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LUNG CANCER DIAGNOSIS IN ENGLAND IN 2024 **CAN WE DO BETTER?**

Enter

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Foreword

Professor Matt Evison
Consultant Chest Physician, Wythenshawe Hospital, Manchester University NHS Foundation Trust

Lung cancer remains one of the most challenging diseases facing our healthcare system, with survival outcomes heavily dependent on the timing of diagnosis. Unwarranted variation in healthcare delivery is a long-standing challenge. When it arises from systemic inequities, it undermines the fairness and efficacy of our healthcare system. This report highlights how such inequities impact patients with lung cancer with particularly compelling and concerning findings related to mental health illness; a disparity that has long been under-acknowledged. This report is one of the first to shine a spotlight on this critical issue, offering new insights into how mental health conditions affect pathways to diagnosis and, ultimately, survival outcomes.

Patients with mental health conditions are disproportionately diagnosed at advanced stages and nearly 2,300 Stage 4 diagnoses in patients with mental health conditions could be prevented if the inequalities were removed. This disparity is also present in emergency care pathways, where late-stage diagnoses following emergency presentation to A&E are significantly higher for those with mental health conditions. These stark differences represent a broader inequity that urgently demands attention.

Unwarranted variation in healthcare delivery, especially when linked to social determinants of health, exacerbates existing inequalities. This report underscores the need for action at all levels – Integrated Care Boards, Cancer Alliances, and other stakeholders must work collaboratively to address these gaps and ensure earlier diagnoses for all.

By bringing these inequalities to light, this report marks a turning point. It is both a call to action and a framework for change, equipping the healthcare system with evidence to drive equitable improvements in lung cancer care and outcomes. Let this be the start of meaningful progress.

Lorraine Dallas
Director of Information, Prevention and Support, Roy Castle Lung Cancer Foundation

Improvements in lung cancer have lagged behind those seen in other common tumour types in the last decade. While earlier diagnosis and better treatments have led to cancer overall being seen as a long-term condition, this is not a universal experience for patients with lung cancer or any of the six less-survivable cancers. Lung cancer remains a disruptive, emotionally charged health threat more often than a treatable disease.

Professor Ray Donnelly, the founder of the Roy Castle Lung Cancer Foundation, christened lung cancer as “the Cinderella cancer”. This report provides many examples of the unresolved issues that leave outcomes still depressingly poor. Almost 50,000 people each year in the UK face a bleak diagnosis.

There are three dimensions to transform the front end of the lung cancer journey: implementation of the National Optimal Lung Cancer Pathway, roll-out of national screening for lung cancer, and delivery of the Faster Diagnosis Programme. While lung cancer diagnosis is impeded by and reflects health inequalities experienced in the UK, the strategies and tools for change are known and available to us. This is reflected in the examples of innovative practice found in the Leaving No-One Behind section – and spreading that practice is an important way of fostering improvements.

Barriers to diagnosis created by geography, deprivation, mental health and ethnicity are reflected in the proportion of diagnoses via accident and emergency departments. We have rich seams of data to identify where services are not meeting needs. Tools such as this report offer the opportunity to compare and share best practice. Bridging the gap is essential to providing universal good-quality clinical care.

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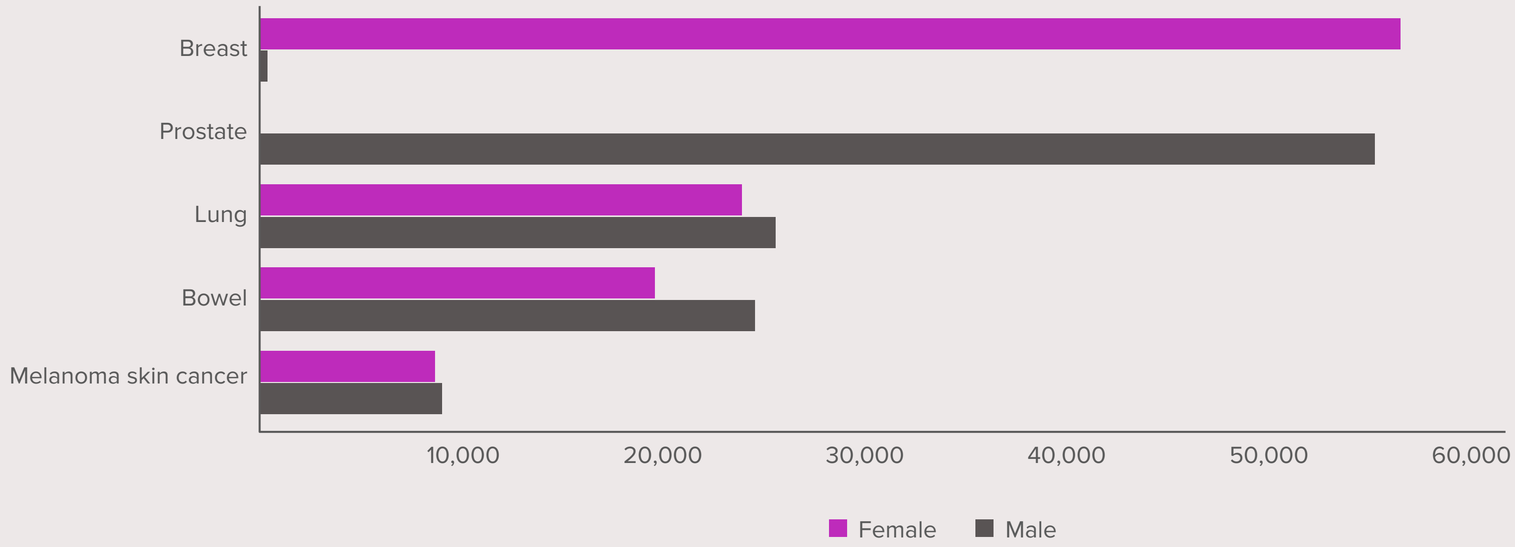
State of the Nation

Lung cancer in the UK

Incidence

- Lung cancer is the third most common cancer in the UK.[1] Each year in the UK, 48,500 people are diagnosed with lung cancer:[1]
  - ~25,300 men
  - ~23,300 women
- Lung cancer is more common with increasing age, and about 45% of people diagnosed with lung cancer in the UK are ≥75 years.[1]

Five most common cancers in the UK, 2017–2019[2]

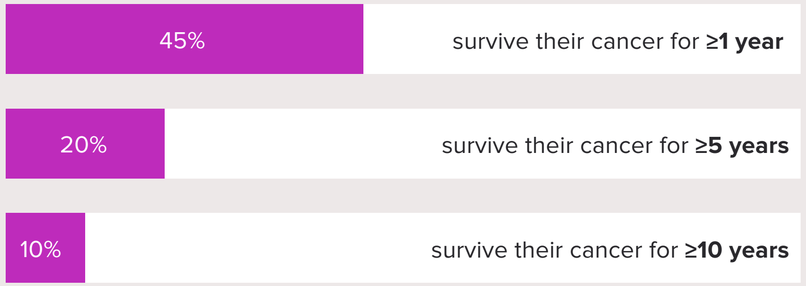


Lung cancer in the UK

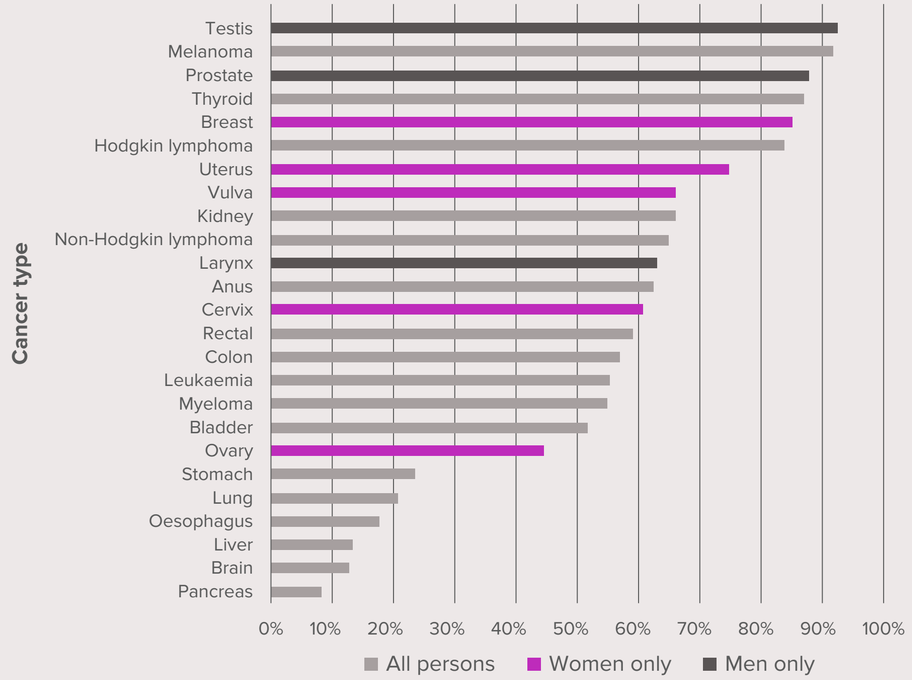
Mortality and survival

- Lung cancer is the most common cause of cancer death in the UK, accounting for 21% of cancer deaths, with about 34,800 people dying from lung cancer every year.[3]

Survival for all stages of lung cancer in England, 2016–2020[4]



Five-year cancer survival estimates for adults (18–99 years) in England, diagnosed between 2016 and 2020 and followed up to 2021[5]



Lung cancer in the UK

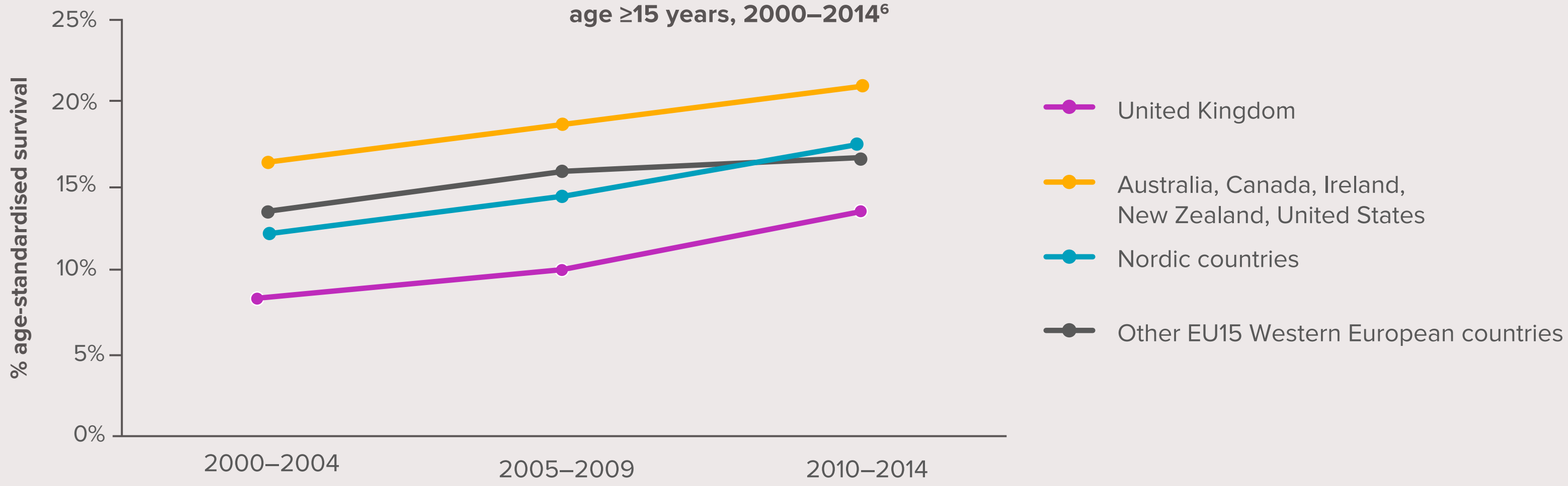
How the UK compares to other countries

In general, cancer survival rates in the UK lag behind those in comparable countries such as the USA, Canada and Australia.[5,6]

"Although we have made progress, the last benchmark showed that cancer survival in the UK is still around 10 to 15 years behind leading countries."[7]

Dr John Butler
Clinical Lead for the International Cancer Benchmarking Partnership

Age-standardised 5-year net lung cancer survival, age ≥15 years, 2000–2014[6]



Early diagnosis

Why early diagnosis is important

When lung cancer is diagnosed at an early stage, patients have the best chance of curative treatment and long-term survival.[8,9]

Proportion of people receiving treatment with curative intent*†[10]

Diagnosed early (Stage 1/2) **78%**

Diagnosed late (Stage 3A) **59%**

Proportion of people surviving lung cancer for ≥5 years[8]

Diagnosed early (Stage 1) **More than 6 in 10**

Diagnosed late (Stage 4) **Fewer than 1 in 10**

*Stage 1/2: surgery or radical radiotherapy. †Stage 3A: surgery, radical radiotherapy or multimodal combination with chemotherapy.

Early diagnosis

NHS initiatives for early diagnosis

The NHS Long Term Plan (LTP) states that one of the biggest actions the NHS can take to improve cancer survival is to diagnose cancer earlier.[9] An LTP ambition was that three in four cancers (75%) would be diagnosed at an early stage by 2028, resulting in 55,000 more people each year surviving their cancer for at least five years after diagnosis.[9] In December 2024, the NHS announced that this target would increase to 80% in 2026.[11]

Faster and more efficient cancer pathways will not achieve these ambitions on their own but they have a crucial role:[12]

- Getting patients from referral to diagnosis more quickly increases their chance of early diagnosis.
- Pathway improvements can indirectly support earlier diagnoses by:
  - widening access
  - providing a platform for piloting and adoption of innovations such as self-referral routes
  - reducing barriers between primary and secondary care.

Click on the boxes below to find out more

Faster Diagnosis Programme

National Optimal Lung Cancer Pathway (NOLCP)

Targeted Lung Health Checks (TLHC) and Lung Cancer Screening Programme

Early diagnosis

NHS initiatives for early diagnosis

Faster Diagnosis Programme

The Faster Diagnosis Programme set out the NHS Cancer Programme's strategic approach to delivering faster diagnosis of cancer, outlining specific and measurable objectives and key requirements for Cancer Alliances until the end of 2023/24, bringing together previously separate objectives relating to rapid diagnostic centres (RDCs) and Faster Diagnosis Standard (FDS) best practice timed pathways (BPTPs).[12]

Faster Diagnosis Programme aims to deliver:[13]

- earlier and faster diagnosis to patients whether or not that is a diagnosis of cancer
- excellent patient experience
- holistic assessment of patient needs
- streamlined support across community, primary and secondary care
- increased capacity in the system through more efficient diagnostic pathways
- support systems to reach the FDS, which is to replace the 2-week wait standard.[12]

Five key objectives for Cancer Alliances:[12]

1. Complete rollout of non-specific symptom pathways to achieve 100% population coverage by March 2024.
2. Implement sequencing of pathways and achieve the maximum timeframes of all published FDS best practice timed pathways.
3. Implement a set of core improvements across all cancer pathways, regardless of tumour type.
4. Define and deliver a locally agreed set of pathway innovations and improvements.
5. Work with integrated care systems (ICSs) (formerly clinical commissioning groups [CCGs]) and providers to ensure that diagnostic capacity is sufficient for cancer pathways to deliver on NHS ambitions, in particular by working with the community diagnostic centre (CDC) programme at a regional level.

Early diagnosis

NHS initiatives for early diagnosis

National Optimal Lung Cancer Pathway (NOLCP)

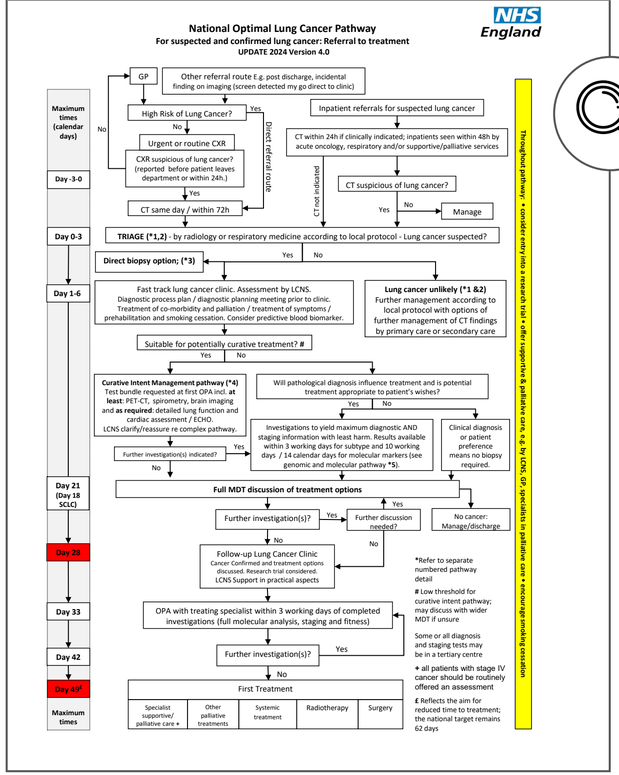
NHS England created the NOLCP to improve outcomes in lung cancer by encouraging best practice, reducing variation, and reducing delays in diagnosis, staging and treatment.[14] It is regularly updated to take into account new evidence and advances.

The NOLCP aims to address long wait times for lung cancer in order to:[15]

- improve time between referral and diagnosis
- reduce anxiety for people referred
- reduce unwarranted variation by understanding how long it is taking certain people to receive a diagnosis for cancer.

The NOLCP is supported by diagnostic standards of care and further commisioning guidance protocols for effective lung cancer services.[14]

National optimal lung cancer pathway[14]



Early diagnosis

NHS initiatives for early diagnosis

National Optimal Lung Cancer Pathway (NOLCP)

Maximum waiting times

- The NOLCP defines maximum waiting times for patients, with systems expected to ensure that most of the relevant steps in the pathway are completed before the maximum waiting time has elapsed, including:[14]
  - time to computed tomography (CT)
  - time to diagnostic clinic
  - time to full diagnosis and staging
  - time to first treatment.
- Although the national cancer wait times target is 62 calendar days, the NOLCP recommends treatment is started within 49 calendar days.[14]

Bypassing chest X-rays for high-risk patients

- Patients at high risk of symptomatic lung cancer can be referred directly to CT without chest x-ray on the same day or within 72 hours.[14]
- This can shorten waiting times and better considers the wellbeing of patients.

Blood-based tumour diagnostics and molecular testing

- Systemic anticancer treatment (SACT) for lung cancer can transform outcomes for patients if given promptly when patients are still in fit condition.[14]

Early diagnosis

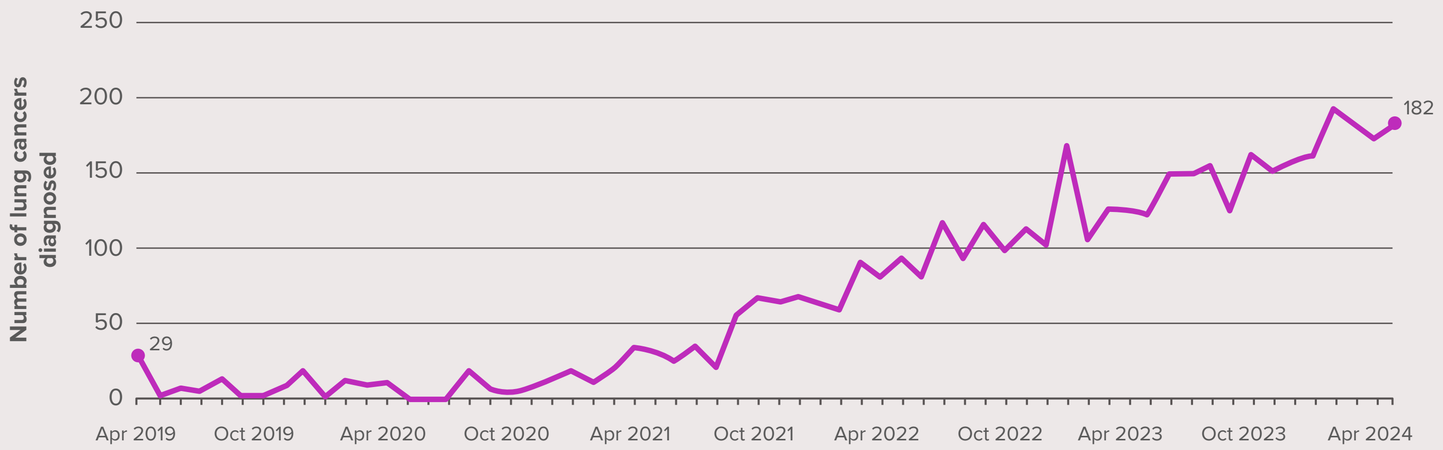
NHS initiatives for early diagnosis

Targeted Lung Health Checks (TLHC) and Lung Cancer Screening Programme

TLHCs

- Since its inception in 2019, the TLHC programme has identified more than 4,000 cases of lung cancer, with 76.7% diagnosed at Stage 1 or 2.[6]
- Coverage of the programme has been increasing over time as it expands across the UK due to its impact and potential to diagnose lung cancer at an earlier stage.[6]

Number of lung cancers diagnosed through the TLHC programme, April 2019–May 2024[6]



Notes: 4,342 total lung cancers have been diagnosed through the TLHC programme from April 2019 to May 2024. 76.7% of these have been diagnosed at early stage (denominator the sum of all stageable cancers). The number of lung cancers diagnosed through the TLHC programme has been increasing over time, as the programme coverage continues to expand around the country.

Source: *Independent Investigation of the National Health Service in England*

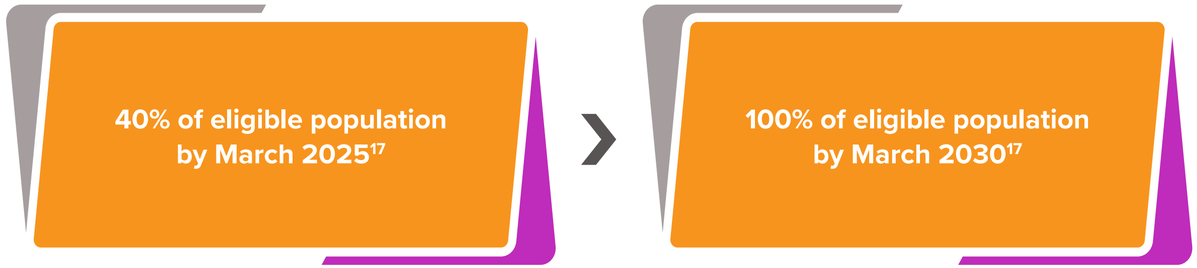
Early diagnosis

NHS initiatives for early diagnosis

Targeted Lung Health Checks (TLHC) and Lung Cancer Screening Programme

NHS lung cancer screening programme[17]

- In 2023, the UK government announced that the TLHCs would form the basis for a national lung cancer screening programme.[17]
- People aged 55–74 years with a general practitioner (GP) record including a history of smoking will be assessed and invited for screenings and smoking cessation services.[17]
- It is estimated that the rollout will mean 325,000 people will be newly eligible for a first scan each year, with 992,000 scans expected per year in total.[17]



Visit our **Case Study section** to learn one clinician's insight into how they sought to reduce inequities in lung cancer diagnosis while setting up the programme in South Yorkshire

About this report

This report describes the findings of a population-based study exploring the possibility of unwarranted variation in initial diagnosis of lung cancer across England by looking at different elements of the lung cancer pathway.

About unwarranted variation

When you see buttons like this, click to find out more

We analysed:

- the proportion of patients diagnosed early, before metastases have developed, and the proportion with de-novo metastases (DNM) at their initial diagnosis.
- the impact of key social determinants of health on the proportion diagnosed with DNM to shine a light on unwarranted variation
- referral sources leading to the initial diagnosis of lung cancer
- wait times for chest X-rays for suspected lung cancer
- the proportion of patients who were treated with curative intent.

We analysed data at the national (England) level and, where patient numbers were adequate, at the Cancer Alliance and ICB levels.

The report is divided into four sections, which can be accessed by the top menu:

- **State of the Nation** – introduction, key findings, reflections, and possible solutions
- **Leaving No-One Behind** – case studies describing best practice
- **Data Centre** – detailed analysis of the findings of our study
- **Appendix** – data tables, HES disclaimer and study methods.

We hope that this report will serve as a starting point for ICBs, Cancer Alliances, and other relevant bodies to become further informed about lung cancer diagnosis, and can assist them in determining how to further take meaningful action to reduce health inequalities and improve health equity in lung cancer in their areas.

About this report

About unwarranted variation

Healthcare can vary in many ways:

- quality
- safety
- outcomes
- spend
- services used.

Some variation and inequality can be expected, due to factors such as genetics and patient preference. However, some variation is less explainable.

It is important to understand unwarranted variation in healthcare, because it can lead to healthcare inequalities, which, in turn, may be the result of an underlying inequity in the way services are provided across the healthcare system.

Reducing unwarranted variation has been a goal of the NHS for many years and is often targeted at the overuse and underuse of healthcare services.

Contemporary policy in the NHS, such as the Core20PLUS5 framework,[18] aims to address healthcare inequalities and improve overall equity in healthcare.

Address healthcare inequalities to **Reduce unwarranted variation** and **Improve health equity**

Study methods

Data sources

- This population-based investigation used Hospital Episode Statistics (HES)[19] to analyse the initial diagnosis of lung cancer between financial years 2020/21 and 2023/24 in England.
- Severity of lung cancer was split into two categories at initial diagnosis.

Non-metastatic (NM) lung cancer
Stages 1–3

Stage 1:[20]
Cancer has not spread outside of the lungs

Stage 2:[20]
Cancer has spread to lymph nodes inside the lung or there is more than one tumour in the same lobe

Stage 3:[20]
Cancer has spread to nearby lymph nodes, and there is more than one tumour in a different lung lobe

De-novo metastatic (DNM) lung cancer
Stage 4

Stage 4:[20]
Cancer has spread outside of the lung into other organs or areas in the body

The **Appendix** includes the HES disclaimer and detailed study methods.

Study methods

Data sources

- We also used the Diagnostic Imaging Dataset (DIDS) to analyse referral source, wait times for chest X-ray (CXR) for suspected lung cancer, and whether positron emission tomography (PET) scans were performed by linking this data to HES.[19,21]

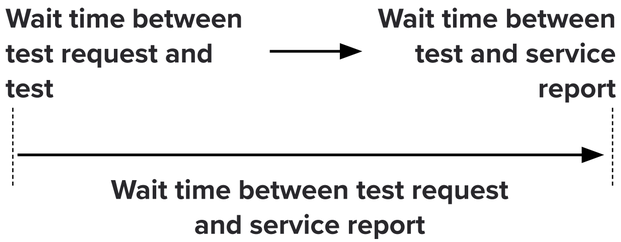
DIDS data were available for 2021/22 and 2022/23 only, so the fiscal year assigned is based on the date of hospital presentation with lung cancer in the HES dataset.

Referral source for suspected lung cancer

A&E | Inpatient | GP | Outpatient

Better understanding of how patients are entering the lung cancer pathway is still needed. We hypothesised that patients diagnosed after or during an accident and emergency (A&E) attendance may have more advanced cancer and/or be from more deprived areas.

Chest X-ray wait times



More about chest X-ray wait times

Click on the button to find out more

PET scans

PET is an important test in the lung cancer pathway. It is required for further investigation of suspicious pulmonary nodules.[16] Patients potentially suitable for curative intent also generally require a PET-CT to clarify diagnosis for small pulmonary nodule staging.[14] For the curative intent management pathway, PET-CT spirometry should be included in the test bundle requested at the first outpatient appointment[15] and should be completed within 5 days according to the NOLCP.[14]

The **Appendix** includes the HES disclaimer and detailed study methods.

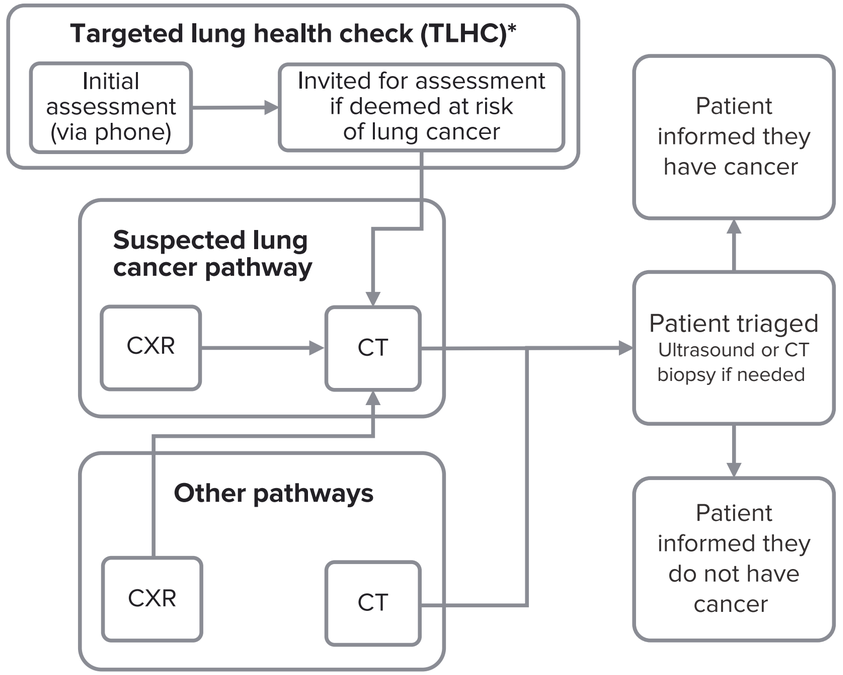
Study methods

Data sources

Chest X-ray wait times

- There are three main entry points to being diagnosed with lung cancer in England:
  - targeted lung health checks (TLHCs)
  - suspected lung cancer
  - other pathways.
- Diagnostic testing is a key component in the diagnosis of lung cancer, including CXR, which identifies a tumour, and CT which identifies the location and size of tumour.
- Time to access these important diagnostic tests is a key component of the overall lung cancer pathway and key to receiving timely diagnosis.
- We therefore analysed the wait times for CXR to determine whether there is variation across the nation.

Routes to diagnosis of lung cancer in England, adapted from[14,16,17]



*To qualify for the TLHCs, patients must live in an area where TLHCs are currently offered, be aged 55–74 years, registered with a GP surgery, and be a current or former smoker.[22]

The **Appendix** provides more detailed information about our study methods.

Study methods

Analysis

- Investigating different social determinants of health and their relationship with lung cancer diagnosis may reveal unwarranted variation and healthcare inequalities.
- We analysed the relationship between the following social determinants of health and initial diagnosis of lung cancer. We did not analyse by smoking status as this is not reliably coded in HES.

Click the buttons to find out more

Age | Sex | Deprivation

Ethnicity | Mental health | Urbanicity

The **Appendix** includes the HES disclaimer and detailed study methods.

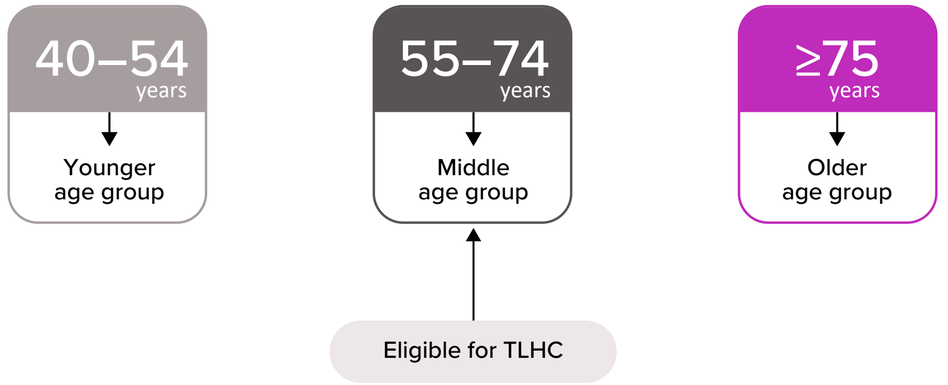
Study methods

Analysis

Age

- It is well evidenced in the literature that incidence of lung cancer increases with age.[23] However, a more granular breakdown of age groups across various social determinants of health and by stage at diagnosis would provide a more in-depth picture of the relationship between age and lung cancer in England.

We split the data in our analysis by age group,* allowing for more detailed analysis across the nation.



*Patient counts for people younger than 40 years were too low for the scope of this analysis.

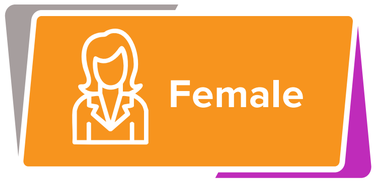
The **Appendix** provides more detailed information about our study methods.

Study methods

Analysis

Sex

- While not a sex-specific condition, males tend to be diagnosed with lung cancer more than females.[24]
- We wanted to understand whether there were significant differences in rates of stage of lung cancer at diagnosis across the two sexes.



The **Appendix** provides more detailed information about our study methods.

Study methods

Analysis

Deprivation

- Although people in more deprived areas are more likely to be diagnosed with lung cancer (small cell),[25] they are now more likely to be diagnosed at an earlier stage (comparing 2022 data vs 2019).[26] We wanted to investigate this further, breaking down regional variation by ICB and Cancer Alliance.

We defined deprivation by the Indices of Multiple Deprivation (IMD) in the Lower-layer Super Output Areas (LSOA) where the patient resides.[27] We further quantified deprivation into Quintiles 1 (most deprived 20th percentile of population) through Quintile 5 (least deprived 20th percentile).

The **Appendix** provides more detailed information about our study methods.

Study methods

Analysis

Ethnicity

- Previous investigations have explored the relationship between ethnicity and lung cancer,[28–30] but we wanted to understand whether there were differences across ICBs and Cancer Alliances in England.

HES data categorise patients as White, Black, Asian, Mixed, Other, and Unknown.[19]

We split the data in our analysis into three ethnicities, allowing for more detailed analysis across the nation.

Asian (South Asian)

For Asian ethnicity, we focused on South Asian populations (comprising Indian, Pakistani, and Bangladeshi) given the low proportion of Chinese patients in the UK.

Black

White (British)

For White ethnicity, we considered only White (British).

The **Appendix** provides more detailed information about our study methods.

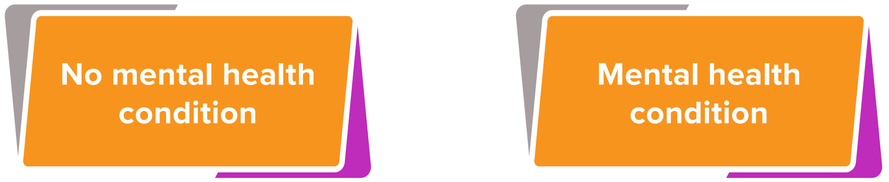
Study methods

Analysis

Mental health

- Evidence suggests that people with severe mental illness may be less likely to participate in cancer screening and therefore may be diagnosed with more advanced cancer and through different methods of referral.[31–35]
- We wanted to better understand the relationship between mental illness and stage of lung cancer at diagnosis, as well as how these patients are referred.

We analysed patients based on whether or not they also had a mental health diagnosis (International Classification of Diseases, 10th Revision [ICD] Chapter V) alongside their initial lung cancer diagnosis.[36]



The **Appendix** provides more detailed information about our study methods.

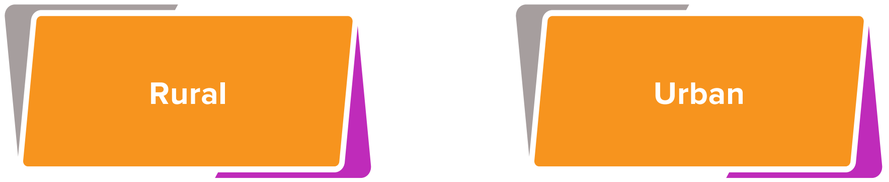
Study methods

Analysis

Urbanicity

- We hypothesised that patients in more rural areas of England may be diagnosed at a later stage than those in more urban areas due to likely reduced proximity to diagnostic testing and treatment centres. However, this may vary across different regions and Cancer Alliances, which warranted further exploration.

We analysed patients based on whether or not they lived in a rural or urban area using the Office for National Statistics (ONS) 2011 Rural-Urban Classification.[37]



The **Appendix** provides more detailed information about our study methods.

Study methods

Limitations

- Rounding patient counts queried from HES[19] to the nearest multiple of five to protect anonymity impacts the granularity of presented data.
- Patient ethnicity is frequently coded as 'Unknown' in HES data, and ethnic groups, particularly for older age groups, are more likely to be unknown.
- Because calculations of percentage of DNM diagnoses and NM diagnoses have been made using rounded patient numbers, there may be a small degree of inaccuracy in the presented percentages. However, we have ensured that this degree of inaccuracy never exceeds 2 percentage points (pp) from the true value in the data we have included in the study.
- The rates of DNM differ significantly from those presented in the National Lung Cancer Audit (NLCA).[10] The NLCA used the Rapid Cancer Registry Dataset (RCRD), which uses the TNM (tumour-node-metastasis) staging system,[52] and our research used Hospital Episode Statistics (HES data), which uses ICD codes. The RCRD has the stage of the cancer recorded and instances linked to a patient's cancer journey.[52] HES data do not record the stage of the cancer and ICD10 codes are used where the type of cancer can be identified and whether or not there is lymph node and/or metastatic involvement. Using this method, whilst the instances of DNM do not align to the NLCA, the overall number of new patients diagnosed and the percentage presenting via A&E is in line with those in the NLCA.
  - According to the NLCA State of the Nation 2024,[10] 36,886 patients were diagnosed with lung cancer in the 2022 calendar year. In our HES analysis, there were 37,365 new lung cancer patients in the 2021/22 fiscal year and 37,295 new lung cancer patients in the 2022/23 fiscal year, the closest equivalent time periods.
  - The proportion of patients presenting via an A&E referral was 32% in 2022 according to the NLCA.[10] This compares with 32% in our HES analysis in 2021/22 and 28% in 2022/23.
  - The proportion of patients presenting with Stage 4 disease in 2022 in the NLCA was 45%.[10] This compares with 35% diagnosed with DNM on presentation in our HES analysis in 2021/22 and 33% with DNM in 2022/23.

The **Appendix** provides more detailed information about our study methods.

Key findings

We analysed a total of 148,255 initial diagnoses in people aged ≥18 years in England between 2020/21 and 2023/24. Although two-thirds of initial diagnoses of lung cancers were non-metastatic, 50,520 cases had already metastasised by the time of initial diagnosis.

Click on the buttons to find out more

About one third of lung cancers in people aged 55–74 years and ≥75 years and 42% in people aged 40–54 years had already metastasised at the time of initial diagnosis

Black patients are more likely to be diagnosed initially with DNM than White British and South Asian patients

Referral via A&E is consistently the most common route leading to initial diagnosis of lung cancer irrespective of age, sex, deprivation, ethnicity, mental health, and urbanicity

Men are typically more likely to be diagnosed initially with lung cancer with DNM than women

People with mental health conditions are more likely to be diagnosed initially with DNM than those without mental health conditions, particularly those aged 40–54 years

Large differences between Cancer Alliances are seen in proportions of initial diagnoses of lung cancer with DNM

Lung cancer with DNM is more likely to be diagnosed initially in people from the least deprived areas than most deprived areas for those aged 55–74 years and ≥75 years

Whether a patient lives in an urban or rural area does not greatly impact on DNM, although rurality seems to be having an increasing influence on the risk of DNM at initial diagnosis

Large differences in proportions of people diagnosed with lung cancer with DNM were seen between ICBs, with some performing worse in 2023/24

For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

About one third of lung cancers in people aged 55–74 years and ≥75 years and 42% in people aged 40–54 years had already metastasised at the time of initial diagnosis

- Compared with men and women aged 55–74 years, men and women aged 40–54 years were more likely to be diagnosed with DNM, while men and women aged ≥75 years were less likely to be diagnosed with DNM.

40–54 years

- For younger patients aged 40–54 years, a much higher proportion of patients were diagnosed with DNM.
- Patients aged 40–54 years were more likely to be diagnosed with DNM than patients aged 55–74 years.

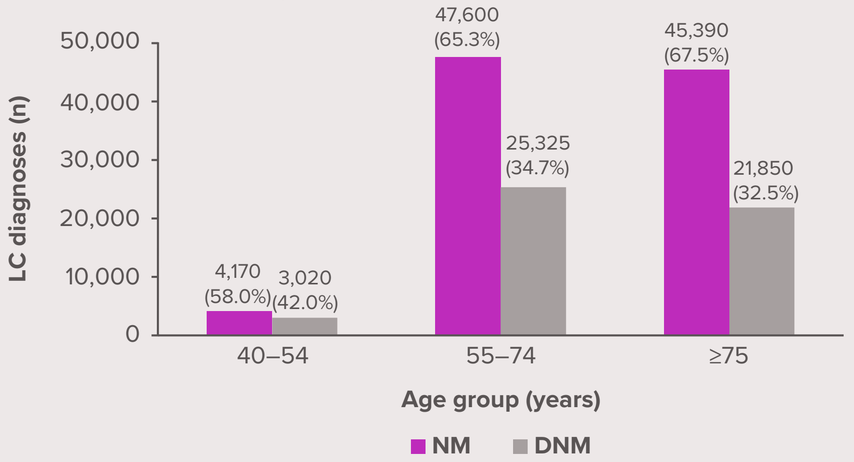
55–74 years

- The incidence of lung cancer was highest in people aged 55–74 years.
- About one third of lung cancer diagnoses in patients aged 55–74 years had already metastasised at the time of initial diagnosis.
- Patients aged 55–74 years were:
  - less likely to be diagnosed with DNM than those aged 40–54 years.
  - more likely to be diagnosed with DNM than those aged ≥75 years.

≥75 years

- About one third of lung cancer diagnoses in patients aged ≥75 years had already metastasised at the time of initial diagnosis.
- Patients aged ≥75 years were less likely to be diagnosed with DNM than those aged 55–74 years and 40–54 years.

Number of initial diagnoses of lung cancer by age group and diagnosis type (2020/21–2023/24)



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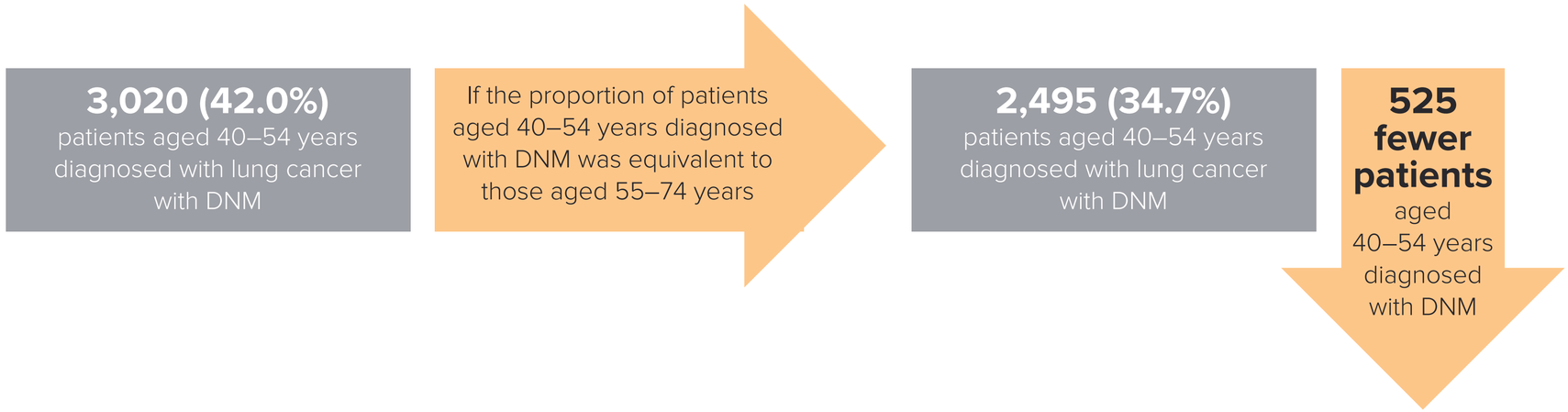
Key findings

About one third of lung cancers in people aged 55–74 years and ≥75 years and 42% in people aged 40–54 years had already metastasised at the time of initial diagnosis

- 42.0% (3,020/7,190) of patients aged 40–54 years with lung cancer are diagnosed at Stage 4 versus 34.7% (25,325/72,925) in those aged 55–74 years.
- If the proportion of patients aged 40–54 years diagnosed with lung cancer at Stage 4 was the same as for those aged 55–74 years (34.7%), the absolute number would be 2,495 patients.
- Therefore, 525 excess Stage 4 diagnoses in patients aged 40–54 years could be prevented if the inequalities were removed.



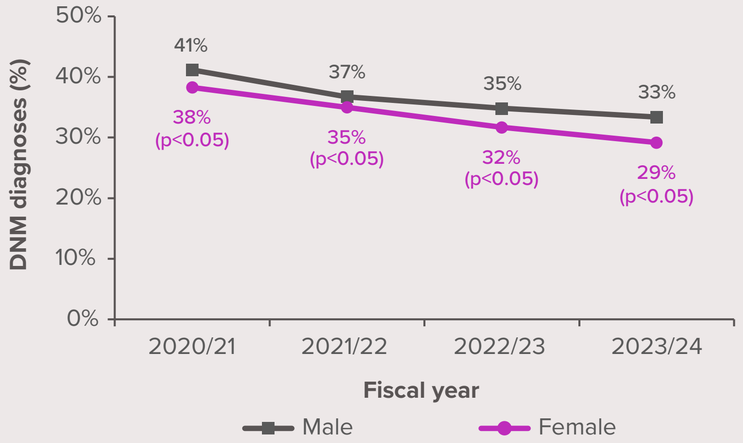
For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Men are typically more likely to be diagnosed initially with lung cancer with DNM than women

- In both men and women, there was an overall decrease in the proportion of diagnoses with DNM during the period analysed.
- Men aged 55–74 years and men aged ≥75 years were significantly more likely to be diagnosed with DNM than women in all age groups throughout the study period.
- The proportion with DNM in these age groups decreased steadily over the study period.
- At all but one timepoint during the study, men aged 40–54 years were more likely to be diagnosed with DNM than women.
- Although the overall trend across the study period was a decrease, the year-by-year proportions fluctuated in the 40–54-year-old age group.

Percentage of initial lung cancers diagnosed with DNM in males and females aged 55–74 years (2020/21–2023/24)



p-values represent significance testing between the two different variables.

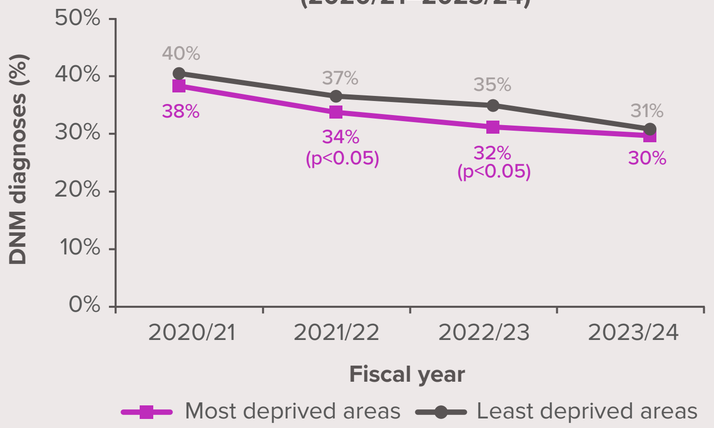
For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Lung cancer with DNM is more likely to be diagnosed initially in people from the least deprived areas than most deprived areas for those aged 55–74 years and ≥75 years

- The proportion of lung cancer diagnosed with DNM was higher in patients aged 55–74 and ≥75 years from least deprived areas compared to patients from the most deprived areas.
  - This was the case for all years of the study period for these two age bands, except for ≥75-year-olds in 2020/21, when the rate was equal.
- For younger patients aged 40–54 years, the proportions of lung cancers diagnosed with DNM were more equal in the first two years of the study period, with the gap increasing to higher DNM diagnoses in the most deprived areas over the last two years.
- However, the overall incidence of lung cancer with DNM is much higher in those from the most deprived areas than the least deprived.

Percentage of initial lung cancers diagnosed with DNM in patients aged 55–74 years by most and least deprived IMD quintile (2020/21–2023/24)



p-values represent significance testing between the two different variables.

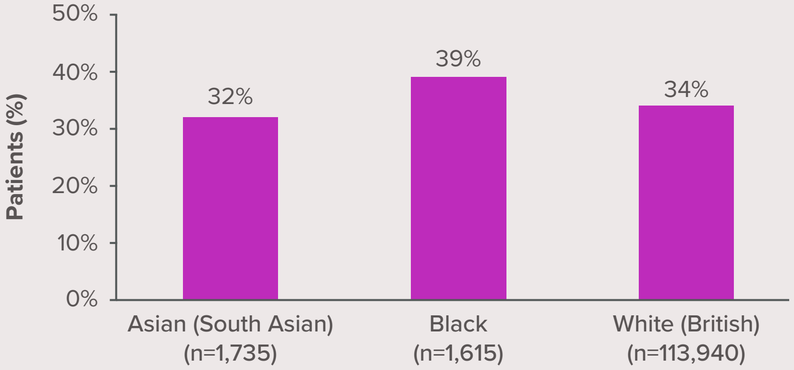
For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Black patients are more likely to be diagnosed with DNM than White British and South Asian patients

- Patient counts by ethnicity were too low to analyse ethnicity by individual year for any patient age group due to wide confidence intervals.
- For the four years of the study period combined:
  - Black patients were more likely to be diagnosed with DNM than White British and South Asian patients.
  - South Asian patients were less likely to be diagnosed with DNM than White British patients.
- Differences between ethnicities were more pronounced among patients aged ≥75 years than those aged 40–54 and 55–74 years.
  - The difference between Black and South Asian patients aged ≥75 years was highest at 10 percentage points (pp).

Percentage of initial lung cancers diagnosed with DNM in all patients by ethnicity (four-year total (2020/21–2023/24)

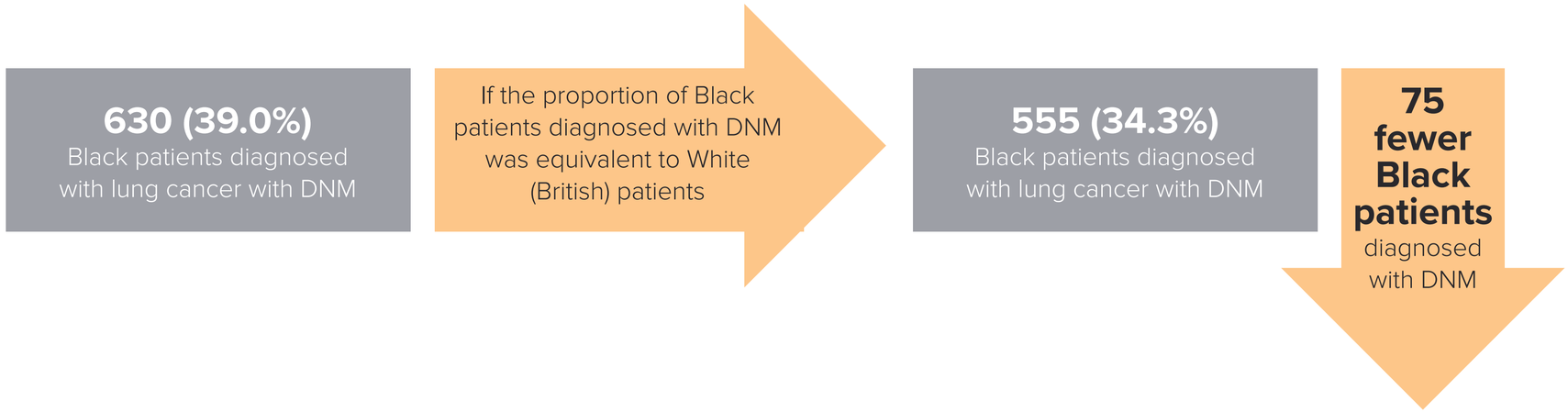


For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Black patients are more likely to be diagnosed with DNM than White British and South Asian patients

- 39.0% (630/1,615) of Black patients with lung cancer are diagnosed at Stage 4 versus 34.3% (39,130/113,940) of White (British) patients.
- If the proportion of Black patients diagnosed with lung cancer at Stage 4 was the same as for White (British) patients (34.3%), the absolute number would be 555 patients.
- Therefore, 75 excess Stage 4 diagnoses in Black patients could be prevented if the inequalities were removed.



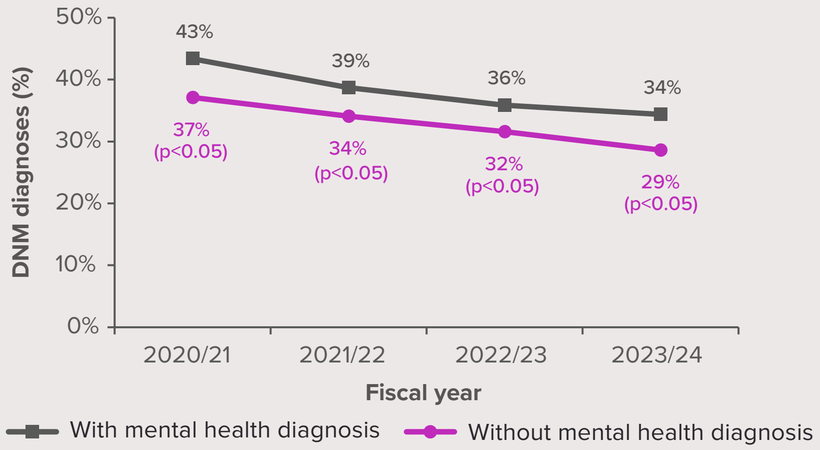
For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

People with mental health conditions are more likely to be diagnosed initially with DNM than those without mental health conditions, particularly those aged 40–54 years

- The proportion of patients diagnosed with DNM was higher for those with mental health diagnoses in all three age groups:
  - These differences were statistically significant for patients aged 40–54 years in 2021/22 and 2023/24 and patients aged 55–74 and ≥75 years at all timepoints.
  - The differences widened for all age groups between 2022/23 and 2023/24.
- Across the four years of the study, there was an overall downward trend in proportion of initial diagnosis with DNM in all age groups.

Percentage of initial lung cancers diagnosed with DNM in patients aged 55–74 years by mental health condition (2020/21–2023/24)



p-values represent significance testing between the two different variables.

For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

People with mental health conditions are more likely to be diagnosed initially with DNM than those without mental health conditions, particularly those aged 40–54 years

- 37.0% (19,110/51,695) of patients with mental health conditions with lung cancer are diagnosed at Stage 4 versus 32.5% (31,410/96,560) of patients without mental health conditions.
- If the proportion of patients with mental health conditions diagnosed with lung cancer at Stage 4 was the same as for patients without mental health conditions (32.5%), the absolute number would be 16,815 patients.
- Therefore, 2,295 excess Stage 4 diagnoses in patients with mental health conditions could be prevented if the inequalities were removed.

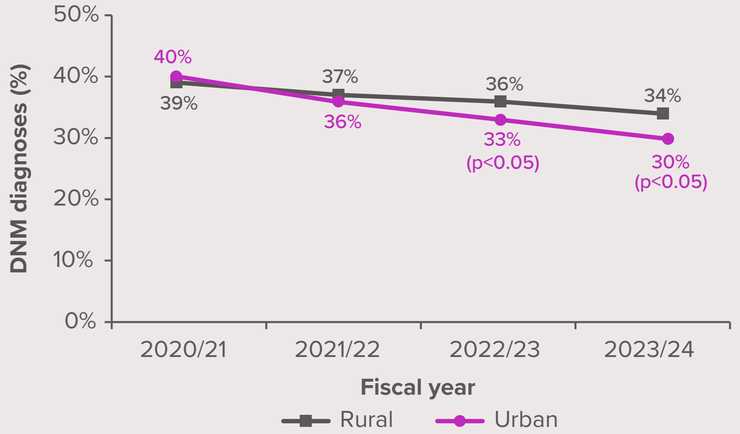
For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Whether a patient lives in an urban or rural area does not greatly impact on DNM, although rurality seems to be having an increasing influence on the risk of DNM at initial diagnosis

- There was an overall downward trend in the proportion of DNM in all age groups for those living in rural or urban areas, except in 2023/24, when the proportion of patients aged 40–54 years living in rural areas increased slightly.
  - The downward trend was more pronounced and consistent for patients in urban areas.
  - In the later years of our study, living in an urban or rural area seemed to have greater impact on the proportion of initial DNM diagnoses than in the earlier years, with the percentage gap between rural and urban patients increasing to a significant difference in the 55–74-year-old age group.
- People aged 40–54 years living in rural or urban areas were most likely to be diagnosed with DNM, while people aged ≥75 years were least likely to be diagnosed with DNM, with some fluctuations in individual years.

Percentage of initial lung cancers diagnosed with DNM in patients aged 55–74 years by urbanicity (2020/21–2023/24)



p-values represent significance testing between the two different variables.

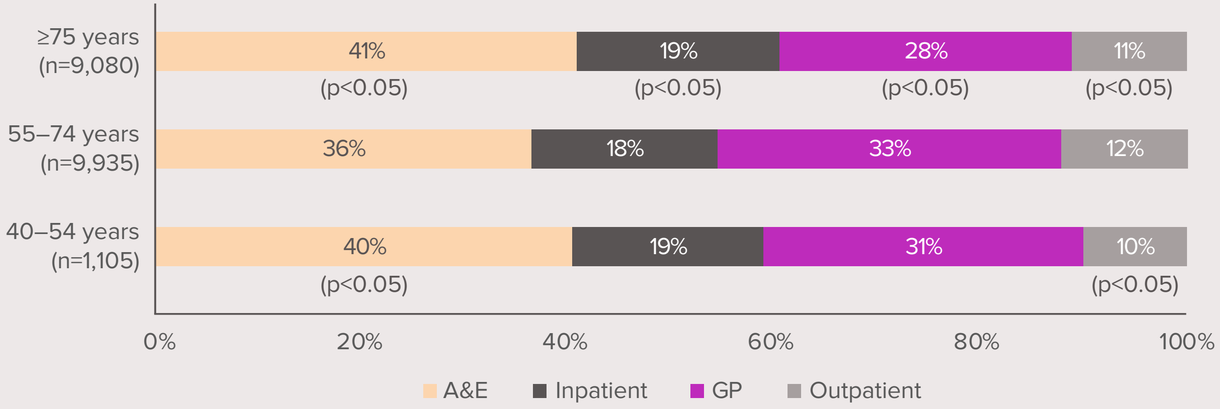
For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Referral via A&E is consistently the most common route leading to initial diagnosis of lung cancer irrespective of age, sex, deprivation, ethnicity, mental health, and urbanicity

- For all comparisons in our analysis, referral via A&E was the most common route leading to initial diagnosis of lung cancer with DNM, with referral by GP the second most common route leading to a diagnosis of DNM.
- Diagnosis via A&E was significantly more likely in:
  - people aged 40–54 and ≥75 years than people aged 55–74 years
  - men than women
  - people in most deprived areas than people in least deprived areas
  - Black and South Asian people than White British people
  - people with a mental health condition than those without a mental health condition
  - people living in urban areas than people living in rural areas.
- People aged ≥75 years were also significantly more likely to be diagnosed via inpatients and significantly less likely to be diagnosed via a GP.
- Black and South Asian patients were also significantly less likely to be diagnosed via GP referral than White British patients.
- Patients with a mental health condition were also significantly more likely to be diagnosed via inpatients and significantly less likely to be diagnosed via outpatients and a GP than those without a mental health condition.

Percentage of DNM diagnoses with referral source by age (2 years total patients diagnosed, 2021/22 and 2022/23)



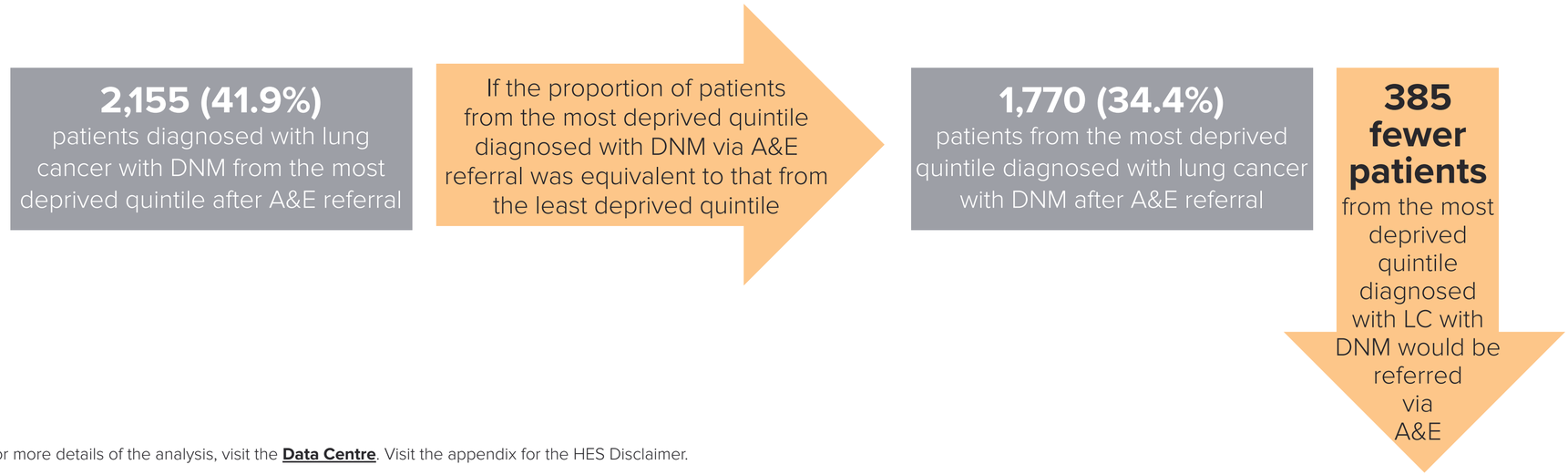
p-values represent significant testing against the 55–74 year old age group.

For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Referral via A&E is consistently the most common route leading to initial diagnosis of lung cancer irrespective of age, sex, deprivation, ethnicity, mental health, and urbanicity

- 41.9% of patients from the most deprived quintile (n=2,155/5,145) were diagnosed with LC with DNM following referral from A&E versus 34.4% of patients from the least deprived quintile (n=1,090/3,170) over a two-year period from 2021/22–2022/23.
- If the proportion of patients from the most deprived quintile diagnosed with lung cancer at Stage 4 following A&E referral was the same as for patients from the least deprived quintile (34.4%), the absolute number would be 1,770 patients referred via A&E.
- Therefore, 385 excess A&E referrals in patients from least deprived areas could be prevented if the inequalities were removed.

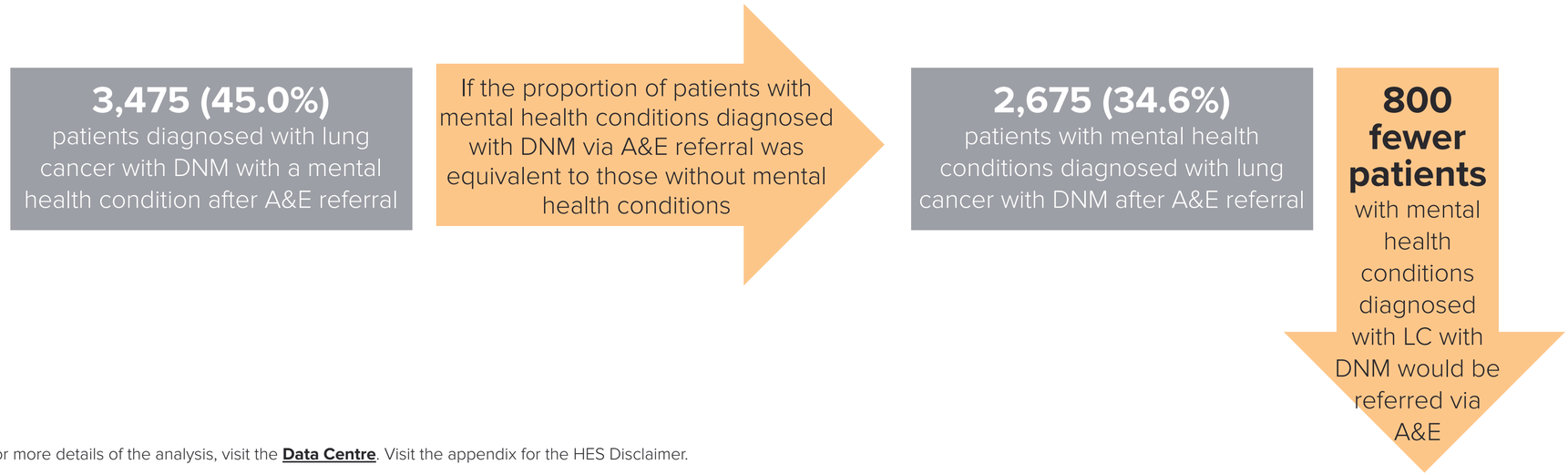


For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

Referral via A&E is consistently the most common route leading to initial diagnosis of lung cancer irrespective of age, sex, deprivation, ethnicity, mental health, and urbanicity

- 45.0% of patients with mental health conditions (n=3,475/7,715) were diagnosed with LC with DNM following referral from A&E versus 34.6% of patients without mental health conditions (n=4,345/12,540) over a two-year period from 2021/22–2022/23.
- If the proportion of patients with mental health conditions diagnosed with LC with DNM following an A&E referral was the same as for patients without mental health conditions (34.6%), the absolute number would be 2,675 patients referred via A&E.
- Therefore, 800 excess A&E referrals in patients with mental health conditions could be prevented if the inequalities were removed.



For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Key findings

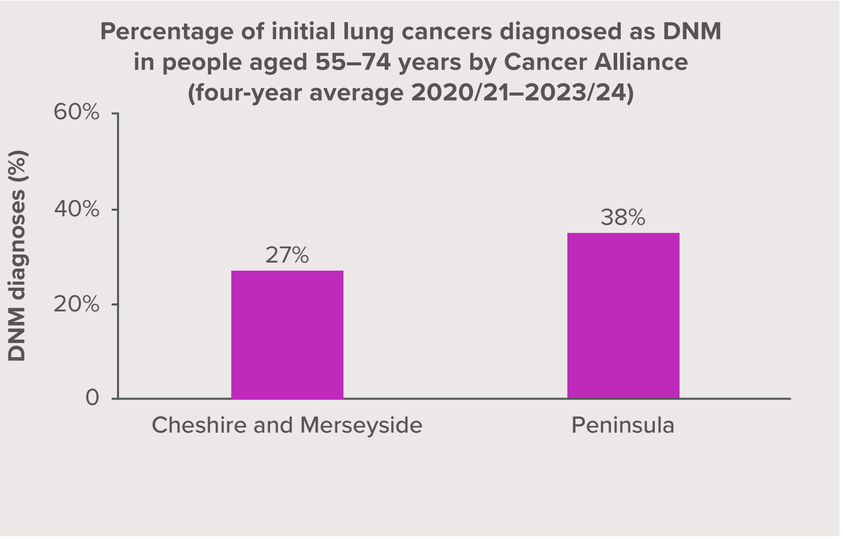
Large differences between Cancer Alliances are seen in proportions of initial diagnoses of lung cancer with DNM

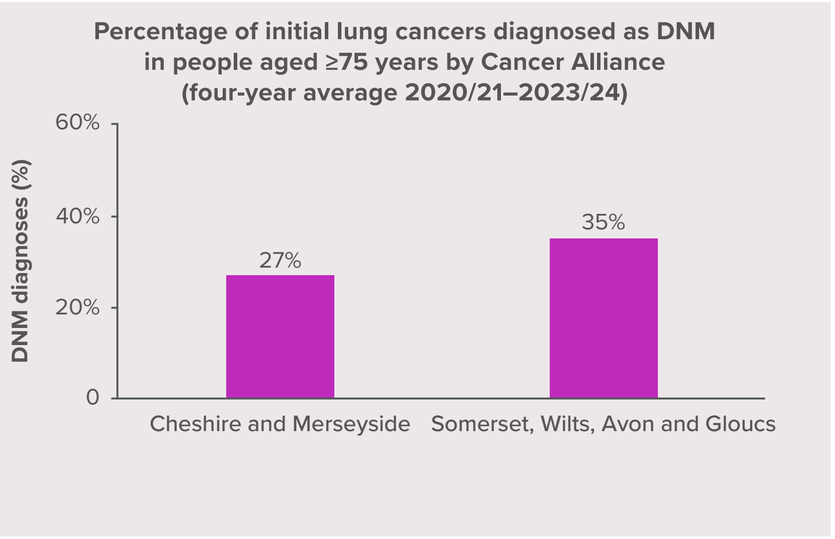
55–74 years

- 11-percentage-point (pp) difference in four-year average in proportion of initial diagnoses of lung cancer with DNM for best and worst performing Cancer Alliances.

≥75 years

- 8-pp difference in four-year average proportion of initial diagnoses of lung cancer with DNM between best- and worst-performing Cancer Alliances.





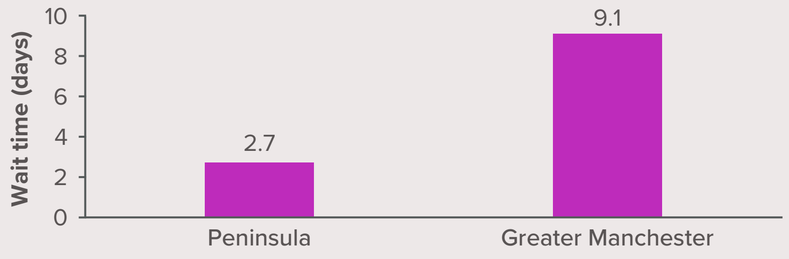
Visit the **Data Centre** for more detailed analysis and graphs, including deep dive analysis by individual Cancer Alliance. Visit the appendix for the HES Disclaimer.

Key findings

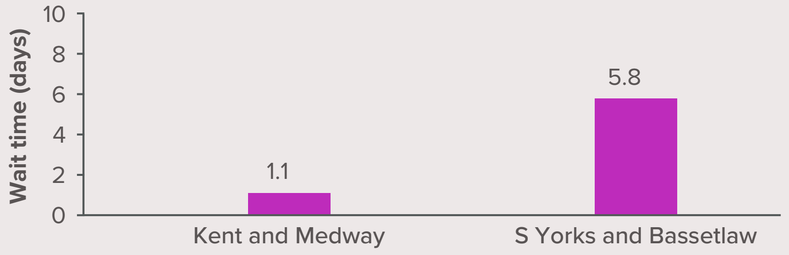
Large differences between Cancer Alliances are seen in wait times for chest X-rays for suspected lung cancer

- Differences between best and worst performing Cancer Alliances were:
  - 4.7 days between test request and test
  - 6.4 days between test and signed report (service report) issued
  - 8.0 days between test request and service report issued.

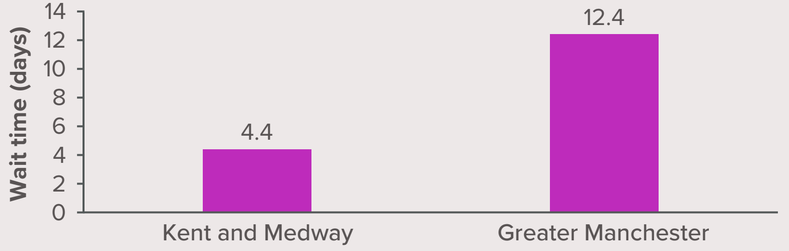
Waiting time from test to service report issued for chest X-ray for suspected lung cancer performed in 2021/22 or 2022/23



Waiting times from test request to test for chest X-ray for suspected lung cancer performed in 2021/22 or 2022/23



Waiting times from test request to service report issued for chest X-ray for suspected lung cancer performed in 2021/22 or 2022/23



Visit the **Data Centre** for more detailed analysis and graphs, including deep dive analysis by individual Cancer Alliance. Visit the appendix for the HES Disclaimer.

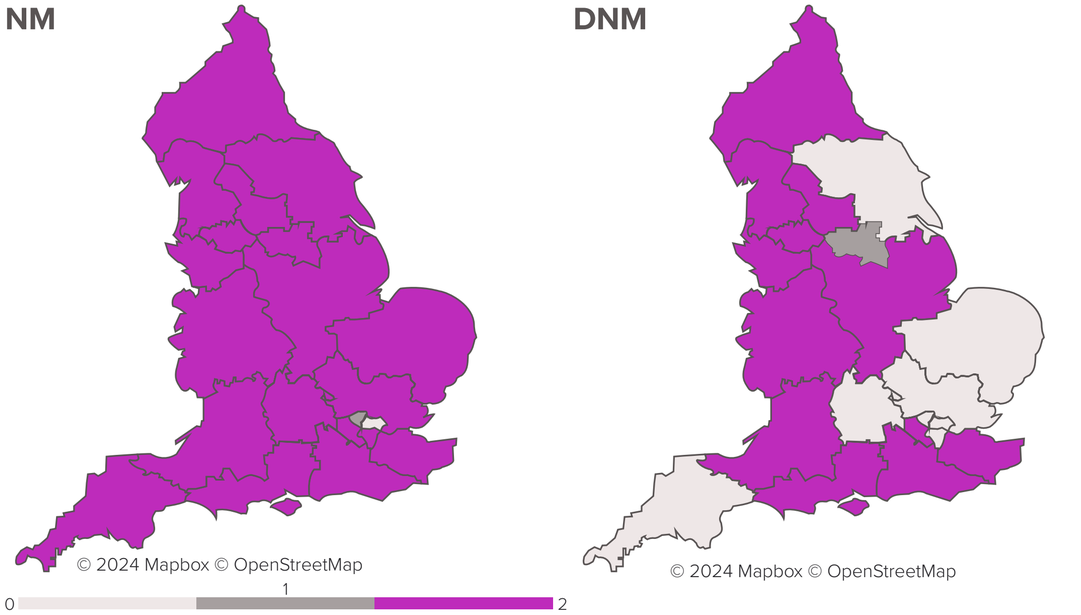
Key findings

Large differences between Cancer Alliances are seen in proportion of patients receiving PET scans within 90 days of their initial DIDS record for suspected lung cancer

- Significant differences in the two-year average proportion of patients aged 55–74 and ≥75 years receiving a PET scan within 90 days of their initial DIDS record for suspected lung cancer were seen in:
  - 19 Cancer Alliances for non-metastatic (NM)
  - 12 Cancer Alliances for de-novo metastatic (DNM).

Visit the **Data Centre** for more detailed analysis and graphs, including deep dive analysis by individual Cancer Alliance. Visit the appendix for the HES Disclaimer.

Significance of the inequity in proportion of receiving a PET scan within 90 days of their initial DIDS record for suspected lung cancer patients aged 55–74 and ≥75 years and Cancer Alliance (two-year average, 2021/22 and 2022/23)



Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

Key findings

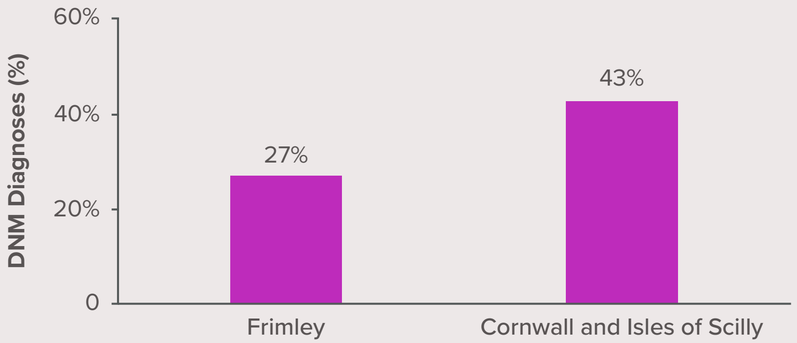
Large differences in proportions of people diagnosed with lung cancer with DNM were seen between ICBs, with some performing worse in 2023/24

- Differences between best and worst performing ICBs were:
  - 16 pp for people aged 55–74 years
  - 16 pp for people aged ≥75 years.

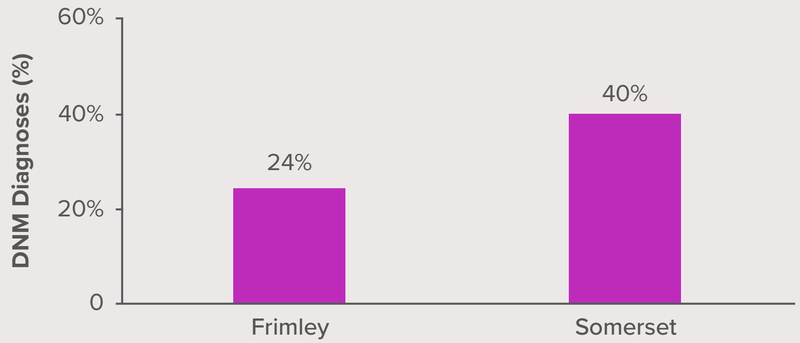
In 2023/24, reductions in the proportion of diagnoses with DNM were seen in:

- 90.5% of ICBs for people aged 55–74 years
- 85.7% of ICBs for people aged ≥75 years.

Percentage of initial lung cancers diagnosed with DNM in people aged 55–74 years by ICB (four-year average 2020/21–2023/24)



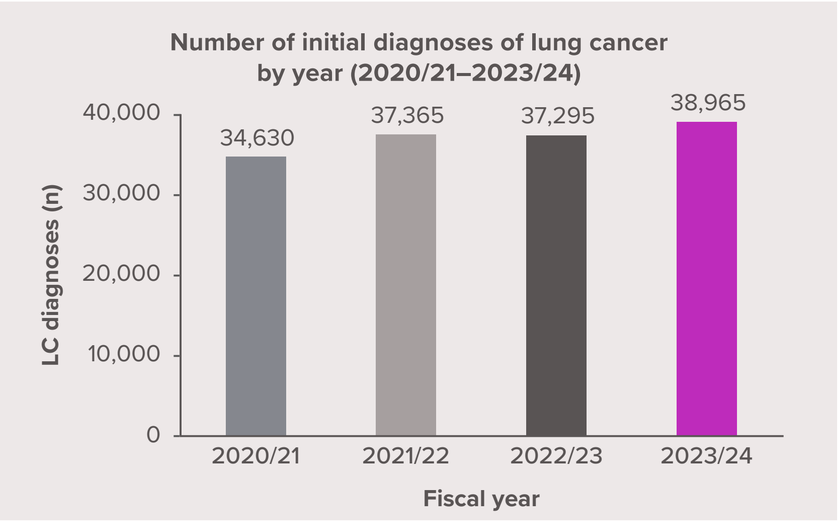
Percentage of initial lung cancers diagnosed with DNM in people aged ≥75 years by ICB (four-year average 2020/21–2023/24)



Visit the **Data Centre** for more detailed analysis and graphs, including deep dive analysis by individual ICB. Visit the appendix for the HES Disclaimer.

Reflections (1)

Although the incidence of lung cancer increased over the four fiscal years covered by our study, this may reflect population growth and demographic trends with an ageing population. It could also reflect increased diagnosis due to the TLHCs, which were first introduced in 2019,[6,16] and their integral role in the NHS Lung Cancer Screening Programme, which was announced in June 2023.[17]

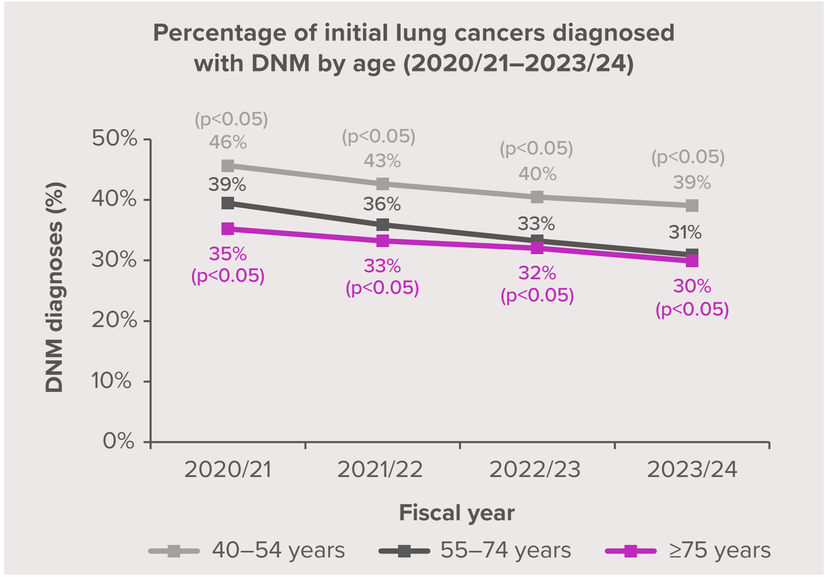


For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Reflections (2)

It is too soon to be certain that the TLHCs and lung cancer screening initiatives have led to the decreased proportion of initial lung cancers diagnosed with metastases observed in our data between 2020/21 and 2023/24, as TLHCs have not yet been adopted universally across the country, and the move to a screening programme was announced only in the final year of our analysis.[16,17]

The shift towards more earlier diagnoses highlighted by our data analysis is encouraging, as outcomes are better the earlier people are diagnosed.



p-values represent significant testing against the 55–74 year old age group.

For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

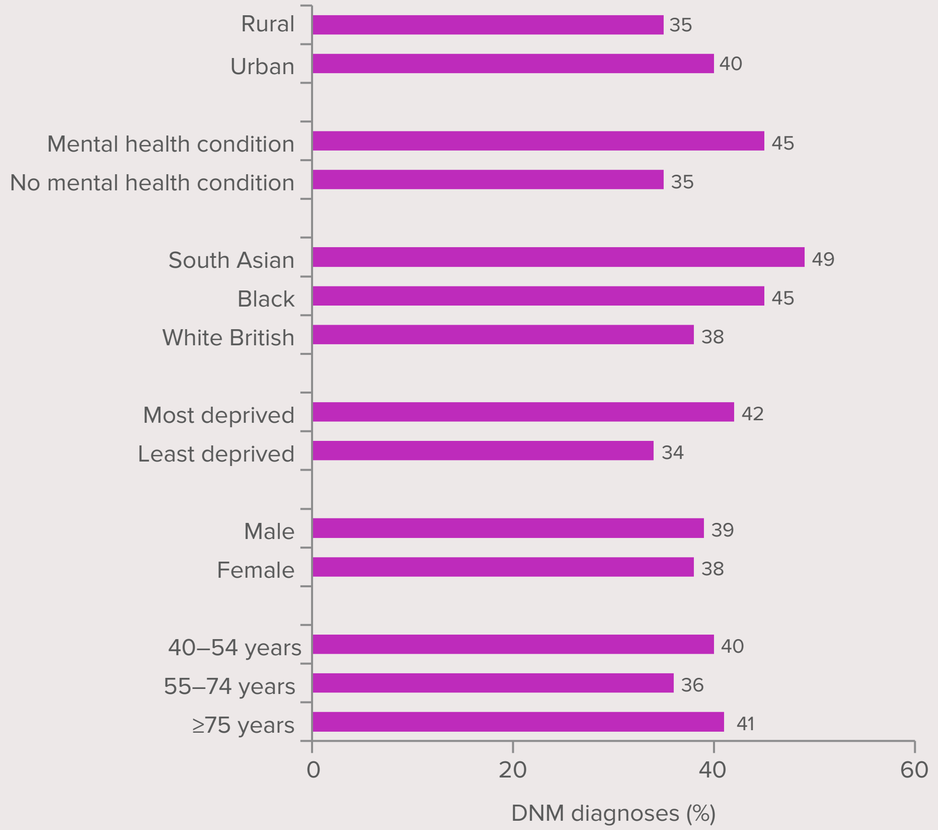
Reflections (3)

Whatever the reason for the overall decrease in the proportion of DNM at initial diagnosis, which was seen almost universally in all of our cohorts, it is strikingly evident that some populations are not benefiting as much as others and that some local organisations are not performing as well as their peers.

One of the most concerning findings is that between one-third and one-half of people initially diagnosed with DNM receive this diagnosis following a referral from A&E. We cannot determine whether these people are not attending their GP or seeking advice elsewhere until they reach an emergent state, they are being seen but not recognised as at risk or referred on in a timely way, or they are awaiting an appointment or investigation when their disease deteriorates.

We urgently need to find out why so many people are being diagnosed with DNM through A&E and identify ways to ensure they are diagnosed before their disease progresses.

Percentage of initial diagnoses of lung cancer with DNM following A&E referral (2 years total patients diagnosed, 2021/22 and 2022/23)



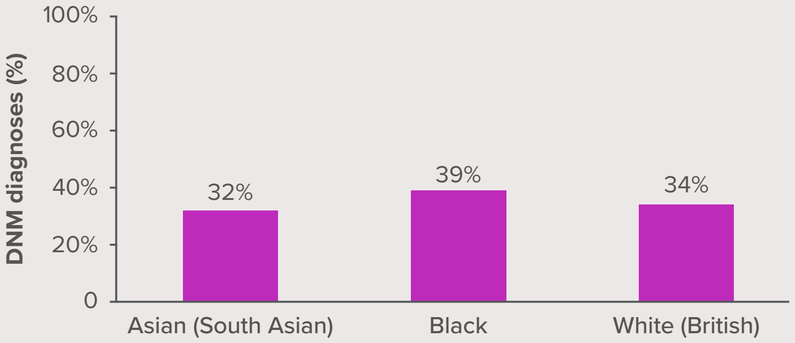
For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Reflections (4)

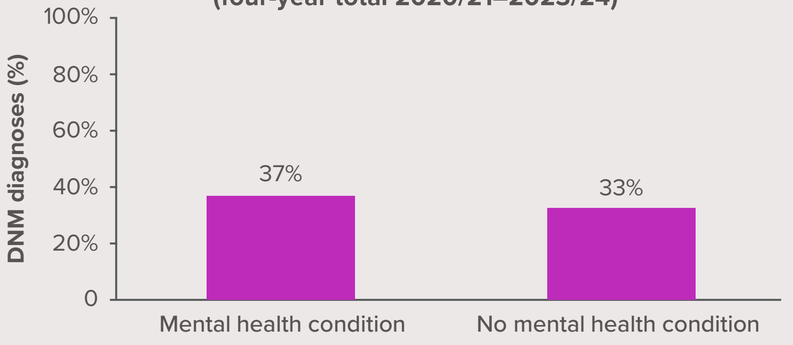
Other striking findings in our analysis are the higher proportions of diagnoses with metastases in specific patient populations, which highlight that not everyone is being afforded the same opportunity for early diagnosis of their lung cancer. Younger people, Black people, people living in least deprived areas, and people living with mental health conditions are much more likely to be initially diagnosed with lung cancer once it has already metastasised.

Identifying stumbling blocks and barriers to awareness, engagement, access, and participation among all the disadvantaged groups identified in our data analysis and developing solutions must be a priority.

Percentage of initial lung cancers diagnosed with DNM in all patients by ethnicity (four-year total 2020/21 –2023/24)



Percentage of initial lung cancers diagnosed with DNM in all patients by presence of a mental health condition (four-year total 2020/21–2023/24)



For more details of the analysis, visit the **Data Centre**. Visit the appendix for the HES Disclaimer.

Possible solutions

Urgent action is clearly needed to reduce health inequalities in lung cancer diagnosis in line with NHS priorities, including the NHS Faster Diagnosis Framework, which aims for 75% of cancers to be diagnosed early (Stage 1 or 2), and Core20PLUS5 framework.[13,18]

Use the suggested action plans below as starting points to stimulate change.

Optimise your pathway

Optimise engagement

Find out more about how to boost early diagnosis and reduce inequalities in the next section Leaving No-One Behind.

Possible solutions

Optimise your pathway

- To ensure that the proportion of cases diagnosed early increases, it is vital that local and system leaders first identify whether their local pathways are optimised and make any changes needed to achieve this:

Review

- Review the data centre section of this report, using our alerts and suggested starting points for exploration to delve deeper into the local situation

Invite

- Invite all stakeholders to identify stumbling blocks and barriers to awareness, diagnosis, and referral

Map

- Map out the pathway in your area to highlight inefficacies, bottlenecks, and under-resourced steps in the pathway

Research

- Research examples of best practice that are already tackling these problems effectively (see next section Leaving No-One Behind)

Identify and implement

- Identify improvements that can be made easily with existing resourcing by making small adjustments – for example:
  - Circulate the key local findings of our study to raise awareness of groups that need particular attention
  - Add flags to electronic records to identify smokers and other high-risk patients to check for symptoms during appointments for other reasons or arrange targeted lung health checks
  - Flag patients with suspected lung cancer for priority chest X-rays in imaging protocols to reduce wait times
  - Ensure imaging reports are emailed rather than mailed by post if they cannot be shared through electronic records
- Identify more significant and innovative changes – for example:
  - Introduce TLHCs if these are not already in place locally and develop an implementation plan for NHS Lung Cancer Screening, using the standard protocol published by NHS England as a framework[13]
  - Consider increasing the number of radiographers or X-ray machines if capacity is causing delays in chest X-ray wait times or reporting
  - Consider artificial intelligence to assess X-ray images for more timely reporting of imaging results
  - Introduce community lung clinics to bring appointments closer to home and reduce waiting times for referrals

Possible solutions

Optimise engagement

- To ensure that the proportion of cases diagnosed early increases for the disadvantaged groups identified in our study, it is vital that local and system leaders identify why particular populations locally are experiencing delayed diagnosis and then develop new strategies to target them:

Review

- Review the data centre section of this report, using our alerts and suggested starting points for exploration to delve deeper into the local situation

Invite

- Invite stakeholders, including people with lived experience from disadvantaged groups our analysis have flagged locally, to identify barriers to awareness, engagement, access, and participation – for example:
  - What are the barriers to clinician awareness for disadvantaged groups?
  - What are the barriers to clinician engagement with disadvantaged groups?
  - What are the barriers to public awareness in disadvantaged groups?
  - What are the barriers to engagement among disadvantaged groups?
  - What are the barriers to access among disadvantaged groups?

Map

- Map out identified barriers and where they fit in the pathway to identify where work is needed

Research

- Research examples of best practice that are already tackling these problems effectively (see next section Leaving No-One Behind)

Identify and implement

- Identify improvements that can be made easily with existing resourcing – for example:
  - Circulate the key local findings of our report to raise awareness of groups that need particular attention
  - Develop public and patient information materials targeted to disadvantaged groups that can be circulated in relevant settings – for example, community centres, churches, mosques, mental health clinics, shopping centres, public toilets
- Identify more significant and innovative changes – for example:
  - Expand clinic opening hours to make it easier for working-aged people to attend clinics
  - Tailor clinic availability and opening hours to local public transport to make it easier for people to attend clinics
  - Consider introducing mobile screening vans to take screening closer to the people who need it
  - Consider introducing community lung clinics to bring appointments closer to home

Bristol Myers Squibb® HSJ Advisory

Leaving No-One Behind

What does good look like?

Introduction

In this section, we look at examples of best practice that can be adapted to local settings.

What does good look like: case studies in screening

What does good look like: case studies in diagnostics

Targeted lung health checks in Manchester[38]

The team at Wythenshawe Hospital were concerned about reaching more people at risk of lung cancer in Manchester's deprived communities.

The team at Wythenshawe Hospital engaged in a grass roots programme, using community initiatives that incorporated GP practices, patient advocates and community services. They tried to **simplify participation** by bringing services to the people who needed them and providing information in a way that was accessible to the groups they were targeting. Many patients were able to avoid waiting at hospital clinics or attending multiple appointments, which often requires time off work.

This programme consisted of:

- community events
- leafletting
- custom posters
- bus stop advertisements
- community awareness sessions.

The team **co-developed** all initiatives with different patient groups to better ensure that they would work well for the community. To **encourage familiarity and trust**, the team collaborated with a local leader and brought their story to the local newspaper.

A mobile health check unit was installed in a car park in a central location, operating 6 days a week from 8 am to 8 pm so that people who work shifts could better access the service.

Staff were trained to flag patients who seemed worried or anxious, allowing for a safety plan to be put in place.

Targeted lung health checks in South Yorkshire[39,40]

South Yorkshire was one of ten sites involved in the initial roll out of TLHCs.

The TLHC team in South Yorkshire aimed to reach as many people at highest risk as possible. The organisation's business intelligence team provided data insights from which a matrix was developed consisting of:

- deprivation data
- smoking rates
- rates of chronic obstructive pulmonary disease (COPD)
- data comparing rates of lung cancers before COVID-19 and current rates (potentially indicative of areas where patients might be being missed).

From this, the team were able to prioritise who to contact through a population health management approach.

A **dedicated Communications Lead** played a crucial role in reaching out to community groups, particularly faith groups. This involved **building trust**, addressing concerns, and tailoring the message to resonate with different cultural and religious backgrounds. The communications lead also worked to overcome language barriers and ensure that information was accessible to individuals with diverse linguistic needs.

Engagement with faith groups occasionally proved challenging. The **use of local contacts was key**. Local leaders were often involved in the ICB and provided the communications lead with contacts to speak to and offered valuable guidance on what to do with different groups to engage more effectively.

Using **local knowledge was paramount**. Local practices in the region were asked for their guidance on where the best location would be to set up the TLHC team's CT screening sites.

Further efforts were made to reach **patients with learning difficulties** by engaging with local learn places and involving their learning disability staff. The team specifically asked the GP practices for details of patients in their areas with learning disabilities so that they could do the additional work required to attempt to reach this small cohort of patients who experience some of the biggest health inequalities.

Making screening more accessible for people with severe mental illness[41-43]

People living in the community with a serious mental illness (SMI) are less likely to take up the offer of screening and are specifically identified as needing additional support to access screening.[41-43]

Those with a cancer diagnosis who also have SMI are more likely to die from cancer than those without SMI. This may be due to:[43]

- reduced uptake of cancer screening services
- delayed cancer diagnosis
- less knowledge about risk factors
- reduced adherence to treatment plans.

In addition, risk factors for cancer such as tobacco use, obesity, poor diet and other comorbidities are highly prevalent in this population.[43]

Wessex Cancer Alliance developed a series of reasonable adjustments, supported by the charity, Mind Andover, to engage with people with serious mental illness, including:[43]

- pre-appointment familiarisation to reduce anxiety
- continuity of care, reducing the number of times a patient may need to recount trauma
- extended appointments for wider support
- use checklist to communicate additional needs
- initial contact by phone, text or email
- reassurance and explanation throughout appointments
- taking patient-led approach
- choice between surgery, home visit or alternative location
- confirmation and reminder messages.

Using artificial intelligence (AI) in chest scans to speed up cancer diagnosis

Two reports by the Royal College of Radiologists highlighted workforce shortages in diagnostic and cancer departments across the country and their impact on patients with cancer:[44,45]

- More doctors are retiring early and growing reliance on outsourcing/ locums is unsustainable and expensive.
- A 29% shortfall in radiologists, rising to 40% by 2027 if action is not taken, at a time when demand for healthcare will be rising.
- 95% of cancer centre leaders were concerned about workforce shortages delaying treatment.
- Systemic anti-cancer treatment was delayed most months in two thirds of centres due to workforce shortages.
- 88% of cancer leaders in England are concerned that staff shortages are impacting on quality of patient care.
- Delays are potentially harmful, as every month cancer treatment is delayed raises the risk of death by 10%.
- There are disparities across the UK in the number of radiologists, as well as in vacancies, with greater shortfalls in rural compared to urban areas, risking postcode lottery in patient outcomes.

In a 6-month pilot study, Frimley Health tested the ability of AI technology to scan thousands of breast and chest images and prioritise those identified as showing cancer and suspected abnormalities. The technology was developed by Qure.ai to highlight abnormal scans, so that radiologists can focus on reporting the urgent cases first, giving patients a faster diagnosis and quicker access to treatment.[46]

The study confirmed the potential of AI for early detection and treatment of lung cancer:[46]

- 99.7% accuracy in triaging scans as normal
- 100% of cancer cases identified, even inconspicuous cancer risk nodules that may traditionally have remained unnoticed
- reduced consultant radiologist's workload by up to 58% by transferring cases to radiographer reporting workload
- freed up to 2 hours of radiologist time per day to concentrate on specialist and complex imaging reports.

"AI has a huge potential impact for assisting clinicians and radiologists with triaging and prioritising urgent findings, speeding up the cancer diagnosis pathway, and improving the patient journey."[46]

Dr Amrita Kumar
Consultant Radiologist, Frimley Health

Radiographer-led fast-tracked imaging pathway[47]

Faster diagnosis and immediate reporting of GP referral chest X-rays leads to better patient outcomes and can reduce anxiety.

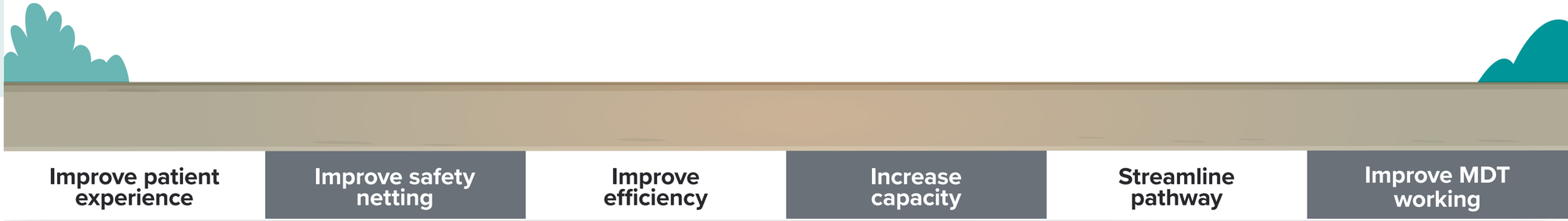
University College London Hospitals NHS Foundation Trust developed an individual patient flow pathway for patients with suspected cancer to combat prolonged imaging and diagnosis.

The project aimed to:

- improve imaging within the NOLCP to improve patient outcomes by reducing time from initial imaging to diagnosis and initiating two-week wait cancer referrals and treatment pathway
- safety net communication of significant and unexpected findings as a direct action from a serious incident
- assess how many patients were recalled for repeat X-ray for unclear findings such as ‘nipple markers’ or ‘apical’ views.

The project resulted in:

- marked reduction in turnaround times for patients awaiting follow-ups on requests for suggested further chest X-ray views within the imaging report
- reduced patient anxiety and footfall in the department
- faster imaging and diagnosis for patients
- facilitated same-day referral for other appropriate services
- increased multidisciplinary team (MDT) working to benefit patients
- improved communications with the respiratory pathway.



Diagnostic hubs to improve efficiency and capacity[48]

Ophthalmology is responsible for 10% of all outpatient activity in the UK – more than any other specialty, and diagnostic tests can take hours.

Combined with the challenges of increasing disease prevalence, an aging population and the need for regular monitoring, this can reduce timely access to care.

Before the pandemic, Moorfields Eye Hospital evaluated the potential of a diagnostic hub to streamline the ophthalmology diagnostic process and improve efficiency and capacity.

The diagnostic hub was a 'one-stop shop' in patients' local communities, providing a convenient way for them to access diagnostic eye care without travelling into central London. Patients have a series of high-tech eye tests within 45 minutes of arrival. Each patient's results are reviewed online by clinicians, and patients then receive a letter informing them of the outcome. Some are offered a video or phone appointment to discuss results. Patients only need to attend a follow-up appointment if the tests identify an issue requiring urgent or in-person attention. A significant number are safely discharged without needing further follow-up appointments in hospital.

Moorfield has now launched three diagnostic hubs, which are part of the NHS England pathway. The hubs reduce the time patients spend in hospital, how long they wait for diagnosis, and their travel time to hospital. The hospital has consequently increased capacity and reduced waiting times for face-to-face appointments. Other community diagnostic centres are now tackling waiting lists across the country.

Alert system for major findings on radiology[49]

Recognition of the importance of incidental findings on scans and the significant risk posed to patients by inadequate alerting systems has increased. There is also a high risk of communication errors in emergency departments due to high patient volume and complex workflow.

Various national organisations, including the Parliamentary and Health Service Ombudsman, National Patient Safety Agency and Royal College of Radiologists have highlighted these risks and made best practice recommendations to prevent serious patient harm. A common theme in these is to have a robust integrated digital solution to alerting clinicians about significant critical findings on X-rays and scans in a timely fashion.

Leeds Teaching Hospitals Trust has developed and implemented a new alerts system to report significant unexpected findings on radiology imaging examinations.

The reporting system is built into the trust's electronic health record, PPM+, which was developed by a dedicated in-house team. One of the first areas of development was the preparation and testing of a solution for clinical colleagues to enter hashtags, which have become standard practice and are universally used in reporting of suspicious findings. Clinical teams are automatically notified to review findings and ensure appropriate steps are followed.

Comprehensive training, including eLearning and supporting guides, was provided to all colleagues, with dedicated support during the initial go-live period.

Features and functionality constantly evolve, prioritised by clinical colleagues who use the system every day.

The new system supports patient safety, improves reporting workflow and provides assurance of robust, clear communication.

Transformative pathway to reduce waiting lists[50]

Pressure on 2-week wait diagnostic breast cancer services has increased. Approximately 20% of 2-week wait referrals to the secondary care diagnostic breast clinics in East Midlands Cancer Alliance had breast pain as their sole symptom. However, breast pain only is not a symptom of breast cancer in recent NHS England guidance, which recommends that these patients are not referred on a 2-week wait pathway.

Dedicated primary care/community-based specialist breast pain clinics were established in East Midlands. The aim was to enable patients solely with breast pain to safely access alternative, more appropriate local care, with reassurance that breast pain alone is not a symptom associated with cancer, alongside thorough clinical examination and family history risk assessment.

Breast Surgeons at Royal Derby Hospital, with regional and national support, developed a breast cancer risk assessment software, which was validated in a clinical trial, to support a mastalgia pathway. The pathway was piloted in a population of one million.

The aims were to:

- see patients in an appropriate setting without over-medicalisation
- reduce new 2-week wait referrals
- not perform breast imaging inappropriately in these patients
- Identify women at increased risk of breast cancer due to family history.

The community breast pain clinics reduced the number of patients with breast pain requiring onward referral to secondary care diagnostic breast clinics to only 3%. The pathway has improved patient care, with high levels of patient satisfaction. It has also enabled system-wide improvements in primary, secondary and tertiary care by empowering primary care to provide effective gatekeeping services and releasing urgently required capacity within secondary care.

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Data Centre

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

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Data centre

Welcome to the data centre, which contains all of the data analysis charts and information. Use the menu on the left to explore different lung cancer diagnoses, age groups and other factors such as deprivation and ethnicity.

The data analysis is in three major categories:

National

England data for patients who received an initial diagnosis of lung cancer between 2020/21–2023/24.

Cancer Alliance

An analysis of England's 21 Cancer Alliances:

- **National comparison:** Showing all 21 Cancer Alliances side by side.
- **Individual Cancer Alliance:** Further details about each organisation.

ICB

A comparison of the 42 integrated care boards (ICBs) in England.

About this data analysis

This study presents actual, non-adjusted figures taken from the English Hospital Episode Statistics (HES) database[19] produced by NHS England. It represents actual patients admitted to NHS hospitals in England over the specified study period. HES data is suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. The HES disclaimer is available in the appendix. All statistical analysis has been performed within specific, geographically defined areas: nationally, by Cancer Alliance or by ICB.

Analyses of referral source and waiting times for chest X-ray were also done using the Diagnostic Imaging Dataset (DIDS)[21]. This is a central collection of detailed information about diagnostic imaging tests carried out on NHS patients. For the purposes of this study, DIDS data have been linked to HES to identify their initial referral source for suspected lung cancer. DIDS data are available for 2021/22 and 2022/23 only. The fiscal year assigned is based on the date of hospital presentation with lung cancer in HES.

In this analysis, rounded patient numbers are used and numbers presented may vary slightly between sections due to rounding and where figures are presented at different decimal points.

See the full data analysis methods.

Lung cancer diagnoses

- DNM, de-novo metastases
- NM, non-metastatic

Age groups

40–54 years
pre target lung health check (TLHC)

55–74 years
eligible for TLHC

≥75 years post-TLHC

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

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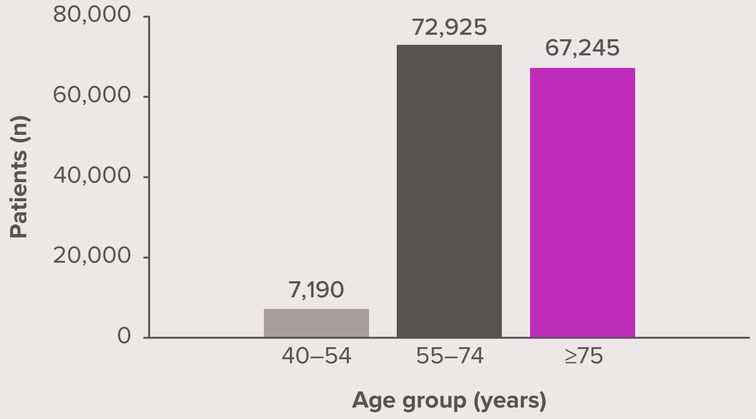
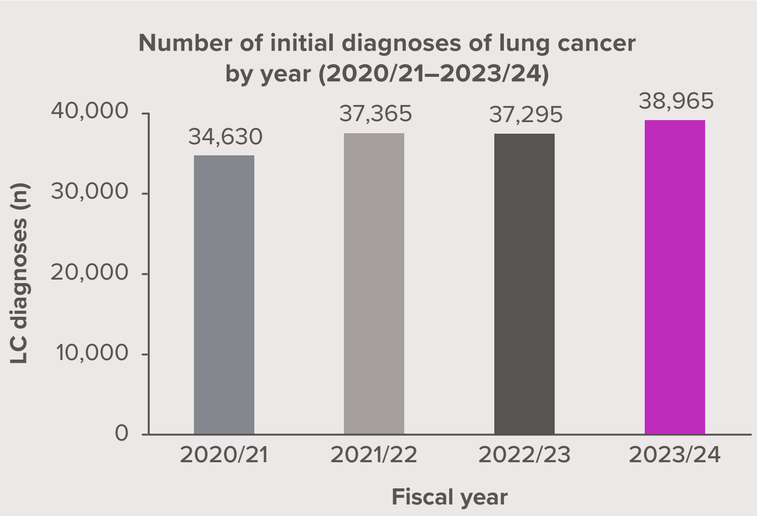
National data (2020/21–2023/24)

- During the four-year study, a total of 148,255 people aged ≥18 years in England received an initial diagnosis of lung cancer (LC). The incidence was highest in those aged ≥55 years.
- Due to suppression for the small numbers at younger ages, this report focuses on patients aged 40–54 years (n=7,190), 55–74 years (n=72,925) and ≥75 years (n=67,245).
- The number of diagnoses has shown a trend to increase since 2020.

Targeted lung health checks

The targeted lung health check (TLHC) programme – a national scheme that identifies people aged 55–74 years at increased risk of lung cancer – started in 2019.[6,16] In June 2023, the Department of Health and Social Care announced that TLHCs would be the basis for a national targeted lung cancer screening programme.[17] The programme is rapidly expanding across England to reach everyone who is eligible and has now sent over one million invites and detected over 3,000 lung cancers, over 74% at an early stage when lung cancer is more treatable.[40]





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Other

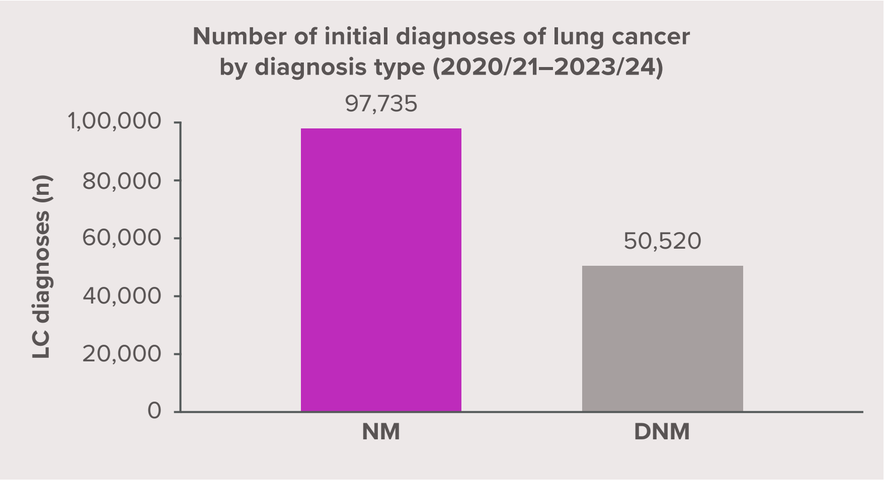
Referral source | Chest X-ray wait time | PET scan

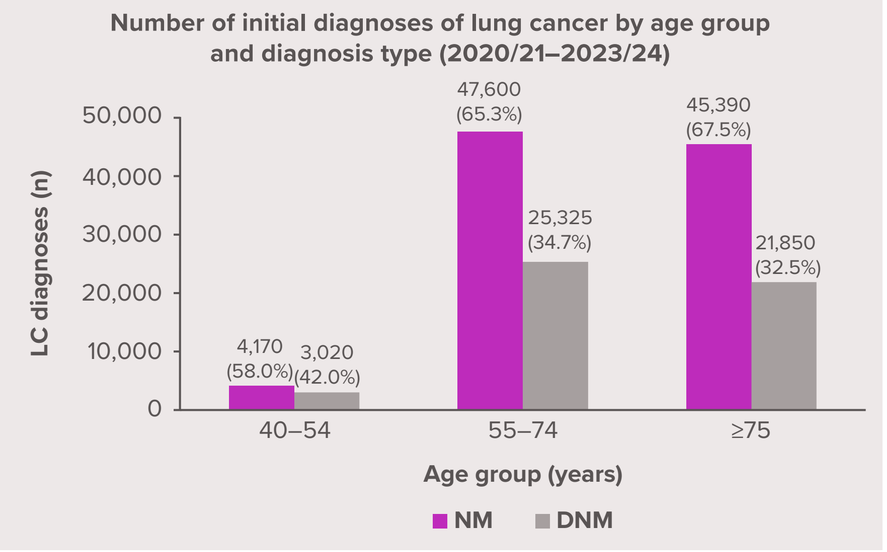
Cancer stage at diagnosis

1 The majority of initial diagnoses of lung cancers were non-metastatic (NM, stages 1–3). However, 50,520 had already metastasised by the time of initial diagnosis.

2 For people aged 55–74 years and ≥75 years, about one third of lung cancer diagnoses had already metastasised at the time of initial diagnosis.

3 For younger patients aged 40–54 years, a much higher proportion of patients were diagnosed with de-novo metastatic disease.





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Other

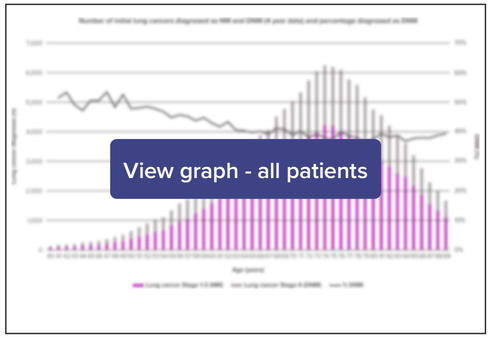
Referral source | Chest X-ray wait time | PET scan

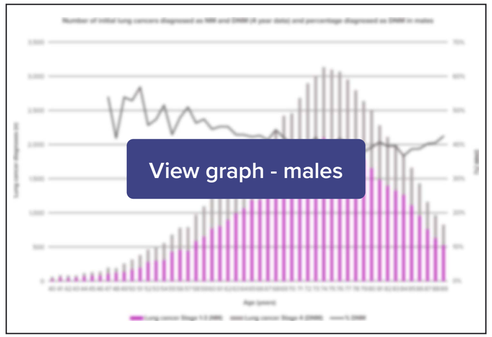
Lung cancer diagnoses by age

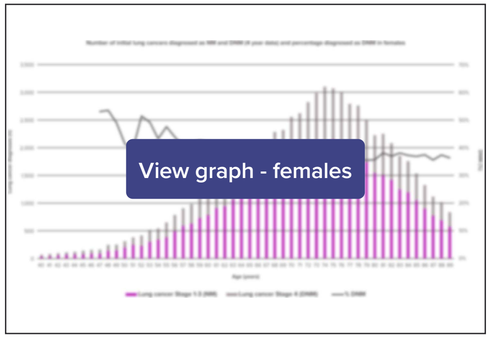
Broken down by individual age from **40** years, the data show a gradual increase in the overall number of **lung cancer diagnoses** to the age of **75** years, followed by a gradual reduction.

The **percentage of diagnoses of DNM** has large fluctuations up to the age of **51** years, when it shows an overall trend to decrease, with smaller fluctuations, up to the age of **84** years, when it shows a small trend to increase.

The **trends for both sexes are similar**, although females tend to have a slightly lower percentage of DNM overall and the trend to decrease in women continues past age **84** years but increases in men.







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Lung cancer diagnosis in England in 2024: can we do better?

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All types | NM | DNM | Suspected lung cancer

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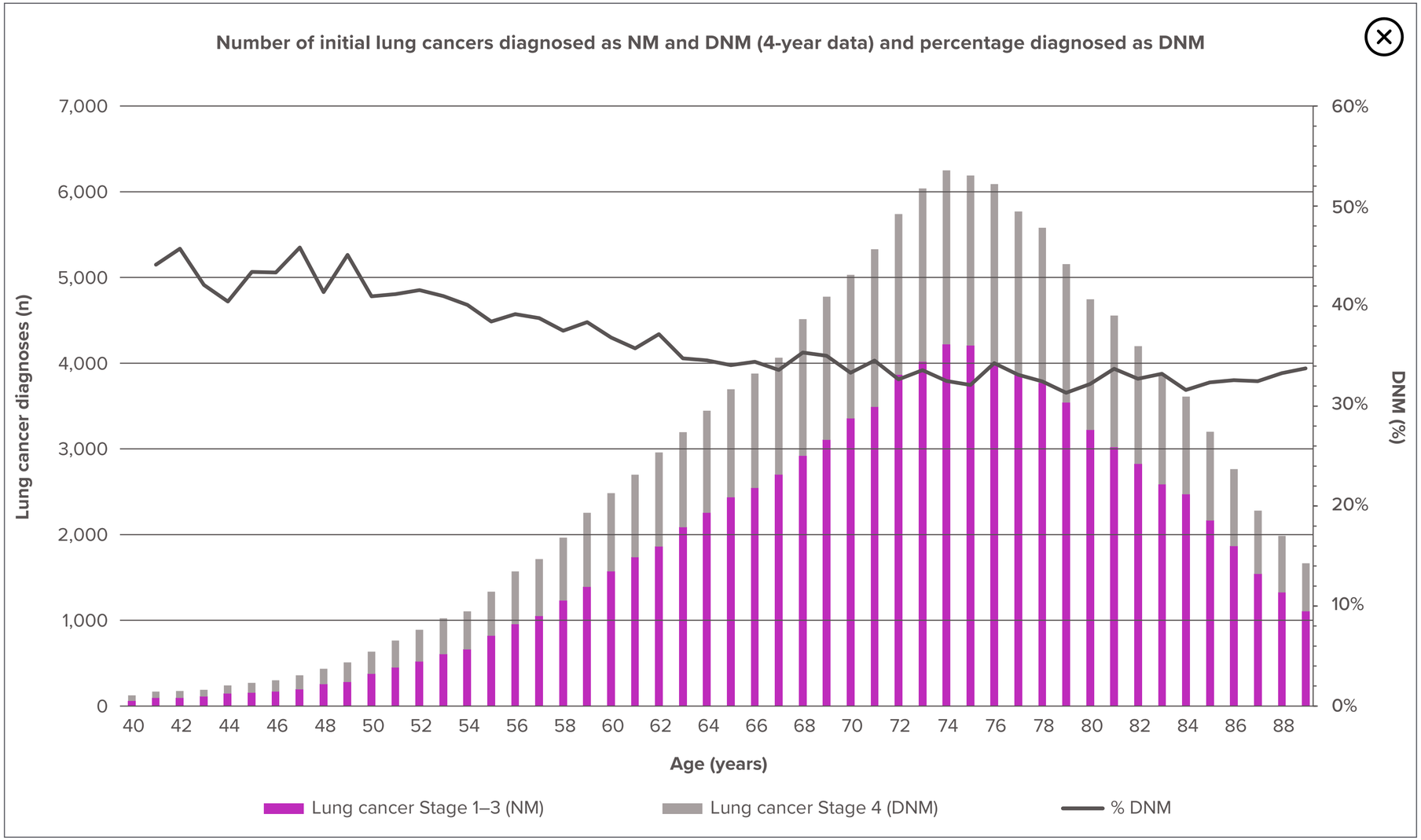
Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan



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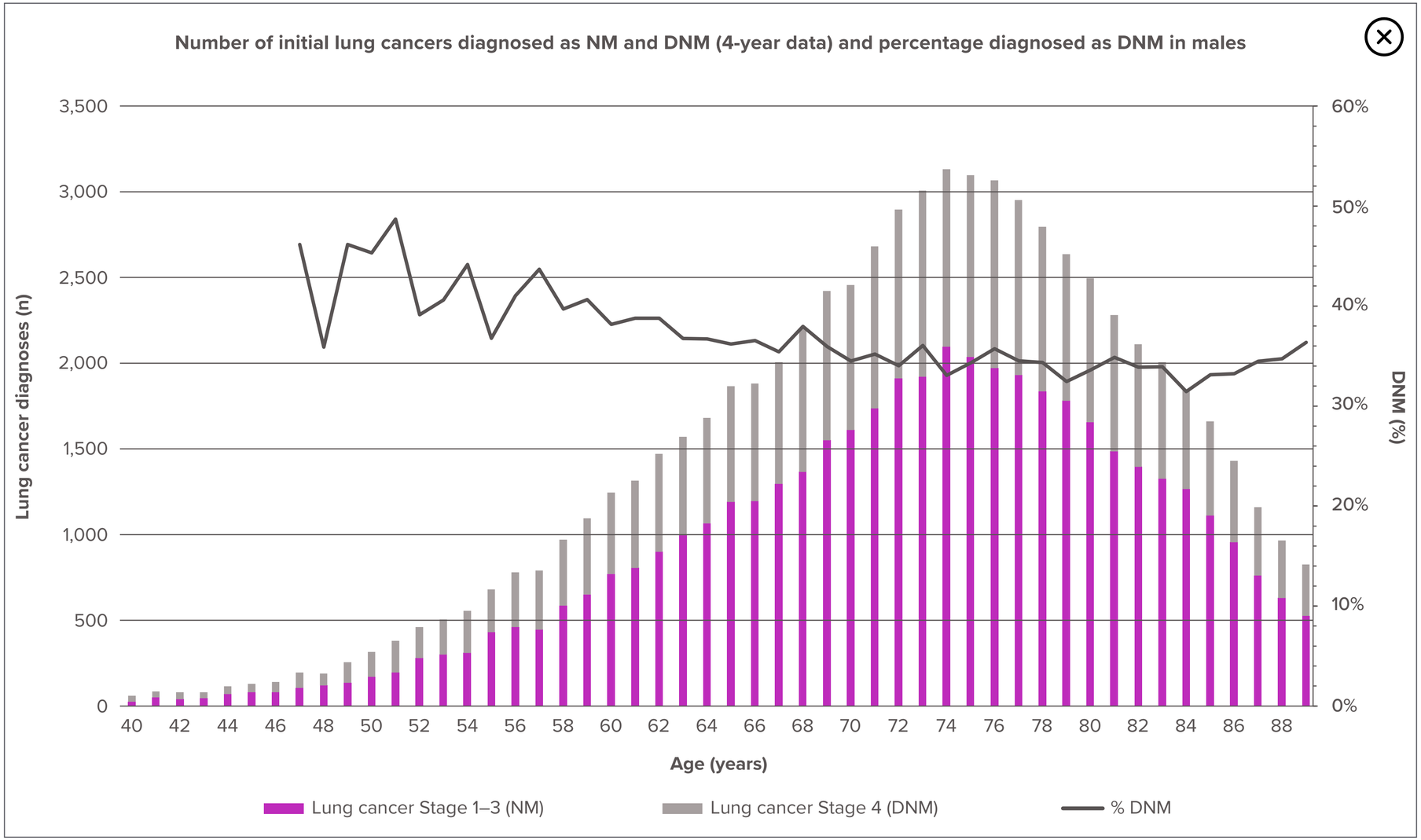

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Deprivation | Ethnicity | Mental health | Urbanicity

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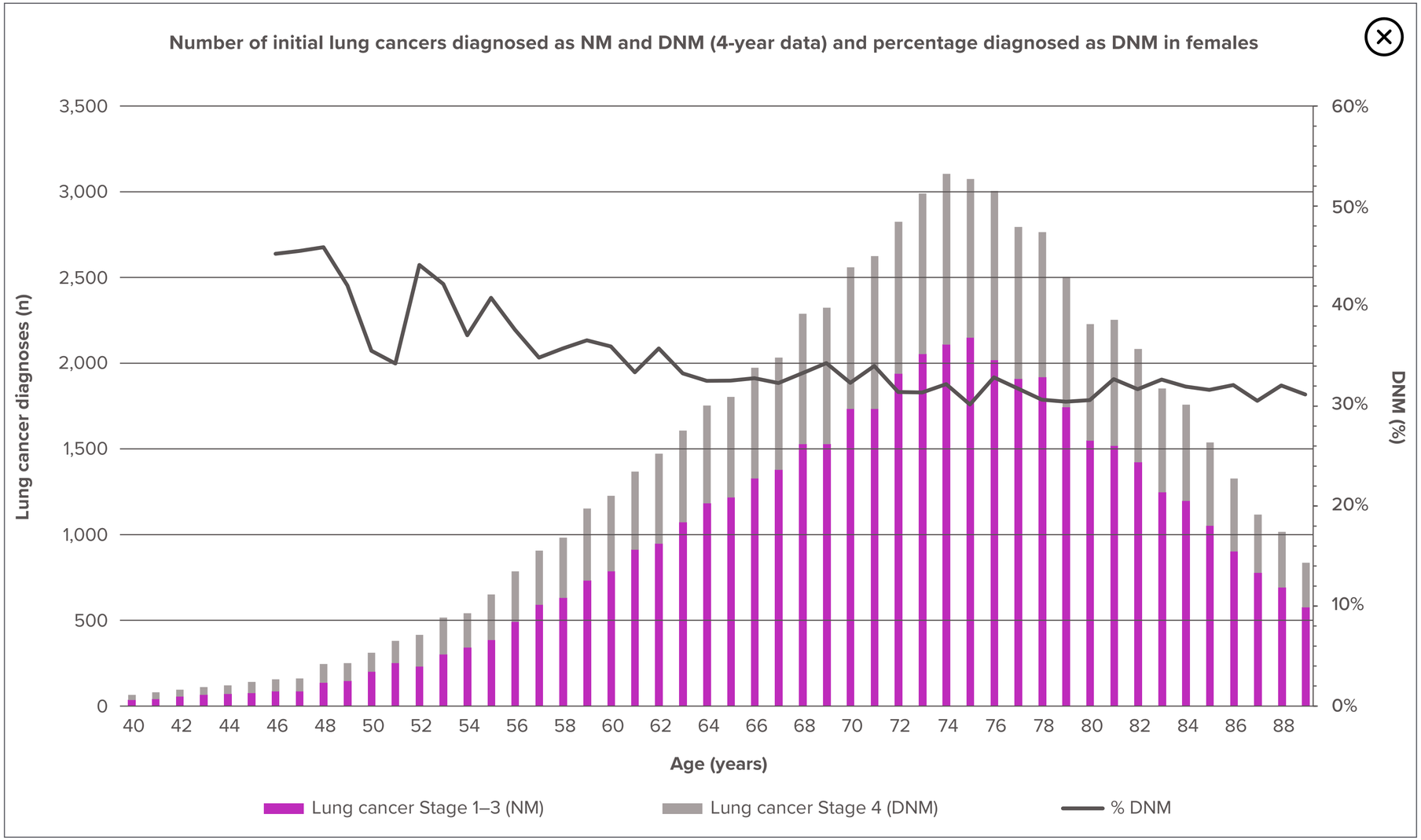

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Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

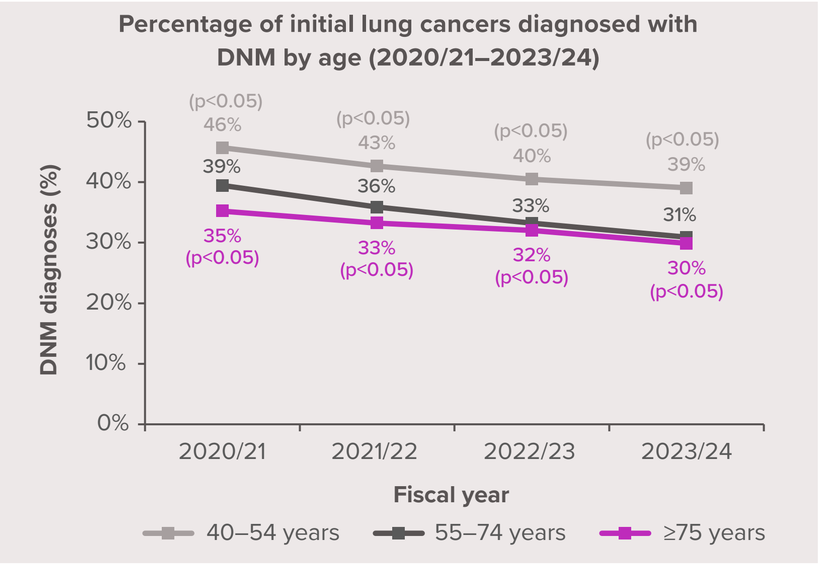
Other

Referral source | Chest X-ray wait time | PET scan

De-novo metastatic (DNM) by age

- Numbers for patients aged <40 years were very small and not shown.
- Throughout the study period, people aged 40–54 years were most likely to be diagnosed as DNM and people aged ≥75 years were least likely to be diagnosed with DNM.
- Between 2020/21 and 2023/24 the proportions diagnosed as DNM decreased steadily in all age groups.

As the proportion of patients with DNM decreases, the proportion of patients with NM increases. This is a positive step forward, as survival is better the earlier lung cancer is diagnosed.



p-values represent significant testing against the 55–74 year old age group.

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

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Other

Referral source | Chest X-ray wait time | PET scan

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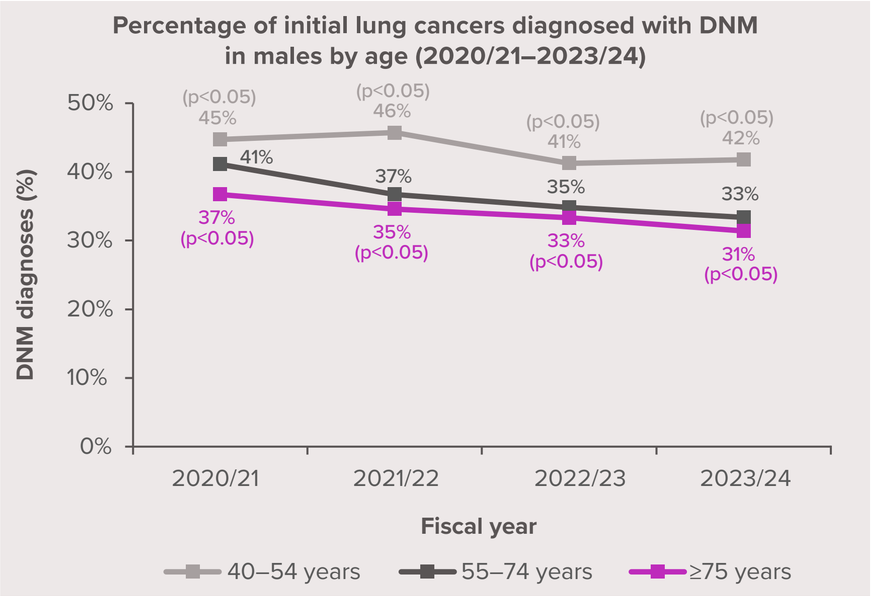
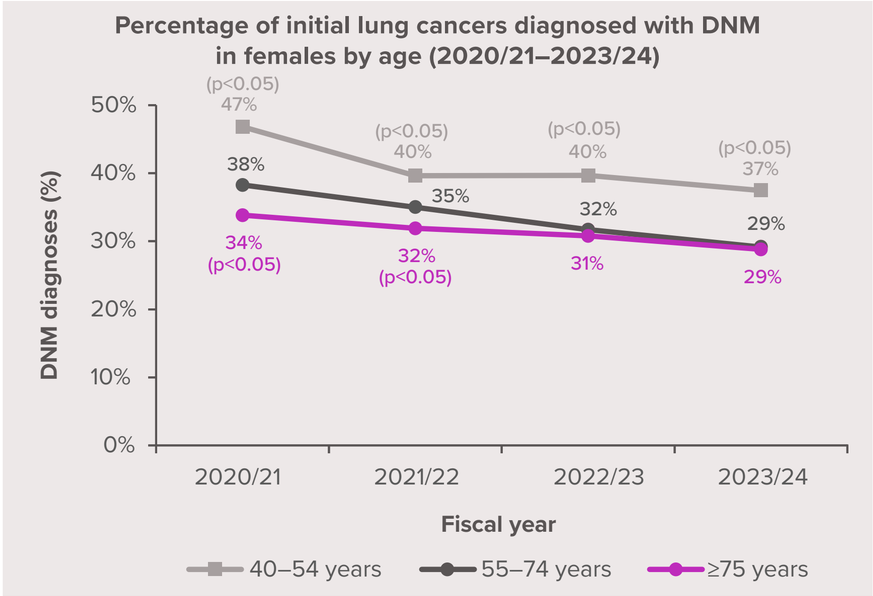
DNM by age (males)

- Throughout the study period, males aged 40–54 years were significantly more likely to be diagnosed with DNM and males aged ≥75 years were significantly less likely to be diagnosed with DNM compared to other age groups.
- Between 2020/21 and 2023/24 the proportions diagnosed with DNM decreased steadily in men aged 55–74 years and ≥75 years; however, in men aged 40–54 years, slight increases were seen in 2021/22 and 2023/24.

DNM by age (females)

- Throughout the study period, females aged 40–54 years were most likely to be diagnosed with DNM and females aged ≥75 years were least likely to be diagnosed with DNM compared to other age groups. These differences were significant throughout the study period for females aged 40–54 years and in 2020/21 and 2021/22 for females aged ≥75 years.
- Between 2020/21 and 2023/24 the proportions diagnosed with DNM decreased steadily in women aged 55–74 years.
- The incidence of DNM diagnoses decreased in women aged 40–54 and ≥75 years between 2020/21 and 2021/22 and between 2022/23 and 2023/24 but plateaued between 2021/22 and 2022/23.





p-values represent significant testing against the 55–74 year old age group.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

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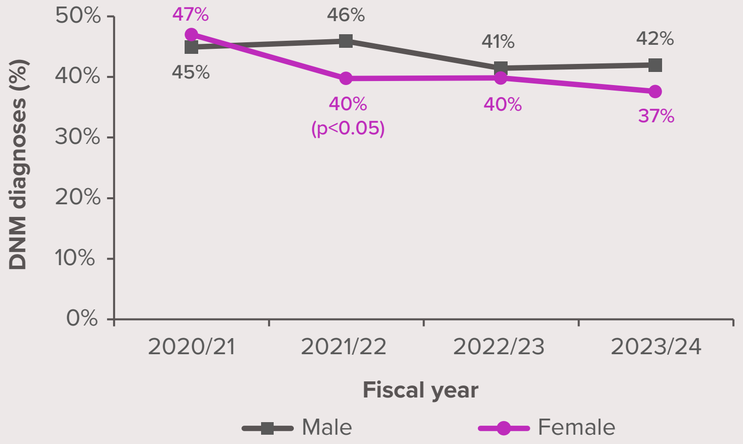
DNM by sex and age

- During 2020/21, females aged 40–54 years were more likely to be diagnosed with DNM than males. Throughout the rest of the 4-year analysis period, females were less likely to be diagnosed with DNM than males; this difference was statistically significant only in 2021/22.
- Throughout the 4-year analysis period, females aged 55–74 and ≥75 years were significantly less likely to be diagnosed with DNM than males.
  - The difference narrowed in 2021/22 for those aged 55–74 years but grew wider through 2022/23 and 2023/24.
  - The difference for those aged ≥75 years was relatively consistent throughout the study period.

Percentage of initial lung cancers diagnosed with DNM in males and females aged 40–54 years (2020/21–2023/24)



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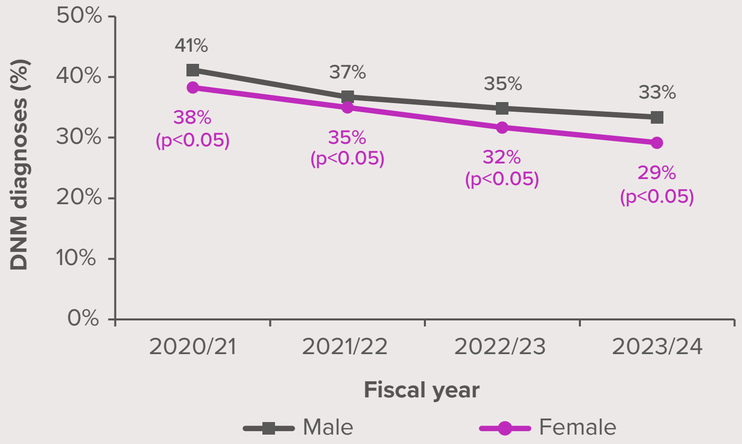
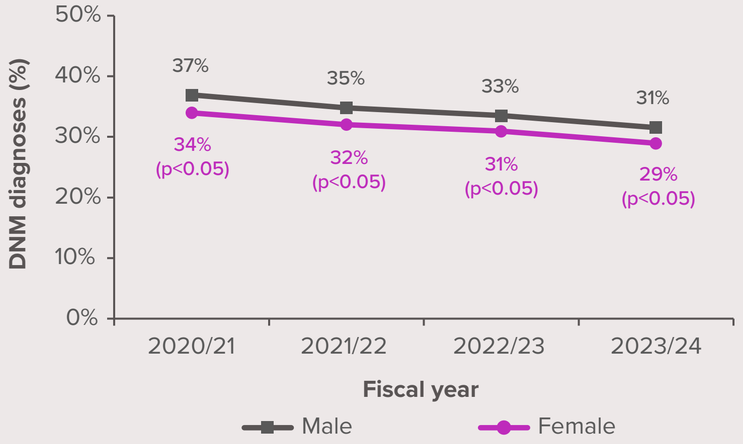


Percentage of initial lung cancers diagnosed with DNM in males and females aged ≥75 years (2020/21–2023/24)



p-values represent significance testing between the two different variables.

Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

Sex
Both sexes | Male | Female

Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

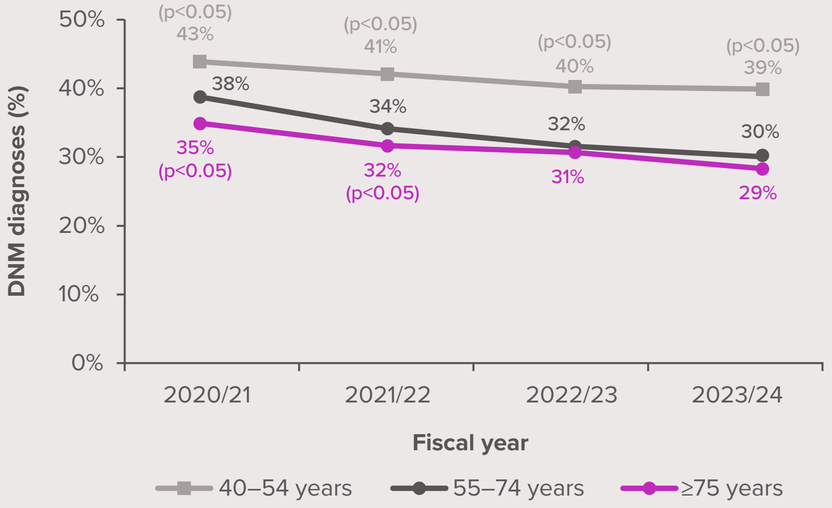
Other
Referral source | Chest X-ray wait time | PET scan

DNM by deprivation (quintile by age)

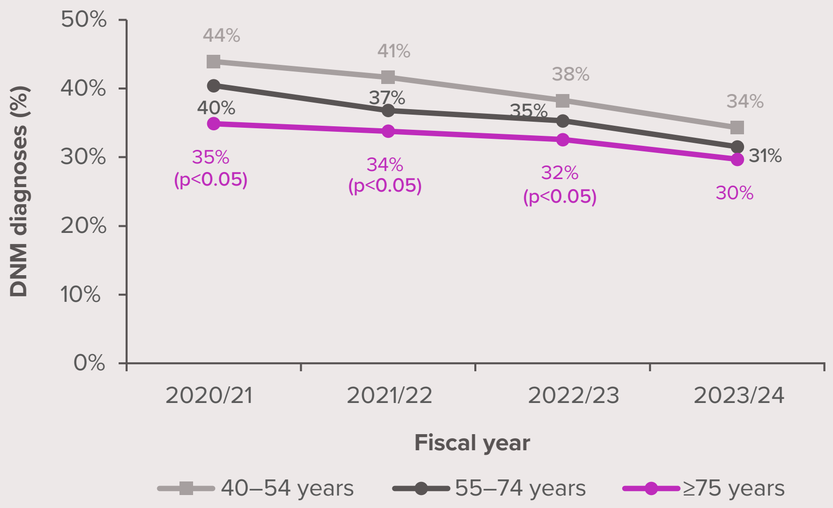
- Patients aged 40–54 years in least and most deprived areas were most likely to be diagnosed with DNM. These differences were statistically significant at all timepoints for patients in most deprived areas compared to 55–74 year olds, but not at any timepoint for those in least deprived areas.
- Patients aged ≥75 years in both areas were least likely to be diagnosed with DNM; these differences were significant for most deprived areas in 2020/21 and 2021/22 and for least deprived areas in 2020/21, 2021/22 and 2022/23, compared to 55–74 year olds.
- In 2022/23, there was only a small difference in the proportion of patients aged 55–74 years and those aged ≥75 years diagnosed with DNM in most deprived areas; the difference was similar in both quintiles throughout the rest of the study period.
- There was a downward trend in the percentage of patients diagnosed with DNM in all age groups in both quintiles across the study period.
- In the most deprived quintile, the proportion of DNM diagnoses plateaued somewhat in patients aged 40–54 years between 2022/23 and 2023/24 and in patients aged ≥75 years between 2021/22 and 2022/23.

The incidence of DNM for the four years combined was higher in patients from most deprived areas (n=12,730) than those from least deprived quintiles (n=7,795).

Percentage of initial lung cancers diagnosed with DNM in most deprived areas by age (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in least deprived areas by age (2020/21–2023/24)



p-values represent significant testing against the 55–74 year old age group.

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

Sex
Both sexes | Male | Female

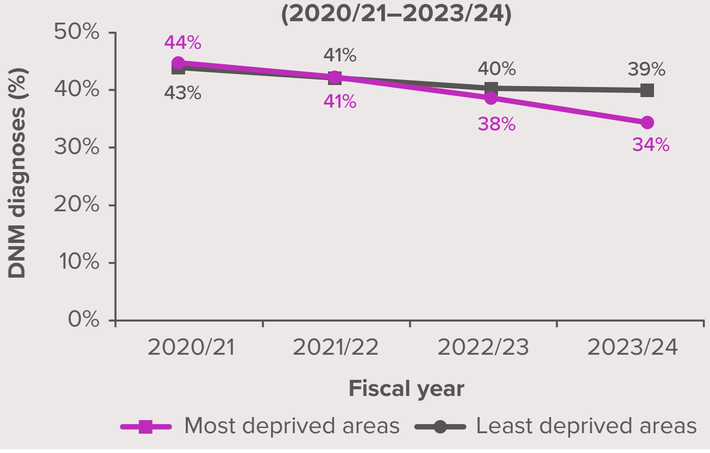
Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

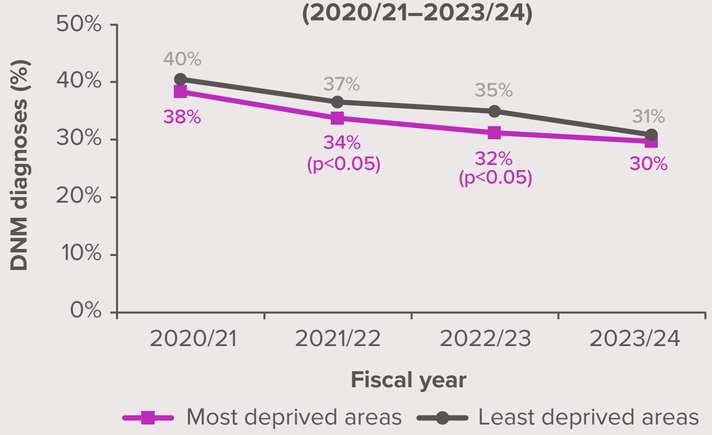
DNM by deprivation (age by quintile)

- The proportion of patients aged 40–54 years diagnosed with DNM was higher in least deprived areas than most deprived areas in 2020/21, identical in both quintiles in 2021/22 and increasingly lower in least deprived areas than most deprived areas in 2022/23 and 2023/24. At no point was this statistically significant.
- Patients aged 55–74 years in least deprived areas were more likely to be diagnosed with DNM than those in most deprived areas at all timepoints; the difference was statistically significant in 2021/22 and 2022/23.
- The proportion of patients aged ≥75 years diagnosed with DNM was identical for the quintiles in 2020/21 but higher in those from least deprived areas than most deprived areas at the other timepoints, although the difference was only 1 pp in 2023/24. At no point was this statistically significant.

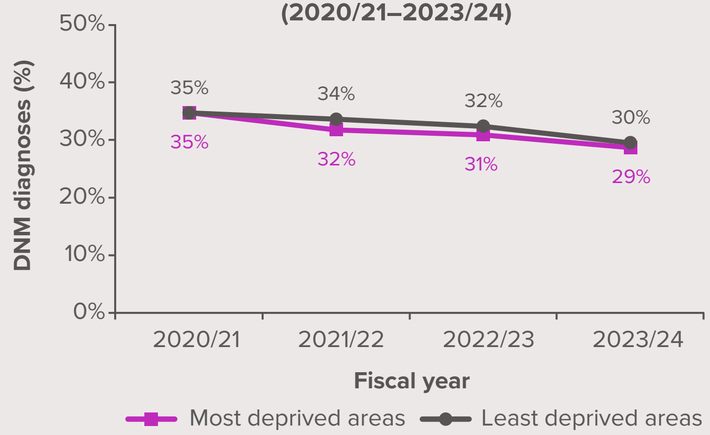
Percentage of initial lung cancers diagnosed with DNM in patients aged 40–54 years by most and least deprived IMD Quintile (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged 55–74 years by most and least deprived IMD Quintile (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged ≥75 years by most and least deprived IMD Quintile (2020/21–2023/24)



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p-values represent significance testing between the two different variables.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

DNM by ethnicity

- Black patients were more likely to be diagnosed with DNM than White British and South Asian patients.
- South Asian patients were slightly less likely to be diagnosed with DNM than White British patients.

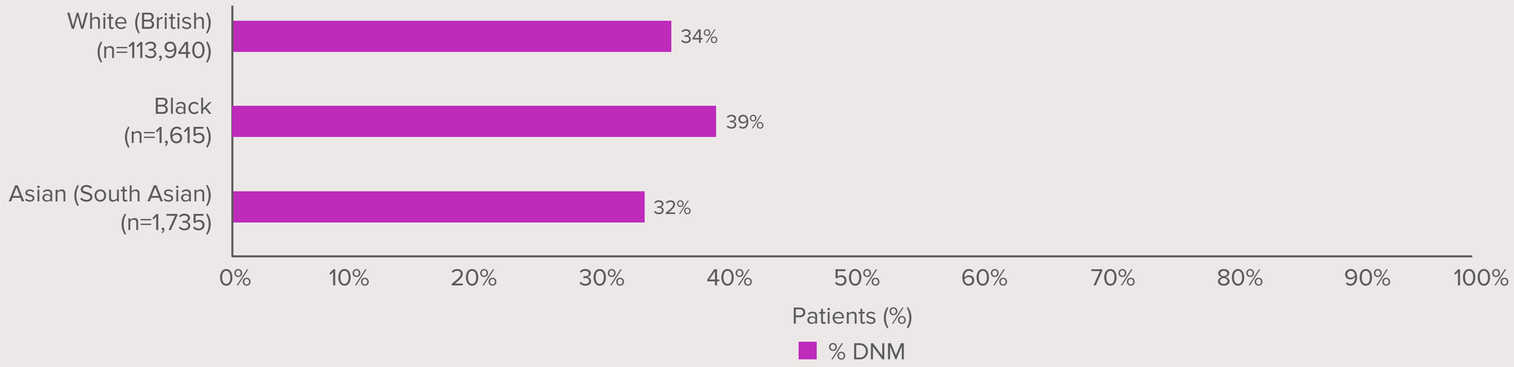
About this analysis

Ethnicity is based on the ethnicity recorded during the patient's first presentation with lung cancer in a hospital inpatient spell or outpatient attendance.

Ethnicities included are "Asian (South Asian)", Black, and "White (British)".

Patient counts were too low to produce line charts by individual year for any patient age group for either NM or DNM due to wide confidence intervals. We therefore present bar charts showing combined data for the four years of the study period.

Percentage of initial lung cancers diagnosed with DNM in all patients by ethnicity (four-year total 2020/21–2023/24)



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See study methods and HES Disclaimer.

Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

Sex
Both sexes | Male | Female

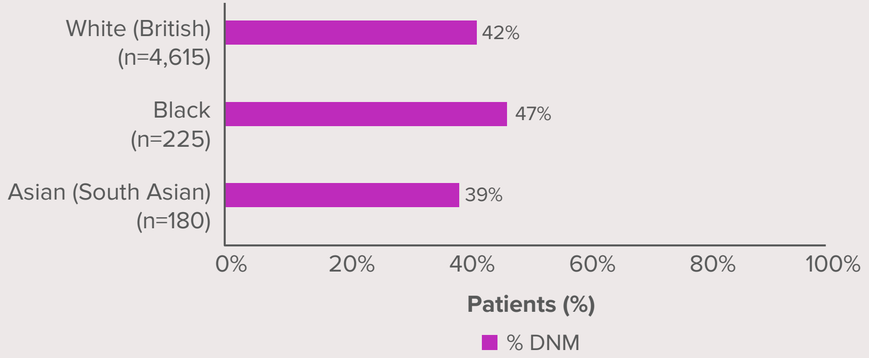
Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

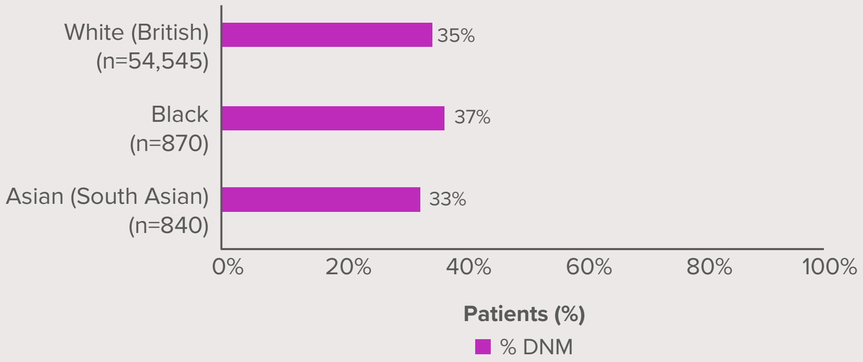
DNM by ethnicity and age

- Among patients aged 40–54 and 55–74 years, Black patients were slightly more likely to be diagnosed with DNM and South Asian patients slightly less likely to be diagnosed with DNM than White British patients.
- Among patients aged ≥75 years, the differences between ethnicities were more pronounced, with Black patients more likely and South Asian patients less likely to be diagnosed with DNM than White British patients. The difference between South Asian and Black patients was 10 pp.

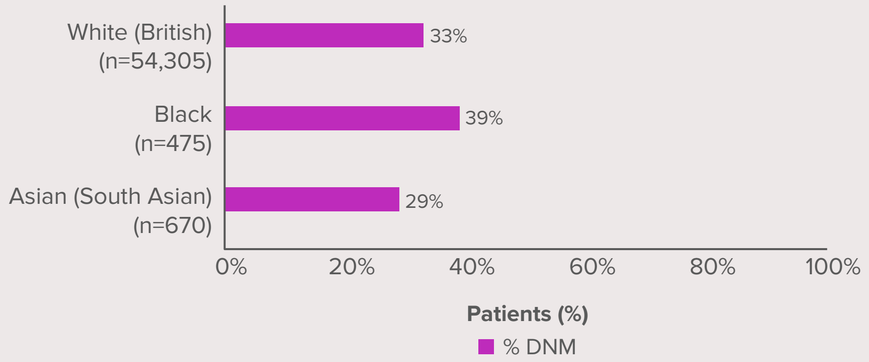
Percentage of initial lung cancers diagnosed with DNM in patients aged 40–54 years by ethnicity (four-year total 2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged 55–74 years by ethnicity (four-year total 2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged ≥75 years by ethnicity (four-year total 2020/21–2023/24)



HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

Sex
Both sexes | Male | Female

Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

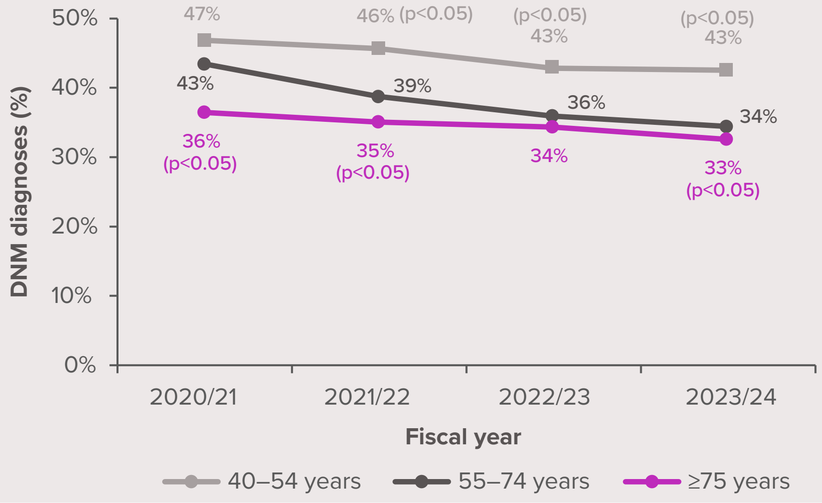
DNM by presence of mental health condition

- Among patients with mental health conditions, patients aged 40–54 years were most likely to be diagnosed with DNM, while patients aged ≥75 years were least likely to be diagnosed with DNM. These differences were significant in 2021/22, 2022/23 and 2023/24 for patients aged 40–54 years and in 2020/21, 2021/22 and 2023/24 for patients aged ≥75 years, when each age group was compared to patients aged 55–74 years.
- Among patients without mental health conditions, patients aged 40–54 years were significantly more likely to be diagnosed with DNM throughout the study period, compared to patients aged 55–74 years. Patients aged ≥75 years were significantly less likely to be diagnosed with DNM in 2020/21 and 2021/22 compared to patients aged 55–74 years, but proportions were similar for those aged 55–74 years in 2022/23 and identical in 2023/24.
- A similar downward trend in the percentage of patients diagnosed with DNM was seen in all age groups for those with and without mental health conditions across the study period.

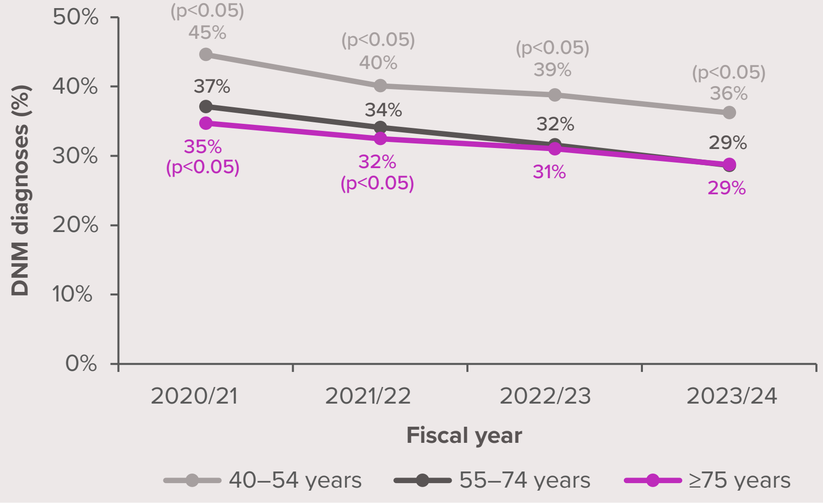
About this analysis

Data were analysed according to whether patients did or did not also have a mental health diagnosis (ICD-10 chapter V[35]) alongside their initial lung cancer diagnosis.

Percentage of initial lung cancers diagnosed with DNM in patients with mental health conditions by age (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients without mental health conditions by age (2020/21–2023/24)



p-values represent significant testing against the 55–74 year old age group.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

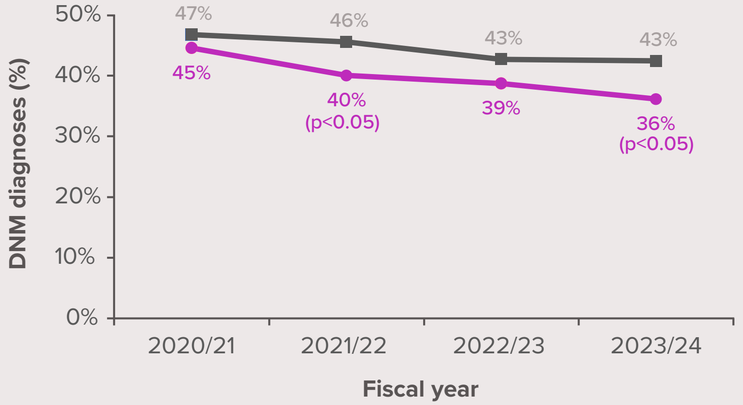
Other

Referral source | Chest X-ray wait time | PET scan

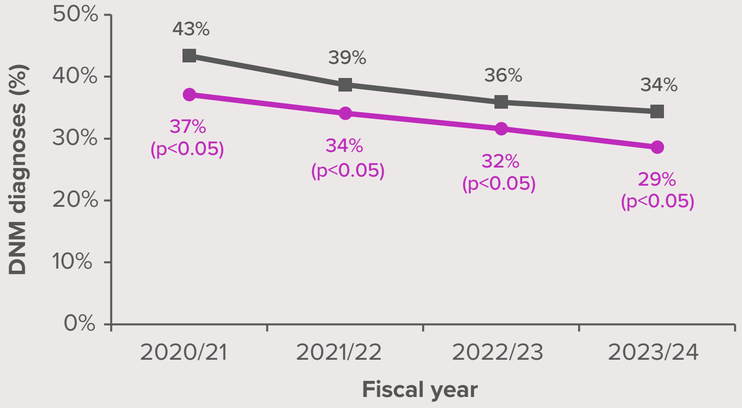
DNM by presence of mental health condition and age

- The proportion of patients diagnosed with DNM was higher for those with mental health diagnoses in all three age groups. These differences were statistically significant for patients aged 40–54 years in 2021/22 and 2023/24 and patients aged 55–74 and ≥75 years at all timepoints.
- There was an overall downward trend in percentage of DNM diagnoses in all age groups for those with and without mental health diagnoses across the four years of the study, but with slight fluctuations for different age groups and mental health status in some years.

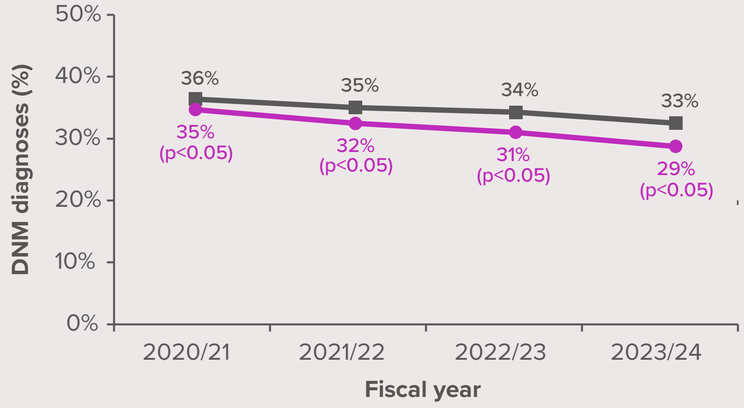
Percentage of initial lung cancers diagnosed with DNM in patients aged 40–54 years by mental health condition (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged 55–74 years by mental health condition (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged ≥75 years by mental health condition (2020/21–2023/24)



With mental health diagnosis | Without mental health diagnosis

p-values represent significance testing between the two different variables.

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Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

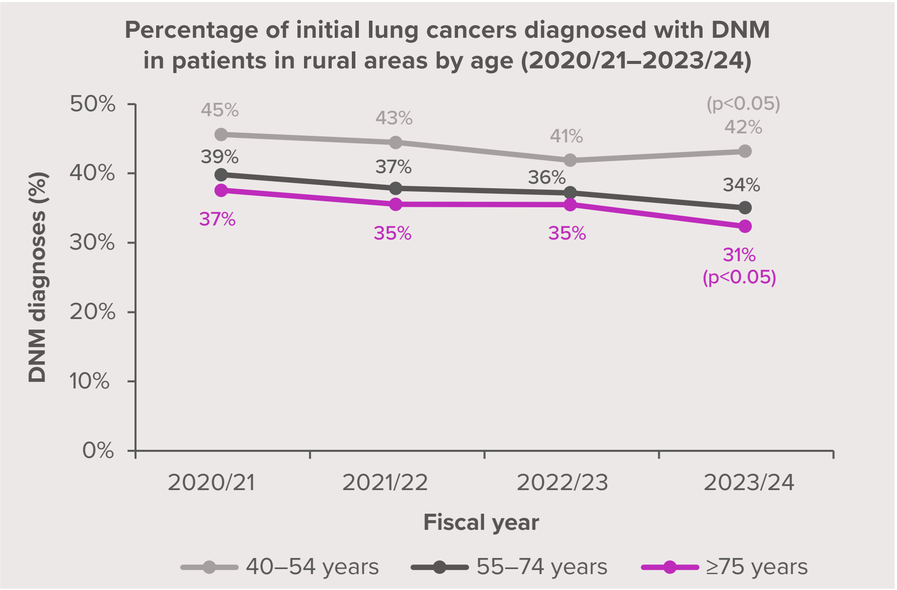
Sex
Both sexes | Male | Female

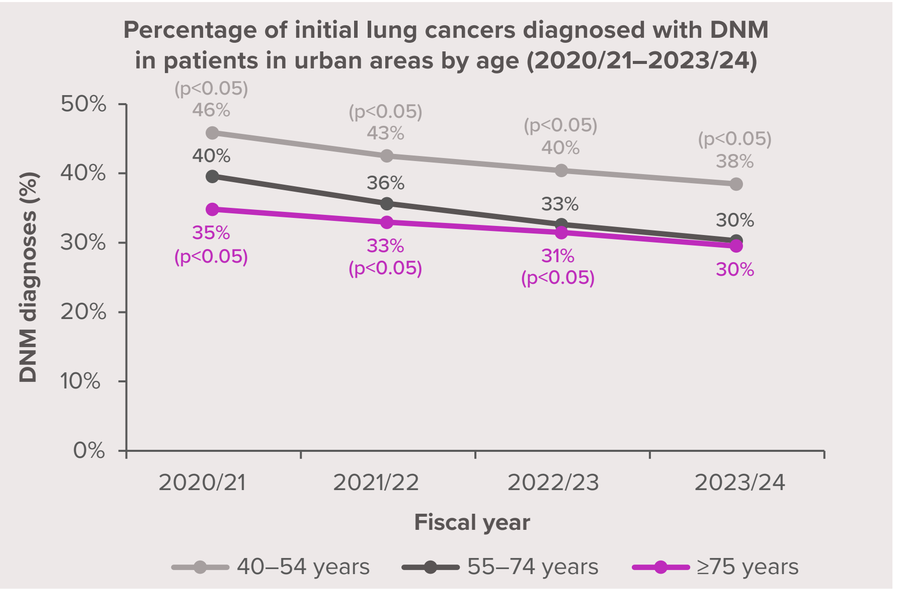
Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

DNM by urbanicity and age

- Patients aged 40–54 years living in rural or urban areas were most likely to be diagnosed with DNM than other age groups. This difference was significant in 2023/24 for patients from rural areas and at all timepoints for those from urban areas.
- Patients aged ≥75 years were least likely to be diagnosed with DNM, except in 2023/24 in urban areas, when percentages were similar or identical to those aged 55–74 years. This difference was significant in 2023/24 for patients from rural areas and in 2020/21, 2021/22 and 2022/23 for those from urban areas.
- A downward trend in the percentage of patients diagnosed with DNM was seen in all age groups for those living in rural or urban areas, except in 2023/24, when the percentage of DNM in patients aged 40–54 years living in rural areas increased slightly.





p-values represent significant testing against the 55–74 year old age group.

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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

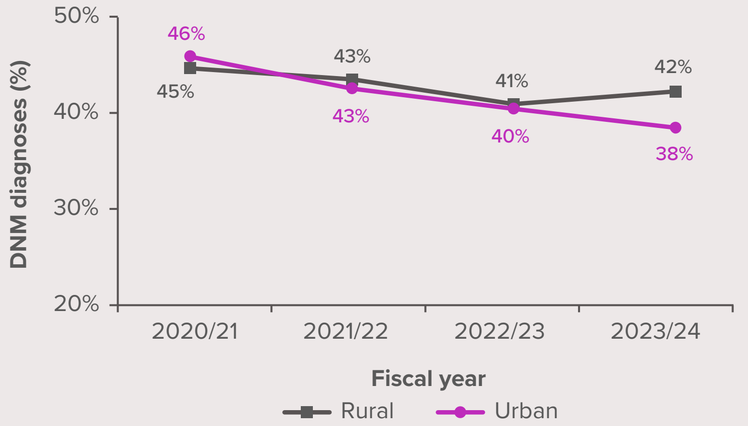
Other

Referral source | Chest X-ray wait time | PET scan

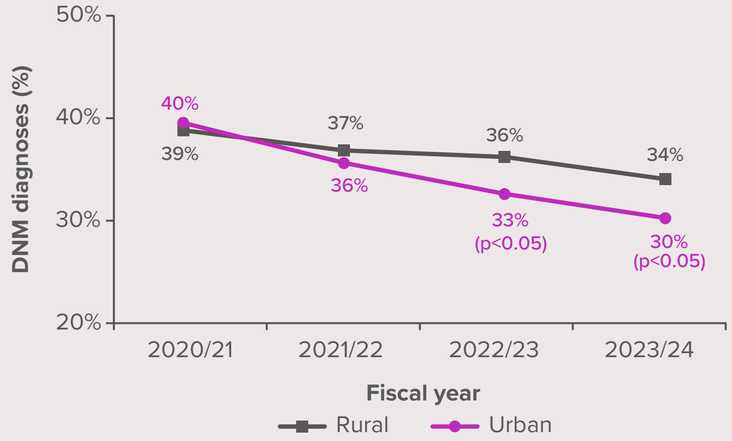
DNM by urbanicity and age

- Patients in all age groups in rural areas were more likely to be diagnosed with DNM than those in urban areas, except in 2020/21 for patients aged 40–54 and 55–74 years old. The difference was significant in 2022/23 and 2023/24 for those aged 55–74 years and ≥75 years.
- A downward trend in the percentage of patients diagnosed with DNM was seen in all age groups in rural and urban areas, except in 2023/24, when the percentage of patients aged 40–54 years living in rural areas increased slightly, and in ages 55–74 and ≥75 years, in whom the percentage plateaued between 2021/22 and 2022/33. The downward trend was more pronounced and consistent for patients in urban areas.

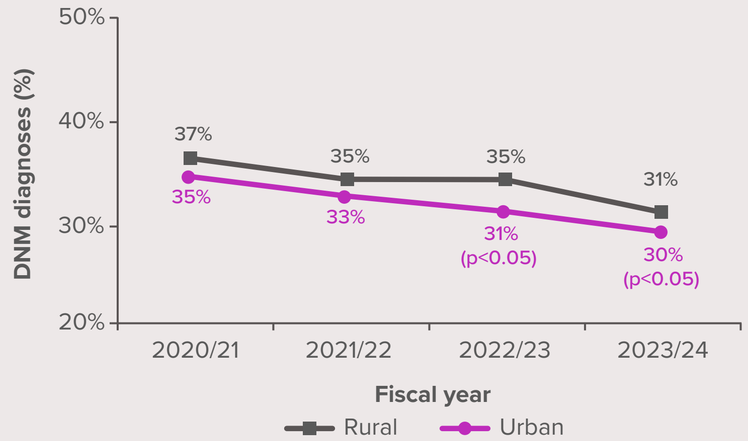
Percentage of initial lung cancers diagnosed with DNM in patients aged 40–54 years by urbanicity (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged 55–74 years by urbanicity (2020/21–2023/24)



Percentage of initial lung cancers diagnosed with DNM in patients aged ≥75 years by urbanicity (2020/21–2023/24)



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See study methods and HES Disclaimer.

p-values represent significance testing between the two different variables.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

DNM by referral source and age

Compared with patients aged 55–74 years:

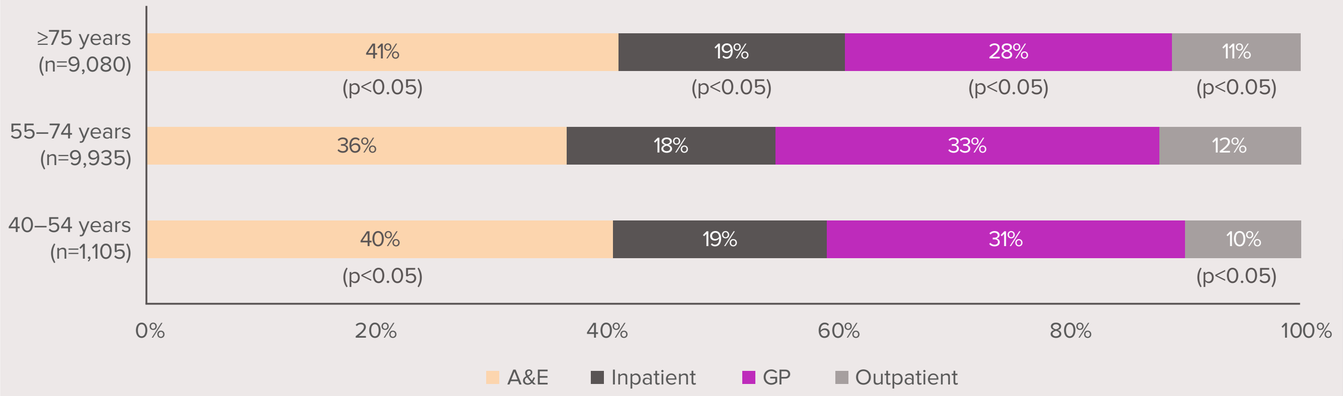
- patients aged 40–54 and ≥75 years were:
  - significantly more likely to be diagnosed via A&E
  - significantly less likely to be diagnosed via outpatients
- patients aged ≥75 years were also:
  - significantly more likely to be diagnosed via inpatients
  - significantly less likely to be diagnosed via a GP.

About this analysis

Data on referrals include patients with valid Diagnostic Imaging Dataset (DIDS) records[21] for suspected LC prior to their first hospital presentation of LC, diagnosed in 2021/22 or 2022/23. Patients were categorised based on referrals across four routes:

- accident and emergency (A&E)
- inpatient
- general practitioner (GP)
- outpatient.

Percentage of DNM diagnoses with referral source by age (2 years total patients diagnosed, 2021/22 and 2022/23)



p-values represent significant testing against the 55–74 year old age group.

Data only include patients with valid DIDS record for suspected LC prior to their first hospital presentation of LC, diagnosed in 2021/22 or 2022/2023 with one of the four referral sources listed. Patient counts are rounded to the nearest multiple of 5, meaning that percentages may not total 100% in categories.

The data show that most patients in all age groups are being diagnosed in A&E, which is concerning.

Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

Sex
Both sexes | Male | Female

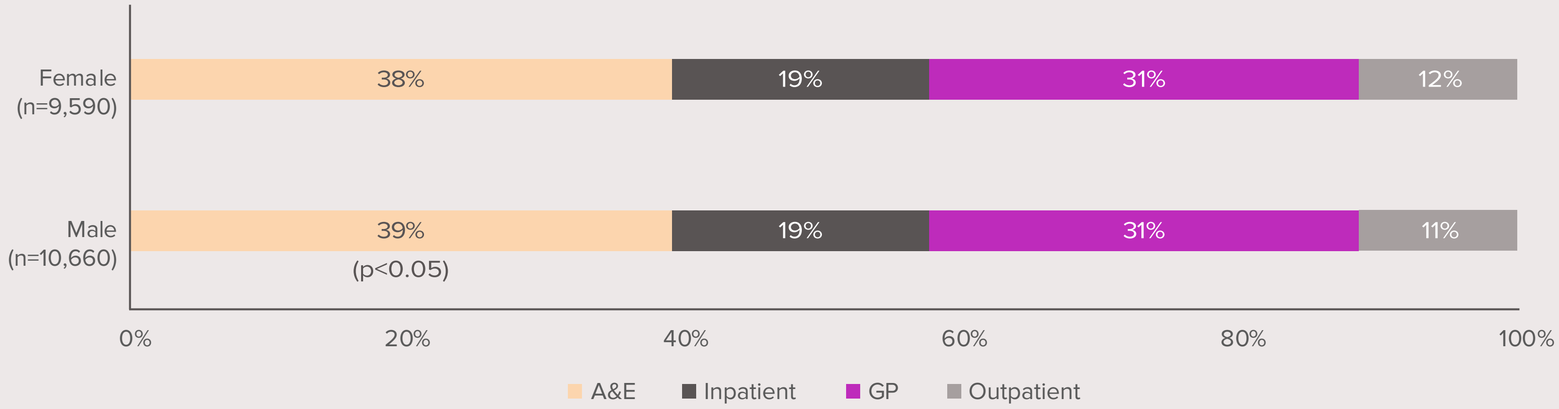
Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

DNM by referral source and sex

- Men were significantly more likely to be diagnosed via A&E than women.
- Percentages referred as inpatients and by GPs were identical for the sexes and only 1 pp higher for women than men via outpatients.

Percentage of DNM diagnoses with referral source by sex (2 years total patients diagnosed, 2021/22 and 2022/23)



p-values represent significance testing between the two different variables.

Data only include patients with valid DIDS record for suspected LC prior to their first hospital presentation of LC, diagnosed in 2021/22 or 2022/2023 with one of the four referral sources listed. Patient counts are rounded to the nearest multiple of 5, meaning that percentages may not total 100% in categories.

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

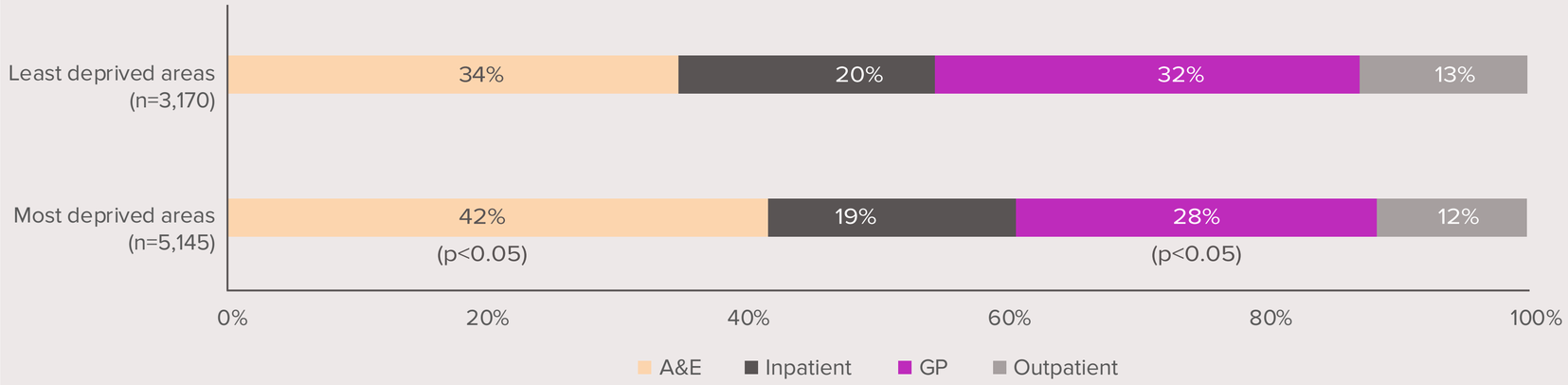
Other

Referral source | Chest X-ray wait time | PET scan

DNM by referral source and deprivation

- Patients in most deprived areas were significantly more likely to be diagnosed via A&E and significantly less likely to be diagnosed via a GP than patients in least deprived areas.
- Differences between quintiles for inpatient and outpatient referrals were not significant.

Percentage of DNM diagnoses with referral source by IMD quintile (2 years total patients diagnosed, 2021/22 and 2022/23)



p-values represent significance testing between the two different variables.

Data only include patients with valid DIDS record for suspected LC prior to their first hospital presentation of LC, diagnosed in 2021/22 or 2022/2023 with one of the four referral sources listed. Patient counts are rounded to the nearest multiple of 5, meaning that percentages may not total 100% in categories.

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Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

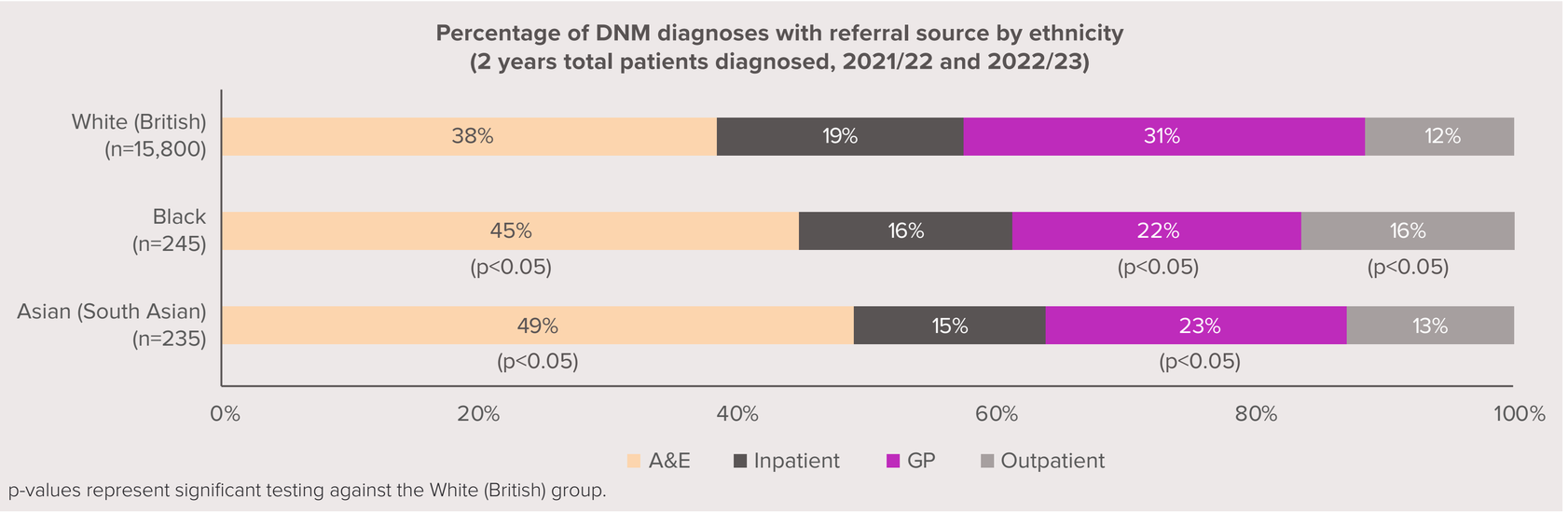
Sex
Both sexes | Male | Female

Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

DNM by referral source and ethnicity

- Patient numbers were much lower for Black and South Asian patients than White British patients, however, they were significantly more likely to be diagnosed via A&E than White (British) patients (7 pp and 11 pp, respectively).
- Black and South Asian patients were significantly less likely to be diagnosed via GP referral than White (British) patients.
- Black patients were also significantly more likely to be diagnosed via outpatients than White (British) patients.
- Other differences between ethnicities were not significant.



p-values represent significant testing against the White (British) group.

Data only include patients with valid DIDS record for suspected LC prior to their first hospital presentation of LC, diagnosed in 2021/22 or 2022/2023 with one of the four referral sources listed. Patient counts are rounded to the nearest multiple of 5, meaning that percentages may not total 100% in categories.

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

Sex
Both sexes | Male | Female

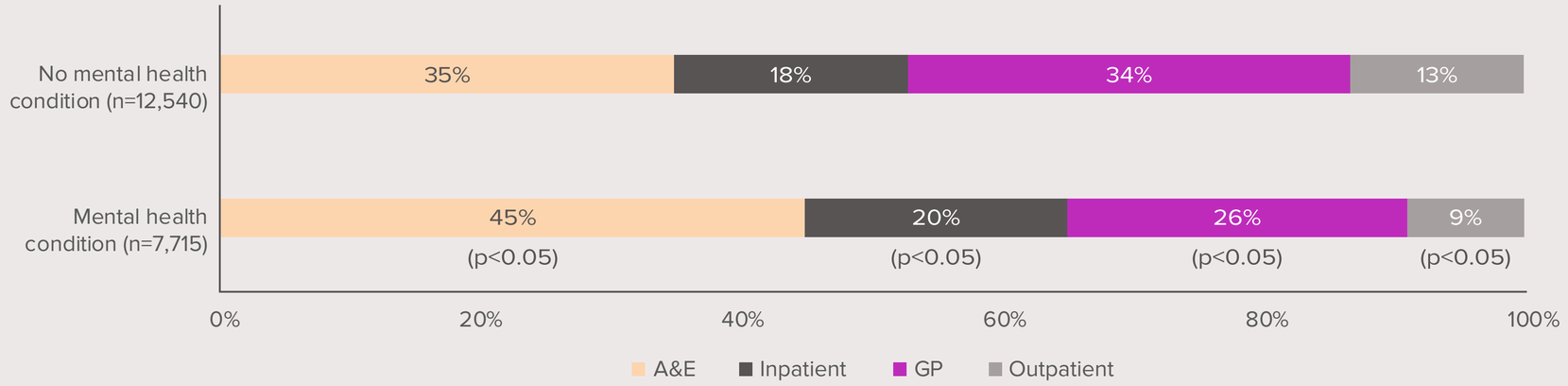
Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

DNM by referral source and presence of mental health conditions

- Patients with a mental health condition were significantly more likely to be diagnosed via A&E and inpatients than those without a mental health condition. The difference for A&E was 10 pp with a high patient count.
- Conversely, patients with a mental health condition were significantly less likely to be diagnosed via outpatients and a GP than those without a mental health condition. The difference for GP referrals was 8 pp.

Percentage of DNM diagnoses with referral source with or without a mental health condition (2 years total patients diagnosed, 2021/22 and 2022/23)



p-values represent significance testing between the two different variables.

Data only include patients with valid DIDS record for suspected LC prior to their first hospital presentation of LC, diagnosed in 2021/22 or 2022/2023 with one of the four referral sources listed. Patient counts are rounded to the nearest multiple of 5, meaning that percentages may not total 100% in categories.

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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

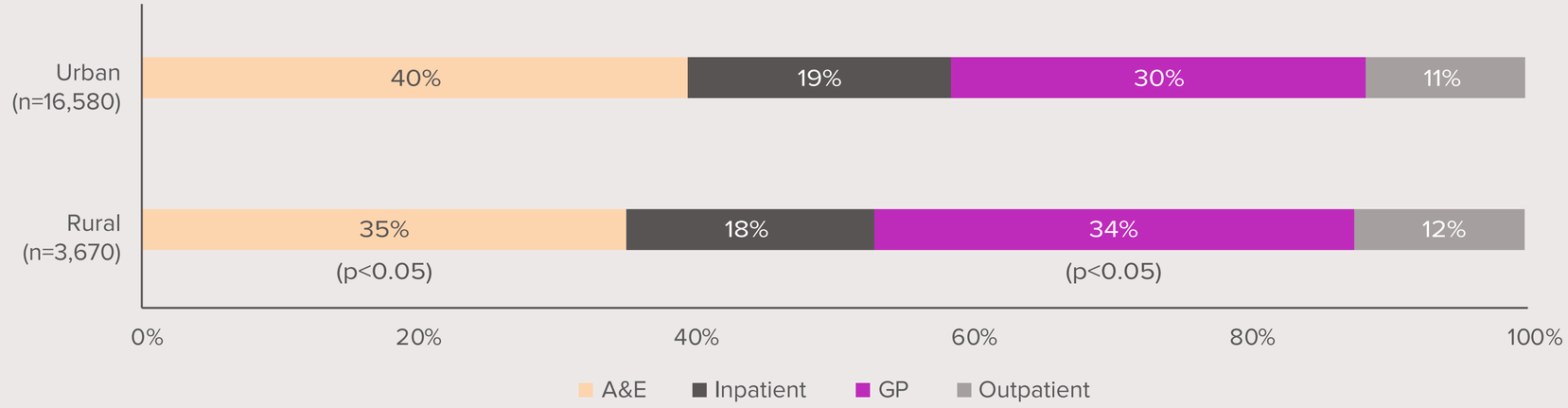
Other

Referral source | Chest X-ray wait time | PET scan

DNM by referral source and urbanicity

- Patients living in urban areas were significantly more likely to be diagnosed via A&E and significantly less likely to be diagnosed via a GP than those living in rural areas.
- Other differences were not significant.

Percentage of DNM diagnoses with referral source by urbanicity (2 years total patients diagnosed, 2021/22 and 2022/23)



p-values represent significance testing between the two different variables.

Data only include patients with valid DIDS record for suspected LC prior to their first hospital presentation of LC, diagnosed in 2021/22 or 2022/2023 with one of the four referral sources listed. Patient counts are rounded to the nearest multiple of 5, meaning that percentages may not total 100% in categories.

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Cancer Alliance data

England data for patients who received an initial diagnosis of lung cancer between 2020/21–2023/24

National comparison

Showing all 21 Cancer Alliances side by side.

Individual Cancer Alliance

Showing individual Cancer Alliances on the map.

About this data analysis

The data present actual, non-adjusted figures taken from the English Hospital Episode Statistics (HES) database[19] produced by NHS England. It represents actual patients admitted to NHS hospitals in England over the specified study period.

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts between 1 and 7 are rounded to the nearest 5.

See the full data analysis methods in the Study methods.
HES Disclaimer.

As calculations of percentages of DNM and NM diagnoses have been made using rounded patient numbers, there may be a small degree of inaccuracy in the presented percentages.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

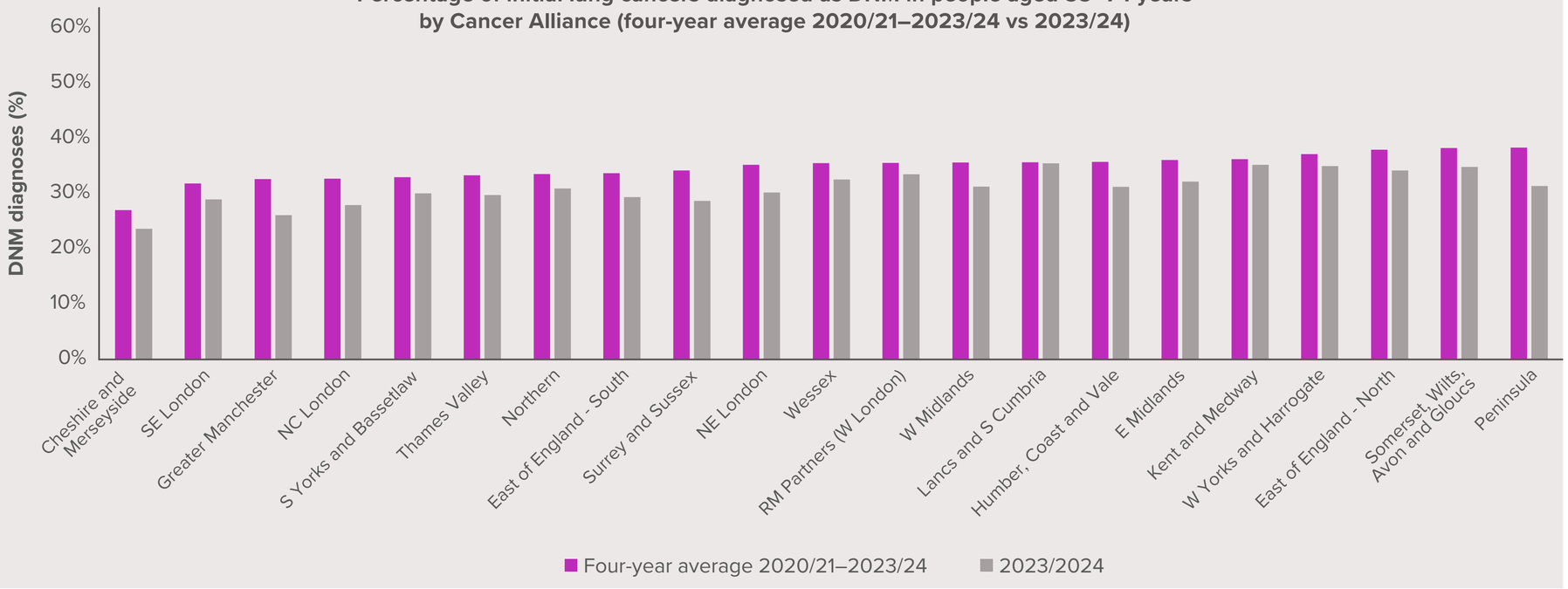
HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

DNM (55–74 years)

In people aged 55–74 years, there was an 11-pp difference in the four-year average (from 2020/21-2023/24) for the best and worst performing Cancer Alliances: Cheshire and Merseyside (27%) and Peninsula, Somerset, Wiltshire, Avon and Gloucestershire, and East of England – North (all 38%).

In 2023/24, 20 of 21 (95%) Cancer Alliances recorded an improvement against their four-year average. Greater Manchester and Peninsula had the biggest reductions (–7 pp). This reduction in Peninsula took it from worst performing Cancer Alliance over the 4-year period to joint 6th with four other Cancer Alliances in 2023/24. Lancashire and South Cumbria recorded no difference from its four-year average.

Percentage of initial lung cancers diagnosed as DNM in people aged 55–74 years by Cancer Alliance (four-year average 2020/21–2023/24 vs 2023/24)



Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

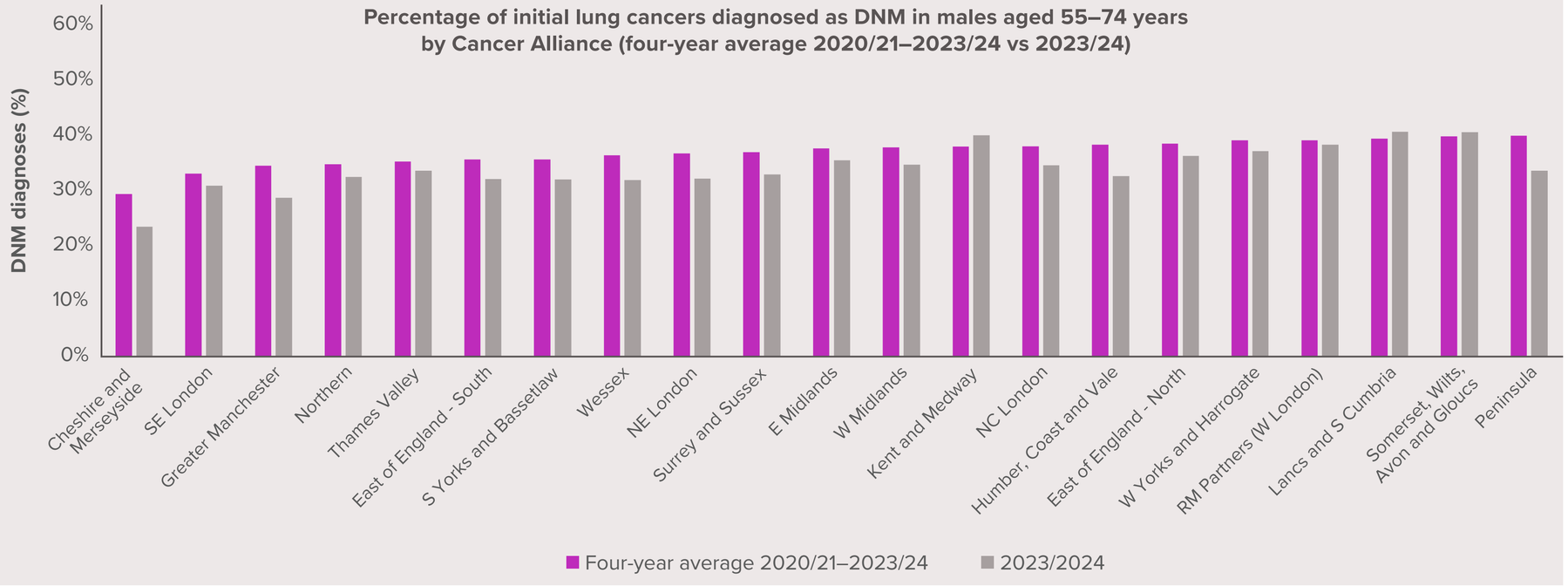
Referral source | Chest X-ray wait time | PET scan

DNM (55–74 years, male)

In men aged 55–74 years, there was an 11-pp difference in the four-year average for the best and worst performing Cancer Alliances: Cheshire and Merseyside (29%) and Peninsula (40%). Cheshire and Merseyside was 4 pp lower than the second best performing Cancer Alliance – South East London, while Peninsula was up to 1 pp higher than the next four worst performing Cancer Alliances – West Yorkshire and Harrogate, RM Partners (West London), Lancashire and South Cumbria, and Somerset, Wiltshire, Avon and Gloucestershire (all 39%).

In 2023/24, 18 of 21 (86%) Cancer Alliances recorded an improvement against their four-year average, while three saw a slight worsening. Cheshire and Merseyside and Peninsula, the best and worst performing Cancer Alliances across the four-year period, respectively, had the biggest improvements (–6 pp), followed by Greater Manchester and Humber, Coast and Vale (–6 pp). The three alliances that recorded a worsening in 2023/24 were Kent and Medway (+2%) and two of the worst performers across the four-year period: Lancashire and South Cumbria and Somerset, Wiltshire, Avon and Gloucestershire (+1 pp).

Percentage of initial lung cancers diagnosed as DNM in males aged 55–74 years by Cancer Alliance (four-year average 2020/21–2023/24 vs 2023/24)



HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | **DNM** | Suspected lung cancer

Age Group

All ages | 40–54 | **55–74** | ≥75

Sex

Both sexes | Male | **Female**

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

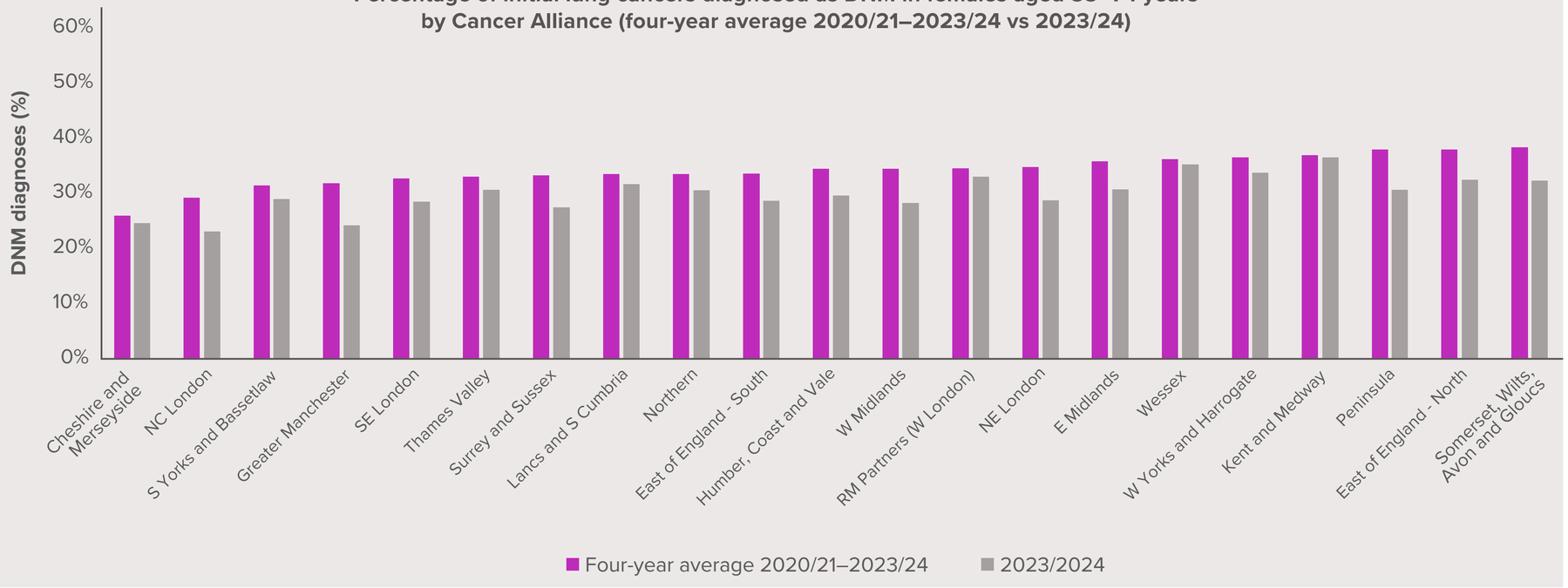
HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

DNM (55–74 years, female)

In females aged 55–74 years, there was a 13-pp difference between the four-year average of the best and worst performing Cancer Alliances: Cheshire and Merseyside (25%) and East of England – North (38%). Cheshire and Merseyside was 4 pp lower than the second best performing Cancer Alliance – North Central London (29%), while East of England – North was only 1 pp higher than the next two worst performing Cancer Alliances – Peninsula and Somerset, Wiltshire, Avon and Gloucestershire (both 37%).

In 2023/24, 20 (95%) of the 21 Cancer Alliances recorded an improvement against their four-year average. Greater Manchester and Peninsula had the biggest improvement (both –7 pp), followed by West Midlands, North Central London, East of England – North, North East London, and Surrey and Sussex (all –6 pp). Kent and Medway was the only alliance that did not see an improvement, with no difference from its four-year average.

Percentage of initial lung cancers diagnosed as DNM in females aged 55–74 years by Cancer Alliance (four-year average 2020/21–2023/24 vs 2023/24)



Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

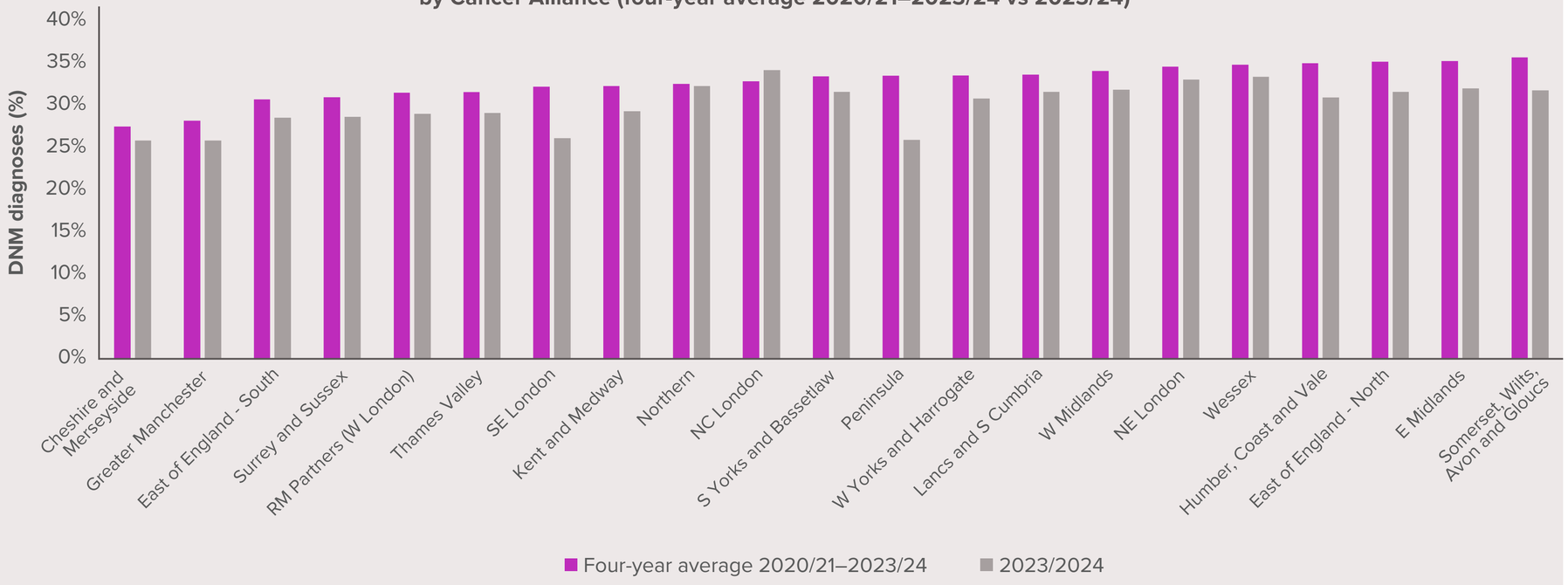
Referral source | Chest X-ray wait time | PET scan

DNM (≥75 years)

Among people aged ≥75 years, the difference between the four-year average of the best and worst performing Cancer Alliances was 8 pp: Cheshire and Merseyside (27%) and Somerset, Wiltshire, Avon and Gloucestershire, East Midlands, East of England – North, Humber, Coast and Vale, and Wessex (all 35%).

In 2023/24, 19 of 21 (91%) of the Cancer Alliances recorded an improvement against their four-year average, one performed worse and one had no change. Peninsula had the best improvement (–7 pp), followed by South East London (– 6 pp). North Central London had a worsening of +1 pp, while Northern had the smallest change.

Percentage of initial lung cancers diagnosed as DNM in people aged ≥75 years by Cancer Alliance (four-year average 2020/21–2023/24 vs 2023/24)



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

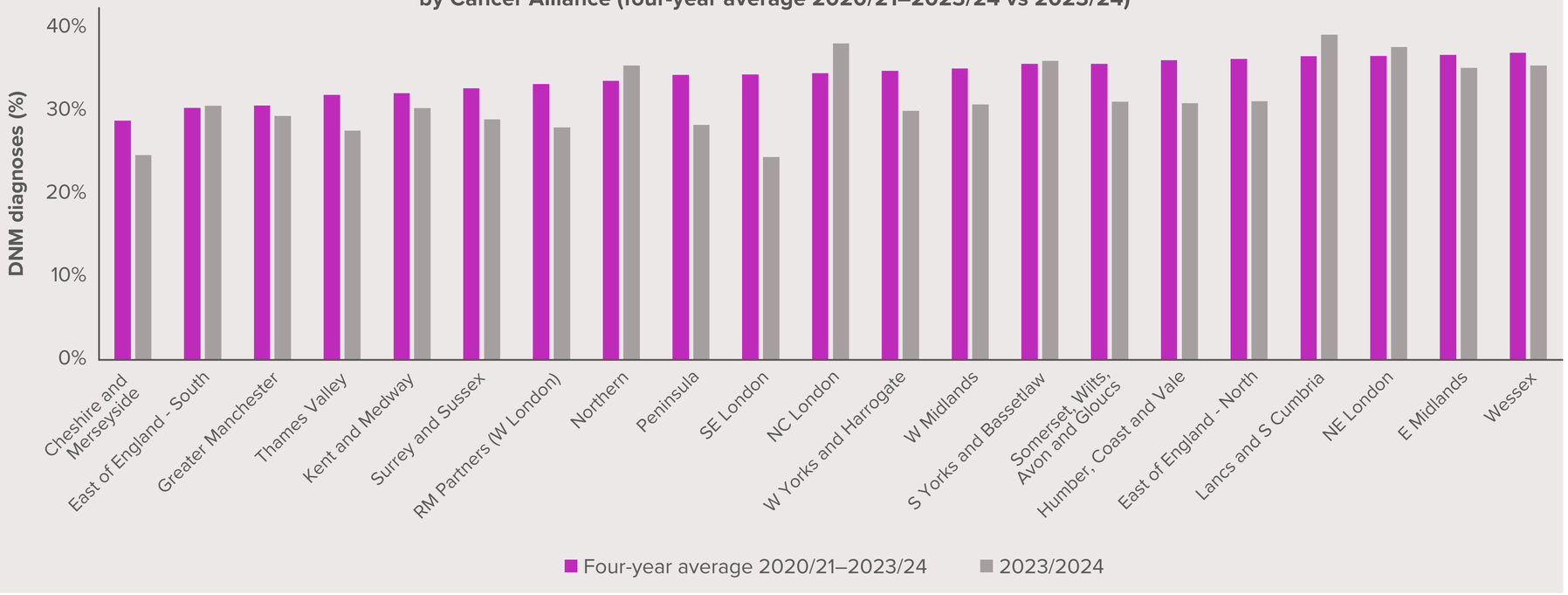
Referral source | Chest X-ray wait time | PET scan

DNM (≥75 years, male)

Among men aged ≥75 years, the difference between the four-year average of the best and worst performing Cancer Alliances was 8 pp: Cheshire and Merseyside (29%) and Wessex and East Midlands (both 37%).

In 2023/24, 15 (71%) of the Cancer Alliances recorded an improvement against their four-year average, four performed worse and two had very little change. South East London had an impressive reduction of –10 pp, followed by Peninsula (–6 pp). North Central London had a worsening of +4 pp, while East of England – South and South Yorkshire and Bassetlaw had very little change.

Percentage of initial lung cancers diagnosed as DNM in males aged ≥75 years by Cancer Alliance (four-year average 2020/21–2023/24 vs 2023/24)



HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | **Female**

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

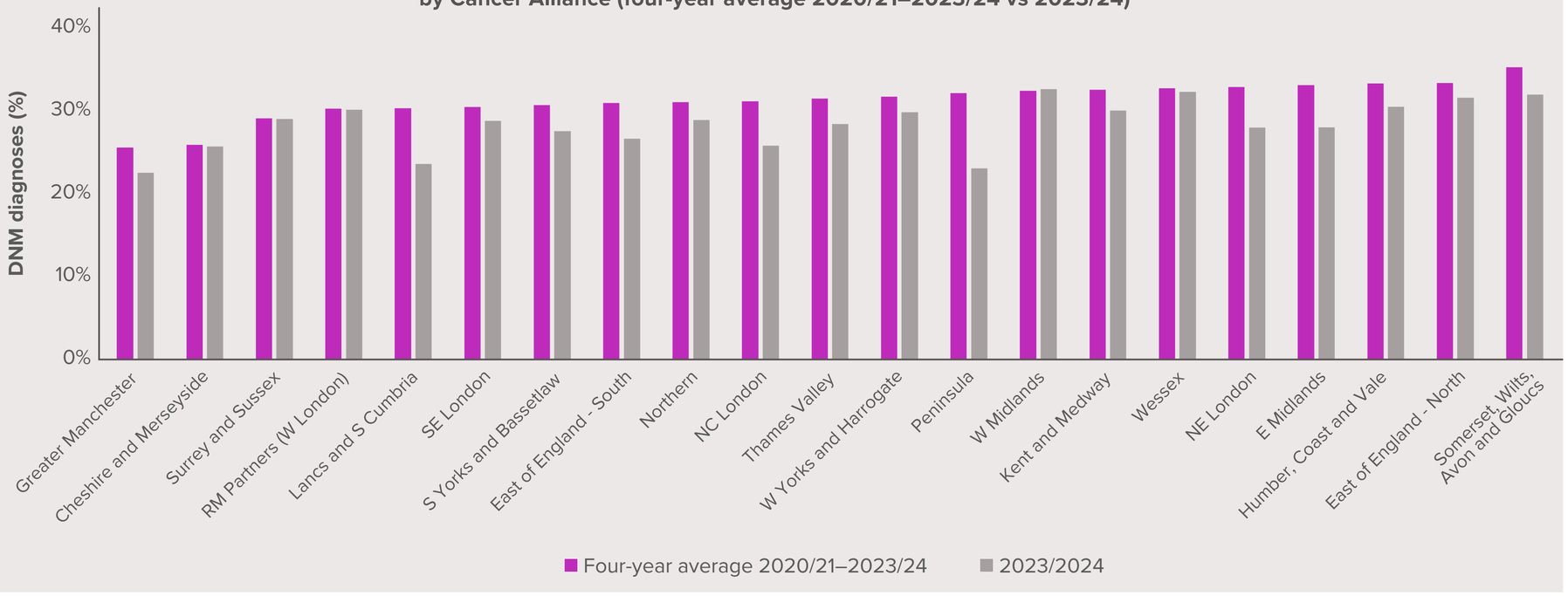
HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

DNM (≥75 years, female)

Among women aged ≥75 years, the difference between the four-year average of the best and worst performing Cancer Alliances was 9 pp: Cheshire and Merseyside and Greater Manchester (both 26%) and Somerset, Wiltshire, Avon and Gloucestershire (35%).

In 2023/24, 16 (76%) of the Cancer Alliances recorded an improvement against their four-year average, five had no change and none performed worse. Peninsula had the best improvement (–9 pp), followed by Lancashire and South Cumbria (–7 pp). Cheshire and Merseyside, Surrey and Sussex, RM Partners (West London), West Midlands and Wessex all had very little change.

Percentage of initial lung cancers diagnosed as DNM in females aged ≥75 years by Cancer Alliance (four-year average 2020/21–2023/24 vs 2023/24)



Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

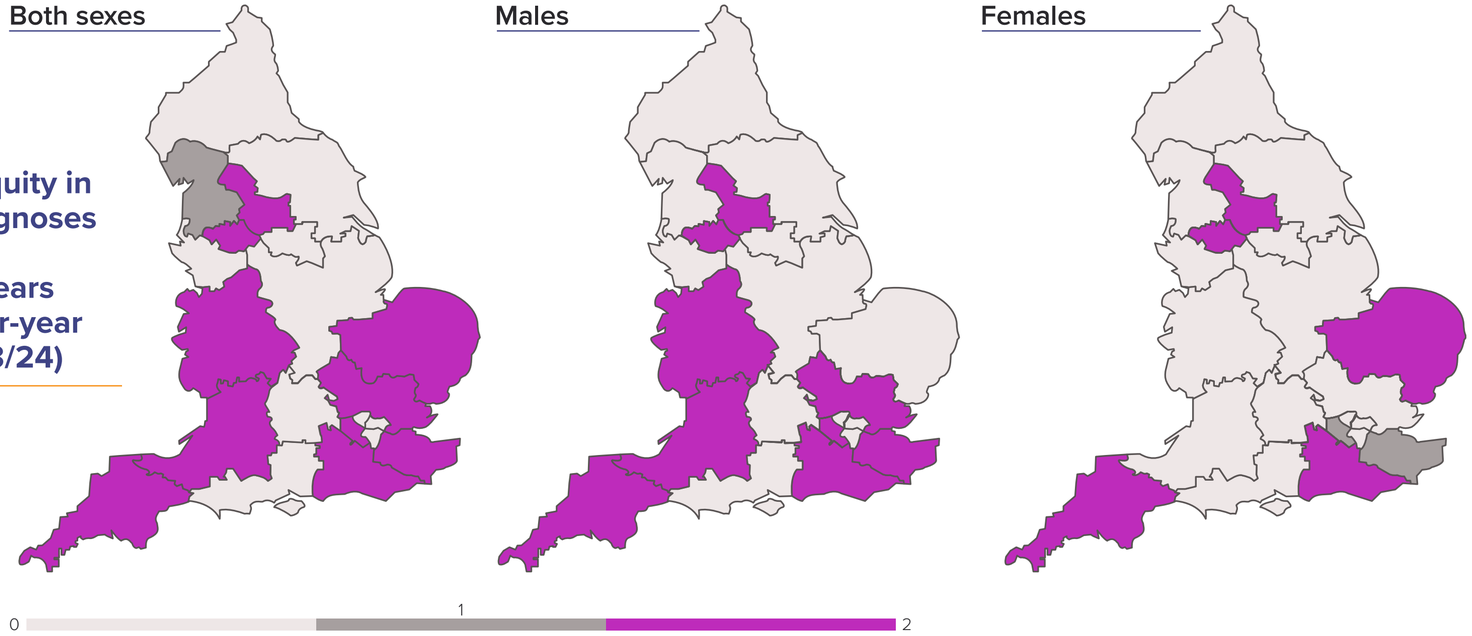
Referral source | Chest X-ray wait time | PET scan

Age and DNM (55–74 vs ≥75 years)

Comparing the four-year average proportion of DNM diagnoses between patients aged 55–74 years and ≥75 years highlights significant inequity in 10 (47.6%) Cancer Alliances.

The pattern of significance between these two age groups differed based on sex in some Cancer Alliances. For example, the difference was significant in East of England – North for both sexes and females but not males, while East of England – South was significant for both sexes and males but not females.

Significance of the inequity in proportion of initial diagnoses of DNM in people aged 55–74 years and ≥75 years by Cancer Alliance (four-year average 2020/21–2023/24)



Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

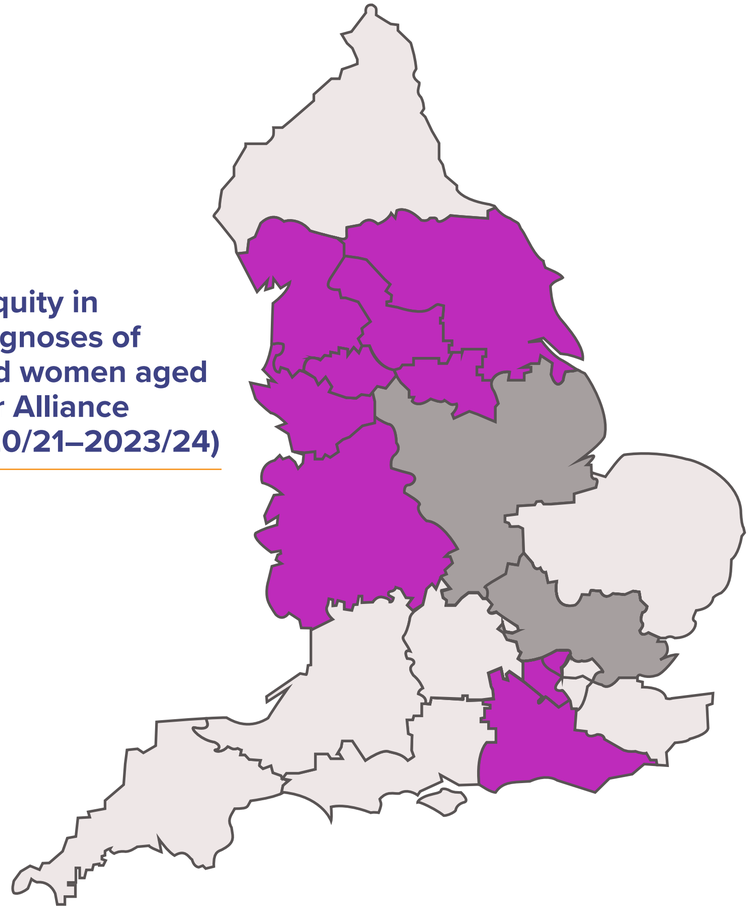
Referral source | Chest X-ray wait time | PET scan

Sex and DNM (55–74 years)

Comparing the four-year average proportion of DNM diagnoses between men and women aged 55–74 years highlights significant inequity in 10 (47.8%) Cancer Alliances:

- Cheshire and Merseyside
- Greater Manchester
- Humber, Coast and Vale
- Lancashire and South Cumbria
- North Central London
- RM Partners (West London)
- South Yorkshire and Bassetlaw
- Surrey and Sussex
- West Midlands
- West Yorkshire and Harrogate.

Significance of the inequity in proportion of initial diagnoses of DNM between men and women aged 55–74 years by Cancer Alliance (four-year average 2020/21–2023/24)



0 1 2

Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ○

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | **Male** | **Female**

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

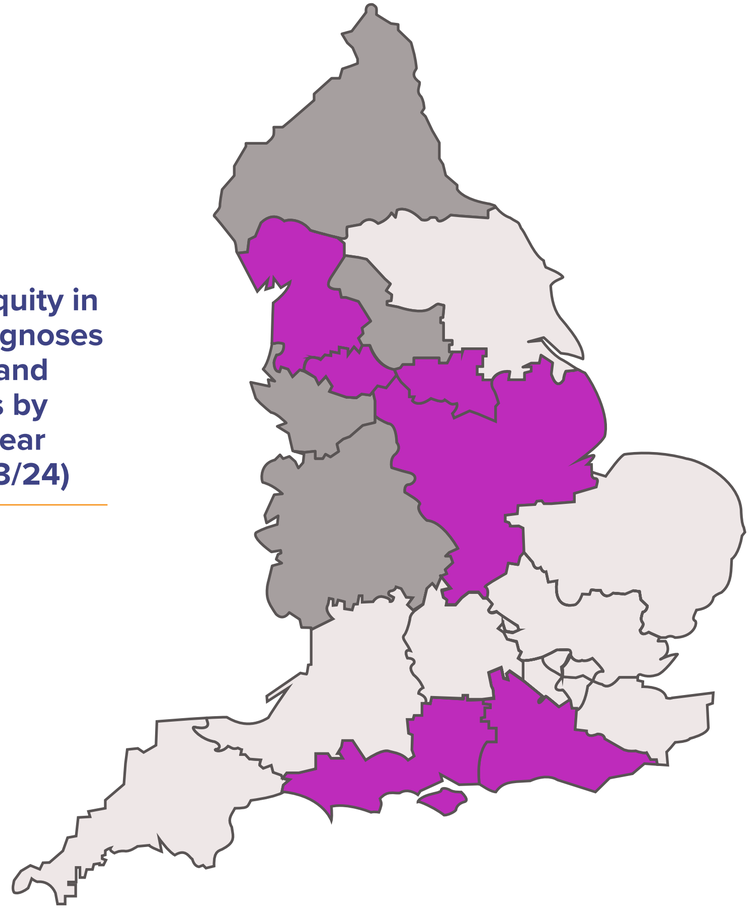
Referral source | Chest X-ray wait time | PET scan

Sex and DNM (≥75 years)

Comparing the four-year average proportion of DNM diagnoses between men and women aged ≥75 years highlights significant inequity in 6 (28.6%) Cancer Alliances:

- East Midlands
- Greater Manchester
- Lancashire and South Cumbria
- South Yorkshire and Bassetlaw
- Surrey and Sussex
- Wessex.

Significance of the inequity in proportion of initial diagnoses of DNM between men and women aged ≥75 years by Cancer Alliance (four-year average 2020/21–2023/24)



0 | 1 | 2

Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ○

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | Urbanicity

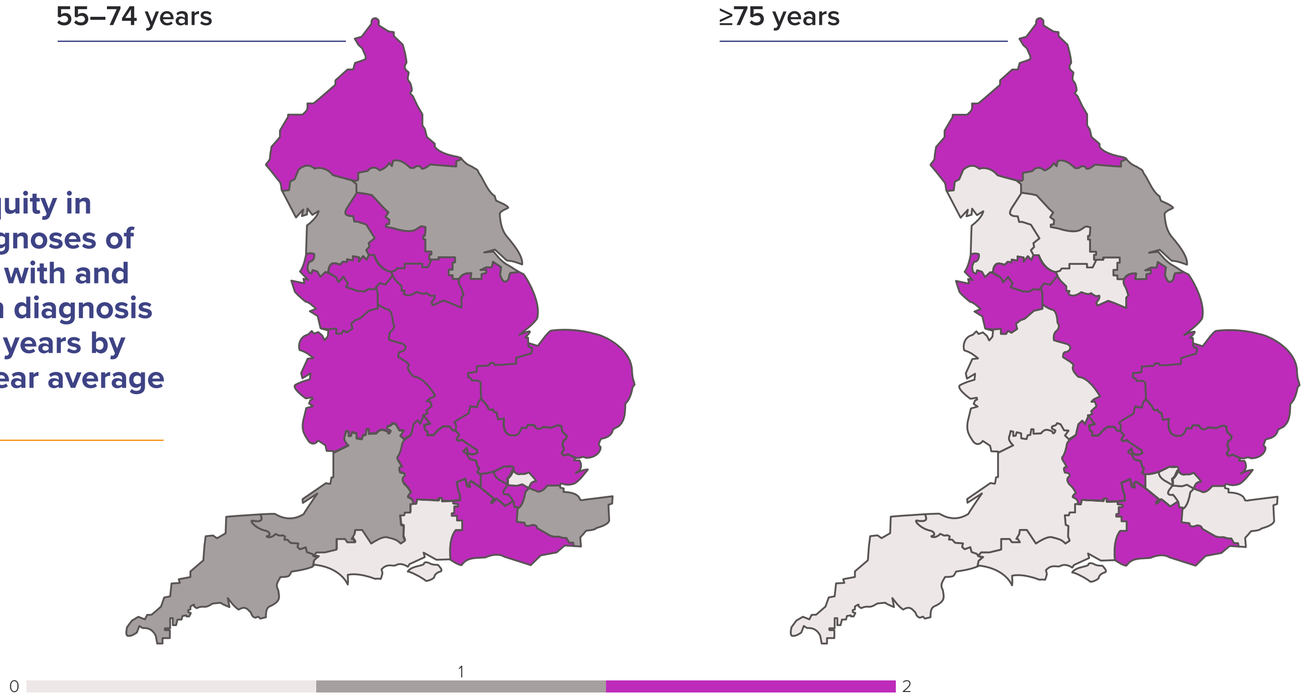
Other

Referral source | Chest X-ray wait time | PET scan

Mental health and DNM

Comparing the four-year average proportion of DNM diagnoses between patients with and without mental health diagnoses highlights significant inequity for patients aged 55–74 years (14 Cancer Alliances) and ≥75 years (8 Cancer Alliances).

Significance of the inequity in proportion of initial diagnoses of DNM between patients with and without a mental health diagnosis at ages 55–74 and ≥75 years by Cancer Alliance (four-year average 2020/21–2023/24)



Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | **Male** | **Female**

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

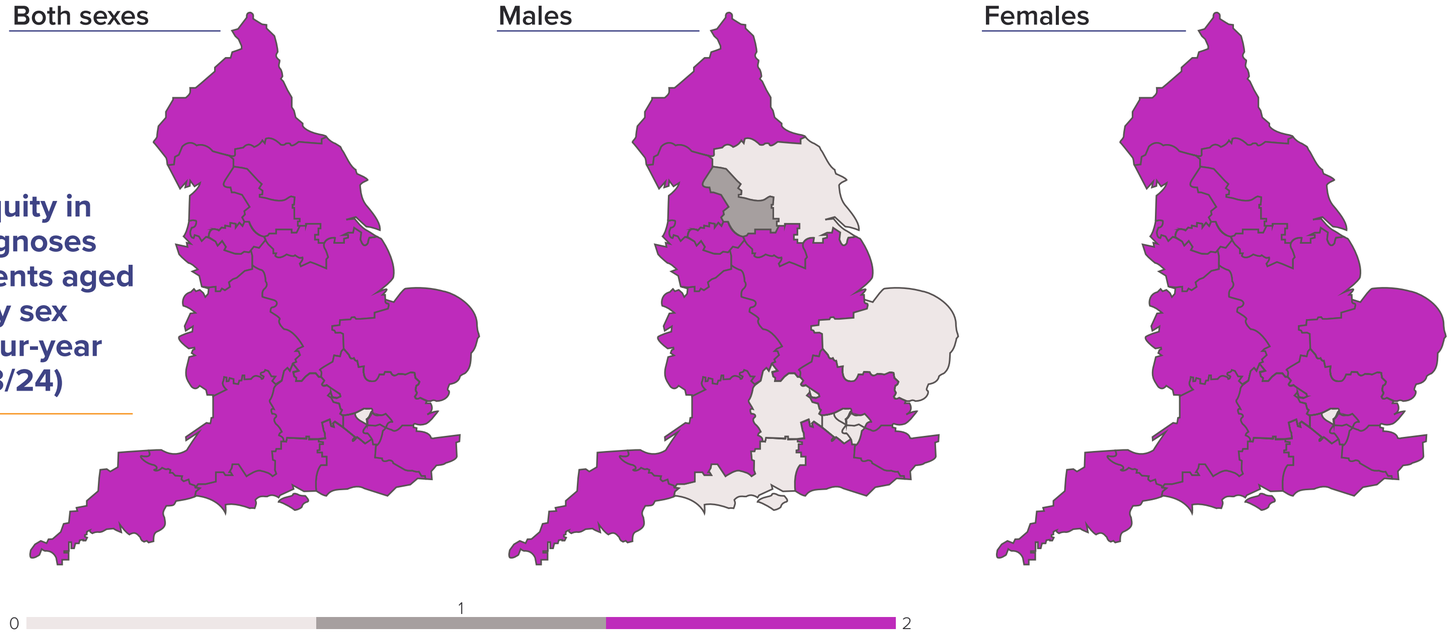
Referral source | Chest X-ray wait time | PET scan

Referral source and DNM by sex

When the four-year average proportion of DNM diagnoses via A&E was compared between patients aged 55–74 years and those aged ≥75 years, only North Central London Cancer Alliance had no significant difference between the two age groups for both sexes combined and females.

For males, the pattern was more mixed, with significant differences between the two age groups in 12 Cancer Alliances, a likely significant difference in one Cancer Alliance, and no significant differences in 8 Cancer Alliances.

Significance of the inequity in proportion of initial diagnoses of DNM via A&E in patients aged 55–74 and ≥75 years by sex and Cancer Alliance (four-year average 2020/21–2023/24)



Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | **55–74** | **≥75**

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

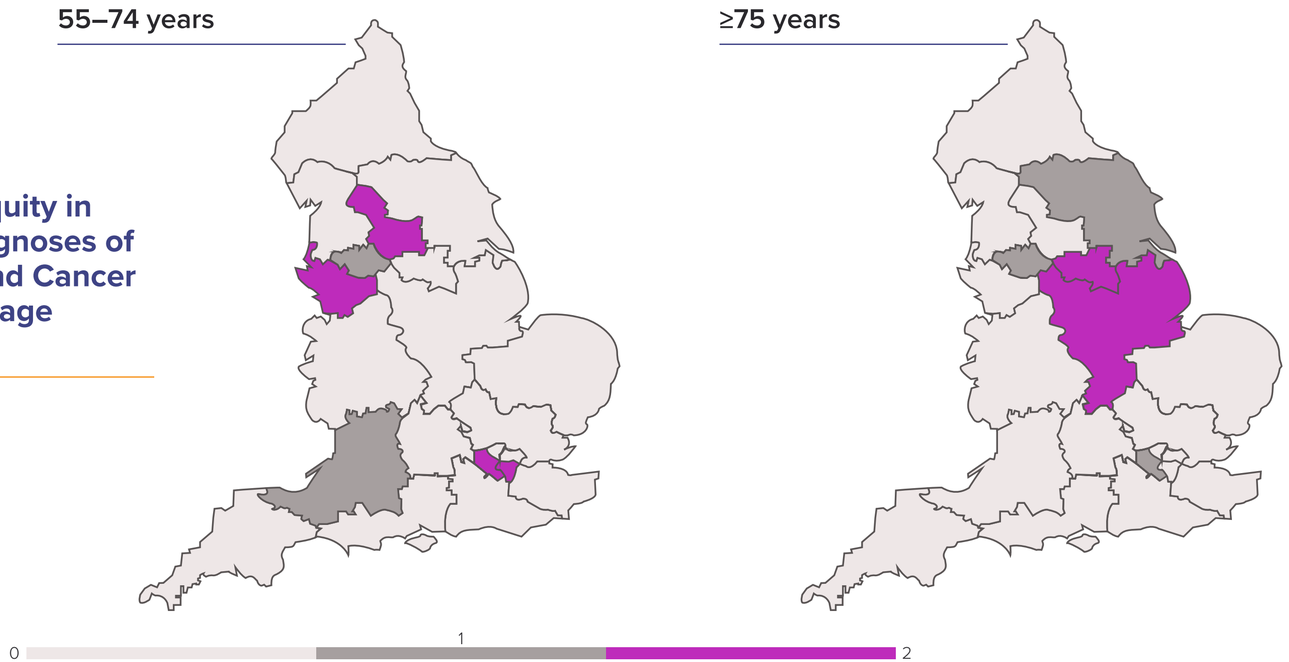
Referral source and DNM by age

When the four-year average proportion of DNM diagnoses via A&E was compared by age, a small number of Cancer Alliances had significant differences, which varied by age group.

Significant differences were seen in:

- patients aged 55–74 years in Cheshire and Merseyside, RM Partners (West London), South East London and West Yorkshire and Harrogate
- patients aged ≥75 years in East Midlands and South Yorkshire and Bassetlaw.

Significance of the inequity in proportion of initial diagnoses of DNM via A&E by age and Cancer Alliance (four-year average 2020/21–2023/24)



Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

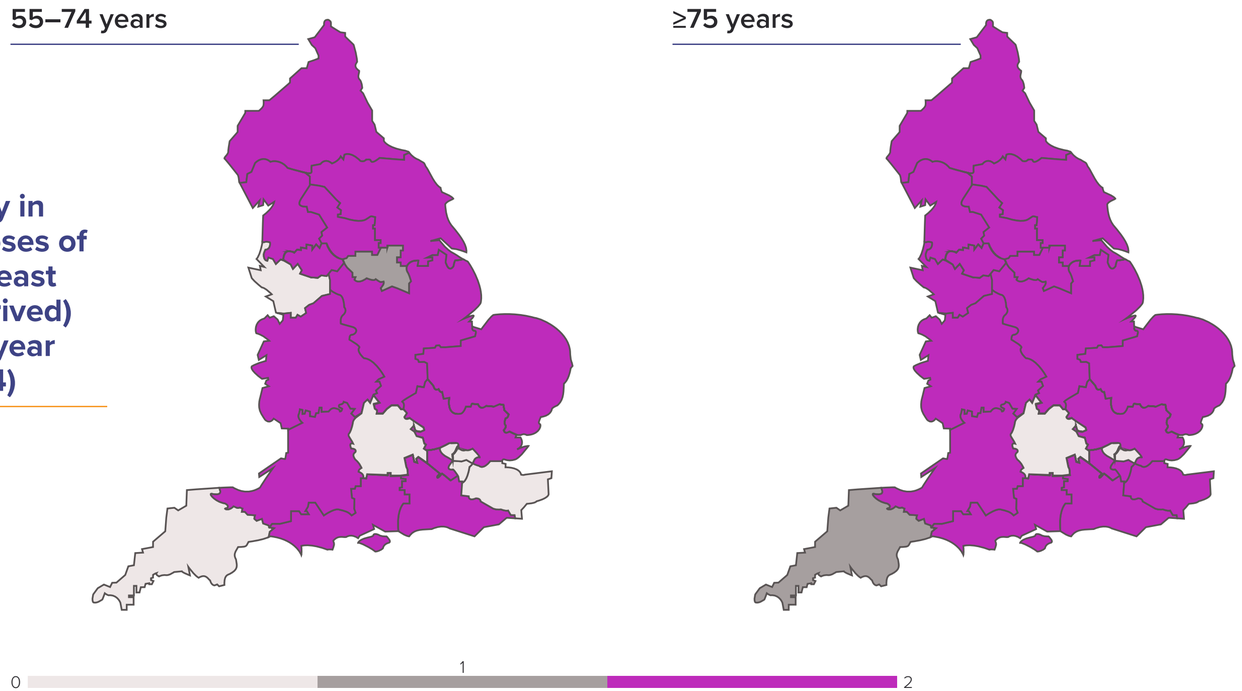
Referral source | Chest X-ray wait time | PET scan

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Referral source, deprivation and DNM

When the four-year average proportion of DNM diagnoses via A&E was compared between the most deprived and least deprived areas, significant differences were seen in 13 Cancer Alliances in patients aged 55–74 years and 17 Cancer Alliances in patients aged ≥75 years.

Significance of the inequity in proportion of initial diagnoses of DNM via A&E by quintile (least deprived versus most deprived) and Cancer Alliance (four-year average 2020/21–2023/24)



There may be a small inaccuracy due to the use of rounded patient numbers to calculate percentages used in significance testing for some Cancer Alliances with low patient numbers

Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | **Chest X-ray wait time** | PET scan

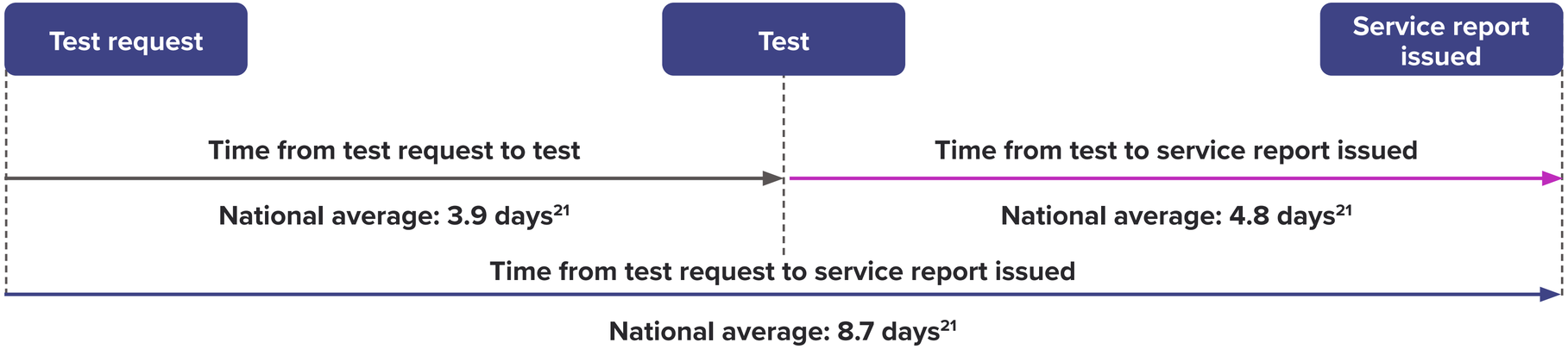
Chest X-ray wait time for suspected lung cancer

An analysis was undertaken of the number of chest X-ray tests performed for suspected lung cancer in 2021/22 and 2022/23 based on data from DIDS,[21] alongside average days from:

- test request to test
- test to service report issued
- test request to service report issued.

The test request date is based on diagnostic test request date or diagnostic test request received date if the former was not available.

The analysis includes all people regardless of whether they are diagnosed with lung cancer and covers all chest X-ray tests performed at NHS hospitals in England. Our analysis here only covers the formal recorded process for chest X-ray reporting.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | **Chest X-ray wait time** | PET scan

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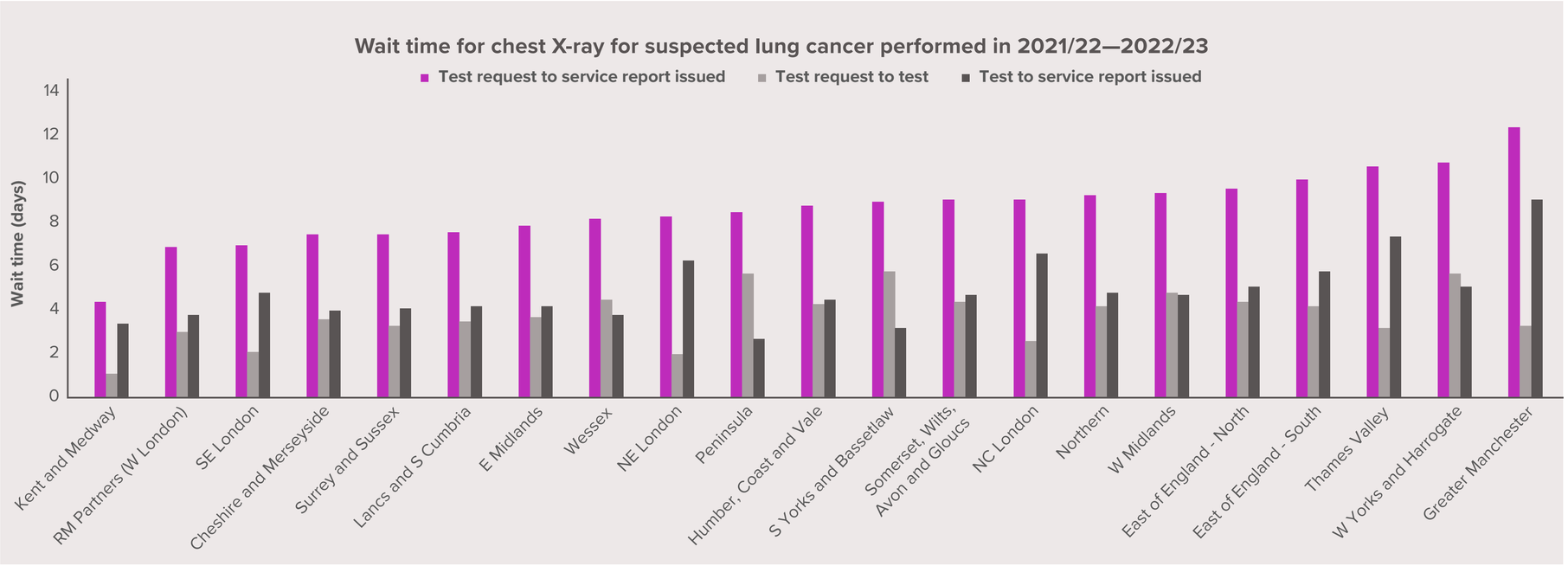
Chest X-ray wait time for suspected lung cancer

Kent and Medway was the best performing alliance for wait times between test request and test, and between test request and service report issued, and third best in wait time between test and service report issued.

Although South Yorkshire and Bassetlaw was the worst performing Cancer Alliance for wait time between test request and test, it was the second best performing Cancer Alliance for wait time between test and service report issued.

Peninsula was the best Cancer Alliance for wait time between test and service report issued, but the joint second worst performing for wait time between test request and test, placing it tenth among all Cancer Alliances for wait time between test requested and service report issued.



Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

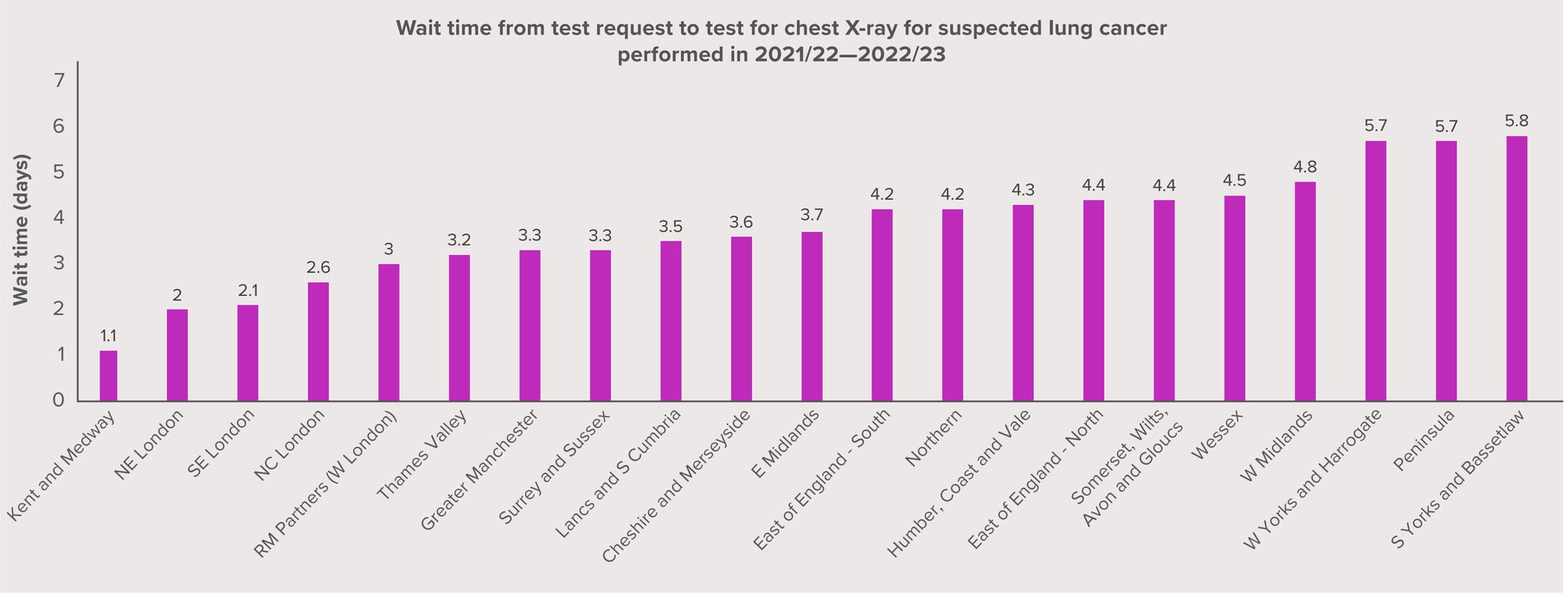
Other

Referral source | **Chest X-ray wait time** | PET scan

Chest X-ray wait time for suspected lung cancer (test request to test)

The difference in wait time between test request and test for the best and worst performing Cancer Alliances was 4.7 days: Kent and Medway (1.1 days) and South Yorkshire and Bassetlaw (5.8 days).

The second best performing Cancer Alliance, North East London, (2.0 days) had a 0.9 day longer wait than Kent and Medway. The second worst performing Cancer Alliances, West Yorkshire and Harrogate, and Peninsula (both 5.7 days) had waiting times only 0.1 day shorter than South Yorkshire and Bassetlaw.



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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

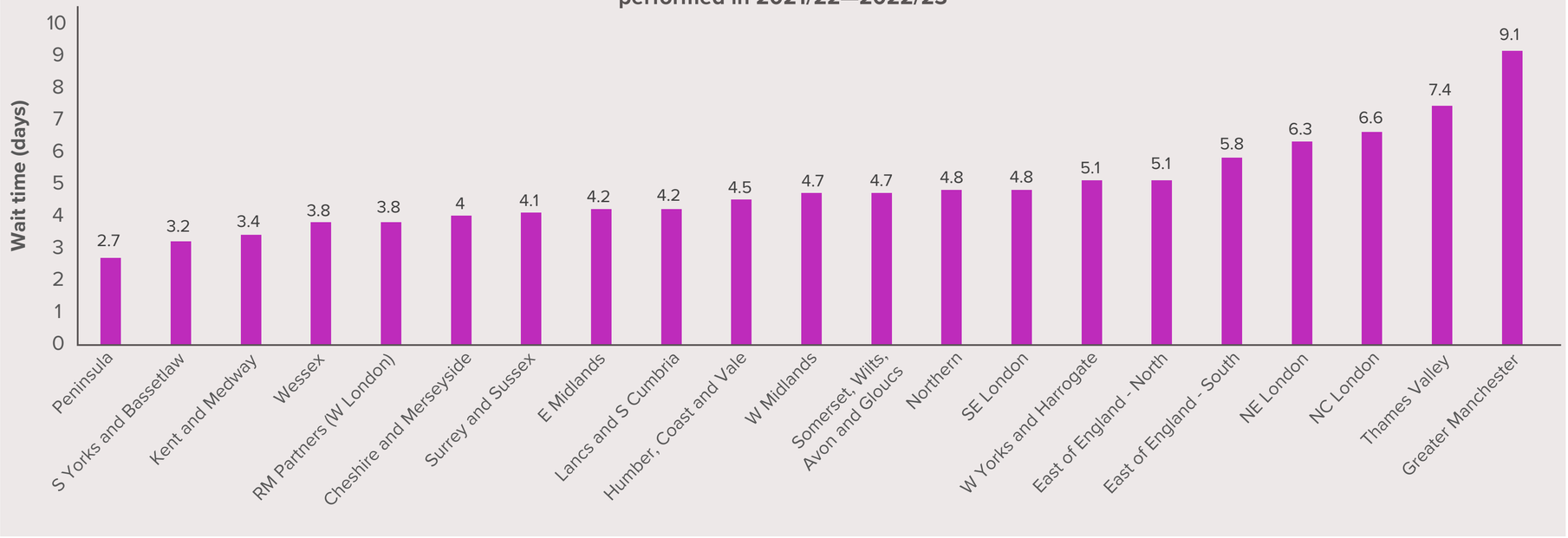
Referral source | **Chest X-ray wait time** | PET scan

Chest X-ray wait time for suspected lung cancer (test to service report issued)

The difference in wait time between test and service report issued for the best and worst performing Cancer Alliances was 6.4 days: Peninsula (2.7 days) and Greater Manchester (9.1 days).

The second best performing Cancer Alliance, South Yorkshire and Bassetlaw (3.2 days) had a 0.5 day longer wait than Peninsula. The second worst performing Cancer Alliance, Thames Valley, (7.4 days) had a waiting time 1.7 days shorter than Greater Manchester.

Wait time from test to service report issued for chest X-ray for suspected lung cancer performed in 2021/22—2022/23



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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

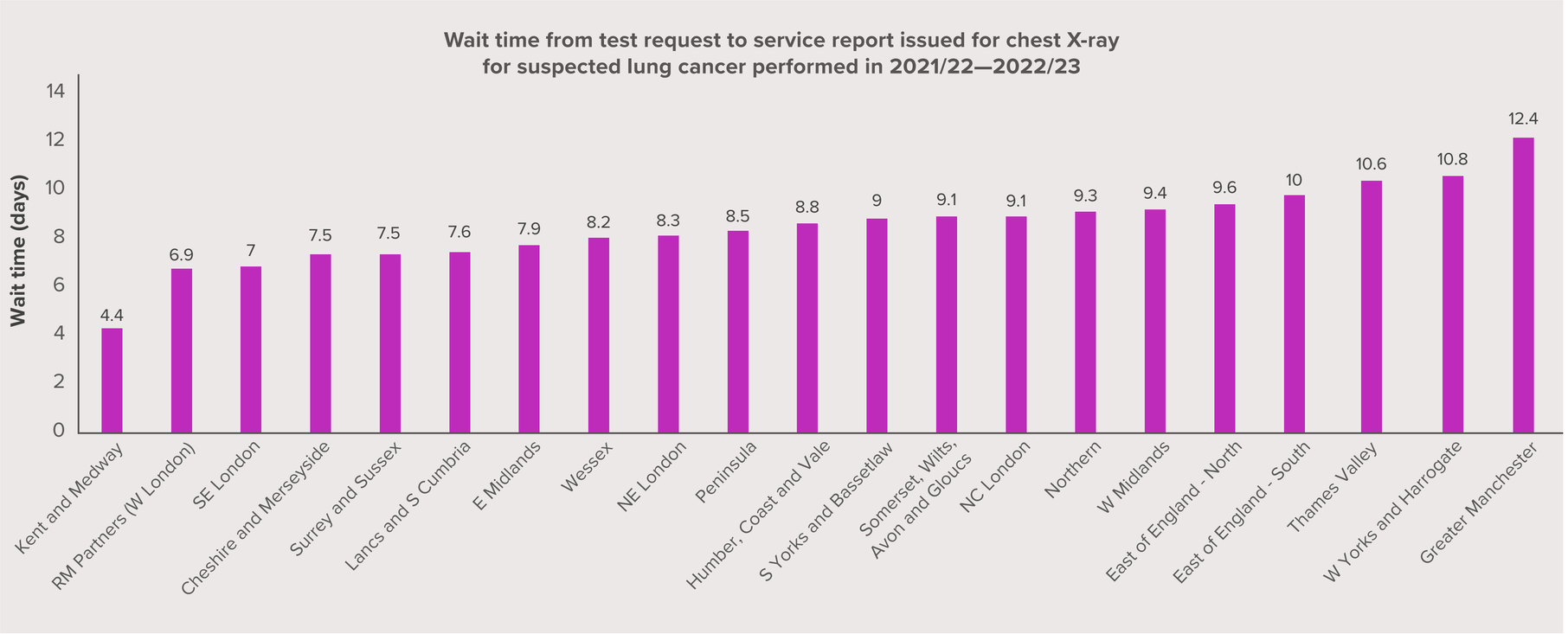
Other

Referral source | **Chest X-ray wait time** | PET scan

Chest X-ray wait time for suspected lung cancer (test request to service report issued)

The difference in wait time between test request and service report issued for the best and worst performing Cancer Alliances was 8.0 days: Kent and Medway (4.4 days) and Greater Manchester (12.4 days).

The second best performing Cancer Alliance, RM Partners West London (6.9 days) had a 2.5 day longer wait than Kent and Medway. The second and third worst performing Cancer Alliances, West Yorkshire and Harrogate (10.8 days) and Thames Valley (10.6 days) had wait times shorter than Greater Manchester by 1.6 days and 1.8 days, respectively.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | **Chest X-ray wait time** | PET scan

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Chest X-ray wait time for suspected lung cancer after A&E referral

Wait times following A&E referrals were predominantly influenced by the time for reporting, as the time from request to test was less than 1 day except for West Midlands.

Overall, from test request to report issued, Peninsula and West Yorkshire and Harrogate were the best performing Cancer Alliances, followed by South Yorkshire and Bassetlaw.

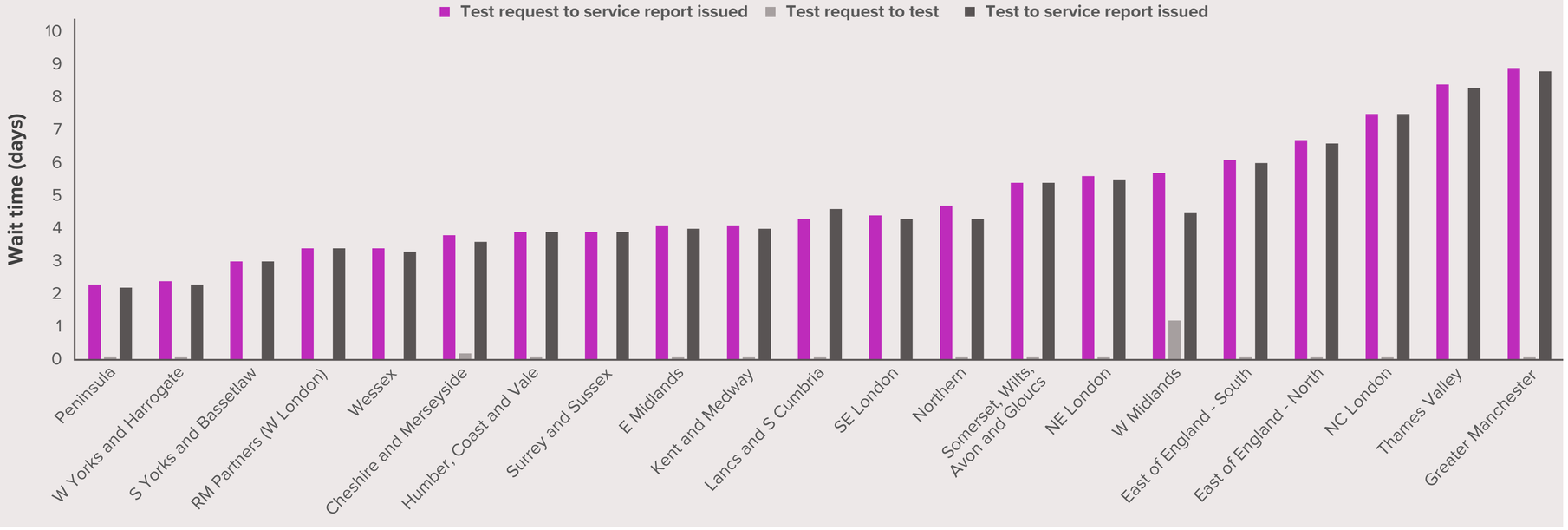
Although West Midlands was the worst performing Cancer Alliance for wait time between test request and test, shorter time for reporting after the test reduced the overall time from request to report.

Greater Manchester and Thames Valley performed worst for overall time from request to report issued due to the long time between test and report issued.

Click below to see detailed breakdowns:

Test request to test | Test to service report issued | Test request to service report issued

Wait time for chest X-ray for suspected lung cancer performed after A&E referral in 2021/22—2022/23



Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

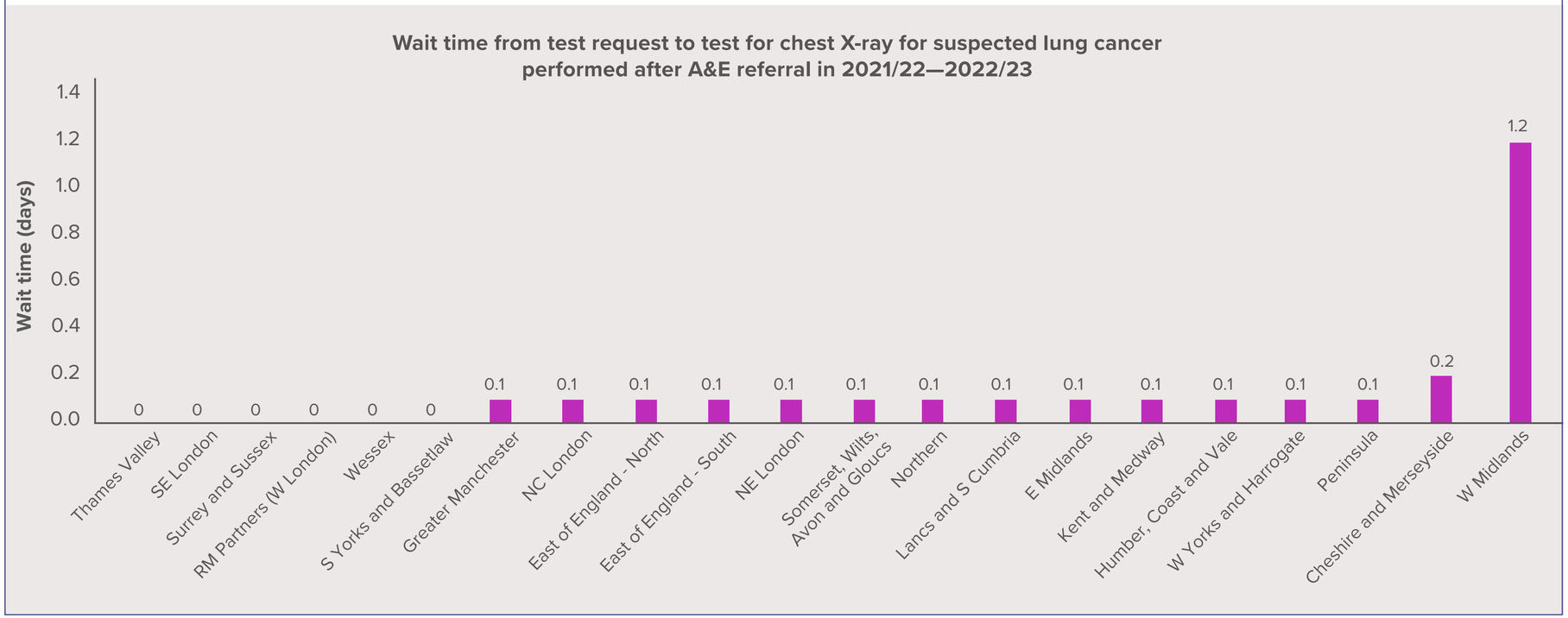
Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

Chest X-ray wait time for suspected lung cancer after A&E referral (test request to test)

Six Cancer Alliances – Thames Valley, SE London, Surrey and Sussex, RM Partners, Wessex, and South Yorkshire and Bassetlaw – all had wait times of 0 days. The remaining Cancer Alliances had waiting times of 0.1 days, except for Cheshire and Merseyside (0.2 days) and West Midlands (1.2 days).



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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | **Chest X-ray wait time** | **PET scan**

Chest X-ray wait time for suspected lung cancer after A&E referral (test to service report issued)

The difference in wait time between test and service report issued for the best and worst performing Cancer Alliances was 6.6 days: Peninsula (2.2 days) and Greater Manchester (8.8 days).

The second best performing Cancer Alliance, West Yorkshire and Harrogate, (2.3 days) had a 0.1 day longer wait than Peninsula, the next best performing Alliance was South Yorkshire and Bassetlaw which had a wait time of 3 days. The second worst performing Cancer Alliance, Thames Valley, (8.3 days) had a wait time shorter than Greater Manchester by 0.5 day.

Wait time from test to service report issued for chest X-ray for suspected lung cancer performed after A&E referral in 2021/22—2022/23

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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | **Suspected lung cancer**

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

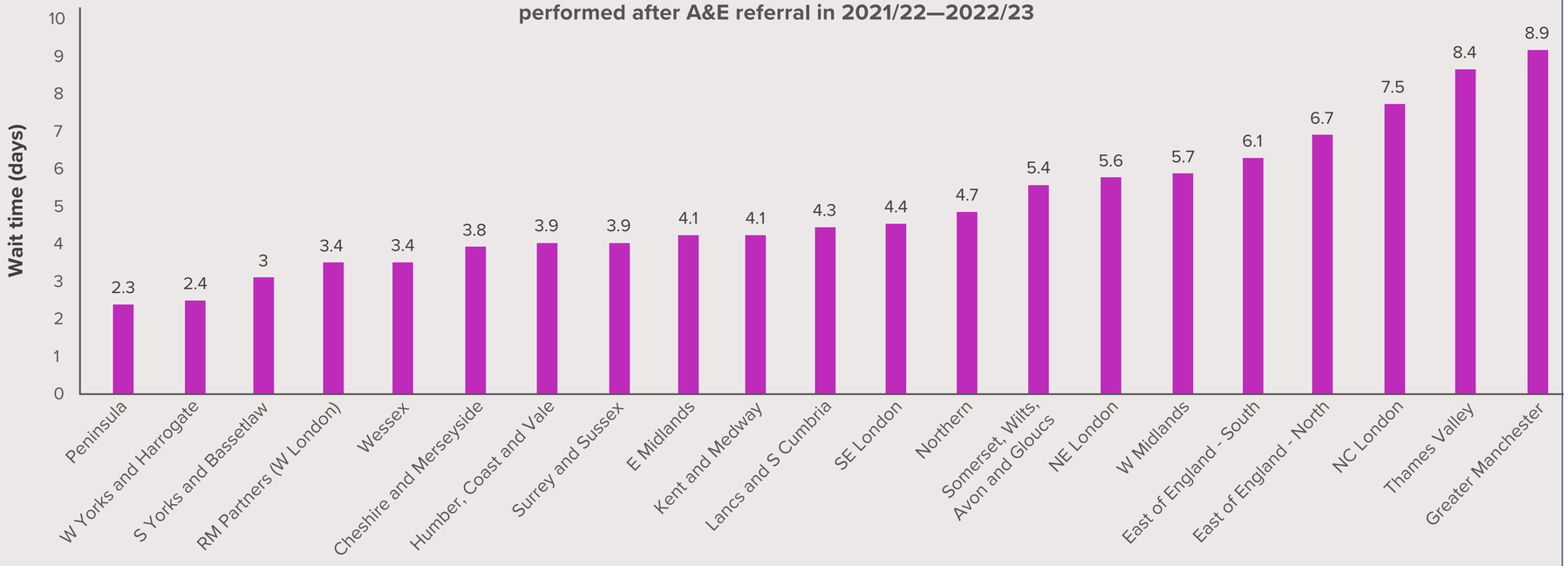
Referral source | **Chest X-ray wait time** | PET scan

Chest X-ray wait time for suspected lung cancer after A&E referral (test request to service report issued)

The difference in wait time between test request and service report issued for the best and worst performing Cancer Alliances was 6.6 days: Peninsula (2.3 days) and Greater Manchester (8.9 days).

The second best performing Cancer Alliance West Yorkshire and Harrogate (2.4 days) had a 0.1 day longer wait than Peninsula, the next best performing Alliance was South Yorkshire and Bassetlaw, which had a wait time of 3 days. The second worst performing Cancer Alliance Thames Valley (8.4 days) had a wait time shorter than Greater Manchester by 0.5 day.

Wait time from test request to service report issued for chest X-ray for suspected lung cancer performed after A&E referral in 2021/22—2022/23



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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | **NM** ◉

DNM ○ | **Suspected lung cancer** ○

Age Group

All ages | 40–54 | **55–74** ◉ | **≥75** ◉

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | **PET scan**

PET scans and NM

When the two-year average proportion of NM diagnoses with PET scans within 90 days of their initial DIDS record for suspected lung cancer was compared between age groups, significant differences were seen in 19 Cancer Alliances in patients aged 55–74 vs ≥75 years.

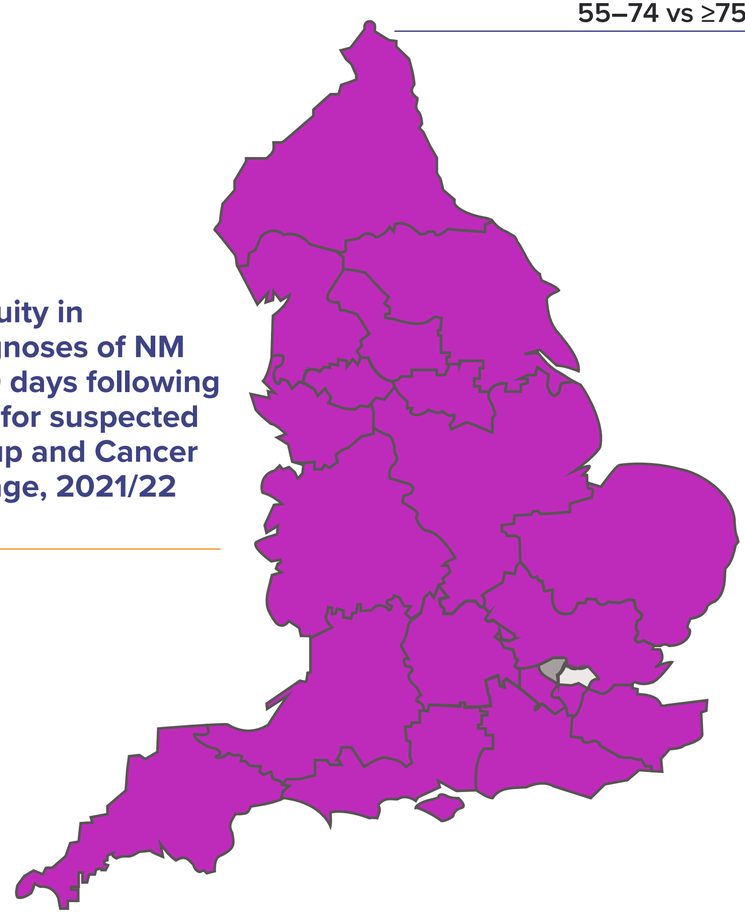
About this analysis

PET scan is defined as any patient coded with a modality of 'Positron emission tomography (procedure)' in a DIDS record[21] within 90 days following their initial DIDS record for suspected lung cancer.

PET scans have been identified for those patients diagnosed with lung cancer in 2021/22 and 2022/23 who have a DIDS record for suspected lung cancer prior to (or on the same date as) their first presentation with lung cancer in a hospital inpatient spell or outpatient attendance. The fiscal year assigned is based on the date of hospital presentation with lung cancer in HES.

55–74 vs ≥75 years

Significance of the inequity in proportion of initial diagnoses of NM with PET scan within 90 days following their initial DIDS record for suspected lung cancer by age group and Cancer Alliance (two-year average, 2021/22 and 2022/23)



0 — 1 — 2

Statistical significance level: 0 = not significant (p≥0.1), 1 = likely significant (p≥0.05, p<0.1), 2 = significant (p<0.05)

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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | **NM** ◉ | DNM ○ | Suspected lung cancer ○

Age Group

All ages | 40–54 | **55–74** | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | **PET scan**

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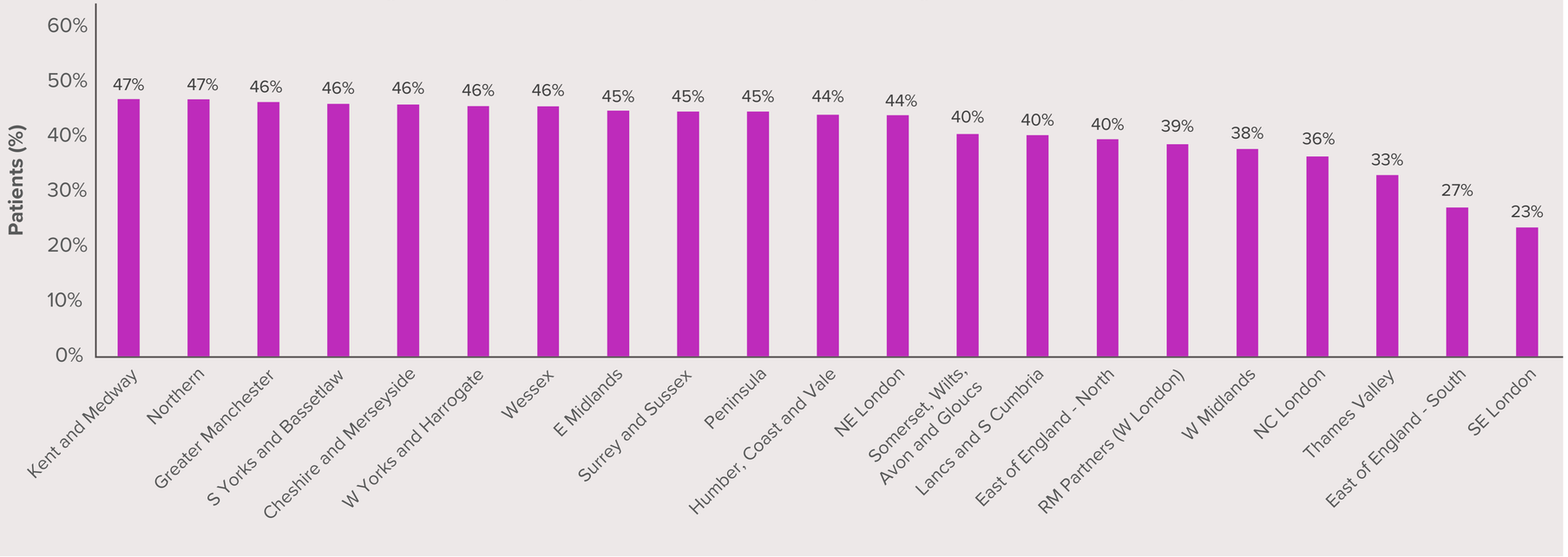
PET scans and NM (55–74 years)

Among patients aged 55–74 years, the difference between the two-year average of the best and worst performing Cancer Alliances was 24 pp: Kent and Medway and Northern (both 47%) and South East London (23%).

Five Cancer Alliances had proportions with PET scan within 90 days following their initial DIDS record for suspected lung cancer of 46% and three had proportions with PET scan within 90 days following their initial DIDS record for suspected lung cancer of 45%. South East London was 4 pp below the next worst performing Cancer Alliance, East of England – South (27%), which was 6 pp below the next worst performing Alliance, Thames Valley (33%).

Proportion of diagnoses of NM with PET scan within 90 days following their initial DIDS record for suspected lung cancer in patients aged 55–74 years by Cancer Alliance (two-year average, 2021/22 and 2022/23)



Data Level
National | Cancer Alliance | ICB

Diagnosis
All types | NM | DNM | Suspected lung cancer

Age Group
All ages | 40–54 | 55–74 | ≥75

Sex
Both sexes | Male | Female

Social Determinants
Deprivation | Ethnicity | Mental health | Urbanicity

Other
Referral source | Chest X-ray wait time | PET scan

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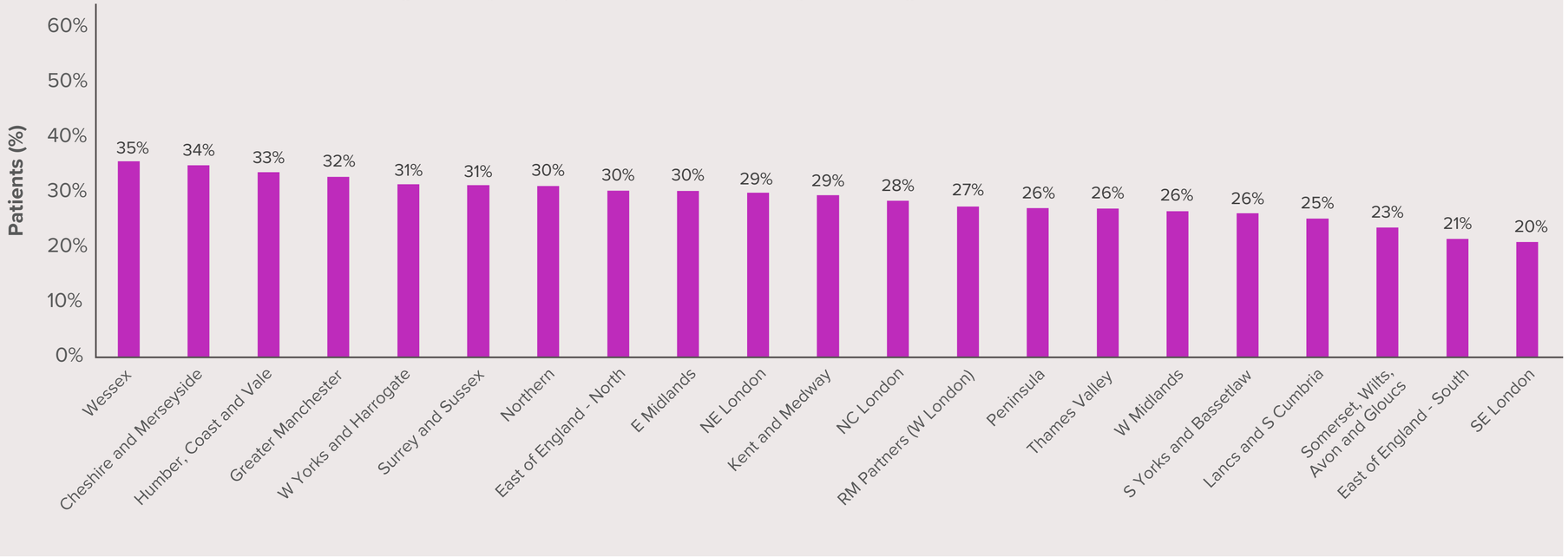
PET scans and NM (≥75 years)

Among patients aged ≥75 years, the difference between the two-year average of the best and worst performing Cancer Alliances was 15 pp: Wessex (35%) and South East London (20%).

The second best performing Cancer Alliance, Cheshire and Merseyside, was only 1 pp behind Wessex, and the second worst performing Cancer Alliance, East of England – South, was only 1 pp above South East London.

Proportion of diagnoses of NM with PET scan within 90 days following their initial DIDS record for suspected lung cancer in patients aged ≥75 years by Cancer Alliance (two-year average, 2021/22 and 2022/23)



Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

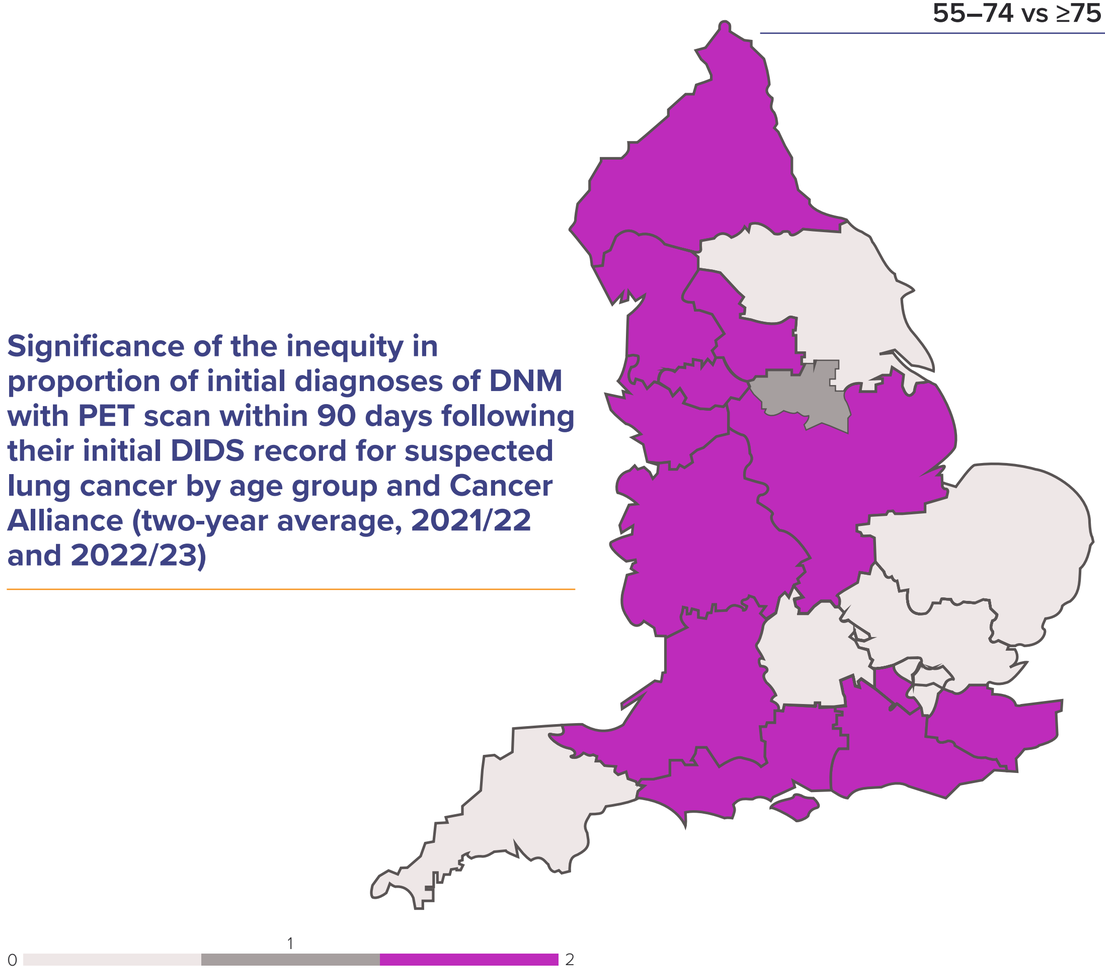
Referral source | Chest X-ray wait time | **PET scan**

PET scans and DNM

When the two-year average proportion of DNM diagnoses with PET scan within 90 days following their initial DIDS record for suspected lung cancer was compared between age groups, significant differences were seen in 12 Cancer Alliances in patients aged 55–74 vs ≥75 years.

55–74 vs ≥75 years

Significance of the inequity in proportion of initial diagnoses of DNM with PET scan within 90 days following their initial DIDS record for suspected lung cancer by age group and Cancer Alliance (two-year average, 2021/22 and 2022/23)



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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | **PET scan**

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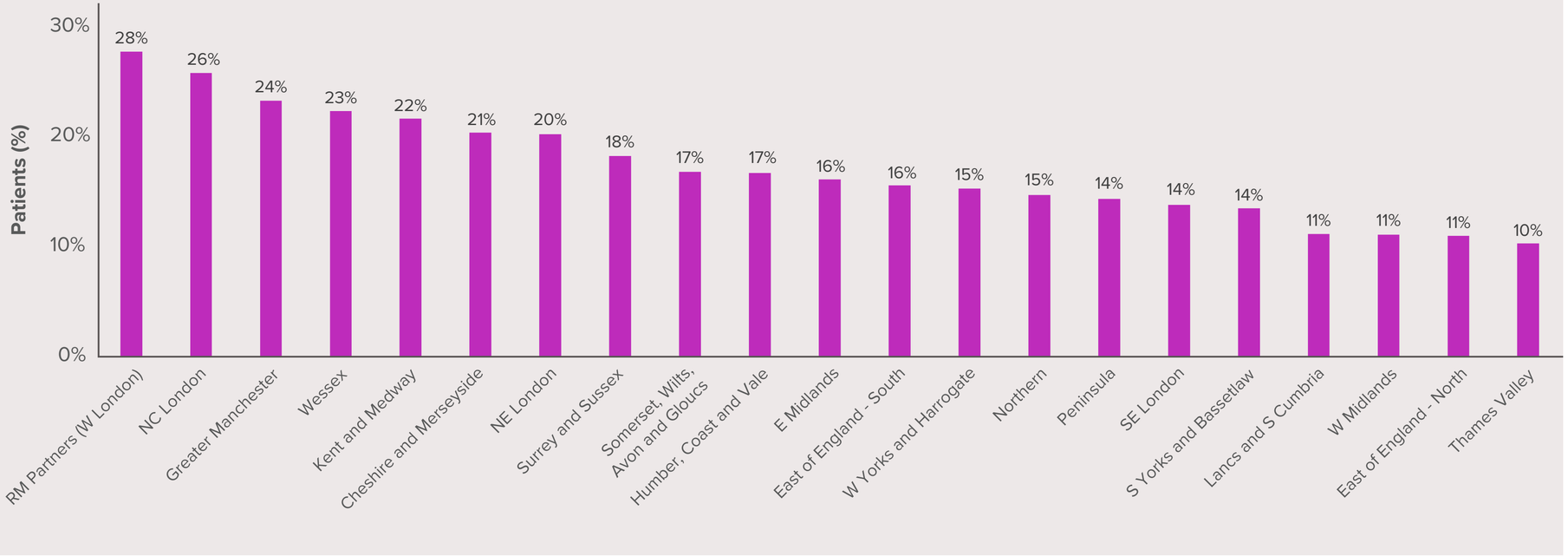
PET scans and DNM (55–74 years)

Among patients aged 55–74 years, the difference between the two-year average of the best and worst performing Cancer Alliances was 18 pp: RM Partners (West London) (28%) and Thames Valley (10%).

The second best performing Cancer Alliance, North Central London, was only 2 pp behind RM Partners (W London), and the three second worst performing Cancer Alliances, East of England – North, West Midlands, and Lancashire and South Cumbria (all 11%) were only 1 pp above Thames Valley.

Proportion of diagnoses of DNM with PET scan within 90 days following their initial DIDS record for suspected lung cancer in patients aged 55–74 years by Cancer Alliance (two-year average, 2021/22 and 2022/23)



Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

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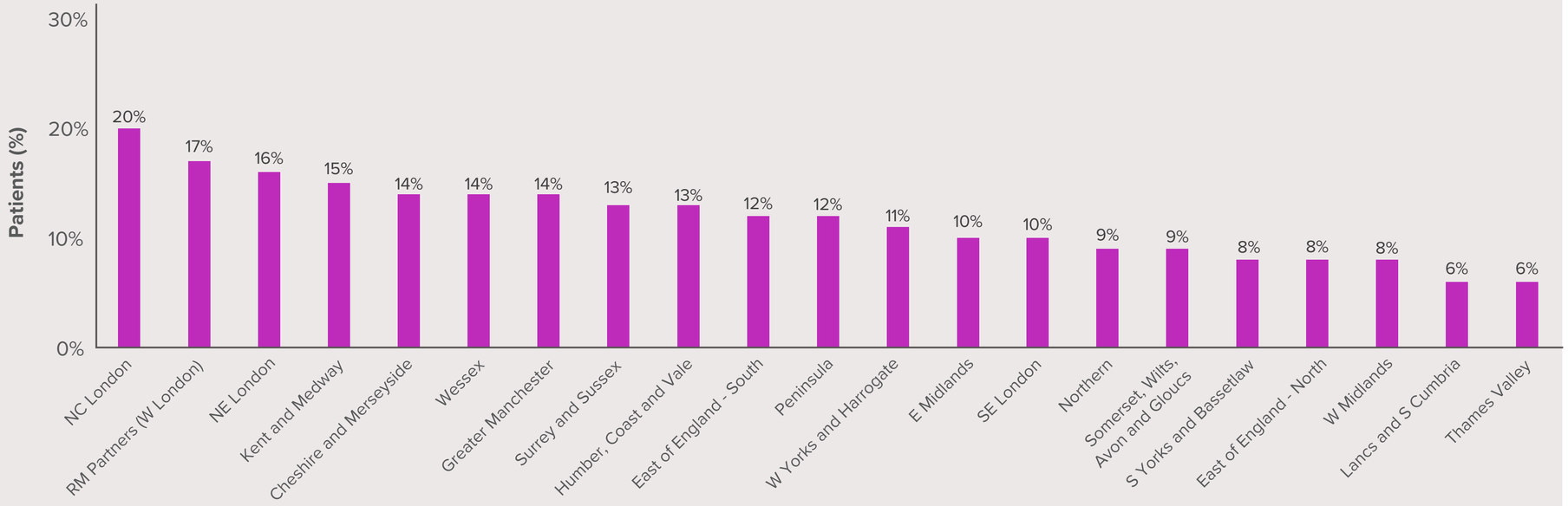
PET scans and DNM (≥75 years)

Among patients aged ≥75 years, the difference between the two-year average of the best and worst performing Cancer Alliances was 14 pp: North Central London (20%) and Thames Valley and Lancashire and South Cumbria (both 6%).

The second best performing Cancer Alliance, RM Partners (West London), was 3 pp behind North Central London, and the three second worst performing Cancer Alliances, South Yorkshire and Bassetlaw, East of England – North, and West Midlands (all 8%) were 2 pp above Thames Valley and Lancashire and South Cumbria.

Proportion of diagnoses of DNM with PET scan within 90 days following their initial DIDS record for suspected lung cancer in patients aged ≥75 years by Cancer Alliance (two-year average, 2021/22 and 2022/23)



Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

Cancer Analysis: deep dive

This section provides in-depth sub-analyses of data for individual Cancer Alliances:

- Year-by-year analysis for patients aged 55–74 years and ≥75 years
- Alert signals for selected social determinants – deprivation, urbanicity, mental health, and A&E referrals by deprivation – for patients aged 55–74 years and ≥75 years
  - Alert signals are designated when a significant difference is seen between the comparators – for example: people with mental health conditions compared with people without mental health conditions
- Alert signals for chest X-ray waiting times for all ages combined by test request to test, test to service report issued, and test request to service report.
  - Alert signals are designated when a Cancer Alliance is in the bottom five out of the 21 Cancer Alliances for each wait time analysis.

Alert signals for each Cancer Alliance are indicated by a cross and pink box in the grid.

Social determinants	55–74 years	≥75 years
	% DNM	
Mental health	✓	X

A bank of question prompts has been developed to suggest starting points for exploration for different alert signals. The questions included for each Cancer Alliance are tailored to the alert signals identified for that particular Cancer Alliance.

Question prompts

Return to National comparison of all Cancer Alliances

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

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Cancer Analysis: deep dive

Question prompts for starting points for exploration for different alert signals

Social determinants

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with:
  - working-age people
  - older people
  - people from deprived areas
  - patients with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics situated close to people's workplaces?
- Are clinics open outside normal working hours?
- Are clinics easily accessible via public transport?

Chest X-ray wait times

- Is capacity for chest X-rays and imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on chest X-ray and imaging reporting for patients with suspected lung cancer?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

Individual Cancer Alliance data

About this analysis

Back to Cancer Alliance introduction

This section provides in-depth sub-analyses of our data for individual Cancer Alliances.

Cancer Alliance

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

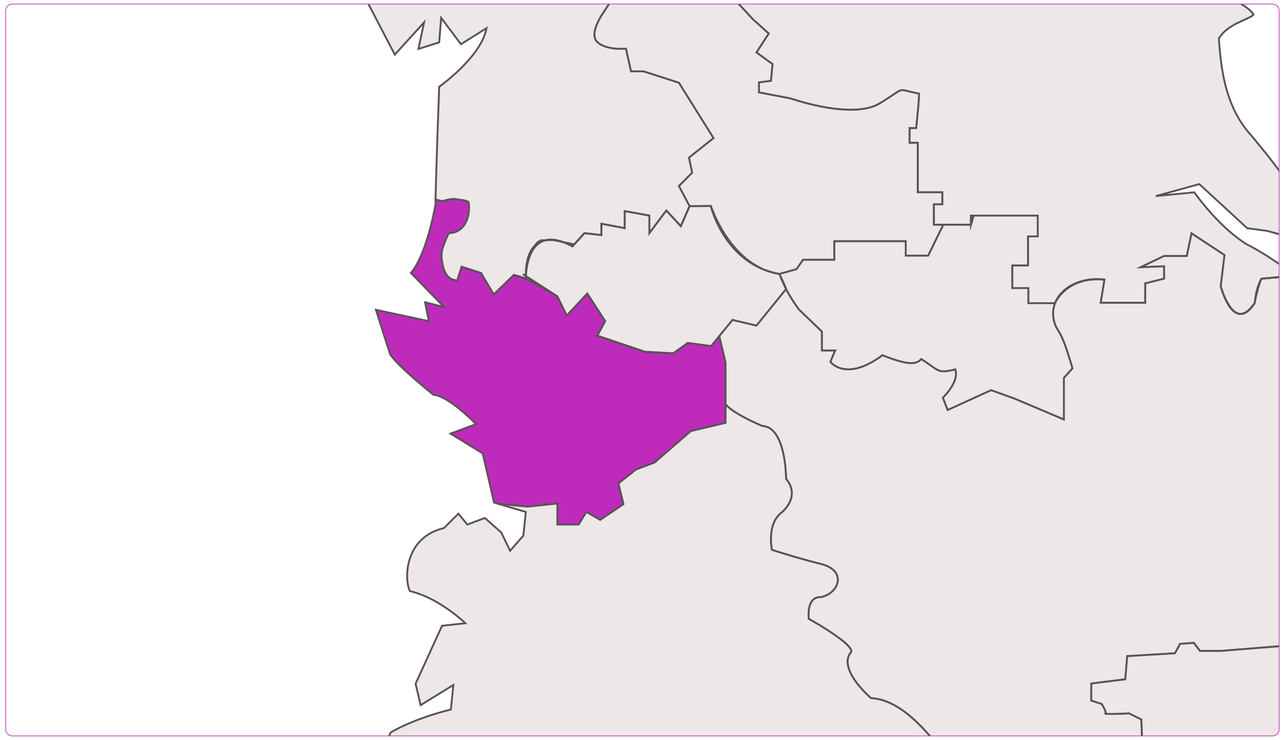
Other

Referral source | Chest X-ray wait time | PET scan

Cheshire and Merseyside Cancer Alliance

Explore the data for Cheshire and Merseyside Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

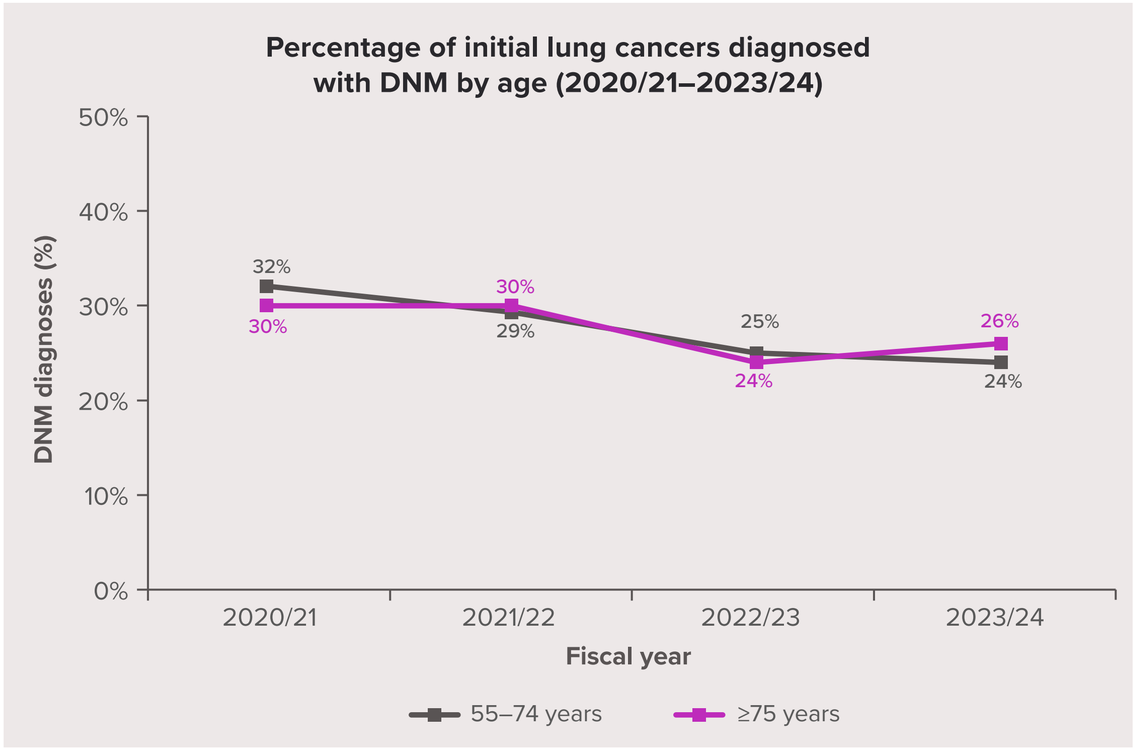
Other

Referral source | Chest X-ray wait time | PET scan

Cheshire and Merseyside Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged 55–74 years, in line with the national picture, although the decrease slowed slightly in 2023/24.
- In contrast with the national average, the proportion of DNM diagnoses in people aged ≥75 years was stable between 2020/21 and 2021/22, decreased in 2022/23 and had an uptick of 2 pp over the latest year.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Cheshire and Merseyside Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	✓	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 and ≥75 years with mental health diagnoses
  - referrals through A&E in people aged ≥75 years from the most deprived areas
- Cheshire and Merseyside Cancer Alliance performed well in chest X-ray wait times compared to other Cancer Alliances.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with older people, people from deprived areas, and patients with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

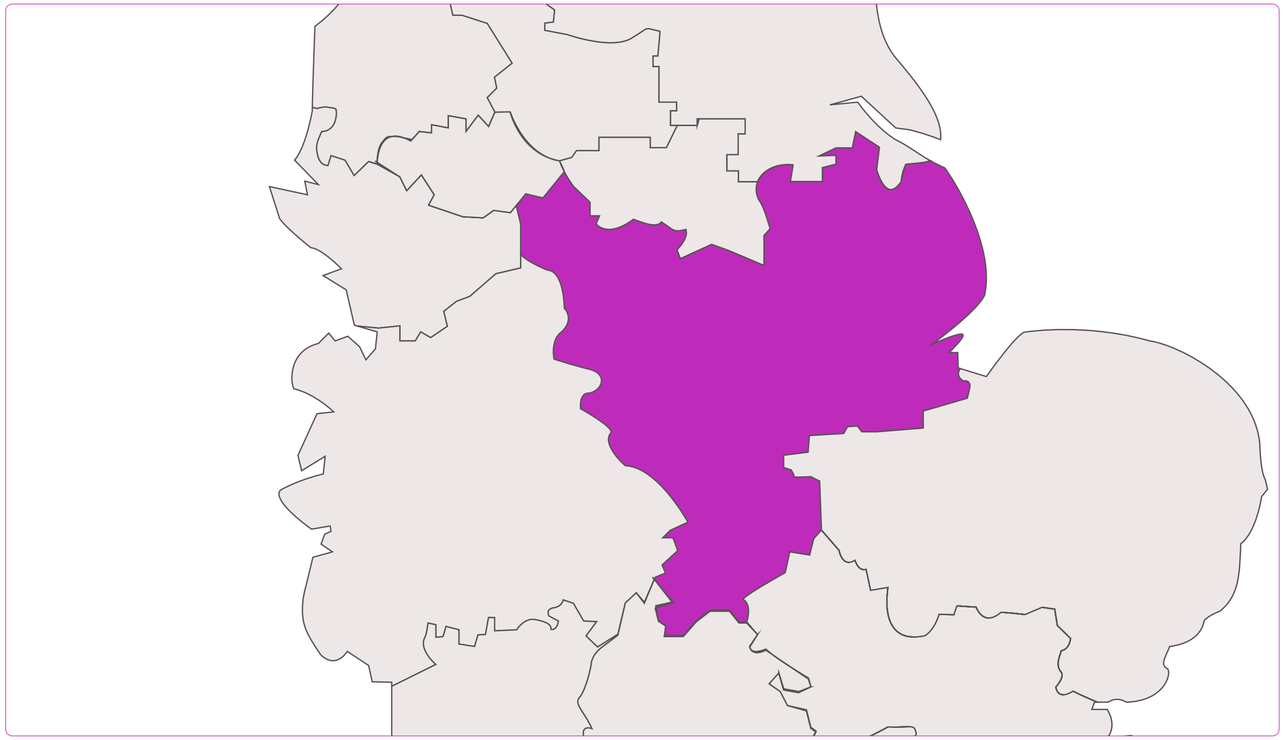
Other

Referral source | Chest X-ray wait time | PET scan

East Midlands Cancer Alliance

Explore the data for East Midlands Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

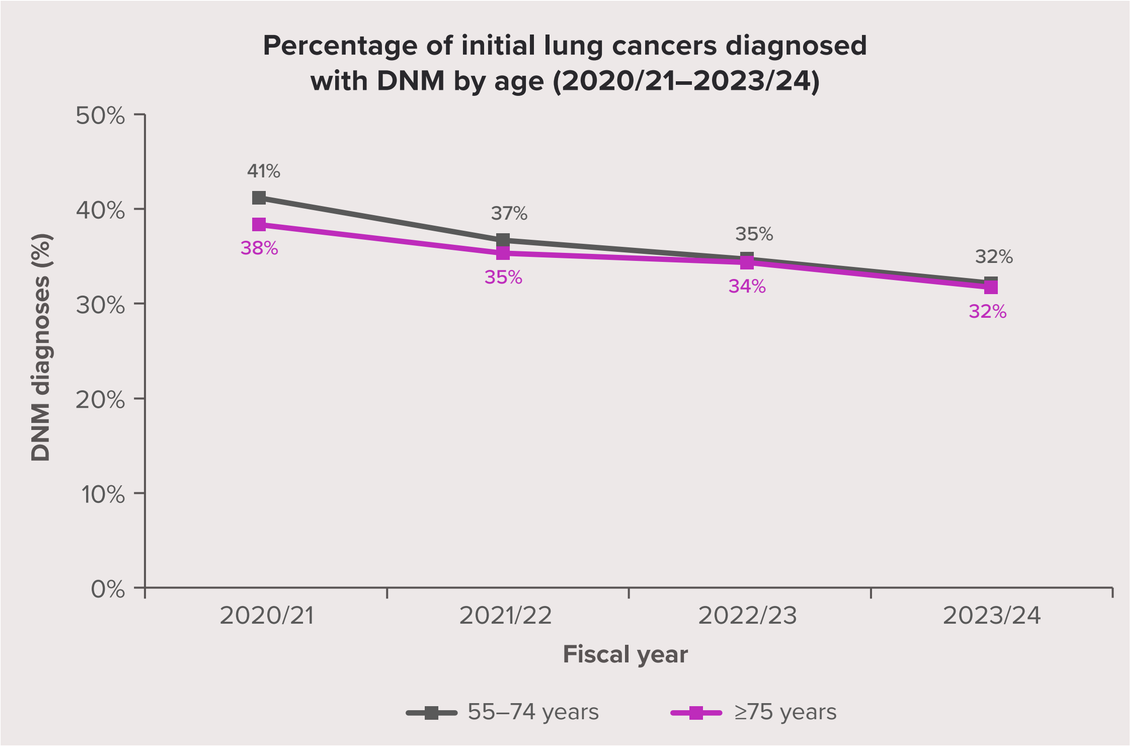
Other

Referral source | Chest X-ray wait time | PET scan

East Midlands Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged 55–74 years and ≥75 years, in line with the national picture.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages | ○ 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

East Midlands Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 and ≥75 years with mental health diagnoses
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas
- East Midlands Cancer Alliance performed well in chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from deprived areas and those with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

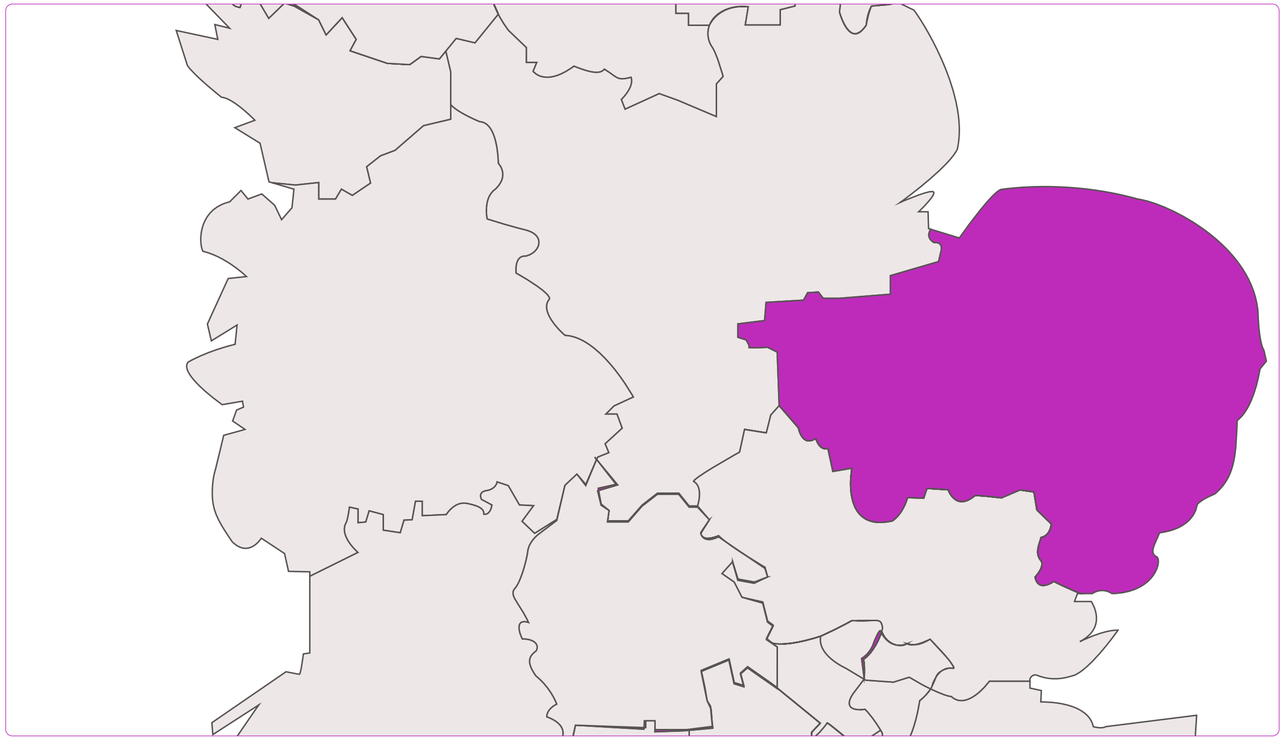
Other

Referral source | Chest X-ray wait time | PET scan

East of England – North Cancer Alliance

Explore the data for East of England – North Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

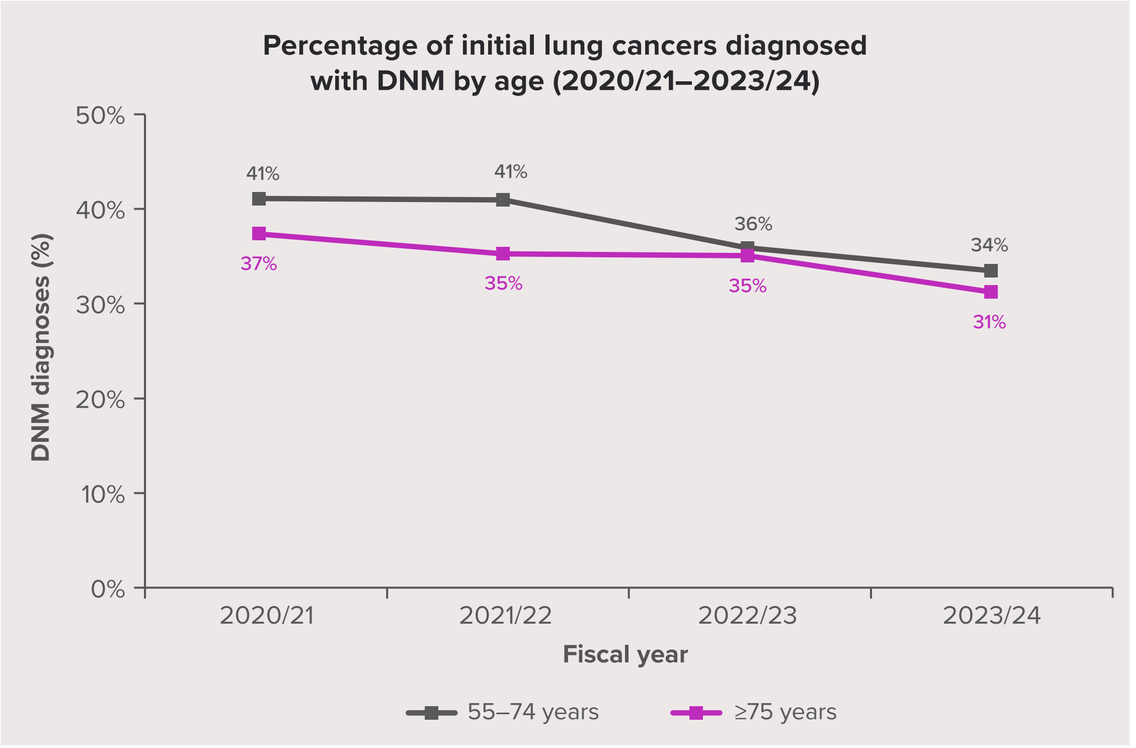
Other

Referral source | Chest X-ray wait time | PET scan

East of England – North Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased overall for both age groups across the study period, the proportion in people aged 55–74 years did not change between 2020/21 and 2021/22 at the start of the study and plateaued between 2021/22 and 2022/23 in people aged ≥75 years.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

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East of England – North Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	X

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 and ≥75 years with mental health diagnoses
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas
  - overall wait time between chest X-ray request and report issued.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from deprived areas and those with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for chest X-rays and imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on chest X-ray and imaging reporting for patients with suspected lung cancer?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

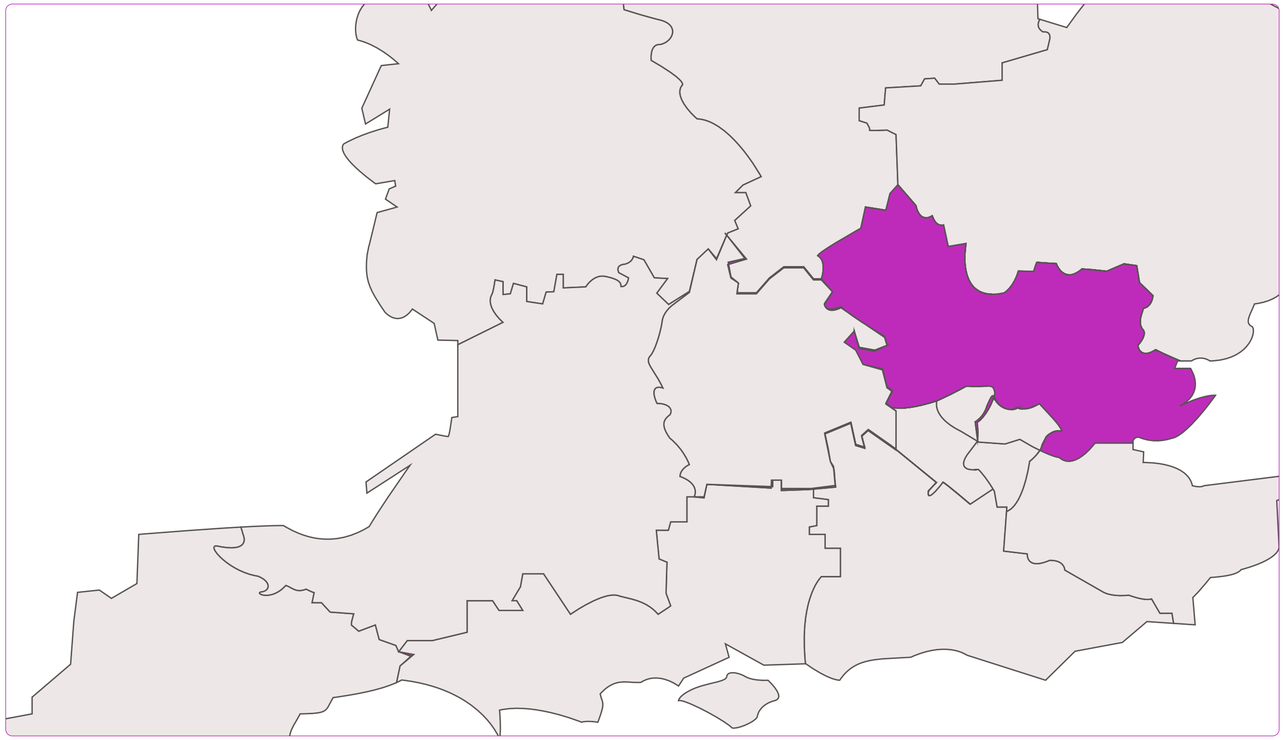
Other

Referral source | Chest X-ray wait time | PET scan

East of England – South Cancer Alliance

Explore the data for East of England – South Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ○

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

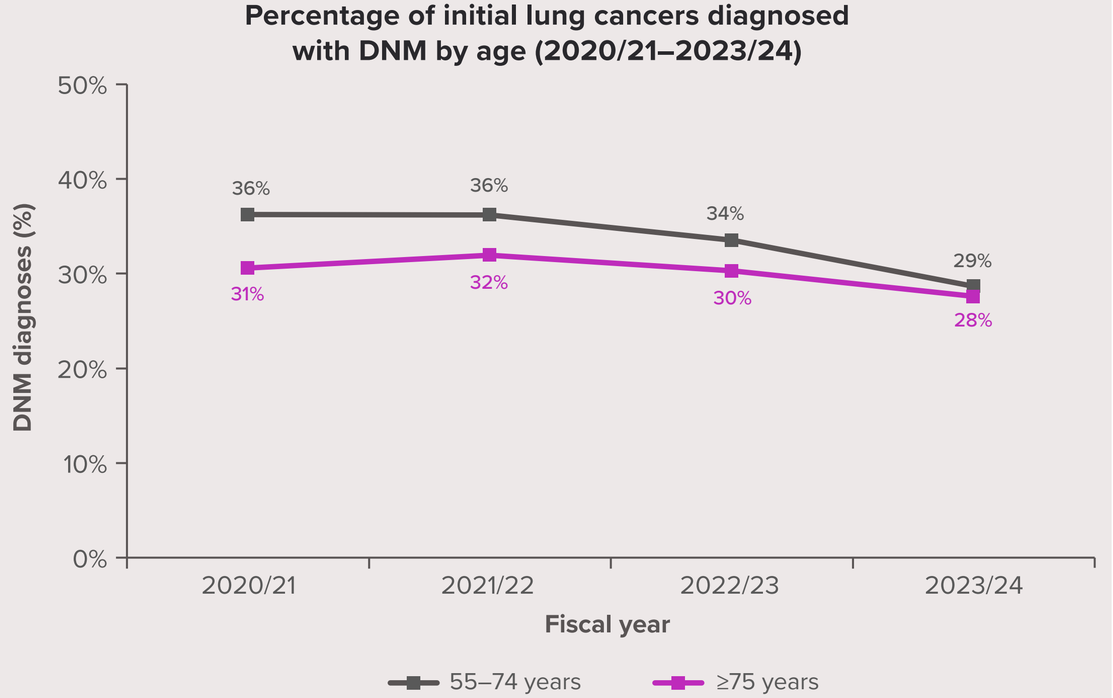
Other

Referral source | Chest X-ray wait time | PET scan

East of England – South Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased overall in both age groups across the study period.
- However, the proportion in people aged 55–74 years did not change between 2020/21 and 2021/22 at the start of the study and showed an uptick of 1 pp in 2021/22 in people aged ≥75 years before decreasing steadily.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

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East of England – South Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	X
Test request to service report issued	X

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 and ≥75 years with mental health diagnoses
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas
  - wait time between chest X-ray and service report issued and overall wait time between chest X-ray request and report issued.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from deprived areas and those with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on imaging reporting for patients with suspected lung cancer?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

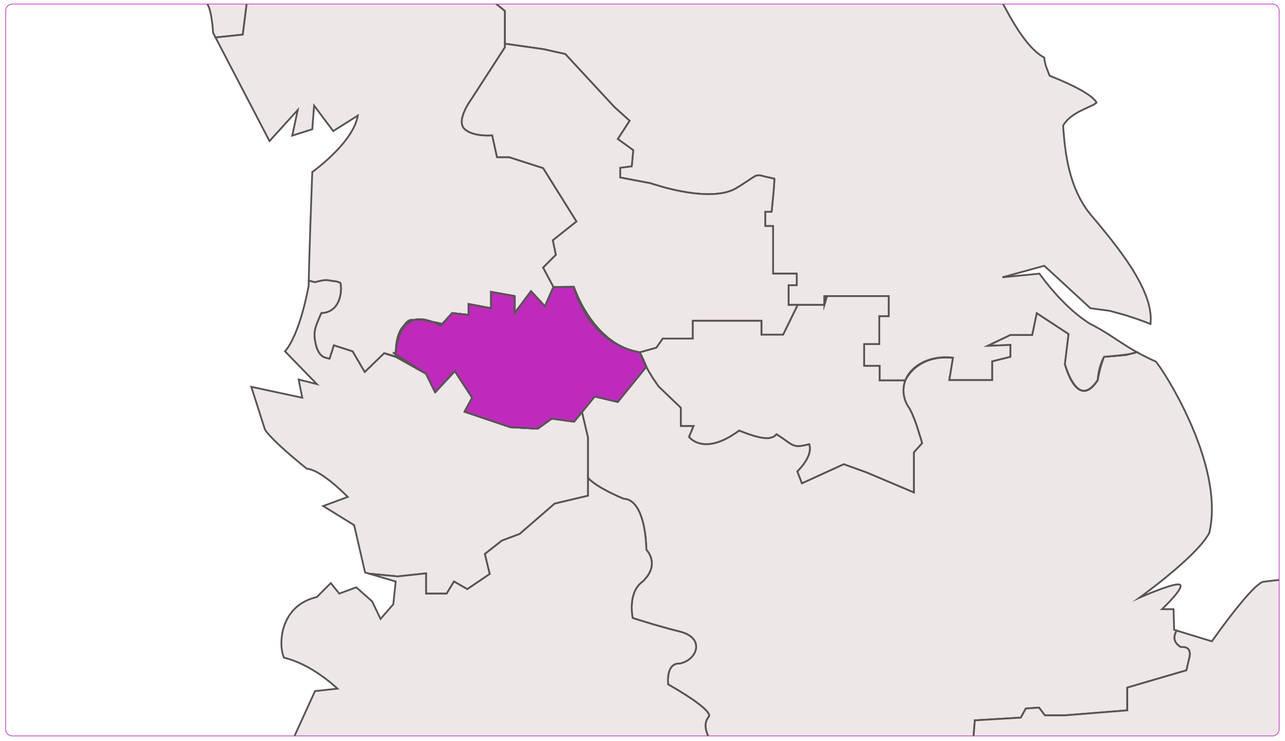
Other

Referral source | Chest X-ray wait time | PET scan

Greater Manchester Cancer Alliance

Explore the data for Greater Manchester Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

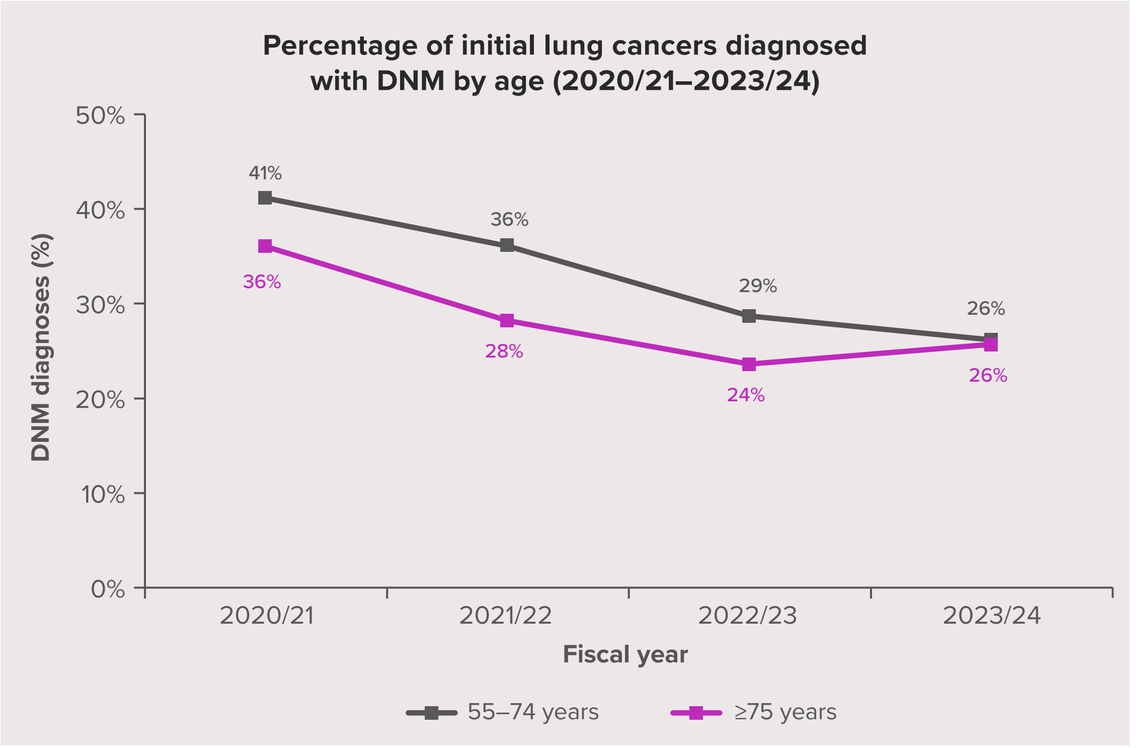
Other

Referral source | Chest X-ray wait time | PET scan

Greater Manchester Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged 55–74 years, in line with the national picture.
- In contrast with the national average, there was a 2 pp uptick in DNM diagnoses over the latest year for people aged ≥75 years.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages | ○ 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

Greater Manchester Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	X
Test request to service report issued	X

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 and ≥75 years with mental health diagnoses
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas
  - chest X-ray wait times for test to service report issued and overall from test request to service report issued.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from deprived areas and those with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on imaging reporting for patients with suspected lung cancer?

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

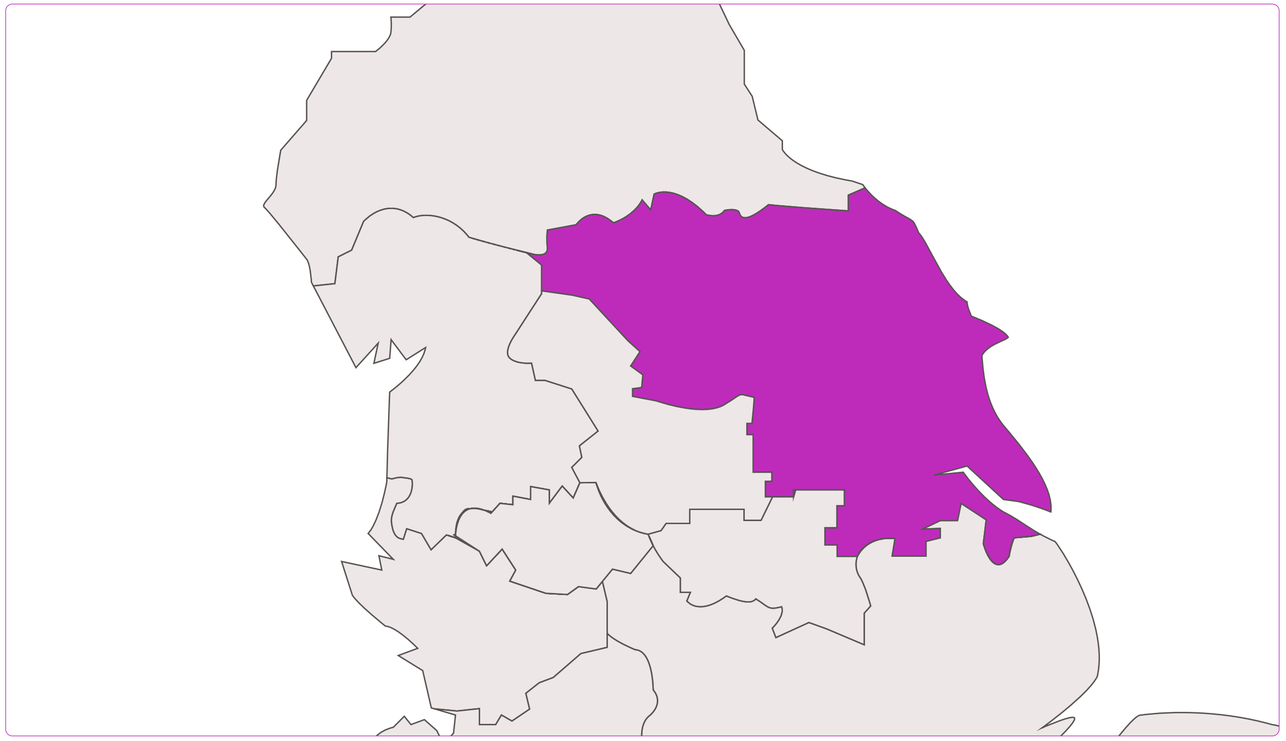
Other

Referral source | Chest X-ray wait time | PET scan

Humber, Coast and Vale Cancer Alliance

Explore the data for Humber, Coast and Vale Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

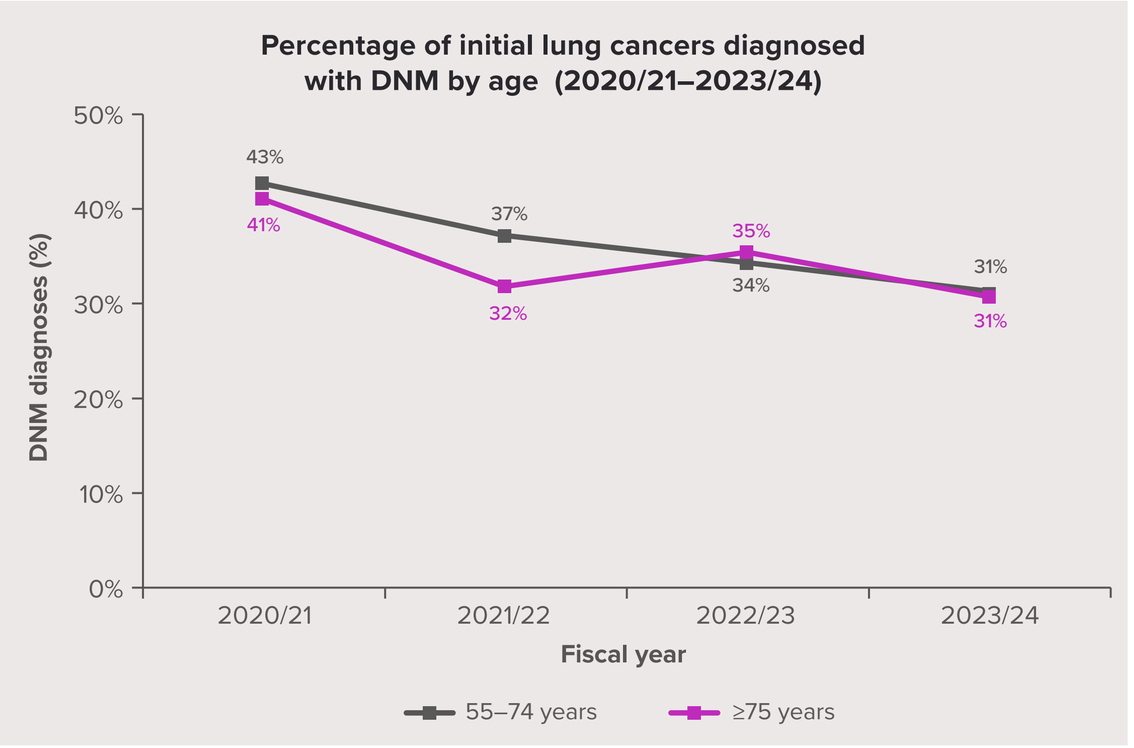
Referral source | Chest X-ray wait time | PET scan

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Humber, Coast and Vale Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged for people aged 55–74 years, in line with the national picture.
- In contrast with the national average, the proportion of DNM diagnoses increased by 3 pp in people aged ≥75 years in 2022/23, before decreasing again.



Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Humber, Coast and Vale Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	✓	✓
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas
- Humber, Coast and Vale Cancer Alliance performed well in chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

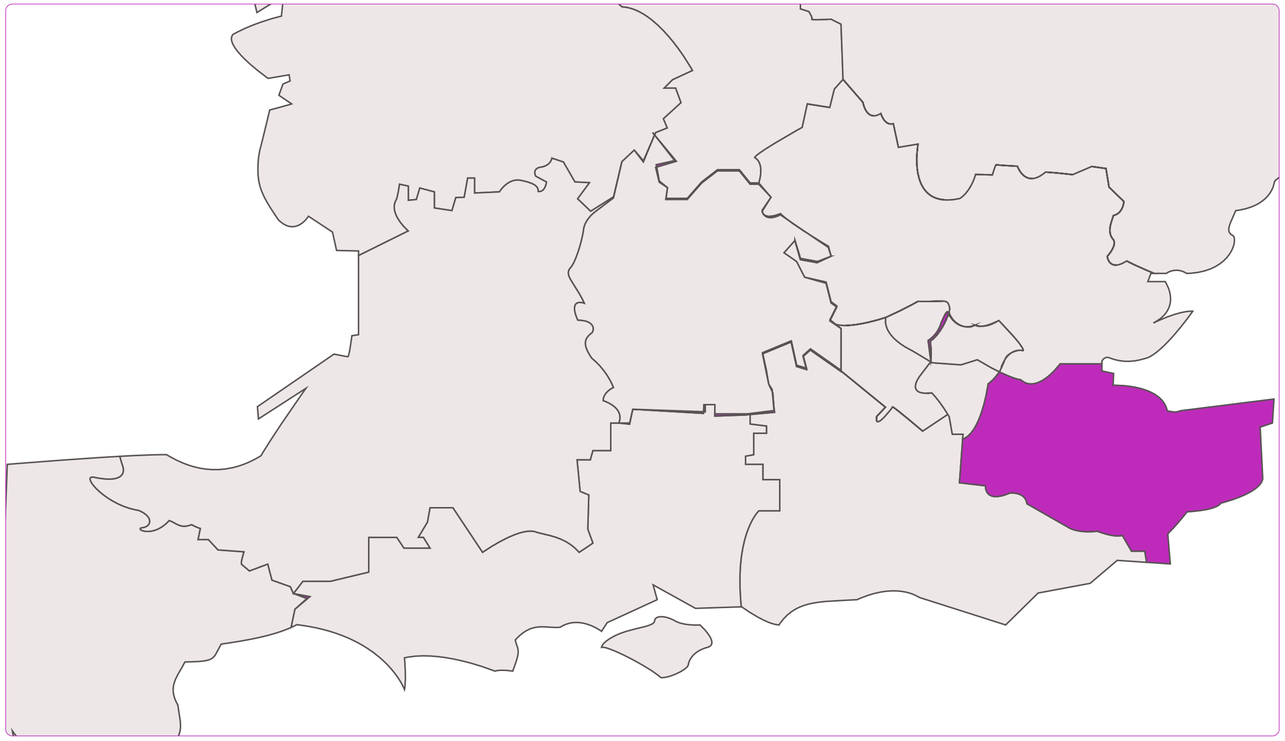
Other

Referral source | Chest X-ray wait time | PET scan

Kent and Medway Cancer Alliance

Explore the data for Kent and Medway Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

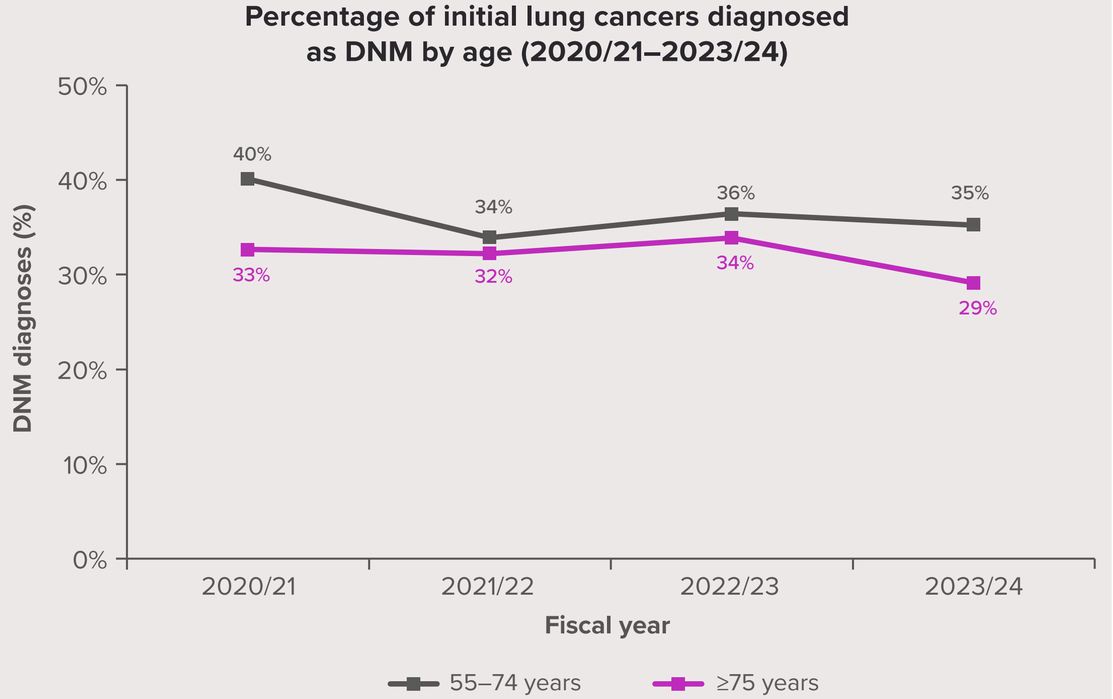
Other

Referral source | Chest X-ray wait time | PET scan

Kent and Medway Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased overall across the study period for both age groups; however, the increase was not steady in either group.
- For people aged 55–74 years, an initial decrease of 6 pp in 2021/22 was followed by an increase of 2 pp in 2022/23 and a decrease of 1 pp in 2023/24.
- For people aged ≥75 years, a small decrease of 1 pp in 2021/22 was followed by an increase of 2 pp in 2022/23 and a further decrease of 5 pp in 2023/24.



HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

Kent and Medway Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	✓	✓
	% A&E	
Deprivation	✓	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - referrals through A&E in people aged ≥75 years from the most deprived areas
- Kent and Medway Cancer Alliance performed well in chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics easily accessible via public transport?

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

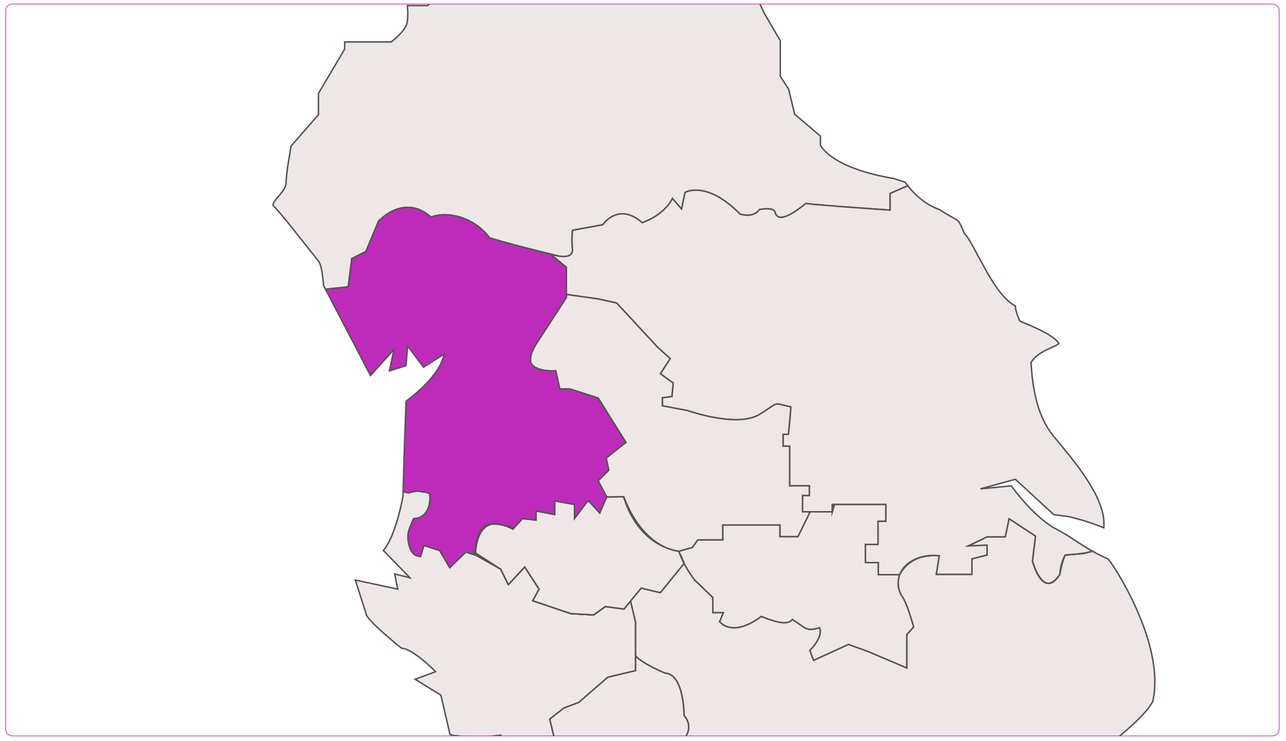
Other

Referral source | Chest X-ray wait time | PET scan

Lancashire and South Cumbria Cancer Alliance

Explore the data for Lancashire and South Cumbria Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

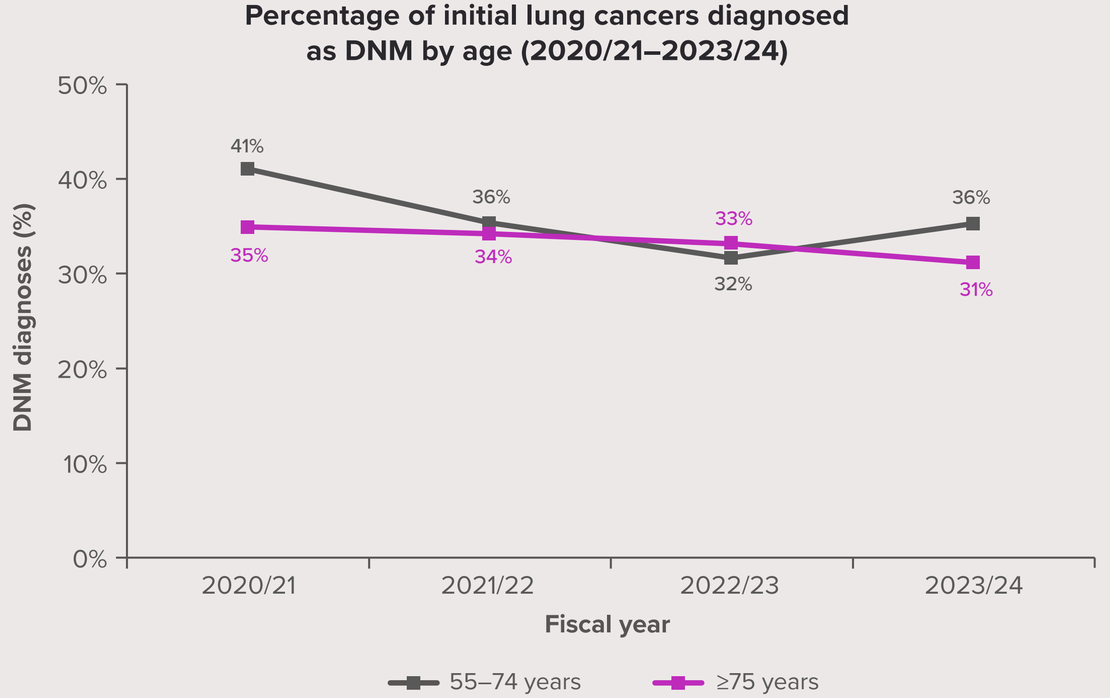
Other

Referral source | Chest X-ray wait time | PET scan

Lancashire and South Cumbria Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged ≥75 years, in line with the national picture.
- In contrast with the national average, there was a 4 pp uptick in DNM diagnoses over the latest year for people aged 55–74 years.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages | ○ 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Lancashire and South Cumbria Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	X
Urbanicity	✓	✓
Mental health	✓	✓
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - patients ≥75 years from the most deprived areas
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas
- Lancashire and South Cumbria Cancer Alliance performed well in chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

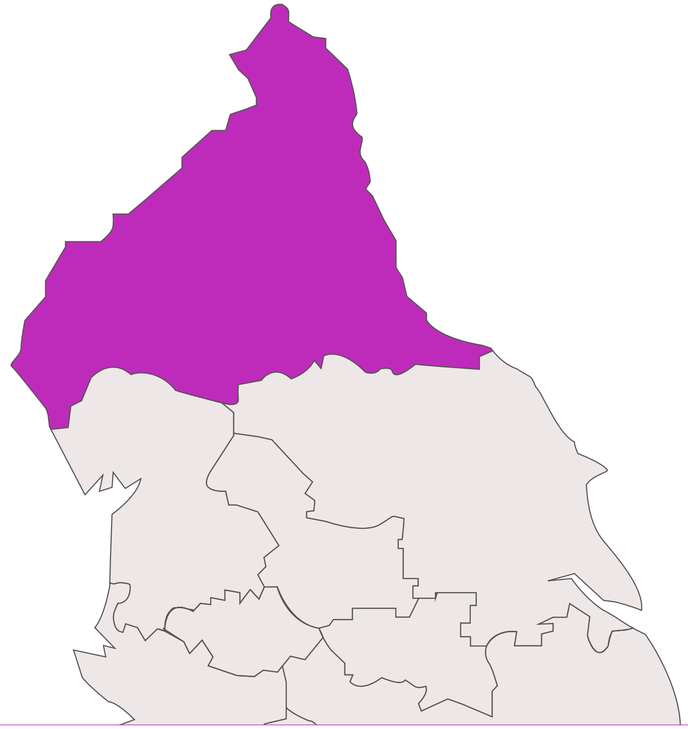
Other

Referral source | Chest X-ray wait time | PET scan

Northern Cancer Alliance

Explore the data for Northern Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

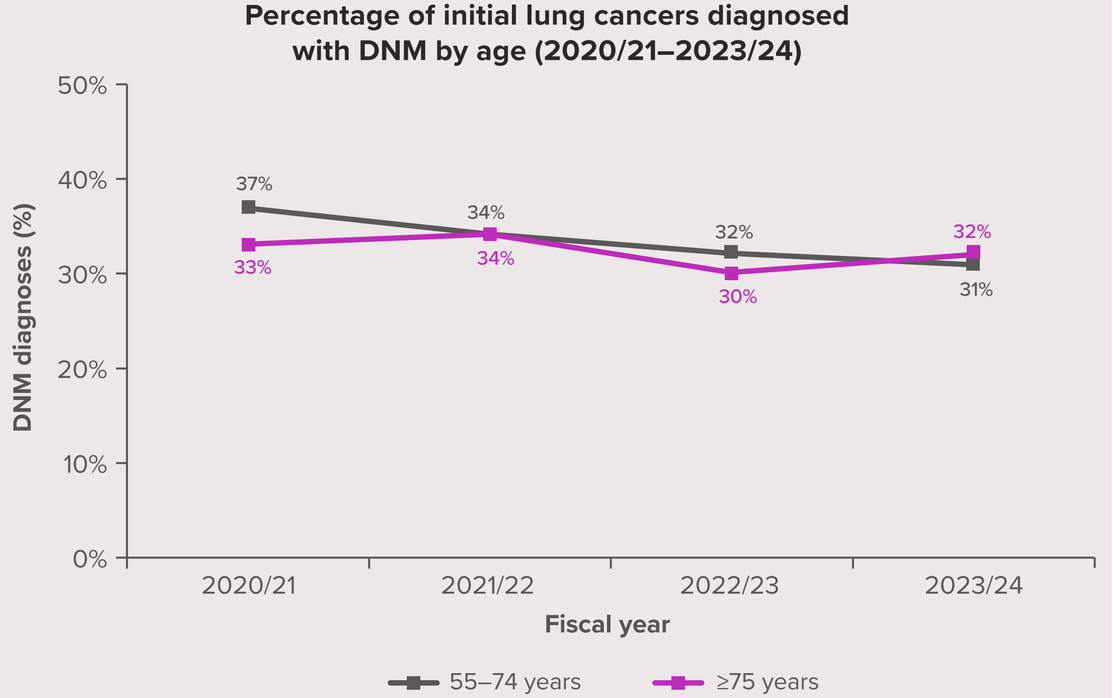
Other

Referral source | Chest X-ray wait time | PET scan

Northern Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged 55–74 years, in line with the national picture.
- In contrast with the national average, there was a 2 pp increase in DNM diagnoses over the latest year for people aged ≥75 years.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

Northern Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	X	✓
Mental health	X	X
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	X

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - patients aged 55-74 from urban areas.
  - patients aged 55–74 and ≥75 years with a mental health condition
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas
- Northern Cancer Alliance performed well in chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from urban and deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

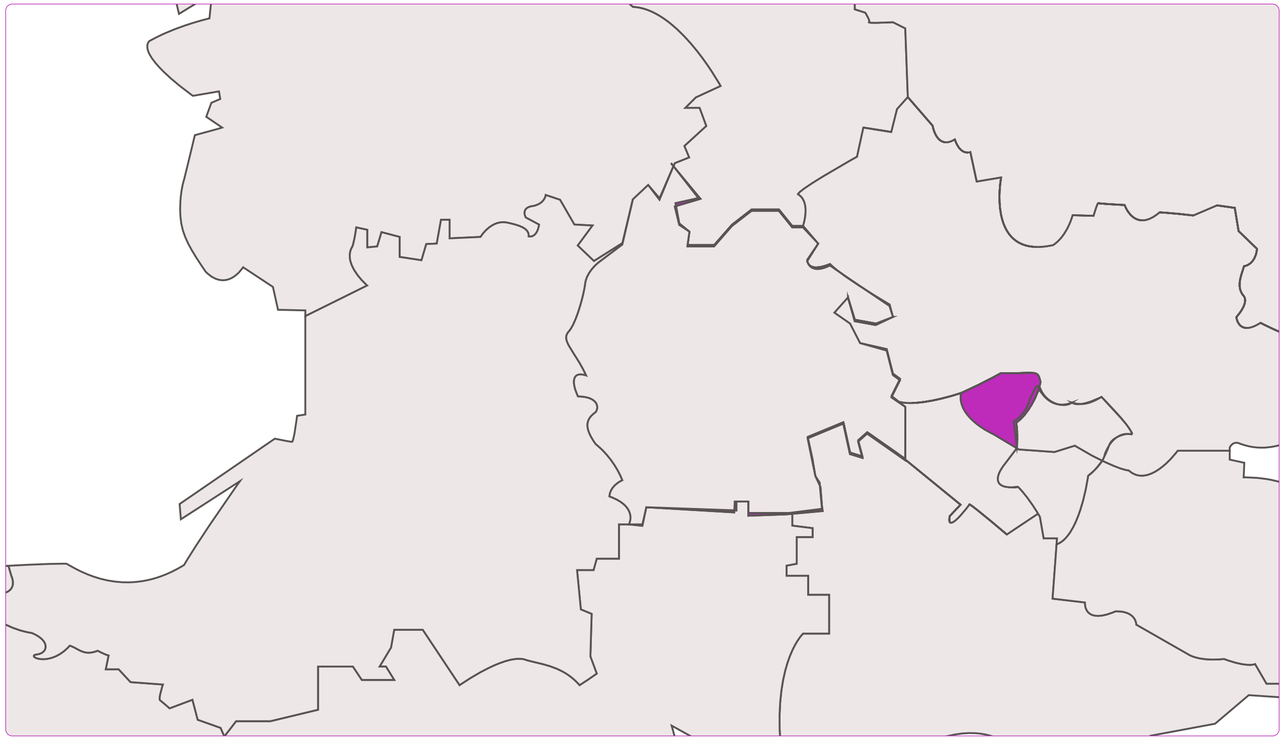
Other

Referral source | Chest X-ray wait time | PET scan

North Central London Cancer Alliance

Explore the data for North Central London Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

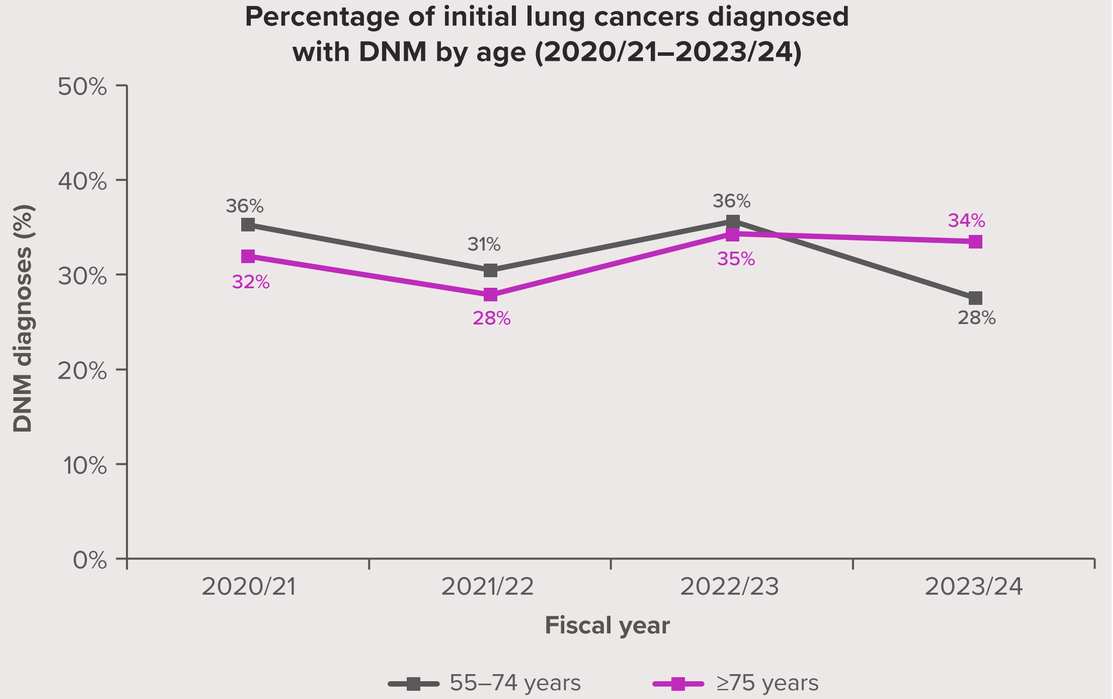
Other

Referral source | Chest X-ray wait time | PET scan

North Central London Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased overall in people aged 55–74 years but this was not a steady decrease: after an initial decrease of 5 pp between 2020/21 and 2021/22, the proportion returned to its initial level with an uptick of 5 pp in 2022/23 before decreasing by 8 pp in 2023/24.
- In people aged ≥75 years, although the proportion of DNM diagnoses decreased by 4 pp between 2020/21 and 2021/22, it increased by 7 pp in 2022/23 before falling by just 1 pp in 2023/24, thus ending the study period higher than at the start.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages | ○ 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

North Central London Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	✓
	% A&E	
Deprivation	✓	✓

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	X
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - patients aged 55–74 with mental health conditions
  - chest X-ray wait time from test to service report issued.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Is capacity for imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on imaging reporting for patients with suspected lung cancer?

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

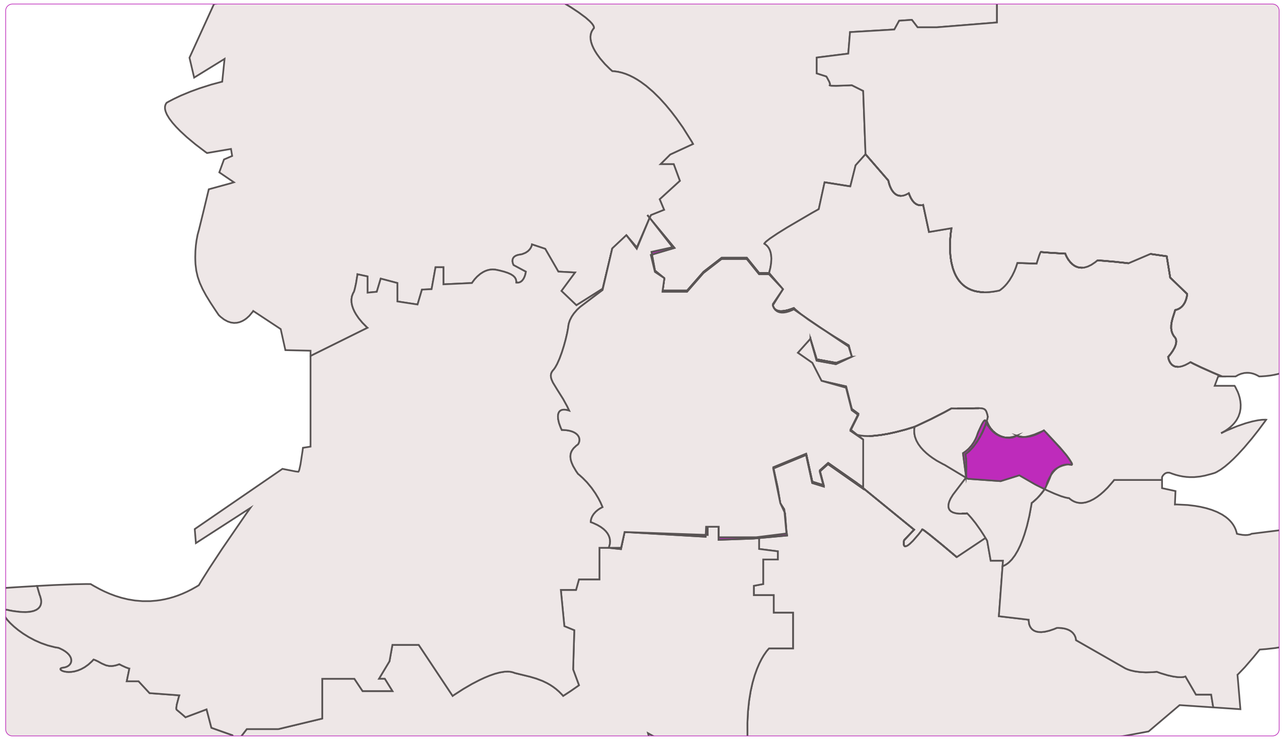
Other

Referral source | Chest X-ray wait time | PET scan

North East London Cancer Alliance

Explore the data for North East London Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

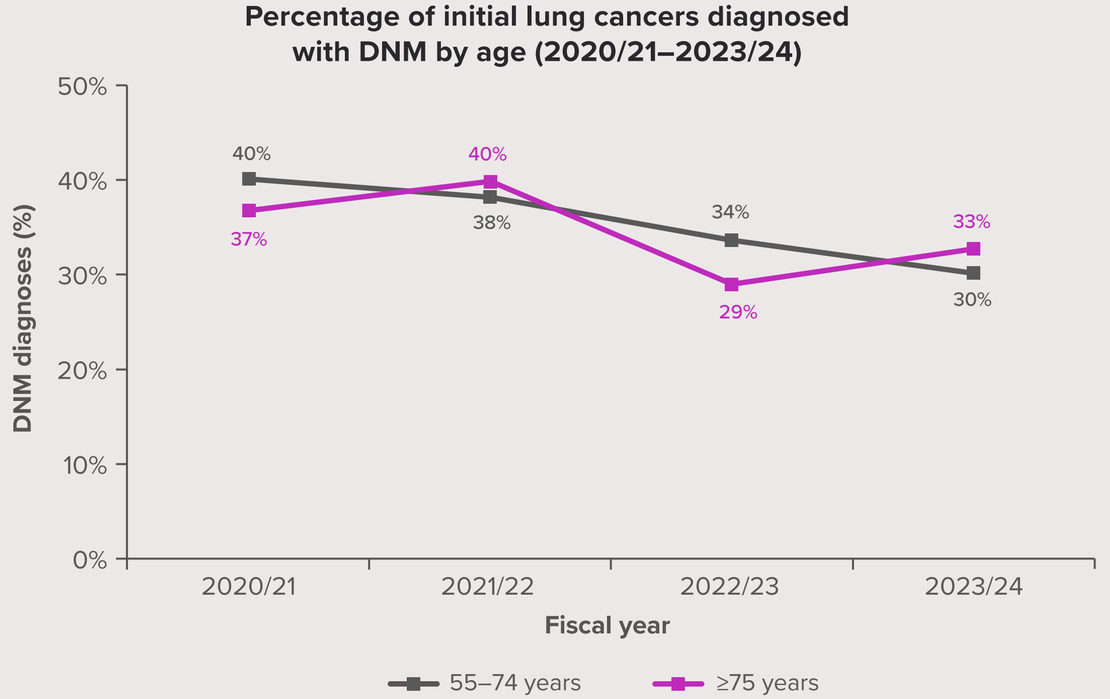
Other

Referral source | Chest X-ray wait time | PET scan

North East London Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged 55–74 years, in line with the national picture.
- Although the overall trend for people aged ≥75 years was a decrease, the year-on-year pattern was more erratic, with an increase of 3 pp initially between 2020/21 and 2021/22, a decrease of 11 pp between 2021/22 and 2022/23 and an uptick of 4 pp in the latest year.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

All ages ◉ | 40–54 ○ | 55–74 ◉ | ≥75 ◉

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

North East London Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	✓	✓
	% A&E	
Deprivation	✓	✓

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	X
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - chest X-ray wait time from test to service report issued.

Starting points for exploration:

- Is capacity for imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on imaging reporting for patients with suspected lung cancer?

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

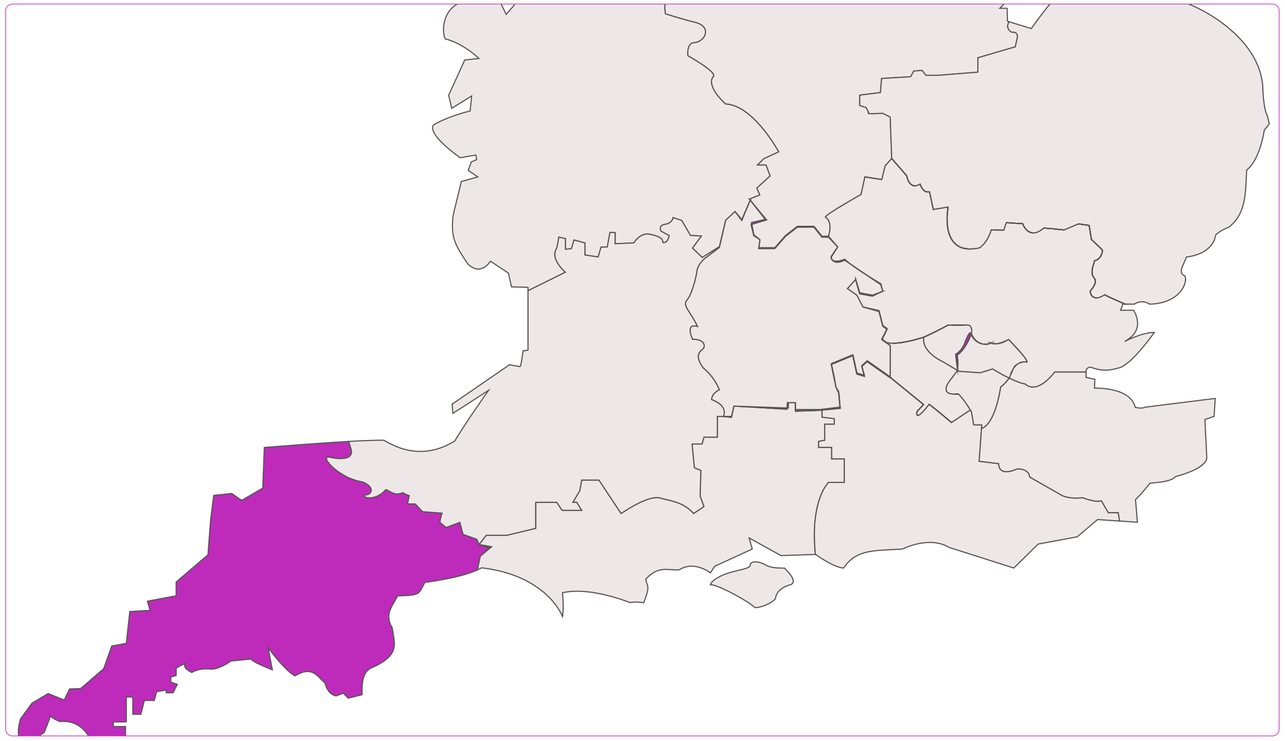
Other

Referral source | Chest X-ray wait time | PET scan

Peninsula Cancer Alliance

Explore the data for Peninsula Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ○

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

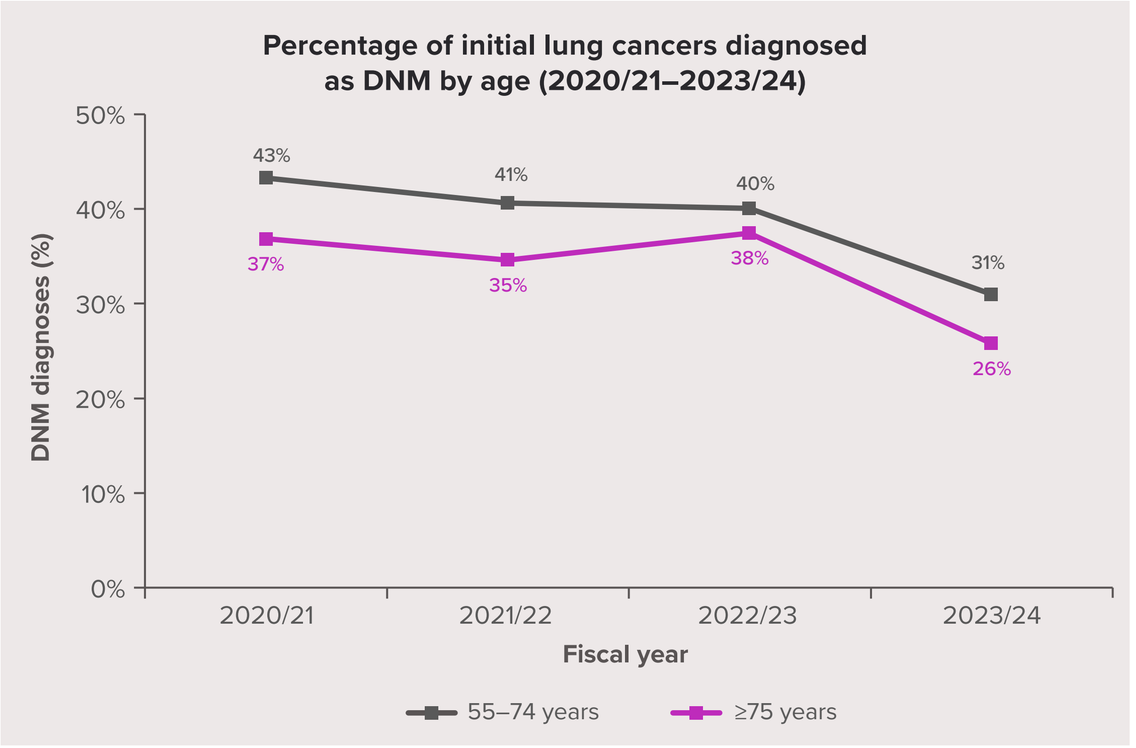
Other

Referral source | Chest X-ray wait time | PET scan

Peninsula Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased year by year for people aged 55–74 years, in line with the national picture.
- For people aged ≥75 years, the proportion decreased in each year except 2022/23, when an uptick of 3 pp was seen.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Peninsula Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	✓	✓
	% A&E	
Deprivation	✓	✓

Chest X-ray wait time*	All ages
Test request to test	X
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - chest X-ray wait time from test request to test.

Starting points for exploration:

- Is capacity for chest X-rays sufficient for the local population?
- Do protocols ensure rapid turnaround on chest X-rays for patients with suspected lung cancer?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

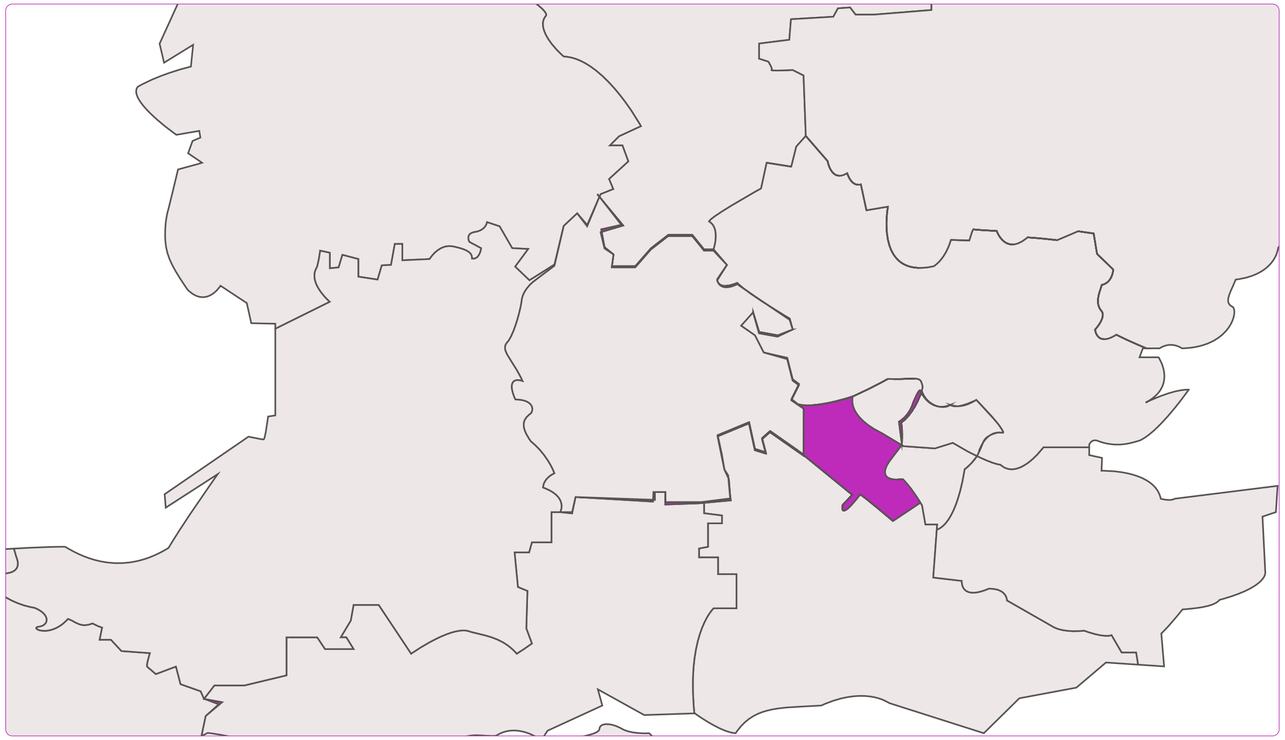
Other

Referral source | Chest X-ray wait time | PET scan

RM Partners (West London) Cancer Alliance

Explore the data for RM Partners (West London) Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

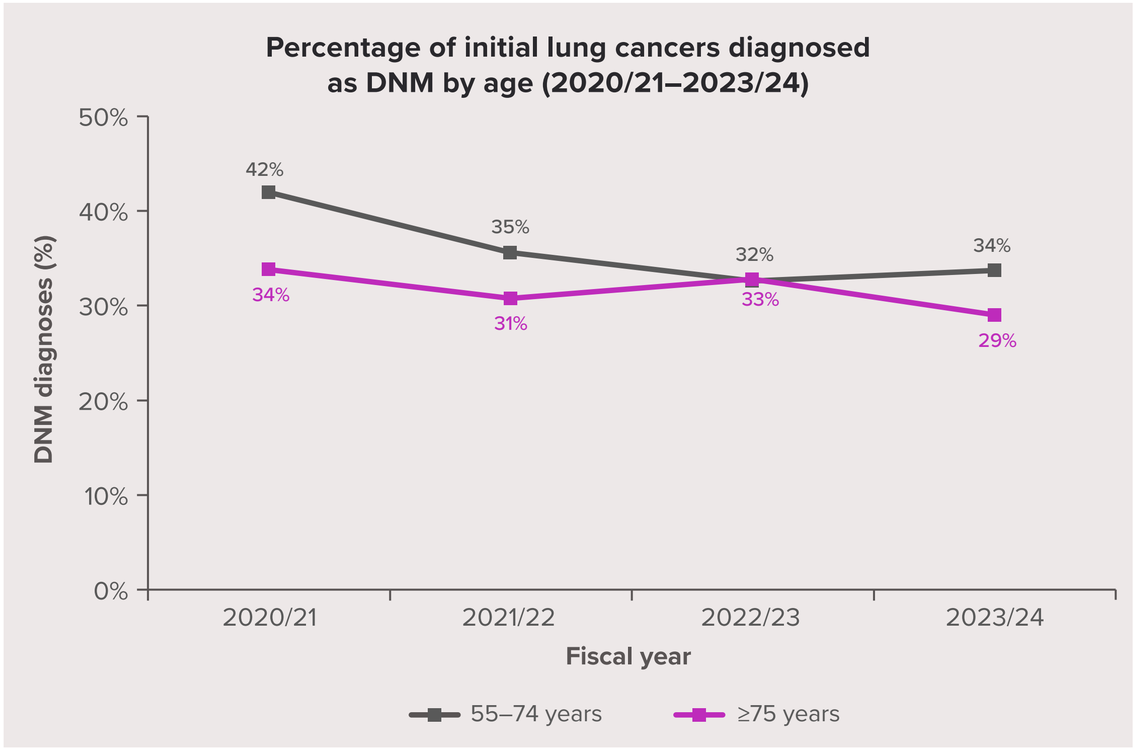
Referral source | Chest X-ray wait time | PET scan

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

RM Partners (West London) Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased steadily for people aged 55–74 years to 2022/23, in line with the national picture, but then increased by 2 pp in 2023/24.
- For people aged ≥75 years, there was an overall decrease of 5 pp across the study period, but decreases in 2021/22 and 2023/24 were accompanied by an uptick of 2 pp in 2022/23.



Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

All ages ◉ | 40–54 ○ | 55–74 ◉ | ≥75 ◉

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

RM Partners (West London) Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - patients aged 55–74 and ≥75 years with mental health conditions
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas.
- RM Partners (West London) performed well in chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients with mental health conditions and from most deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

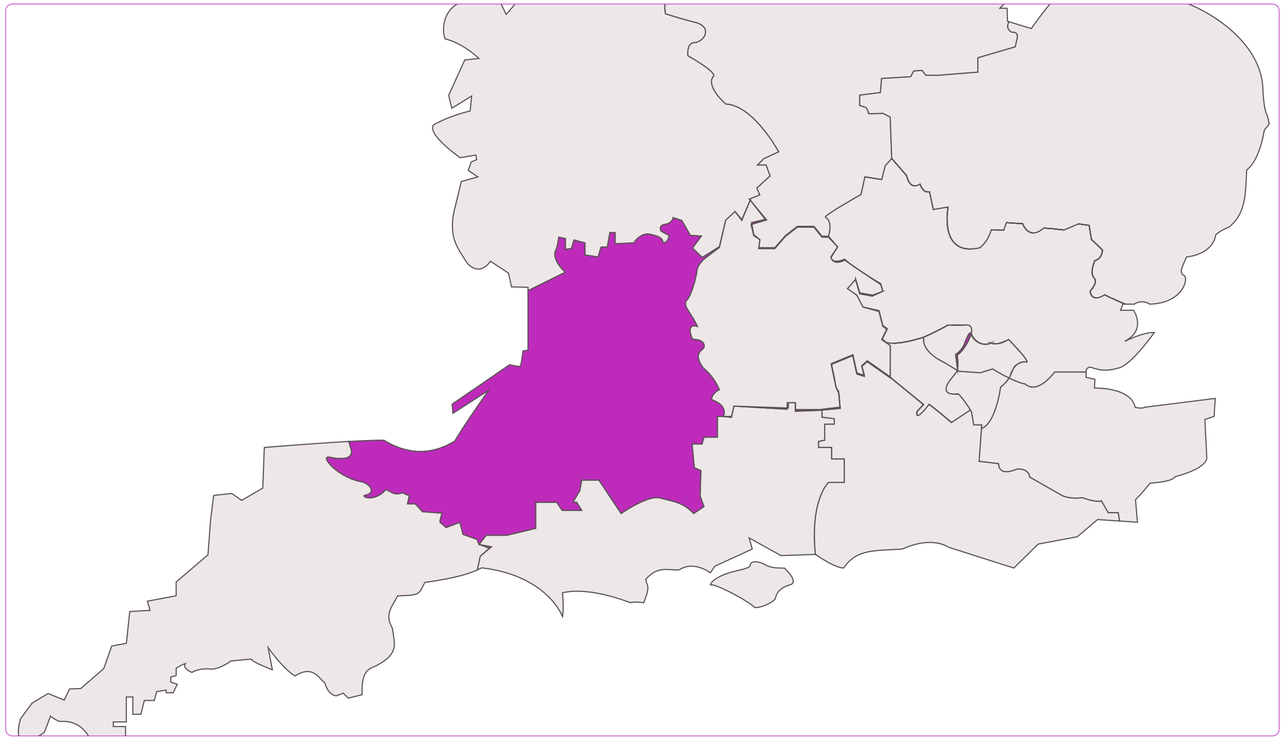
Other

Referral source | Chest X-ray wait time | PET scan

Somerset, Wiltshire, Avon and Gloucestershire Cancer Alliance

Explore the data for Somerset, Wiltshire, Avon and Gloucestershire Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

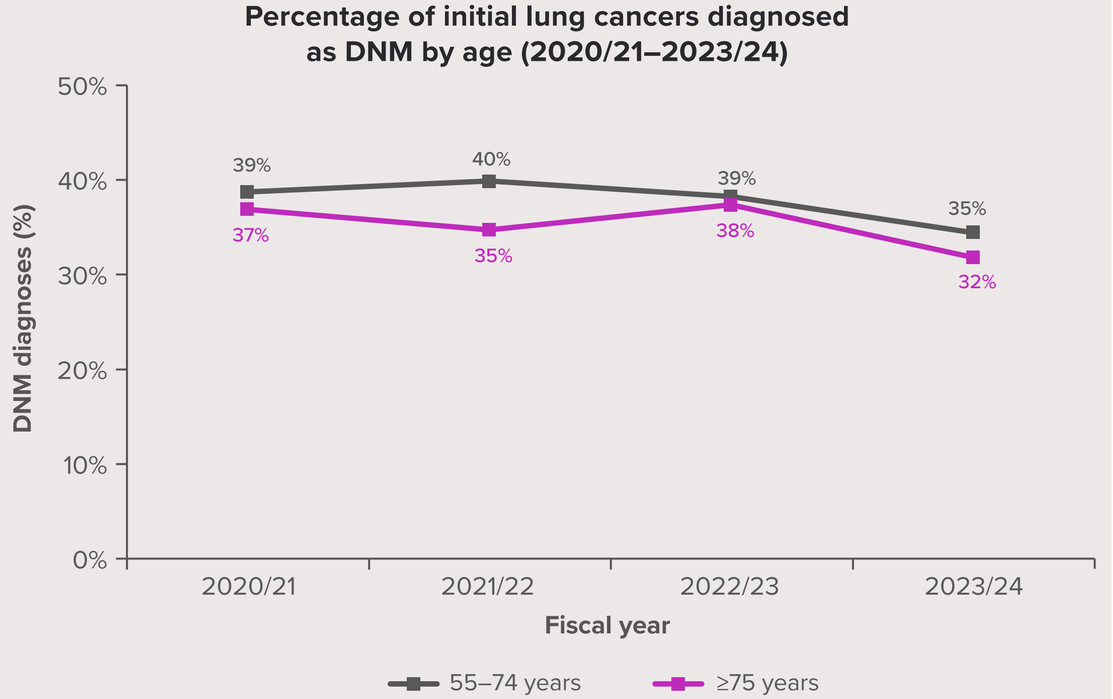
Other

Referral source | Chest X-ray wait time | PET scan

Somerset, Wiltshire, Avon and Gloucestershire Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased overall for both age groups.
- The decrease was not steady in either age group, however, with upticks of 1 pp in 2020/21 for people aged 55–74 years and 3 pp in 2022/23 for people aged ≥75 years before decreases continued.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

Somerset, Wiltshire, Avon and Gloucestershire Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	✓	✓
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	X
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas.
- Somerset, Wiltshire, Avon and Gloucestershire Cancer Alliance performed well in chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from most deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

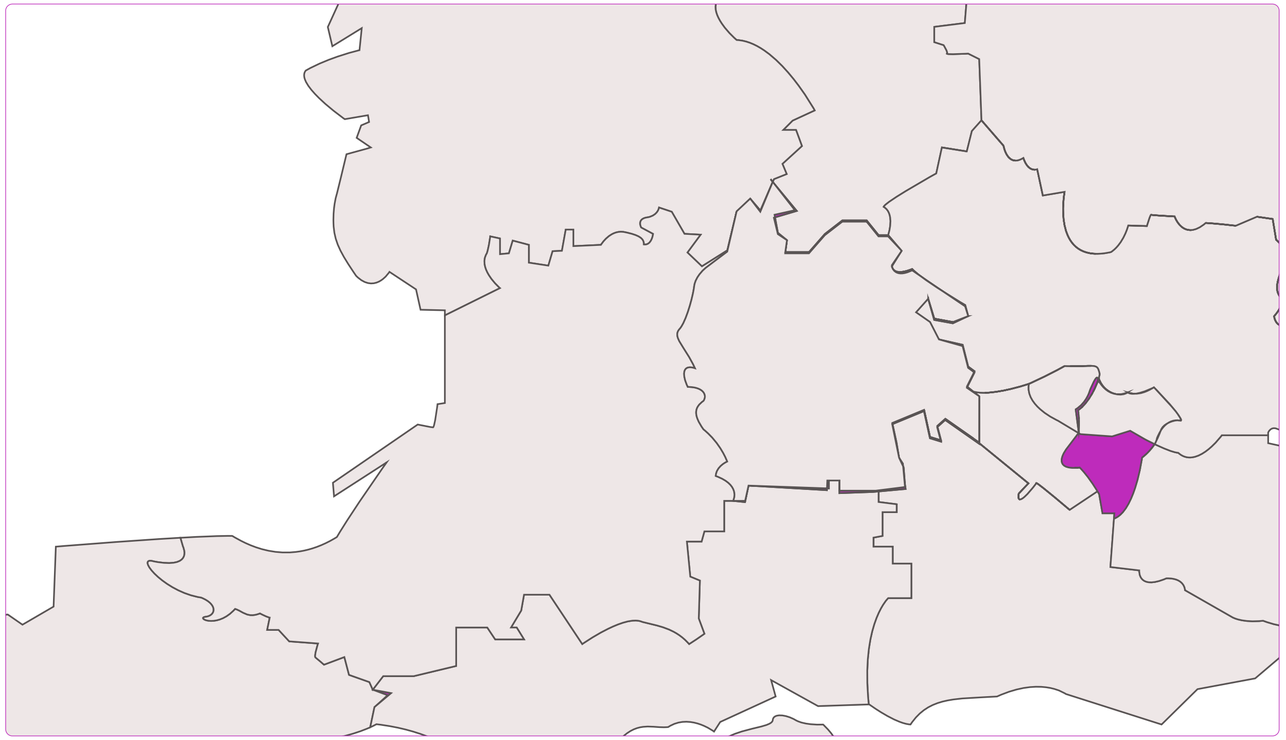
Other

Referral source | Chest X-ray wait time | PET scan

South East London Cancer Alliance

Explore the data for South East London Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

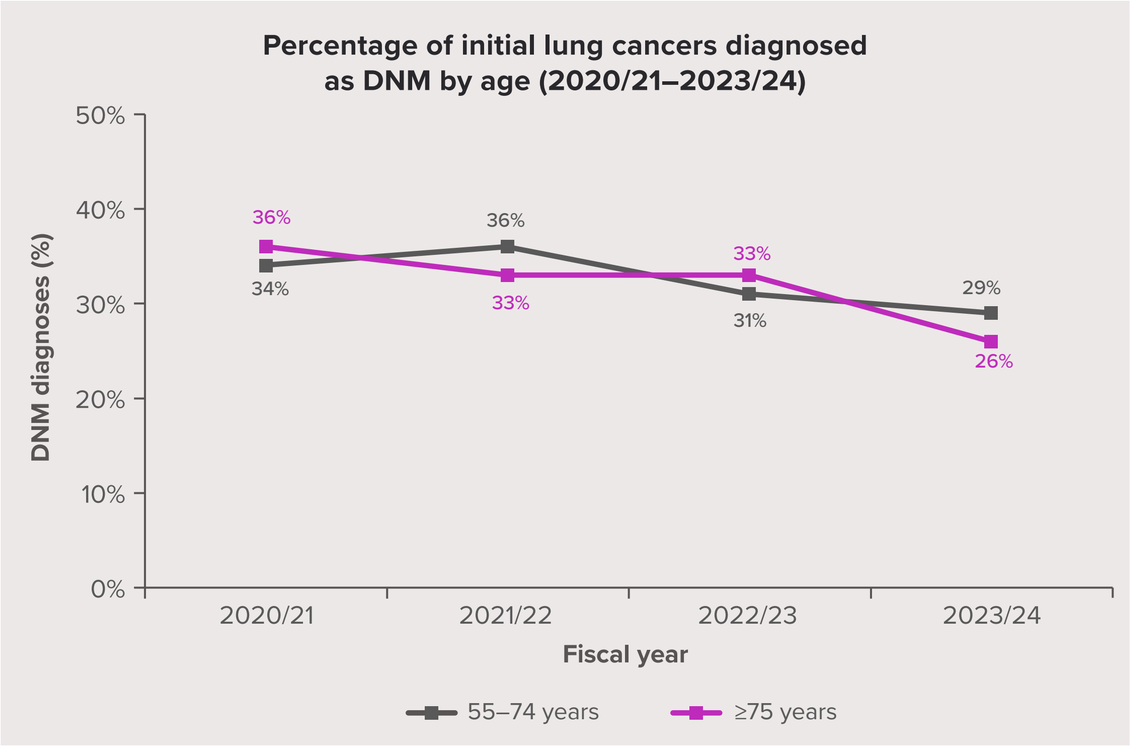
Other

Referral source | Chest X-ray wait time | PET scan

South East London Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased overall across the study period for both age groups.
- The decrease was not steady in either age group, however, with an uptick of 2 pp in 2020/21 for patients aged 55–74 years and a plateau between 2021/22 and 2022/23 in people aged ≥75 years.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

South East London Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	✓
	% A&E	
Deprivation	✓	X

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 years with mental health conditions
  - referrals through A&E in people aged ≥75 years from the most deprived areas.
- South East London Cancer Alliance performed well on chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients from most deprived areas and with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

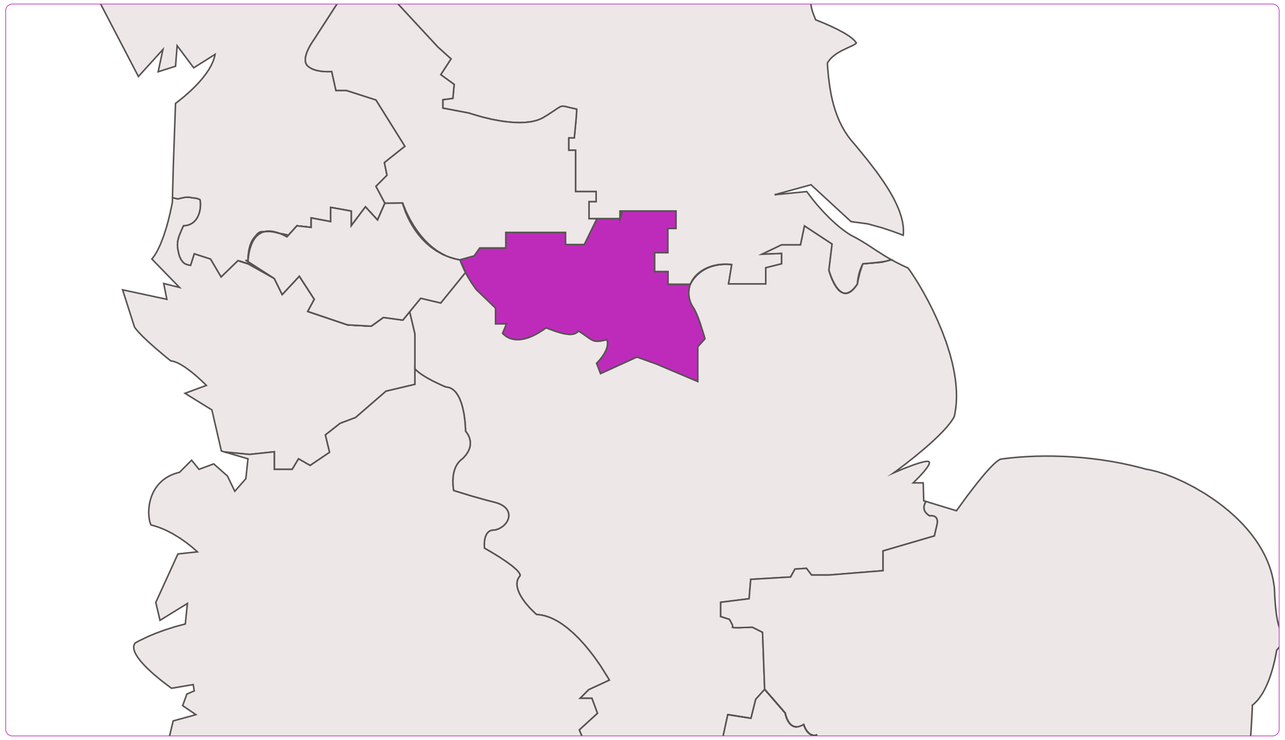
Other

Referral source | Chest X-ray wait time | PET scan

South Yorkshire and Bassetlaw Cancer Alliance

Explore the data for South Yorkshire and Bassetlaw Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ○

Age Group

All ages | 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | Urbanicity

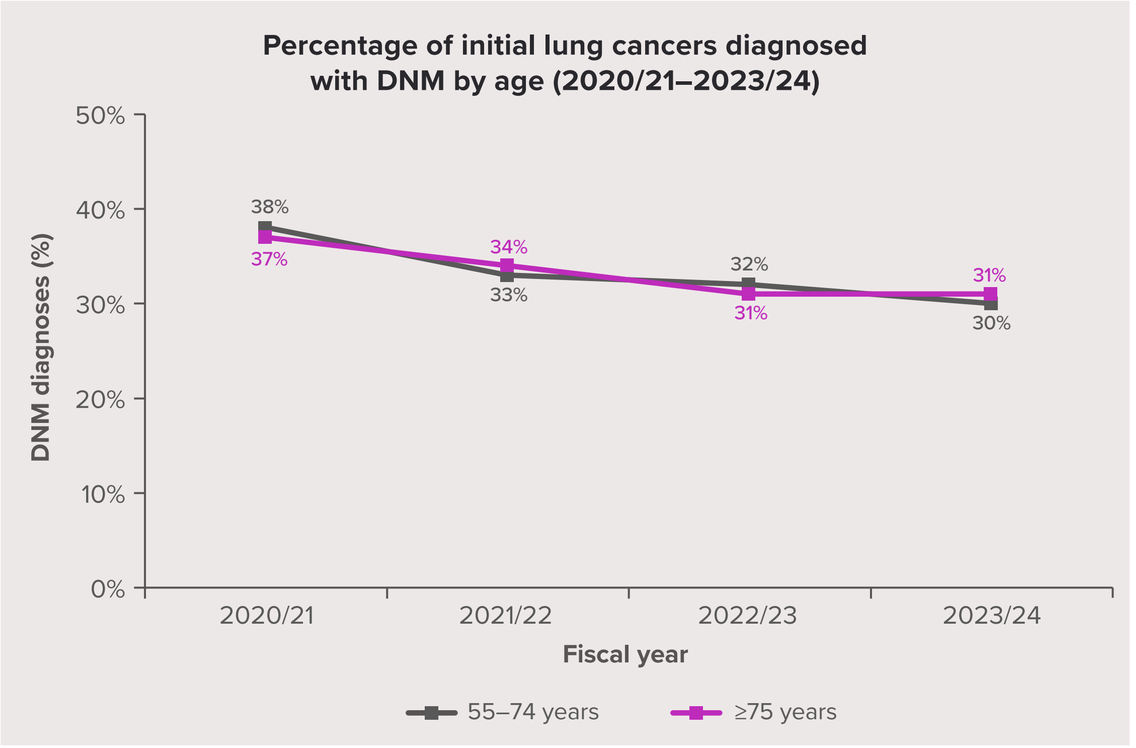
Other

Referral source | Chest X-ray wait time | PET scan

South Yorkshire and Bassetlaw Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged 55–74 years, in line with the national average.
- In people aged ≥75 years, the proportion of lung cancers diagnosed with DNM decreased steadily each year but plateaued between 2022/23 and 2023/24.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages | ○ 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

South Yorkshire and Bassetlaw Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	✓
	% A&E	
Deprivation	✓	✓

Chest X-ray wait time*	All ages
Test request to test	X
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 years with mental health conditions
  - chest X-ray wait times for test request to test.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for chest X-rays sufficient for the local population?
- Do protocols ensure rapid turnaround on chest X-rays for patients with suspected lung cancer?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

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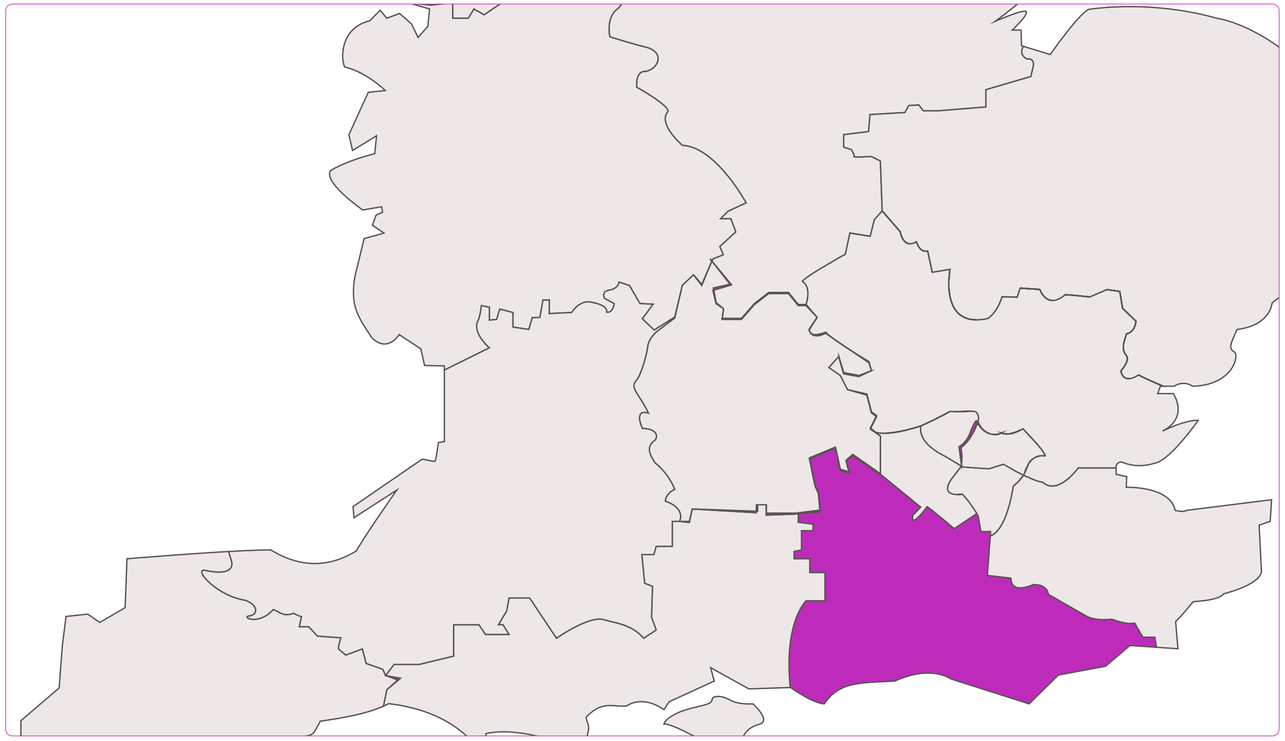
See study methods and HES Disclaimer.

Surrey and Sussex Cancer Alliance

Explore the data for Surrey and Sussex Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

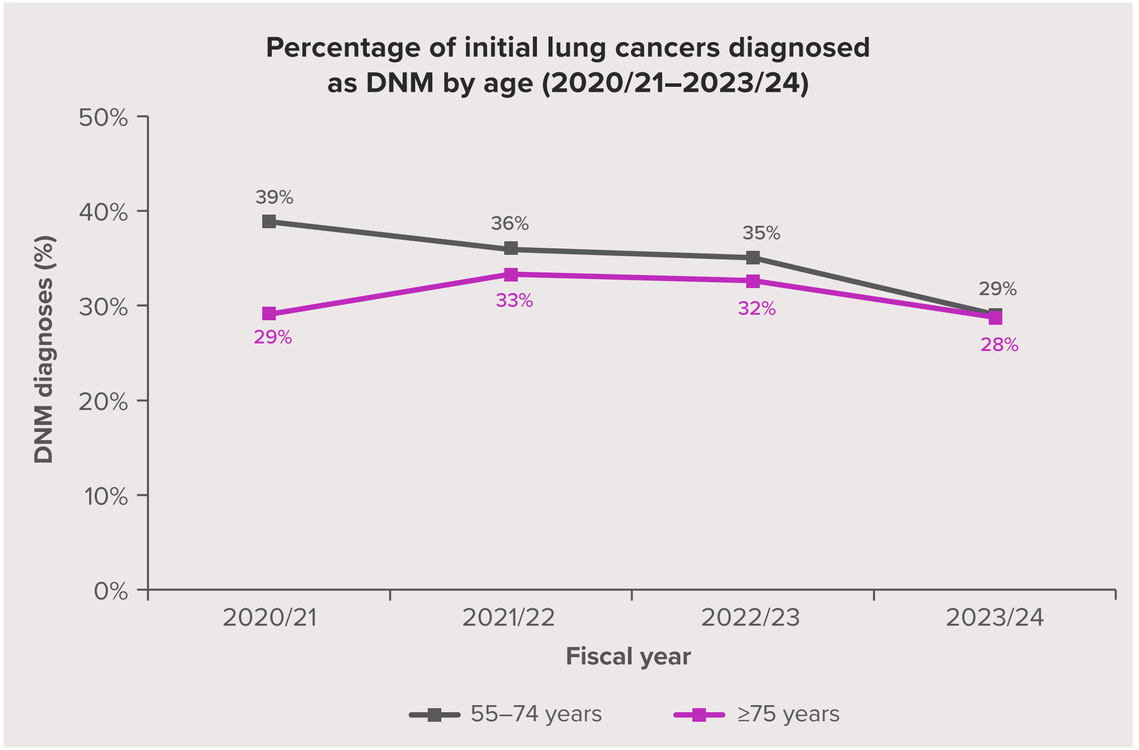
Other

Referral source | Chest X-ray wait time | PET scan

Surrey and Sussex Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased steadily in each year for people aged 55–74 years, in line with the national picture.
- In people aged ≥75 years, there was a 4 pp uptick in DNM diagnoses in 2021/22 followed by decreases of 1 pp and 4 pp, respectively, in 2022/23 and 2023/24.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

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Surrey and Sussex Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	X	✓

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 and ≥75 years with mental health conditions
  - referrals through A&E in people aged 55–74 years from the most deprived areas.
- Surrey and Sussex Cancer Alliance performed well on chest X-ray wait times.

Starting points for exploration:

- How is information communicated to different communities?
- Is there enough engagement with patients with mental health conditions and people living in the most deprived areas?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

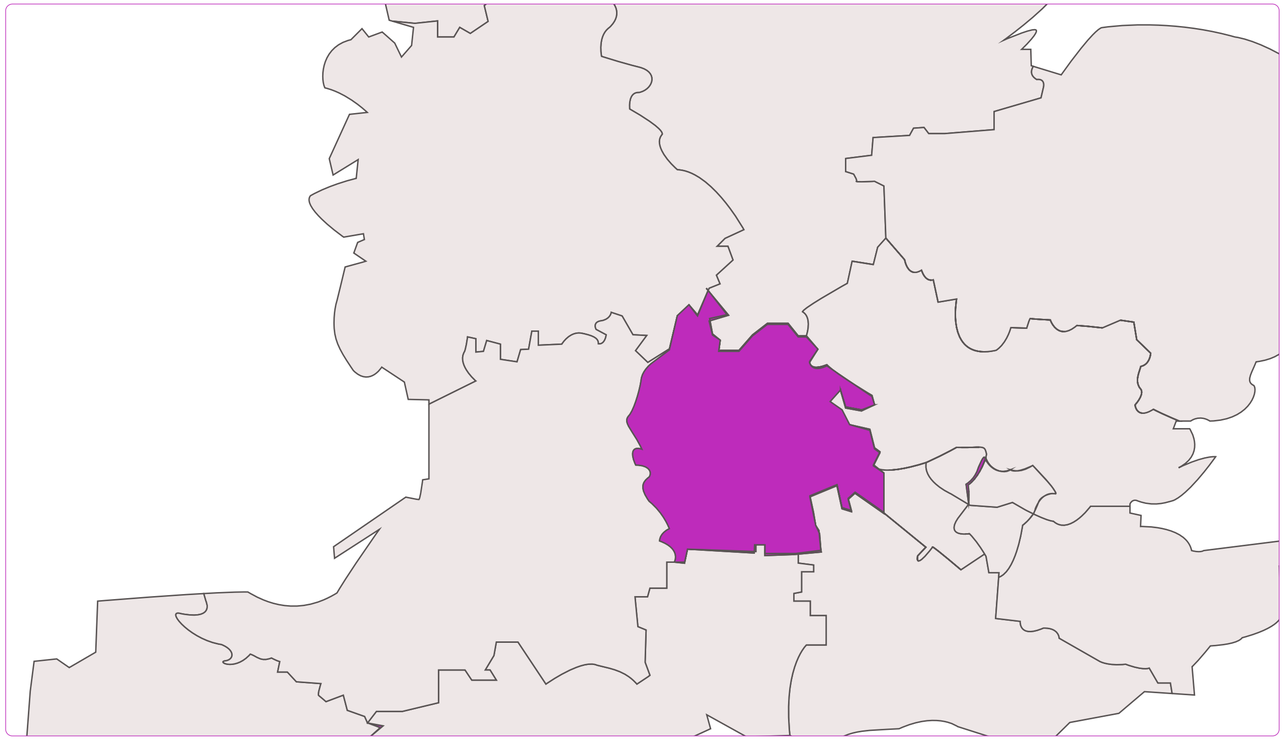
Other

Referral source | Chest X-ray wait time | PET scan

Thames Valley Cancer Alliance

Explore the data for Thames Valley Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

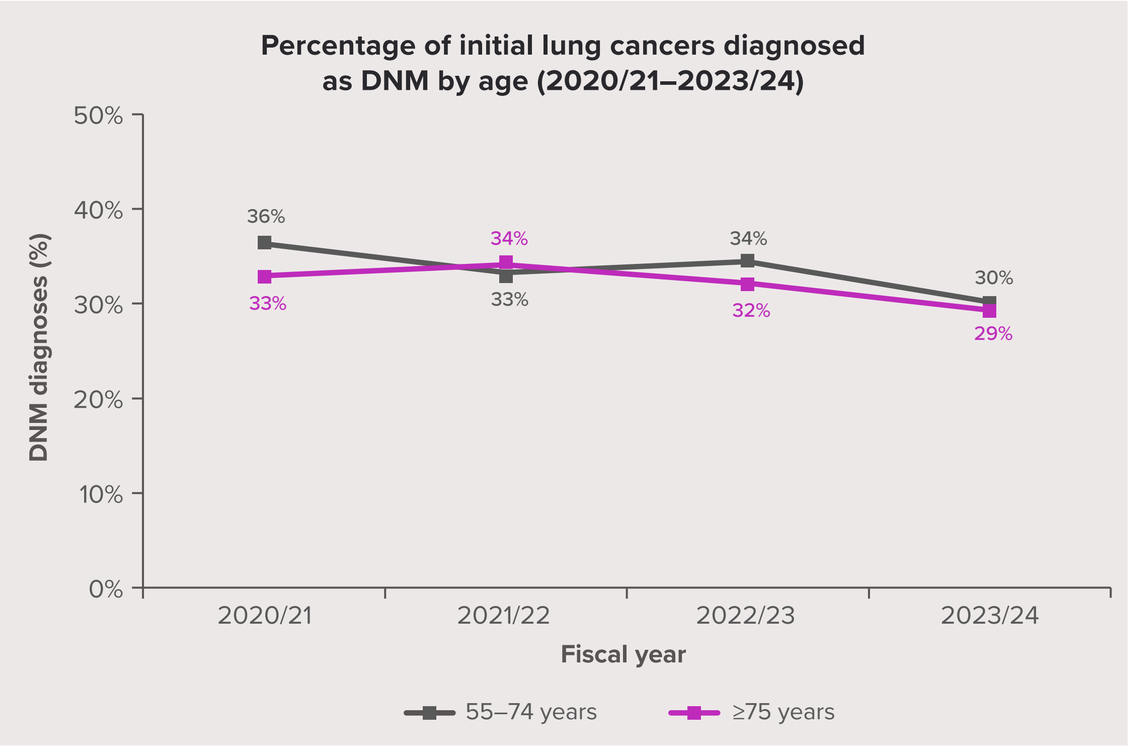
Other

Referral source | Chest X-ray wait time | PET scan

Thames Valley Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased overall for both age groups.
- The decrease was not steady in either age group, however, with upticks of 1 pp in 2021/22 for people aged ≥75 years and in 2022/23 for people aged 55–74 years before decreases continued.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages | ○ 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Thames Valley Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	X
	% A&E	
Deprivation	✓	✓

Chest X-ray wait time*	All ages
Test request to test	✓
Test to service report issued	X
Test request to service report issued	X

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 and ≥75 years with mental health conditions
  - chest X-ray wait times for test to service report issued and overall from test request to report issued.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with patients with mental health conditions?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on imaging reports for patients with suspected lung cancer?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

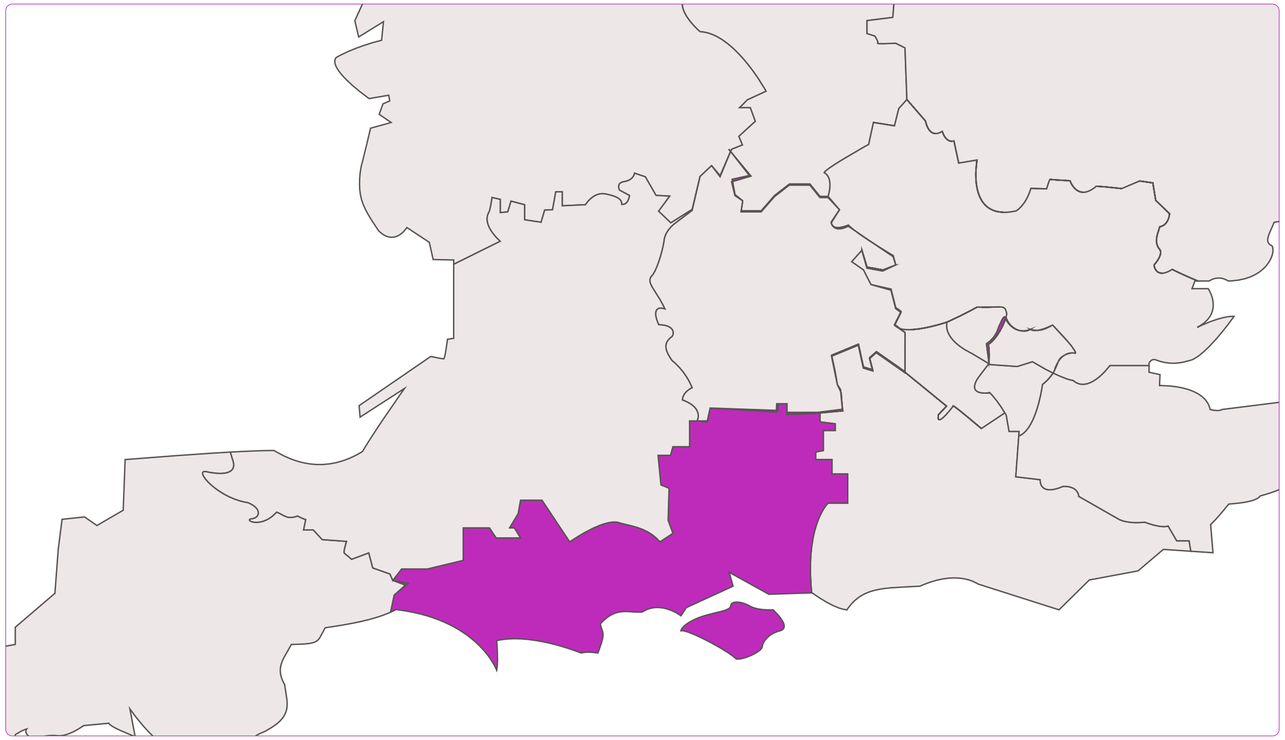
Other

Referral source | Chest X-ray wait time | PET scan

Wessex Cancer Alliance

Explore the data for Wessex Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

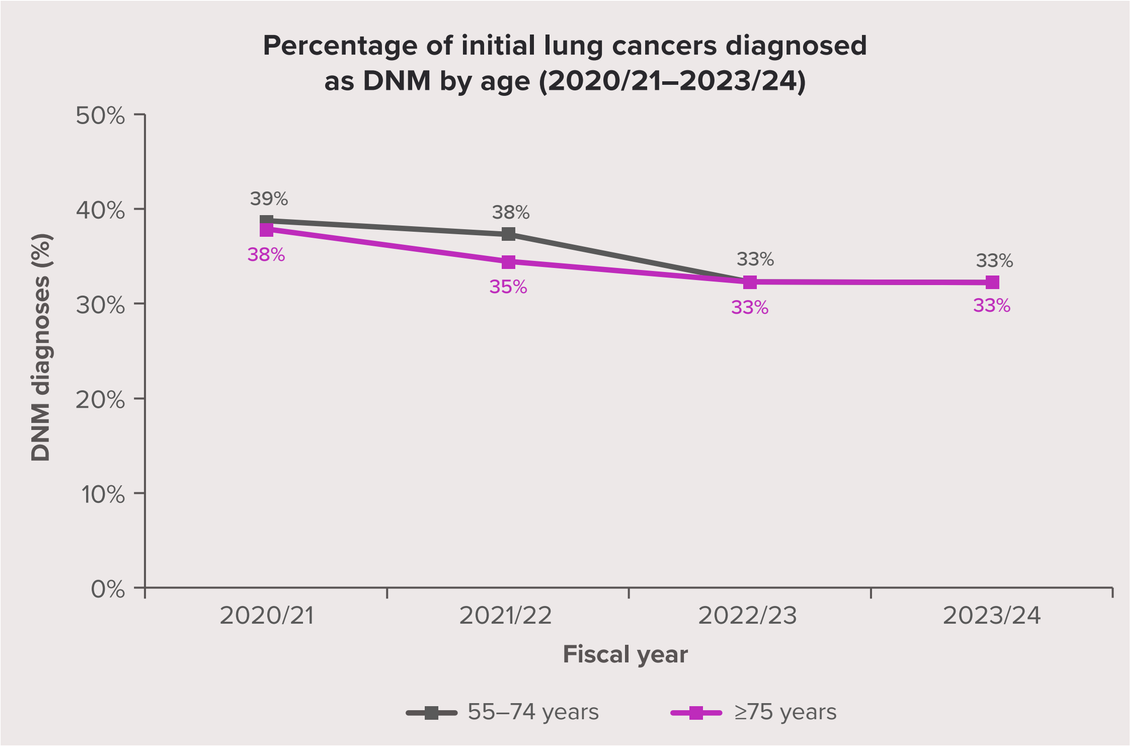
Other

Referral source | Chest X-ray wait time | PET scan

Wessex Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed as DNM decreased overall in both age groups; however, after initial decreases in 2021/22 and 2022/23, the proportion plateaued at 33% in both age groups in 2023/24.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

Wessex Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	✓	✓
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	X
Test to service report issued	✓
Test request to service report issued	✓

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas.
  - chest X-ray wait times from test request to test.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with people living in the most deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for chest X-rays sufficient for the local population?
- Do protocols ensure rapid turnaround on chest X-rays for patients with suspected lung cancer?

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

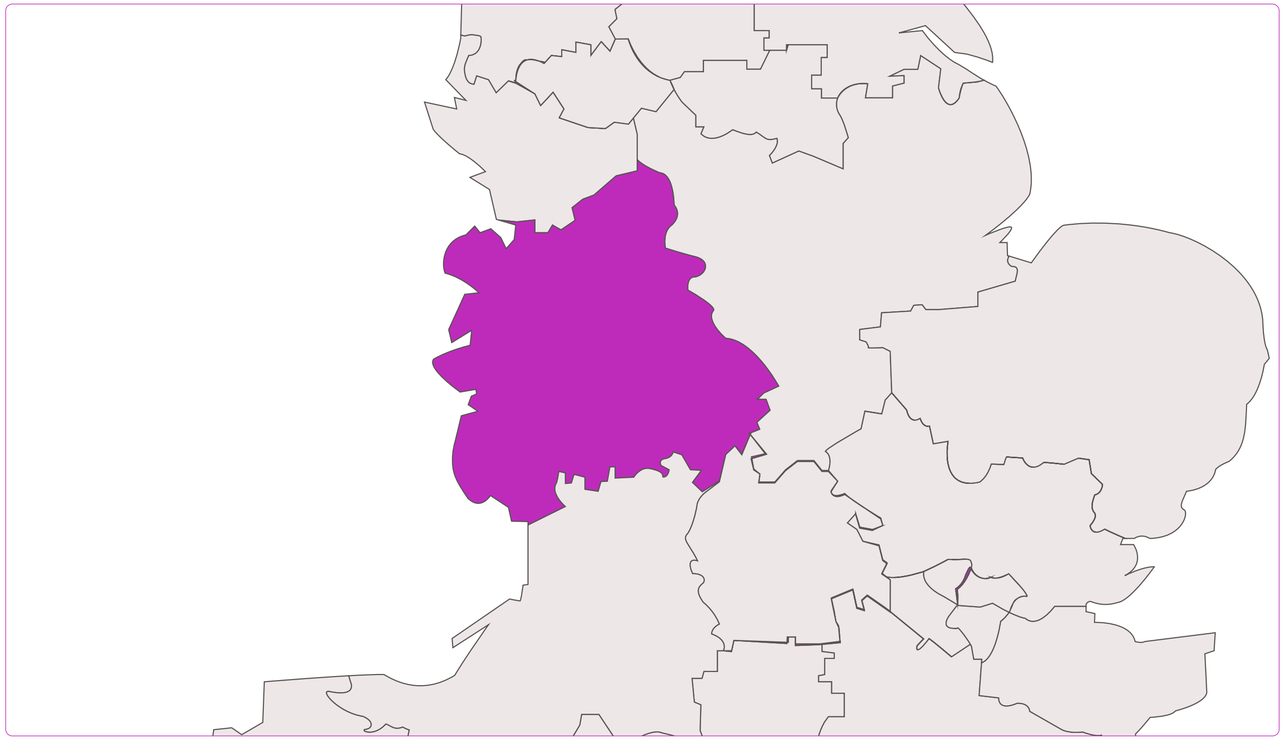
Other

Referral source | Chest X-ray wait time | PET scan

West Midlands Cancer Alliance

Explore the data for West Midlands Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

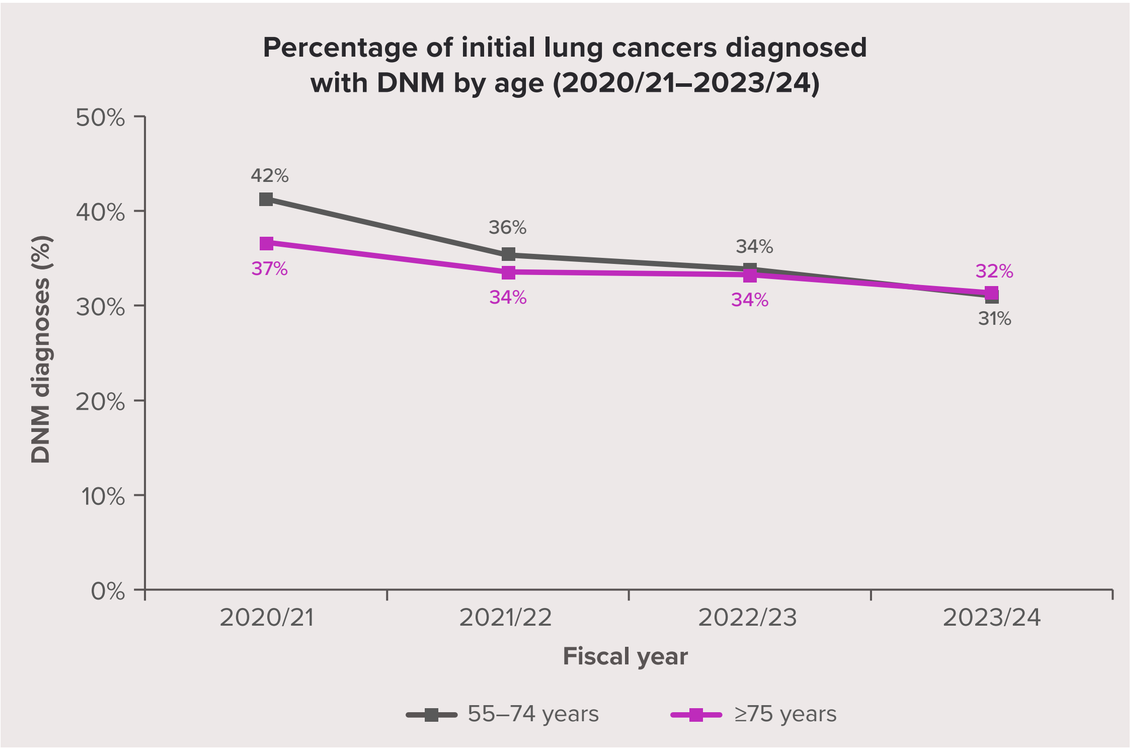
Other

Referral source | Chest X-ray wait time | PET scan

West Midlands Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM decreased steadily in each year for people aged 55–74 years, in line with the national picture.
- Although there was an overall trend to decrease in the proportion of DNM diagnoses in people aged ≥75 years, the proportion plateaued between 2021/22 and 2022/23.



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages — ○ 40–54 — ◉ 55–74 — ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

West Midlands Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	✓
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	X
Test to service report issued	✓
Test request to service report issued	X

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 years with mental health conditions
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas.
  - chest X-ray wait times from test request to test.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with people with mental health conditions and those living in the most deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for chest X-rays sufficient for the local population?
- Do protocols ensure rapid turnaround on chest X-rays for patients with suspected lung cancer?

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5. See study methods and HES Disclaimer.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

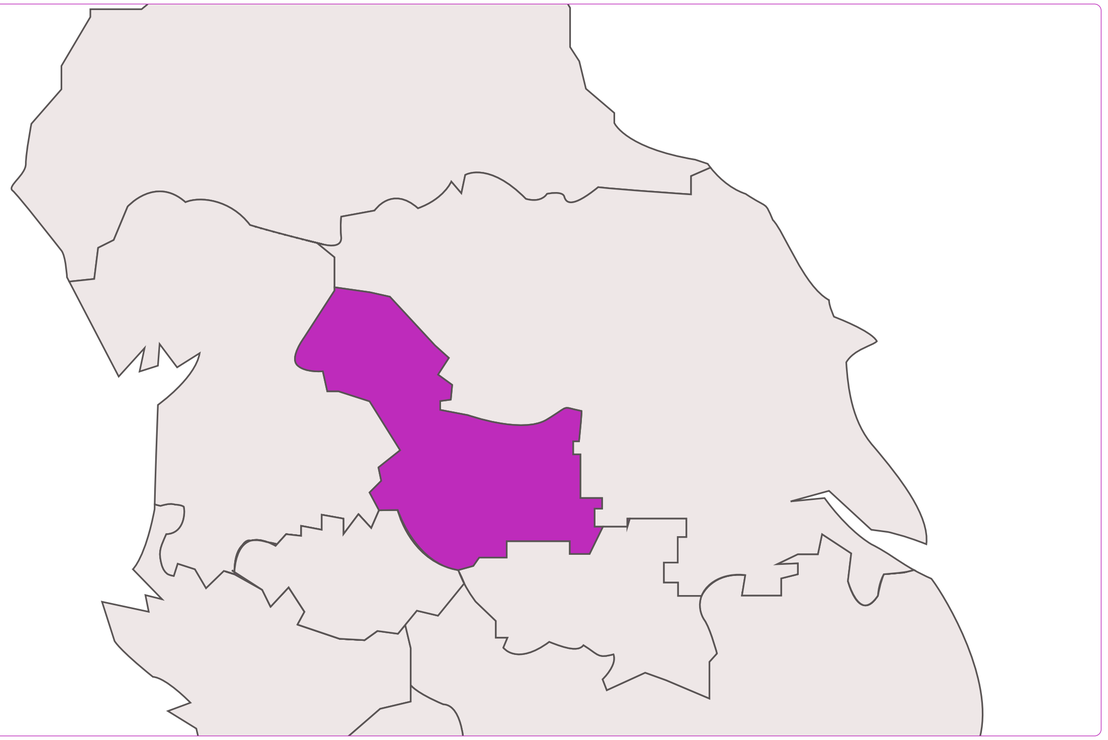
Other

Referral source | Chest X-ray wait time | PET scan

West Yorkshire and Harrogate Cancer Alliance

Explore the data for West Yorkshire and Harrogate Cancer Alliance:

Deep dive | National comparison of all Cancer Alliances



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See study methods and HES Disclaimer.

Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ○

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

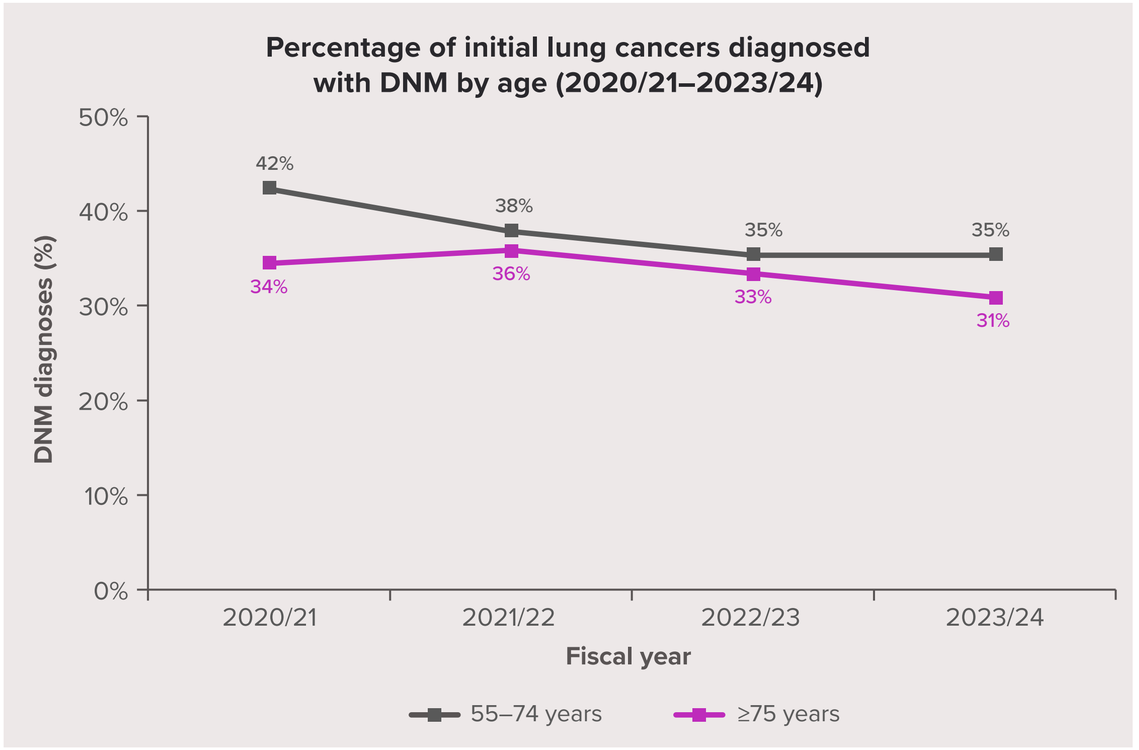
Other

Referral source | Chest X-ray wait time | PET scan

West Yorkshire and Harrogate Cancer Alliance

Deep dive – year by year

- The proportion of lung cancers diagnosed with DNM increased in 2020/21 for people aged ≥75 years but then decreased steadily, in line with the national picture.
- In contrast with the national average, the proportion of DNM diagnoses plateaued in the latest year for people aged 55–74 years.



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Data Level

National | **Cancer Alliance** | ICB

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ◉

Age Group

◉ All ages | ○ 40–54 | ◉ 55–74 | ◉ ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity

Mental health | **Urbanicity**

Other

Referral source | **Chest X-ray wait time** | **PET scan**

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West Yorkshire and Harrogate Cancer Alliance

Deep dive – alerts and areas for exploration

Alert signals from the data

Social determinants	55–74 years	≥75 years
	% DNM	
Deprivation	✓	✓
Urbanicity	✓	✓
Mental health	X	✓
	% A&E	
Deprivation	X	X

Chest X-ray wait time*	All ages
Test request to test	X
Test to service report issued	X
Test request to service report issued	X

*Alerts for chest X-ray wait times are given when the Cancer Alliance is ranked in the bottom five of the Cancer Alliances for this metric.

Key points:

- Alerts were identified for:
  - people aged 55–74 years with mental health conditions
  - referrals through A&E in people aged 55–74 and ≥75 years from the most deprived areas.
  - chest X-ray wait times from test request to test and overall from test request to report issued.

Starting points for exploration:

- How is information communicated to different communities?
- Are healthcare professionals making every contact count to raise awareness about lung health?
- Is there enough engagement with people with mental health conditions and those living in the most deprived areas?
- Are materials being co-created with communities and people with lived experiences?
- Are clinics close to people's workplaces and open outside normal working hours?
- Are clinics easily accessible via public transport?
- Is capacity for chest X-rays and imaging reporting sufficient for the local population?
- Do protocols ensure rapid turnaround on chest X-rays and imaging reporting for patients with suspected lung cancer?

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

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See study methods and HES Disclaimer.

Integrated care board (ICB) data

This section compares the four-year average proportion of patients who have had an initial diagnosis of DNM between 2020/21 and 2023/24 in England's 42 ICBs side by side.

For both sexes combined, data for 2023/24 are also shown to provide a recent comparison of ICB performance. Percentages for 2023/24 data by sex have not been included due to low patient numbers. In the following charts, percentage point differences given may not be 100% accurate due to rounding.

About this data analysis

The data presents actual, non-adjusted figures taken from the English Hospital Episode Statistics (HES) database[19] produced by NHS Digital. It represents actual patients admitted to NHS hospitals in England over the specified study period.

HES data are suppressed to protect privacy. Where patient count are between 1 and 7, data have been suppressed and values are figures are rounded to the nearest 5.

See the full data analysis methods.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

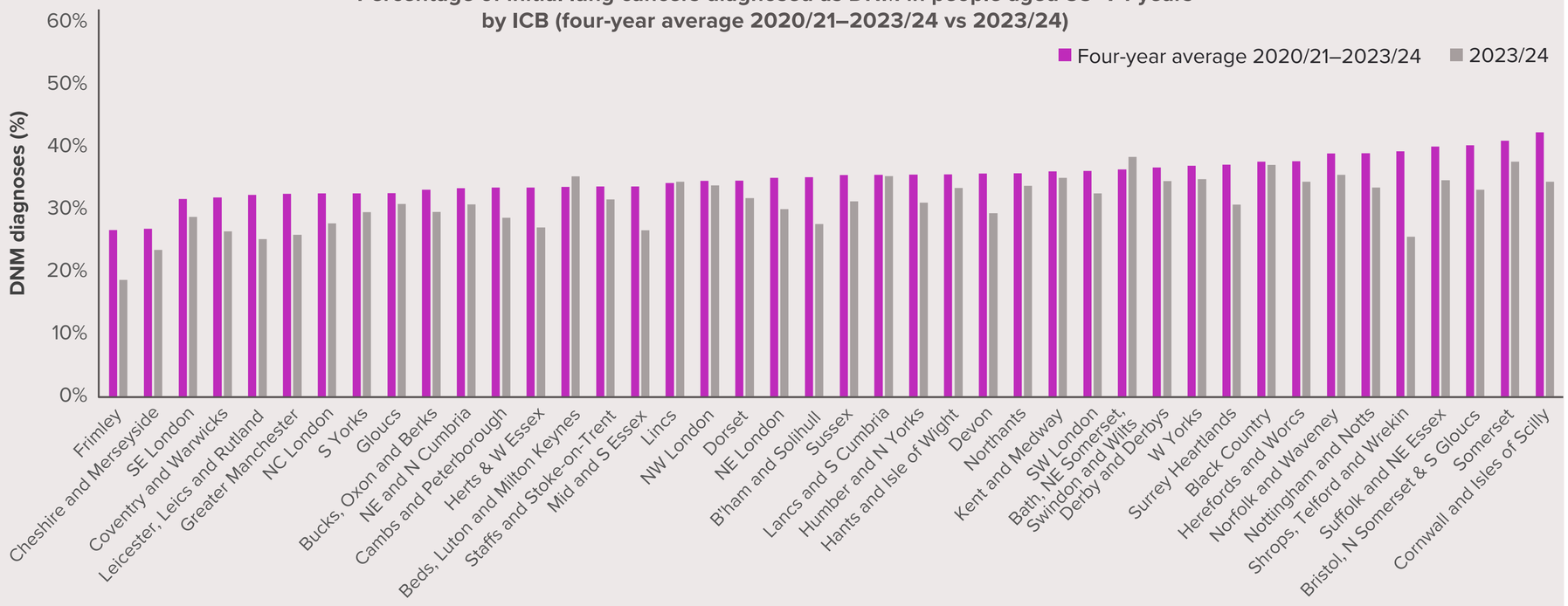
Referral source | Chest X-ray wait time | PET scan

DNM LC (55–74 years)

Among people aged 55–74 years, there was a 15-pp difference % between the best and worst performing ICBs: Frimley (27%) and Cornwall and Isles of Scilly (43%).

In 2023/24, 38 (90.5%) ICBs had reductions in the proportion of DNM diagnoses compared with their four-year average, two ICBs recorded increases (Beds, Luton and Milton Keynes and NHS Bath and North East Somerset, Swindon and Wiltshire ICB), and two had very little change (NHS Lincolnshire ICB and NHS Lancashire and South Cumbria ICB).

Percentage of initial lung cancers diagnosed as DNM in people aged 55–74 years by ICB (four-year average 2020/21–2023/24 vs 2023/24)



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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

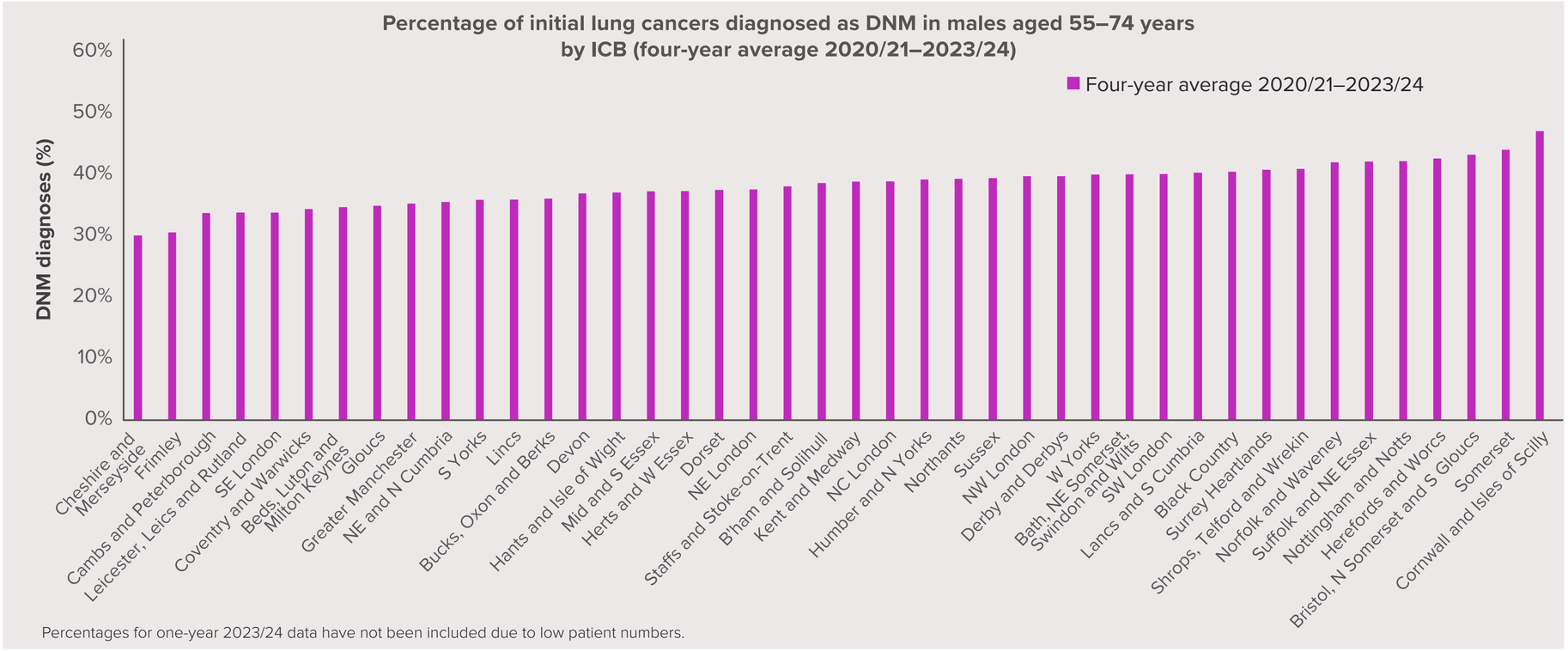
Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

DNM LC (55–74 years, males)

Among men aged 55–74 years, there was a 17-pp difference % between the best and worst performing ICBs: NHS Cheshire and Merseyside ICB (29%) and Cornwall and Isles of Scilly (46%).



Percentages for one-year 2023/24 data have not been included due to low patient numbers.

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Data Level

National | Cancer Alliance | **ICB**

Diagnosis

All types ○ | NM ○

DNM ◉ | Suspected lung cancer ○

Age Group

All ages | 40–54 | **55–74** | ≥75

Sex

Both sexes | Male | **Female**

Social Determinants

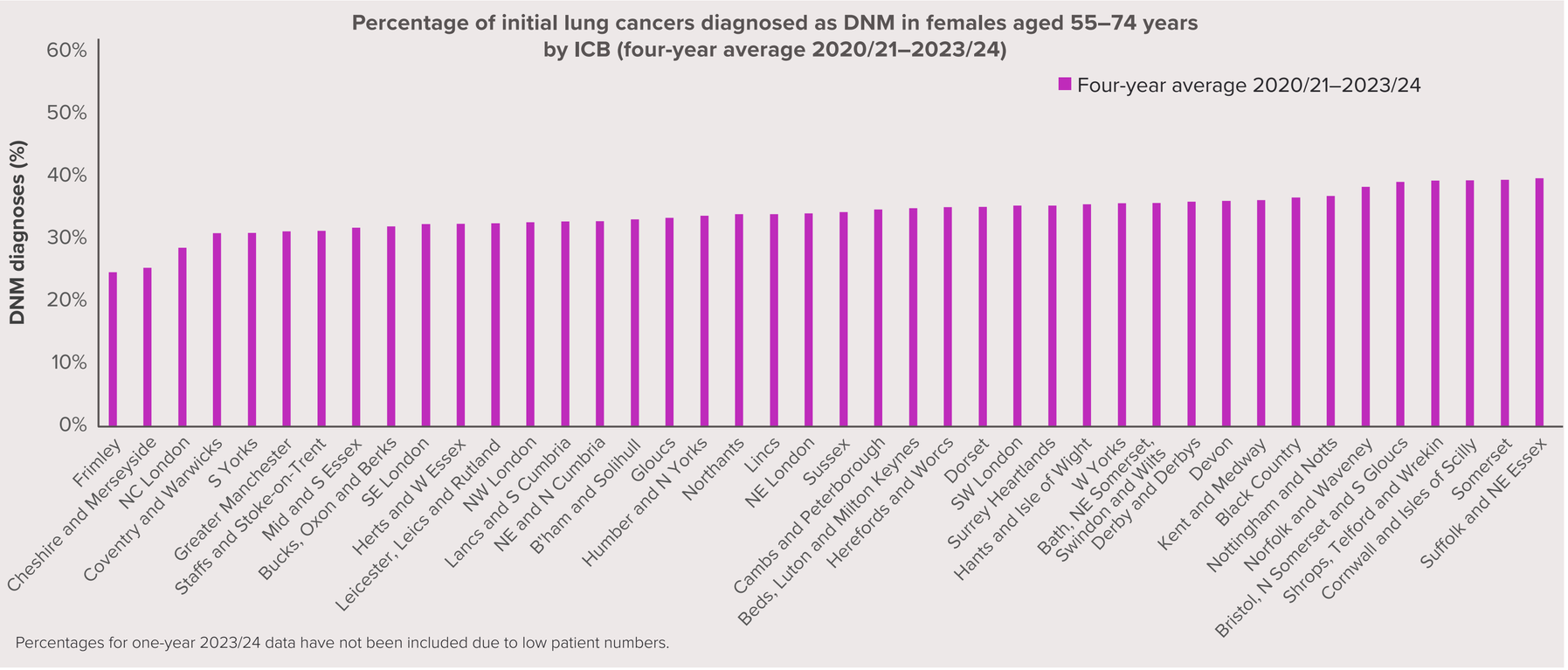
Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

DNM LC (55–74 years, females)

Among women aged 55–74 years, there was a 15-pp difference % between the best and worst performing ICBs: NHS Frimley ICB (25%) and NHS Suffolk and North East Essex ICB (40%).



Percentages for one-year 2023/24 data have not been included due to low patient numbers.

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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

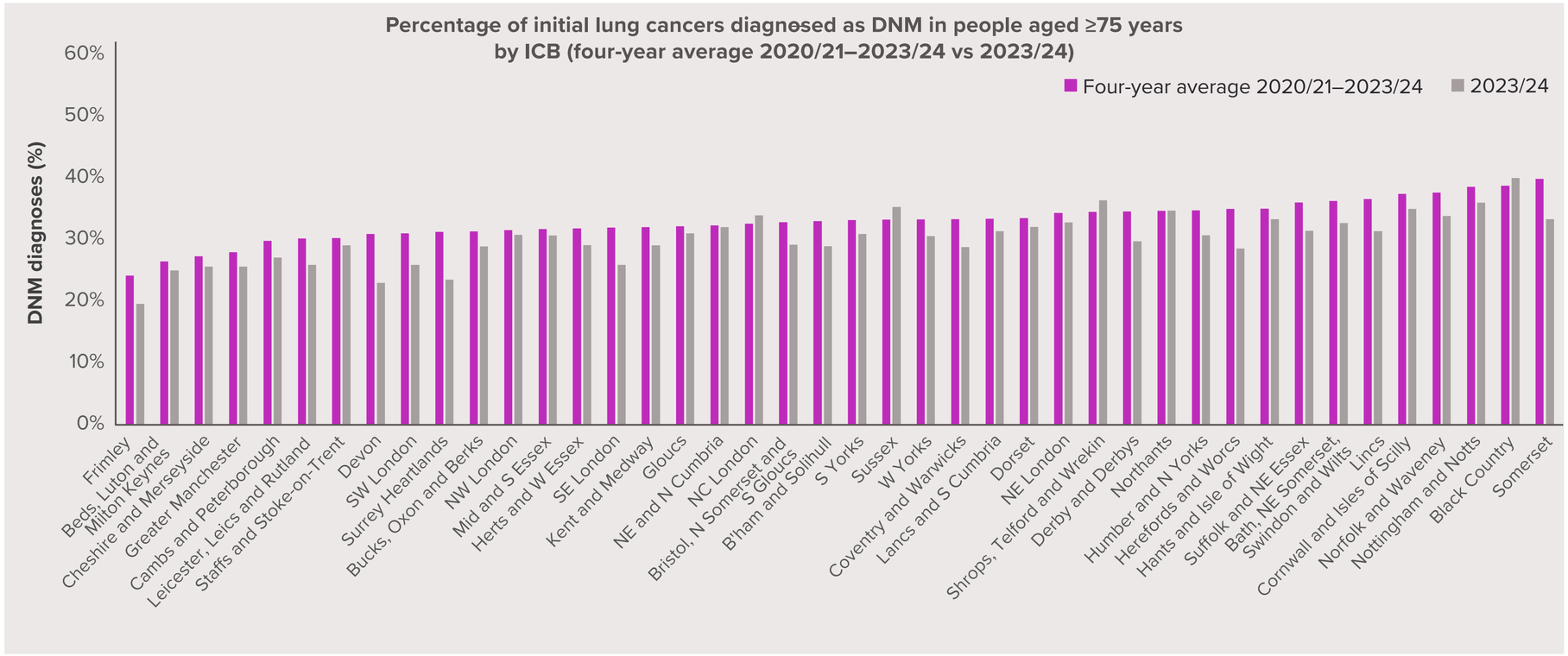
Other

Referral source | Chest X-ray wait time | PET scan

DNM LC (≥75 years)

Among people aged ≥75 years, the difference between the best- and worst-performing ICBs in the four-year average for the proportion of initial DNM diagnoses was 16 pp: NHS Frimley ICB (24%) and NHS Somerset ICB (40%).

In 2023/24, 36 (85.7%) ICBs had reductions in the proportion of DNM diagnoses compared with their four-year average, four ICBs recorded increases (NHS North Central London ICB, NHS Sussex ICB, NHS Shropshire, Telford and Wrekin ICB, and NHS Black Country ICB), and one had no change (NHS Northamptonshire ICB).



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Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

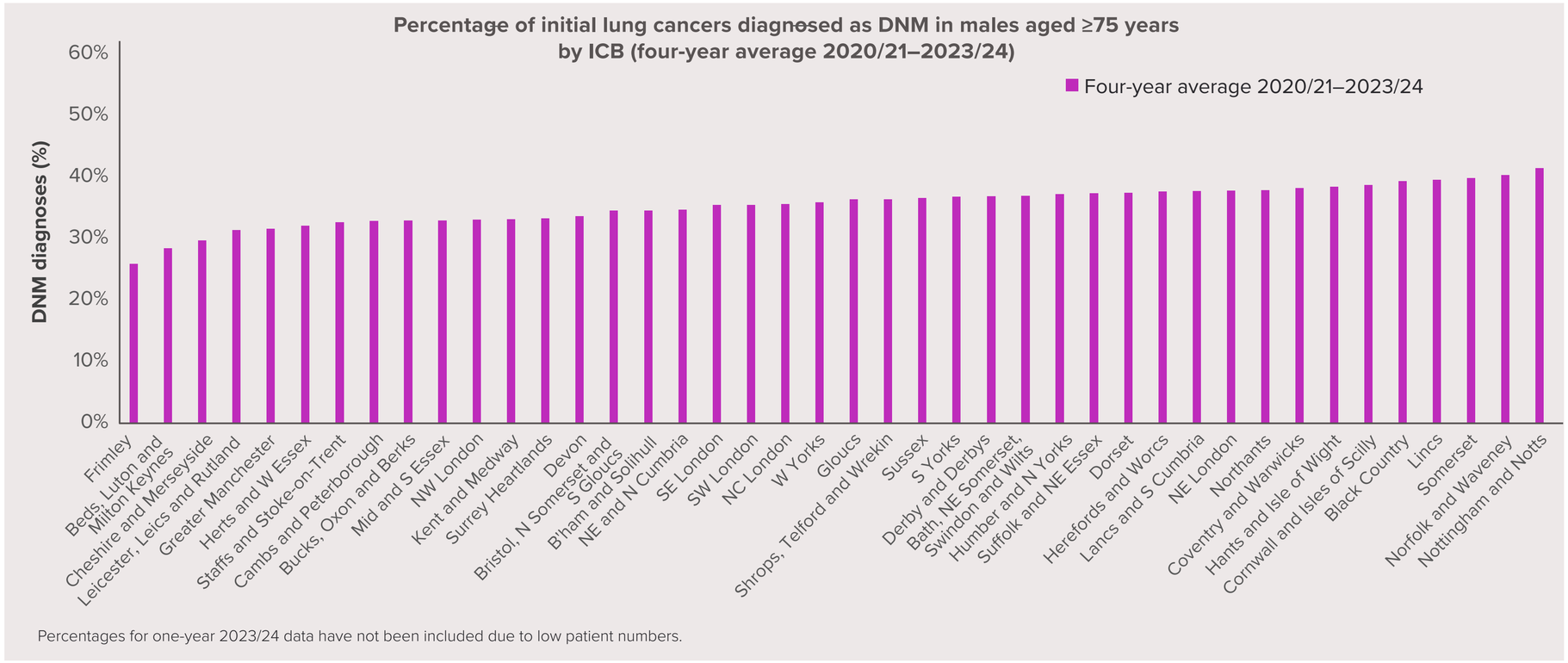
Other

Referral source | Chest X-ray wait time | PET scan

HES data are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed and values are not displayed in charts and maps. All other patient counts above 7 are rounded to the nearest 5.
See study methods and HES Disclaimer.

DNM LC (≥75 years, males)

Among men aged ≥75 years, the difference in the four-year average for the proportion of initial DNM diagnoses between the best- and worst-performing ICBs was 14 pp: NHS Frimley ICB (26%) and NHS Nottingham and Notts ICB (40%).



Percentages for one-year 2023/24 data have not been included due to low patient numbers.

Data Level

National | Cancer Alliance | ICB

Diagnosis

All types | NM | DNM | Suspected lung cancer

Age Group

All ages | 40–54 | 55–74 | ≥75

Sex

Both sexes | Male | Female

Social Determinants

Deprivation | Ethnicity | Mental health | Urbanicity

Other

Referral source | Chest X-ray wait time | PET scan

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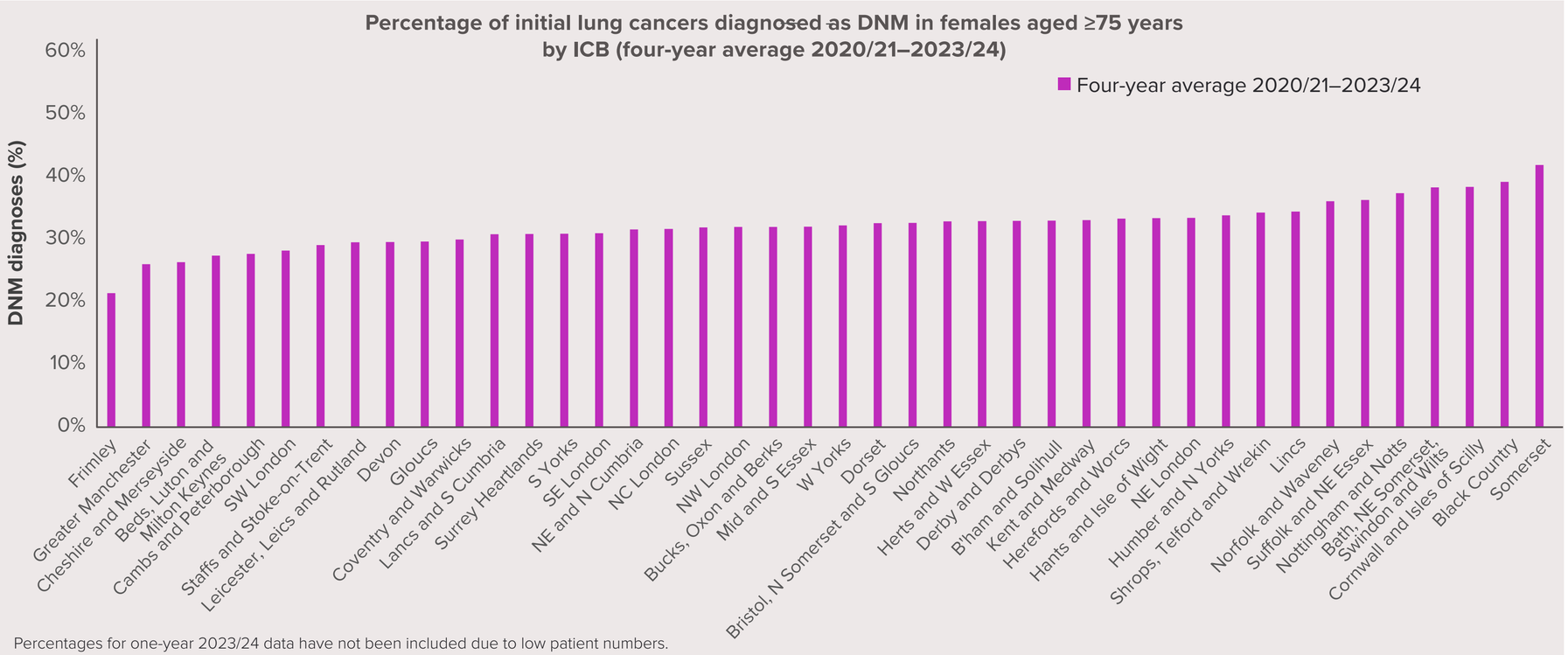
DNM LC (≥75 years, females)

Among women aged ≥75 years, the difference in the four-year average for the proportion of initial DNM diagnoses between the best- and worst-performing ICBs was 20 pp: NHS Frimley ICB (21%) and NHS Somerset ICB (41%).



Percentages for one-year 2023/24 data have not been included due to low patient numbers.

Appendix

Table 1

Total initial lung cancer diagnoses in England by fiscal year (April–March 2020/21–2023/24), age band, lung cancer category and sex

		Patients with initial lung cancer diagnosis (N=148,255)				
Characteristic		**2020/21**	**2021/22**	**2022/23**	**2023/24**	**All years**
Age band (years)						
All ages		34,630 (100)	37,365 (100)	37,295 (100)	38,965 (100)	148,255 (100)
40–54		1,840 (5.3)	1,865 (5.0)	1,705 (4.6)	1,780 (4.6)	7,190 (4.8)
55–74		17,130 (49.5)	18,380 (49.2)	18,365 (49.2)	19,050 (48.9)	72,925 (49.2)
≥75		15,475 (44.7)	16,895 (45.2)	16,985 (45.5)	17,885 (45.9)	67,245 (45.4)
Age band (years) and lung cancer category – all patients						
All ages	All lung cancers	34,630 (100)	37,365 (100)	37,295 (100)	38,965 (100)	148,255 (100)
	DNM	13,120 (37.9)	13,080 (35.0)	12,325 (33.0)	11,995 (30.8)	50,520 (34.1)
	NM	21,510 (62.1)	24,285 (65.0)	24,975 (67.0)	26,970 (69.2)	97,735 (65.9)
40–54	All lung cancers	1,840 (100)	1,865 (100)	1,705 (100)	1,780 (100)	7,190 (100)
	DNM	840 (45.7)	795 (42.6)	690 (40.5)	695 (39.0)	3,020 (42.0)
	NM	995 (54.1)	1,070 (57.4)	1,015 (59.5)	1,090 (61.2)	4,170 (58.0)
55–74	All lung cancers	17,130 (100)	18,380 (100)	18,365 (100)	19,050 (100)	72,925 (100)
	DNM	6,755 (39.4)	6,590 (35.9)	6,100 (33.2)	5,885 (30.9)	25,325 (34.7)
	NM	10,375 (60.6)	11,790 (64.1)	12,265 (66.8)	13,165 (69.1)	47,600 (65.3)
≥75	All lung cancers	15,475 (100)	16,895 (100)	16,985 (100)	17,885 (100)	67,245 (100)
	DNM	5,450 (35.2)	5,615 (33.2)	5,440 (32.0)	5,345 (29.9)	21,850 (32.5)
	NM	10,030 (64.8)	11,275 (66.7)	11,545 (68.0)	12,540 (70.1)	45,390 (67.5)

Continue

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Data are n (%). Each patient count was rounded to the nearest multiple of 5 in line with **HES licence** requirements, see full disclaimer; this reduces accuracy and means that data may not total 100% across rows.

Table 1

Total initial lung cancer diagnoses in England by fiscal year (April–March 2020/21–2023/24), age band, lung cancer category and sex

Age band (years) and lung cancer category – male patients						
All ages	All lung cancers	17,535 (100)	18,805 (100)	18,590 (100)	19,050 (100)	73,980 (100)
	DNM	6,905 (39.4)	6,800 (36.2)	6,405 (34.5)	6,250 (32.8)	26,360 (35.6)
	NM	10,630 (60.6)	12,005 (63.8)	12,185 (65.5)	12,795 (67.2)	47,615 (64.4)
40–54	All lung cancers	895 (100)	930 (100)	885 (100)	850 (100)	3,560 (100)
	DNM	400 (44.7)	425 (45.7)	365 (41.2)	355 (41.8)	1,545 (43.4)
	NM	490 (54.7)	505 (54.3)	515 (58.2)	500 (58.8)	2,015 (56.6)
55–74	All lung cancers	8,565 (100)	9,195 (100)	9,095 (100)	9,265 (100)	36,115 (100)
	DNM	3,520 (41.1)	3,375 (36.7)	3,165 (34.8)	3,090 (33.4)	13,150 (36.4)
	NM	5,045 (58.9)	5,820 (63.3)	5,930 (65.2)	6,170 (66.6)	22,965 (63.6)
≥75	All lung cancers	7,995 (100)	8,575 (100)	8,510 (100)	8,830 (100)	33,910 (100)
	DNM	2,935 (36.7)	2,965 (34.6)	2,835 (33.3)	2,770 (31.4)	11,505 (33.9)
	NM	5,060 (63.3)	5,610 (65.4)	5,680 (66.7)	6,060 (68.6)	22,405 (66.1)
Age band (years) and lung cancer category – female patients						
All ages	All lung cancers	16,895 (100)	18,555 (100)	18,700 (100)	19,360 (100)	73,510 (100)
	DNM	6,195 (36.7)	6,275 (33.8)	5,915 (31.6)	5,680 (29.3)	24,070 (32.7)
	NM	10,700 (63.3)	12,280 (66.2)	12,785 (68.4)	13,675 (70.6)	49,440 (67.3)
40–54	All lung cancers	930 (100)	935 (100)	820 (100)	895 (100)	3,580 (100)
	DNM	435 (46.8)	370 (39.6)	325 (39.6)	335 (37.4)	1,470 (41.1)
	NM	495 (53.2)	560 (59.9)	495 (60.4)	560 (62.6)	2,110 (58.9)
55–74	All lung cancers	8,435 (100)	9,180 (100)	9,270 (100)	9,470 (100)	36,355 (100)
	DNM	3,225 (38.2)	3,210 (35.0)	2,935 (31.7)	2,760 (29.1)	12,125 (33.4)
	NM	5,215 (61.8)	5,970 (65.0)	6,335 (68.3)	6,710 (70.9)	24,230 (66.6)
≥75	All lung cancers	7,430 (100)	8,320 (100)	8,470 (100)	8,860 (100)	33,080 (100)
	DNM	2,510 (33.8)	2,650 (31.9)	2,605 (30.8)	2,550 (28.8)	10,315 (31.2)
	NM	4,925 (66.3)	5,670 (68.1)	5,865 (69.2)	6,305 (71.2)	22,765 (68.8)

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Table 2

Total initial lung cancer diagnoses in England by fiscal year (April–March 2020/21–2023/24), lung cancer category, age band and deprivation

			Patients with initial lung cancer diagnosis				
Age (years)	**Deprivation**	**Lung cancer category**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**All years**
All ages	Most deprived quintile	All lung cancers	8,900 (100)	9,870 (100)	9,635 (100)	9,960 (100)	38,365 (100)
		DNM	3,325 (37.4)	3,325 (33.7)	3,075 (31.9)	3,010 (30.2)	12,730 (33.2)
		NM	5,575 (62.6)	6,545 (66.3)	6,560 (68.1)	6,955 (69.8)	25,635 (66.8)
	Least deprived quintile	All lung cancers	5,395 (100)	5,730 (100)	5,675 (100)	6,020 (100)	22,820 (100)
		DNM	2,030 (37.6)	2,020 (35.3)	1,915 (33.7)	1,835 (30.5)	7,795 (34.2)
		NM	3,365 (62.4)	3,710 (64.7)	3,760 (66.3)	4,185 (69.5)	15,020 (65.8)
40–54	Most deprived quintile	All lung cancers	570 (100)	605 (100)	555 (100)	585 (100)	2,315 (100)
		DNM	245 (43.0)	250 (41.3)	220 (39.6)	230 (39.3)	950 (41.0)
		NM	325 (57.0)	355 (58.7)	330 (59.5)	350 (59.8)	1,365 (59.0)
	Least deprived quintile	All lung cancers	240 (100)	205 (100)	210 (100)	205 (100)	855 (100)
		DNM	105 (43.8)	85 (41.5)	80 (38.1)	70 (34.1)	340 (39.8)
		NM	135 (56.3)	120 (58.5)	130 (61.9)	130 (63.4)	520 (60.8)
55–74	Most deprived quintile	All lung cancers	4,885 (100)	5,460 (100)	5,395 (100)	5,525 (100)	21,270 (100)
		DNM	1,870 (38.3)	1,860 (34.1)	1,710 (31.7)	1,675 (30.3)	7,115 (33.5)
		NM	3,015 (61.7)	3,600 (65.9)	3,685 (68.3)	3,850 (69.7)	14,155 (66.5)
	Least deprived quintile	All lung cancers	2,360 (100)	2,430 (100)	2,405 (100)	2,520 (100)	9,710 (100)
		DNM	950 (40.3)	890 (36.6)	845 (35.1)	790 (31.3)	3,475 (35.8)
		NM	1,405 (59.5)	1,540 (63.4)	1,560 (64.9)	1,730 (68.7)	6,235 (64.2)
≥75	Most deprived quintile	All lung cancers	3,395 (100)	3,745 (100)	3,625 (100)	3,780 (100)	14,545 (100)
		DNM	1,180 (34.8)	1,190 (31.8)	1,120 (30.9)	1,085 (28.7)	4,580 (31.5)
		NM	2,210 (65.1)	2,555 (68.2)	2,505 (69.1)	2,695 (71.3)	9,965 (68.5)
	Least deprived quintile	All lung cancers	2,765 (100)	3,065 (100)	3,025 (100)	3,270 (100)	12,120 (100)
		DNM	960 (34.7)	1,030 (33.6)	980 (32.4)	965 (29.5)	3,930 (32.4)
		NM	1,805 (65.3)	2,035 (66.4)	2,045 (67.6)	2,305 (70.5)	8,190 (67.6)

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See study methods and HES Disclaimer.

Table 3

Total initial lung cancer diagnoses by age band, lung cancer category and ethnicity in England, 2020/21–2023/24

		Patients with initial lung cancer diagnosis		
Age (years)	**Ethnicity**	**All lung cancers**	**DNM**	**NM**
All ages	Asian (South Asian)	1,735 (100)	560 (32.3)	1,175 (67.7)
	Black	1,615 (100)	630 (39.0)	985 (61.0)
	White (British)	113,940 (100)	39,130 (34.3)	74,805 (65.7)
40–54	Asian (South Asian)	180 (100)	70 (38.9)	110 (61.1)
	Black	225 (100)	105 (46.7)	125 (55.6)
	White (British)	4,615 (100)	1,950 (42.3)	2,665 (57.7)
55–74	Asian (South Asian)	840 (100)	275 (32.7)	565 (67.3)
	Black	870 (100)	320 (36.8)	550 (63.2)
	White (British)	54,545 (100)	19,290 (35.4)	35,260 (64.6)
≥75	Asian (South Asian)	670 (100)	195 (29.1)	475 (70.9)
	Black	475 (100)	185 (38.9)	290 (61.1)
	White (British)	54,305 (100)	17,725 (32.6)	36,585 (67.4)

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Table 4

Total initial lung cancer diagnoses in England by fiscal year (April–March 2020/21–2023/24), age band, lung cancer category and presence of mental health condition

			Patients with initial lung cancer diagnosis				
Age (years)	**MH diagnosis**	**Lung cancer category**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**All years**
All ages	With mental health diagnosis	All lung cancers	11,875 (100)	13,145 (100)	12,950 (100)	13,725 (100)	51,695 (100)
		DNM	4,860 (40.9)	4,960 (37.7)	4,615 (35.6)	4,680 (34.1)	19,110 (37.0)
		NM	7,015 (59.1)	8,185 (62.3)	8,335 (64.4)	9,045 (65.9)	32,580 (63.0)
	Without mental health diagnosis	All lung cancers	22,755 (100)	24,220 (100)	24,350 (100)	25,240 (100)	96,560 (100)
		DNM	8,265 (36.3)	8,120 (33.5)	7,710 (31.7)	7,315 (29.0)	31,410 (32.5)
		NM	14,495 (63.7)	16,100 (66.5)	16,640 (68.3)	17,920 (71.0)	65,155 (67.5)
40–54	With mental health diagnosis	All lung cancers	865 (100)	855 (100)	725 (100)	800 (100)	3,245 (100)
		DNM	405 (46.8)	390 (45.6)	310 (42.8)	340 (42.5)	1,445 (44.5)
		NM	460 (53.2)	465 (54.4)	415 (57.2)	465 (58.1)	1,800 (55.5)
	Without mental health diagnosis	All lung cancers	975 (100)	1,010 (100)	980 (100)	980 (100)	3,945 (100)
		DNM	435 (44.6)	405 (40.1)	380 (38.8)	355 (36.2)	1,575 (39.9)
		NM	540 (55.4)	605 (59.9)	600 (61.2)	625 (63.8)	2,365 (59.9)
55–74	With mental health diagnosis	All lung cancers	6,340 (100)	7,030 (100)	6,980 (100)	7,520 (100)	27,865 (100)
		DNM	2,750 (43.4)	2,720 (38.7)	2,505 (35.9)	2,585 (34.4)	10,555 (37.9)
		NM	3,590 (56.6)	4,310 (61.3)	4,475 (64.1)	4,935 (65.6)	17,310 (62.1)
	Without mental health diagnosis	All lung cancers	10,790 (100)	11,355 (100)	11,385 (100)	11,530 (100)	45,060 (100)
		DNM	4,005 (37.1)	3,870 (34.1)	3,595 (31.6)	3,300 (28.6)	14,770 (32.8)
		NM	6,785 (62.9)	7,485 (65.9)	7,790 (68.4)	8,230 (71.4)	30,290 (67.2)
≥75	With mental health diagnosis	All lung cancers	4,615 (100)	5,195 (100)	5,175 (100)	5,335 (100)	20,320 (100)
		DNM	1,680 (36.4)	1,820 (35.0)	1,775 (34.3)	1,735 (32.5)	7,010 (34.5)
		NM	2,935 (63.6)	3,375 (65.0)	3,400 (65.7)	3,600 (67.5)	13,310 (65.5)
	Without mental health diagnosis	All lung cancers	10,860 (100)	11,700 (100)	11,810 (100)	12,555 (100)	46,925 (100)
		DNM	3,770 (34.7)	3,800 (32.5)	3,665 (31.0)	3,610 (28.8)	14,845 (31.6)
		NM	7,090 (65.3)	7,900 (67.5)	8,145 (69.0)	8,940 (71.2)	32,080 (68.4)

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Table 5

Total initial lung cancer diagnoses in England by fiscal year (April–March 2020/21–2023/24), age band, lung cancer category and urbanicity status

			Patients with initial lung cancer diagnosis				
Age (years)	**Urbanicity**	**Lung cancer category**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**All years**
All ages	Rural	All lung cancers	6,370 (100)	6,620 (100)	6,550 (100)	6,830 (100)	26,370 (100)
		DNM	2,425 (38.1)	2,375 (35.9)	2,320 (35.4)	2,255 (33.0)	9,380 (35.6)
		NM	3,945 (61.9)	4,245 (64.1)	4,225 (64.5)	4,575 (67.0)	16,990 (64.4)
	Urban	All lung cancers	28,260 (100)	30,745 (100)	30,750 (100)	32,135 (100)	121,890 (100)
		DNM	10,695 (37.8)	10,705 (34.8)	10,000 (32.5)	9,740 (30.3)	41,140 (33.8)
		NM	17,565 (62.2)	20,045 (65.2)	20,750 (67.5)	22,395 (69.7)	80,750 (66.2)
40–54	Rural	All lung cancers	280 (100)	230 (100)	220 (100)	225 (100)	950 (100)
		DNM	125 (44.6)	100 (43.5)	90 (40.9)	95 (42.2)	410 (43.2)
		NM	155 (55.4)	130 (56.5)	125 (56.8)	130 (57.8)	540 (56.8)
	Urban	All lung cancers	1,560 (100)	1,635 (100)	1,485 (100)	1,560 (100)	6,240 (100)
		DNM	715 (45.8)	695 (42.5)	600 (40.4)	600 (38.5)	2,610 (41.8)
		NM	845 (54.2)	935 (57.2)	885 (59.6)	960 (61.5)	3,630 (58.2)
55–74	Rural	All lung cancers	3,000 (100)	3,105 (100)	3,050 (100)	3,155 (100)	12,310 (100)
		DNM	1,165 (38.8)	1,145 (36.9)	1,105 (36.2)	1,075 (34.1)	4,490 (36.5)
		NM	1,835 (61.2)	1,960 (63.1)	1,950 (63.9)	2,080 (65.9)	7,820 (63.5)
	Urban	All lung cancers	14,130 (100)	15,280 (100)	15,315 (100)	15,895 (100)	60,620 (100)
		DNM	5,590 (39.6)	5,445 (35.6)	4,995 (32.6)	4,810 (30.3)	20,835 (34.4)
		NM	8,540 (60.4)	9,835 (64.4)	10,320 (67.4)	11,085 (69.7)	39,780 (65.6)
≥75	Rural	All lung cancers	3,075 (100)	3,255 (100)	3,260 (100)	3,425 (100)	13,010 (100)
		DNM	1,125 (36.6)	1,125 (34.6)	1,125 (34.5)	1,075 (31.4)	4,450 (34.2)
		NM	1,945 (63.3)	2,130 (65.4)	2,140 (65.6)	2,350 (68.6)	8,560 (65.8)
	Urban	All lung cancers	12,405 (100)	13,640 (100)	13,725 (100)	14,465 (100)	54,230 (100)
		DNM	4,320 (34.8)	4,495 (33.0)	4,320 (31.5)	4,270 (29.5)	17,405 (32.1)
		NM	8,080 (65.1)	9,145 (67.0)	9,405 (68.5)	10,195 (70.5)	36,830 (67.9)

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Table 6

Patient counts by age band, sex, IMD quintile, ethnicity, presence of mental health condition and urbanicity status for source of referral of initial diagnosis of metastatic lung cancers in England, 2 years total (patients diagnosed in 2021/22 and 2022/23)

	Referral source				
Age (years)	**Total**	**A&E**	**Inpatient**	**GP**	**Outpatient**
All ages	20,255 (100)	7,820 (38.6)	3,820 (18.9)	6,240 (30.8)	2,350 (11.6)
40–54	1,105 (100)	445 (40.3)	205 (18.6)	340 (30.8)	110 (10.0)
55–74	9,935 (100)	3,615 (36.4)	1,810 (18.2)	3,295 (33.2)	1,210 (12.2)
≥75	9,080 (100)	3,710 (40.9)	1,770 (19.5)	2,580 (28.4)	1,005 (11.1)
Sex					
Male	10,660 (100)	4,185 (39.3)	1,975 (18.5)	3,310 (31.1)	1,215 (11.4)
Female	9,590 (100)	3,635 (37.9)	1,845 (19.2)	2,930 (30.6)	1,135 (11.8)
IMD quintile					
Most deprived	5,145 (100)	2,155 (41.9)	995 (19.3)	1,440 (28)	595 (11.6)
Least deprived	3,170 (100)	1,090 (34.4)	630 (19.9)	1,030 (32.5)	405 (12.8)
Ethnicity					
Asian (South Asian)	235 (100)	115 (48.9)	35 (14.9)	55 (23.4)	30 (12.8)
Black	245 (100)	110 (44.9)	40 (16.3)	55 (22.4)	40 (16.3)
White (British)	15,800 (100)	6,075 (38.4)	3,025 (19.1)	4,880 (30.9)	1,825 (11.6)

Continue

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Table 6

Patient counts by age band, sex, IMD quintile, ethnicity, presence of mental health condition and urbanicity status for source of referral of initial diagnosis of metastatic lung cancers in England, 2 years total (patients diagnosed in 2021/22 and 2022/23)

		Referral source			
MH diagnosis	**Total**	**A&E**	**Inpatient**	**GP**	**Outpatient**
With mental health diagnosis	7,715 (100)	3,475 (45.0)	1,565 (20.3)	2,020 (26.2)	685 (8.9)
Without mental health diagnosis	12,540 (100)	4,345 (34.6)	2,255 (18.0)	4,220 (33.7)	1,665 (13.3)
Urbanicity					
Rural	3,670 (100)	1,270 (34.6)	650 (17.7)	1,260 (34.3)	445 (12.1)
Urban	16,580 (100)	6,550 (39.5)	3,170 (19.1)	4,980 (30.0)	1,905 (11.5)

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Table 7

Percentage of initial lung cancers diagnosed as de-novo metastatic by age band, sex, four-year value (2020/21–2023/24) and 2023/24 values by Cancer Alliance

	Percentage of initial lung cancers diagnosed as DNM					
	55–74 years			≥75 years		
Cancer Alliance	All patients	Male	Female	All patients	Male	Female
Cheshire and Merseyside	27.1 (23.7)	29.1 (23.3)	25.4 (24.0)	27.3 (25.6)	28.7 (24.6)	26 (25.8)
East Midlands	36.1 (32.2)	37.3 (35.2)	35 (30.1)	35 (31.8)	36.6 (35.0)	33.3 (28.1)
East of England - North	38 (34.2)	38.2 (36.0)	37.5 (31.6)	34.9 (31.4)	36.1 (31.0)	33.5 (31.8)
East of England - South	33.7 (29.4)	35.3 (31.8)	32.9 (28.0)	30.5 (28.3)	30.2 (30.5)	31.1 (26.8)
Greater Manchester	32.7 (26.1)	34.2 (28.5)	31.2 (23.7)	28 (25.6)	30.5 (29.2)	25.7 (22.7)
Humber, Coast and Vale	35.8 (31.3)	38 (32.4)	33.7 (28.9)	34.7 (30.7)	35.9 (30.8)	33.5 (30.6)
Kent and Medway	36.3 (35.2)	37.7 (39.7)	36.2 (35.7)	32 (29.1)	32 (30.2)	32.7 (30.2)
Lancs and South Cumbria	35.7 (35.5)	39.1 (40.3)	32.8 (31.0)	33.4 (31.4)	36.4 (39.0)	30.5 (23.7)
North Central London	32.7 (27.9)	37.7 (34.3)	28.6 (22.6)	32.6 (33.9)	34.4 (37.9)	31.3 (25.9)
North East London	35.2 (30.2)	36.4 (31.9)	34.1 (28.2)	34.3 (32.8)	36.4 (37.5)	33.1 (28.1)
RM Partners (West London)	35.6 (33.5)	38.8 (38.0)	33.8 (32.4)	31.3 (28.8)	33.1 (27.9)	30.4 (30.3)
Northern	33.6 (31.0)	34.5 (32.2)	32.8 (29.9)	32.3 (32.0)	33.5 (35.3)	31.2 (29.1)
Peninsula	38.4 (31.4)	39.6 (33.3)	37.1 (30.0)	33.3 (25.7)	34.2 (28.2)	32.3 (23.2)
Somerset, Wilts, Avon and Gloucs	38.3 (34.9)	39.5 (40.2)	37.2 (31.8)	35.4 (31.5)	35.5 (31.0)	35.4 (32.1)
South East London	31.9 (29.0)	32.8 (30.6)	32.3 (30.0)	32 (25.9)	34.2 (24.3)	30.6 (28.9)
South Yorks and Bassetlaw	33 (30.1)	35.3 (31.7)	30.7 (28.3)	33.2 (31.4)	35.5 (35.8)	30.9 (27.7)
Surrey and Sussex	34.2 (28.7)	36.7 (32.7)	32.5 (26.9)	30.7 (28.4)	32.6 (28.8)	29.3 (29.2)
Thames Valley	33.3 (29.8)	35 (33.3)	32 (27.9)	31.3 (28.9)	31.8 (27.5)	31.6 (28.6)
Wessex	35.5 (32.6)	36.1 (31.6)	35.4 (34.5)	34.5 (33.1)	36.8 (35.3)	32.9 (32.5)
West Midlands	35.7 (31.3)	37.5 (34.4)	33.7 (27.7)	33.8 (31.6)	34.9 (30.6)	32.6 (32.8)
West Yorks and Harrogate	37.2 (35.0)	38.8 (36.8)	35.7 (32.9)	33.3 (30.6)	34.6 (29.9)	31.9 (30.0)

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Table 8

Percentage of initial lung cancers diagnosed as de-novo metastatic by age band, sex, four-year value (2020/21–2023/24) and 2023/24 values by ICB

	Percentage of initial lung cancers diagnosed as metastatic					
	55–74 years			≥75 years		
NHS Integrated Care Board	All patients	Male	Female	All patients	Male	Female
Bath, NE Somerset, Swindon and Wilts	36.6 (38.6)	38.8	35.7	36.3 (32.7)	35.7	37.9
Beds, Luton and Milton Keynes	33.8 (35.5)	33.6	34.9	26.5 (25.0)	27.5	27.1
B'ham and Solihull	35.4 (27.8)	37.4	33.1	33.0 (28.9)	33.3	32.6
Black Country	37.8 (37.3)	39.2	36.6	38.7 (40.0)	38.0	38.8
Bristol, North Somerset and South Gloucs	40.5 (33.3)	41.9	39.1	32.8 (29.2)	33.3	32.3
Bucks, Oxon and Berks	33.3 (29.8)	35.0	32.0	31.3 (28.9)	31.8	31.6
Cambs and Peterborough	33.7 (28.8)	32.7	34.7	29.8 (27.1)	31.7	27.4
Cheshire and Merseyside	27.1 (23.7)	29.1	25.4	27.3 (25.6)	28.7	26.0
Cornwall and Isles of Scilly	42.5 (34.6)	45.7	39.3	37.4 (35.0)	37.3	38.0
Coventry and Warwicks	32.1 (26.7)	33.3	30.9	33.3 (28.8)	36.9	29.6
Derby and Derbys	36.9 (34.7)	38.5	35.9	34.6 (29.7)	35.6	32.6
Devon	35.9 (29.5)	35.8	36.1	30.9 (23.0)	32.5	29.3
Dorset	34.8 (32.0)	36.4	35.1	33.5 (32.1)	36.2	32.2
Frimley	26.9 (18.9)	29.6	24.7	24.2 (19.6)	25.6	21.1
Gloucs	32.8 (31.0)	33.9	33.3	32.2 (31.0)	35.1	29.3
Greater Manchester	32.7 (26.1)	34.2	31.2	28.0 (25.6)	30.5	25.7
Hants and Isle of Wight	35.8 (33.6)	36.0	35.5	35.0 (33.3)	37.1	33.0
Herefords and Worcs	37.9 (34.6)	41.3	35.1	35.0 (28.6)	36.4	32.9
Herts and West Essex	33.7 (27.3)	36.2	32.4	31.8 (29.1)	31.0	32.5
Humber and North Yorks	35.8 (31.3)	38.0	33.7	34.7 (30.7)	35.9	33.5

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Table 8

Percentage of initial lung cancers diagnosed as de-novo metastatic by age band, sex, four-year total (2020/21–2023/24) and 2023/24 values by ICB

	Percentage of initial lung cancers diagnosed as DNM					
	55–74 years			≥75 years		
NHS ICB	All patients	Male	Female	All patients	Male	Female
Kent and Medway	36.3 (35.2)	37.7	36.2	32.0 (29.1)	32.0	32.7
Lancs and South Cumbria	35.7 (35.5)	39.1	32.8	33.4 (31.4)	36.4	30.5
Leicester, Leics and Rutland	32.5 (25.4)	32.8	32.5	30.2 (25.9)	30.3	29.2
Lincs	34.4 (34.6)	34.8	33.9	36.6 (31.4)	38.2	34.0
Mid and South Essex	33.8 (26.8)	36.2	31.8	31.7 (30.7)	31.8	31.7
Norfolk and Waveney	39.1 (35.7)	40.7	38.3	37.6 (33.8)	39.0	35.7
North Central London	32.7 (27.9)	37.7	28.6	32.6 (33.9)	34.4	31.3
North East and North Cumbria	33.6 (31.0)	34.5	32.8	32.3 (32.0)	33.5	31.2
North East London	35.2 (30.2)	36.4	34.1	34.3 (32.8)	36.4	33.1
North West London	34.7 (34.0)	38.5	32.7	31.6 (30.8)	31.9	31.6
Northants	35.9 (34.0)	38.1	33.9	34.7 (34.7)	36.6	32.5
Nottingham and Notts	39.2 (33.7)	40.9	36.8	38.6 (36.0)	40.0	37.0
Shrops, Telford and Wrekin	39.5 (25.8)	39.7	39.3	34.5 (36.4)	35.1	33.9
Somerset	41.2 (37.8)	42.7	39.4	39.9 (33.3)	38.5	41.4
South East London	31.9 (29.0)	32.8	32.3	32.0 (25.9)	34.2	30.6
South West London	36.3 (32.8)	38.8	35.3	31.0 (25.9)	34.2	27.9
South Yorks	32.8 (29.7)	34.8	30.9	33.2 (30.9)	35.5	30.5
Staffs and Stoke-on-Trent	33.8 (31.8)	36.9	31.3	30.3 (29.1)	31.5	28.8
Suffolk and North East Essex	40.2 (34.8)	40.8	39.7	36.0 (31.4)	36.1	35.9
Surrey Heartlands	37.4 (31.0)	39.5	35.3	31.3 (23.5)	32.1	30.5
Sussex	35.7 (31.5)	38.2	34.3	33.2 (35.3)	35.4	31.6
West Yorks	37.2 (35.0)	38.8	35.7	33.3 (30.6)	34.6	31.9

Data are four-year total (2023/24 value). Each patient count was rounded to the nearest multiple of 5 in line with **HES licence** requirements, see full disclaimer; this reduces accuracy and means that data may not total 100% across rows. Values for 40–54 year olds have not been included due to suppression of low numbers.

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   2.2. You should be on the alert for any rare and unintentional breach of confidence, such as responding to a query relating to a news item that may add more information to that already in the public domain. If you recognise an individual while carrying out any analysis you must exercise professionalism and respect their confidentiality.

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   2.4. HES data must only be used exclusively for the provision of outputs to assist health and social care organisations.

   2.5. HES data must not be used principally for commercial activities. The same aggregated HES data outputs must be made available, if requested, to all health and social care organisations, irrespective of their value to the company.

   2.6. HES data must not be used for, including (but not limited to), the following activities:

   2.6.1. Relating HES data outputs to the use of commercially available products. An example being the prescribing of pharmaceutical products

   2.6.2. Any analysis of the impact of commercially available products. An example being pharmaceutical products

   2.6.3. Targeting and marketing activity

   2.7 HES data must be accessed, processed and used within England or Wales only. HES data outputs must not be shared outside of England or Wales without the prior written consent of HSJ Information.

   2.8 If HES data are subject to a request under the Freedom of Information Act, then HSJ Information and NHS Digital must be consulted and must approve any response before a response is provided.

3. 2024/25 HES data are provisional and may be incomplete or contain errors for which no adjustments have yet been made. Counts produced from provisional data are likely to be lower than those generated for the same period in the final dataset. This shortfall will be most pronounced in the final month of the latest period, e.g. September from the April to September extract. It is also probable that clinical data are not complete, which may in particular affect the last two months of any given period. There may also be errors due to coding inconsistencies that have not yet been investigated and corrected.

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10. You can contact HSJ Information by telephoning 0845 121 3686, by e-mailing client.services@HSJInformation.co.uk or by visiting www.hsjmarketintelligence.co.uk

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Abbreviations

A&E	Accident and emergency
AI	Artificial intelligence
BPTP	Best practice timed pathway
CA	Cancer Alliance
CDC	Community diagnostic centre
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
CXR	Chest X-ray
DIDS	Diagnostic Imaging Dataset
DNM	De-novo metastatic
E	East
EU	European Union
FDS	Faster Diagnosis Standard
GP	General practitioner
HES	Hospital Episode Statistics
ICB	Integrated care board
ICD-10	International Classification of Diseases, 10th Revision
ICS	Integrated Care System
IMD	Index of multiple deprivation
LC	Lung cancer
LSOA	Lower-layer Super Output Area
LTP	Long Term Plan
MDT	Multidisciplinary team
NLCA	National Lung Cancer Audit
NC	North Central
NE	North East
NM	Non-metastatic
NOLCP	National Optimal Lung Cancer Pathway
NSCLC	Non-small cell lung cancer
ONS	Office for National Statistics
pp	Percentage point
RCRD	Rapid Cancer Registry Dataset
RDC	Rapid diagnostic centre
S	South
SACT	Systemic anti-cancer treatment
SCLC	Small cell lung cancer
SE	South East
SMI	Severe mental illness
TLHC	Targeted lung health check
US	Ultrasound
W	West

Study methods

Study design and setting

In this observational study, we used Hospital Episode Statistics (HES) data[19] to analyse variations in diagnosis of lung cancer by a number of combinations including age, deprivation, ethnicity, referral source, mental health conditions, and urbanicity. We included patients at their initial diagnosis of lung cancer as inpatients and outpatients and excluded those previously diagnosed with lung cancer.

The study involved secondary analysis of existing pseudonymised data and therefore was exempt from UK National Ethics Committee approval. The study was conducted and reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement.[51]

The study was exempted from ethics approval after review for data access from the Independent Group Advising on the Release of Data for NHS England.

Study methods

Lung cancer definitions

Lung cancer total

- All patients who had a hospital inpatient spell or outpatient attendance with a diagnosis of lung cancer (ICD-10 code C34)[36] who were not diagnosed with mesothelioma (ICD-10 codes C45.0, C45.1, C45.7)[36] at any time in the study period.

Stage 1–3 lung cancer (non-metastatic, NM)

- All patients who were diagnosed with lung cancer (as defined above) who were not diagnosed with metastases (ICD-10 codes C78 and C79)[36] within 30 days of their first hospital presentation of lung cancer.

Stage 4 lung cancer (de-novo metastatic, DNM)

- All patients who were diagnosed with lung cancer (as defined above) alongside a diagnosis of metastases (ICD-10 codes C78 and C79)[36] within 30 days of their first hospital presentation of lung cancer.

Study methods

Study period

The study period was 1 April 2019 to 31 March 2024, as this was the most recent available finalised period in HES[19] at the time of the study.

For our analysis, we queried the 12-month periods April 2020 to March 2021, April 2021 to March 2022, April 2022 to March 2023, and April 2023 to March 2024. We queried HES as far back as possible, with April 2019 the earliest month available, using these additional 12 months of data prior to 2020/21 to confirm that a patient was indeed a new patient.

We also used data from the Diagnostic Imaging Dataset (DIDS),[21] which were only available for 2021/22 and 2022/23.

Study methods

Patient attributes 1

Age

We divided patients into three age bands:

- 40–54 years
- 55–74 years (corresponding to the NHS lung cancer screening programme)[16,17]
- ≥75 years.

We also analysed patients by individual year between 18 and 89 years inclusive.

Some analyses for some ages and age groups were excluded due to low patient numbers.

Deprivation

We defined deprivation by the Indices of Multiple Deprivation (IMD) Lower-layer Super Output Areas (LSOA) where the patient resides.[27] We further quantified deprivation into Quintiles 1 (most deprived 20th percentile of population) through Quintile 5 (least deprived 20th percentile).

Mental health

We analysed patients based on whether or not they also had a mental health diagnosis (ICD-10 Chapter V)[36] alongside their initial lung cancer diagnosis.

Urbanicity/rurality

We analysed patients based on whether or not they lived in a rural or urban area from the ONS 2011 Rural-Urban Classification.[37]

Geography

We analysed data for England in total and for each of the 21 Cancer Alliances and 42 Integrated Care Boards.

Study methods

Patient attributes 2

Ethnicity

Ethnicity was based on the ethnicity recorded during the patient's first presentation with lung cancer in a hospital inpatient spell or outpatient attendance.

HES data categorise patients as White, Black, Asian, Mixed, Other, and Unknown.[19]

- For white ethnicity, we considered only White (British).
- For Asian ethnicity, we chose to focus on South Asian populations given the low proportion of Chinese patients in the UK population.
- The ethnicity categories included in our analysis were therefore Asian (South) (comprising Indian, Pakistani, and Bangladeshi), Black, and White (British).

We could only analyse ethnicity for the four years of the study combined due to suppression at the level of individual years.

HES data category	Definitions
Asian	Indian (Asian or Asian British)
	Pakistani (Asian or Asian British)
	Bangladeshi
	Any other Asian background
Black	Caribbean (Black or Black British)
	African (Black or Black British)
	Any other Black background
Mixed	White and Black Caribbean (Mixed)
	White and Black African (Mixed)
	White and Asian (Mixed)
	Any other Mixed background
Other	Chinese (other ethnic group)
	Any other ethnic group
Unknown ethnic group	Not known
	Not stated
White	British (White)
	Irish (White)
	Any other White background

Study methods

Patient attributes 3

Referral source

Referral source is based on the patient source of the patient's first DIDS record[21] for suspected lung cancer prior to (or on the same date as) their first presentation with lung cancer in a hospital inpatient spell or outpatient attendance.

DIDS data is available for 2021/22 and 2022/23 only.[21] The fiscal year assigned is based on the date of hospital presentation with lung cancer in HES.[19]

Inpatient referral source refers to 'Admitted patient care – inpatient (this health care provider)' only. It does not include 'Admitted patient care – day case (this health care provider).

The patient sources 'Other' and 'Other health care provider' have not been shown at national or sub-national level due to data suppression.

A patient may have more than one initial DIDS record[21] sharing the same date, so there may be a small element of double-counting in the referral source data.

PET scan

PET scan was identified for patients diagnosed with lung cancer in 2021/22 and 2022/23 who had a DIDS record[21] for suspected lung cancer prior to (or on the same date as) their first presentation with lung cancer in a hospital inpatient spell or outpatient attendance.

PET scan was defined as any patient coded with a modality of 'Positron emission tomography (procedure)' in a DIDS record[21] within 90 days following their initial DIDS record for suspected lung cancer.

The fiscal year assigned is based on the date of hospital presentation with lung cancer in HES.

Study methods

Patient attributes 4

Wait times for chest X-rays

An analysis of the number of chest X-ray tests was performed for suspected lung cancer in 2021/22 and 2022/23 based on data from DIDS,[21] alongside average days from:

- test request to test
- test to service report issued
- test request to service report issued.

The test request date was based on diagnostic test request date or diagnostic test request received date if the former was not available.

The analysis included all people regardless of whether they were diagnosed with lung cancer and covered all chest X-ray tests performed at NHS hospitals in England.

Study methods

Statistical analysis

We used age 55–74 years, Male, Quintile 5 (least deprived), White (British) ethnicity, Urban, and No mental health condition as the reference values for respective statistical analyses. We compared values for de-novo metastases with non-metastatic disease.

HES data[19] are suppressed to protect privacy. Where patient counts are between 1 and 7, data have been suppressed. Values and figures above 7 are rounded to the nearest 5.

We applied the chi-squared (χ^2) test to determine the statistical significance between observed and expected patient counts. A *p*-value <0.05 was interpreted as statistically significant. We used Python version 3.8.2 for all statistical analyses.

Study methods

Limitations

Rounding patient counts queried from HES[19] to the nearest multiple of five to protect anonymity impacts the granularity of presented data.

Patient ethnicity is frequently coded as 'Unknown' in HES data, and ethnic groups, particularly for older age groups, are more likely to be unknown.

Because calculations of percentage of DNM diagnoses and NM diagnoses have been made using rounded patient numbers, there may be a small degree of inaccuracy in the presented percentages. However, we have ensured that this degree of inaccuracy never exceeds 2 pp from the true value in the data we have included in the study.

The rates of DNM differ significantly from those presented in the National Lung Cancer Audit (NLCA).[10] The NLCA used the Rapid Cancer Registry Dataset (RCRD), which uses the TRM (tumour-ratio-metastasis staging) system and our research used Hospital Episode Statistics (HES data) which uses ICD codes. The RCRD has the stage of the cancer recorded and all instances linked to a patient's cancer journey. HES data does not record the stage of the cancer and ICD10 codes are used where the type of cancer can be identified and whether or not there is lymph node and/or metastatic involvement. Using this method, whilst the instances of DNM do not align to the NLCA, the overall number of new patients diagnosed and the percentage presenting via A&E is in line with those in the NLCA.

According to the NLCA State of the Nation 2024, 36,886 patients were diagnosed with lung cancer in the 2022 calendar year.[10] In our HES analysis, there were 37,365 new lung cancer patients in the 2021/2022 fiscal year and 37,295 new lung cancer patients in the 2022/2023 fiscal year, the closest equivalent time periods.

The proportion of patients presenting via an A&E referral was 32% in 2022 according to the NLCA.[10] This compares with 32% in our HES analysis in 2021/2022 and 28% in 2022/2023.

The proportion of patients presenting with Stage 4 disease in 2022 in the NLCA was 45%.[10] This compares with 35% diagnosed with DNM on presentation in our HES analysis in 2021/2022 and 33% with DNM in 2022/2023.

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