ●	59.3 ▲	11.6	32.0
South East Coast	**2,389** ●	**95.8** ●	**89.8** ▲	**74.0** ▲	**49.4** ▲	**73.0** ▲	**53.0** ▲	**13.1**	**25.9**
RA2	97 ●	74.2 ▲	89.2 ▲	72.2 ▲	36.1 ▲	84.5 ●	58.8 ▲	17.5	27.8
RDU	196 ●	94.9 ▲	93.1 ▲	88.8 ●	73.5 ▲	84.7 ●	57.1 ▲	20.4	15.8
RN7	136 ●	100.0 ●	97.1 ●	100.0 ●	93.4 ●	92.6 ●	72.1 ●	13.2	33.8
RPA	182 ●	98.4 ●	94.1 ▲	93.4 ●	93.4 ●	62.6 ▲	43.4 ▲	11.0	29.7
RTK	129 ●	100.0 ●	79.1 ▲	35.7 ▲	32.6 ▲	76.0 ●	23.3 ▲	6.2	3.9
RTP	168 ●	95.2 ●	93.8 ▲	83.3 ●	63.1 ▲	81.0 ●	56.5 ▲	11.9	19.0
RVV	456 ●	95.4 ●	85.6 ▲	42.5 ▲	3.3 ▲	61.6 ▲	52.0 ▲	13.6	29.2
RWF	227 ●	99.6 ●	86.7 ▲	89.9 ●	74.0 ▲	77.5 ●	59.9 ▲	16.7	31.7
RXC	268 ●	99.6 ●	82.9 ▲	78.4 ▲	55.2 ▲	73.9 ▲	54.9 ▲	12.3	27.6
RXH	230 ●	96.1 ●	96.9 ●	73.0 ▲	46.5 ▲	66.5 ▲	46.5 ▲	10.9	26.5
RYR16	139 ●	95.7 ●	95.5 ●	86.3 ●	35.3 ▲	71.2 ▲	56.1 ▲	7.9	32.4
RYR18	161 ●	90.1 ▲	92.1 ▲	84.5 ●	42.9 ▲	71.4 ▲	55.9 ▲	13.0	23.6
South West	**2,173** ●	**95.7** ●	**89.4** ▲	**84.4** ●	**61.9** ▲	**73.3** ▲	**64.5** ●	**15.2**	**33.8**
RA3	98 ●	86.7 ▲	100.0 ●	66.3 ▲	37.8 ▲	80.6 ●	66.3 ●	17.3	28.6
RA4	82 ●	97.6 ●	95.5 ●	84.1 ●	74.4 ▲	50.0 ▲	59.8 ▲	18.3	14.6
RA7	140 ●	98.6 ●	95.7 ●	76.4 ▲	55.7 ▲	73.6 ▲	62.9 ●	22.9	22.1
RA9	201 ●	97.5 ●	86.0 ▲	86.6 ●	56.2 ▲	65.2 ▲	58.2 ▲	9.5	32.8
RBA	165 ●	93.9 ▲	76.9 ▲	78.2 ▲	32.7 ▲	81.8 ●	69.7 ●	20.6	35.2
RBZ	78 ●	78.2 ▲	88.0 ▲	92.3 ●	74.4 ▲	51.3 ▲	56.4 ▲	9.0	29.5
RD1	200 ●	99.0 ●	85.5 ▲	87.5 ●	41.5 ▲	68.0 ▲	59.0 ▲	15.5	30.0
REF	238 ●	96.6 ●	98.9 ●	98.3 ●	88.7 ●	76.5 ●	79.0 ●	12.6	53.4
RH8	195 ●	98.5 ●	88.8 ▲	97.9 ●	89.7 ●	83.6 ●	75.4 ●	17.4	46.7
RK9	282 ●	96.5 ●	92.2 ▲	76.6 ▲	48.6 ▲	66.0 ▲	59.6 ▲	11.3	36.2
RTE	282 ●	93.6 ▲	82.2 ▲	78.4 ▲	60.3 ▲	84.4 ●	63.1 ●	17.4	27.0
RVJ	210 ●	98.6 ●	96.9 ●	86.2 ●	80.0 ●	74.8 ▲	59.0 ▲	14.8	29.0

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 1

Place first seen	Actual number	Discussed at MDT (%)	% of patients receiving CT before bronchoscopy	Patient seen by nurse Specialist (%)	Nurse specialist present at diagnosis (%)	Histological diagnosis (%)	% having active treatment	% receiving surgery all cases	% receiving radiotherapy
Thames Valley	**1,054**	**96.9**	**89.1**	**87.9**	**75.3**	**85.4**	**65.7**	**21.8**	**21.8**
RD7	142	88.7	92.6	92.3	83.1	77.5	55.6	13.4	26.8
RD8	86	98.8	43.2	90.7	81.4	91.9	76.7	20.9	32.6
RHW	180	98.3	98.2	82.2	46.1	81.7	65.0	16.1	29.4
RN3	151	96.7	97.9	91.4	78.1	80.8	62.3	20.5	9.3
RTH	317	98.1	100.0	85.8	82.6	90.9	71.6	29.7	18.6
RXQ	178	98.9	97.1	89.3	80.3	86.5	61.2	21.9	21.3
Wessex	**1,326**	**96.8**	**89.0**	**79.0**	**61.4**	**76.3**	**62.8**	**14.1**	**32.8**
R1F	92	94.6	92.0	97.8	81.5	79.3	56.5	8.7	29.3
RBD	107	100.0	81.4	92.5	56.1	71.0	62.6	17.8	25.2
RD3	140	85.0	76.0	70.7	57.9	77.9	57.1	14.3	29.3
RDZ	183	96.7	82.5	86.9	76.5	67.2	60.7	16.4	28.4
RHM	221	98.6	87.8	69.7	52.5	76.5	72.4	15.8	43.4
RHU	346	99.1	97.6	72.5	65.6	76.9	57.8	11.8	36.1
RN506	82	96.3	97.4	74.4	41.5	75.6	57.3	8.5	28.0
RN541	80	97.5	89.8	81.3	51.3	87.5	72.5	17.5	17.5
RNZ	75	100.0	86.1	92.0	53.3	85.3	77.3	17.3	40.0
West Midlands	**3,202**	**95.4**	**88.3**	**87.9**	**66.5**	**74.7**	**57.2**	**15.8**	**24.6**
RBK	151	99.3	88.5	95.4	80.8	85.4	62.3	15.2	23.8
RJC	88	96.6	82.1	84.1	69.3	76.1	62.5	14.8	9.1
RJD	148	99.3	78.6	89.2	76.4	85.8	66.9	20.3	29.1
RJE	349	90.0	85.8	86.5	29.5	69.3	59.0	16.3	32.7
RKB	234	98.7	97.5	95.3	88.0	76.1	62.8	17.5	35.0
RL4	237	100.0	100.0	97.0	94.1	74.3	56.1	15.6	23.2
RLQ	129	100.0	97.8	75.2	64.3	74.4	69.0	19.4	37.2
RLT	110	96.4	93.9	83.6	75.5	77.3	59.1	10.0	20.9
RNA	223	77.6	91.5	90.6	79.8	74.4	48.4	9.4	20.6
RR1	496	95.4	78.9	89.9	62.3	66.5	48.0	15.9	8.9
RRK	253	98.0	98.7	94.9	75.1	79.4	66.0	20.6	32.0
RWP	210	98.6	84.4	78.6	77.1	76.7	50.5	14.3	23.3
RWP01	73	94.5	86.1	91.8	41.1	76.7	56.2	15.1	17.8
RXK	244	97.5	96.0	86.1	61.5	77.0	54.1	11.1	24.2
RXW	256	96.1	80.9	74.2	44.5	73.8	59.0	18.8	33.2
Yorkshire and the Humber	**3,994**	**98.5**	**91.9**	**86.7**	**71.7**	**71.0**	**60.2**	**15.1**	**27.9**
RAE	218	99.1	96.4	89.0	76.1	64.2	65.1	14.7	37.6
RCB55	175	98.3	90.2	91.4	84.0	77.1	60.0	17.1	30.3
RCBCA	137	99.3	92.5	90.5	68.6	62.0	48.2	9.5	30.7
RCD	100	98.0	95.1	90.0	74.0	70.0	63.0	12.0	25.0
RCF	131	100.0	100.0	87.8	75.6	77.1	62.6	13.7	26.0
RFF	163	100.0	94.3	92.6	73.6	82.2	66.3	13.5	9.2
RFR	230	97.0	98.8	93.0	89.1	70.4	55.7	15.2	15.7
RFS	186	100.0	94.2	96.2	86.6	67.2	51.6	17.2	9.7
RHQ	435	100.0	92.6	84.8	68.0	72.4	53.3	15.4	20.2
RJL	333	97.6	92.8	91.3	81.7	65.8	58.3	16.8	28.8
RP5	288	100.0	87.0	70.1	56.9	74.0	65.3	16.0	36.8
RR8	509	98.8	84.8	85.5	78.4	73.5	69.7	15.7	46.4
RWA	369	96.5	86.6	78.9	35.0	69.1	62.9	17.1	29.3
RWY	277	99.6	92.6	85.6	63.2	66.1	60.6	13.7	31.0
RXF	443	96.6	97.4	89.6	82.2	73.1	55.8	13.3	20.5
England Total	**30,503**	**95.4**	**91.1**	**83.9**	**65.3**	**75.1**	**60.2**	**15.4**	**28.3**

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 1

Place first seen	Actual number	Discussed at MDT (%)	% of patients receiving CT before bronchoscopy	Patient seen by nurse Specialist (%)	Nurse specialist present at diagnosis (%)	Histological diagnosis (%)	% having active treatment	% receiving surgery all cases	% receiving radiotherapy
North Wales	**487** ●	**99.6** ●	**93.7** ▲	**79.7** ▲	**N/A**	**74.5** ▲	**60.8** ●	**9.7**	**37.0**
7A1A1	175 ●	99.4 ●	85.1 ▲	95.4 ●	N/A	74.9 ▲	64.6 ●	10.9	42.3
7A1A4	169 ●	99.4 ●	98.7 ●	91.1 ●	N/A	73.4 ▲	56.2 ▲	12.4	32.5
7A1AU	143 ●	100.0 ●	96.2 ●	46.9 ▲	N/A	75.5 ●	61.5 ●	4.9	35.7
South Wales	**1,512** ●	**99.7** ●	**93.3** ▲	**86.2** ●	**N/A**	**73.4** ▲	**57.3** ▲	**11.2**	**37.8**
7A2AJ	41 ●	100.0 ●	88.2 ▲	43.9 ▲	N/A	82.9 ●	58.5 ▲	9.8	31.7
7A2AL	156 ●	100.0 ●	92.8 ▲	92.3 ●	N/A	87.8 ●	63.5 ●	10.9	38.5
7A2BL	63 ■	98.4 ●	86.7 ▲	82.5 ●	N/A	71.4 ▲	57.1 ▲	9.5	38.1
7A3B7	113 ●	99.1 ●	84.4 ▲	83.2 ●	N/A	61.9 ▲	59.3 ▲	11.5	46.0
7A3C4	83 ■	100.0 ●	100.0 ●	88.0 ●	N/A	68.7 ▲	54.2 ▲	7.2	39.8
7A3C7	99 ■	99.0 ●	95.2 ●	93.9 ●	N/A	80.8 ●	63.6 ●	11.1	35.4
7A3CJ	63 ●	100.0 ●	65.7 ▲	95.2 ●	N/A	76.2 ●	74.6 ●	19.0	47.6
7A4C1	278 ●	100.0 ●	99.0 ●	84.9 ●	N/A	64.0 ▲	54.3 ▲	10.4	37.8
7A5B1	142 ●	99.3 ●	97.1 ●	82.4 ●	N/A	74.6 ▲	42.3 ▲	11.3	31.0
7A5B3	127 ●	100.0 ●	100.0 ●	93.7 ●	N/A	78.0 ●	61.4 ●	13.4	47.2
7A6AM	107 ●	100.0 ●	97.7 ●	95.3 ●	N/A	70.1 ▲	60.7 ●	12.1	40.2
7A6AR	240 ●	99.6 ●	97.5 ●	81.7 ●	N/A	75.4 ●	54.6 ▲	10.8	30.0
Wales Total	**1,999** ●	**99.6** ●	**93.4** ▲	**84.6** ●	**N/A**	**73.7** ▲	**58.1** ▲	**10.9**	**37.6**
England and Wales Total	**32,502** ●	**95.6** ●	**91.2** ▲	**83.9** ●	**N/A**	**75.0** ●	**60.1** ●	**15.1**	**28.8**
Last year's results									
2012 England and Wales Total	**33,035** ●	**95.8** ●	**89.6** ▲	**82.3** ●	**61.2** ▲	**75.3** ●	**60.8** ●	**15.2**	**30.0**
Difference	-533	-0.2	1.6	1.7	4.0	-0.2	-0.8	-0.1	-1.1
Counts aggregated by place first seen trust.									
Range Network									
Min		88.8	87.9	74.0	49.4	69.4	53.0	9.7	21.8
LQ		94.1	89.2	79.9	61.4	73.1	58.0	13.6	26.8
Median		95.7	91.9	84.3	61.9	74.5	60.8	14.6	27.9
UQ		97.7	93.4	87.3	71.7	77.2	62.6	16.4	32.7
Max		99.7	95.2	90.7	75.3	85.4	65.7	21.8	37.8
Range Trust									
Min		74.2	0.0	2.1	1.1	50.0	23.3	0.7	3.9
LQ		95.4	87.2	78.9	52.7	70.8	56.1	11.5	22.5
Median		98.0	93.2	87.5	68.0	76.1	59.9	14.6	29.2
UQ		99.5	96.9	92.4	80.5	81.0	64.5	17.4	35.4
Max		100.0	100.0	100.0	97.8	100.0	87.4	31.1	57.0
Mean		95.7	90.9	83.8	65.5	75.6	60.1	14.7	28.9

Indicator	Definition	▲	■	●
Actual number	Number of cases with date first seen in year specified	<50%	50-75%	>=75%
Discussed at MDT (%)	Complete when MDT Discussion Indicator = Y (denominator = all cases)	<95%		>=95%
% of patients receiving CT before bronchoscopy	Complete when CT Scan Date before or equal to Bronchoscopy Date (denominator = cases with Bronchoscopy Date present)	<95%		>=95%
Patient seen by nurse Specialist (%)	Complete when Patient Assessed by a Lung Cancer Nurse Specialist = Y (denominator = all cases)	<80%		>=80%
Nurse specialist present at diagnosis (%)	Complete when Lung Cancer Nurse Specialist Present When Received Diagnosis = Y (denominator = all English cases)	<80%		>=80%
Histological diagnosis (%)	Complete when Histology is present or Basis of diagnosis equals 5, 6 or 7 (denominator = all English cases)	<75%		>=75%
% Having active treatment	Complete when date present for Brachytherapy, Anti-cancer drug regimen, Surgery or Teletherapy (denominator = all cases)	<60%		>=60%
% receiving surgery all cases	Complete when Surgery Procedure Date is present (denominator = all cases, excluding mesothelioma)			
% receiving radiotherapy	Complete when either Teletherapy Treatment Course Start Date or Brachytherapy Therapy Treatment Course Start Date is present (denominator = all cases)			

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 1

Code	Actual number	Discussed at MDT (%)	% of patients receiving CT before bronchoscopy	Patient seen by nurse Specialist (%)	Histological diagnosis (%)	% Having active treatment	% receiving surgery all cases	% receiving radiotherapy
SCAN	**1,189**	**99.2**	**98.0**	**82.0**	**69.6**	**58.1**	**14.4**	**36.2**
Borders	77	100.0	100.0	100.0	70.1	63.6	15.6	33.8
Dumfries and Galloway	102	94.1	96.2	43.1	80.4	61.8	10.8	38.2
Fife	300	98.7	100.0	78.7	61.7	50.7	9.0	34.0
Lothian	710	100.0	97.4	87.0	71.4	60.1	17.0	37.0
WoSCAN	**2,589**	**97.3**	**91.5**	**80.0**	**72.0**	**59.9**	**15.3**	**32.9**
Ayrshire and Arran	391	99.2	93.3	76.2	66.8	55.0	11.5	39.6
Clyde	366	94.3	83.5	60.1	68.3	52.2	12.6	27.0
Forth Valley	224	99.6	95.9	95.1	78.6	69.6	17.9	36.2
Lanarkshire	521	99.0	93.7	84.1	74.9	65.6	16.7	29.2
North Glasgow	720	96.4	93.2	81.9	76.0	62.5	17.8	34.2
South Glasgow	367	96.5	90.5	85.3	65.4	54.0	13.9	32.4
NoSCAN	**957**	**95.4**	**97.2**	**81.9**	**78.0**	**67.9**	**10.9**	**42.7**
Grampian	371	92.7	98.5	69.3	77.9	75.1	11.9	49.3
Orkney	0							
Shetland	13	69.2	100.0	84.6	46.2	46.2	0.0	30.8
Highland	214	98.1	95.3	82.7	76.6	65.9	11.7	39.3
Argyll and Clyde (H)	27	88.9	100.0	96.3	70.4	55.6	18.5	22.2
Western Isles	12	100.0	100.0	50.0	66.7	50.0	25.0	16.7
Tayside	320	98.1	96.9	95.9	81.3	64.1	8.4	40.6
Scotland total	**4,735**	**97.4**	**94.0**	**80.9**	**72.6**	**61.1**	**14.2**	**35.7**
Last year's results (including mesothelioma)								
2012 Scotland Total	**4,810**	**95.6**	**92.4**	**84.8**	**72.6**	**60.0**	**12.2**	**37.2**
Difference	-75	1.8	1.6	-3.9	0.0	1.1	2.0	-1.5
Counts aggregated by place first seen health board.								
Range Health Board								
Min		69.2	83.5	43.1	46.2	46.2	0.0	16.7
LQ		94.2	93.6	74.5	66.7	53.5	11.3	30.4
Median		98.1	96.6	83.4	70.9	61.0	13.2	34.1
UQ		99.3	100.0	89.0	76.9	64.5	17.2	38.5
Max		100.0	100.0	100.0	81.3	75.4	25.0	49.3

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 2

Code	Actual number	Number of NSCLC	% of NSCLC having Surgery	NSCLC Stage IA, IB, IIA or IIB (patients first seen 2011-13)*	% of NSCLC Stage IA, IB, IIA or IIB having surgery (patients first seen 2011-13)*	Number of PS0-1 NSCLC Stage IIIB or IV (patients first seen 2011-13)*
Cheshire and Merseyside	**1,692** ●	**1,480**	**19.7** ●	**1,343**	**56.2** ●	**761**
LLCU	385 ●	322	21.4 ●	347	61.1 ●	152
RBL	256 ●	227	20.7 ●	222	55.9 ●	136
RBN	265 ●	231	18.6 ●	164	61.6 ●	92
REM	315 ●	273	23.1 ●	262	54.2 ●	140
RJR	142 ●	132	17.4 ●	122	50.8 ▲	90
RVY	147 ●	133	14.3 ▲	93	55.9 ●	78
RWW	177 ●	157	15.3 ▲	130	45.4 ▲	72
East Midlands	**2,348** ●	**2,043**	**14.9** ▲	**1,225**	**57.3** ●	**1,400**
RJF	134 ●	114	0.9 ▲	90	51.1 ▲	76
RK5	252 ●	219	15.1 ▲	130	49.2 ▲	147
RNQ	195 ●	171	18.7 ●	111	61.3 ●	107
RNS	167 ●	154	14.3 ▲	93	55.9 ●	113
RTG	325 ●	280	25.0 ●	195	63.6 ●	186
RWD	350 ●	299	14.4 ▲	135	60.0 ●	177
RWE	490 ●	440	13.4 ▲	223	58.3 ●	319
RX1	433 ●	364	12.1 ▲	247	55.1 ●	275
East of England	**2,885** ●	**2,542**	**15.8** ▲	**1,515**	**49.7** ▲	**1,905**
RAJ	221 ●	198	15.2 ▲	99	65.7 ●	149
RC1	99 ●	94	11.7 ▲	45	48.9 ▲	45
RC9	131 ●	117	14.5 ▲	84	38.1 ▲	80
RCX	142 ●	123	18.7 ●	89	47.2 ▲	123
RDD	198 ●	169	14.2 ▲	107	54.2 ●	145
RDE	255 ●	213	15.5 ▲	113	67.3 ●	209
RGM ◆	23 ◆	21 ◆	52.4 ◆	27 ◆	74.1 ◆	4 ◆
RGN	171 ●	147	21.1 ●	88	58.0 ●	114
RGP	146 ●	137	10.2 ▲	94	21.3 ▲	150
RGQ	179 ●	157	14.0 ▲	90	53.3 ●	120
RGR	160 ●	147	16.3 ●	74	51.4 ▲	72
RGT	178 ●	159	26.4 ●	130	54.6 ●	153
RM1	342 ●	297	12.1 ▲	192	41.1 ▲	192
RQ8	175 ●	156	15.4 ▲	93	49.5 ▲	135
RQQ	66 ●	56	17.9 ●	46	50.0 ▲	29
RWG	186 ●	169	12.4 ▲	37	18.9 ▲	65
RWH	213 ●	182	15.4 ▲	107	51.4 ▲	120
London Cancer	**1,446** ●	**1,277**	**17.8** ●	**773**	**53.6** ●	**881**
R1HKH	122 ●	100	20.0 ●	62	45.2 ▲	79
R1HM0	121 ●	113	15.0 ▲	74	62.2 ●	46
R1HNH	72 ■	67	10.4 ▲	36	41.7 ▲	55
RAL	103 ●	88	30.7 ●	54	79.6 ●	46
RAP	90 ●	84	11.9 ▲	37	45.9 ▲	54
RF4	280 ●	254	11.8 ▲	125	35.2 ▲	135
RKE	92 ●	81	14.8 ▲	49	51.0 ▲	67
RQW	158 ●	130	23.1 ●	92	63.0 ●	52
RQX	92 ●	82	23.2 ●	70	44.3 ▲	63
RRV	131 ●	111	24.3 ●	87	59.8 ●	90
RVL	183 ●	165	17.0 ●	87	63.2 ●	192

Key

◆ Tertiary Trust

	% PS0-1 Stage IIIB or IV NSCLC having chemotherapy (patients first seen 2011-13)*	Number of histologically confirmed NSCLC	% histologically confirmed NSCLC having surgery	Number of pre-treatment NSCLC	% pre-treatment NSCLC histology NOS	Number of patients small cell lung cancer (patients first seen 2011-13)*	% small cell receiving chemotherapy (patients first seen 2011-13)*
	63.7 ●	**963**	**29.6**	**947**	**12.2** ●	**578**	**66.8** ▲
	71.1 ●	247	27.9	242	9.1 ●	161	62.1 ▲
	62.5 ●	141	32.6	135	11.9 ●	93	68.8 ▲
	62.0 ●	148	27.7	147	21.1 ▲	82	70.7 ●
	63.6 ●	194	32.5	194	14.4 ●	113	66.4 ▲
	57.8 ▲	62	30.6	59	5.1 ●	44	75.0 ●
	67.9 ●	75	25.3	74	8.1 ●	32	81.3 ●
	56.9 ▲	91	26.4	91	9.9 ●	53	56.6 ▲
	50.4 ▲	**1,399**	**21.7**	**1,276**	**11.9** ●	**784**	**66.6** ▲
	76.3 ●	74	1.4	71	4.2 ●	48	68.8 ▲
	53.1 ▲	156	21.2	141	14.2 ●	106	69.8 ▲
	50.5 ▲	111	28.8	110	20.0 ●	62	56.5 ▲
	43.4 ▲	112	18.8	108	10.2 ●	51	58.8 ▲
	59.1 ▲	185	37.8	168	7.1 ●	96	68.8 ▲
	53.1 ▲	211	20.4	193	15.0 ●	126	64.3 ▲
	45.8 ▲	265	22.3	219	13.7 ●	135	68.1 ▲
	42.5 ▲	283	15.5	264	9.5 ●	158	69.0 ▲
	57.6 ▲	**1,912**	**20.7**	**1,845**	**11.5** ●	**970**	**65.2** ▲
	61.1 ●	148	20.3	144	13.9 ●	73	64.4 ▲
	71.1 ●	59	18.6	56	17.9 ●	20	50.0 ▲
	33.8 ▲	85	20.0	73	12.3 ●	51	35.3 ▲
	68.3 ●	96	22.9	95	15.8 ●	58	70.7 ●
	60.7 ●	133	18.0	128	7.0 ●	81	69.1 ▲
	65.1 ●	171	19.3	171	8.2 ●	106	72.6 ●
	50.0 ◆	18 ◆	55.6 ◆	13 ◆	15.4 ◆	1 ◆	0.0 ◆
	60.5 ●	106	29.2	101	14.9 ●	61	67.2 ▲
	48.7 ▲	97	13.4	88	15.9 ●	38	78.9 ●
	60.0 ●	128	17.2	128	7.8 ●	55	67.3 ▲
	63.9 ●	110	21.8	109	5.5 ●	39	76.9 ●
	56.9 ▲	129	32.6	120	8.3 ●	58	65.5 ▲
	60.4 ●	199	17.6	198	13.1 ●	112	70.5 ●
	45.2 ▲	130	18.5	131	8.4 ●	51	45.1 ▲
	48.3 ▲	32	28.1	29	27.6 ▲	28	71.4 ●
	41.5 ▲	131	16.0	124	6.5 ●	64	53.1 ▲
	60.0 ●	140	20.0	137	19.0 ●	74	68.9 ▲
	61.9 ●	**1,060**	**21.0**	**1,025**	**8.7** ●	**449**	**67.3** ▲
	59.5 ▲	83	21.7	82	2.4 ●	45	66.7 ▲
	73.9 ●	102	16.7	98	7.1 ●	34	82.4 ●
	50.9 ▲	59	11.9	50	4.0 ●	16	50.0 ▲
	71.7 ●	78	34.6	74	0.0 ●	30	66.7 ▲
	50.0 ▲	66	15.2	64	34.4 ▲	32	50.0 ▲
	63.0 ●	199	15.1	199	3.5 ●	71	59.2 ▲
	55.2 ▲	59	20.3	57	10.5 ●	31	77.4 ●
	55.8 ▲	101	28.7	95	4.2 ●	65	55.4 ▲
	61.9 ●	67	26.9	67	22.4 ▲	23	65.2 ▲
	66.7 ●	96	28.1	96	19.8 ●	40	92.5 ●
	64.6 ●	149	18.8	142	3.5 ●	62	74.2 ●

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 2

Code	Actual number	Number of NSCLC	% of NSCLC having Surgery	NSCLC Stage IA, IB, IIA or IIB (patients first seen 2011-13)*	% of NSCLC Stage IA, IB, IIA or IIB having surgery (patients first seen 2011-13)*	Number of PS0-1 NSCLC Stage IIIB or IV (patients first seen 2011-13)*
London Cancer Alliance	**2,006**	**1,792**	**14.8**	**1,080**	**51.0**	**1,386**
RAS	124	116	11.2	37	51.4	75
RAX	122	114	16.7	70	60.0	59
RC3	65	63	6.3	29	31.0	67
RFW	94	84	10.7	51	54.9	70
RJ1	111	94	25.5	92	56.5	80
RJ2	304	268	11.2	77	44.2	96
RJ6	121	99	12.1	63	39.7	79
RJ7	136	127	18.1	108	53.7	116
RJZ	137	114	7.9	60	56.7	102
RQM	72	65	20.0	37	59.5	67
RT3	23	22	72.7	22	86.4	6
RV8	94	85	17.6	52	71.2	74
RVR	181	164	7.9	79	32.9	116
RYJ	249	224	22.3	167	57.5	200
RYQ	170	150	10.0	133	36.8	174
Manchester, Lancs and S Cumbria	**3,373**	**2,926**	**19.4**	**2,303**	**45.8**	**2,051**
RBT	189	168	17.3	106	44.3	50
RJN	127	110	23.6	84	45.2	83
RM2	194	165	35.8	233	54.9	135
RM3	193	171	22.2	141	55.3	105
RMC	213	184	19.6	157	45.2	88
RMP	165	142	18.3	82	43.9	58
RRF	247	205	15.6	159	42.8	178
RTX	151	142	16.2	147	30.6	144
RW3	212	180	17.8	159	43.4	137
RW6	634	549	22.8	396	45.7	350
RWJ	213	182	17.6	133	40.6	178
RXL	240	199	10.1	143	43.4	178
RXN	240	216	22.2	152	59.9	138
RXR	355	313	13.1	211	40.8	229
Northern England	**2,615**	**2,237**	**14.3**	**1,611**	**47.9**	**1,611**
RE9	135	113	14.2	85	51.8	72
RLN	264	219	17.4	176	48.9	133
RNL	235	197	11.2	116	59.5	173
RR7	217	196	14.8	168	41.7	89
RTD	345	302	20.5	207	62.3	186
RTF	358	300	13.0	174	46.0	296
RTR	351	292	10.3	236	44.9	168
RVW	297	255	14.1	206	40.8	201
RXP	413	363	13.2	243	42.8	293

	% PS0-1 Stage IIIB or IV NSCLC having chemotherapy (patients first seen 2011-13)*	Number of histologically confirmed NSCLC	% histologically confirmed NSCLC having surgery	Number of pre-treatment NSCLC	% pre-treatment NSCLC histology NOS	Number of patients small cell lung cancer (patients first seen 2011-13)*	% small cell receiving chemotherapy (patients first seen 2011-13)*
	60.4 ●	**1,403**	**18.9**	**1,339**	**14.3** ●	**603**	**67.3** ▲
	41.3 ▲	64	18.8	50	26.0 ▲	37	62.2 ▲
	61.0 ●	85	22.4	85	12.9 ●	35	71.4 ●
	44.8 ▲	34	11.8	32	15.6 ●	12	66.7 ▲
	50.0 ▲	64	14.1	64	21.9 ▲	29	55.2 ▲
	82.5 ●	94	25.5	94	10.6 ●	42	83.3 ●
	55.2 ▲	202	14.9	188	26.6 ▲	55	72.7 ●
	64.6 ●	81	14.8	79	3.8 ●	54	53.7 ▲
	69.0 ●	105	21.9	101	12.9 ●	35	65.7 ▲
	52.0 ▲	93	9.7	93	9.7 ●	39	66.7 ▲
	62.7 ●	59	22.0	58	8.6 ●	21	81.0 ●
	100.0 ◆	21 ◆	76.2 ◆	10 ◆	0.0 ◆	3 ◆	100.0 ◆
	64.9 ●	72	20.8	69	10.1 ●	31	58.1 ▲
	61.2 ●	116	11.2	107	12.1 ●	37	56.8 ▲
	58.5 ▲	191	26.2	188	14.4 ●	77	66.2 ▲
	65.5 ●	119	12.6	118	10.2 ●	95	73.7 ●
	56.4 ▲	**2,033**	**27.8**	**2,015**	**13.5** ●	**1,228**	**71.5** ●
	48.0 ▲	94	30.9	92	26.1 ▲	48	68.8 ▲
	55.4 ▲	83	31.3	83	18.1 ●	40	82.5 ●
	54.1 ◆	146 ◆	40.4 ◆	145 ◆	4.8 ◆	94 ◆	72.3 ◆
	38.1 ▲	125	30.4	121	9.1 ●	71	57.7 ▲
	51.1 ▲	100	35.0	96	6.3 ●	79	63.3 ▲
	69.0 ●	100	26.0	100	16.0 ●	63	76.2 ●
	44.9 ▲	145	22.1	147	6.8 ●	101	63.4 ▲
	65.3 ●	71	32.4	70	11.4 ●	66	87.9 ●
	51.8 ▲	142	22.5	140	15.7 ●	92	69.6 ▲
	54.6 ▲	368	33.7	367	25.9 ▲	187	65.8 ▲
	44.9 ▲	128	25.0	123	19.5 ●	78	78.2 ●
	73.6 ●	149	13.4	149	12.8 ●	111	78.4 ●
	71.7 ●	163	29.4	163	3.1 ●	82	80.5 ●
	62.0 ●	219	18.7	219	5.0 ●	115	70.4 ●
	64.2 ●	**1,600**	**19.9**	**1,578**	**21.0** ▲	**1,027**	**69.5** ▲
	61.1 ●	71	22.5	71	12.7 ●	65	67.7 ▲
	66.9 ●	163	23.3	161	21.1 ▲	108	75.0 ●
	50.9 ▲	138	15.9	137	21.2 ▲	104	50.0 ▲
	51.7 ▲	125	22.4	111	9.9 ●	58	82.8 ●
	75.8 ●	215	28.8	210	4.8 ●	123	78.0 ●
	61.5 ●	221	17.6	221	27.1 ▲	131	71.0 ●
	81.0 ●	220	13.6	219	3.7 ●	166	65.1 ▲
	64.7 ●	182	19.8	183	11.5 ●	111	77.5 ●
	61.1 ●	265	18.1	265	56.6 ▲	161	65.8 ▲

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 2

Code	Actual number	Number of NSCLC	% of NSCLC having Surgery	NSCLC Stage IA, IB, IIA or IIB (patients first seen 2011-13)*	% of NSCLC Stage IA, IB, IIA or IIB having surgery (patients first seen 2011-13)*	Number of PS0-1 NSCLC Stage IIIB or IV (patients first seen 2011-13)*
South East Coast	**2,389** ●	**2,161**	**13.7** ▲	**1,286**	**47.3** ▲	**1,534**
RA2	97 ●	89	18.0 ●	38	52.6 ●	14
RDU	196 ●	171	18.7 ●	114	61.4 ●	119
RN7	136 ●	117	14.5 ▲	70	60.0 ●	88
RPA	182 ●	182	11.0 ▲	82	54.9 ●	96
RTK	129 ●	114	7.0 ▲	89	41.6 ▲	103
RTP	168 ●	148	13.5 ▲	81	44.4 ▲	133
RVV	456 ●	412	14.3 ▲	259	36.3 ▲	312
RWF	227 ●	207	17.9 ●	116	64.7 ●	141
RXC	268 ●	235	13.6 ▲	141	44.7 ▲	158
RXH	230 ●	215	11.6 ▲	141	43.3 ▲	103
RYR16	139 ●	118	8.5 ▲	69	43.5 ▲	128
RYR18	161 ●	153	13.1 ▲	86	40.7 ▲	139
South West	**2,173** ●	**1,899**	**16.3** ●	**1,337**	**53.4** ●	**1,454**
RA3	98 ●	89	18.0 ●	41	58.5 ●	45
RA4	82 ●	78	19.2 ●	53	43.4 ▲	46
RA7	140 ●	132	24.2 ●	123	62.6 ●	74
RA9	201 ●	175	9.1 ▲	118	44.9 ▲	123
RBA	165 ●	142	23.2 ●	76	59.2 ●	82
RBZ	78 ●	66	10.6 ▲	40	50.0 ▲	62
RD1	200 ●	166	15.7 ▲	116	44.8 ▲	132
REF	238 ●	201	13.9 ▲	134	58.2 ●	162
RH8	195 ●	176	18.8 ●	135	51.9 ▲	173
RK9	282 ●	255	12.2 ▲	183	43.7 ▲	194
RTE	282 ●	234	19.7 ●	185	56.2 ●	217
RVJ	210 ●	183	14.2 ▲	132	66.7 ●	144
Thames Valley	**1,054** ●	**918**	**23.3** ●	**664**	**60.1** ●	**744**
RD7	142 ●	125	15.2 ▲	67	37.3 ▲	112
RD8	86 ●	78	21.8 ●	34	70.6 ●	50
RHW	180 ●	160	16.9 ●	98	52.0 ●	128
RN3	151 ●	124	21.0 ●	109	59.6 ●	91
RTH	317 ●	274	31.8 ●	243	68.7 ●	204
RXQ	178 ●	157	24.2 ●	111	60.4 ●	159
Wessex	**1,326** ●	**1,181**	**14.8** ▲	**718**	**57.0** ●	**1,138**
R1F	92 ●	86	9.3 ▲	38	60.5 ●	88
RBD	107 ●	98	19.4 ●	76	52.6 ●	86
RD3	140 ●	123	15.4 ▲	68	61.8 ●	110
RDZ	183 ●	165	15.8 ▲	99	61.6 ●	162
RHM	221 ●	196	17.3 ●	132	50.0 ▲	162
RHU	346 ●	298	12.1 ▲	166	57.2 ●	305
RN506	82 ●	76	9.2 ▲	42	45.2 ▲	71
RN541	80 ●	74	18.9 ●	50	56.0 ●	68
RNZ	75 ■	65	18.5 ●	47	74.5 ●	86

	% PS0-1 Stage IIIB or IV NSCLC having chemotherapy (patients first seen 2011-13)*	Number of histologically confirmed NSCLC	% histologically confirmed NSCLC having surgery	Number of pre-treatment NSCLC	% pre-treatment NSCLC histology NOS	Number of patients small cell lung cancer (patients first seen 2011-13)*	% small cell receiving chemotherapy (patients first seen 2011-13)*
	49.7 ▲	**1,516**	**19.4**	**1,491**	**11.3** ●	**736**	**61.5** ▲
	57.1 ▲	74	21.6	74	24.3 ▲	29	62.1 ▲
	63.9 ●	141	22.7	140	5.7 ●	70	54.3 ▲
	67.0 ●	107	15.9	107	3.7 ●	44	79.5 ●
	34.4 ▲	114	17.5	112	0.0 ●	24	75.0 ●
	38.8 ▲	83	9.6	79	12.7 ●	34	41.2 ▲
	65.4 ●	116	17.2	111	15.3 ●	55	60.0 ▲
	37.8 ▲	237	24.9	226	13.7 ●	146	63.0 ▲
	58.2 ▲	156	23.1	155	15.5 ●	60	70.0 ●
	56.3 ▲	165	18.8	165	11.5 ●	102	60.8 ▲
	46.6 ▲	138	18.1	138	8.7 ●	73	67.1 ▲
	54.7 ▲	78	12.8	78	15.4 ●	57	52.6 ▲
	38.1 ▲	107	18.7	106	13.2 ●	42	52.4 ▲
	57.0 ▲	**1,318**	**22.8**	**1,303**	**10.4** ●	**708**	**70.6** ●
	71.1 ●	70	22.9	71	14.1 ●	37	62.2 ▲
	60.9 ●	37	40.5	36	22.2 ▲	12	91.7 ●
	78.4 ●	95	33.7	95	13.7 ●	32	75.0 ●
	54.5 ▲	105	15.2	104	2.9 ●	61	72.1 ●
	73.2 ●	112	28.6	112	9.8 ●	42	76.2 ●
	50.0 ▲	28	17.9	28	50.0 ▲	28	67.9 ▲
	50.0 ▲	102	23.5	101	6.9 ●	74	64.9 ▲
	51.9 ▲	145	19.3	145	3.4 ●	99	74.7 ●
	61.3 ●	144	22.9	135	8.9 ●	76	84.2 ●
	60.8 ●	159	19.5	158	12.7 ●	92	66.3 ▲
	37.3 ▲	190	24.2	187	10.2 ●	107	62.6 ▲
	68.1 ●	130	16.9	130	10.8 ●	48	68.8 ▲
	53.1 ▲	**764**	**27.2**	**747**	**12.2** ●	**380**	**71.6** ●
	36.6 ▲	93	18.3	90	24.4 ▲	40	55.0 ▲
	68.0 ●	71	22.5	70	11.4 ●	44	77.3 ●
	48.4 ▲	127	21.3	119	5.0 ●	45	60.0 ▲
	58.2 ▲	95	26.3	94	9.6 ●	67	77.6 ●
	60.3 ●	245	34.7	243	11.9 ●	125	76.0 ●
	51.6 ▲	133	28.6	131	13.0 ●	59	71.2 ●
	51.1 ▲	**867**	**19.7**	**844**	**16.2** ●	**437**	**76.2** ●
	53.4 ▲	67	10.4	66	39.4 ▲	24	83.3 ●
	61.6 ●	67	28.4	65	12.3 ●	24	70.8 ●
	55.5 ▲	92	20.7	91	16.5 ●	52	73.1 ●
	46.3 ▲	105	22.9	97	16.5 ●	47	76.6 ●
	54.3 ▲	144	23.6	143	5.6 ●	84	86.9 ●
	40.0 ▲	218	16.1	218	17.4 ●	120	69.2 ▲
	54.9 ▲	56	12.5	53	13.2 ●	25	64.0 ▲
	63.2 ●	64	21.9	61	13.1 ●	30	93.3 ●
	61.6 ●	54	22.2	50	22.0 ▲	31	71.0 ●

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 2

Code	Actual number	Number of NSCLC	% of NSCLC having Surgery	NSCLC Stage IA, IB, IIA or IIB (patients first seen 2011-13)*	% of NSCLC Stage IA, IB, IIA or IIB having surgery (patients first seen 2011-13)*	Number of PS0-1 NSCLC Stage IIIB or IV (patients first seen 2011-13)*
West Midlands	**3,202** ●	**2,808**	**16.6** ●	**1,736**	**58.1** ●	**1,925**
RBK	151 ●	131	16.0 ●	78	51.3 ▲	98
RJC	88 ●	82	15.9 ▲	43	60.5 ●	59
RJD	148 ●	114	24.6 ●	80	71.3 ●	93
RJE	349 ●	310	17.4 ●	103	66.0 ●	150
RKB	234 ●	210	18.1 ●	102	65.7 ●	185
RL4	237 ●	211	16.6 ●	171	53.2 ●	147
RLQ	129 ●	112	18.8 ●	60	58.3 ●	78
RLT	110 ●	92	9.8 ▲	69	49.3 ▲	67
RNA	223 ●	191	10.5 ▲	112	66.1 ●	78
RR1	496 ●	438	16.2 ●	273	56.8 ●	274
RRK	253 ●	227	21.6 ●	205	61.5 ●	161
RWP	210 ●	186	15.6 ▲	100	53.0 ●	109
RWP01	73 ●	64	15.6 ▲	36	63.9 ●	42
RXK	244 ●	213	11.7 ▲	144	50.0 ▲	190
RXW	256 ●	226	18.6 ●	160	55.0 ●	193
Yorkshire and the Humber	**3,994** ●	**3,524**	**16.4** ●	**2,692**	**49.6** ▲	**2,348**
RAE	218 ●	197	15.2 ▲	215	37.7 ▲	148
RCB55	175 ●	148	20.3 ●	122	52.5 ●	81
RCBCA	137 ●	128	8.6 ▲	53	47.2 ▲	68
RCD	100 ●	89	13.5 ▲	58	41.4 ▲	51
RCF	131 ●	108	15.7 ▲	83	42.2 ▲	88
RFF	163 ●	142	14.8 ▲	87	50.6 ▲	128
RFR	230 ●	198	17.7 ●	153	41.8 ▲	120
RFS	186 ●	166	16.9 ●	113	45.1 ▲	116
RHQ	435 ●	379	17.2 ●	291	56.4 ●	200
RJL	333 ●	293	18.8 ●	165	65.5 ●	227
RP5	288 ●	258	17.1 ●	180	55.6 ●	233
RR8	509 ●	456	17.1 ●	471	42.0 ▲	262
RWA	369 ●	325	18.2 ●	252	59.1 ●	240
RWY	277 ●	240	15.4 ▲	146	50.0 ▲	150
RXF	443 ●	397	14.4 ▲	303	50.8 ▲	235
England Total	**30,503** ●	**26,788**	**16.5** ●	**18,283**	**51.8** ▲	**19,138**

	% PS0-1 Stage IIIB or IV NSCLC having chemotherapy (patients first seen 2011-13)*	Number of histologically confirmed NSCLC	% histologically confirmed NSCLC having surgery	Number of pre-treatment NSCLC	% pre-treatment NSCLC histology NOS	Number of patients small cell lung cancer (patients first seen 2011-13)*	% small cell receiving chemotherapy (patients first seen 2011-13)*
	57.6 ▲	**1,998**	**23.2**	**1,991**	**12.3** ●	**994**	**67.1** ▲
	67.3 ●	109	19.3	109	9.2 ●	59	64.4 ▲
	67.8 ●	61	21.3	61	16.4 ●	25	84.0 ●
	66.7 ●	93	30.1	92	15.2 ●	68	75.0 ●
	71.3 ●	203	26.6	203	13.8 ●	92	78.3 ●
	44.3 ▲	154	24.7	157	3.2 ●	70	55.7 ▲
	59.2 ▲	150	23.3	149	4.7 ●	62	74.2 ●
	50.0 ▲	79	26.6	78	10.3 ●	39	64.1 ▲
	56.7 ▲	67	13.4	68	5.9 ●	52	65.4 ▲
	65.4 ●	134	14.9	134	4.5 ●	58	62.1 ▲
	62.0 ●	272	26.1	264	10.2 ●	125	67.2 ▲
	63.4 ●	175	27.4	175	10.9 ●	84	65.5 ▲
	49.5 ▲	137	21.2	137	23.4 ▲	64	65.6 ▲
	50.0 ▲	47	21.3	47	6.4 ●	31	58.1 ▲
	57.4 ▲	157	15.3	157	16.6 ●	84	64.3 ▲
	42.0 ▲	159	26.4	159	28.9 ▲	81	64.2 ▲
	62.4 ●	**2,365**	**24.2**	**2,182**	**12.4** ●	**1,471**	**71.2** ●
	64.2 ●	119	25.2	118	10.2 ●	71	78.9 ●
	54.3 ▲	108	27.8	104	12.5 ●	69	62.3 ▲
	52.9 ▲	76	13.2	75	4.0 ●	29	69.0 ▲
	78.4 ●	59	18.6	50	10.0 ●	41	70.7 ●
	69.3 ●	78	21.8	72	15.3 ●	54	75.9 ●
	69.5 ●	113	17.7	98	26.5 ▲	77	74.0 ●
	65.0 ●	130	26.9	105	3.8 ●	94	62.8 ▲
	55.2 ▲	105	25.7	82	4.9 ●	67	70.1 ●
	75.0 ●	259	25.1	258	12.0 ●	147	80.3 ●
	59.0 ▲	179	30.2	157	15.3 ●	96	74.0 ●
	55.4 ▲	183	23.0	155	9.7 ●	114	63.2 ▲
	71.0 ●	321	24.3	319	10.3 ●	194	73.2 ●
	47.5 ▲	211	28.0	211	26.5 ▲	132	72.0 ●
	74.0 ●	146	25.3	146	10.3 ●	109	79.8 ●
	56.2 ▲	278	20.5	232	7.8 ●	176	62.5 ▲
	57.5 ▲	**19,198**	**22.7**	**18,583**	**13.0** ●	**10,365**	**68.6** ▲

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 2

Code	Actual number	Number of NSCLC	% of NSCLC having Surgery	NSCLC Stage IA, IB, IIA or IIB (patients first seen 2011-13)*	% of NSCLC Stage IA, IB, IIA or IIB having surgery (patients first seen 2011-13)*	Number of PS0-1 NSCLC Stage IIIB or IV (patients first seen 2011-13)*
North Wales	**487** ●	**411**	**10.7** ▲	**316**	**35.8** ▲	**344**
7A1A1	175 ●	152	11.8 ▲	121	38.8 ▲	126
7A1A4	169 ●	138	14.5 ▲	131	37.4 ▲	117
7A1AU	143 ●	121	5.0 ▲	64	26.6 ▲	101
South Wales	**1,512** ●	**1,326**	**12.4** ▲	**977**	**36.7** ▲	**992**
7A2AJ	41 ●	39	10.3 ▲	18	44.4 ▲	31
7A2AL	156 ●	141	12.1 ▲	82	46.3 ▲	107
7A2BL	63 ■	54	9.3 ▲	48	45.8 ▲	69
7A3B7	113 ●	99	12.1 ▲	52	42.3 ▲	77
7A3C4	83 ■	80	7.5 ▲	40	40.0 ▲	77
7A3C7	99 ■	85	11.8 ▲	46	37.0 ▲	78
7A3CJ	63 ●	56	21.4 ●	38	52.6 ●	82
7A4C1	278 ●	247	11.3 ▲	216	28.7 ▲	142
7A5B1	142 ●	117	13.7 ▲	97	42.3 ▲	92
7A5B3	127 ●	107	15.9 ▲	77	40.3 ▲	73
7A6AM	107 ●	97	12.4 ▲	85	25.9 ▲	33
7A6AR	240 ●	204	12.3 ▲	164	34.1 ▲	119
Wales Total	**1,999** ●	**1,737**	**12.0** ▲	**1,293**	**36.5** ▲	**1,336**
England and Wales Total	**32,502** ●	**28,525**	**16.2** ●	**19,576**	**50.8** ▲	**20,474**
Last year's results						
2012 England and Wales Total	**33,035** ●	**29,054**	**16.2** ●	**6,849***	**50.4*** ▲	**7,203***
Difference	-533	-529	0.1	N/A	N/A	N/A

Counts aggregated by place first seen trust.

Range Network						
Min			10.7		35.8	
LQ			14.6		47.6	
Median			15.8		51.0	
UQ			17.2		56.6	
Max			23.3		60.1	
Range Trust						
Min			0.9		18.9	
LQ			12.1		43.4	
Median			15.5		51.2	
UQ			18.6		59.0	
Max			31.8		79.6	
Mean			15.8		50.8	

	% PS0-1 Stage IIIB or IV NSCLC having chemotherapy (patients first seen 2011-13)*	Number of histologically confirmed NSCLC	% histologically confirmed NSCLC having surgery	Number of pre-treatment NSCLC	% pre-treatment NSCLC histology NOS	Number of patients small cell lung cancer (patients first seen 2011-13)*	% small cell receiving chemotherapy (patients first seen 2011-13)*
	62.2 ●	**287**	**14.6**	**285**	**10.9** ●	**193**	**71.5** ●
	54.0 ▲	108	15.7	109	16.5 ●	69	81.2 ●
	67.5 ●	93	21.5	92	9.8 ●	79	73.4 ●
	66.3 ●	86	5.8	84	4.8 ●	45	53.3 ▲
	54.4 ▲	**924**	**17.7**	**923**	**11.6** ●	**577**	**62.7** ▲
	64.5 ●	32	12.5	32	21.9 ▲	11	63.6 ▲
	66.4 ●	122	13.9	122	9.0 ●	44	88.6 ●
	37.7 ▲	36	13.9	36	19.4 ●	26	57.7 ▲
	50.6 ▲	56	21.4	54	33.3 ▲	39	61.5 ▲
	50.6 ▲	54	11.1	54	14.8 ●	32	50.0 ▲
	55.1 ▲	66	15.2	67	16.4 ●	36	66.7 ▲
	56.1 ▲	41	29.3	41	4.9 ●	30	80.0 ●
	57.7 ▲	147	19.0	147	8.8 ●	91	71.4 ●
	32.6 ▲	81	19.8	81	8.6 ●	58	31.0 ▲
	64.4 ●	79	21.5	79	12.7 ●	47	74.5 ●
	63.6 ●	65	18.5	65	3.1 ●	45	51.1 ▲
	56.3 ▲	145	17.2	145	7.6 ●	113	61.9 ▲
	56.4 ▲	**1,211**	**17.0**	**1,208**	**11.4** ●	**770**	**64.9** ▲
	57.4 ▲	**20,409**	**22.4**	**19,791**	**12.9** ●	**11,135**	**68.4** ▲
	57.2* ▲	**20,881**	**21.9**	**19,977**	**15.8** ●	**3,686***	**67.9*** ▲
	N/A	-472	0.5	-186	-2.9	N/A	N/A
	49.7		14.6		8.7		61.5
	53.8		19.6		11.4		66.7
	57.6		21.0		12.2		67.3
	62.0		23.7		13.0		71.4
	64.2		29.6		21.0		76.2
	32.6		1.4		0.0		31.0
	51.0		17.6		7.8		62.5
	59.1		21.5		11.7		68.8
	65.0		26.2		15.9		75.0
	82.5		40.5		56.6		93.3
	58.0		21.6		13.0		68.1

Indicator	Definition	▲	■	●
Actual number	Number of cases with date first seen in year specified	<50%	50-75%	>=75%
Number of NSCLC	Number of NSCLC cases			
% of NSCLC having Surgery	Complete when Surgery Procedure Date is present (excluding where Primary Procedure (OPCS) = E59.5) (denominator = NSCLC cases)	<16%		>=16%
NSCLC Stage IA, IB, IIA or IIB (patients first seen 2011-13) *	Number of NSCLC cases with TNM Stage IA, IB, IIA or IIB (covering patients first seen 2011-13)			
% of NSCLC Stage IA, IB, IIA or IIB having surgery (patients first seen 2011-13) *	Complete when Surgery Procedure Date is present (excluding where Primary Procedure (OPCS) = E59.5) (denominator = NSCLC cases with TNM Stage IA, IB, IIA or IIB (covering patients first seen 2011-13))	<52%		>=52%
Number of PS0-1 NSCLC Stage IIIB or IV (patients first seen 2011-13) *	Number of NSCLC cases with Performance Status 0 or 1 and TNM Stage IIIB or IV (covering patients first seen 2011-13)			
% PS0-1 Stage IIIB or IV NSCLC having chemotherapy (patients first seen 2011-13) *	Complete when Chemotherapy Start Date is present (denominator = NSCLC cases with Performance Status 0 or 1 and TNM Stage IIIB or IV (covering patients first seen 2011-13))	<60%		>=60%
Number of histologically confirmed NSCLC	Number of histologically-confirmed NSCLC cases			
% histologically confirmed NSCLC having surgery	Complete when Surgery Procedure Date is present (excluding where Primary Procedure (OPCS) = E59.5) (denominator = histologically-confirmed NSCLC cases)			
Number of pre-treatment NSCLC	Number of pre-treatment NSCLC cases			
% pre-treatment NSCLC histology NOS	Percentage of pre-treatment NSCLC cases with Histology NOS (M8046/3) (denominator = pre-treatment NSCLC cases)	>20%		<=20%
Number of patients small cell lung cancer (patients first seen 2011-13) *	Number of SCLC cases (covering patients first seen 2011-13)			
% small cell receiving chemotherapy (patients first seen 2011-13) *	Complete when Chemotherapy Start Date is present (denominator = SCLC cases (covering patients first seen 2011-13))	<70%		>=70%

* Measures highlighted with an asterisk cover patients first seen across three years (2011 to 2013) produce a more reliable estimate for measures where annual numbers of cases are small. Last year's results covered one year only, so are not directly comparable to the results in this year's report.

Table 2a
Process, nursing, imaging and clinical measures England and Wales (2013 all) part 2

Code	Actual number	Number of NSCLC	% of NSCLC having Surgery	NSCLC Stage IA, IB, IIA or IIB	% of NSCLC Stage IA, IB, IIA or IIB having surgery	Number of PS0-1 NSCLC Stage IIIB or IV	
SCAN	**1,189**	**1,035**	**15.7**	**298**	**45.3**	**261**	
Borders	77	65	18.5	16	50.0	13	
Dumfries and Galloway	102	87	12.6	11	72.7	23	
Fife	300	267	9.4	69	33.3	56	
Lothian	710	616	18.5	202	47.5	169	
WoSCAN	**2,589**	**2,218**	**16.8**	**640**	**45.2**	**525**	
Ayrshire and Arran	391	344	11.6	80	37.5	81	
Clyde	366	310	13.9	89	41.6	63	
Forth Valley	224	187	19.8	54	55.6	37	
Lanarkshire	521	445	18.4	131	45.8	123	
North Glasgow	720	610	19.8	186	49.5	143	
South Glasgow	367	322	15.2	100	40.0	78	
NoSCAN	**957**	**738**	**12.7**	**161**	**47.2**	**221**	
Grampian	371	318	11.9	61	44.3	105	
Orkney	0						
Shetland	13	12	0.0	1	0.0	5	
Highland	214	182	12.1	40	55.0	44	
Argyll and Clyde (H)	27	26	19.2	7	57.1	5	
Western Isles	12	10	30.0	2	50.0	2	
Tayside	320	190	13.7	50	44.0	60	
Scotland total	**4,735**	**3,991**	**15.7**	**1,099**	**45.5**	**1,007**	
Last year's results (including mesothelioma)							
2012 Scotland Total	**4,810**						
Difference	-75						
Counts aggregated by place first seen health board.							
Range Health Board							
Min			0.0		0.0		
LQ			12.1		41.2		
Median			14.5		46.7		
UQ			18.7		51.3		
Max			30.0		72.7		

	% PS0-1 Stage IIIB or IV NSCLC having chemotherapy	Number of histologically confirmed NSCLC	% histologically confirmed NSCLC having surgery	Number of pre-treatment NSCLC	% pre-treatment NSCLC histology NOS	Number of patients small cell lung cancer	% small cell receiving chemotherapy
	48.3	**671**	**23.8**	**608**	**12.2**	**142**	**59.2**
	69.2	42	26.2	36	16.7	12	75.0
	69.6	64	17.2	64	9.4	15	73.3
	57.1	152	16.4	139	10.8	30	40.0
	40.8	413	27.4	369	12.7	85	61.2
	50.9	**1,494**	**24.5**	**1,404**	**13.5**	**350**	**72.9**
	55.6	214	18.7	202	7.9	43	76.7
	46.0	194	22.2	172	18.0	52	63.5
	51.4	140	25.0	136	19.1	34	76.5
	70.7	314	26.1	313	9.3	72	80.6
	36.4	437	27.5	412	14.6	106	69.8
	44.9	195	23.6	169	16.0	43	72.1
	51.1	**587**	**16.0**	**574**	**18.5**	**130**	**73.8**
	46.7	236	16.1	229	13.5	46	78.3
	40.0	5	0.0	5	40.0	1	100.0
	45.5	132	16.7	129	14.0	30	96.7
	40.0	18	27.8	14	21.4	1	0.0
	100.0	6	50.0	6	33.3	2	50.0
	63.3	190	13.7	191	26.2	50	58.0
	50.2	**2,752**	**22.5**	**2,586**	**14.3**	**622**	**69.9**
		2,641	**20.5**			**632**	**70.6**
		111	2.0			-10	-0.7
	36.4		0.0		2.7		0.0
	43.9		16.6		10.5		60.4
	49.0		22.9		15.3		72.7
	64.8		26.5		19.7		77.1
	100.0		50.0		40.0		100.0

Organisational analysis

One explanation for the variation in lung cancer process and outcome measures is different access to diagnostics and treatment specialists, however little is known about the provision of these services across English lung cancer services.

An electronic survey was sent to all lung cancer lead clinicians in England and Wales in January 2014. The survey included seven questions for all MDTs on service provision, diagnostic services, staging services, and lung cancer treatment. There were a further three questions for treatment centres. Two reminders were sent and the survey closed in May 2014.

128 records were submitted from 176 Trusts (see Table 1a for individual Trust participation status). After removal of duplicate and empty records 101 were available for analysis. Mean (range) average number of patients discussed per MDT meeting is 25.5 (5-87.5) and 28.7 per cent Trusts have a separate diagnostic meeting. There is considerable variation in the mean (range) number of whole time equivalent (WTE) on site lung cancer specialists e.g. thoracic pathologists 1.4 (0-10), lung CNS 2.0 (0.5-10) and respiratory physicians 3.9 (0-20). Most diagnostic and staging procedures are available either on or off site, although medical thoracoscopy is not available to 14.0 per cent of Trusts. (See Figure 11). Chemotherapy, radiotherapy and surgery are available on site in 89.2 per cent, 33.3 per cent and 18.2 per cent of Trusts, respectively. VAT lobectomy, stereotactic radiotherapy and radiofrequency ablation are not available to 5.4 per cent, 6.5 per cent and 9.7 per cent of Trusts, respectively (See Figure 12). Centres performing thoracic surgery report mean (range) WTE number of surgeons at 1.5 (0-6) and thoracic HDU beds at 4 (0-24). Acute oncology services are available to 88.0 per cent of chemotherapy treatment centres and 87.1 per cent of radiotherapy centres.

Figure 11
Diagnostics availability

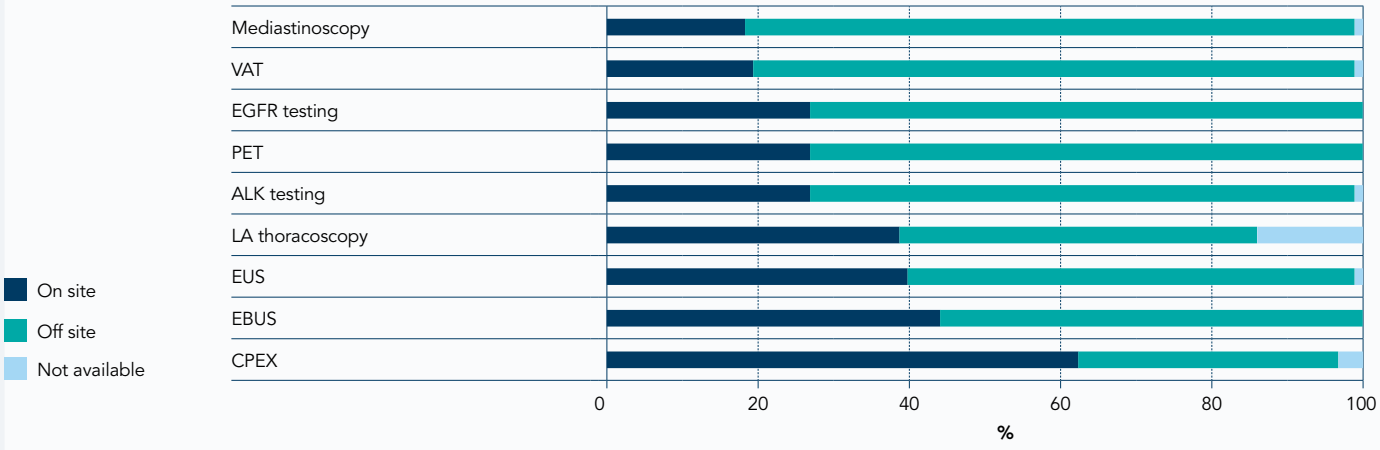
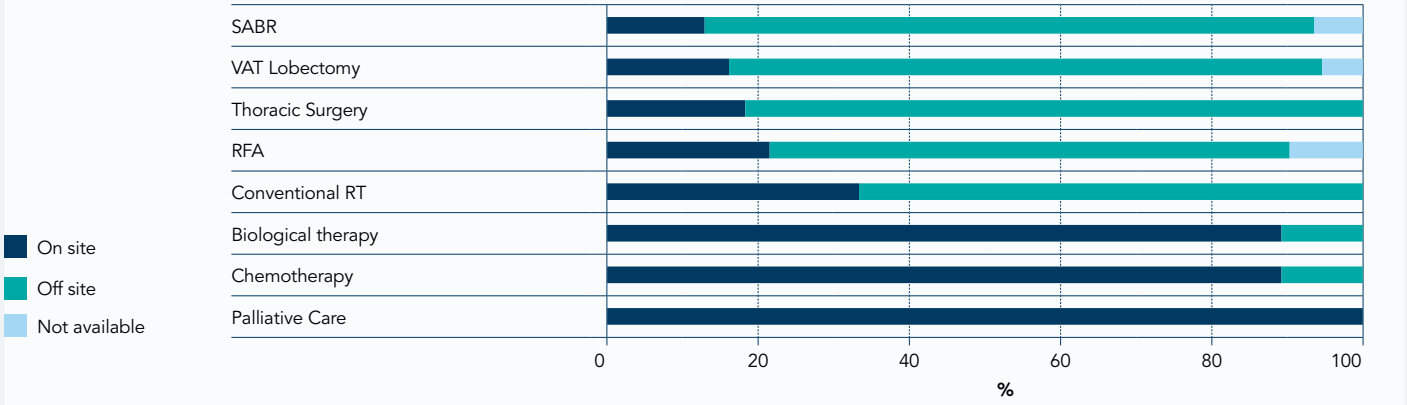


Figure 12
Therapeutics availability



These data provide a moderately representative snapshot of diagnostic and treatment services available for lung cancer patients in England and Wales. There is significant variation in the number of specialists available and some patients do not have access to key treatment modalities e.g. VAT lobectomy. Further work is required to determine how this relates to patient experience and outcomes. All Trusts are encouraged to submit validated data for the next round of organisational audit.

Demographics

The audit collects rich and high quality data on patients that is informative with respect to the demographics of the population analysed in the audit report. Median age at diagnosis is 74 years and the overall age distribution is shown in Figure 13. 54.4 per cent of patients are male. Figure 14 shows the age at diagnosis by audit year. The distribution of socio-economic status is shown in Figure 15.

The audit also collects data on the route patients take to their secondary care lung cancer team. Overall, 21.1 per cent of patients in England and Wales are referred through a non-elective pathway (following an emergency admission to hospital or after an Accident and emergency attendance). This route of referral is associated with a worse outcome and may reflect the performance of primary care services. The route of referral for patients by SCN is shown in Figure 16.

Figure 13
Age at Diagnosis (all lung cancers)

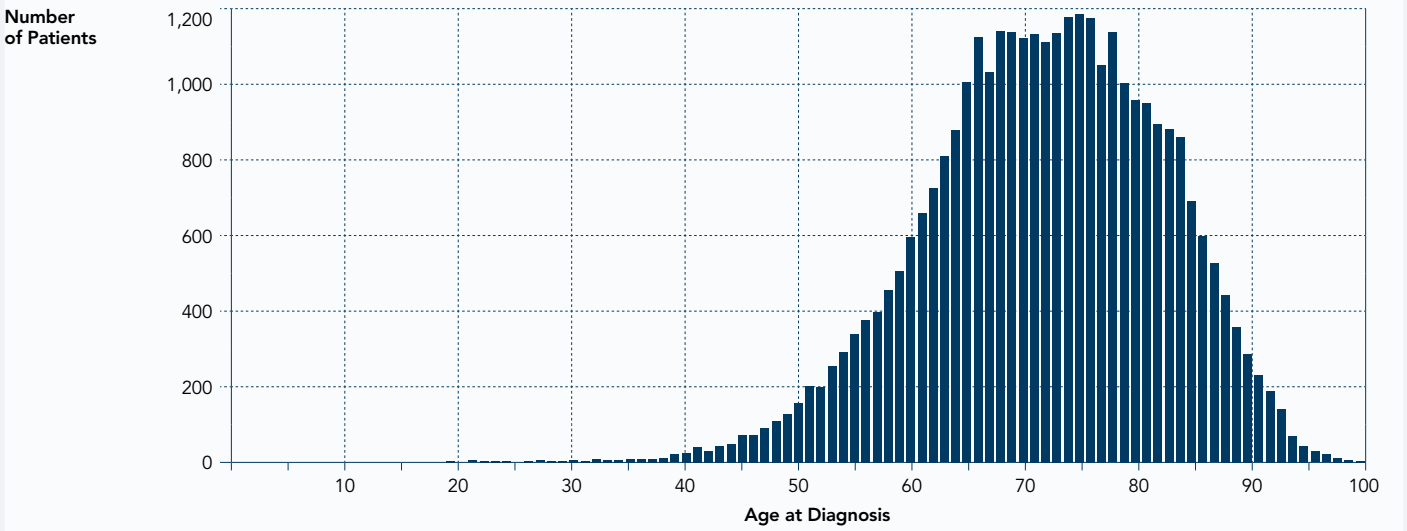


Figure 14
Age at Diagnosis by Audit Year (all lung cancers)

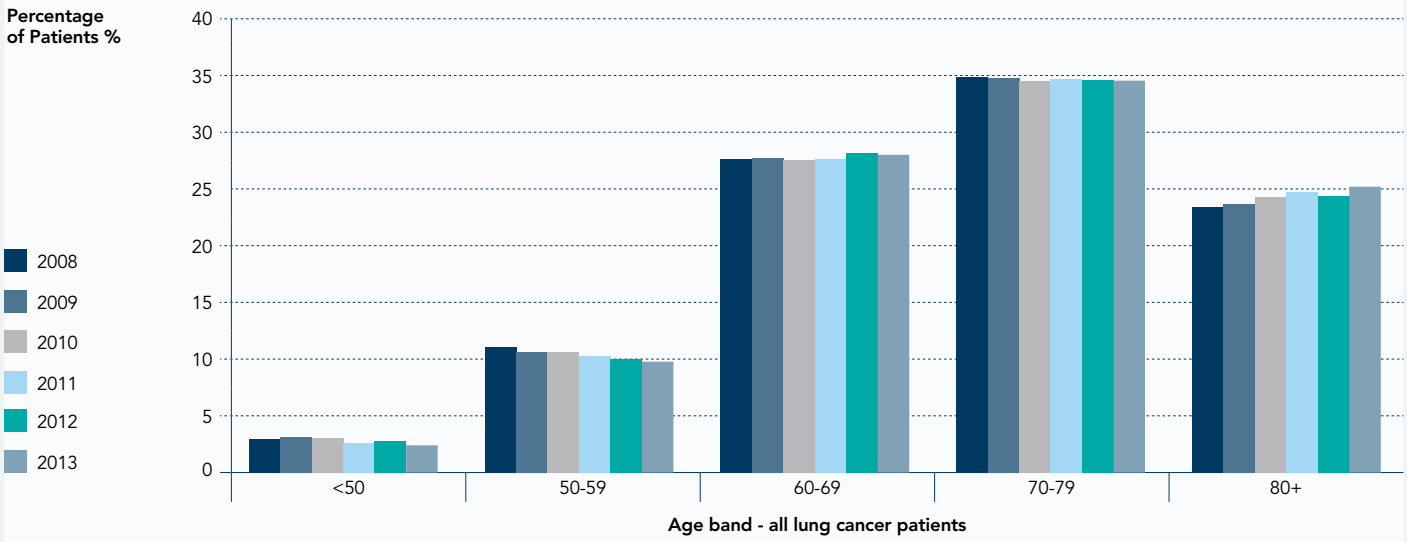


Figure 15
Index of Multiple Deprivations (all lung cancers)

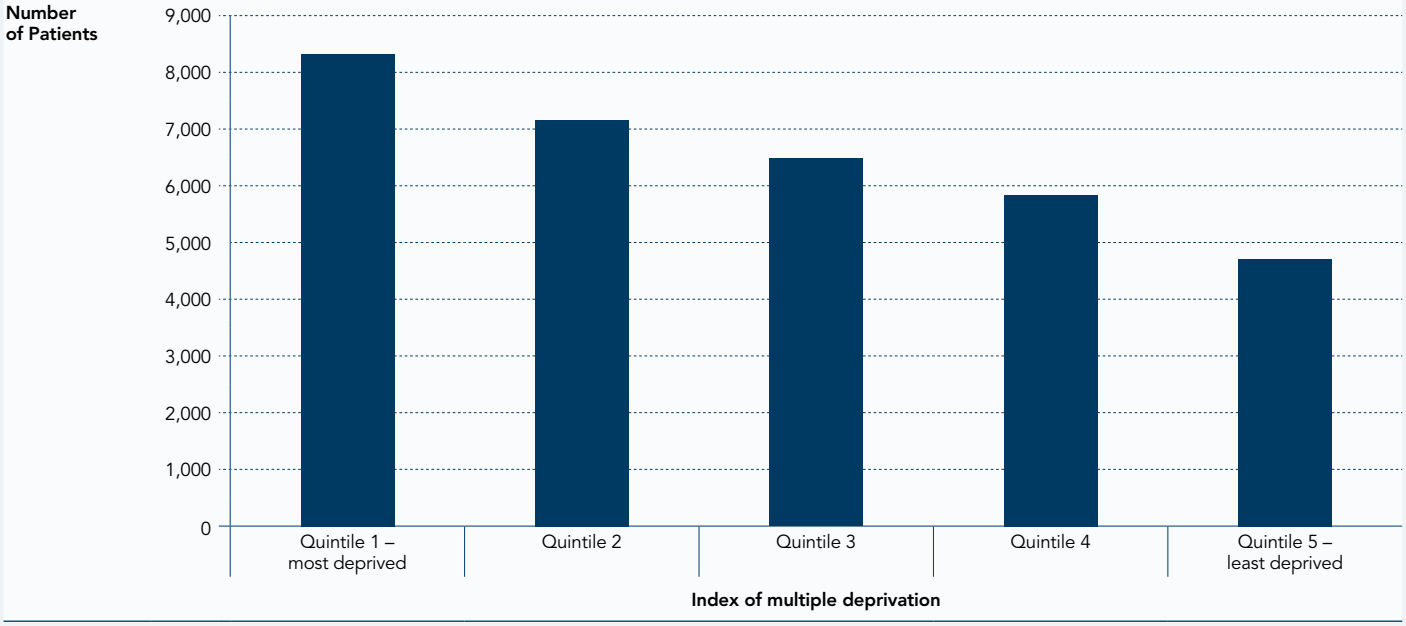
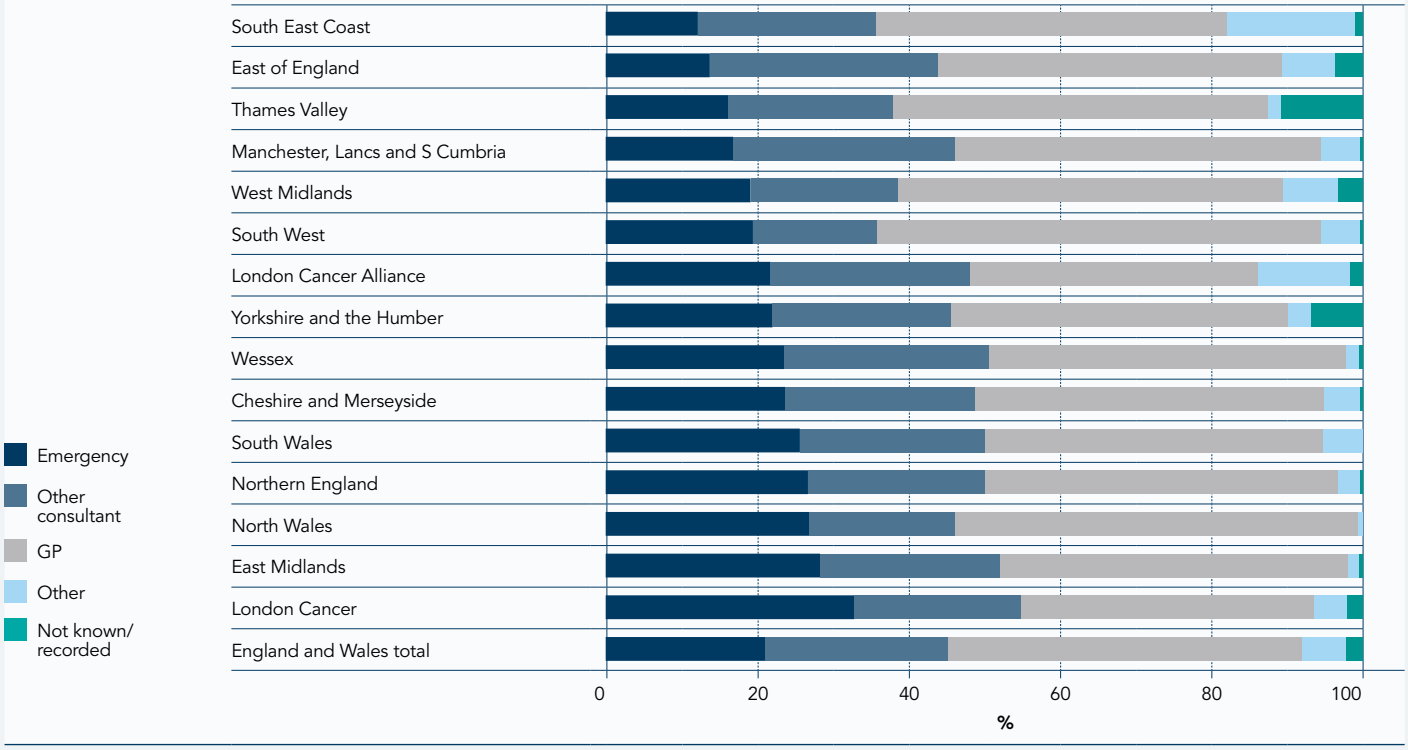


Figure 16
Referral source by SCN



Lung Cancer Nurse Specialists

In 2013, access to lung cancer nurse specialists (LCNS) has increased further as shown in the "Standards of Care" section.

As in previous years, we highlight the association between access to nurse specialists and receipt of anti-cancer treatment (Figure 17). For example, in 2013, 65.6 per cent of those who saw a LCNS received anti-cancer treatment, compared to 27.1 per cent of those who did not see a LCNS.

Figure 17
Proportion of patients receiving active treatment (%)

	2013	2012	2011	2010	2009	2008
Seen by LCNS	65.6	66.6	65.3	64.4	64.8	59.4
Not seen by LCNS	27.1	27.4	28.7	29.8	30.4	30.6
Data not recorded	35.4	39.7	44.8	44.8	52.6	51.0

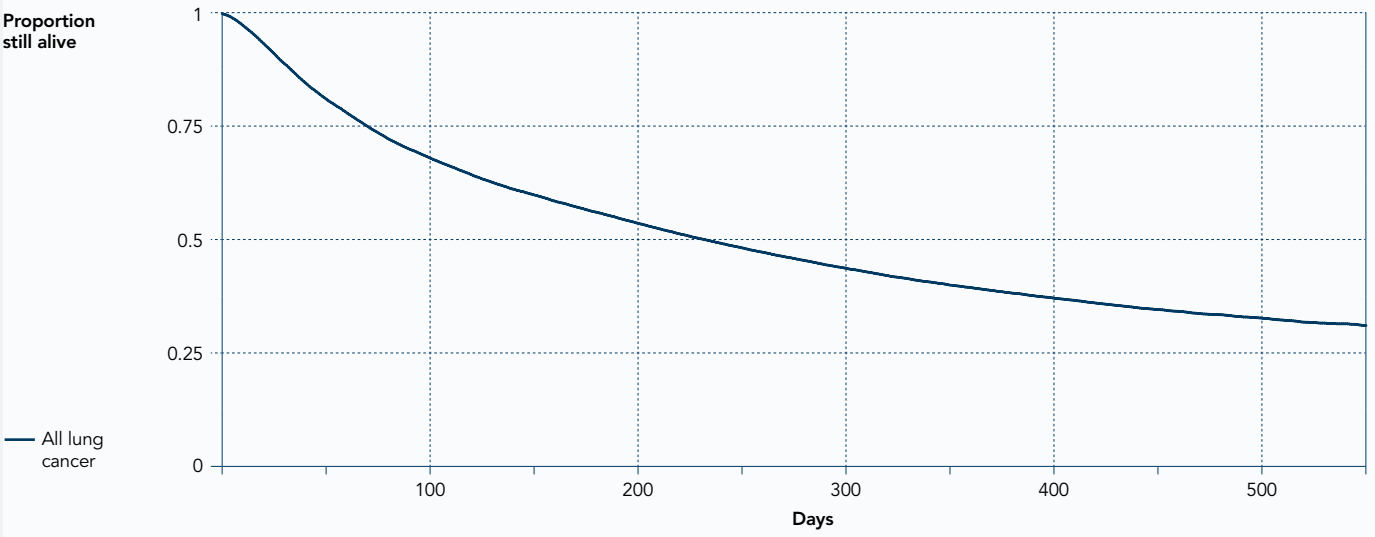
This has been the subject of a more detailed analysis carried out by Sheffield Hallam University. The report entitled "Opening doors to treatment: Exploring the impact of lung cancer specialist nurses on access to anti-cancer treatment: an exploratory case study" can be viewed at http://bit.ly/YyiUB3

Mortality and Survival

Treatment of lung cancer aims to prolong survival and improve quality of life by improving symptoms. Median survival (the time taken for 50.0 per cent of the patients to die from their cancer) is one way of measuring survival of the whole cohort of patients in England and Wales from 2013 (the audit does not receive data of death on patients submitted from Scotland and so is unable to calculate survival in this group). The graphs below demonstrate the survival patterns of the whole cohort (Figure 18), patients with NSCLC (Figure 19), and patients with SCLC (Figure 20) from England and Wales.

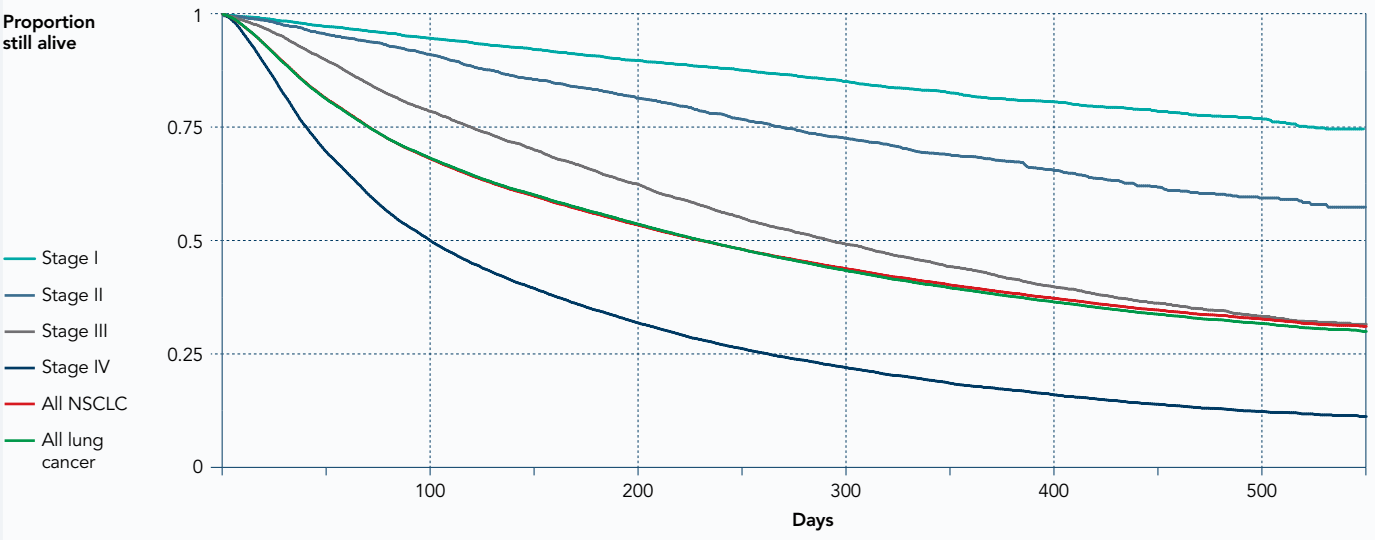
Figure 21 shows the crude median survival for Cancer Networks in England and Wales. Each result is made up of the results from individual hospitals in that region. Results for individual hospitals will be available in the online audit reports and will include statistically adjusted data to take account of differing clinical features of patients (such as age, Stage and Performance Status). Survival data has to be interpreted with caution, to avoid making inappropriate judgements.

Figure 18
Survival curve for all lung cancer (2013)



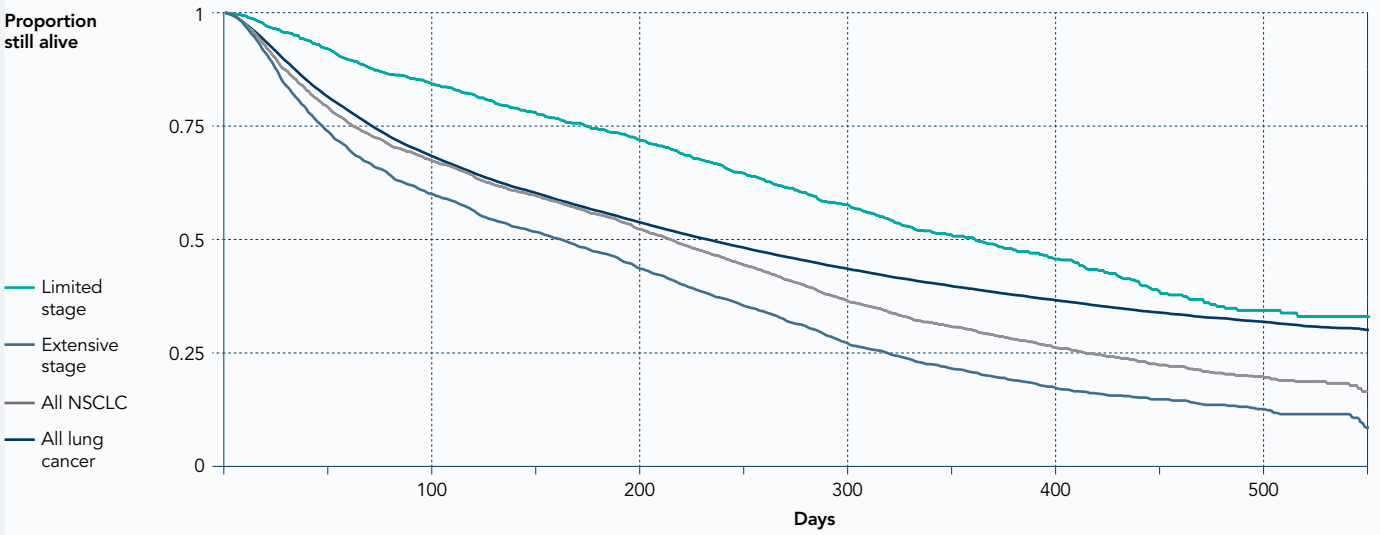
Median Survival: 232 days

Figure 19
Survival curves by Stage for all NSCLC (2013)



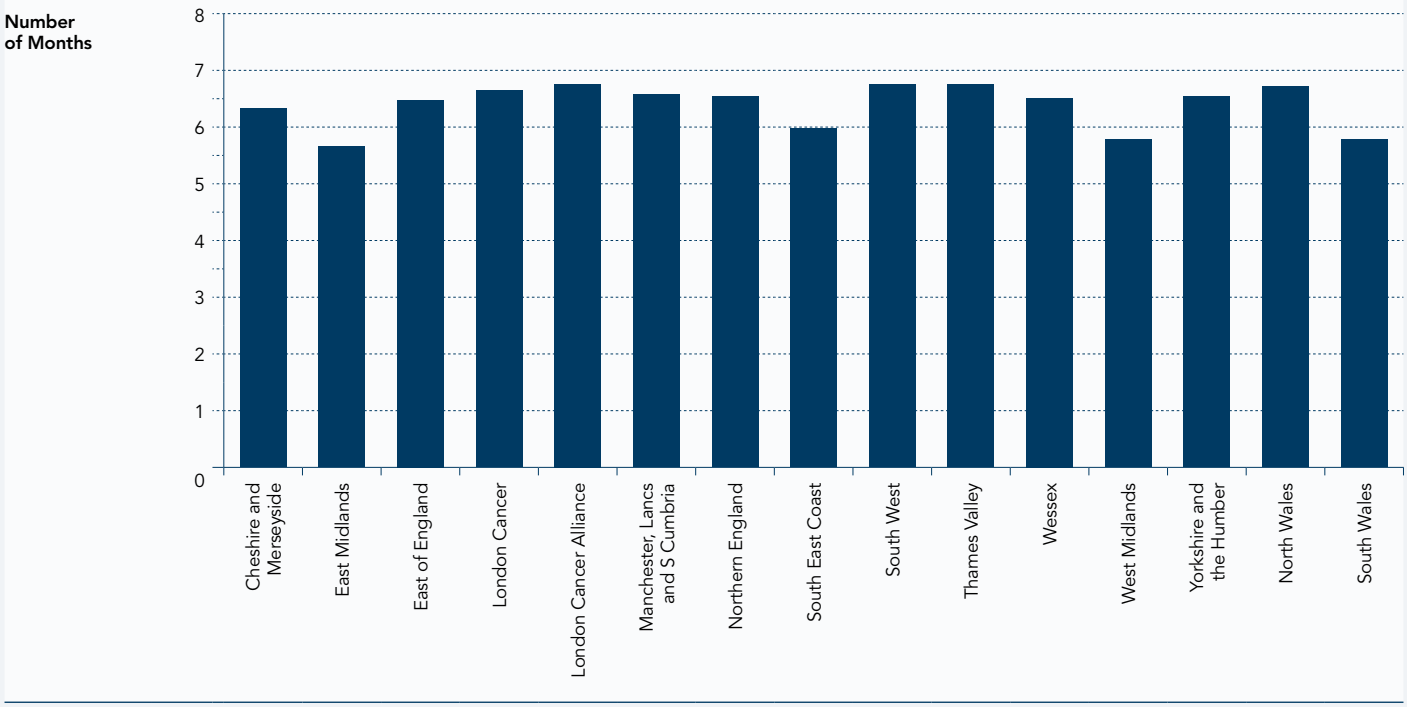
Median survival: Stage 1 – not reached; Stage 2 – not reached; Stage 3 – 293 days; Stage 4 – 100 days

Figure 20
Survival curves by Stage for all SCLC (2013)



Median Survival: Limited stage – 361 days; Extensive stage – 161 days

Figure 21
Median survival (months) by SCN for all lung cancer (2013)



The Importance of Co-Morbidity

Patients who develop lung cancer often have other illnesses (co-morbidities) that influence their ability to undergo the range of investigations and treatments that might otherwise be recommended for them. These co-morbidities tend to be more common in lung cancer patients than with other cancer types due to the age distribution of the disease (see Focus on Demographics) as well as the link with smoking which is associated with lung disease, heart disease and stroke.

As noted in other sections, in order to assess and compare the performance of services for lung cancer patients, it is necessary to take into account the different populations of patients managed by different organisations. Case-mix adjustment has historically taken into account the age, sex, disease stage, performance status and socio-economic status, but the audit does record information about co-morbidity which has the potential to be used as well. This section examines the co-morbidity data in the audit and discusses its limitations.

Methods of Recording Co-Morbidity

Co-morbidity is defined as a disease or illness affecting a cancer patient in addition to but not as a result of their current cancer. Although there are well established methods for recording the type and severity of co-morbidities (such as the Adult Co-Morbidity Evaluation-27 score), they are time consuming and have been considered to be impractical for use in the clinical setting as well as placing an unacceptable burden on cancer teams if used for audit purposes.

The NLCA co-morbidities consist of:

- Chronic Obstructive Pulmonary Disease (COPD)
- Dementia/Cerebrovascular disease
- Cardiovascular disease
- Renal failure
- Other malignancy
- Severe weight loss
- Other co-morbidity

Since the inception of the NLCA, a different method has been used to record co-morbidity. Rather than record all diseases, the audit asks whether the patient has specific co-morbidities (see opposite) that affects the management of the patient. For example, a patient who would have undergone a surgical operation for their cancer if it were not for their having severe lung disease will have this recorded, but not if the lung disease is so mild that they were still able to undergo the surgery. Unfortunately, previous analysis of the audit data has suggested that organisations have not fully understood this methodology, and furthermore it may have been inadequately completed, thus limiting the usefulness of the data.

Apart from co-morbidity, the audit does record "Performance Status" which quantifies general well-being and quality of life. This data field is very well completed by most organisations (see "Accuracy of Data in This Report") and is considered by some to be a surrogate marker for co-morbidity.

A further method of recording co-morbidity has begun to be used in recent years. All patients admitted to hospital in England have information about their co-morbidities recorded in a system known as "Hospital Episode Statistics" (HES) which can be used to calculate a co-morbidity score known as a Charlson Index. Unfortunately at present this data is only available for in-patient episodes, although it is hoped that similar data will be available for out-patient episodes in the future. Furthermore, the HES data is not completely accurate and so it has to be interpreted with a note of caution.

This year, the case-mix adjusted data published online will include HES-derived co-morbidity for the first time.

Lung Function

As well as recording the presence of lung disease as a relevant co-morbidity, the audit also records the exact level of lung function on individual patients. Two measurements are recorded – the absolute value and the percentage predicted of the Forced Expiratory Volume in 1 second (FEV1). These are of most importance in patients undergoing surgical treatment of their cancer, since the pre-operative lung function provides an important guide to the risk of the procedure and the likelihood of breathing problems afterwards.

Case Mix Adjustment

A typical explanation for different audit results from different organisations (Hospital Trusts or Cancer Networks) is that there is a different "case-mix". For example, a Hospital with a low treatment rate might argue that the patients they treat are older, more socially deprived, have more advanced disease, or poorer fitness (Performance Status).

The NLCA collects data that allows such factors to be taken into account. Taking anti-cancer treatment as an example, a statistical technique known as "logistic regression" calculates the likelihood of a patient in an organisation getting treatment compared to a baseline (typically the largest organisation) assuming that patients are matched for their case-mix.

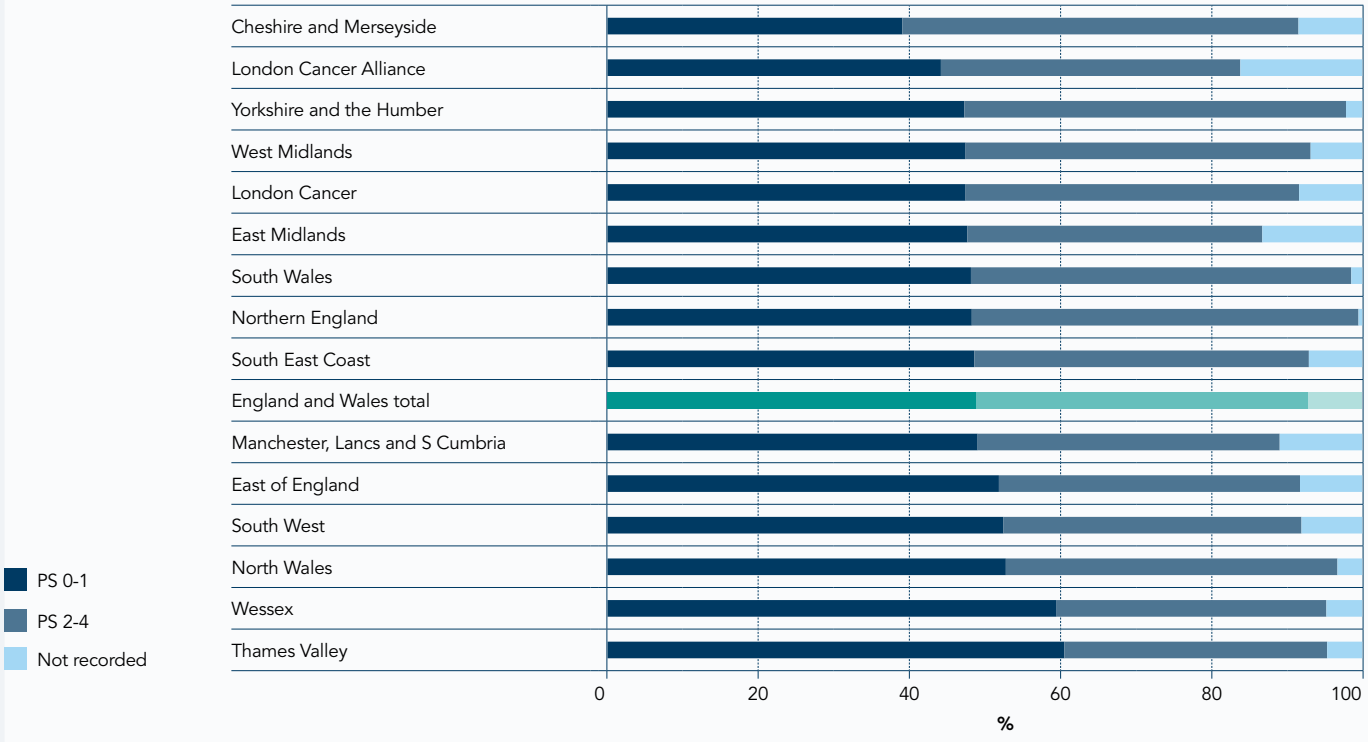
This measure of likelihood of treatment is called an "odds ratio". The baseline organisation will always have an odds ratio of 1.0. If Hospital X has an odds ratio of 0.9, we can say that patients in that Hospital are 10 per cent less likely to have treatment (1.0 minus 0.9, converted to a percentage). Odds ratios have a further benefit, in that they provide so-called "confidence intervals", indicating how confident we can be that the observed differences are statistically important.

Improvements in data collection mean that Stage and Performance Status are now recorded in over 90 per cent of cases. In order to further refine the statistical analyses, it is important in future that organisations improve recording of co-morbidity and lung function. As mentioned in "Key Recommendations", we have suggested that for those patients who do not receive the first choice treatment due to a co-morbidity, details of the co-morbidity should be provided in at least 85.0 per cent of cases; and for patients with Stage I-II and PS 0-1, completeness for FEV1 and FEV1% should exceed 75.0 per cent.

What Does the Data Tell Us?

Overall 17.9 per cent of patients have a Performance Status of 0 (fittest patients), with 30.9 per cent having PS 1, 19.6 per cent having PS 2, 18.0 per cent having PS 3, and 6.4 per cent PS 4 (least fit patients), Figure 22 below shows the distribution of PS in each SCN. This proportion with PS 0-1 represents those likely to be fit enough to receive radical (curative) treatment

Figure 22
Performance Status Distribution in each SCN



Chronic Obstructive Pulmonary Disease (COPD) precluded first choice treatment for 460 English patients (1.5 per cent of total cases). Proportions by SCN ranged from 0.2 to 4.7 per cent (see Figure 23). Other co-morbidities (not including COPD) precluded first choice treatment for an additional 1,458 English patients (4.8 per cent of total cases), ranging from 1.4 to 13.9 per cent at SCN-level (also see Figure 23). London Cancer had the highest proportion of patients in both categories and their overall rate of 18.6 per cent is 50.0 per cent greater than the next highest network (12.0 per cent for London Cancer Alliance). As mentioned above, these results should be interpreted with caution.

Of patients with non-COPD co-morbidity, 82.2 per cent had the nature of the co-morbidity recorded, with data completeness varying widely between SCNs (17.1 to 94.2 per cent – see Figure 24). Other Significant co-morbidity is by far the most common co-morbidity type reported (47.7 per cent), having more than double the proportion of the next highest co-morbidity type (cardiovascular disease with 19.4 per cent – see Figure 25).

Figure 23
Proportion of patients where co-morbidity precluded treatment by SCN (including COPD)

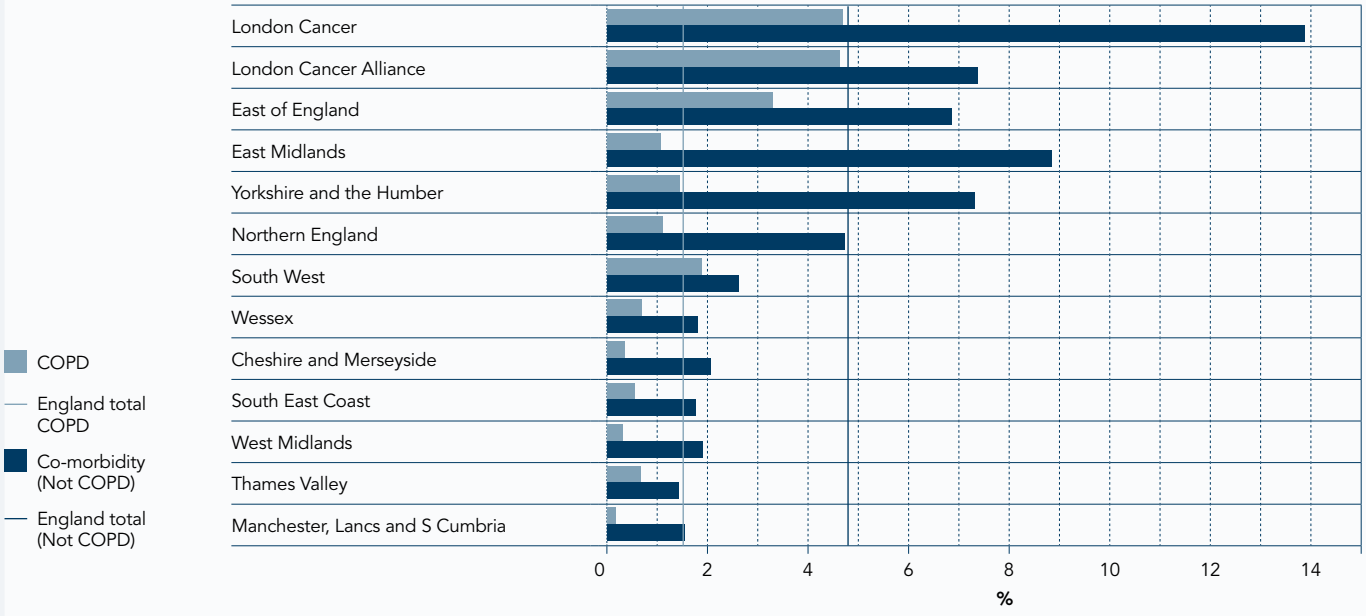


Figure 24
Completeness of nature of co-morbidity for patients where co-morbidity precluded treatment by SCN (excluding COPD)

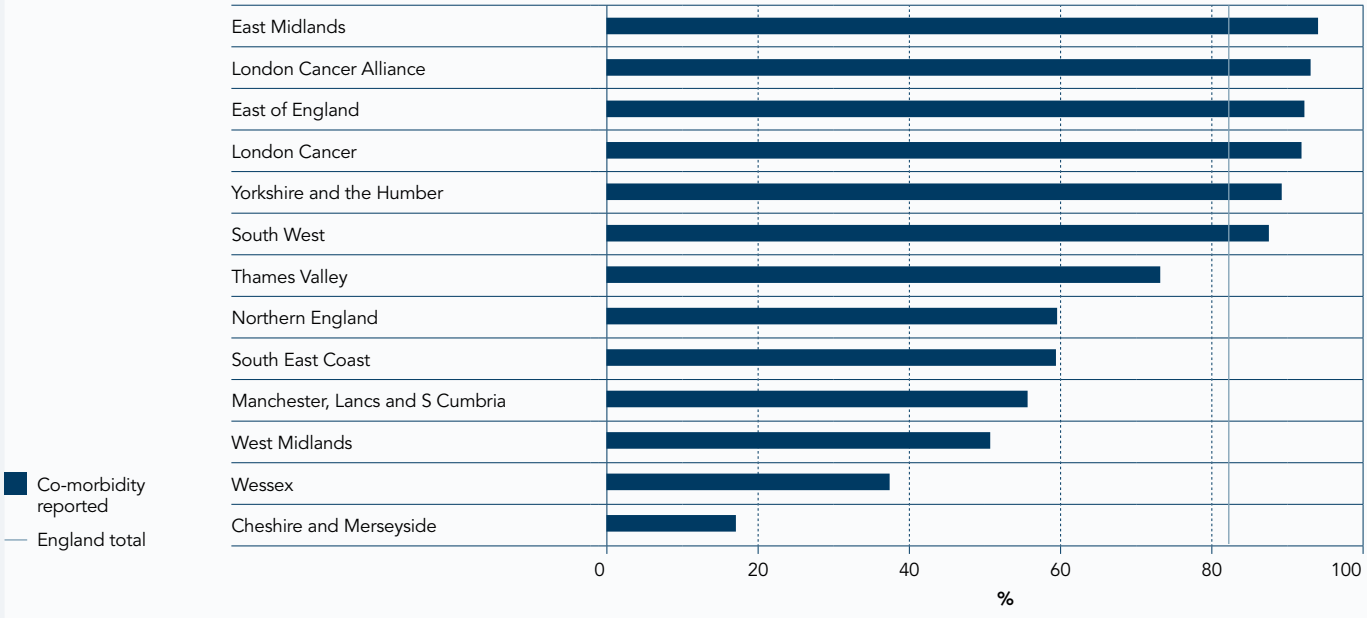
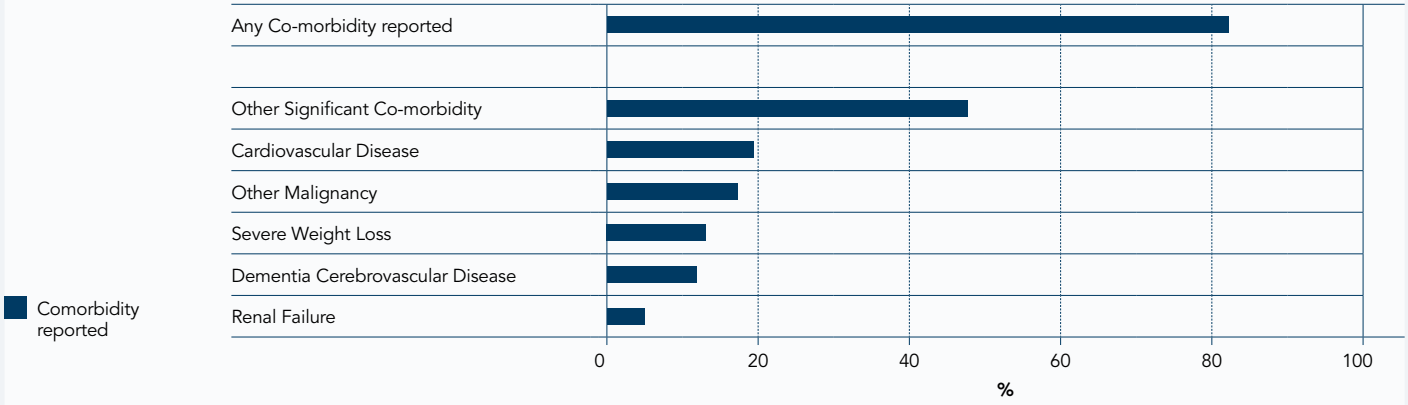


Figure 25
Nature of co-morbidity of patients where co-morbidity precluded treatment (excluding COPD)



For patients of good performance status and earlier stage cancer (i.e. the population of patients most likely to be considered for surgical treatment), the overall proportion having the percentage predicted FEV1 recorded is 67.1 per cent. The variation in recording of this data across the SCNs is shown in Figure 26. The median and interquartile range of the FEV1% predicted for this population of patients is shown in Figure 27.

Figure 26
Proportion of Patients with FEV1 % predicted recorded (PS 0-1, Stage 1-2)

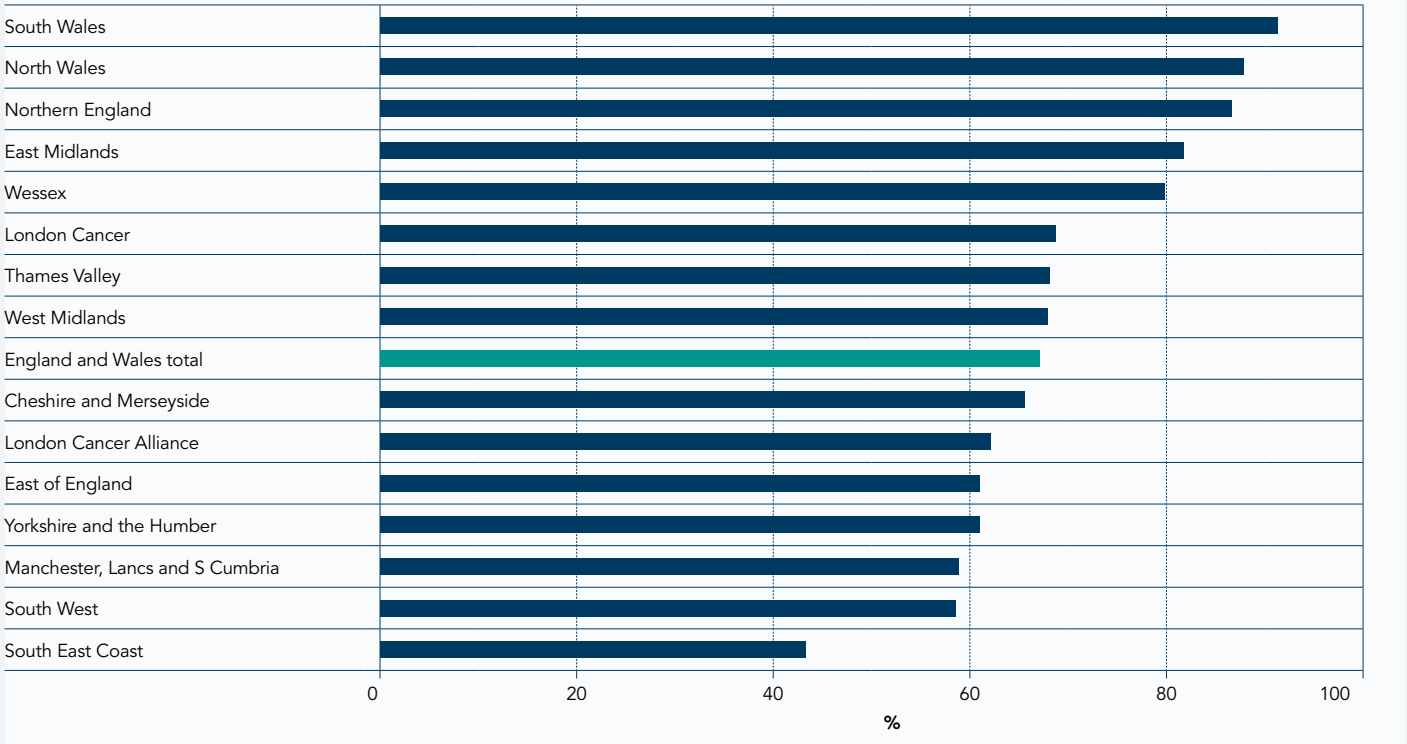
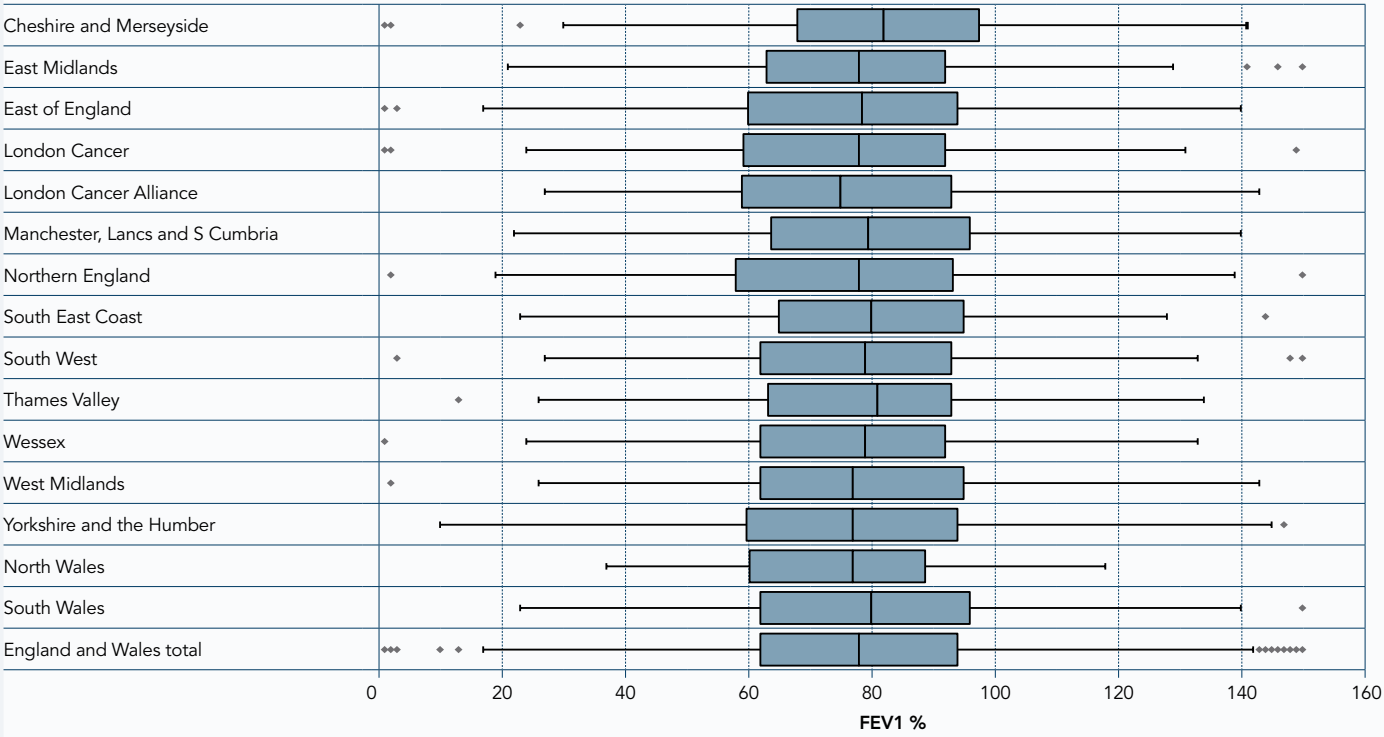


Figure 27
FEV1 % median and IQR - PS0-1 NSCLC Stage IA, IB, IIA or IIB



Tertiary Trusts

Most activity relating to lung cancer initial diagnosis occurs in the secondary care Trusts which range from small district general hospitals, to large teaching hospitals. Subsequent treatment often take place in the same Trust, or for some smaller Trusts, the patient may be transferred to another secondary care organisation. Activity in these organisations is well represented by the audit since the analysis of cases by "place first seen" allocates patients to the decision-making multi-disciplinary team.

However, there are several Tertiary Trusts which do not provide diagnostic services and which are therefore only rarely the "place first seen". These Trusts do provide a very important treatment service for patients both in their local area, but also on a regional/national basis, and for this reason we have chosen to record their activity separately, as shown in the Table below (Figure 28). Due to the absence of a common denominator, it is not possible to compare outcomes in these organisations at the present time.

Figure 28
Tertiary Treatment Centre Counts

Trust Code	Trust Name	Surgery (n)	Chemotherapy (n)	Teletherapy (n)	Brachytherapy (n)	Radiotherapy (n)	Any (n)
RBV	The Christie NHS Foundation Trust	0	471	759	11	759	1011
REN	The Clatterbridge Cancer Centre NHS Foundation Trust	1	465	464	0	464	712
RGM	Papworth Hospital NHS Foundation Trust	138	0	0	0	0	138
RM2	University Hospital of South Manchester NHS Foundation Trust	461	244	2	0	2	581
RPY	The Royal Marsden NHS Foundation Trust	0	160	119	1	120	253
RT3	Royal Brompton and Harefield NHS Foundation Trust	290	0	0	0	0	290

Appendix 1:
Trust and Health Board Identification for England and Wales

LC	London Cancer
R1HKH	Barts Health NHS Trust (Whipps Cross)
R1HM0	Barts Health NHS Trust (St Barts)
R1HNH	Barts Health NHS Trust (Newham)
RAL	Royal Free London NHS Foundation Trust
RAP	North Middlesex University Hospital NHS Trust
RF4	Barking, Havering and Redbridge University Hospitals NHS Trust
RKE	The Whittington Hospital NHS Trust
RQW	The Princess Alexandra Hospital NHS Trust
RQX	Homerton University Hospital NHS Foundation Trust
RRV	University College London Hospitals NHS Foundation Trust
RVL	Barnet and Chase Farm Hospitals NHS Trust

N40	London Cancer Alliance
RAS	The Hillingdon Hospitals NHS Foundation Trust
RAX	Kingston Hospital NHS Trust
RC3	Ealing Hospital NHS Trust
RFW	West Middlesex University Hospital NHS Trust
RJ1	Guy's and St Thomas' NHS Foundation Trust
RJ2	Lewisham Healthcare NHS Trust
RJ6	Croydon Health Services NHS Trust
RJ7	St George's Healthcare NHS Trust
RJZ	King's College Hospital NHS Foundation Trust
RPY	The Royal Marsden NHS Foundation Trust
RQM	Chelsea and Westminster Hospital NHS Foundation Trust
RT3	Royal Brompton and Harefield NHS Foundation Trust
RV8	North West London Hospitals NHS Trust
RVR	Epsom and St Helier University Hospitals NHS Trust
RYJ	Imperial College Healthcare NHS Trust
RYQ	South London Healthcare NHS Trust

N50	Cheshire and Merseyside
LLCU	Liverpool Lung Cancer Unit
RBL	Wirral University Teaching Hospital NHS Foundation Trust
RBN	St Helens and Knowsley Hospitals NHS Trust
REM	Aintree University Hospital NHS Foundation Trust
REN	The Clatterbridge Cancer Centre NHS Foundation Trust
RJR	Countess of Chester Hospital NHS Foundation Trust
RVY	Southport and Ormskirk Hospital NHS Trust
RWW	Warrington and Halton Hospitals NHS Foundation Trust

N51	Greater Manchester, Lancashire and South Cumbria
RBT	Mid Cheshire Hospitals NHS Foundation Trust
RJN	East Cheshire NHS Trust
RM2	University Hospital of South Manchester NHS Foundation Trust
RM3	Salford Royal NHS Foundation Trust
RMC	Bolton NHS Foundation Trust
RMP	Tameside Hospital NHS Foundation Trust
RRF	Wrightington, Wigan and Leigh NHS Foundation Trust
RTX	University Hospitals of Morecambe Bay NHS Foundation Trust
RW3	Central Manchester University Hospitals NHS Foundation Trust
RW6	Pennine Acute Hospitals NHS Trust
RWJ	Stockport NHS Foundation Trust
RXL	Blackpool Teaching Hospitals NHS Foundation Trust
RXN	Lancashire Teaching Hospitals NHS Foundation Trust
RXR	East Lancashire Hospitals NHS Trust

N52	Northern England
RE9	South Tyneside NHS Foundation Trust
RLN	City Hospitals Sunderland NHS Foundation Trust
RNL	North Cumbria University Hospitals NHS Trust
RR7	Gateshead Health NHS Foundation Trust
RTD	The Newcastle Upon Tyne Hospitals NHS Foundation Trust
RTF	Northumbria Healthcare NHS Foundation Trust
RTR	South Tees Hospitals NHS Foundation Trust
RVW	North Tees and Hartlepool NHS Foundation Trust
RXP	County Durham and Darlington NHS Foundation Trust

N53	Yorkshire and The Humber
RAE	Bradford Teaching Hospitals NHS Foundation Trust
RCB55	York Hospital (Historic RCB)
RCBCA	Scarborough General Hospital (Historic RCC)
RCD	Harrogate and District NHS Foundation Trust
RCF	Airedale NHS Foundation Trust
RFF	Barnsley Hospital NHS Foundation Trust
RFR	The Rotherham NHS Foundation Trust
RFS	Chesterfield Royal Hospital NHS Foundation Trust
RHQ	Sheffield Teaching Hospitals NHS Foundation Trust
RJL	Northern Lincolnshire and Goole Hospitals NHS Foundation Trust
RP5	Doncaster and Bassetlaw Hospitals NHS Foundation Trust
RR8	Leeds Teaching Hospitals NHS Trust
RWA	Hull and East Yorkshire Hospitals NHS Trust
RWY	Calderdale and Huddersfield NHS Foundation Trust
RXF	Mid Yorkshire Hospitals NHS Trust

N54	East of England
RAJ	Southend University Hospital NHS Foundation Trust
RC1	Bedford Hospital NHS Trust
RC9	Luton and Dunstable Hospital NHS Foundation Trust
RCX	The Queen Elizabeth Hospital, King's Lynn, NHS Foundation Trust
RDD	Basildon and Thurrock University Hospitals NHS Foundation Trust
RDE	Colchester Hospital University NHS Foundation Trust
RGM	Papworth Hospital NHS Foundation Trust
RGN	Peterborough and Stamford Hospitals NHS Foundation Trust
RGP	James Paget University Hospitals NHS Foundation Trust
RGQ	Ipswich Hospital NHS Trust
RGR	West Suffolk NHS Foundation Trust
RGT	Cambridge University Hospitals NHS Foundation Trust
RM1	Norfolk and Norwich University Hospitals NHS Foundation Trust
RQ8	Mid Essex Hospital Services NHS Trust
RQQ	Hinchingbrooke Health Care NHS Trust
RWG	West Hertfordshire Hospitals NHS Trust
RWH	East and North Hertfordshire NHS Trust

N55	East Midlands
RJF	Burton Hospitals NHS Foundation Trust
RK5	Sherwood Forest Hospitals NHS Foundation Trust
RNQ	Kettering General Hospital NHS Foundation Trust
RNS	Northampton General Hospital NHS Trust
RTG	Derby Hospitals NHS Foundation Trust
RWD	United Lincolnshire Hospitals NHS Trust
RWE	University Hospitals of Leicester NHS Trust
RX1	Nottingham University Hospitals NHS Trust

N56	West Midlands
RBK	Walsall Healthcare NHS Trust
RJC	South Warwickshire NHS Foundation Trust
RJD	Mid Staffordshire NHS Foundation Trust
RJE	University Hospital of North Staffordshire NHS Trust
RKB	University Hospitals Coventry and Warwickshire NHS Trust
RL4	The Royal Wolverhampton NHS Trust
RLQ	Wye Valley NHS Trust
RLT	George Eliot Hospital NHS Trust
RNA	The Dudley Group NHS Foundation Trust
RR1	Heart of England NHS Foundation Trust
RRK	University Hospitals Birmingham NHS Foundation Trust
RWP	Worcestershire Acute Hospitals NHS Trust (RWP31/50)
RWP01	Worcestershire Acute Hospitals NHS Trust (RWP01)
RXK	Sandwell and West Birmingham Hospitals NHS Trust
RXW	Shrewsbury and Telford Hospital NHS Trust

N57	South West
RA3	Weston Area Health NHS Trust
RA4	Yeovil District Hospital NHS Foundation Trust
RA7	University Hospitals Bristol NHS Foundation Trust
RA9	South Devon Healthcare NHS Foundation Trust
RBA	Taunton and Somerset NHS Foundation Trust
RBZ	Northern Devon Healthcare NHS Trust
RD1	Royal United Hospital Bath NHS Trust
REF	Royal Cornwall Hospitals NHS Trust
RH8	Royal Devon and Exeter NHS Foundation Trust
RK9	Plymouth Hospitals NHS Trust
RTE	Gloucestershire Hospitals NHS Foundation Trust
RVJ	North Bristol NHS Trust

N58	South East Coast
RA2	Royal Surrey County Hospital NHS Foundation Trust
RDU	Frimley Park Hospital NHS Foundation Trust
RN7	Dartford and Gravesham NHS Trust
RPA	Medway NHS Foundation Trust
RTK	Ashford and St Peter's Hospitals NHS Foundation Trust
RTP	Surrey and Sussex Healthcare NHS Trust
RVV	East Kent Hospitals University NHS Foundation Trust
RWF	Maidstone and Tunbridge Wells NHS Trust
RXC	East Sussex Healthcare NHS Trust
RXH	Brighton and Sussex University Hospitals NHS Trust
RYR16	Western Sussex Hospitals NHS Trust (RYR16)
RYR18	Western Sussex Hospitals NHS Trust (RYR18)

N59	Thames Valley
RD7	Heatherwood and Wexham Park Hospitals NHS Foundation Trust
RD8	Milton Keynes Hospital NHS Foundation Trust
RHW	Royal Berkshire NHS Foundation Trust
RN3	Great Western Hospitals NHS Foundation Trust
RTH	Oxford University Hospitals NHS Trust
RXQ	Buckinghamshire Healthcare NHS Trust

N60	Wessex
R1F	Isle of Wight NHS Trust
RBD	Dorset County Hospital NHS Foundation Trust
RD3	Poole Hospital NHS Foundation Trust
RDZ	The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust
RHM	University Hospital Southampton NHS Foundation Trust
RHU	Portsmouth Hospitals NHS Trust
RN506	Hampshire Hospitals NHS Foundation Trust (RN5)
RN541	Hampshire Hospitals NHS Foundation Trust (RN1)
RNZ	Salisbury NHS Foundation Trust

NWW	North Wales Regional Cancer Network
7A1A1	Ysbyty Glan Clwyd
7A1A4	Wrexham Maelor Hospital
7A1AU	Ysbyty Gwynedd

SWCN	South Wales Regional Cancer Network
7A2AJ	Bronglais General Hospital
7A2AL	Prince Philip Hospital
7A2BL	Withybush General Hospital
7A3B7	Princess of Wales Hospital
7A3C4	Singleton Hospital
7A3C7	Morriston Hospital
7A3CJ	Neath Port Talbot Hospital
7A4C1	University Hospital Llandough
7A5B1	The Royal Glamorgan Hospital
7A5B3	Prince Charles Hospital Site
7A6AM	Nevill Hall Hospital
7A6AR	Royal Gwent Hospital

Appendix 2: Local Action Plan

Recommendation	Achieved Y/N/P/NK	Planned Action	Suggested Actions	Suggested Responsibility	Date Plan Actioned	Date Issue Resolves
Data Completeness and Quality						
The organisation participates in this national audit			Contact Clinical Audit Support Unit (nlca@hscic.gov.uk). Visit http://www.ic.nhs.uk/lung for information. Obtain, read and disseminate the Lung Cancer Audit Annual Report.	Cancer Manager / Governance Lead		
Data on all patients diagnosed with lung cancer are submitted to the audit			Use MDT meetings to capture all cases discussed, Try to record cases in real time or near real time. Do not delay case upload until the deadline. Liaise with pathology departments to correlate cases. Work with IT department to set up CSV file upload facility if information is collected on a third party system or identify resources to input data directly.	MDT Chair		
All relevant data fields are completed for each patient			Use proforma for data collection at MDT. Identify key person to quality assure data prior to submission. Ensure data inputters understand clinical implications of data. Map and allocate responsibility along patient pathway. Agree protocols and submission routes for patients that are treated across different organisations.	Data Co-ordinator / Cancer Manager / Network Manager		
Key data fields including stage and performance status should be completed in at least 85 per cent and in at least 95 per cent with respect to the MDT field			Refer to the documentation on the National Lung Cancer Audit website and ensure that key fields are completed for all relevant cases. MDT Chair assists Co-ordinator by ensuring that stage, performance status and other key fields are discussed and recorded for each patient.	MDT Chair, Data Co-ordinator / Cancer Manager/ Network Manager		
FEV1 absolute and FEV1% predicted for stage I and II NSCLC patients with PS 0 or 1 should be recorded in at least 85 per cent			Record data in real time at MDT where possible; foster links with physiology departments to obtain data on relevant patients; quality assure data prior to submission.			
For those patients who do not receive the first choice treatment due to a co-morbidity, details of the co-morbidity should be provided in at least 85 per cent of cases			Ensure that all relevant co-morbidity data is discussed at MDT, and ensure that cases where co-morbidity prevents treatment of choice are submitted to the audit. It is important that the collected data adheres to the definitions in the LUCADA data manual.			

Recommendation	Achieved Y/N/P/NK	Planned Action	Suggested Actions	Suggested Responsibility	Date Plan Actioned	Date Issue Resolves
Process of Care						
Over 95 per cent of patients submitted to the audit are discussed at an MDT			Liaise with cancer waiting times team to identify lung cancer referrals. Liaise with radiology department to identify all imaging suspicious of lung cancer or mesothelioma. Liaise with pathology department to identify cases.	MDT Chair, Lung Cancer Clinical Lead		
The Histological Confirmation Rate should be at least 75 per cent To be reviewed in light of case-mix adjusted odds ratio			This result should be interpreted in conjunction with the case-mix adjusted odds ratio, which might better reflect whether the organisation is an outlier. Ensure all histological diagnoses are submitted to the audit, including those confirmed only by resection. Liaise with pathology department to identify cases. Review clinical diagnoses and diagnostics protocols if HCR is below optimum.	MDT Chair, Lung Cancer Clinical Lead		
The proportion of patients receiving CT prior to bronchoscopy should exceed 95 per cent			Ensure that all CT / bronchoscopy data is submitted to the audit. Review patient pathway and individual clinician practices.	MDT Chair, Lung Cancer Clinical Lead, Radiologists		
Over 80 per cent of patients are seen by a Lung Cancer Nurse Specialist			Review the specialist nurse service, ensuring all nursing posts are staffed and that clear referral pathways exist.	MDT Chair, Lung Cancer Clinical Lead, Specialist Nurse		
Over 80 per cent of patients have a Lung Cancer Nurse Specialist present at the time of diagnosis			Review the specialist nurse service, allocate extra nursing support alongside lung cancer clinics.	MDT Chair, Lung Cancer Clinical Lead, Specialist Nurse		
PET Scan dates should be recorded for all relevant cases			Ensure that all PET data is captured at MDT submitted to the audit.	MDT Chair, Lung Cancer Clinical Lead, Specialist Nurse		
NSCLC NOS rate of more than 20 per cent should be reviewed to ensure that best practice histological diagnostic techniques including immunohistochemistry are being followed, in order that patients receive appropriate chemotherapy regimens			Ensure that Pathologist is an integral part of the lung MDT and understands the importance of tumour subtyping. Ensure that a locally-approved panel of immunohistochemical markers are being used for subtyping and that locally-approved appropriate mutation-testing is being applied.	MDT Chair, Pathologist, Lung Cancer Clinical Lead, Specialist Nurse, MDT Co-ordinator		

Recommendation	Achieved Y/N/P/NK	Planned Action	Suggested Actions	Suggested Responsibility	Date Plan Actioned	Date Issue Resolves
Clinical Outcomes						
Surgical resection rates for NSCLC below 16 per cent must be reviewed To be reviewed in light of case-mix adjusted odds ratio			This result should be interpreted in conjunction with the case-mix adjusted odds ratio, which might better reflect whether the organisation is an outlier. Ensure that all surgical resections are submitted to the audit. If data is complete then review treatment policies for early stage lung cancer in patients with good performance status. Ensure that the Thoracic Surgeon attends MDT meetings. Consider offering a second opinion in borderline cases.	MDT Chair, Lung Cancer Clinical Lead, Thoracic Surgeons		
Surgical resection rates for Stage I/ II NSCLC below 52 per cent must be reviewed			This result should be interpreted in conjunction with the case-mix adjusted odds ratio, which might better reflect whether the organisation is an outlier. Ensure that all surgical resections are submitted to the audit. If data is complete then review treatment policies for early stage lung cancer in patients with good performance status. Ensure that the Thoracic Surgeon attends MDT meetings. Consider offering a second opinion in borderline cases.	MDT Chair, Lung Cancer Clinical Lead, Thoracic Surgeons		
Active anti-cancer treatment rates below 60 per cent should be reviewed To be reviewed in light of case-mix adjusted odds ratio			This result should be interpreted in conjunction with the case-mix adjusted odds ratio, which might better reflect whether the organisation is an outlier. Ensure that all treatments are submitted to the audit. Review treatment policies for small cell lung cancer patients. Review pathway from diagnosis to treatment to ensure it is as expeditious as possible.	MDT Chair, Lung Cancer Clinical Lead. MDT members		
Chemotherapy rates for small cell lung cancer below 70 per cent should be reviewed To be reviewed in light of case mix adjusted odds ratio			This result should be interpreted in conjunction with the case-mix adjusted odds ratio, which might better reflect whether the organisation is an outlier. Ensure that all treatments are submitted to the audit. Review treatment policies for small cell lung cancer patients.	MDT Chair, Lung Cancer Clinical Lead. MDT members		
Chemotherapy rates for patients of PS 0-1 with advanced stage NSCLC IIIB/IV below 60 per cent should be reviewed To be reviewed in light of case-mix adjusted odds ratio			This result should be interpreted in conjunction with the case-mix adjusted odds ratio, which might better reflect whether the organisation is an outlier. Ensure that all treatments are submitted to the audit. Review treatment policies for non-small cell lung cancer patients with advanced stage.	MDT Chair, Lung Cancer Clinical Lead. MDT members		
Low median survival, as demonstrated by a case-mix adjusted hazard ratio significantly below the baseline, should be investigated.			Ensure that all relevant data has been submitted to the audit, Identify areas where audit standards have not been met or where CMA demonstrates the Trust to be an outlier and review.	MDT Chair, Lung Cancer Clinical Lead. MDT members		

Appendix 3: References

1. National Cancer Intelligence Network. Cancer survival in England by stage 2012. Accessible at: http://www.ncin.org.uk/publications/survival_by_stage

2. Leading the information revolution in cancer intelligence: why the National Lung Cancer Audit is the key to transforming lung cancer outcomes. 2014. Accessible at: http://www.roycastle.org/Resources/Roy%20Castle/Documents/PDF/leading-the-information-revolution-in-cancer-intelligence.pdf

3. Lung Cancer Interactive Map. Accessible via: http://www.roycastle.org/news-and-campaigning/Campaigns/interactive-map

4. http://www.londonhp.nhs.uk/services/cancer/implementation/integrated-cancer-systems/

Appendix 4: Glossary

Adenocarcinoma: a type of cancer arising from glandular tissue

Anti-cancer treatment (active treatment): a term used to define treatments for lung cancer that have an effect on the tumour itself, not just on symptoms. In lung cancer patients these are most often surgery, chemotherapy, radiotherapy or a combination.

Benchmarking: a method of comparing processes and outcomes against standards

Biopsy: removal and examination of tissue, usually microscopic, to establish a precise (***histological***) diagnosis.

Bronchoscopy: a procedure for examining the airways by inserting an instrument (bronchoscope) into the trachea and lungs, normally via the nose. Enables a ***bronchial biopsy*** to be taken.

Bronchial biopsy: removal of a small piece of lung tissue during a bronchoscopy in order to make a ***histological*** diagnosis.

Cancer Registry / ies: organisations who systematically collect high level data about all cases of cancer in the UK. Cancer registries are unique in being able to provide historical trend and population-based data to monitor changes in cancer incidence or survival over long periods of time.

Case ascertainment: the number of cases of lung cancer actually recorded by an organisation as a proportion of the number expected. Gives assurance that organisations are submitting data on all relevant cases.

Case-mix: refers to the different characteristics of patients seen in different hospitals (for example age, sex, disease stage, social deprivation and general health). Knowledge of differing case-mix enables a more accurate method of comparing quality of care (***case-mix adjustment***).

Case-mix adjustment: a statistical method of comparing quality of care between organisations that takes into account important and measurable patient characteristics.

Chemotherapy: medicines used in the treatment of cancer that can be given by mouth or by injection.

Common denominator (in a non-mathematical context) factors that link objects (e.g. hospitals) together.

Co-morbidity: medical conditions or disease processes that are additional to the disease under investigation (in this case lung cancer). In the NLCA this is recorded when a co-morbidity restricts the type of treatment that can be given for lung cancer.

CT scan: the abbreviated term for computed or computerised axial tomography. These are tests that produces detailed images of the body using X-rays images that are enhanced by a computer.

Cytological: refers to a pathological examination of cells outside the architecture of the actual tissue or organ they are taken from (as opposed to ***histological***).

Data completeness: a measure of the standard of data submitted to the audit, both in terms of the numbers of cases submitted as well as the data on each individual case.

Diagnosis: confirming the presence of the disease

Health Board: an organisation providing healthcare services in Scotland and Wales. A health board may manage one or several hospitals within a region.

Histological: refers to a pathological examination of cells within the architecture of a tissue or organ rather than just the cells themselves (as opposed to ***cytological***).

Hospital Trust: an organisation providing secondary healthcare services in England. A hospital trust may be made up of one or several hospitals within a region.

Improving Outcomes in Lung Cancer project (ILCOP) a project sponsored by the Health Foundation and managed by the Royal College of Physicians to look at ways to improve care offered to people diagnosed with lung cancer.

Integrated Cancer Systems: (ICS) a group of providers that come together in a formal, governed way to provide comprehensive, seamless cancer patient pathways.

Interquartile range: the range of a particular variable excluding the highest quarter and lowest quarter of the values recorded. Can be useful to give a sense of the spread of a set of data without being affected by very high or very low results.

Lung Cancer Nurse Specialist: a nurse specialising in care of people diagnosed with lung cancer or mesothelioma.

Lobectomy: an operation to remove a whole section (lobe) of lung tissue – see also ***wedge resection***. There are three lobes in the right lung and two lobes in the left lung.

Lead Clinician: healthcare professional in a hospital taking overall responsibility for the services provided for a specific disease area.

Lymph nodes: small, oval-shaped organs of the immune system, whose main job is to fight infection. Distributed widely throughout the body (including the neck, armpit, abdomen and thorax) they are a common place for cancers to spread.

MDT: multi-disciplinary team, a group of healthcare professionals working in a co-ordinated manner for patient care.

Mediastinum / Mediastinal: refers to an area within the centre of the thorax (chest) between the two lungs, where the heart, blood vessels and lymph nodes are found.

Mediastinotomy / oscopy: an operation that enables visualization and biopsy of the mediastinal lymph nodes. These procedures are often used to determine whether a cancer has spread to the lymph nodes, which affects the stage of the disease.

Mesothelioma: cancer of the lining of the lung caused by exposure to asbestos.

Metastasis: cancer that has spread from the place where it was formed to grow in another part of the body.

Network: see 'Cancer Network'

NLCA: National Lung Cancer Audit

Nodule (lung nodule): a small abnormality on the lung often found on chest X-rays or CT scans Most lung nodules are non-cancerous (benign). However, some lung nodules may be cancerous - either early-stage lung cancer or metastatic cancer that has spread to the lungs from another site in the body.

Non-small cell carcinoma: a group of types of lung cancer sharing certain characteristics, that makes up 85-90 per cent of all lung cancers. Includes squamous carcinoma and adenocarcinoma. See also ***small cell carcinoma***.

NOS: not otherwise specified. In the case of ***NSCLC*** histology, this implies that the histological diagnosis has not been sub-classified to a particular cell type e.g. squamous carcinoma, adenocarcinoma etc.

NSCLC: non-small cell lung cancer

Operability: in the consideration of surgical treatment of a lung cancer, refers to the patients' ability to cope with both the operation and the subsequent reduction of lung volume and function. See also ***resectability***.

Performance Status: a systematic method of recording the ability of an individual to undertake the tasks of normal daily life compared with that of a normal person

PET Scan: an abbreviation for positron emission tomography. This is a computerised diagnostic technique that uses radioactive substances to examine structures of the body. Nowadays usually combined with a ***CT scan*** (PET-CT scan). It produces a three-dimensional image that reflects the metabolic and chemical activity of the body.

Radiologist: a doctor specialising in the use of imaging technologies, including radiation, to diagnose and treat disease.

Radiotherapy: the treatment of cancer using radiation, which is most often delivered by X-ray beams (external beam radiotherapy) but can be given internally (brachytherapy).

Resectability: in the consideration of surgical treatment of a lung cancer, refers to the ability of the surgeon to remove the tumour taking into account its location and stage. See also ***operability***.

RCP: abbreviation for The Royal College of Physicians, the professional body of doctors practicing general medicine and its subspecialties.

SCLC: small cell carcinoma.

Secondary care: care provided by a hospital as opposed to that provided in the community by a general practitioner and allied staff (primary care).

Small cell lung cancer: a type of lung cancer making up around 10-15 per cent of all lung cancers. See also ***non-small cell carcinoma***.

Squamous Carcinoma: a type of cancer arising from cells which line body cavities.

Staging / stage: the anatomical extent of a cancer.

Strategic Clinical Networks: (SCNs) bring together groups of health professionals to support commissioners to improve services for a particular condition in order to improve the quality of care and outcomes for patients

Surgical resection: an operation to remove abnormal tissues or organs.

Tertiary Centres: hospitals that specialise in diagnosis and treatment of specific conditions, often handling very complex cases. Other hospitals may refer patients to these centres for specialist treatment.

Thoracic surgeon: specialist surgeon who operates on the chest and lungs

VATS: stands for video-assisted thoracoscopic surgery, an approach to lung cancer surgery.

Wedge resection: an operation to remove a section of lung tissue smaller than a lobe – see also ***lobectomy***.

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