

State of the Nation Report 2023

Results of the National Lung Cancer Audit for patients in England during 2021
and Wales during 2020-2021

Version 2: July 2023



This report was prepared by members of the NLCA project team

Neal Navani, Senior Clinical Lead
John Conibear, Oncology Lead, Royal College of Radiologists
Doug West, Thoracic Surgical Lead, Society for Cardiothoracic Surgery
Team members in the Clinical Effectiveness Unit, RCS England:
Julie Nossiter, NLCA Audit Lead
Adrian Cook, NLCA Senior Statistician
David Cromwell, NLCA Methodological Lead
Lauren Dixon, NLCA Clinical Fellow
Ella Barber, NLCA Data Scientist
Joanne Boudour, NLCA Project Manager

Citation for this document:

National Lung Cancer Audit: State of the Nation Report 2023. London: Royal College of Surgeons of England, 2023.

© 2023 Healthcare Quality Improvement Partnership (HQIP)

Copyright All rights reserved. No part of this publication may be reproduced in any form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this publication) without the written permission of the copyright owner. Applications for the copyright owner's written permission to reproduce any part of this publication should be addressed to the publisher.



**Royal College
of Surgeons
of England**

The Royal College of Surgeons of England is an independent professional body committed to enabling surgeons to achieve and maintain the highest standards of surgical practice and patient care. As part of this it supports Audit and the evaluation of clinical effectiveness for surgery. Registered Charity no: 212808



The British Thoracic Oncology Group (BTOG) is the multi-disciplinary group for healthcare professionals involved with thoracic malignancies throughout the UK. Registered Charity no: 1166012



Society for Cardiothoracic Surgery
in Great Britain and Ireland

The SCTS is the representative body for cardiothoracic surgery in Great Britain & Ireland. Registered Charity no: 1113536



HQIP
Healthcare Quality
Improvement Partnership

The NLCA is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). 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 in patient outcomes, and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering 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 projects, other devolved administrations and crown dependencies. <https://www.hqip.org.uk/national-programmes>

Cancer Registration in England and Wales

This work uses data that has been provided by patients and collected by the NHS as part of their care and support. For patients diagnosed in England, the data is collated, maintained and quality assured by the National Disease Registration Service (NDRS), which is was part of NHS Digital. Access to the data was facilitated by the NHS Digital Data Access Request Service.

For patients diagnosed in Wales, the NLCA dataset is captured through a national system, Cancer Information System for Wales (CaNISC), after identification by hospital cancer services and uploaded via electronic MDT data collection systems to the Wales Cancer Network (WCN), Public Health Wales.

**Version 2
July 2023**

This version of the report includes revisions to the survival curves from patients diagnosed in Wales, grouped by Welsh hospitals (updated from Welsh Health Boards) and updates/corrections to quoted figures.

Executive summary

The purpose of the [National Lung Cancer Audit](#) is to evaluate the patterns of care and outcomes for patients with lung cancer in England and Wales, and to support services to improve the quality of care for these patients. The main body of the report gives an overview of clinical process and outcomes for 34,478 patients diagnosed with lung cancer in England in 2021. A separate section provides detailed results on the care received by patients diagnosed in Wales in 2020 and 2021. The COVID-19 pandemic affected the collection of cancer registry data and the last NLCA Annual Report was not able to publish results that covered the same periods of time for England (2020) and Wales (2019).

The report describes the results of an analysis using data provided by NHS Digital and the Welsh Cancer Network. It summarises the performance of lung cancer services on a set of performance indicators and patient outcomes for 2021, together with information for 2019 and 2020. The results for England were derived from the Rapid Cancer Registration Dataset (RCRD), while the results for Wales uses their main cancer registration dataset.

1. Introduction

The [National Lung Cancer Audit \(NLCA\)](#) is one of the suite of national cancer audits within the National Clinical Audit and Patient Outcomes Programme (NCAPOP) funded by NHS England and the Welsh Government. In February 2022, the responsibility of delivering the NLCA moved from the Royal College of Physicians to the Clinical Effectiveness Unit within the Royal College of Surgeons of England.

The aim of the NLCA is to evaluate the patterns of care and outcomes for patients with lung cancer in England and Wales, and to support services to improve the quality of care for these patients. National guidelines underpin the management of patients with lung cancer and the NLCA evaluates current patterns of care against these standards. Several documents contain specific standards including: publications from [The National Institute for Health and Care Excellence \(NICE\)](#), [national commissioning guidance](#), the [National Optimal Lung Cancer Pathway](#) and the recent [Getting it Right First Time \(GIRFT\)](#) report. The NLCA has developed a set of indicators to reflect these and encourages healthcare professionals to review the findings of this report and to understand why unwarranted differences exist.

There are additional supplementary materials that accompany this document available on the NLCA website at: www.lungcanceraudit.org.uk. These include data tables containing [individual NHS trust results](#), and a description of the [audit methods](#). The website also provides access to:

- links to resources that support local services' quality improvement initiatives.
- links to other sources of information about lung cancer.

The results from the NLCA are used by various other national healthcare organisations, such as GIRFT in their reports and hospital visits and the Care Quality Commission (CQC) intelligence team to create a dashboard to support their inspection.

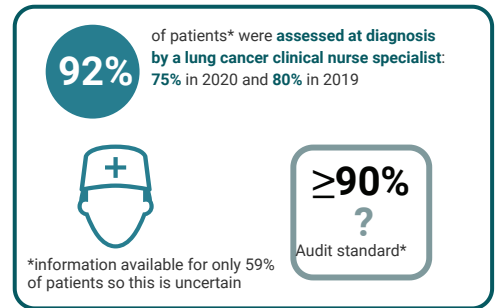
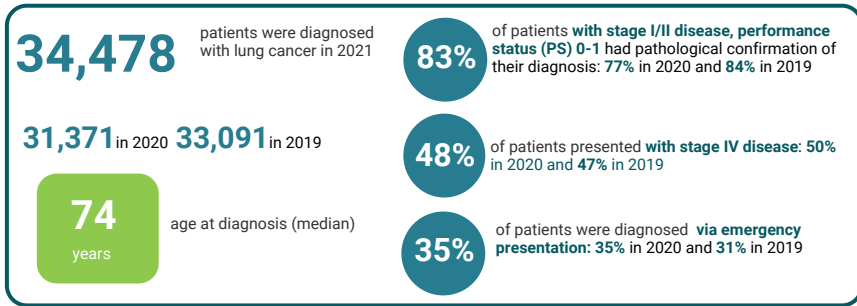
Key Messages

- The number of patients diagnosed in England in 2021 has returned to pre- pandemic levels with 34,478 patients diagnosed with lung cancer compared to 31,371 in 2020 and 33,091 in 2019.
- The proportion of patients with stage I/II PS 0–2 NSCLC undergoing curative-intent treatment in England has increased from 73% in 2020 to 79% in 2021.
- The proportion of patients with NSCLC stage IIIB-IV and PS 0-1 receiving systemic anti-cancer therapy in England has increased from 55% in 2020 to 61% in 2021.
- The COVID-19 pandemic in 2020 had an impact on the number of patients diagnosed in Wales which fell from 2,240 in 2019 to 2,067 in 2020 with a subsequent recovery in 2021 to 2,244.
- The COVID-19 pandemic in 2020 had an impact on lung cancer treatment in Wales with a reduction in the number of patients with NSCLC undergoing surgery or treatment with curative intent compared with 2019; by 2021, the number of patients undergoing these treatments had not recovered to 2019 pre- pandemic levels.

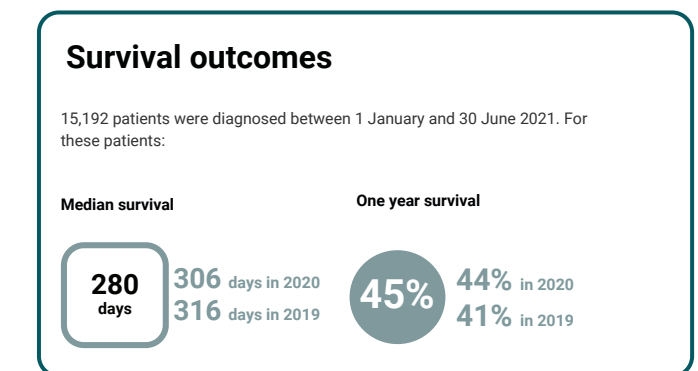
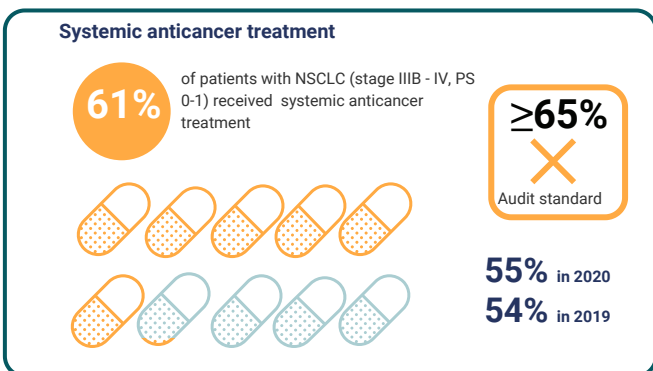
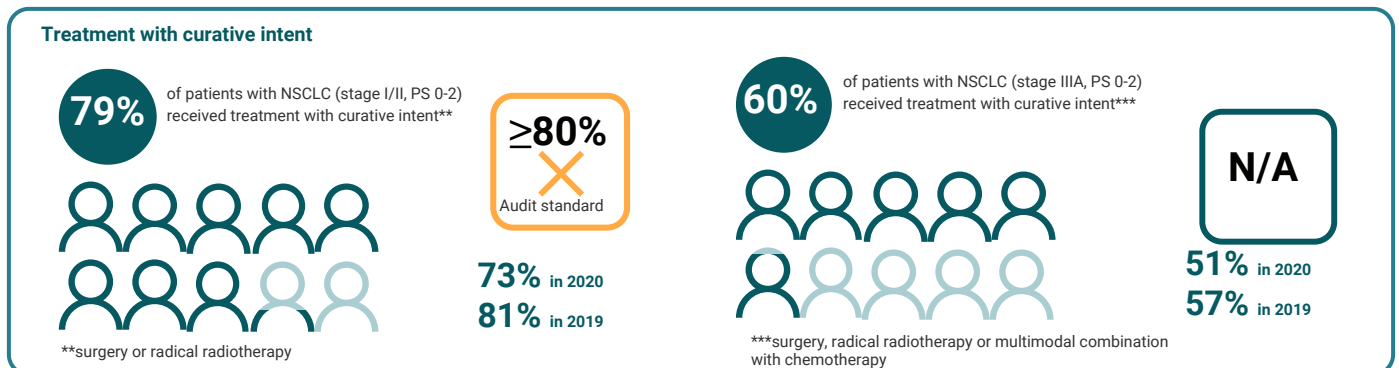
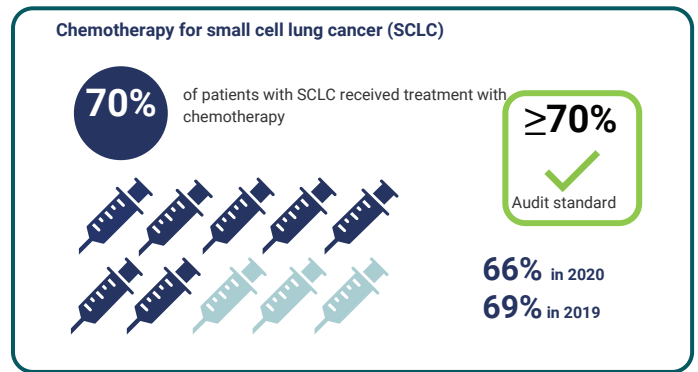
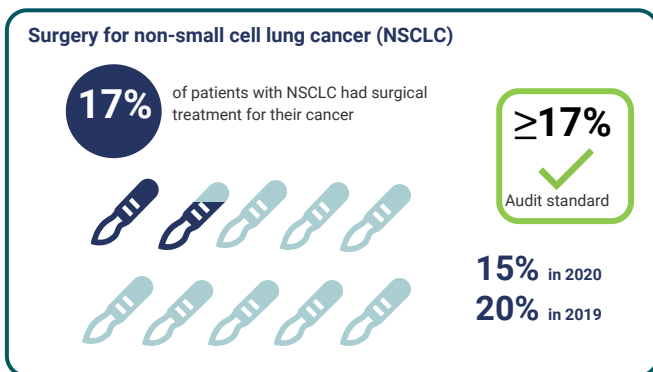
Table 1. Recommendations, key findings and related national guidance

Recommendation	Audience	Results in 2021	NLCA benchmarking standard 2021	National Guidance	Results in 2020 (for comparison against results in 2021)
<p>1. Aim to achieve high levels of data completeness in the cancer registration datasets, particularly the Rapid Cancer Registration Dataset and COSD in England.</p> <p>- Completeness should be at least 95% for performance status (PS), ethnicity and disease stage, and at least 90% for “trust first seen”, route to diagnosis, seen by a lung cancer clinical nurse specialist (LCNS) at diagnosis and smoking status (to highlight inequalities and inform future strategies).</p>	NHS England, Integrated Care Boards (ICBs), Cancer Alliances	<p><i>Results for England and Wales (2021)</i></p> <p>Performance status: England, from RCRD (83%); Wales (97%)</p> <p>Disease (TNM) stage: England, from RCRD (86%); Wales (98%)</p> <p>Basis of diagnosis: England (90%); Wales (100%)</p> <p>LCNS at diagnosis: England (59%); Wales (98%)</p> <p>Smoking status: England (49%); Wales (N/A)</p> <p>(Results 2.1, page 6 (England) and 3.1, page 11 (Wales).</p>	NLCA benchmarking standard 2021: Completeness should be at least 95% for performance status (PS) and disease stage, and at least 90% for “trust first seen”, route to diagnosis, seen by a LCNS and smoking status.	<p>The Cancer Outcome and Services Data set (COSD) has been the national standard for reporting cancer in the NHS in England since January 2013. Feedback reports for the data submitted are available through the National Disease Registration Service (NDRS). CancerStats website. COSD is the main source for the rapid cancer registration dataset. Improved completeness of this dataset is required to ensure quarterly reporting. The Cancer Network Information System Cymru (CaNISCS) collects, analyses and releases information about cancer in Wales.</p>	<p><i>Results for England and Wales (2020)</i></p> <p>Performance status: Reduction - England, from RCRD (87%) Reduction - Wales (99%)</p> <p>Disease (TNM) stage: Reduction - England, from RCRD (90%) Increase - Wales (97%)</p> <p>Completeness of Basis of diagnosis, LCNS at diagnosis, smoking status were not reported in the NLCA 2021 Annual Report.</p> <p>(Results 2 (England) and 3 (Wales).</p>
<p>2. Ensure at least 85% of patients with stage I/II PS 0-2 NSCLC undergo curative intent treatment in line with NICE guidance.</p>	NHS England, ICBs, Welsh Health Boards, Cancer Alliances	<p><i>Results for England and Wales (2021)</i></p> <p>England: 79% of patients in 2021 Wales: 65% of patients in 2021</p> <p>(Results 2.3, page 8 (England) and 3.2, page 11 (Wales).</p>	NLCA benchmarking standard 2021: 80% of patients with NSCLC (stage I/II, PS 0-1) should receive treatment with curative intent.	<p>NICE quality statement 5 (QS17): Adults with NSCLC stage I or II and good PS have treatment with curative intent NLCA Healthcare Improvement Plan 2022: Goal 1 - Increase the proportion of patients who receive treatment with curative intent.</p>	<p><i>Results for England and Wales (2020)</i></p> <p>Increase - England: 73% of patients in 2020 Reduction - Wales: 66% of patients in 2020</p>
<p>3. Ensure at least 70% of patients with NSCLC stage IIIB-IV and PS 0-1 receive systemic anti-cancer therapy in line with NICE guidance.</p>	NHS England, ICBs, Welsh Health Boards, Cancer Alliances	<p><i>Results for England and Wales (2021)</i></p> <p>England: 61% of patients in 2021 Wales: 57% of patients in 2021</p> <p>(Results 2.3, page 8 (England) and 3.2, page 11 (Wales).</p>	NLCA benchmarking standard 2021: 65% of patients with NSCLC (stage IIIB-IVB, PS 0-1) should receive systemic anti-cancer therapy.	<p>NICE guideline [NG 122], 2019: People with stage IIIB or IV NSCLC and eligible PS are offered systemic therapy [1.4.45 – 49].</p>	<p><i>Results for England and Wales (2020)</i></p> <p>Increase - England: 55% of patients in 2020 Increase - Wales: 52% of patients in 2020</p>
<p>4. Ensure at least 90% of lung cancer patients are seen by a lung cancer clinical nurse specialist at diagnosis.</p>	NHS England, ICBs, Welsh Health Boards, Cancer Alliances	<p><i>Results for England and Wales (2021)</i></p> <p>England: 92% of patients in 2021 Wales: 93% of patients in 2021</p> <p>(Results 2.3, page 8 (England) and 3.2, page 11 (Wales).</p>	NLCA benchmarking standard 2021: 90% of patients should be assessed at diagnosis by a lung cancer clinical nurse specialist	<p>NICE quality statement 3 (QS17): Adults with suspected or confirmed lung cancer have access to a named lung cancer clinical nurse specialist. NLCA Healthcare Improvement Plan 2022: Goal 2 - Increase the proportion of patients who are assessed by a lung cancer clinical nurse specialist.</p>	<p><i>Results for England and Wales (2020)</i></p> <p>Increase - England: 75% of patients in 2020 Increase - Wales: 93% of patients in 2020</p>
<p>5. Resource lung cancer MDTs according to the commissioning guidance set out by the Lung Cancer Clinical Expert Group, and update the guidance to reflect current best practice.</p>	NHS England, Welsh Health Boards, Lung Cancer Clinical Expert Group, Cancer Alliances	Recommendation in light of R2 – R4	N/A	<p>Commissioning Guidance from the commissioning guidance set out by the Lung Cancer Clinical Expert Group:</p>	N/A

Diagnosis & staging



Treatment allocation



Data quality



2. Results for England (2021)

2.1 Source of patient data and data completeness

The results for English patients diagnosed in 2021 (January-December) were derived using an extract of data from the [Rapid Cancer Registration Dataset \(RCRD\)](#) provided by the National Cancer Registration and Analysis Service (NCRAS). The datasets were received by the NLCA in November 2022 and contained patient data submitted to NCRAS by English NHS trusts before July 2022. The RCRD data were linked by NCRAS to other national health care datasets, including Hospital Episode Statistics (HES), the National Radiotherapy Dataset (RTDS), and the Systemic Anti-Cancer Dataset (SACT). Further details can be found in the NLCA 2022 methodology report.

The NLCA performance indicators use various data items within the RCRD, some of which are fundamental to identifying appropriate patient groups. These data items include basis of diagnosis (clinical, histological), tumour morphology, disease stage, and performance status. The completeness of the data submitted by NHS trusts on these four data items was slightly below the target levels (Table 2). The completeness of demographic data items (age, ethnicity, social deprivation) was excellent, being complete for over 95% of records, with little variation between NHS trusts and Cancer Alliances.

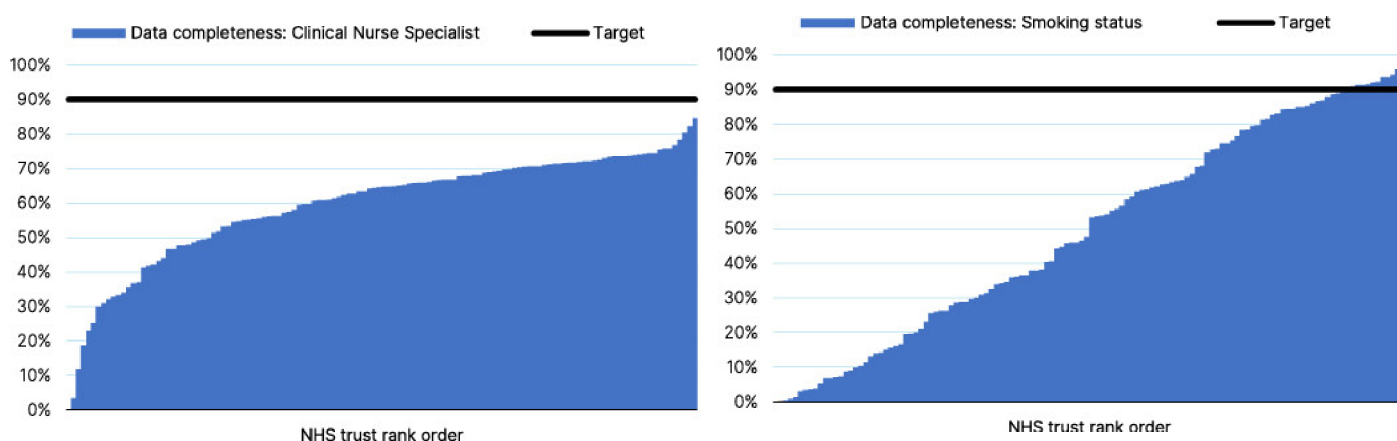
In contrast, smoking status and whether a lung cancer clinical nurse specialist (LCNS) was present at diagnosis had levels of completion of 49% and 59%, respectively. Moreover, there was substantial variation between NHS trusts and Cancer alliances in the completeness of these two data items (Figure 1). The metrics derived from these data items are linked to NICE quality standards, which reflect important aspects of the care process: documentation of smoking status ensures smoking cessation support can be made available to all patients who need it, and LCNS support around the time of diagnosis is highly valued by patient and families.

To calculate information for NHS organisations, patients were allocated to the place of diagnosis. It was not possible to group patients by “site first seen” this year as done in previous reports because the RCRD did not contain this data item..

Table 2: Completeness of key data items for patients diagnosed in 2021 within the Rapid Cancer Registration Dataset

Data item	Completeness	Target level	No. of NHS trusts above target (n=126)
TNM stage	86.0	90%	60
Performance Status (PS)	82.7	90%	54
Morphology	64.8	75%	30
Basis of diagnosis	90.4	90%	97
Access to lung cancer clinical nurse specialist (LCNS)	59.3	90%	0
Smoking status	49.3	90%	12

Figure 1: Completeness of data in 2021: access to lung cancer clinical nurse specialist (LCNS) and smoking status by English NHS trust



2.2 Patient characteristics

In 2021, there were 34,478 patients diagnosed with lung cancer in England, compared to 31,371 in 2020 and 33,091 in 2019. This highlights the fall in the number of lung cancer cases diagnosed during the COVID-19 pandemic and the return in 2021 to pre-pandemic levels.

Table 3 summarises the characteristics of the patients diagnosed in 2021. The proportion of lung cancers proven to be small cell lung cancers (SCLC) continued to fall, reaching 7% in 2021 from 9% in 2019 and 11% in 2014. The median age was 74.0 years overall (IQR: 66.6 – 80.5). The median age for non-small cell lung cancer (NSCLC) was 74 years, while for SCLC it was 70 years.

The distribution of stage and performance status (PS) for all patients with lung cancer in 2021 is shown in Table 3. Among patients with known values in 2021:

- The proportion with stage IV disease was 48%, compared to 50% in 2020 and 47% in 2019. (NB: The figures in previous NLCA reports were 44% in 2020 and 43% in 2019 but these were based on all patients and included patients with unknown values.)
- The proportion of patients with performance status of 0-1 was 54% compared to 47% in 2020 and 52% in 2019. However, data completeness was lower in 2020 (=80%)

Table 3: Characteristics of patients diagnosed with lung cancer in England during 2021

	Overall percentage	Percentage among known		Overall percentage	Percentage among known
Smoking status			Type of lung cancer		
Never smoked	4.2	8.7	Non-small cell	56.1	
Current / Ex-smoker	45.1	91.3	Small cell	7.4	
Unknown	50.7		Carcinoid	1.4	
			Not assessed (NSCLC)	35.2	
Ethnicity			Stage at diagnosis		
White	86.8	89.6	Stage I	19.6	22.8
Mixed	2.3	2.4	Stage II	6.8	7.9
Asian/Asian British	3.0	3.1	Stage IIIA	10.6	12.3
Black/Black British	2.4	2.5	Stage IIIB/C	8.0	9.3
Other	2.3	2.4	Stage IV	41.0	47.7
Unknown	3.1		Unknown	14.0	
IMD quintile			Performance status		
1 – most deprived	26.3		0	17.6	21.3
2	21.4		1	26.7	32.3
3	19.9		2	16.3	19.7
4	17.5		3	16.9	20.5
5 – least deprived	15.0		4	5.1	6.2
			Unknown	17.3	

NSCLC = Non-small cell lung cancer; IMD = Index of Multiple Deprivation

2.3 NLCA performance indicators for England in 2021

Compared to 2020, there were some significant improvements in performance during 2021 across the key indicators of lung cancer care (Table 4). We note: (i) the proportion of patients undergoing surgery improved from 15% to 17%, although this was still lower than the 20% achieved in 2019; (ii) curative treatment rates among patients with PS 0-2 have bounced back from 73% in 2020 to 79% in 2021, and (iii) there was substantial improvement in systemic therapy administration, rising from 55% in 2020 to 61% in 2021.

Table 4: Levels of achievement on the NLCA performance indicators by English NHS trusts between 2019 and 2021 (Rapid Cancer Registration Dataset)

	NLCA target	2021	2020	2019
Number of patients		34,478	31,371	33,091
Proportion of patients with pathological diagnosis (Stage I/II, PS 0-1)	≥90%	83%	77%	84%
Proportion of patients with NSCLC undergoing surgery	≥17%	17%	15%	20%
Proportion of patients with SCLC receiving chemotherapy	≥70%	70%	66%	69%
Proportion of patients with NSCLC who had curative treatment (Stage I/II, PS 0-2)	≥80%	79%	73%	81%
Proportion of patients with NSCLC who had curative treatment (Stage IIIA, PS 0-2)	N/A	60%	51%	57%
Proportion of patients with NSCLC (IIIB-IV, PS 0-1) who had systemic anticancer therapy	>65%	61%	55%	54%
Proportion of patients seen by LCNS	≥90%	92%	75%	80%
Diagnosis via emergency presentation	N/A	35%	35%	31%
Median time from diagnosis to treatment	N/A	35 days*	27 days	28 days
Median survival	N/A	280 days**	306 days	316 days
One year survival	N/A	45%**	44%	41%

NSCLC = non-small cell lung cancer; SCLC = small cell lung cancer; PS = performance status; LCNS = lung cancer clinical nurse specialist

* Patients with stage IV NSCLC; ** Patients diagnosed January – June 2021

Proportion of patients who had curative treatment

In 2020, the proportion of patients who had curative treatment (Stage I/II, PS 0-2) fell to 73% from 81% the year before. In 2021, the proportion had almost returned to the pre-pandemic rate, with 79% of NSCLC patients having curative treatment.

Patients with stage IIIA and a good PS can be considered for treatments with curative intent e.g., surgery, radiotherapy, or some multimodal combination. In this audit period (2021), it is encouraging to see that curative intent treatments rates for stage IIIA patients with good PS 0-2 had returned to pre-pandemic levels, with a value of 60%. Nonetheless, this leaves 40% of patients with 'potentially' curative stage IIIA disease still receiving either palliative intent therapies or no active treatment whatsoever. Improving treatment rates in Alliances with low rates through the sharing of good practice and expertise will help to ensure that patients are offered access to the most appropriate treatment.

Surgical resection rate

In 2020, the overall lung cancer resection rate for patients with NSCLC fell to 15% from 20% the year before. In 2021, we saw a partial recovery in the national resection rate, with 17% of NSCLC patients having a lung resection.

There was variation in the unadjusted resection rates between Cancer Alliances, with rates ranging from 11% to 32% (IQR 15.1-19.5). Surgery is almost always used for patients with good performance status, and Cancer Alliances with a higher proportion of patients diagnosed as performance status 0 or 1 also had higher resection rates, perhaps reflecting the impact of Targeted Lung Health Checks. It was also notable that the highest resection rates were in three of the four London cancer alliances but this requires further study to understand.

Patients seen by lung cancer clinical nurse specialist

A NICE quality standard for lung cancer is that all patients should have access to a lung cancer clinical nurse specialist (LCNS), and the National Lung Cancer Audit has been using a target of 90% for the LCNS to be present at the time of diagnosis.

In 2019, 80% of patients were reported to have access to a LCNS. This figure had been increasing before the pandemic, but it fell slightly in 2020. Among patients diagnosed in 2021 who had this data entered, 92% of patients saw a LCNS at diagnosis, which exceeded the 90% target. Overall, the target was exceeded by 18 of the 21 Cancer Alliances, and 102 of the 126 NHS trusts. It should be noted that data completeness for this metric was lower than previously at 59%.

Systemic anticancer treatment rates for advanced NSCLC (stage IIIB-IV) with PS 0-1

Clinical trials have demonstrated that systemic anti-cancer treatment (SACT) can improve quality of life and extended survival for patients with advanced and incurable NSCLC. In 2017, the NLCA set an audit standard of SACT for 65% of patients with advanced (stages IIIB-IV) NSCLC and a good performance status (PS 0-1).

In 2019 and 2020, 54% and 55% of patients with advanced NSCLC and good PS received SACT, respectively. In this audit period, 61% of patients received SACT within English NHS trusts which demonstrates a significant recovery from 2020 levels. However, this headline figure masks significant variation amongst individual trusts with only 54 out of 124 trusts (44%) meeting or exceeding the NLCA SACT audit standard of 65%. It will be important to continue to monitor this metric to ensure NHS trusts have the necessary resources to improve biomarker testing as well as access and capacity to meet a new standard of 70%.

51% of patients with advanced NSCLC (stage IIIB – IV) PS 0-2 underwent systemic anticancer treatment in 2021. Going forward the NLCA will also report results for patients with PS 0-2 to enable benchmarking with [GIRFT](#) and NICE.

Chemotherapy treatment rates for small cell lung cancer (SCLC)

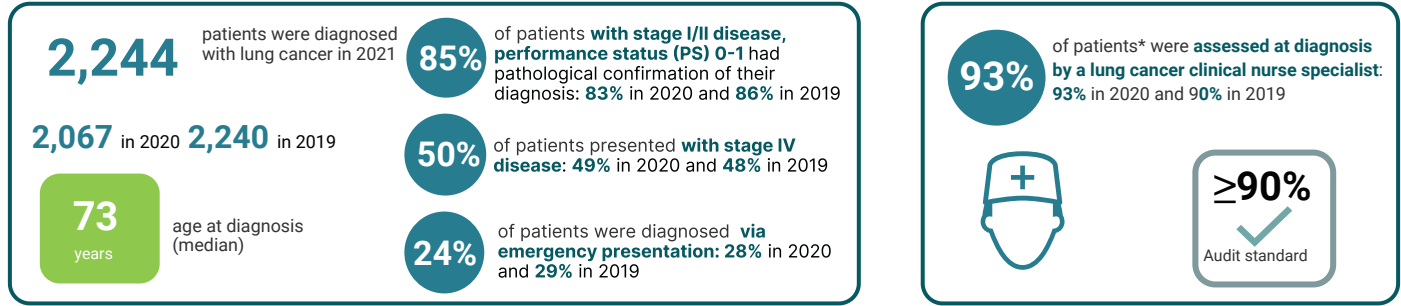
SCLC is a particularly aggressive type of lung cancer which typically presents at an advanced stage at the time of diagnosis. In 2017, the NLCA set an audit standard that at least 70% of SCLC patients should receive SACT.

It is good to see that 70% of SCLC patients diagnosed in 2021 received SACT. This is highly commendable given the continued resource challenges which services face following the COVID-19 pandemic. Overall, 51 out of 103 NHS trusts (50%) met or exceeded this audit standard.

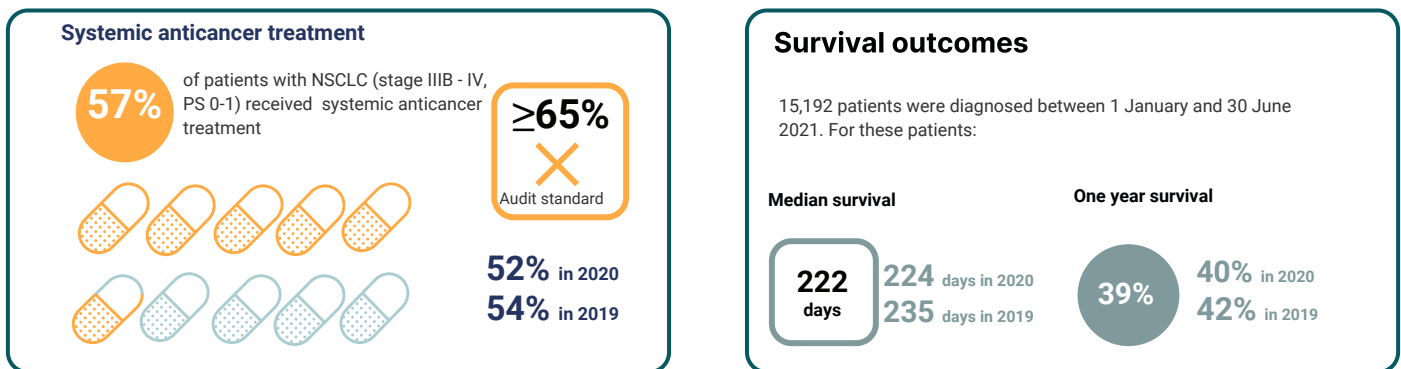
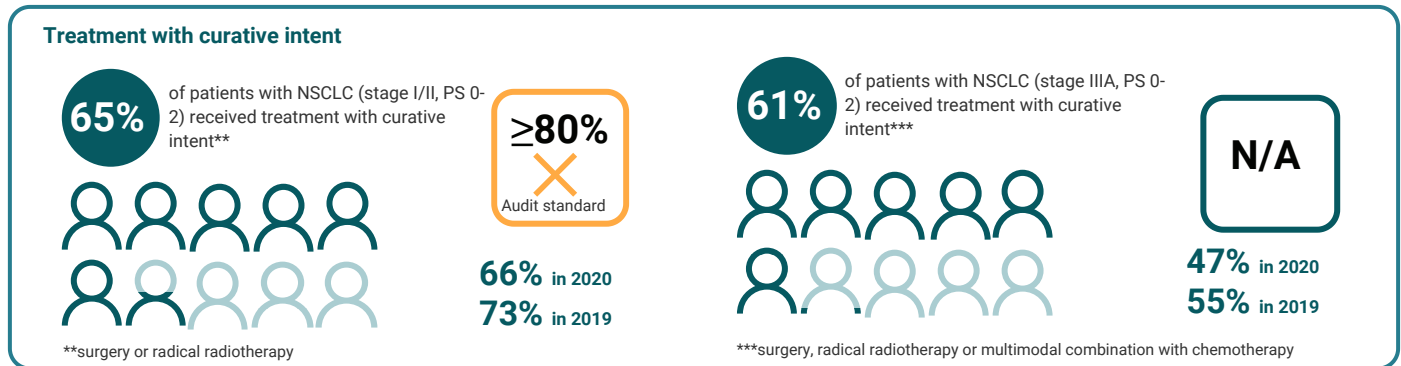
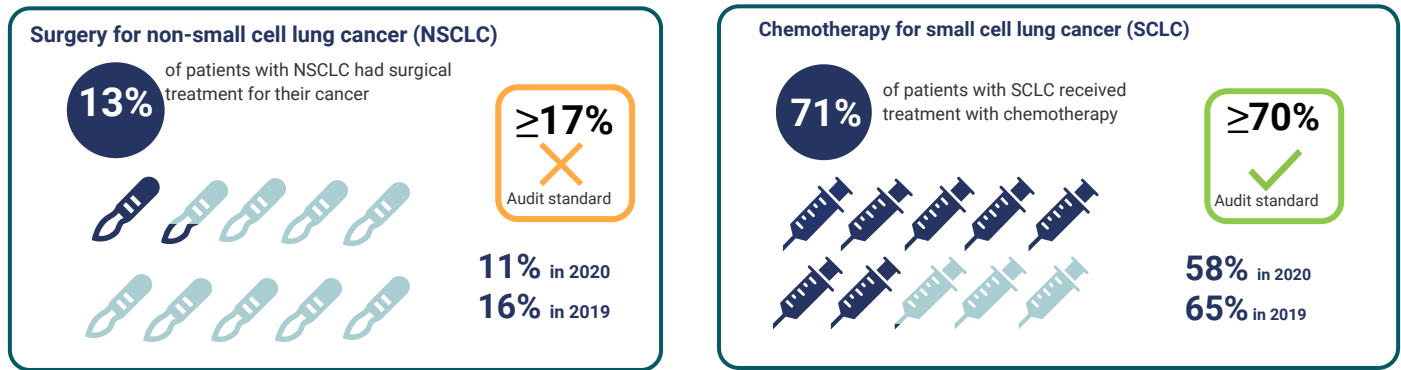
Time from diagnosis to treatment for patients with stage IV NSCLC and patients with SCLC

The National Optimal Lung Cancer Pathway (NOLCP) recommends 49 days from presentation to the start of treatment. The benchmark according to standard cancer waiting times for diagnosis to treatment is 31 days and this was shortened to 21 days in the NOLCP for all patients. For patients with stage IV NSCLC diagnosed in 2021, the median time from diagnosis to treatment (SACT) was 35 days (IQR: 21 – 52). SCLC can be rapidly progressive, and it is particularly important that patients are diagnosed quickly and receive SACT as soon as possible after the diagnosis is made. In 2017, the NLCA set a standard that at least 80% of patients should receive SACT within 14 days of pathological diagnosis. In 2021, the median time from diagnosis to start of SACT was 15 days (IQR 9 -25 days) for patients diagnosed with SCLC. This has improved since 2019, when the median was 28 days. However, none of the Cancer Alliances met the audit standard or were compliant with the NOLCP timelines, highlighting the improvement required in lung cancer pathways.

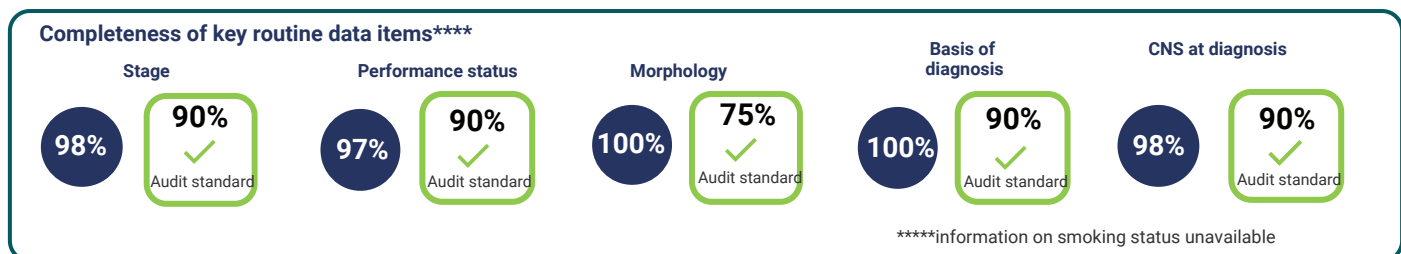
Diagnosis & staging



Treatment allocation



Data quality



3. Results for Wales (2020 and 2021)

3.1 Source of Welsh patient data and data completeness

The Welsh results contained in this report were derived using the standard dataset collected through the Cancer Network Information System Cymru (CANISC). The figures for 2020 and 2021 are presented alongside those for 2019 for comparison. The figures should not be compared to the English data which is derived from the Rapid Cancer Registration Dataset. The completeness of the Welsh data was excellent for each year. In 2021, the levels of completeness for the 2,244 patients diagnosed were: 100% for basis of diagnosis, 100% for tumour morphology, 98.1% for disease stage, and 97.0% for performance status. 97.5% of records had data on whether a lung cancer clinical nurse specialist was present at diagnosis. Data was not provided on ethnicity or smoking status.

The characteristics of patients diagnosed in Wales during 2020 and 2021 were similar. For the 2,244 patients diagnosed in 2021, the median age of diagnosis was 73 years (IQR 67-80), and 50.4% were women. SCLC made up 9.6% of lung cancer cases, and for patients with SCLC and NSCLC disease, the median ages were 69 and 74 years, respectively. The proportion of patients diagnosed with stage IV disease was 49.5%, while 40.8% had a performance status 0 or 1.

3.2 NLCA performance indicators for Wales in 2020 and 2021

Across six of the nine process indicators, the overall level of performance in 2020 was not as high as during 2019 (Table 5), mirroring the findings for England during 2020 and 2019. The 2,067 patients diagnosed in 2020 was approximately 92% of the number diagnosed in 2019. This reduction may correspond to patients not presenting to secondary care due to the COVID-19 pandemic. This analysis does not include patients identified with lung cancer from death certificates only and will omit patients with an unknown diagnosis of lung cancer who died from COVID-19.

Table 5: Levels of achievement on the NLCA performance indicators by Welsh Health Boards between 2019 and 2021

	NLCA target	2021	2020	2019
Number of patients		2,244	2,067	2,240
Proportion of patients with pathological diagnosis (Stage I/II, PS 0–1)	≥90%	85%	83%	86%
Proportion of patients with NSCLC undergoing surgery	≥17%	13%	11%	16%
Proportion of patients with SCLC receiving chemotherapy	≥70%	71%	58%	65%
Proportion of patients with NSCLC who had curative treatment (Stage I/II, PS 0–2)	≥80%	65%	66%	73%
Proportion of patients with NSCLC who had curative treatment (Stage IIIA, PS 0–2)	N/A	61%	47%	55%
Proportion of patients with NSCLC (IIIB–IV, PS 0–1) who had systemic anticancer therapy	≥65%	57%	52%	54%
Proportion of patients seen by LCNS	≥90%	93%	93%	90%
Diagnosis via emergency presentation	N/A	24%	28%	29%
Median time from diagnosis to treatment (Patients with stage IV SCLC)	N/A	16 days	14 days	16 days
Median survival	N/A	222 days	224 days	235 days
One year survival	N/A	39%	40%	42%

NSCLC = non-small cell lung cancer; SCLC = small cell lung cancer; PS = performance status; LCNS = lung cancer clinical nurse specialist

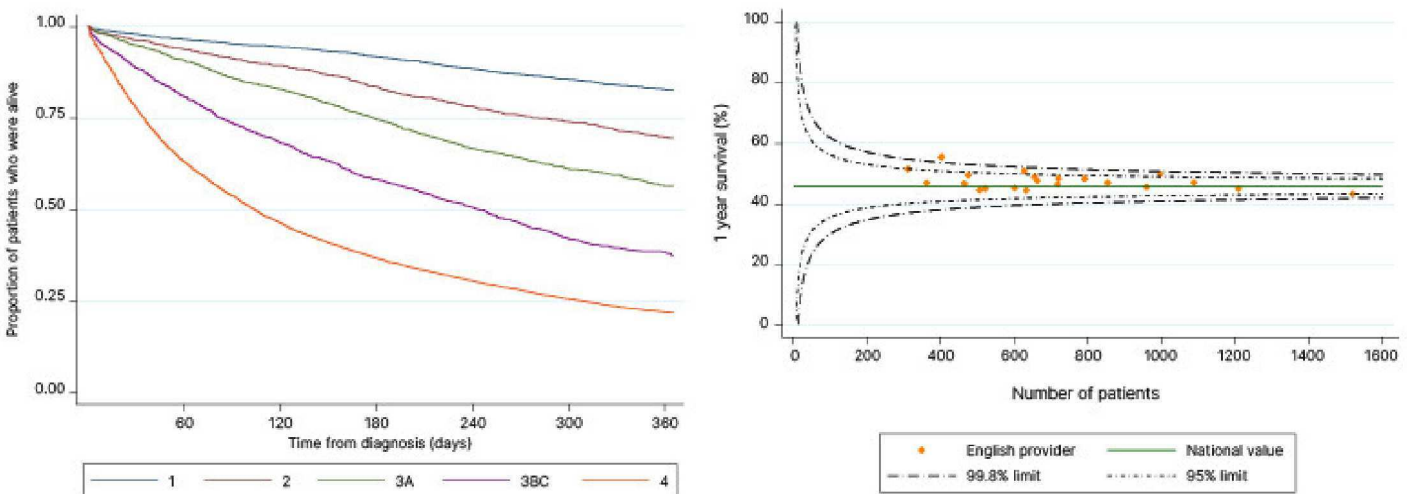
Table 5 highlights several key findings for care delivered in Wales during 2020 and 2021:

- Curative treatment rates of NSCLC patients with stage I/II and good performance status (0-2) were similar in 2020 (66%) and 2021 (65%), a fall from 73% in 2019. For patients with stage IIIA disease, curative treatment rates were higher 2021 than 2019, after a fall in 2020.
- In 2020, the surgical resection rate for patients with NSCLC was 11%, compared with 16% in 2019. The rate for 2021 (13%) had not recovered to the 2019 pre-COVID-19 level.
- The proportion of patients with lung cancer diagnosed after an emergency presentation was lower for both 2020 (28%) and 2021 (24%) than in 2019 (29%); a higher proportion were seen by a LCNS in 2020 (93%) and 2021 (93%) than in 2019 (90%).
- The use of systemic anticancer treatment for stage IIIB/IIIC-IV NSCLC patients (PS 0-1) remained below the audit standard (65%) and was little changed from 2019.

4. Survival after cancer diagnosis

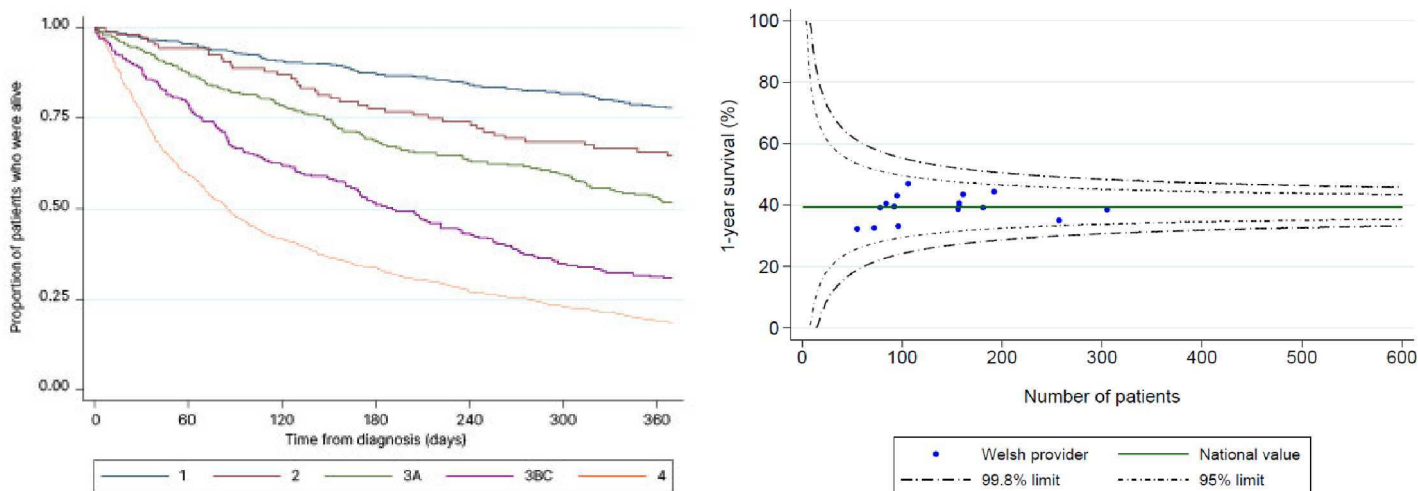
Survival among English patients for 2020 were reported in 2022, in an update to the NLCA report of January 2022. The median survival was 306 days, and 1-year survival was 44.3%. In this report, we describe survival of the 15,192 patients diagnosed between 1 January and 30 June 2021. Median survival was slightly shorter than 2020 at 280 days, and varied between Cancer Alliances from 210 days to over one year. One year survival was very similar at 44.7% overall, and varied from 37.5% to 58.7% between Alliances. Figure 2 shows risk-adjusted 1-year mortality rates for the Cancer Alliances.

Figure 2: Kaplan Meier survival curves from patients diagnosed in England (Jan-Jun 2021), stratified by disease stage and risk-adjusted estimates for English cancer Alliances.



For patients diagnosed with lung cancer in Wales during 2020, the median survival was 224 days (95% CI: 198 to 252) and 1-year survival in this cohort was 39.8%. The median survival was similar in 2021 (222 days; CI: 197 to 243) and 1-year survival was 39.3%. Survival by stage for 2021 is shown in Figure 4, and is similar to the estimates for 2019. The median survival for patients with stage IV disease was 82 days (CI: 70 to 94) in 2020 and 85 days (CI: 76 to 94). Figure 3 also shows risk-adjusted 1-year survival rates for the Welsh hospitals for patients diagnosed in 2021, and the rates fall within the expected range around the national Welsh average. See NLCA website for more details.

Figure 3: Kaplan Meier survival curves from patients diagnosed in Wales (2021), stratified by disease stage and risk-adjusted survival estimates for Welsh hospitals



5. Commentary

This is the first NLCA State of the Nation report and aims to provide a succinct summary of the care received by English patients diagnosed in 2021 and by Welsh patients diagnosed in 2020 and 2021.

This report demonstrates several important findings in lung cancer care during 2021. Within England, lung cancer services have improved significantly compared to the performance reported for 2020. The detrimental effect of the COVID-19 pandemic on lung cancer patients has been extensively documented [1,2], and this had reflected in the figures for England in 2020 previously, and now for Welsh patients in this report. The recovery of services are a tribute to colleagues and lung cancer services.

It is encouraging to see an improvement in PS at presentation and most notably pathological confirmation rate, curative treatment rates, surgical resection rate and proportion seen by a LCNS. Despite these important steps forward, several areas of care still require improvement. Improving the completeness of key data items remains a priority for many English NHS trusts. Innovations are also still required to reduce the emergency presentation rate which remains high at 35%. In Wales, the curative treatment rate in 2021 remains significantly below pre-pandemic levels.

The NLCA have traditionally allocated patients to NHS organisations based on their “site first seen” because this best reflects the decision making of multi-disciplinary teams. The algorithm used previously to determine “site first seen” could not be used with the data supplied for this report, and we encourage NHS trusts to ensure the COSD field “place first seen” is completed to enable this approach in future.

Information on key NLCA metrics are available at [English NHS trust / Alliance and Welsh hospital / Health Board levels online](#). Several innovations are also planned for 2023. This includes using the RCRD to provide regular dashboard reports. While biomarker results are currently not available, links with the Genomic Laboratory Hubs are planned to provide molecular data. As the targeted lung health check programme expands, the NLCA also intends to report uptake and impact of lung cancer screening on outcomes. In the meantime, this State of the Nation report provides strong evidence that lung cancer care is recovering from the pandemic and patients are benefitting from research advances in early detection, curative treatments, and systemic therapies.