# **APPG Report** Lung Cancer Recovery After COVID





All Party Parliamentary Group for Respiratory Health

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# **APPG Report** Lung Cancer Recovery After COVID

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# Forewords

## **Jim Shannon MP**

#### Chair, All-Party Parliamentary Group for Respiratory Health

It has been a difficult year with the impact of COVID hitting respiratory health badly. It has been difficult for many people and we are deeply saddened at the loss of lives and the devastating consequence the pandemic has had on so many people. Amid all this, we cannot speak highly enough of the courage, dedication, devotion and expertise of those



who have been at the leading edge of the NHS, who have placed the needs of their patients at the forefront of their minds. It is in this context and in dedication to all those who lost loved ones to COVID that the APPG is launching this report.

The APPG was brought together to raise awareness of the importance of respiratory health and to promote effective policy for improving treatments and outcomes for respiratory illnesses and for this inquiry we have focussed on the challenges presented by COVID on lung cancer diagnosis, treatment and management and the impact this has had on healthcare systems, clinicians and patients.

The inquiry has given us real insights into the outstanding work carried out by so many professionals and the everyday impact the illness has on the patients themselves.

We are enormously grateful to all the clinical experts and the patient groups who very kindly responded to our request for evidence and it is largely their responses that informs the content of the report.

We would particularly like to thank Professor David Baldwin for his outstanding assistance and advice in helping us to conduct the inquiry and produce this report.

## **Professor David Baldwin**

Professor David Baldwin, Honorary Professor of Medicine and Respiratory Physician, Nottingham University hospitals and the University of Nottingham

The All-Party Parliamentary Group for Respiratory Health has produced a timely report on the impact of COVID on lung cancer, which I hope will make a real difference for clinicians, patients and their families. It is a balanced appraisal of where we are with the challenges facing us now in the UK, how they can be resolved and suggests



some appropriate recommendations to help make this happen.

My aim as a clinician dedicated to lung cancer is to drive earlier diagnosis for all lung cancer patients by helping the NHS to provide a first-class diagnostic and treatment service. To achieve this, it will be necessary to raise greater awareness of the illness and the report will help us to do that.

The work carried out every day by cancer clinicians and healthcare workers throughout the UK is truly exceptional but the structures and pathways within lung cancer care need to deliver better outcomes, to reflect their hard work and commitment.

What is needed, and the report makes this clear, is a more systematic, cooperative approach to dealing with lung cancer and ultimately one that unites us all in the delivery of a truly world leading service.

The report and others like it, enable us to look at familiar problems in new and unique ways and I commend it to Ministers and the government.

## All-Party Parliamentary Group for Respiratory Health

#### Chair: Jim Shannon MP

**Vice-Chairs:** Ian Liddell-Grainger MP, Liz Twist MP, Yvonne Fovargue MP, Mark Logan MP, Earl of Dundee, Lord Simon, Baroness Masham of Ilton, Baroness Blackstone, Baroness Thornton.

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## Introduction

COVID has had an enormous impact across the world. In the UK, it has cost premature deaths and left a devastating impact on many people's lives. The pandemic has hit every sector of society and has had a huge impact on healthcare delivery.

As a consequence, the APPG for Respiratory Health decided to look at the impact of COVID on respiratory health services in the UK and on the NHS ambitions for lung cancer care and outcomes.

We decided to concentrate our inquiry on the post-COVID recovery and we chose to investigate lung cancer in particular as even short delays to referrals or treatment can have a large impact on patients. We have looked at and considered the key challenges identified by the respondents to our request for evidence, in addition to carefully considering the opportunities for progress and putting forward recommendations for the DHSC to consider.

To reflect the views within the lung cancer community, we invited clinicians, professional bodies, the Department of Health and Social Care (DHSC) and its executive bodies, patient advocacy groups and patients themselves to submit evidence for our inquiry and we were delighted at the level of response.

Over 30 organisations and individuals kindly submitted evidence and we are enormously grateful to all the respondents for their assistance in enabling us to put this report together.

Their views were, as we expected, varied and diverse but there were many areas of consistency across a number of topics. There was widespread acknowledgment of the impact of COVID and the necessity to restore lung cancer services quickly and seize the opportunity to extend beyond just recovering the pre-COVID position to deliver real and lasting improvements.

We heard about hard pressed clinicians and staff working hard to diagnose and treat as many patients as possible and we were enormously impressed by the very positive work being undertaken across the cancer community to increase screening, early diagnosis and restore treatment levels above pre-COVID levels.

Lung cancer is one of the fastest degenerative and progressive diseases and we were advised by senior clinicians that if treatment for some cancers is missed for even a relatively short period curative potential can be lost and patients can regress quickly and move from an active treatment arm to palliative care.

We have looked closely at all the challenges posed by COVID and their effect and we have tried to identify ways in which the cancer community can bounce back better.

Some of the challenges for lung cancer existed before COVID - low referral rates at early stages, delays in diagnosis and treatment and resource issues in personnel and equipment.

Our respondents made a very strong case for early detection and diagnosis as essential to improving outcomes and these were identified by our respondents as some of the most important issues, together with speed of referral and patient access to care and treatment (ABPI, UK lung cancer care outcomes: A comparison with Europe, July 2017, available at: http://cancercomparator.abpi.org. uk/resources/ ABPI%20lung%20cancer%20briefing%20July%202017.pdf).

There were many suggestions on early diagnosis through a variety of means but there was unanimous support for the rollout of low dose CT scanning. This varied from straight to CT, GP led CT, self-referred straight to CT and increased CT provision within the Health Lung Checks and the expanding Community Diagnostic Centres. There was also support for CT scanning in the context of the work of the CDCs in coordination with the ongoing work of the rapid diagnostic centres.

We asked for views on a national lung cancer screening programme and found widespread support for the programme. To investigate the potential for a national screening programme we considered the latest clinical data and outcomes and we couldn't fail to be impressed by the potential shown by the Dutch-Belgian Randomised Lung Cancer Screening Trial (NELSON) study, whose outcomes have been supported by the trials in Manchester, Liverpool and other regional lung health check pilots which are delivering the same outstanding results in deprived parts of England. To place this into context, we looked carefully at the policies and initiatives undertaken and proposed by the government on lung cancer and found that there are many policy initiatives initiated by the government over a number of years.

The NHS Long Term Plan (LTP) underpins the government's overall strategy and contains ambitions to reduce the number of lung cancer deaths and it aims to increase the proportion of all cancers diagnosed at stages I and II from around half now to three-quarters of cancer patients by 2028.

The Plan also led to the report by Professor Sir Mike Richards, which was instrumental in setting up the Community Diagnostic Centres, recommending expanding CT scanning capacity by 100% over the next five years to meet increasing demand and match comparable countries and improving digitalisation and improved connectivity of the Cancer Networks.

The National Optimal Lung Cancer Pathway (NOLCP) published in 2017 was introduced to improve and streamline the pathway to allow quicker lung cancer diagnosis and at an earlier stage, when treatment could be more effective.

We considered the impact of COVID on a variety of variables including waiting lists, referrals, testing and treatment and we have tried to put the system recovery from COVID into context and what it means for clinicians and patients.

We also welcome the announcement of the Community Diagnostic Centres and the funding that accompanies them, which we believe will make a substantial difference to lung cancer outcomes, although the additional capacity will add to the importance of an increase in the workforce to accommodate this.

There is considerable clinical evidence from a wide number of trials and pilots that lung cancer screening using LDCT scans offers a safe, effective method to deliver significant reductions in lung cancer mortality. Early detection can also lead to a curative pathway, which is much more cost-effective than immunotherapy treatment used in the palliative pathway.

In publishing our findings, we hope to supplement the efforts of the many organisations, both clinical and non-clinical, which work tirelessly on behalf of clinicians, patients and their families.

There are more widespread views and opinions of great value contained in the submissions than we can possibly represent in a report of this nature but our aim was to allow different views and opinions to be expressed in order to assist us in our understanding of what needs to be done to improve lung cancer outcomes.

It is of course, entirely a matter for the government, the DHSC and its Executive Agencies to make the policy decisions that will implement the improvements our stakeholders have identified but we hope that we can offer some insights from clinical experts and other essential stakeholders in how this might be done.

We will be looking to take the recommendations of this report forward with Ministers and others.

We would like to thank everyone who has taken the time to respond to us - we were impressed by the dedication and commitment of so many organisations and individuals working to improve lung cancer outcomes and we commend their ongoing work. Some have been very generous with their time and it is thanks to them that we were able to produce this report.

In conclusion, we found convincing evidence that there is a very real opportunity to improve lung cancer outcomes dramatically, to improve the lives of lung cancer patients throughout the UK and reduce the burden on our healthcare system and society that was forced on us by COVID.

There is a very real opportunity to improve lung cancer outcomes dramatically

## Recommendations

- We recommend that NHS England smoking cessation services be integrated into all aspects of the lung cancer care pathways from first presentation
- We recommend that smoking cessation initiatives should be provided as part of the local lung health checks, included in the local community diagnostic centres and that the deprivation index should be used to prioritise resources
- · We recommend that further research be commissioned into why some never smokers develop lung cancer
- We recommend that any positive recommendation by the National Screening Committee be accepted in a timely manner by Ministers and rolled out immediately
- We recommend that appropriate incentives be considered to allow the maximum impact of a national screening programme and that these should be built into existing mechanisms, such as the PCN contract, the Direct Enhanced Services incentives, QOF or the IIF
- We recommend that NHS England implements clinician driven straight-to-CT for lung cancer diagnosis and integrates this across primary care, the health lung checks programme and the CDCs
- We recommend that NHS England take the necessary steps to fully implement the NOLCP across the country and liaise with the Cancer Alliances to establish timely implementation
- We recommend that to enable NOLCP to be fully accountable, a data recording and reporting system should be introduced to make best use of the data arising from the NOLCP
- We recommend that NHS England commits to extending the current referral pathways to allow patient self-referral to the new CDCs and the lung health checks
- We recommend that the locations of the CDCs are initially linked to the deprivation index to ensure the resources are placed where they are needed most
- We recommend that the CDCs build in appropriate capacity for respiratory services, including low dose CT scans together with the appropriate personnel
- We recommend that referral pathways should provide for onward referral for suspected lung cancer patients and we recommend that a simplified but consistent referral pathway is built into the CDCs from the start
- We recommend that NHS England provides support to GP practices to enable a tailored approach for potential lung cancer patients to be prioritised for face to face consultations within primary care and then assessed for the appropriateness of future face to face or virtual consultations
- We recommend that the DHSC and NHS England consider and consult on the implementation of a National Lung Cancer Action Plan
- We recommend the DHSC put in place a plan for an immediate increase in the resources necessary to realise the ambitions of the Long Term Plan and the appropriate AI roll out to realise the potential of the CDCs and the Lung Health Checks
- We recommend that NHS England investigates the optimal means to restore clinical and expert personnel vacancies and increase the number of scanners necessary to meet the restoration of lung cancer services

# Lung Cancer

Lung cancer is the leading cause of cancer deaths worldwide, accounting for one in five cancer deaths.<sup>1</sup> It is the 3rd most common cancer in the UK, accounting for 13% of all new cancer cases.<sup>2</sup>

There are around 48,500 new lung cancer cases in the UK every year, more than 130 every day. It is the most common cause of cancer death and there are around 35,100 lung cancer deaths in the UK every year - 96 every day, which is more than breast and bowel cancer combined.<sup>3</sup>

There are usually no signs or symptoms in the early stages. Symptoms of lung cancer develop as the condition progresses and these include:<sup>4</sup>

- a persistent cough that doesn't go away
- a long-standing cough that gets worse
- chest infections that keep coming back
- coughing up blood
- an ache or pain when breathing or coughing
- persistent breathlessness
- persistent tiredness or lack of energy
- loss of appetite or unexplained weight loss

Cancer Research UK (CRUK) has identified lung cancer as a cancer with substantial unmet need

These symptoms can vary from person to person and many of them can be caused by other respiratory conditions or by smoking.

The symptoms of lung cancer can be indistinct from other respiratory illnesses<sup>5</sup> and disorders and a persistent cough and breathlessness can be difficult to recognise as lung cancer and are common in smokers and people who used to smoke. Unfortunately, by the time specific symptoms of lung cancer are diagnosed, it has often progressed beyond an early stage and is much more difficult to treat.

The UK has low lung cancer survival when compared with other European countries and the estimated UK five year survival (2010-2014) is among the lowest in Europe, 5-7 percentage points behind leading countries such as Germany, Latvia, Norway, Sweden and Switzerland.<sup>6</sup> Lung cancer survival in the UK also falls below that of countries with comparable health systems and comprehensive cancer data outside of Europe.<sup>7</sup>

Cancer Research UK (CRUK) has identified lung cancer as a cancer with substantial unmet need due to poor five-year survival and only limited improvement over the past decade.<sup>8</sup>

In England in 2019, the data shows that half of all lung cancers were diagnosed at stage IV (50%), compared to 5% of breast cancers and 25% of colorectal cancers.<sup>9, 10</sup> A person diagnosed with stage IV lung cancer has less than 10% chance of surviving five years after diagnosis; this increases to between 68–92% if diagnosed at stage I.<sup>11</sup>

- <sup>1</sup> Ferlay J, Ervik M, Lam F, et al. 2020. GLOBOCAN 2020 cancer fact sheet: all cancers. Lyon: Global Cancer Observatory
- $^{\rm 2}$   $\,$  Lung cancer statistics | Cancer Research UK  $\,$
- $^{3}\ \ {\rm https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics/statistics-by-cancer-type/lung-cancer#heading-One-statistics-by-cancer#heading-One-stati$
- <sup>4</sup> Lung cancer Symptoms NHS (www.nhs.uk)
- <sup>5</sup> Cancer Research UK. Lung cancer symptoms. https://about-cancer.cancerresearchuk.org/about-cancer/lungcancer/symptoms (last accessed October 2021).
- <sup>6</sup> Implementing-timed-lung-cancer-diagnostic-pathway.pdf (england.nhs.uk)
- <sup>7</sup> https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(19)30456-5/fulltext
- <sup>a</sup> https://www.cancerresearchuk.org/funding-for-researchers/our-research-strategy/tackle-cancers-with-substantial-unmet-need
- <sup>9</sup> Public Health England, National Cancer Registration & Analysis Service. Staging data in England. CancerData
- <sup>10</sup> https://www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/measuring-uptake/lung-cancer-impact-report/nice-impact-lung-cancer.pdf
- <sup>11</sup> Goldstraw P, Chansky K, Crowley J, et al. 2016. The IASLC lung cancer staging project: proposals for revision of the TNM stage groupings in the forthcoming (eighth) edition of the TNM classification for lung cancer. J Thorac Oncol 11(1): 39-51

Early detection would carry personal and societal benefits and significantly reduce the total costs of lung cancer. With earlier detection, more people will be able to remain active, healthier and live longer with their families and return to work.

Earlier referral of symptomatic people is unlikely to result in an increase in early-stage lung cancers being diagnosed and the emphasis on screening and early diagnosis needs to concentrate on non-symptomatic or asymptomatic people.

An estimated 89% of lung cancers are preventable, with 86% of these linked to smoking<sup>12</sup> and long-term tobacco smoking<sup>13</sup>, it appears to us to make sense for screening and early diagnosis to concentrate on smoking as a major risk factor. This needs to take into account regional differences in population health and access to screening and healthcare.

## Lung cancer in the UK

#### According to statistics from Cancer Research UK<sup>14</sup>

- There are around 48,500 new lung cancer cases in the UK every year, which is more than 130 every day
- Lung cancer is the 3rd most common cancer in the UK, accounting for 13% of all new cancer cases
- There are around 35,100 lung cancer deaths in the UK every year 96 every day, which is more than breast and bowel cancer combined (Cancer Research UK. Cancer mortality for common cancers, 2017, downloadable excel spreadsheet, available at: http://www.cancerresearchuk.org/health-professional/cancer-statistics/ mortality/ common-cancers-compared#heading-Zero)
- Lung cancer is the most common cause of cancer death in the UK, accounting for 21% of all cancer deaths
- In females in the UK, lung cancer is the most common cause of cancer death, with around 16,000 deaths in 2018
- In males in the UK, lung cancer is the most common cause of cancer death, with around 18,600 deaths in 2018
- Around 4 in 10 (40.6%) of people diagnosed with lung cancer in England survive their disease for one year or more
- Around 3 in 20 (16.2%) of people diagnosed with lung cancer in England survive their disease for five years
  or more
- Over the last decade, lung cancer mortality rates have decreased by a seventh (14%) in the UK. Rates in females have decreased by a twentieth (5%), and rates in males have decreased by more than a fifth (22%)
- Mortality rates for lung cancer are projected to fall by 21% in the UK between 2014 and 2035, to 58 deaths per 100,000 people by 2035
- It is predicted that 1 in 10 (9.5%) of people diagnosed with lung cancer in England survive their disease for ten years or more
- Lung cancer incidence rates in England in females are 174% higher in the most deprived quintile compared with the least and in males are 168% higher in the most deprived quintile compared with the least
- Around 14,300 cases of lung cancer each year in England are linked with deprivation (around 6,600 in females and around 7,800 in males)
- <sup>12</sup> https://www.nice.org.uk/guidance/ng122/chapter/Context

<sup>&</sup>lt;sup>13</sup> Tonya Walser, Xiaoyan Cui, Jane Yanagawa, et al, Smoking and Lung Cancer, Proc Am Thorac Soc. 2008 Dec 1; 5(8): 811–815.

<sup>&</sup>lt;sup>14</sup> Lung cancer statistics | Cancer Research UK. (https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/lung-cancer#heading-One)

# **Policy context**

Cancer and in particular lung cancer has been a healthcare priority for successive governments and the many policy initiatives created to improve outcomes for patients stand testament to this.

Governments have traditionally worked very closely with the major stakeholders in the external cancer community who make a major contribution to policy and research, from executive, regulatory and other bodies, such as the National Institute for Health & Care Excellence (NICE) and guideline groups, research bodies and patient advocacy groups.

The UK has some outstanding and global leading research bodies and institutes and we readily welcome the contribution they make to help fight cancer.

Government policy on cancer and lung cancer is contained in many initiatives and most of them roll out as a consequence of the LTP, published by NHS England in January 2019. The plan highlighted cancer as one of four key clinical areas for improvement. It included an ambition to increase the proportion of cancers diagnosed at stages I and II from 50% to 75% by 2028.<sup>15</sup>

The plan also identified early diagnosis as one of the key strategies to improve cancer outcomes. To achieve this, the plan states that focus will be placed on:

- Greater awareness of the symptoms of cancer
- Accelerating access to diagnosis and treatment
- Maximising the number of cancers identified through screening

## Greater awareness of the symptoms of cancer

NHS England and NHS Improvement's public health 'Help us help you' campaign is encouraging people to come forward with symptoms, with a specific lung cancer campaign from August 2021.<sup>16</sup>

The campaign was widely praised by our respondents along with calls for further similar campaigns.

The UK has some outstanding and global leading research bodies and institutes and we readily welcome the contribution they make to help fight cancer.

<sup>15</sup> NHS Long Term Plan v1.2 August 2019
 <sup>16</sup> Official Report, WPQ, 21st October 2021

## Accelerating access to diagnosis and treatment

One of the key aims of the Long Term Plan is for more cancers to be diagnosed following a GP referral or from screening, with reductions in diagnosis through emergency presentation.

The Independent Review of Diagnostic Services in England report by Professor Sir Mike Richards went further and made a number of critical recommendations to help realise the outcomes of the LTP. These include extending the lung health checks following the strong results in Liverpool and Manchester and we have seen that this is already underway.<sup>17</sup>

From 2019, we saw the roll out of more mobile lung CT scanners starting in parts of the country with the lowest lung cancer survival. The lung health checks not only identify more cancers quickly, they can also help to diagnose a range of other health conditions, including Chronic Obstructive Pulmonary Disease (COPD) and coronary heart disease and help reduce inequalities in cancer outcomes.<sup>18</sup>

Under the Plan, the primary care networks are required to help improve early diagnosis of patients in their own neighbourhoods by 2023/24 and the faster diagnosis standard, introduced in 2020, was designed to ensure most patients receive a definitive diagnosis or ruling out of cancer within 28 days of urgent suspected cancer referral from a GP or from cancer screening.<sup>19</sup>

Among other initiatives, an Early Cancer Diagnosis Specification for Primary Care Networks (PCNs) was introduced in 2021, with a focus on optimising referral practice<sup>20</sup> and a Quality and Outcomes Framework (QOF) Quality Improvement module was introduced in 2021/22 to improve referral practice and improve screening uptake.<sup>21</sup>

Although the roll out of the lung health checks is not universal, the rapid diagnostic centres and the Community diagnostic centres, together with the introduction of earlier low dose CT scanning, have all increased the opportunities for lung cancer to be diagnosed at an early stage.

Rapid diagnostic centres for patients with non-specific symptoms provide a new referral pathway for GPs, assisting them to refer those with symptoms which could indicate a range of cancers.<sup>22</sup>

Twenty new targeted lung health check locations in England have recently been confirmed for 2022/23 and are linked to parts of the country with the highest rates of mortality from lung cancer.

"One of the key aims of the Long Term Plan is for more cancers to be diagnosed following a GP referral or from screening"

"Twenty new targeted lung health check locations in England have recently been confirmed for 2022/23"

<sup>&</sup>lt;sup>17</sup> DIAGNOSTICS: RECOVERY AND RENEWAL – Report of the Independent Review of Diagnostic Services for NHS England – October 2020

<sup>&</sup>lt;sup>18</sup> NHS England » NHS to rollout lung cancer scanning trucks across the country

<sup>&</sup>lt;sup>19</sup> NHS England » Faster diagnosis

<sup>&</sup>lt;sup>20</sup> B0431-network-contract-des-early-cancer-diagnosis-guidance-21-22.pdf (england.nhs.uk)

<sup>&</sup>lt;sup>21</sup> Official Report, WPQ 9th November 2021

<sup>&</sup>lt;sup>22</sup> Rapid Diagnostic Centres: Vision and 2019/20 Implementation Specification (england.nhs.uk)

## **System policy initiatives**

There are a number of system initiatives already underway or being introduced that should materially assist in lung cancer outcomes.

The clinically-led national Getting It Right First Time (GIRFT) programme generates comparative information that assists in the identification of best practice<sup>23</sup> and the NHS RightCare programmes take an evidence-based approach to assist in the design of optimum pathways of care.<sup>24</sup> Their review of Lung Cancer services is currently with NHSE for consideration before publication.

To support this, the National Lung Cancer Audit, through the Royal College of Physicians, has been collecting data nationally since 2005 to ensure care meets standards and seeks to reduce unwarranted variation across the country.<sup>25</sup>

To support the delivery of the new faster diagnosis standard, NHS England has aligned the Cancer Alliances and the upcoming Integrated Care Systems and NHS England and NHS Improvement regions.

Data collection for all patients within the pathway was intended to start in 2019, with full monitoring against the standard beginning in April 2020, and performance increasing as additional diagnostic capacity rolls out. However, we note that this has been delayed until Q3 2021/2022 and we would like to see this as a firm commitment.

There have been a large number of initiatives set out by the government and some of these show great promise in improving lung cancer outcomes. The commitment to lung cancer by the government is demonstrable but there are still gaps in resource allocation.

There are a number of system initiatives already underway or being introduced that should materially assist in lung cancer outcomes

"There have been a large number of initiatives set out by the government and some of these show great promise in improving lung cancer outcomes"

<sup>23</sup> Getting It Right First Time - GIRFT

<sup>24</sup> NHS RightCare » Respiratory (england.nhs.uk)

25 NLCA (rcp.ac.uk)

# Impact of COVID

The COVID outbreak was declared a pandemic by the WHO on the 12th March 2020,<sup>26</sup> although the impact was felt earlier in a number of countries including the UK. It has had a devastating impact on people's lives and on health system structures and response mechanisms.

No part of the UK has been left untouched and the impact on lung cancer has been felt disproportionally in deprived areas.

Public Health England (PHE) data shows that deprived groups are at greater risk of emergency presentation and late stage diagnosis for most cancers. People in deprived areas are more likely to be diagnosed and to have poor outcomes following COVID diagnosis than those in less deprived areas.<sup>27</sup>

PHE's 'Atlas of Variation in risk factors and healthcare for respiratory disease in England' showed that morbidity and mortality due to respiratory disease are concentrated within deprived groups.<sup>28</sup>

As well as the deprivation impact, we heard compelling evidence of the impact from COVID across the entire lung cancer pathway.

## **Impact on Testing**

The drop in the number of tests carried out during the pandemic was of concern and the halting of lung cancer screening pilots and restricted access to diagnostics contributed to a 75% drop in urgent lung cancer referrals.<sup>29</sup>

There was a reduction in lung cancer specific surgery and chemotherapy and reduced access to diagnostic services, such as PET scans, chest X-Rays, CT scanning and endobronchial ultrasound.<sup>30</sup>

The Public Health Minister confirmed in the House of Commons that these figures have not yet recovered by stating that: "sustained fall in people coming forward for lung checks, with the number of people seeking checks at only 76% of pre-pandemic levels."<sup>31</sup>

### Impact on diagnosis

The impact of lower diagnosis rates can be a life or death outcome for many lung cancer patients and a number of studies have shown that even when delays to referrals or treatment do not have life or death consequences, they still have a profound impact on patients.

Even before the impact of COVID, 75% of people present with advanced cancer when it has already spread<sup>32</sup> and a recent study in the Lancet predicted that there will be an additional estimated 1,372 lung cancer deaths five years after diagnosis in the wake of COVID.<sup>33</sup>

Delays in diagnosis in England, due to COVID are expected to result in a 11.2% increase of stage IV diagnoses of lung cancer.<sup>34</sup>

CRUK further told us that provisional data for England showed that around 2,300 fewer lung cancers were diagnosed during April-December 2020 compared to the same period in 2019.<sup>35,36</sup> 24% fewer cases were diagnosed via the urgent suspected cancer referral route with a 9% increase in cases diagnosed via emergency presentations.<sup>36</sup>

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<sup>26</sup> WHO/Europe | Coronavirus disease (COVID-19) outbreak - WHO announces COVID-19 outbreak a pandemic)

<sup>27</sup> Official Report, WPQ, 14th September 2021

- <sup>28</sup> Atlas of Variation PHE
- <sup>29</sup> UKLCC-COVID-19-Matters-Report-Oct-2020.pdf, 75 per cent drop in UK urgent lung cancer referrals during lockdown say experts ecancer, 75% drop in people referred to lung cancer specialists - Roy Castle Lung Cancer Foundation

<sup>30</sup> Written evidence submitted by Professor David Baldwin (chair), on behalf of the UK Lung Cancer and Mesothelioma Clinical Expert Group. Health and Social Care Select Committee, (CSV0012). September 2021

- $^{\scriptscriptstyle 31}~$  Official Report, "Covid-19: Lung Cancer Pathway" Westminster Hall debate, 2nd December 2020
- <sup>32</sup> Knight, Sean, Crosbie, Phil et al., Progress and prospects of early detection in lung cancer, Open Biology, September 2017, available at: https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC5627048/
- $^{\rm 33}$  Gourd E. Lung cancer control in the UK hit badly by COVID pandemic. Lancet Oncol. 2020;21(12):1559
- <sup>34</sup> Purushotham A, Roberts G, Haire K, et al. 2021. The impact of national non-pharmaceutical interventions ('lockdowns') on the presentation of cancer patients. ecancer 15: 1180

 $^{\scriptscriptstyle 35}$  CRUK evidence to this inquiry

<sup>36</sup> PHE Rapid Cancer Registration Dataset. June 2021 snapshot. 2019 data adjusted for working days. Rapid Cancer Registrations Data (ncin.org.uk)

There is also considerable evidence that reduced access to CT scanners and diagnostic staff have led to further missed opportunities for early detection, or to keep patients safe.<sup>37, 38, 39</sup>

In their evidence CRUK pointed to their GP Omnibus survey in February 2021 which identified the factors most frequently endorsed by GPs as potentially contributing to delays in diagnosis of lung cancer.<sup>40</sup> These included:

- 91% endorsed that patients were reluctant to attend hospital for diagnostic testing
- 78% endorsed patients were not presenting with respiratory symptoms
- 73% endorsed increases in diagnostic testing turnaround time
- 68% of those who replied expressed difficulty in identifying symptoms with remote consultations

To complicate this further, there is also an impact for many patients caused by the delays on functional outcomes – quality of life, complications due to progression, greater economic burden and premature mortality and morbidity. It has been suggested that the impact of diagnosis and treatment delay is probably far greater for patients and society than we are currently seeing.

### Impact on waiting lists

The Clinical Expert Group (CEG) told us that lung cancer incidence fell by a third of expected numbers, during the first wave of pandemic. We understand from their evidence that there has been no subsequent compensatory increase.<sup>41</sup> This means that for some people their lung cancer will not have been diagnosed before they, unfortunately, died either from the condition, or other causes.

We also heard that waiting lists for diagnosis have risen considerably and data from NHS England show that up to September 2021, 175,824 patients were waiting for an CT scan and 31,223 were waiting more than 6 weeks – 72% higher than March 2020 figures.<sup>42</sup> At the end of August 2021, ten times more patients were waiting 6 or more weeks for radiology than in 2019.<sup>43</sup>

According to the Lung Cancer and Mesothelioma Clinical Expert Group, the Two-Week Waiting data show a significant drop in two week wait clinic bookings for lung cancer, due to the pandemic, which have still not fully recovered.<sup>44, 45</sup>

In answer to a recent Written Parliament Question, the government confirmed that the number of people waiting longer than 62 days from an urgent referral for suspected cancer in England in July 2021, in the most recently published statistics, was approximately 18,000. Although this has reduced from 35,000 in May 2020 it still represents a significant challenge to restore the referrals to pre-

The government also announced that they are committed to the recovery of cancer services by the end of March 2022. They also confirmed that the DHSC had dedicated an additional £1 billion for elective and cancer services and the NHS is expanding diagnostic and treatment capacity to meet increasing levels of referrals and treatment.<sup>47</sup>

On the 26th October this year, the government announced their delivery plan for tackling the backlog in elective services to reduce waiting lists would be published by the end of November this year.<sup>48</sup>

#### "It has been suggested that the impact of diagnosis and treatment delay is probably far greater for patients and society than we are currently seeing"

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- <sup>37</sup> Royal College of Radiologists evidence to this inquiry
- <sup>38</sup> World Economic Forum. 2021. Learning lessons from across Europe: prioritizing lung cancer after COVID-19. Geneva: WEF
- <sup>39</sup> The Royal College of Radiologists. Clinical radiology UK workforce census 2020 report. London: The Royal College of Radiologists, 2021
- <sup>40</sup> Cancer Research UK, GP Omnibus survey, February 2021, Unpublished findings
- <sup>41</sup> CEG evidence to this inquiry
- 42 Statistics » Monthly Diagnostic Waiting Times and Activity (england.nhs.uk). Statistics » Diagnostics Waiting Times and Activity (england.nhs.uk)
- <sup>43</sup> Evidence of COVID-19 impact across the cancer pathway (cancerresearchuk.org)
- <sup>44</sup> https://digital.nhs.uk/dashboards/ers-open-data#dashboard
- <sup>45</sup> CEG evidence to this inquiry
- $^{\rm 46}~$  Official Report, WPQ 38326, 18th October 2021
- <sup>47</sup> Official Report, WPQ 26th, October 2021
- <sup>48</sup> Official Report, WPQ 26th, October 2021

## **Impact on treatment**

We heard that even small delays or interruptions in treatment can have enormous implications for patients and a global study has shown that a delay in cancer treatment of four weeks is associated with a 6-13% increase in the risk of death.<sup>49</sup>

The Annals of Oncology reported that the greatest rates of death arise following even modest delays to surgery in aggressive cancers, with up to 30% reduction in survival at six months and up to 17% reduction in survival at three months for patients with stage two or three lung cancer.<sup>50</sup>

Even for those patients diagnosed early enough for surgery to be an option, limited availability of surgery due to competing needs of COVID patients has had a significant effect on prognosis.<sup>51</sup>

A study in 2016 showed a 16% increase in mortality if the time from diagnosis to surgery exceeds 40 days. A delay of three months or more can mean the progression from a potentially curative tumour towards one that is only suitable for palliative care.<sup>52</sup>

Data for England suggest that a three-month delay in surgery for bladder, lung, oesophageal, ovarian, liver, pancreatic and stomach cancers would incur 4,755 excess deaths over one year, escalating to 10,760 excess deaths for a six-month delay.<sup>53</sup>

COVID also had a big impact on research and during the first wave of the pandemic, all clinical trials in lung cancer were stopped.

"COVID also had a big impact on research and during the first wave of the pandemic, all clinical trials in lung cancer were stopped"

## Restoring confidence in lung cancer services

None of this makes for particularly comfortable reading, so we challenged our respondents to come up with imaginative and creative ideas on the means and methods to best recover from COVID and drive the lung cancer agenda beyond the position it was in pre-COVID.

Our respondents agreed that restoring confidence in the service delivery and improving outcomes for lung cancer patients were the priorities post -COVID. They responded to our inquiry with innovative and dynamic solutions. These mainly centred around prevention, earlier and rapid diagnosis, referral and treatment and service improvement and recovery, which were all expressed as essential steps in the recovery process.

We agree with the experts and believe that now is the time to learn lessons from COVID and build better systems across the lung cancer pathway.

- <sup>52</sup> Yang et al. Optimal timing of lobectomy for clinical stage IA non-small cell lung cancer, 2016, available at: https://ascopubs.org/doi/10.1200/ JCO.2016.34.15\_suppl.8549
- <sup>55</sup> Sud A, Jones ME, Broggio J, et al. 2020. Collateral damage: the impact on outcomes from cancer surgery of the COVID-19 pandemic. Ann Oncol 31(8): 1-10

<sup>&</sup>lt;sup>49</sup> Hanna T P, King W D, Thibodeau S, Jalink M, Paulin G A, Harvey-Jones E et al. Mortality due to cancer treatment delay: systematic review and meta-analysis BMJ 2020

<sup>&</sup>lt;sup>50</sup> A. Sud, M.E. Jones, J. Broggio et al, Collateral damage: the impact on outcomes from cancer surgery of the COVID-19 pandemic, Ann Oncol. 2020 Aug; 31(8): 1065–1074. https:// www.ncbi.nlm.nih.gov/pmc/articles/PMC7237184/ Last accessed October 2021

<sup>&</sup>lt;sup>51</sup> Richardson B, Bentley S. 2020. Cancer postCOVID: impact, outcomes and next steps. London: Carnall Farrar) (Richards M, Anderson M, Carter P, et al. 2020. The impact of the COV-ID-19 pandemic on cancer care. Nature Cancer 1(6): 565-67

## Prevention

Prevention was widely supported and mainly focussed on smoking cessation and public awareness campaigns.

## **Smoking cessation**

In 2019 in the UK, 14.1% of people aged 18 years and above smoked cigarettes, which equates to around 6.9 million people.<sup>54</sup> Smoking is widely recognised as the leading cause of lung cancer, far outstripping any other single factor<sup>55</sup> and smoking cessation was considered by our respondents as one of the most practical ways of helping to reduce the number of lung cancer cases.

The loss of funding for smoking cessation over many years prior to the pandemic and the pandemic itself have negatively impacted smoking cessation, as together they have caused a reduction in active referrals of Covid symptomatic patients to stop smoking programmes.<sup>56</sup>

While our experts varied in their recommendations, there was a widespread agreement on the necessity of promoting smoking cessation. The evidence from the CEG summed up the general consensus around the importance of smoking cessation:

'For people who smoke, every opportunity should be taken to assist them in quitting. Smoking cessation should be integrated into all aspects of lung cancer care.'<sup>57</sup>

CRUK told us that smoking is a driver of health inequalities, accounting for approximately half of the difference in life expectancy between the lowest and highest income groups.<sup>58</sup> They also highlighted their modelling which shows that only the least deprived quintile is expected to be smoke free in England 2030, while the most deprived quintile won't achieve this target until the mid-2040s.<sup>59</sup>

They pointed to sustained Government funding reductions to the public health grant<sup>60, 61</sup> which has meant that vital stop smoking services commissioned by local authorities are in danger of being further reduced in England.

They also told us that increased and sustainable funding is needed to support the recurring costs of tobacco control at a local, regional and national level and this could be supported through a Smokefree Fund, which would pay for the measures necessary to prevent people from starting to smoke and help existing smokers to stop.<sup>62</sup>

The importance of local support for smoking cessation was also highlighted by Yorkshire Cancer Research (YCR), who referred to their own testing which showed that patients who have a lung health check at a non-medical facility such as a shopping centre, are more relaxed and less defensive when it comes to taking advice on cessation.<sup>63</sup>

Given the government's proposal to roll out the community diagnostic centres within non-medical community facilities, some patients may benefit from services being conducted outside traditional medical facilities.<sup>64</sup>

We welcome the government's commitment to make England Smoke Free by 2030 which was expressed in a recent answer to a parliamentary question; "We are committed to reducing the harms caused by tobacco and smoking rates amongst adults are currently at 13.9%, the lowest on record."<sup>65</sup>

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- <sup>54</sup> Adult smoking habits in the UK Office for National Statistics (ons.gov.uk). https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/ drugusealcoholandsmoking/datasets/adultsmokinghabitsingreatbritain Last accessed November 2021
- $^{\rm 55}\ \, {\rm https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/lung-cancer}$
- $^{\rm 56}~$  British Thoracic Society's evidence to this inquiry
- $^{\rm 57}$  CEG evidence to this inquiry
- <sup>58</sup> Marmot M, Allen J, Goldblatt P, et al. Fair Society, Healthy Lives: The Marmot Review: strategic review of health inequalities in England post-2010. 2010
- <sup>59</sup> Cancer Intelligence Team, Cancer Research UK. Smoking prevalence projections for England, Scotland, Wales and Northern Ireland, based on data to 2018/2019. Published February 2020
- <sup>60</sup> The Health Foundation. Today's public health grant announcement provides some certainty, but more investment is needed over the longer-term. Published 17 March 2020. Accessed 18 May 2021
- <sup>61</sup> The Health Foundation. Briefing: Taking our health for granted plugging the public health grant funding gap. The Health Foundation; 2018
- <sup>62</sup> CRUK evidence to this inquiry
- $^{\rm 63}$  Yorkshire Cancer Research evidence to this inquiry
- <sup>64</sup> Yorkshire Cancer Research evidence to this inquiry
- <sup>65</sup> Official Report, WPQ 26th October 2021

We agree with CRUK that more research is needed on how to identify and engage people from more deprived groups who smoke and take appropriate healthcare services to them to bring them more into the healthcare system and we look forward to the DHSC's new Tobacco Control Plan which is currently in preparation and is intended to deliver the 2030 smoke-free ambition. Several of our respondents welcomed the proposal and some suggested that more needed to be done in order to make it a reality.

There was however some concern over the delay to the plan but also hope that its publication would contain new health policy proposals that would help cut lung cancer rates.

We believe that smoking cessation should be a priority in reducing health inequalities across the UK and should be integrated into all aspects of lung cancer care.

There were also concerns raised around patients who have never smoked but nevertheless go on to develop lung cancer. Around 15% of lung cancers in the UK arise in never smokers each year<sup>66</sup> and 6,000 never smokers are estimated to die every year from lung cancer.<sup>67</sup>

Greater research into why these never smokers go on to develop lung cancer could shed light on environmental or workplace risks that may also need to be addressed in the future.

We believe that smoking cessation should be a priority in reducing health inequalities across the UK and should be integrated into all aspects of lung cancer care

#### Recommendations

- We recommend that NHS England smoking cessation services be integrated into all aspects of the lung cancer care pathways from first presentation
- We recommend that smoking cessation initiatives should be provided as part of the local lung health checks, included in the local community diagnostic centres and that the deprivation index should be used to prioritise resources
- We recommend that further research be commissioned into why some never smokers develop lung cancer

### Public health awareness campaigns

There was strong support for the Public Health England (PHE) and NHS England campaign "Help us help you – lung cancer symptoms" which was designed to raise awareness of lung cancer symptoms and to encourage people experiencing persistent symptoms to contact their GP.<sup>68</sup>

The British Thoracic Oncology Group (BTOG) in their evidence suggested that one step to earlier stage diagnosis is by running further public awareness campaigns such as the "Help us help you" programme.<sup>69</sup>

The campaign was widely praised by our respondents and most commented favourably on its impact. Although we would stress that symptoms are usually associated with progression of disease and whilst awareness campaigns are important, they shouldn't be introduced instead of a national screening programme. We commend PHE for initiating the campaign and we urge their replacement agency, the Office for Health Improvements and Disparities to pursue similar public health campaigns until some normality is restored to clinical pathways.

- <sup>66</sup> BTOG evidence to this inquiry
- <sup>67</sup> Bhopal, Anand et al. "Lung cancer in never-smokers: a hidden disease." Journal of the Royal Society of Medicine vol. 112,7 (2019): 269-271. doi:10.1177/0141076819843654

 $^{\rm 69}~$  BTOG evidence to this inquiry

<sup>&</sup>lt;sup>68</sup> https://campaignresources.phe.gov.uk/resources/campaigns/120-help-us-help-you---lung-cancer-symptoms-/resources

# Screening

## National screening programme

#### A growing body of evidence

The NHS Long Term Plan states that from 2019, NHS England "will deploy more mobile lung CT scanners – taking the support to people in supermarket car parks – starting in parts of the country with the lowest lung cancer survival rates". It is intended that the programme will be rolled out nationally, and also that those in the programme will continue to be screened up to the age of 75,<sup>70</sup> although we await the details of the implementation of the programme.

NHS England commissioned Professor Sir Mike Richards, the former National Cancer Director, to review the current adult screening programmes and diagnostic capacity. His Independent Review of Diagnostic Services in England called for the introduction of community diagnostic hubs (the new Community Diagnostic Centres), a doubling of CT scanning capacity and a comprehensive equipment renewal programme, which should result in a further increase in CT scans.<sup>71</sup>

His report suggested that the ambitions in the LTP for the Lung Health Check pilots should only invite people identified as current or ex-smokers to be rolled out across ten cancer alliances over the next two years.

National screening decisions in the UK are taken by ministers following advice from the National Screening Committee (NSC) which advises ministers and the NHS in the four UK countries about all aspects of population screening and supports implementation of screening programmes. At present, screening for lung cancer in the UK is not recommended by the NSC.<sup>72</sup> The Committee justifies this on three counts:

- There is not enough evidence to show that a screening programme would be effective at improving outcomes for people with lung cancer
- No clinical trials for lung cancer screening have been completed
- Currently there is no available test which is suitable for use in a screening programme

In February 2020, the NSC started work to review this policy recommendation. It focussed on the outcomes from the NELSON trial which looked in more detail at lung cancer screening.

The results of the NELSON trial were published in 2020 and confirmed the findings of the US National Lung Screening Trial (NLST) more than ten years previously, that targeted screening of former and current smokers with low-dose computed tomography (LDCT) can significantly reduce deaths from lung cancer.<sup>73</sup>

#### The NELSON trial concluded that:

"In this trial involving high-risk persons, lung-cancer mortality was significantly lower among those who underwent volume CT screening than among those who underwent no screening. There were low rates of follow-up procedures for results suggestive of lung cancer."

This reduction in mortality observed in the NELSON trial was largely due to the shift towards earlier diagnosis of lung cancer, which means a greater number of patients being eligible for curative intent treatments such as surgery.

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<sup>&</sup>lt;sup>70</sup> https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf

<sup>&</sup>lt;sup>71</sup> https://www.england.nhs.uk/wp-content/uploads/2020/11/diagnostics-recovery-and-renewal-independent-review-of-diagnostic-services-for-nhs-england-2.pdf

<sup>&</sup>lt;sup>72</sup> Lung cancer - UK National Screening Committee (UK NSC) - GOV.UK (view-health-screening-recommendations.service.gov.uk). https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://view-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.uk/.https://wiew-health-screening-recommendations.service.gov.

<sup>&</sup>lt;sup>73</sup> De Koning H, et al. Reduced Lung-Cancer Mortality with Volume CT Screening in a Randomized Trial N Engl J Med 2020;382:503-513. https://www.nejm.org/doi/full/10.1056/ nejmoa1911793 last accessed November 2021

In addition to this, the National Lung Cancer Screening Trial results were also very encouraging, reporting a 20% relative reduction in lung cancer mortality in the low-dose computed tomography (LDCT) screening group compared to those who underwent chest radiography.<sup>74</sup>

The UCL SUMMIT Study is also expected to inform lung cancer screening suitability when the results of the trial are published later in 2021. The trial has followed the same model as the lung health checks and preliminary results, reported in the media show that 11,551 patients receiving LDCT scans and 70% of screened patients with a positive lung cancer result were stage I and II.<sup>75</sup>

#### Local trials and the lung health check pilots

Before the publication of the NELSON mortality outcomes, and prompted by the success of the UK Lung Screen trial and pilot programmes in Manchester, Liverpool, Nottingham and London, NHS England established the lung health checks programme in 2019<sup>76</sup> for people at high risk of lung cancer – those aged between 55 and 74 with a history of smoking. People in the targeted areas were assessed for their overall respiratory health with those deemed high-risk for lung cancer being referred for LDCT. The checks also included assessment of other respiratory illnesses such as COPD and asthma.

In the pilots, patients have their risk assessed at a lung health check appointment and those assessed as high risk are offered an immediate low-dose CT scan provides either by hospital-based or mobile scanners – in the case of Manchester and Nottingham.

COVID 'free / light' Community Diagnostic Hubs (CDH) were established to protect potential patients from COVID and to maintain lung health checks outside and offered a single point of access to diagnostic tests.<sup>77</sup> Sir Mike Richards also recommended a doubling of CT scanning and that CDH should be funded for all ICSs when they are introduced in 2022.

Other local trials in Leeds, Liverpool, South Tyneside and Sunderland demonstrated similar results. An analysis of the baseline performance of five of the UK lung cancer screening programmes, published in Science Direct, found that "the performance of UK-based lung cancer screening programmes, delivered within or aligned to the National Health Service, compares favourably to published clinical trial data."<sup>78</sup>

A number of other non-UK studies confirm these findings. A review reported in the Lancet Oncology called for a full European expansion of CT lung cancer screening by experts<sup>79</sup> and a joint position paper by the European Society of Radiology and European Respiratory Society calls for its implementation.<sup>80</sup>

Data from the multiple trials from NELSON to the Lung Health Checks to the pilot studies and the United Kingdom Lung Screen Trial (UKLS) outcomes are compelling and we believe that the implementation of a national screening programme would represent one of the biggest single solutions to achieving the ambitions of the Long Term Plan.

In the pilots, patients have their risk assessed at a lung health check appointment and those assessed as high risk are offered an immediate low-dose CT scan provides either by hospital-based or mobile scanners

- <sup>79</sup> Oudkerk M, et al. Lancet Oncol 2017;18:e754-e766
- <sup>80</sup> Kauczor HU, et al. Eur Radiol 202030:3277-3294

<sup>&</sup>lt;sup>74</sup> Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening NLST, N Engl J Med 2011;365:395-409

<sup>&</sup>lt;sup>75</sup> CT scan catches 70% of lung cancers at early stage, NHS study finds. https://www.theguardian.com/society/2021/feb/14/ct-scan-catches-70-of-lung-cancers-at-early-stagenhs-study-finds. Last accessed September 2021

<sup>&</sup>lt;sup>76</sup> https://www.england.nhs.uk/contact-us/privacy-notice/how-we-use-your-information/our-services/evaluation-of-the-targeted-lung-health-check-programme/

<sup>&</sup>lt;sup>77</sup> https://www.england.nhs.uk/2020/10/nhs-to-introduce-one-stop-shops-in-the-community-for-life-saving-checks/

<sup>&</sup>lt;sup>78</sup> Analysis of the baseline performance of five UK lung cancer screening programmes. https://www.sciencedirect.com/science/article/abs/pii/S0169500221005481

#### National Screening Programme – the need for timely action

We found the weight of evidence on the need to introduce a national screening programme overwhelming and our respondents were in complete agreement on the benefits of LDCT screening. We also agree that for lung cancer screening to be cost effective, it has to target a population defined by risk prediction models and we believe that key demographics of age and deprivation will meet those definitions.

Linking the lung health checks and the new CDCs to the deprivation index and age-restricting the lung health checks and limiting these initially to smoking history will help to meet some of the recommendations of the Mike Richards report and the expectations of the lung cancer community.

The expanded use of data at primary care level needs to be considered to make any screening programme effective. The ability to accurately log and register current and former smokers is essential to avoid unnecessary increased workloads and the missed identification of participants at risk. An assessment of the data services at primary care level should be undertaken to make sure that the correct data collection is in place.

We also believe that it is important to incentivise primary care for any screening programme and we note that the Supporting Early Cancer Diagnosis Quality Improvement module for QOF is to be repeated in the intended 2020-21 format with some slight modifications to account for the impact of the pandemic on care.<sup>81</sup>

An assessment of the use of the Investment and Impact Fund (IIF) should be made to see if these are the best mechanisms to assist greater participation.

Early diagnosis of lung cancer has an additional benefit for those in society from deprived areas, who have been disproportionately affected by COVID and who suffered from high levels of ill-health and low life expectancy even before the pandemic.<sup>82,83</sup>

We agree with the experts that the evidence from the NELSON study and the many lung pilots in the UK is overwhelming and that a national screening programme should be put in place immediately if it is recommended by the NSC.

A national screening programme could make a significant contribution to efforts to recover NHS cancer services following the pandemic, maximise the number of patients who are diagnosed with lung cancer before it has spread, improve outcomes and reduce the resources required for treating people with advanced lung cancer.

The UK NSC is currently undertaking a revised review of Lung Cancer Screening cost-effectiveness and is likely to be able to make a recommendation in either late 2021 or early 2022.

It is not for us to second guess or to try to influence the NSC as they consult on the potential of a national screening programme but we do urge the government to implement the recommendations of the NSC quickly and to roll out the necessary resources as soon as practically possible.

## "We found the weight of evidence on the need to introduce a national screening programme overwhelming"

#### Recommendations

- We recommend that any positive recommendation by the National Screening Committee be accepted in a timely manner by Ministers and rolled out immediately
- We recommend that appropriate incentives be considered to allow the maximum impact of a national screening programme and that these should be built into existing mechanisms, such as the PCN contract, the Direct Enhanced Services incentives, QOF or the IIF

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<sup>&</sup>lt;sup>81</sup> https://www.cancerresearchuk.org/health-professional/learning-and-support/resources/gp-contract-guide/working-on-the-qof#Current\_care0

<sup>&</sup>lt;sup>82</sup> UK 2070 Commission. Go Big. Go Local. 2020. Go-Big-Go-Local.pdf (uk2070.org.uk). last accessed August 2021

<sup>&</sup>lt;sup>83</sup> NHS England Cancer Strategy. https://www.england.nhs.uk/cancer/strategy/. Last accessed August 2021

#### X-rays and CT scans

We also looked at the role of x-rays and CT scans in diagnosis as a means of driving earlier referral and what lessons we could learn from existing practice and from newer modelling such as NOLCP.

We found some studies that suggest that chest x-rays may not be sensitive enough as the primary means of diagnosis. Numerous studies have shown that chest x-rays are not as sensitive as CT scans and could result in individuals having to return for a follow-up scan, which could delay diagnosis, while some studies stated that x-rays to investigate patients with suspected lung cancer may even be harmful.<sup>84</sup>

The study of 101 lung cancer diagnoses found that only 10% of patients with a normal chest X-ray, went on to receive a CT scan even when this was recommended leading to a "significant delay" in diagnosing lung cancer among these patients.

We were told that very early cancers can be missed in x-rays, giving false reassurance to patients who typically will wait longer before presenting again following the initial results.

This appears to support a "CT first" approach and the evidence overwhelmingly endorses this. The CEG told us that they have devised a patient pathway which would support the rapid referral of patients with suspected lung cancer to CT scans for diagnostics without having to first undergo a chest x-ray.<sup>85</sup>

We believe that this merits further research and propose that to improve early stage disease, the use of CT should be considered as the first-line investigation for primary care patients with suspected lung cancer.

A comprehensive approach to early detection should include rapid referral pathways for people who present in primary care with possible symptoms and people who present with a lung nodule while undergoing a routine x-ray for another reason, and targeted screening programmes for those who meet defined screening eligibility criteria.

In their evidence the CEG stated that greater access to CT scanning for all those at risk of lung cancer is "probably the most important factor in the differences seen in the UK outcomes compared with those of other countries with equivalent healthcare systems".<sup>86</sup>

It is not for us to make recommendations on clinical decisions but the evidence on straight to CT scanning is unequivocal and we have no hesitation in supporting its widespread introduction.

#### Recommendation

• We recommend that NHS England implements clinician driven straight-to-CT for lung cancer diagnosis and integrates this across primary care, the health lung checks programme and the CDCs

"We were told that very early cancers can be missed in x-rays, giving false reassurance to patients who typically will wait longer before presenting again following the initial results"

<sup>84</sup> Robert W. Foley, & Vanessa Nassour & Helen C. Oliver, Chest X-ray in suspected lung cancer is harmful, European Radiology (2021) 31:6269–6274. https://pubmed.ncbi.nlm.nih. gov/33517491/. Last accessed October 2021

<sup>85</sup> Asthma UK and BLF evidence to this inquiry

<sup>86</sup> CEG evidence to this inquiry

# **Early diagnosis and referrals pathway**

Early detection and diagnosis and rapid referral pathways were identified by all of our respondents as a crucial step to reducing lung cancer deaths and reversing late stage presentation. Identifying lung cancers at stages I or II offers the potential for curative treatment and reduced mortality for patients.

The BTOG told us that diagnosing lung cancer at an earlier stage would improve outcomes by more than any other intervention,<sup>87</sup> while the PCRS reminded us that when diagnosed at the earliest stage, more than one in three people with lung cancer will survive their disease for five years or more, compared with around just five in 100 people when diagnosed at a later stage.<sup>88</sup>

We considered a number of the options that were outlined by our responders on initiating an effective lung cancer pathway.

## **National Optimal Lung Cancer Pathway**

There was extensive support for the implementation for NOLCP and it was seen by several of our experts as essential to the post-COVID recovery.<sup>89</sup>

The NOLCP, was developed by the CEG, the leading independent group of nationally and internationally recognised clinicians, academics, patients, commissioners and representatives from health professional bodies and charities.<sup>90</sup>

The Pathway is designed to improve outcomes in lung cancer by encouraging best practice, reducing variation, and reducing delays in diagnosis, staging and treatment. It is also designed to meet the waiting time targets as set out in the Independent Cancer Taskforce report.

Implementation of the NOLCP was regarded as essential by most of the experts – CRUK referred to the implementation of NOLCP as a major priority – to enable faster diagnosis, optimal service logistics and allow capacity planning in relation to workforce and physical resources.

We note that NHS England has produced a referral implementation guide on the pathway referencing BTS guidelines for the radical management of lung cancer, the NICE guidelines for the investigation and management of suspected lung cancer (NG 12) and with reference to the NICE Quality Standard (QS 17).<sup>91</sup>

To accelerate the diagnostic pathway, the NOLCP recommends a 'straight to CT' triaging system through which radiologists can 'hot report' suspicious chest x-rays for further CT investigation.

Increase in CT scanning provision for appropriate age groups and straight to CT was unanimously supported by those who provided evidence and the Taskforce for Lung Health highlighted GP-led straight-to-CT referral if potential lung cancer is suspected as a "crucial step".<sup>92</sup>

We also heard that once diagnosed, the speed at which patients receive their first treatment can have a major impact on outcomes. However, none of the UK countries at present meet the standard on the percentage of patients receiving their first definitive treatment for cancer within 62 days of a GP referral for suspected cancer.<sup>93</sup>

To date the NOLCP has had a big impact in reducing the time to diagnosis of lung cancer patients, and it sets out a clearly defined pathway from presentation of symptoms to first treatment delivery in 49 days, rather than the current 62 day target.

We were hugely impressed by the amount of work that has clearly gone into producing the NOLCP and it appeared to us that implementation of the pathway could be truly transformative in lung cancer care, diagnosis and early referral. We are guided by our experts and they are unanimous in their support for the pathway.

<sup>90</sup> https://www.england.nhs.uk/wp-content/uploads/2018/04/implementing-timed-lung-cancer-diagnostic-pathway.pdf

<sup>93</sup> UKLCC evidence to this inquiry

<sup>&</sup>lt;sup>87</sup> BTOG evidence to this inquiry

<sup>&</sup>lt;sup>88</sup> PCRS evidence to this inquiry

 $<sup>^{\</sup>rm 89}~$  Supportive evidence to this inquiry from Asthma UK/BLF, CRUK, BTS, BTOG, UKLCC and the CEG

 <sup>&</sup>lt;sup>91</sup> National Optimal Lung Cancer Pathway, NHS England https://www.cancerresearchuk.org/sites/default/files/lung\_cancer\_implementation\_guide\_august\_2017.pdf
 <sup>92</sup> Asthma UK/BLF evidence to this inquiry

#### Recommendations

- We recommend that NHS England take the necessary steps to fully implement the NOLCP across the country and liaise with the Cancer Alliances to establish timely implementation
- We recommend that to enable NOLCP to be fully accountable, a data recording and reporting system should be introduced to make best use of the data arising from the NOLCP

## **Rapid Diagnostic Centres**

The rollout of Rapid Diagnostic Centres (RDCs) across England is an ambitious five-year programme, started in 2019, which is designed to speed up diagnosis of cancer and other serious conditions.<sup>94</sup>

RDCs are not physical centres in their own right but are designed to make sure everyone with suspected cancer gets the right tests at the right time in as few visits as possible. RDC pathways have the potential to promote continuous improvement in cancer diagnostics and avoid the need for patients to make multiple trips to hospitals for multiple tests.

The programme was included in the LTP to support innovation across cancer pathways and build a body of evidence that supports healthcare commissioners and providers to select the best approaches.

#### The centres provide:

- Coordinated access to a diagnostic pathway for all patients with symptoms that could indicate cancer
- A personalised, accurate and rapid diagnosis of symptoms by bringing existing diagnostic capabilities and clinical expertise together

By 2024 the programme is anticipated to achieve full population coverage across England for non-specific symptom pathways.

## **Community Diagnostic Centres**

On the 1st October, 2021 the Government announced 40 new Community Diagnostic Centres (CDCs), which are set to open across England in a range of settings from local shopping centres to football stadiums which will offer new earlier diagnostic tests closer to patients' homes. We believe that ongoing implementation of the programme should continue to ensure provision of services in community or easily accessible settings.<sup>95</sup>

The new centres will be backed by a new £350 million investment and are intended to provide around 2.8 million scans in the first full year of operation. They are designed to assist with earlier diagnosis through faster and easier access to diagnostic tests for symptoms including breathlessness, cancer and ophthalmology.

Each of the centres will include a multi-disciplinary team of staff including nurses and radiographers and will be open seven days a week.

In the Budget, announced on the 28th October 2021, the Chancellor announced an additional £5.9 billion to tackle the backlog of diagnostic tests to deliver more checks, scans and treatment. The intention is to increase the number of centres to "at least" 100.96

The Minister also confirmed during the Budget debate that this figure includes £1.5 billion for increased bed capacity, equipment, new surgical hubs to tackle waiting times for elective surgeries and at least a total of 100 community diagnostic centres to help to clear backlogs of people waiting for clinical tests such as MRIs, ultrasounds and CT scans, together with £2.9 billion alone to be used on diagnostic scanning equipment such as CT, MRI, and ultrasound scanners.

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- <sup>94</sup> https://www.england.nhs.uk/wp-content/uploads/2019/07/rdc-vision-and-1920-implementation-specification.pdf
- <sup>95</sup> https://www.gov.uk/government/news/40-community-diagnostic-centres-launching-across-england
- <sup>96</sup> https://www.gov.uk/government/news/budget-and-spending-review-october-2021-what-you-need-to-know

This is a very welcome announcement and a clear commitment to increase the diagnostic capability across the country. We do not yet know the details of the new centres - how they will coordinate with the rapid diagnostic centres, where they will be based and exactly what checks and scans will be included but we believe this is a significant development.

Patient direct self-referral to either the new CDCs or to the RDCs was also recommended as a solution to minimise delays within the system. The CEG suggested self-referral as a means to improve the use of stretched radiology services. Although this may present data challenges, we found this an attractive method to improve patient access to the diagnostic services and would welcome further research into this.<sup>97</sup>

We strongly welcome the creation of the CDCs and the funding that will enable them to be realised. They should provide additional opportunities, along with the rapid diagnostic centres to increase confidence in patients and relieve pressures in the secondary care appointments system.

We also believe that they will introduce greater consistency, awareness and timely treatment options which will benefit patients for whom referrals are necessary.

The roll out of the health lung checks and the community diagnostic centres does raise one concern. People who are ineligible to present for a lung health check or a hub for definitional reasons, whether in terms of age, geographic location or other reasons. We would like to see some clarity in the provision that will be made for these excluded people to avoid them being placed at a disadvantage.

#### Recommendations

- We recommend that NHS England commits to extending the current referral pathways to allow patient self-referral to the new CDCs and the lung health checks
- We recommend that the locations of the CDCs are initially linked to the deprivation index to ensure the resources are placed where they are needed most
- We recommend that the CDCs build in appropriate capacity for respiratory services, including low dose CT scans together with the appropriate personnel
- We recommend that referral pathways should provide for onward referral for suspected lung cancer patients and we recommend that a simplified but consistent referral pathway is built into the CDCs from the start

### Face to face consultations

One major challenge facing the recovery of lung cancer services was identified by our respondents as the reduction in face to face GP consultations. During the COVID outbreak, normal NHS respiratory services were reduced or stopped completely and face to face referrals fell,<sup>98</sup> although a large number of patients were able to access their GPs through video consultations.

Asthma UK and the BLF conducted a survey in March 2021 asking people about the respiratory care they had received since October 2020. Although this was not specific to lung cancer, it is useful as an indicator for lung cancer patients.<sup>99</sup>

#### The survey found that:

- 25.9% had delayed or avoided using GP care
- 62.3% of those who avoided their GP said it was because they 'didn't want to over burden health services'
- 56.4% said it was because they 'didn't think it was safe for them to go to the GP'

Recent clinician and patient surveys carried out by the BTOG, Lung Cancer Nursing UK (LCNUK), Roy Castle Lung Cancer Foundation and UKLCC on the impact of virtual consultations with GPs and multi-disciplinary teams found that patients preferred face to face appointments.<sup>100</sup>

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<sup>99</sup> Asthma UK/BLF evidence to this inquiry

<sup>&</sup>lt;sup>97</sup> CEG evidence to this inquiry

<sup>98</sup> NHS e-Referral Service (e-RS) open data dashboard - NHS Digital. https://digital.nhs.uk/dashboards/ers-open-data. Last accessed October 2021

 $<sup>^{100}</sup>$  Multiple evidence submissions to this inquiry, including BTOG, LCNK, Roy Castle Lung Cancer Foundation and the UKLCC

In a recent United Kingdom Oncology Nursing Society (UKONS) survey of their oncology nurses, they found that the greatest number of replies believed that increased and easier access to face to face appointments to GPs in a faster time was essential to better outcomes and patients cited lack of access to a GP as a main cause of delay.<sup>101</sup>

CRUK told us of unpublished data from the MAINROUTE study, led by researchers at the University of Oxford. This was designed to track changes in presenting patterns and clinical activity related to common diseases, including cancer, prior to, during and after lockdown for COVID. It demonstrated a significant decrease in patients presenting to primary care with respiratory symptoms, including red flag symptoms, compared to pre-pandemic.<sup>102</sup>

CRUK also referred to a public survey undertaken by Cardiff University in collaboration with CRUK which sought to understand the impact of COVID on cancer symptom experience and help-seeking behaviour.

The survey, which took place between August and September 2020, found that of 3,025 participants who experienced potential cancer symptoms, nearly half (44.8%) reported not contacting their GP for any symptom in the 6 months leading up to the survey, even for red flags such as coughing up blood.

Only around half of those experiencing lung-specific symptoms such as 'a persistent cough' and 'shortness of breath' had sought help (51.8% and 46% respectively).<sup>103</sup>

Reduced face to face consultations also deny GPs the means to make a full diagnosis. They are prevented from diagnosing signs and symptoms of other respiratory diseases that would normally be picked up in person.<sup>104</sup>

There are a number of challenges posed by remote consultations – for those for whom English is not their first language, for elderly people who have hearing or vision issues or who are unfamiliar with the technology and how it works, the inability for clinicians to immediately undertake further tests or write a prescription. There are also psychological consequences of remote consultations for patients with severe illnesses, such as lung cancer, which can leave some patients with high anxiety levels and increased loneliness.

On the 14th October, NHS England published "Our plan for improving access for patients and supporting general practice",<sup>105</sup> which sought out to address the access challenge and although many practices are getting back to normal, in August 2021 over 15% of practices still recorded less than 20% face to face GP appointments.

The two main principles behind the plan are to improve access to urgent, same day primary care, ideally from patients' own GP practice and expand same day urgent care capacity to ease the winter pressures on the NHS. The government also announced new £250 million funding to support the plan.

We welcome the funded strategy from NHS England although we note that it is very early in the process and that it will be necessary to see how the initiative works in practice and the extent to which it can attract the support of primary care clinicians. We hope that people with suspected cancer can be prioritised in the planned increase.

To address the challenges, the UKLCC suggested a tailored approach by which a potential lung cancer patient is seen face-to-face for the initial consultation and followed up with a targeted consultation approach, between face to face and virtual consultations, tailored to the individual circumstances and preferences.<sup>106</sup>

"Only around half of those experiencing lung-specific symptoms such as 'a persistent cough' and 'shortness of breath' had sought help"

<sup>&</sup>lt;sup>101</sup> UKONS evidence to this inquiry

<sup>&</sup>lt;sup>102</sup> Nuffield Department of Primary Care Health Sciences, University of Oxford, Monitoring Attendance, INvestigation, Referral and OUTcomes in primary care: impact of and recovery from COVID-19 lockdown (MAINROUTE) Study (unpublished data)

<sup>&</sup>lt;sup>103</sup> NHS-E&I Cancer Waiting Times. 2019 data adjusted for working days. https://www.england.nhs.uk/statistics/statistical-work-areas/cancer-waiting-times/. Last accessed August 2021

 $<sup>^{104}</sup> What works for patients and healthcare professionals? Virtual consultations _in_the_lung_cancer_pathway.pdf (msdconnect.co.uk) Last accessed August 2021 and a construction of the second structure of the second str$ 

<sup>&</sup>lt;sup>105</sup> BW999-our-plan-for-improving-access-and-supporting-general-practice-oct-21.pdf (england.nhs.uk)

<sup>&</sup>lt;sup>106</sup> https://www.uklcc.org.uk/wp-content/uploads/2020/10/UKLCC-COVID-19-Matters-Report-Oct-2020.pdf

We understand the attraction of remote care and we agree that it is likely to remain an essential part of primary care in the future, especially as AI technology becomes more defined and accurate.

We think a special case can be made for lung cancer patients for whom time can be critical and we believe that NHS England should take immediate steps to restore face to face consultations in primary care as soon as possible for initial presentation and that GPs should prioritise potential lung cancer patients.

Any ongoing referral from there to either secondary care or to either the community diagnostic centres or the rapid diagnostic centres is also vital for all potential lung cancer patients and the referral should be made speedily and without delay to enable symptoms to be assessed as soon as possible.

#### Recommendation

• We recommend that NHS England provides support to GP practices to enable a tailored approach for potential lung cancer patients to be prioritised for face to face consultations within primary care and then assessed for the appropriateness of future face to face or virtual consultations

### **Better use of data**

As lung cancer screening moves from local pilot schemes to a national programme, there has to be a better role and a re-positioning of patient data management systems used by Trusts to a more centralised lung cancer screening hub. Data must be accessible to clinicians from different specialities from primary care to surgery, radiology and pathology.

We were encouraged to see that NHS England has launched a new Rapid Cancer Registration and Treatment data dashboard, to support cancer services to understand and respond to the impact of COVID on cancer diagnoses and related treatment.<sup>107</sup>

This is a password protected data repository and from the Rapid Cancer Registration Dataset, it will be possible to provide monthly estimates of the number of cancer diagnoses, the volume of surgical tumour resection procedures and the proportion of patients receiving a surgical tumour resection, chemotherapy and/or radiotherapy, at England, cancer alliance and trust level.

We were also interested in the work of the National Disease Registration Service (NDRS) Molecular and Genomics team which has released the Somatic Molecular Testing reports on CancerStats. The data aims to "provide a clear picture of genomic testing within the NHS, correlate specific genetic mutations and aberrations with patient outcomes and support patients and their clinical teams in choosing appropriate treatments and care, which includes data on lung cancer molecular diagnostics from 2016 onwards.

NCRAS is also working with several collaborators to undertake research on this data to answer questions for lung cancer and provided us with two examples:

- In partnership with King's College London, does molecular testing incur a delay in the start of treatment for locally advanced and metastatic non-small cell lung cancer?
- In partnership with the Crick Institute, investigating the association of air pollution with the incidence and molecular genomics of lung cancer

Establishment of a robust data management hub will prevent the problems associated with diverse local systems across the Trusts and streamline the screening process by linking the different clinical disciplines involved in lung cancer screening.

NHS Digital would play a crucial role in the production and rollout of any screening system. A properly coordinated national system would provide valuable accumulated data from across the country, allowing further investigation and study into the outcomes of screening to benchmark against the Long Term Plan aims to improve early diagnosis.

107 https://www.cancerdata.nhs.uk/

# Service improvement and recovery

## **National Lung Cancer Action Plan**

We asked our experts if they felt that a National Lung Cancer Action Plan was needed to draw all the different strands of policy and delivery together in one strategy. We wondered to what extent the NOLCP partially fulfilled that function already and if there were gaps in its provision that would have to be filled through other means.

Almost all of our respondents agreed with the need for a Lung Cancer National Action Plan.

The RCR stated that it could be a crucial step to create greater diagnostics capacity – as long as there was sufficient investment behind it<sup>108</sup> – and supported their view with the recommendation by Professor Sir Mike Richards in his review of NHS diagnostics.

The BTOG went further and stated that it is urgently required. They pointed out that lung cancer outcomes were already among the worst in Europe and that COVID had a significant negative impact. They suggested that the action plan should address issues around workforce, radiology and clinical oncology, data and research.<sup>109</sup>

In their evidence they pointed to significant shortages in thoracic radiology, oncology, pathology and clinical nurse specialists. They also felt that variations in workforce may explain some of the inequality of outcomes and that very few lung cancer teams meet the NHSE service specification.<sup>110</sup>

They also felt investment in training, equipment and benchmarking was urgently needed, especially in CTs scanner per capita and stated that although the National Lung Cancer Audit (NLCA) has driven quality improvement in data since 2005, this should be developed to provide more real time data to monitor whether all patients receive the best evidence based treatments in a timely manner.

They also called for a reprioritisation in lung cancer research. Although the UK is a global leader in research, they felt that lung cancer has been underfunded compared to other malignancies, and that the pandemic has further hit funding.

The CEG thought an action plan would be very welcome and they reminded us that they had been working on this for some time, producing both the NOLCP and the Guidance for Cancer Alliances on the commissioning of Lung Cancer Services.<sup>111</sup>

Their work supporting all English national initiatives and various reports and enquiries that involve lung cancer place them in a strong position to help advise on the details of a national action plan.

The Primary Care Respiratory Society (PCRS) also supported the need for a national NHS Action Plan and claimed it would help to improve rates of early diagnosis and reduce the rates of death from lung cancer. They also felt that any Action Plan should consider the pathway for people who are found to have non-cancer respiratory symptoms which need investigating.<sup>112</sup>

LCNUK also supported the concept and suggested that the plan should "recognise the changing needs of patients throughout the pathway, from diagnosis, through treatment, to end of life care or survivorship, ensure that the essential investment is made in recruiting and retaining the workforce needed to support patients throughout the pathway, including sufficient LCNSs to support the increasing numbers of patients with lung cancer, many of whom are living for longer with their disease".<sup>113</sup>

<sup>109</sup> BTOG evidence to this inquiry

<sup>&</sup>lt;sup>108</sup> RCR evidence to this inquiry

<sup>&</sup>lt;sup>110</sup> Ana Bhavani Adizie, Amir Khakwani, Paul Beckett, et al, Impact of organisation and specialist service delivery on lung cancer outcomes. Thorax. 2019 Jun;74(6):546-550. https:// thorax.bmj.com/content/74/6/546.long. Last accessed August 2021

 $<sup>^{\</sup>rm 111}\,$  CEG evidence to this inquiry

<sup>&</sup>lt;sup>112</sup> PCRS evidence to this inquiry

 $<sup>^{\</sup>scriptscriptstyle 113}\,$  LCNUK evidence to this inquiry

In advising cancer alliances for the commissioning of the whole lung cancer pathways, it is worth pointing out that NICE guidance on lung cancer (Lung Cancer Clinical Expert Group, 2017) recommends one whole-time equivalent nurse for an annual caseload of 80 new patients.<sup>114</sup>

EGFR Positive UK and ALK Positive UK considered an action plan was urgently needed and a necessity from a patient perspective.<sup>115</sup>

They supported this with evidence from their open patient data which showed over 83% of their members are diagnosed at stage IV, which is well above the national figure of 57% for lung cancer patients diagnosed at stage IIIb or IV.

They also felt that this reflected their membership population of younger people and never-smokers and that the average age of their members is 50.

In their submission they suggested that any Action Plan should include:

- enhanced public awareness campaigns
- GP education and the involvement of allied healthcare professionals in identifying at risk patients
- improved access to the diagnostic pathway
- improved access to CT scanners
- increased NGS testing capacities
- an increase in key staff such as thoracic radiologist, specialist clinical and medical oncologists and Lung Cancer Clinical Nurse Specialists

Similarly, the BTS told us that an action plan is a priority and should form part of a post-Covid recovery plan.<sup>116</sup>

YCR agreed and pointed to the UK lung cancer outcomes which were among the worst in Europe pre-COVID.117

There was no doubt in the evidence we received that almost all the respondents supported a National Action Plan for lung cancer. There was a variety of opinions on how the plan should look and what elements should be included. It is not for us to make this decision or resolve the differing opinions.

Rather, this is properly a matter for ministers and NHS England to consider and determine and on the weight of the evidence received we would support any moves to create an action plan. However, we would also encourage full consultation with as wide a variety of stakeholders as possible when deciding what the plan would recommend.

#### Recommendation

We recommend that the DHSC and NHS England consider and consult on the implementation of a National Lung Cancer Action Plan

"EGFR Positive UK and ALK Positive UK considered an action plan was urgently needed and a necessity from a patient perspective" <sup>115</sup>

"We recommend that the DHSC and NHS England consider and consult on the implementation of a National Lung Cancer Action Plan"

<sup>&</sup>lt;sup>114</sup> https://pathways.nice.org.uk/pathways/lung-cancer

 $<sup>^{\</sup>scriptscriptstyle 115}\,$  EGFR Positive UK and ALK Positive UK evidence to this inquiry

<sup>&</sup>lt;sup>116</sup> BTS evidence to this inquiry

 $<sup>^{\</sup>rm 117}\,$  YCR evidence to this inquiry

## Resources

## Workforce

Our respondents also felt that NHS lung cancer resources were at a critical stage. We understand from the evidence we received that this has been the case for some time and most of the evidence we received called for an urgent increase in the lung cancer workforce.

Increased recruiting and retention across the lung cancer pathway was supported by all our respondents who pointed to the challenges of workforce shortages with the RCR claiming that workforce shortages are the biggest barrier to being able to increase imaging capacity within the NHS.<sup>118</sup>

The UKLCC linked workforce shortages to lung cancer outcomes and told us that across the entire pathway shortages are a major limiting factor in improving those outcomes.<sup>119</sup> The The NLCA, found workforce disparities and huge shortages in staffing, with only 5% of sites currently having adequate levels of staffing across all respiratory medicine, medical, clinical oncology, radiology and specialist nursing.<sup>120</sup>

The BTOG told us that CT resources prior to the pandemic were poor compared to similar spending nations and similar to YCR, they stated that workforce shortfalls need to be addressed to match the NHSE service specification.<sup>121</sup>

The LCNS were strongly in favour of increased investment in recruiting and training LCNSs, to ensure that lung cancer nurse numbers were consistent with the guidance set out in the NOLCP.<sup>122</sup>

Data from MacMillan Cancer Support show that cancer nurses form the majority of the workforce and there is a current need for an additional 2,500 Cancer Nurse Specialists (CNS) in the UK, an increase of 84%. By 2030, the gap between patient needs and CNS capacity in the UK will have grown to 3,700 nurses, an increase of 123%.<sup>123</sup>

EGFR Positive UK and ALK Positive UK called for an increase in numbers of scanners per hundred thousand population and claimed that this is currently not on a par with other countries with higher five year survival figures.<sup>124</sup>

The NHS radiologist workforce has been described as short-staffed by 33% and needs at least another 1,939 consultants (one third of the total workforce) just to keep up with pre-coronavirus levels of demand for scans and surgery.<sup>125</sup> Shortfalls in the chest/lung radiologist workforce are forecast to rise steeply with 24% of the workforce due to retire within five years. Already, more than half (58%) of radiology leaders say they do not have enough diagnostic and interventional radiologists to keep patients safe.<sup>126</sup>

The evidence we received from the Royal College of Radiologists (RCR) was challenging. We expected the Royal College to highlight the shortfall in radiologists and in the scanners necessary to realise the ambitions of the Long Term Plan but we were still surprised at the figures they presented to us.

- <sup>121</sup> BTOG evidence to this inquiry
- <sup>122</sup> NHS England. National Optimal Lung Cancer Pathway. Version 3.0, updated 2020. Available at: https://www.cancerresearchuk.org/sites/default/files/national\_optimal\_lung\_pathway\_aug\_2017.pdf
- <sup>123</sup> Macmillan Cancer Support Addressing the Gap, 2020; Macmillan Cancer Support Cancer Nursing on the Line, 2021. https://www.macmillan.org.uk/\_images/addressing-the-gapreport\_tcm9-358808.pdf. Last Accessed September 2021
- $^{\rm 124}$  EGFR Positive UK and ALK Positive UK evidence to this inquiry
- <sup>125</sup> The Royal College of Radiologists. Clinical radiology UK workforce census 2020 report. Radiology workforce census | The Royal College of Radiologists (rcr.ac.uk). Last accessed August 2021
- <sup>126</sup> The Royal College of Radiologists. Clinical radiology UK workforce census 2020 report. Radiology workforce census | The Royal College of Radiologists (rcr.ac.uk). Last accessed August 2021

<sup>&</sup>lt;sup>118</sup> RCR evidence to this inquiry

<sup>&</sup>lt;sup>119</sup> UKLCC evidence to this inquiry

<sup>120</sup> https://www.hqip.org.uk/wp-content/uploads/2020/01/REF118\_NLCA-org\_rep\_FINAL-TYPESET\_web\_20200108.pdf

A recent report by the RCR highlighted the general shortfall in radiology services across the UK [www.rcr.ac.uk; Work Census report 2020]. PreCOVID, 120,000 CT and MRI scans were performed daily in the UK. In September 2020, more than 200,000 patients were waiting for six weeks or more.<sup>127</sup> There is little doubt that the transfer of services to manage the COVID pandemic has contributed to this situation.

The same census from the Royal College revealed more than 430 unfilled consultant radiology vacancies for more than one year and early retirement by consultants adds further to these pressures.

Training for radiologists takes an additional five years post graduate study, so it will take some time to turn decreasing specialist figures around and either incentives need to be put into place as soon as possible to help resolve the workforce crisis or outsourcing issues need to be streamlined.

Although we note that training numbers have increased, we heard that these are not sufficient at present to keep up with the increasing demands - the current workforce increase is around 4% versus 7% needed annually.<sup>128</sup>

As well as an expansion in overall training numbers for clinical radiologists the RCR saw the need for more radiologists trained in CT guided lung biopsy to ensure that the service can expand, reduce waiting times for the procedure and have enough capacity to maintain the service.

Similarly, the RCR also told us that workforce shortages are high in the clinical oncology workforce, with at least another 189 (17% of the workforce) clinical oncologists needed to meet rising demand. They added that more than half of UK cancer centre clinical directors (52%) say oncologist shortages are negatively impacting patient care. Workforce growth has been particularly slow for clinical lung oncologists, with no growth on average over the last five years.

In a recent report, the RCR claimed that the potential impacts of an increase of 130 clinical radiologist training starts per year and 50 clinical oncologist training starts per year in England showed that over a five-year period, each extra year of investment in training will save £30 million compared to delivering the increase in Whole Time Equivalents through increased outsourcing and overseas recruitment.<sup>129</sup>

Over a ten-year period the study showed that each extra year of investment in training will save £190 million compared to delivering the increase in WTEs through increased outsourcing and overseas recruitment.

The case for increased resources in personnel and equipment is compelling and has been known to successive governments for some time. Filling skilled personnel vacancies won't happen overnight and a concerted willingness to address the issues needs to be taken soon to avoid the UK falling further behind.

Whether the vacancies are filled with training expansion within the UK or outsourced is a decision for NHS England but it must be faced and a longer term strategy put in place. The RCR in their recent report made several suggestions on how a strategy of this nature might look.

Similarly, to meet the ambitions and expectations of the LTP and Sir Mike Richards' recommendations, appropriate resources must be found for the increase in scanners that will be at the forefront of the fight against lung cancer.

The case for increased resources in personnel and equipment is compelling and has been known to successive governments for some time

127 The Royal College of Radiologists. Clinical radiology UK workforce census 2020 report. Radiology workforce census | The Royal College of Radiologists (rcr.ac.uk). Last accessed August 2021

 $^{\scriptscriptstyle 128}$  Prof Edwin J.R. van Beek evidence to this inquiry

129 Why we need investment in radiology and oncology trainees | The Royal College of Radiologists. Why we need investment in radiology and oncology trainees | The Royal College of Radiologists (rcr.ac.uk). Last accessed October 2021

## Equipment

It was clear from the evidence we received that there were shortfalls not only in the lung cancer workforce but also in equipment. While we strongly welcome the CDCs and the lung health checks, they need to be adequately staffed and equipped to make a difference.

We heard widespread evidence that to increase access to diagnosis there needs to be significant investment in diagnostic equipment. The UK has fewer scanners than the majority of comparable OECD countries – 8.8 CT scanners per million population compared to an OECD average of 25.9 and 7.4 MRI scanners per million population compared to an OECD average of 16.9.<sup>130</sup>

In his review, 'Diagnostics: Recovery and Renewal' (NHSE), Professor Sir Mike Richards identified a need for a 100% increase in scanners just to bring the UK up to the current median level.

EGFR Positive UK, ALK Positive UK and UKONS all supported more scanners and the CRUK told us that the UK compares poorly internationally on scanner capacity, ranking close to the bottom on average number of MRI and CT scanners per million out of 36 OECD countries.<sup>131</sup>

In 2019, the government committed an additional £200m for new imaging scanners. In addition to this, in answer to a recent parliamentary question, the Minister announced that significant investment has been made in radiotherapy, including £32 million to replace 17 Linear Accelerators aged over 10 years by the end of March 2022.<sup>132</sup>

This presents an ideal opportunity for the CDCs to be properly equipped to increase access to diagnostics, with provision for CTs being provided in the CDCs to support lung cancer diagnosis but this will need a workforce commitment to ensure that the centres are adequately staffed.

The application of artificial intelligence tools to facilitate more rapid and accurate reporting should be considered by NHS England as part of the expanded screening programme.

While we warmly welcome the government announcements to replace scanners, we note that this was in the context of replacing older, less efficient scanners, so the £200 million investment is effectively a stand-still investment, rather than funding for an increase in the number of scanners.

"It was clear from the evidence we received that there were shortfalls not only in the lung cancer workforce but also in equipment"

#### Recommendations

- We recommend the DHSC put in place a plan for an immediate increase in the resources necessary to realise the ambitions of the Long Term Plan and the appropriate AI roll out to realise the potential of the CDCs and the Lung Health Checks
- We recommend that NHS England investigates the optimal means to restore clinical and expert personnel vacancies and increase the number of scanners necessary to meet the restoration of lung cancer services

<sup>132</sup> Official Report, WPQ 26th October 2021

<sup>&</sup>lt;sup>130</sup> OECD. 2019. Health at a Glance 2019: OECD Indicators. Accessed May 2021 via https://www.oecd-ilibrary.org/docserver/4dd50c09en. pdf?expires=1620211757&id=id&accname=guest&checksum=340E4B0D5E08ABF2154B4177080E0484

<sup>&</sup>lt;sup>131</sup> OECD. 2019. Health at a Glance 2019: OECD Indicators. Accessed May 2021 via https://www.oecd-ilibrary.org/docserver/4dd50c09en. pdf?expires=1620211757&id=id&accname=guest&checksum=340E4B0D5E08ABF2154B4177080E0484

# Conclusion

We are enormously grateful to all those who submitted evidence for our inquiry, which we have tried to place in context within our report.

As a result of the impact of COVID, the report is longer and more in depth than we intended and this was unavoidable as COVID was so disruptive to respiratory health services. We were enormously impressed with the thoughts and idea of our respondents, who all contributed so much to this report and it was their expertise and experience that drove the recommendations.

It appears to us that serious political intent is needed to not only restore lung cancer services to pre-COVID levels but to take it further and drive improvement to patient outcomes beyond expected levels.

We believe that there are a number of ways that this can take place quickly and easily. The roll-out of a full lung cancer screening programme across all four nations will do more to improve lung cancer survival than any other intervention. The implementation of the NOLCP, the restoration of personnel and equipment, earlier and faster diagnosis all play an essential part.

We have identified the key areas that were highlighted to us and the decisions on implementation and the allocation of resources necessary to realise the recommendations lie with the DHSC and its executive agencies.

The roll-out of a full lung cancer screening programme across all four nations will do more to improve lung cancer survival than any other intervention

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