MEMBERSHIP AND ACKNOWLEDGEMENTS

The UKLCC’s Clinical Advisory Group (CAG) is a panel of senior clinicians, each representing particular specialties involved in the care of lung cancer patients, from the time of first suspicion of the diagnosis through to palliative care.

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Mr Martin Grange
Patient representative, and member of the Lung Cancer Screening Advisory Group

The CAG is also supported by leading patient and clinical group members, including:

- British Lung Foundation
- British Thoracic Oncology Group
- British Thoracic Society
- Cancer Black Care
- Cancer Research UK
- Macmillan Cancer Support
- National Lung Cancer Forum for Nurses
- Primary Care Respiratory Society
- Roy Castle Lung Cancer Foundation
- Teneus Cancer Care

The meeting ‘Making the very best use of NHS resources and opportunities to improve outcomes for lung cancer patients in England’ was sponsored by the following:

- MSD
- East of England NHS Trust
- UCLH NHS Foundation Trust
- University Hospitals of South Manchester NHS Trust

The work of the UKLCC is financially supported by the following:

- Bristol-Myers Squibb
- Roche Products Ltd
- MSD

CONCLUSIONS

The United Kingdom Lung Cancer Coalition (UKLCC) – the country’s largest multi-interest group in lung cancer – is a coalition of the UK’s leading lung cancer experts, senior NHS professionals, charities and healthcare companies. Through our campaigning activity we aim to:

- Raise political awareness of lung cancer
- Raise the general public’s awareness of lung cancer – and especially encourage earlier presentation and symptom recognition
- Empower patients to take an active part in their care
- Improve lung cancer services
FOREWORD

Our collective ambition is for cancer care in the UK to be the best in the world.

Despite the NHS being the most highly rated healthcare system globally, and cancer survival rates being higher than ever before, we currently fall short of our cancer ambition in many areas. There are multiple reasons for this and no single action which will change things. What we need are ambitious but achievable aims for each type of cancer so that we can organise the facilities and the people we have in a way which will bring about drastic improvements.

Through its document ‘25 by 25 – a ten-year strategy to improve lung cancer survival rates’ the UK Lung Cancer Coalition (UKLCC) has provided that ambition for lung cancer by setting a five-year objective of improving the five-year survival rate for lung cancer to 25% by 2025. A key element of this strategy is the implementation of the National Optimal Lung Cancer Pathway (NOLCP) which is a practical road map and tool for improving care that all cancer alliances in England are being asked to make a priority. The pathway is also available to clinicians in Wales, Scotland and Northern Ireland and in those parts of the country where healthcare is devolved. Health services are encouraged to adopt it in their own area.

In April 2018 UKLCC convened a workshop in conjunction with the Cancer Vanguard and NHS England (NHS England) to support implementation of the NOLCP and showcase examples of good practice and innovation from around the country. I was delighted to be asked to chair one of the sessions in my then part time role as National Clinical Director for Cancer. This report brings to life the workshop presentations and discussions in a way which enhances and complements the NOLCP itself and other resources such as NHSE’s ‘Timed Clinical Pathway for Lung Cancer, which CCGs have been mandated to implement through the national planning guidance.

Throughout the report runs a thread of the importance of data and evidence derived from sources such as the National Cancer Registration and Analysis service (NCRAS) and the National Lung Cancer Audit (NLCA) to provide the basis for local change and better practice. Maintaining this flow of data collection and audit is surely vital to any future national cancer plans.

In a report full of practical examples and details, one sound bite stands out: “millimetres matter”. Faster diagnosis and treatment of lung cancer really does matter – unwarranted delays which allow the tumour to grow by just a few millimetres have a dramatic effect on the success of treatment. Eliminating unnecessary stages in diagnostic pathways, ensuring early senior assessment and fine-tuning communication systems all have a part to play and there will be few, if any, services across the country which are unable to take some guidance and help from the examples set out in this report.

Lung cancer affects our communities unevenly, reflecting historical levels of smoking but also income levels and occupations. Variations in treatment rates and survival highlighted in this report cannot be tolerated and must be actively addressed. Universal adoption of the NOLCP and its incorporation into commissioning and cancer alliance plans would take us a substantial way towards achieving this aim.

Adoption of pathways such as the NOLCP requires persistence and leadership at local level. Clinical leadership is vital as are support from commissioners and regulators such as the CQC and the important role that patients and the public can play in guiding local developments. I would commend the NOLCP to you together with the National Clinical Timed Pathway for Lung Cancer.

This report, with its wealth of examples, should act as a vital toolbox and encouragement to all those with or working with patients with lung cancer. It is a source of great optimism that the ambition set by the UKLCC for this miserable disease can be achieved.

Chris Harrison
Medical Director, The Christie NHS Foundation Trust
September 2018

INTRODUCTION

In October 2016 the UKLCC published the report 25 by 25 – a ten-year strategy to improve lung cancer survival rates which set an ambitious vision for a drastic improvement in care for those with lung cancer across the UK – to raise five-year survival rates to 25% by 2025. It is extremely positive that the governments across all four nations of the UK have proved strongly supportive of this ambition.

Lung cancer is the biggest cancer killer in the UK for both men and women; our survival rates consistently lag behind many across Europe and are woefully low. We also know that within the UK the quality of care and outcomes for patients varies widely. This needs to change if we are to achieve our 25 by 25 ambition.

In April 2018 the UKLCC convened a workshop to explore how to continue to drive improvements in standards of care and outcomes for patients in England. This focused on using current structures, commissioning arrangements and funding streams to achieve this. Many practical steps have been taken to turn this ambition into a reality, including the work of the Lung Clinical Expert Group who produced and published the National Optimal Lung Cancer Pathway (NOLCP) in 2017. The UKLCC is strongly supportive of the NOLCP and, whilst it is an NHS England document, would encourage the devolved nations to consider how they can achieve similar aims within their own health services.

The workshop explored how adoption and implementation of the NOLCP is an important enabler to achieving the UKLCC’s aim for every lung cancer patient to get the best possible care wherever they are in England. The discussions focussed on three stages in the pathway and on the role of secondary care in these:

– Recognition and referral
– Access to specialist care
– Diagnosis, staging and fitness assessment

The workshop focussed on identifying both areas of good practice and barriers to adoption.

The purpose of this report is to share the findings from the workshop with commissioners, providers, Cancer Alliances and the wider lung cancer community, with the additional hope that it will stimulate other groups in England and across the UK to run similar events to promote the wider adoption of best practice.

The report sets out:

– The evidence base for why rapid diagnosis and the NOLCP is important
– What we already know works, which can support implementing the NOLCP
– Where the major remaining problem areas are in the pathway and what needs to be done to address those issues
– Some practical examples of best practice in implementing elements of the NOLCP
THE IMPERATIVE FOR IMPLEMENTING THE NATIONAL OPTIMAL LUNG CANCER PATHWAY

The NOLCP provides a road map for service providers and commissioners who are aiming to improve their local lung cancer services, to help ensure patients start treatment within 49 days. Though challenging, the timelines in the path are achievable.

It is essential that everyone who has a role in supporting the implementation of the NOLCP is clear about why these changes are important and how it will drive better clinical outcomes, more positive patient experiences, and improve the use of NHS resources.

With 61% of healthcare professionals responding to a UKLCC survey agreeing that implementing a standardised lung cancer pathway would improve lung cancer survival rates, we know that there is more that can be done.

This chapter sets out the evidence base which the UKLCC believes makes the case for improving lung cancer survival.

IMPROVING LUNG CANCER SURVIVAL

Over many years lung cancer has consistently been the UK’s biggest cancer killer and, despite improvements in treatment, it still has some of the worst outcomes of all cancers. Latest figures for five-year survival for patients diagnosed in England in 2011, show that only 14% of males and 17.5% of females survived for five years post a diagnosis of lung cancer. Both one and five-year survival rates for lung cancer patients are woefully inadequate, especially when you compare these outcomes of the UKLCC’s ambition to increase five-year survival to 25% by 2025.

These data are clearly worrying, but there is evidence of improving survival rates in recent years which is largely the result of improving treatment rates. There is hope that if we were to consistently apply best practice to the care of every patient in the UK, we could, relatively quickly, demonstrate the UK as a leader in Europe at improving lung cancer survival.

Patients diagnosed at the earliest stage are almost five times more likely to survive a year from diagnosis than those diagnosed in the latest stages. Good progress is being made on improving the number of lung cancers being diagnosed at stage I and II. Data from the National Lung Cancer Audit (NLCA) found that in 2012 19.5% of lung cancers across England and Wales were diagnosed at stages I and II, with this figure increasing to 27% in 2016.

The fitness of a patient is also a crucial factor in whether they are able to undergo potentially curative treatment such as surgery. Performance Status is one of the vital measures of this fitness and can also deteriorate if there is a delay in diagnosis, to the point where a patient who may have been fit for treatment at the outset becomes unfit by the time a treatment decision has been reached.

We know that time and millimetres matter. Even in the early stages (stages I and II) the growth of a tumour during a typical patient’s wait for treatment can be hugely significant, with the smallest of increases in the size of the tumour and/or lymph node involvement impacting on survival. Studies show the direct link between shorter pathways and improved survival, with one study finding a 16% increase in mortality if the time from diagnosis to surgery was greater than 40 days.

UK LONG-TERM SURVIVAL OUT OF 29 EUROPEAN COUNTRIES

- Northern Ireland 19th
- England 26th
- Scotland 27th
- Wales 28th

18 ORGANISATIONS WERE IDENTIFIED AS HAVING BETTER SURGICAL RESECTATION RATES THAN THE NATIONAL AVERAGE

- Overall, 80.4% of patients with early stage disease and good performance status received treatment with curative intent in 2016; however, this means that one in five such patients did not receive treatment with curative intent, which is not good enough
- Across individual organisations the rate of treatment with curative intent varied from 54.5% to 100%
- There were 13 trusts where one in three patients in this group did not receive treatment with curative intent

TACKLING VARIATIONS AROUND THE COUNTRY

Despite improvements in five-year survival for lung cancer, unacceptable variations persist across the country which are resulting in variation in patient outcomes.

The NLCA for the period 2016 (with results published in 2017) found geographical variation across England on a number of key measures including:

Surgery rates in all non–small cell lung cancer (NSCLC)

- Overall, 62% of patients with good performance status and advanced NSCLC received SACT
- Excluding tertiary trusts, the casemix adjusted results varied from 25.7% to 100%

Systemic anti-cancer treatment (SACT) rates in NSCLC (stage IIIB/IV and performance status 0–1) (audit target 65%)

- Overall, 54.5% of patients with stage IIIB/IV and performance status 0–1 received SACT
- Across individual organisations the rate of SACT varied from 25.7% to 100%
- There were 13 trusts where one in three patients in this group did not receive SACT

Curative intent treatment rates for stage I–II NSCLC (performance status 0–2)

- Overall, 80.4% of patients with early stage disease and good performance status received treatment with curative intent in 2016; however this means that one in five such patients did not receive treatment with curative intent, which is not good enough
- Across individual organisations the rate of treatment with curative intent varied from 54.5% to 100%
- There were 13 trusts where one in three patients in this group did not receive treatment with curative intent

The NLCA for the period 2016 (with results published in 2017) found geographical variation across England on a number of key measures including:

OVERVIEW OF PATIENTS WITH EARLY STAGE DISEASE RECEIVED TREATMENT WITH CURATIVE INTENT

- Overall, 80.4% of patients with early stage disease and good performance status received treatment with curative intent in 2016; however this means that one in five such patients did not receive treatment with curative intent, which is not good enough
- Across individual organisations the rate of treatment with curative intent varied from 54.5% to 100%
- There were 13 trusts where one in three patients in this group did not receive treatment with curative intent

While some variation is inevitable, more can be done to ensure that there is a more consistent and better service offer across the country regardless of where a patient is diagnosed and treated for lung cancer. If there are delays in a local pathway because of symptom recognition, presentation to primary care, referral to secondary care and then investigation in secondary care, then implementation of the NOLCP will undoubtedly help to address these.
IMPROVING PATIENT EXPERIENCE

As set out above, a more rapid pathway has a direct impact on overall health and wellbeing. The 2016 National Cancer Patient Experience Survey (NCPS) found that 26% of patients self-report that their health deteriorates while they are waiting for a treatment decision. A delayed diagnosis means patients “having their worst fears dragged out”, with “thousands of people are being left in an appalling state of limbo.” So early diagnosis is not only important from a clinical perspective, but it is also important so that a patient and their family have a better experience.

Designing the care pathway around the experience and needs of the patient is vital to ensure that patients have this positive experience of their care and receive the standard of care that will lead to improved clinical outcomes. The NOLCP requires that services organise themselves around patients in this way. Rapid progression through the pathway can only be achieved if each provider carefully plans the various elements of its diagnostic services and appointments to make sure that these clinical events are delivered in an efficient and streamlined manner.

Another key component in patients having a positive experience is having access to a clinical nurse specialist (CNS). The roles of the lung cancer CNS are many and varied, but part of their role is to help in the coordination of services, to personalise the cancer pathway, and to inform and support the patient and their family. Therefore, the CNS is a critical member of the MDT who has a major impact on whether a patient has a positive experience of care.

The latest NLCA reported that, in England, only 70% of lung cancer patients had been seen by a lung CNS (audit target is 80%). There are a number of key areas which could help to improve the use of resources, which have been identified in the NLCA organisational audit, which was conducted in 2014. This highlighted variation in service provision: 85% of providers in England participated in the most recent organisational audit which found that:

- One third of providers discuss more than 30 patients per MDT meeting list
- The number of providers with a separate diagnostic MDT meeting has increased from 29% to 43%
- The provision of on-site endobronchial ultrasound (EBUS) has increased from 44% to 67% in three years
- Access to on-site pulmonary rehabilitation (81% to 67%) and smoking cessation services (86% to 67%) has decreased in three years

In 2019 the audit will be repeated and the following benchmarks will be used:

- All core MDT members should have dedicated time to attend a weekly MDT meeting, discussing no more than 30 patients in two hours
- All MDTs should ensure adequate specialist time commitment, as specified in the national commissioning guidance, with particular focus on lung CNSs
- All providers without a separate diagnostic MDT should implement this within the next 12 months as specified in the new commissioning guide
- All patients should have access to smoking cessation and pulmonary rehabilitation services

Implementation of the NGLCP will help organisations to achieve these new benchmarks, which are monitored through the NLCA and also to hopefully identify areas where efficiency gains can be made.

USING RESOURCES EFFECTIVELY

A standardised pathway would also help to provide access to coordinated multidisciplinary care in a timely manner, and may be more cost-effective.

Access many cancers, later diagnosis is known to be a major driver of excess treatment costs. Treatment for stage III and IV lung cancer costs the NHS nearly twice the amount spent on stage I and II interventions. There are a number of key areas which could help to improve the use of resources, which have been identified in the NLCA organisational audit, which was conducted in 2014. This highlighted variation in service provision: 85% of providers in England participated in the most recent organisational audit which found that:

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Implementation of the NGLCP will help organisations to achieve these new benchmarks, which are monitored through the NLCA and also to hopefully identify areas where efficiency gains can be made.

THE NHS PLANNING GUIDANCE 2018/19

The 2018/19 NHS planning guidance, Refreshing NHS Plans for 2018/19, is a refresh of plans prepared under the two-year NHS Operational Planning and Contracting Guidance 2017-2019. The 2018/19 guidance sets out details of how additional funding from the November 2017 budget will be allocated and the developments in national policy with regards to system level collaboration. It also sets out the expectations for commissioners and providers in updating their operational plans for 2018/19, including in relation to the clear deliverables for cancer. Relevant deliverables for lung cancer are as follows:

- Ensure all eight waiting time standards for cancer are met, including the 62-day referral-to-treatment cancer standard. The ‘10 high impact actions’ for meeting the 62-day standard should be implemented in all trusts, with oversight and coordination by Cancer Alliances. The release of cancer transformation funding in 2018/19 will continue to be linked to delivery of the 62-day cancer standard.
- Support the implementation of the new radiotherapy service specification, ensuring that the latest technologies, including the new and upgraded machines being funded through the £130 million Radiotherapy Modernisation Fund, are available for all patients across the country.
- Ensure implementation of the nationally agreed rapid assessment and diagnostic pathways for lung, prostate and colorectal cancers, ensuring that patients get timely access to the latest diagnosis and treatment. Accelerating the adoption of these innovations helps meet the 62-day standard ahead of the introduction of the 28-day Faster Diagnosis Standard in April 2020.
- Progress towards the 2020/21 ambition for 62% of cancer patients to be diagnosed at stage 1 or 2 – and reduce the proportion of cancers diagnosed following an emergency admission.

INITIATIVES TO SUPPORT THE IMPLEMENTATION OF NOLCP

Historically there have been low levels of political and policymaker pressure to improve lung cancer outcomes compared to other cancers. However, through the work of the UKLCC and others, this is now changing and the importance of focussing on lung cancer outcomes is being recognised in a variety of national plans.

While there is still more that needs to be done to improve the outcomes of lung cancer patients at all levels of the system, and the national ambition for lung cancer outcomes should be higher, key steps forward should be possible within the systems and structures that we already have. The national, regional and local initiatives which already exist, and which can help to support the implementation of the NOLCP, are set out in this chapter.

We have, however, also highlighted some of the challenges with these initiatives, to ensure that this report is based on the reality of what teams’ experience.
28-day Faster Diagnosis Standard
The new 28-day Faster Diagnosis Standard has been designed to ensure that every patient referred for an investigation with a suspicion of cancer is given a diagnosis, or told that cancer has been ruled out, within 28 days. Currently, waiting time targets are only in place for the time it takes to first see a specialist and the time to first treatment. This new standard aims to create a more patient-centred access standard for cancer, focusing waiting times measurements on what is most important to the patient; having cancer ruled out or having a confirmed diagnosis. The 28-Day Faster Diagnosis Standard is due to be rolled out across England by 2020. Trusts and primary care – with the support of their local Cancer Alliance – will work together to update their reporting systems and pathways, using Transformation Funding (discussed further below) to help support this.

This aligns with the NOCLP and five pilot sites have begun testing the new standard (NHS Trusts in Royal Bournemouth and Christchurch, East Lancashire, Ipswich, Kingston and Leeds). Each of these Trusts is focusing on at least two types of tumour pathway with East Lancashire, and Royal Bournemouth and Christchurch focussing on lung cancer. Learnings from these pilot sites will be invaluable to demonstrate that the first part of the lung cancer pathway can be completed much more quickly and efficiently than it currently is. This will also help to diagnose and reassure patients earlier.

28-day faster diagnosis standard, lung cancer pathway

**DAY 0-3**
- Radiologists with one third of their job plan devoted to thoracic imaging
- Medical oncologists with one third of their job plan devoted to lung cancer
- Clinical oncologists with one third of their job plan devoted to lung cancer
- A thoracic surgical unit should have a minimum of three, full time general thoracic surgeons
- One full-time lung CNS per 80 new diagnoses per year
- One and a half full-time palliative care specialist nurses per 200 stage N1 patients per year

**DAY 14**
- PET CT scan (if not contraindicated)
- Cardiac CT scan (if indicated)
- Further investigations (as per maximum diagnostic and imaging algorithms with latest known)

**DAY 21**
- Full MDT: discussion of treatment options
- Further investigations: required after MDT

**DAY 28**
- Communication to patient on outcome
- Cancer confirmed or all clear provided

**28-day Faster Diagnosis Standard**

The 28-day waiting time standard only applies to a very limited number of lung cancer pathways (only those referred from a GP through the two-week wait pathway, which equates to less than 30% of lung cancer patients), it is useful that this is mandated nationally and monitored. While the 62-day waiting time standard only applies to a very limited number of lung cancer patients, where time is of the essence.

The NOLCP sets out an ambition for the referral to treatment phase of the lung cancer pathway to be shortened to 69 days. Therefore, full implementation of the NOCLP will ensure that trusts achieve the nationally mandated target, but also go above and beyond this to respond to the needs of lung cancer patients, where time is of the essence.

Implementation of the NOCLP means that there is a reduced likelihood of less ill patients being prioritised ahead of those in greatest need, to comply with the target.

**Percentage of diagnoses by presentation route, lung, by year**

<table>
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<th>Year</th>
<th>Emergency presentation</th>
<th>GP referral</th>
<th>Self-referral</th>
<th>Death certificate only</th>
<th>Death certificate only</th>
<th>Two-week wait</th>
<th>Spinner uptake</th>
<th>Specialist advice</th>
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**28-day Faster Diagnosis Standard**

The 62-day waiting time standard and relevant operational standards for lung cancer are as follows:21

- 62-days from urgent GP referral for suspected cancer to first treatment (85%)
- 62-days from a consultant’s decision to upgrade the urgency of a patient (e.g. following a non-urgent referral) due to a suspicion of cancer to first treatment (no operational standard set)

While the 62-day waiting time standard only applies to a very limited number of lung cancer pathways (only those referred from a GP through the two-week wait pathway, which equates to less than 30% of lung cancer patients), it is useful that this is mandated nationally and monitored. Around three quarters of lung cancer patients (72.8%) are treated within the current standard.22 Its limitations, particularly as a single indicator, need to be recognised.

The NOLCP sets out an ambition for the referral to treatment phase of the lung cancer pathway to be shortened to 69 days. Therefore, full implementation of the NOCLP will ensure that trusts achieve the nationally mandated target, but also go above and beyond this to respond to the needs of lung cancer patients, where time is of the essence.

Implementation of the NOCLP means that there is a reduced likelihood of less ill patients being prioritised ahead of those in greatest need, to comply with the target.

**Transformation Funding**

To deliver what is set out in the Five Year Forward View, the Independent Cancer Taskforce, which authored the most recent national cancer strategy,23 identified that additional funding would be needed to support cancer activities in three areas:

- earlier diagnosis
- the Recovery Package
- stratified follow up pathways

Cancer Alliances and the Cancer Vanguards were required to bid for this funding to access it from the cancer transformation fund. Sustainability and Transformation Partnerships (STPs) are central to the process for submitting bids. All bids required that they were explicitly linked to the local STPs’ plan. Individual organisations or alliances were able to bid on behalf of the STP for the transformation funding, but applications had to come via the STP.

Frustratingly, the transformation funding is linked to achievement against the 62-day waiting time target and used as the measure which is the key to unlocking full transformation funding.

Sadly, across all cancers the operational standard of 85% of patients getting from urgent GP referral for suspected cancer to first treatment has been missed for all but one month since April 2014.24 This means that transformation funding has been slow to be released.

As the bidding organisations are not set up to deliver against the waiting time target it seems inappropriate that this would be the measure chosen to trigger the release of this much needed funding.

**Commissioning guidance to support the pathway**

The NOCLP Clinical Advice for Cancer Alliances for the Commissioning of the Whole Lung Cancer Pathway helpfully sets out, for the first time, the minimum amount of time specialists should be devoting to lung cancer:

- The equivalent of one full-time Consultant Respiratory Physician (10 programmed activities) per 200 new diagnoses per year
- Radiologists with one third of their job plan devoted to thoracic imaging
- Medical oncologists with one third of their job plan devoted to lung cancer
- Clinical oncologists with one third of their job plan devoted to lung cancer
- A thoracic surgical unit should have a minimum of three, full time general thoracic surgeons
- One full-time lung CNS per 80 new diagnoses per year
- One and a half full-time palliative care specialist nurses per 200 stage N1 patients per year

The purpose of these benchmarks is to ensure patients receive treatment from real specialists who have the skills and expertise to ensure the best possible outcomes.

The NOCLP therefore provides a concrete level of clinical expertise which can be audited and if there is not sufficient capacity in a service a case can be made for additional resources.

**National Lung Cancer Audit**

www.nlcaudit.co.uk

The National Lung Cancer Audit (NLCA) was conceived in the late 1990s when it was identified that lung cancer survival rates varied widely across England and lagged behind those of comparable countries. It did not start to collect national data until 2005.

The purpose of the NLCA today is to review the quality of lung cancer care, highlighting progress – for example, currently 80% of records for England have both performance status and stage recorded which is very encouraging.25 The audit also identifies areas for improvement and identifying ways in which to reduce variation in practice.

As well as covering many aspects of lung cancer, the NLCA works with the Society of Cardio-Thoracic Surgeons to produce a Cancer Consultant Outcome report for lung cancer surgery (https://sctxs.org/ outcomes/thoracic/) which includes a process for identifying outliers on three measures relating to surgical treatment:

- Unit level 30-day survival
- Unit level 90-day survival
- Unit level one-year survival

Where a unit is found to be an outlier in relation to the national mean in any indicator, this will trigger a formal ‘alert’ or ‘alarm’ letter being sent to the trust’s CEO and Medical Director. They will be sign posted to the NLCA’s improvement toolkit as a resource for service improvement advice.

What the NLCA does not currently do is to also provide information of provider performance directly to the commissioner. If an alert or alarm was triggered for a trust, then it would be sensible to make sure that this is communicated to the commissioners, as well as providers, to ensure that all parties are working towards delivering improvement and working out joint action plans to deliver better outcomes for patients.

The NLCA is an incredibly powerful tool in identifying and then tackling unwanted variation. It should be used as a performance management tool, not only by trusts, but also by commissioners so that they can hold trusts to account for poor outcomes.

Commissioners would also better understand where the pressures are in the system and where they may need to invest more.

The current contract for the NLCA ends in March 2020 and the UKLCC believes it is vital that it is re-commissioned, since, without it, it will not be possible for the impact of the service re-design and other initiatives to be properly monitored.
PRACTICAL CONSIDERATIONS WHEN IMPLEMENTING THE NOLCP

Having discussed implementation of the pathway with professionals from across the country, several interesting themes and examples have emerged. These may provide some practical considerations for local teams when beginning the journey to implementing the NOLCP.

This chapter sets out the key themes and provides snapshots of real-life examples of how services are dealing with some of the challenges identified. A full set of case studies is included in the final chapter of this report.

PROCESS MAPPING

Process mapping is a good first step in thinking about how best to implement the NOLCP. This requires getting everyone who is involved in lung cancer patient’s journey (all MDT members, plus GPs, managers, administrators, porters, etc.) into a room to map every element of the existing pathway. This will help to identify inefficient points in the pathway, which can then be prioritised for action and improvement.

The impact of these actions and improvements should be evaluated. Where the remaining blocks can be identified as being the result of resource or infrastructure shortcomings, these issues can be presented to the commissioner to demonstrate an evidence-based case for investment.

Using data from the National Cancer Registration and Analysis Service (NCRAS) and the NLCA can help to support the process mapping work, but short term, limited and local considerations for local teams when beginning the journey to implementing the NOLCP.

STREAMLINING ADMIN

One of the key ways that some services are ensuring that diagnostic tests are managed efficiently, is by reviewing the administrative procedures surrounding this.

Barts’ Health appointment of a pathway coordinator

Barts’ Health appointed a pathway coordinator to oversee and coordinate all points on the pathway, including liaison with patients, radiologists, PET schedulers and a dedicated Lung Biomedical Scientist.

This reduced time to first appointment, with all patients having an upfront CT – reported prior to their appointment.

Services and administrators book tests in different ways in different departments. This can lead to confusion for the patient and inefficiencies in the service. Given that time is of the essence in implementing the NOLCP, streamlining this area will be essential in making sure evidence based decisions can be made by the MDT in a timely way.

Implementing the RAPID Programme in the Wythenshawe Hospital

Over the last two years the MDT at the North West Lung Centre, Wythenshawe Hospital have transformed the lung cancer service with the RAPID (Rapid Access to Pulmonary Investigation and Diagnosis) Programme.

Central to the Programme is next-day access to CT imaging following a referral for suspected lung cancer with same-day hot reporting and clinical review with results dramatically enhancing the efficiency of the front end of the pathway.

The RAPID Programme sped up access to diagnostics, eliminated unnecessary delay and improved the patient experience for patients with suspected lung cancer.

Leicester centralised booking system for diagnostic tests

In Leicester, all bookings for diagnostic tests were coordinated through one office.

It meant that there was one phone number for patients to call if they need information about their tests. This made it easier for the service and the patient to make sure that tests were planned efficiently and that it was simple to communicate.

There is value in each service, and for services networked across cancer alliance/STP geographies, to share and bundle some of the initial diagnostic tests where possible and appropriate.

SINGNIFICANT EVENT AUDITS

General practices should be encouraged to hold a significant event audit for every lung cancer case which was missed or where a patient presented as an emergency. Significant event audits are an important reflective learning tool and will help to improve GPs’ knowledge of the signs and symptoms of lung cancer.

USE OF IT SYSTEMS

In a world where we can order anything on the internet and have it delivered the next day, there is a real need for the NHS to make sure that data and IT systems are joined up.

It is important that patients’ records are linked and available to ensure that all clinicians can access a patient’s case history and the results of tests and treatments, at any part of the care pathway.

Using digital to streamline care at the Wirral University Hospital

At the Wirral University Hospital, the team aimed to produce a paperless lung cancer pathway system (removing the more traditional option of fax), which linked primary care with secondary care radiology, respiratory and outpatient departments.

This streamlines the referral process, removes human delays as much as possible and improves communication between primary and secondary care, and the patient.

As all parts of pathway are electronic it is easily-monitored, and the team is able to run real-time monthly timeframes along a patient’s pathway to identify areas of delay.

There is a need to link secondary care and primary care so that general practice is kept up to date on a patient’s case.

DIAGNOSTIC TESTS

Diagnostic tests need to be planned and timed so that results are available quickly and at key points in the cycle of a service so that they can be discussed and acted upon as quickly as possible. Diagnostic MDTs, prior to patients being seen, can help to speed up the pathway and ensure that patients remain fit for treatment.

Speeding up pathology turnaround times in Bart’s Health

A Biomedical Scientist (BMS) in Bart’s Health Pathology Laboratory was tasked with expediting every step of the pathway for lung pathology samples, including booking in, embedding/cutting up, initial staining and immunohistochemistry, as part of a pilot to improve pathology turnaround times.

Over the period of the pilot there was a significant improvement in pathology turnaround times from 16.6% achieving a seven day target to 48.5%.

The success of the pilot secured funding for this to become a substantive post.

‘ONE-STOP’ CLINICS

Some centres have looked to carry out and bundle some of the initial diagnostic tests where possible and appropriate.

Implementing a One-Stop Lung Cancer Clinic in South Tyneside

In South Tyneside, the CCG initially focused on the Day 0 – Day 21 section of the Pathway, centred on the One-Stop Clinic. Following a CT scan, where possible, diagnostic tests are being combined so that patients are able to have multiple diagnostic tests in one day.

While it was challenging to implement for a team stretched for resources and time, its implementation led to improved chances of achieving the 62-day pathway and 28-day standards.

DIRECT REFERRAL FROM PATHOLOGY

As set out earlier, performance status is as important as stage. This is particularly important in small cell lung cancer because patients can deteriorate quickly.

In some centres (for example, in Leicester), when a patient is identified as having small cell lung cancer, pathologists are able to refer direct to the oncologist rather than having to wait for the MDT meeting (though the MDT is kept informed). This means that time is saved and patients are moved along the pathway more quickly and efficiently.
SCHEDULING OF KEY MEETINGS

Reviewing the weekly timetable of a service can help to drive efficiency. Making sure that the MDT has the information it needs to discuss each patient and to have timely information from diagnostic tests is essential.

Using a diagnostic multi-disciplinary team to speed up investigations at Glenfield Hospital in Leicester

At Glenfield Hospital all new referrals are channelled through a lung clinic which runs three times per week. An hour prior to the clinic, a pre-clinic diagnostic MDT meeting is held and attended by key members of the lung team. During this meeting a patient’s diagnostic pathway is planned. This helps streamline the investigation plans for patients which, in turn, avoids repeat investigations and makes the lung cancer pathway faster.

EFFICIENT USE OF EQUIPMENT

Some very practical issues can help to maximise the capacity of valuable equipment.

Unlocking equipment capacity in Leicester

A time-in-motion study conducted in Leicester identified that one machine takes 30 minutes to warm up before it can be used. As this was turned on at the beginning of a clinic, it meant that several potential slots were unused because the machinery was not operational. Once this barrier was identified, it was simple to arrange to have an appropriate member of staff turn the machine on at least 30 minutes before the clinic was due to begin, and therefore maximise the number of slots which could be offered to patients.

For services, being able to identify areas where changes and efficiencies could be made in the existing system will be important in delivering the NOLCP.

CANCER ALLIANCES AND THEIR RELATIONSHIPS WITH STPs

As mentioned previously, the link between cancer alliances and STPs is important to ensure coordination, as part of a region-wide view of cancer services.

Alliances are key in helping to ensure that communication between trusts is good and to help facilitate conversations between different services.

Good networking of services between different hospitals in an alliance area, is not only advantageous to patient care, but can also help to use resources efficiently.

Working to a shared vision to improve lung cancer services in East London

East London Health and Care Partnership identified that the implementation of the NOLCP aligned with the programme of the Local Sustainability and Transformation Partnerships (STP).

Looking to collaborate rather than compete in response to the challenges of local services, a shared vision was created for change in lung cancer outcomes.

Identifying this as a key priority, as a result of the STP’s low one-year survival rates, the STP worked with CCGs to tackle variation in outcomes using data to support interventions and built on work that was already underway.

INTER-TRUST REFERRALS

Strong relationships between different services are vital in implementing the NOLCP. Around two-thirds of patients with lung cancer have investigations and/or treatment in two or more hospital trusts. Therefore, making sure that the processes for inter-trust referrals are simple and efficient for staff, easy to understand, and seamless for patients is key.

Good communication is, of course, a vital element of this and ‘patient navigators’ should be employed to oversee the steps along the patient pathway.

COMMUNICATION WITH PATIENTS ABOUT A COMPLEX PATHWAY

One of the biggest worries for patients during their lung cancer journey is not knowing what their next step is. Implementation of the NOLCP means that it is essential that patients have rapid, but appropriate, progression through the pathway.

One consideration when implementing the NOLCP should be to ensure that no patient is allowed to leave a clinic without knowing what their next step is and having appointments/tests booked if possible. All patients should have a designated key worker (usually a lung cancer CNS) whom they can contact with any queries or concerns.

This should be considered a marker of high quality care and should be incorporated into any service redesign which takes place during the implementation of the NOLCP.

PATIENT TRANSPORT

We know that, for some patients, getting to a hospital for their appointments can be challenging because of transport issues.

As set out above, it is not practical (or desirable) for every centre to be able to provide every test and treatment for lung cancer. This means that a patient may have to attend appointments at two or more different places. This can be challenging, because of the time and cost of travelling to multiple different geographical locations.

Travel times and the availability of public transport need to be taken into account when decisions are being made about service configuration. Where travel time poses very difficult problems, such as in remote and rural areas, consideration should be given to providing patient hotel accommodation.

PRE-HABILITATION

Fitness for surgery is a crucial factor. People can deteriorate very quickly where on day one they are fit for surgery, but by day 21 they are not. Investing in pre-habilitation can help to ensure that patients have the best chance of accessing treatment when the time comes to have this. Pre-habilitation can improve a patient’s chance of good clinical outcomes and therefore should be considered as part of the package of care given to patients during their lung cancer journey.
CONCLUSION

The adoption of the NOCLP is key to providing lung cancer patients with the best possible chance in their care and treatment.

There is a clear evidence base for swift diagnosis in lung cancer and we know that there are a number of actions which can be taken to help ensure this happens. We must do more to tackle variation in outcomes. At present, patients are being failed, with survival rates failing to meet that of our European counterparts. Implementing the changes to the NOCLP identified in this report, will help improve clinical outcomes and patient experience, alongside ensuring a more efficient use of NHS resources. Some excellent work is already taking place across the country to implement NOCLP. There is now an opportunity to reflect on these examples and take learnings forward in different settings, tailored to specific challenges.

Action must be taken if we are to achieve the UKLCC’s ambition of a 25% five-year survival rate for lung cancer by 2025. We must work to reduce the time taken to diagnosis. The time to act is now because millimetres matter in lung cancer.

SPOTLIGHT ON OPTIMISING THE LUNG CANCER PATHWAY

The following examples have been collated through a UKLCC questionnaire, conducted in August 2018.

Streamlining and innovating services
1. Using digital systems to streamline referral in Wirral University Teaching Hospital NHS Foundation Trust
2. Redesigning lung cancer services in Wythenshawe Hospital
3. Implementing a tailored NOCLP in South Tyneside
4. Establishing workstreams to support implementation of NOCLP in Nottingham University Hospital

Harnessing diagnostic services
5. Improving access to CTs in Wirral University Teaching Hospital NHS Foundation Trust
6. Coordinating diagnostic MDTs in Glenfield Hospital
7. Targeted case finding in South Tyneside
8. Immediate reporting of chest X-rays at Homerton University Hospital
9. Piloting of a dedicated Biomedical Scientist to expedite lung samples in Bart’s Health NHS Trust

Collaborative working approaches
10. Aligning services to improve small cell lung cancer outcomes in South Tyneside
11. Collaborating across different teams in University Hospitals of Leicester
12. Appointment of a pathway coordinator in Barts Health NHS Trust
13. Implementing a virtual MDT in Bart’s Health NHS Trust
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**STREAMLINING AND INNOVATING SERVICES**

**WHAT PROBLEM WERE YOU TRYING TO SOLVE?**

WUTH is one of the North’s NHS global digital exemplar trusts and as such we aimed to produce a paperless system (reducing traditional fax) linking primary care with secondary care radiology, respiratory, and outpatient departments (including endoscopy). The aim was to streamline the referral process, remove human delays as much as possible, and improve communication between primary and secondary care and the patient.

We previously completed an informal review of the CT scan prior to clinic, and have now introduced a daily virtual outpatient clinic which is tariffed and supported by the CCG to:

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1. **WHAT WAS YOUR APPROACH TO TACKLING THIS?**

We used the radiology requesting system and current cancer flag system as means for referral to the lung cancer pathway virtual clinic via:

   **Chest x-ray (CXR) request**

   This includes authorisation for a CT scan if the CXR reported a suspicion of lung cancer. This authorisation completes a “dummy” CT request which becomes active if the lung cancer flag is applied to the CXR report (with no requirement for radiology to fill out the CT scan request).

   **CT request**

   In cases where the CXR is normal or not flagged for lung cancer, but there is still high clinical suspicion of lung cancer, primary care is able to request a CT scan and authorise the start of the lung cancer pathway. The initial request form mimics the traditional faxed referral.

   Either flagged CXR or above CT request start the lung cancer pathway, triggering an automatic email to the booking department once the test has taken place. This indicates the need for virtual clinic review in one week (we aim to reduce this to the target 72 hours by 2020).

   We obtained agreement from the local CCG for a tariffed, job planned, daily virtual clinic, with possibility to downgrade urgency of review (non-cancer findings) or discharge (as per secondary care triage review in the NOLCP). From the virtual clinic review:

   - a letter is emailed in real-time to primary care to inform them of outcome and management plan in cases of cancer
   - the CNS has a telephone conversation with the patient to relay the outcome of the virtual review, including informing them of further investigations (echo/ PFT/PET scan) and checking any anti-coagulants prior to the patient having any invasive tests
   - our target is to review all patients with cancer identified by CT within five days from the virtual review, with the best invasive investigation scheduled as soon as possible after this (on the same day if possible)

   We have completed a three-month study (January – March 2018), two months following implementation to allow comparison with a baseline study from our traditional “one-stop clinic” in 2014.

   **WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?**

   Firstly, as our new system involved a change in working practice it required all parties to agree:

   **Primary care and the CCG**

   We agreed a virtual tariff, the acceptance of the potential to downgrade a case in urgency, and discharge without face-to-face review

   **Education of primary care**

   On the new referral system, and agreement to be requestor of CT

   **Radiology**

   Agreement of the direct to CT model (automatic requesting process) and process to highlight urgent CT scan requests to CT booking clerks to be completed within the 72-hour target

   **Respiratory**

   Consultant time is planned into virtual clinic, including holiday cover

   **Outpatient booking office**

   Acceptance of emails for booking virtual clinic and using letter formulated from virtual clinic to book appropriate outpatient clinic (cancer vs urgent, general vs routine)

   **Cancer data team**

   Agreement of referral date (given lack of traditional fax ‘starting the clock’)

   Following initiation of the new pathway we found delays for CT scans due to sheer number of primary care requests for clinical suspicion only (normal CXR, no haemoptysis). After a justification study was conducted, we had these cases further triaged (with agreement of CCG) into these categories:

   **Urgent 72-hour target CT**

   Where an abnormal CXR or unexplained haemoptysis was identified, as per NICE guidance for urgent referral

   **Target 3-week CT (reported)**

   Suspicious symptoms which were not included in the previous group (NICE suggests primary care investigation to determine if cancer pathway is warranted)

   **WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?**

   Since the introduction of the new pathway we have been consistently compliant with the national 62-day cancer standard. We have seen a 15-days reduction in the meantime from flagged CXR to MDT discussion (2014, 39 days; 2018, 24 days), with 85% compliance with the 2020 target of a patient being informed of their treatment plan within 28 days.

   As all parts of pathway are electronic it is easily monitored, and we are able to run real-time monthly timeframes along the patient’s pathway for areas of delay to streamline further.

   **FOR MORE INFORMATION ABOUT THIS WORK PLEASE CONTACT:**

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Programme successes include:

- exceptional and improved patient experience from the outset
- a positive shift in one-year survival
- a significant reduction in the lung cancer pathway with 45% of patients starting treatment within 28 days, 82% within 50 days, and 94% within 62 days
- elimination of two-week wait and 31-day standard breaches
- increased the number of CT scans performed by day 7 by 3.5-fold to 92% of GP referrals
- reduced the time from GP referral to outpatient clinic, with a fully reported CT scan, by 6 days, from an average of 10 days to 4 days
- increased the number of MDT discussions by day 14 from GP referral, 5-25 fold (42%) and by day 21, 4.5-fold (77%)
- have been able to confirm the absence of cancer on the day of CT scanning, compared with an average of 6 days previously

Feedback from a patient:

"There appeared to be a delay in the local services at home and with a suspicion of lung cancer was an extremely frightening and anxious time. We contacted Christie’s Hospital who put us in contact with the North West Lung Centre who provided care to an outstanding standard, within 72 hours we had all necessary investigations undertaken which of course alleviated some anxiety, the fear of the unknown with a possible diagnosis of lung cancer is an awful time and the rapid service of having EBUS, MRI Scans, Lung Function Tests, meeting with Consultants made this experience a little more bearable. The idea of the RAPID Programme has been able to confirm the absence of cancer on the day of CT scanning, compared with an average of 6 days previously"

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?

Challenges included:

- managing and coordinating appointments from multiple departments. Collaborative working overcame some of the issues, but good communication and collaborative working is required moving forward to ensure that this is sustainable in the long term
- the Programme had no control over access to PET scanning and there was limited collaborative working, which hindered effective pathway planning and delivery. Lack of PET provision on-site prevented same day planning for necessary tests. Discussions continue around PET
- improved system and processes
- increased the number of CT scans performed by day 7 by 3.5-fold to 92% of GP referrals
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- increased the number of MDT discussions by day 14 from GP referral, 5-25 fold (42%) and by day 21, 4.5-fold (77%)
- have been able to confirm the absence of cancer on the day of CT scanning, compared with an average of 6 days previously

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?

The core aim of the RAPID Programme was to speed up access to diagnostics, eliminate unnecessary delays, and improve the experience for patients with suspected lung cancer.

Prior to the RAPID Programme, from those in the 2-week referral pathway, 0% of patients had their CT scan within 4 days, 27% had a CT scan within 7 days and 74% within 14 days. However, following the implementation of the RAPID Programme, 78% of patients have their CT scan within 4 days, 92% within 7 days and 99% within 14 days.

We have shortened the diagnostic pathway for lung cancer such that 8%, 42%, and 77% of referrals are discussed at MDT with completed investigations by day 7, 14 and 21, respectively. This compares with 0%, 8% and 17% prior to the introduction of the RAPID Programme.

As a result, 40% of patients received surgery within 14 days of the MDT meeting and we are now working to robustly establish appropriate working practices within thoracic surgery and medical oncology to improve this even further.

With 93% of patients rating service delivered through the RAPID Programme as 8 out of 10 or better, this has confirmed an improvement and acceptable, accelerated service for the benefit of patients and their families.

WHAT WAS YOUR APPROACH TO TACKLING THIS?

This involved the complete redesign of the specialist and complex service, to what is now called the RAPID (Rapid Access to Pulmonary Investigation and Diagnosis) Programme. Central to the RAPID Programme is next day review, with results dramatically enhancing the efficiency of the front end of the pathway.

The objectives of the RAPID Programme were to work collaboratively across departments and organisations to:

- deliver cancer services we would expect for our own family with a ‘next day’ ethos and exceptional patient experience
- potentially improve survival in lung cancer through rapid access to treatment, and prevention of clinical deterioration, on prolonged pathways
- improve the overall quality of care, outcomes, booking system and processes
- reduction in investigation days, with less patient visits to hospital
- measure referral to date of treatment
- increase active treatment rates through prevention of deterioration whilst on the cancer pathway

Lung cancer diagnosis is complex and requires multiple tests. The current cancer pathway targets a maximum waiting time of 52-days from referral to treatment, yet also sets a target of 85% compliance, thereby tolerating a longer pathway in one in seven patients. Despite this, these targets are universally not being achieved across the UK. Lung cancer is the biggest cause of cancer death and has an aggressive biology. Rapid pathways that deliver a diagnosis and treatment well above that defined in the 62-day pathway will not just deliver the patient experience we would want for our own loved ones but may also improve survival.

WHAT PROBLEM WERE YOU TRYING TO SOLVE?

Lung cancer is the biggest cause of premature death in Greater Manchester above any other disease or cancers combined. Based on this, over the last 2 years the Multi-Disciplinary Lung Cancer Team at the North West Lung Centre, Wythenshawe Hospital has transformed the lung cancer service with this pivotal key programme.

REDESIGNING LUNG CANCER SERVICES IN WYTHENSHELVE HOSPITAL

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Feedback from patients at full implementation stage of RAPID Programme:

“a first class service all round”

“All the staff at Wythenshawe Hospital so caring, all went the extra mile”

“Consultants and everybody were excellent. Through a worrying time for me having lots of scans and surgery, I couldn’t have had better care”

“Fantastic from start to finish. I was so scared but the team were there for me. Lead nurse and the doctor who gave me the results”

“High praise for the whole unit, complete efficiency”

“My cancer was detected on May 4th, operated on 13 days later. Fantastic service by the most dedicated people I have ever met”

“I was extremely fortunate to have benefited from the RAPID programme which had only recently started at the time I was being diagnosed. Without exception, the staff were efficient, caring and sensitive. Even now I am stunned at how efficient the NHS was”

“Efficient. I’ve never enjoyed the NHS before, very very impressed”
IMPLEMENTING A TAILORED NOLCP IN SOUTH TYNESIDE

WHAT PROBLEM WERE YOU TRYING TO SOLVE?
Introduction of NOLCP

WHAT WAS YOUR APPROACH TO TACKLING THIS?
We wrote a South Tyneside version of the NOLCP to fit with our pathway and team approach. One element of this was writing a standard radiology report. A comment could be added to the end of a CXR report, where appropriate, saying that an appointment will be made for the patient. MDT coordinators and secretaries would then go on to arrange these appointments.

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?
We recognised that non-GP outpatients were not included in the pathway (eg. A&E patients who were not admitted) so these were included into the pathway.

Patients who came via a GP were not included in performance data, so GPs were asked to send a two week wait referral

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
On average, patients are now seen at day four for their CT (three day reduction from previous).

The biggest impact was cutting out time for GPs to act on the CXR report.

A lot of work is needed to ensure the whole team is on board and that everyone understands the benefit to patients. This includes secretaries, MDT coordinators, radiology team, as well as lung CNSs and doctors.

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ESTABLISHING WORKSTREAMS TO SUPPORT IMPLEMENTATION OF NOLCP IN NOTTINGHAM UNIVERSITY HOSPITAL (NUH)

WHAT PROBLEM WERE YOU TRYING TO SOLVE?
At NUH waiting times for lung cancer were recognised as being very poor and compared unfavourably against national figures (lowest quartile for 62-day target). The 62-day national target had not been met for several years.

There is an increasing body of evidence that faster pathways result in better outcomes for patients.

In response to this, the lung cancer service formed a formal project team in August 2016 to begin implementation of the NOLCP which was a ready-made solution to poor cancer waiting times.

In parallel with this, there was recognition of poor governance and inefficient processes within the service, so implementation of the new pathway presented an opportunity to improve efficiency and governance.

WHAT WAS YOUR APPROACH TO TACKLING THIS?
Detailed analysis was undertaken for data collection including review of every breach RCA for over two years, discovery meetings, demand and capacity analyses, process mapping, audits and benchmarking exercises with peer trusts. This informed the changes required to implement the new streamlined pathway.

Five workstreams were set up to systematically address the whole of the pathway with a multi professional, cross discipline approach: administrative, tertiary, referrals (referral or CXR to first OPA), diagnostics (first OPA to DTT) and treatment (DTT to treatment).

Specialty specific action plans were developed with the aim of achieving the key waiting time milestones set out in the NOLCP. For each specialty frequent meetings took place with clinicians and specialty general managers or service managers. The question posed to each specialty was always ‘What would you need to achieve this turnaround time?’. This helped to expand the potential solutions as we were keen to explore all options and not be limited by the status quo.

Monthly steering group meetings with each Specialty were chaired by the clinical lead for lung cancer.

Communication was key – within specialties and across disciplines – to achieve a robust approach to achieving rapid turnaround times across the pathway. Advocacy work was undertaken to raise the profile of the lung cancer service and to improve clinical and corporate engagement within the Trust.

Whilst we have addressed all parts of the pathway in parallel, we have prioritised the beginning of the pathway as this is expected to benefit the greatest proportion of patients.

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
— partial implementation of the NOLCP, although key milestones not yet met
— sustained improvement in performance against the 62-day target

Radiology
— CT waiting time target of 10 days was reduced to 5 days
— new CXR to CT pathway ‘straight to CT’ (median 8 days saved, 43% conversion rate) - joint primary care, radiology and respiratory pathway
— same day / next day USG neck node biopsy
— ambulatory lung biopsy
— x 1 WTE consultant – Sept 2018
— job planning – protect specialist work

Respiratory
— daily triage – 1/3 off pathway, scheduling of consultant rota
— daily new patient clinics (+ lung function support)
— trial ‘cancer hour’: daily escalation of results, preserve MDT and clinic capacity
— endoscopy: additional scopes, two extra lists (7.25 per week), reconfiguring consultant staffing to match skill mix to procedure demand
— introduction of deep sedation endoscopy lists for poorly tolerant patients
— x 1 WTE consultant (to be recruited)
— virtual attendance at regional mesothelioma MDT (clinicians, LCNS, MDT Co)
— appointment of clinical data lead

Respiratory / admin
— in-house management of clinic space
— use of partial waiting lists to reduce demands on MDT and cancer clinic
— expansion of Band 3 & 4 admin teams
— admin SOPs – improved efficiency, visibility and governance
— integration of upgrade decision into MDT
— new MDT outcome, MDT referral and lung cancer upgrade forms
— cancer clinic letters sent within 2 working days
Conclusions

The NUH lung cancer team have made substantial progress with respect to cancer waiting times, clinical governance and data quality. Significant improvement in national cancer performance against the 62-day standard. Significant 50% reduction in number of patients untreated over day 104 (94 + day 104 breaches August – December 2017, n=7 + day 104 breaches January – May 2018).

Improved job satisfaction for all and the service delivers high quality care for patients.

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?

Data quality

A constant issue and one that is still a challenge to date in all areas of the NOLCP. For certain focused parts of the pathway (eg, radiology and respiratory medicine) we have ensured local data is validated and robustly collected at source by the specialty to help establish baselines and monitor progress.

Resource limitations

Staffing (eg, radiologists), equipment, diagnostic capacity and treatment capacity. We attempted to mitigate these by close cross-specialty working and a flexible approach to solving problems – designing a system that relied on the weakest point as little as possible and negotiating compromise.

Advocacy

Within the service there was understandable concern that the NOLCP would over burden hard pressed members of the team. It was important to reassure colleagues that this was not the case and any solution had to be fair and sustainable. Outside the service it was important to convey why the lung cancer needed to be prioritised for clinical reasons.

Tertiary referrals

Local cancer centre processes are complex, not standardised or efficient. This has not been addressed.

Complex patient pathways

With multiple inter-specialty handovers. Admin SOPs to clarify lines of responsibility, improved cancer tracking and closer clinician/admin team working relationships.

For more information about this work please contact:

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HARNESSING DIAGNOSTIC SERVICES

5

IMPROVING ACCESS TO CTS IN WIRRAL UNIVERSITY TEACHING HOSPITAL NHS FOUNDATION TRUST

WHAT PROBLEM WERE YOU TRYING TO SOLVE?

Ever increasing pressure on respiratory two week wait clinic capacity

Potentially unnecessary lung cancer clinic visits by patients with no evidence of cancer

Failure to meet 14-day pathway targets

Limited options of referral for GPs for patients with a normal chest X-ray but ongoing clinical concern for cancer

Lack of consistency between local trusts in direct access to chest CT

WHAT WAS YOUR APPROACH TO TACKLING THIS?

Offering GPs direct access to CT, followed by a virtual clinic review and triage by a respiratory physician

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?

Challenge

Achieving clarity about responsibilities for acting on reports – GPs were concerned about their ability to interpret CT reports whilst being responsible for further clinical management

Ensuring prompt GP review of CT reports with rapid action where necessary. Part-time GP working and lack of ability to review reports on a daily basis, was a challenge

Achieving clarity about who informs the patient about the findings of the CT and next steps

Achieving clarity about patients without cancer but with other abnormal findings

Solution

All CT reports will be reviewed and triaged by a respiratory physician in a virtual clinic

This was addressed by implementing internal review in secondary care, with the reports sent to GPs for information

A leaflet was developed to explain to patients that they may be contacted for further diagnostics directly by the hospital if required. The GP is also responsible for explaining this to the patient when they request the CT. A letter will be generated for all virtual clinic reviews

Implementing internal review and triage with the reports sent to GPs for information

To inform and monitor pathway changes and for submission to the NLCA has improved significantly

A separate task group was set up to address clinical incidents in the service. Far fewer Datix incidents have been reported in 2017-2018 compared with 2016-2017 due to the introduction of admin SOPs, improved admin staffing, improved radiology processes and integration of upgrade decisions into the lung MDT. Many of these improvements are being rolled out to other tumour sites at NUH.
**Challenge** | **Resolution**
--- | ---
Avoiding the need for GPs to make multiple requests/referrals | Implementing internal review, with the reports sent to GPs for information. However, where patients are deemed more suitable for a ‘routine’ respiratory clinic the respiratory consultant may need to ask for more information from the GP if needed.

In addition, the GP CT request form includes broader information fields than the lung cancer 2 week wait form, including past medical history, medications, and symptoms, to reduce the need for a separate referral.

Supporting GP concerns about how to manage patients discharged on the basis of a CT result and no hospital clinic appointment | The virtual clinic letter and CT report should support GPs in discussing patients’ symptoms.

Radiology concerns about demand increase | The majority of two week wait referrals are already triaged straight to CT, and it is expected that GP uptake of Direct Access will be slow and not universal. Sharing the experience of other trusts who have undertaken Direct Access was helpful in this regard. The process will be trialed for six months and closely audited to ensure that CT requests are manageable and appropriate.

Deciding on criteria for direct CT access for suspected lung cancer when the CXR did not support the diagnosis | In the absence of good evidence, criteria were extrapolated from the NICE Guidance NG12 for an urgent chest x-ray, although in this case where the recent chest x-ray does not suggest lung cancer. This will be closely audited.

Cost of enabling electronic requesting | A bid was made to cancer network contingency funding to support this.

No local SE London cancer network agreed process | The trial has been presented to the lung network group and interim data will be shared after three months with a view to sharing learning and potentially standardising across the network.

Diversity of GP views on direct access and acceptability | This is a trial and not compulsory – GPs can decide whether or not to request a CT or to use the two week wait suspected lung cancer referral as previously.

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**6**

**COORDINATING DIAGNOSTIC MDTS IN GLENFIELD HOSPITAL**

**WHAT PROBLEM WERE YOU TRYING TO SOLVE?**

Triage of patient and diagnostic test planning prior to lung cancer clinics

**WHAT WAS YOUR APPROACH TO TACKLING THIS?**

We channel all new referrals through a thrice weekly lung clinic. A diagnostic MDT is held in the hour prior to the clinic, which is attended by key members of the lung team. This is where the patients’ diagnostic pathway is planned.

**WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?**

Support from consultant radiologists, lung cancer specialist nurses and admin staff. A business case was prepared to get extra support from radiology department.

**WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?**

We have been successfully running this diagnostic MDT for last ten years. We have proved that a diagnostic MDT before lung cancer clinics helps streamline the investigation plans for our patients which, in turn, avoids repeat investigations and make the lung cancer pathway fast.

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**7**

**TARGETED CASE FINDING IN SOUTH TYNESIDE**

**WHAT PROBLEM WERE YOU TRYING TO SOLVE?**

Late diagnosis of lung cancer, with around a third of patients presenting as an emergency

**WHAT WAS YOUR APPROACH TO TACKLING THIS?**

LDCT project – lung cancer case finding pilot in high risk population

**WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?**

Funding was a challenge, but this was overcome by a successful business case with local CCG.

GPs and their practices buying into project.

**WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?**

Outcomes are being evaluated with abstract submitted to Winter British Thoracic Society conference, however after a year, the pilot has shown that this approach to targeted case finding can be embedded into routine practice.

As with all service improvements the whole team needs to be onboard – GPs, practice nurses, CCG, radiology and lung cancer team.

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IMMEDIATE REPORTING OF CHEST X-RAYS (CXR) AT HOMERTON UNIVERSITY HOSPITAL

WHAT PROBLEM WERE YOU TRYING TO SOLVE?
Immediate reporting of CXR when referred from primary care is identified as best practice within the National Optimal Lung Cancer Pathway. However, diagnostic capacity is a barrier to implementation.

In small, structured assessments, the diagnostic accuracy of CXR interpretation by reporting radiographers was comparable to that of non-specialist consultant radiologists. Radiographer CXR reporting within the lung cancer pathway also appears to be cost-effective in a decision tree model, and the feasibility of immediate reporting of CXRs has been established at a single clinical centre.

WHAT WAS YOUR APPROACH TO TACKLING THIS?
To be evaluated, as part of a Cancer Research UK funded trial, the use of trained CXR reporting radiographers to provide immediate reports to all CXR referred from primary care.

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?
Homerton University Hospital had an acute immediate upgrade for suspicious CXRs for 10 years. However, this required the radiographer performing the CXR to recognise the image as abnormal and flag for an immediate report. Radiology, primary care and the CCG have strong links, excellent communication and a history of innovative working. As such, tariff has always been paid for any upgrades performed by radiology without the need to return to the GP.

Radiotherapist CXR reporting is also well established at Homerton (8 years). Reporting radiographers attend the relevant MDT, increasing visibility and awareness among the respiratory physicians. The reporting team has recently been expanded and at the commencement of the immediate reporting trial there were three qualified CXR reporting radiographers (1.5 FTE). With this number of reporting staff, it was very difficult, accounting for leave and other clinical duties, to ensure consistent cover for 10 sessions per week. As part of a planned development programme, the number of training places has been increased, with an additional two radiographers qualified in the previous 12 months and a further two currently undergoing training. By Summer 2019, there will be seven qualified radiographers (5 FTE) to cover the immediate reporting service.

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
We collected 12 months of data from the block randomised trial (five sessions per week with immediate radiographer reporting) completed on 30 June 2018, and we are currently undertaking data analysis. Some patient pathways are incomplete, and these have been excluded from the analysis. Significance testing has not yet been performed on the data. This will occur after the data collection has been completed.

Preliminary results from the first nine months (July 17 – March 18) were promising. The primary outcome was reduced time to diagnosis of lung cancer or discharge from the lung cancer pathway, in days.

There were 187 (47%) sessions randomised to immediate reporting and 214 (53%) to standard reporting. The immediate pathway included 3,059 (of 6,903, 44.3%) of CXRs. Average report turnaround time was 2.0 hours (SD 11.6) in the immediate arm and 3.8 hours (SD 19.4) in the standard arm.

A total of 41 lung cancers were diagnosed (prevalence 0.59%) in the cohort, 19 within the immediate pathway. Mean and median time to diagnosis for lung cancer for patients that were randomised to the immediate pathway was 45.1 (SD=27.8) and 32.5 (IQR 19-70) days, similar compared to the mean and median of 45.4 (SD=24.3) and 35.5 (IQR 26-71) for those diagnosed via the standard CXR reporting arm. Time to discharge from the lung cancer pathway was marginally quicker for patients that received a standard CXR report (mean 32.4, SD=29.7; median 22, IQR 14-50) compared to those that received an immediate CXR report (mean 36.1, SD=31.4; median 21.5, IQR 13-49.5).

For the small cohort of patients that was identified as possible lung cancer on CXR, time to diagnosis was quicker for those that received an immediate CXR report, with mean and median time to diagnosis of 28.4 (SD=19.5) and 18 (IQR=18-33) days compared to the standard CXR reporting pathway (mean 43.2, SD=25.4; median 36, IQR=24-73).

These are preliminary results, with incomplete patient pathways and no significance testing performed. These may be subject to change and should be interpreted as such.

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WHAT PROBLEM WERE YOU TRYING TO SOLVE?
Pathology turnaround times.

WHAT WAS YOUR APPROACH TO TACKLING THIS?
We undertook a pilot employing a dedicated Band 6 Biomedical Scientist (BMS) in our pathology laboratory, specifically tasked with expediting lung samples such as those obtained by bronchoscopy, EBUS and CT guided biopsy.

The BMS was tasked with expediting every step of the pathway for lung pathology samples including booking in, embedding, cutting up, initial staining and immunohistochemistry.

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?
This post was originally funded as a three-month pilot with existing staff undertaking the extra hours as overtime. Despite this, we still achieved significant improvements. The success of this pilot secured funding for this to become a permanent post, but we have had difficulty recruiting to this post due to a national shortage of biomedical scientists.

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
Over the period of the pilot there was a significant improvement in pathology turnaround times from 16.6% achieving a seven-day target to 48.5% (p<0.0001) and whilst it was not statistically significant, there was also an improvement in 62-day pathway compliance from 75.8% to 90.6% over the subsequent period.

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COLLABORATIVE WORKING APPROACHES

ALIGNING SERVICES TO IMPROVE SMALL CELL LUNG CANCER (SCLC) OUTCOMES IN SOUTH TYNESIDE

WHAT PROBLEM WERE YOU TRYING TO SOLVE?
Small cell lung cancer poor outcomes.

WHAT WAS YOUR APPROACH TO TACKLING THIS?
As soon as SCLC is diagnosed in the laboratory the lung cancer team are informed. An appointment is made with the oncologist and a chemotherapy date is planned on the unit.

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?
We implemented this back in 2013, then when our lab merged with two other trusts labs, our two pathologists joined a bigger team sharing the work. The approach set out above had not always been actioned in the other trusts. However, after some discussions the whole team agreed to implement this pathway.

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
Small cell lung cancer patients benefits.

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COLLABORATING ACROSS DIFFERENT TEAMS IN UNIVERSITY HOSPITALS OF LEICESTER

WHAT PROBLEM WERE YOU TRYING TO SOLVE?
The respiratory department at the University Hospitals of Leicester provided tertiary level specialist respiratory care and is located in Glenfield Hospitals. The trust also operates two other hospitals, Leicestershire Royal Infirmary and Leicester General Hospital, where general medicine and surgical patients are admitted.

WHAT WAS YOUR APPROACH TO TACKLING THIS?
We have linked up with acute oncology services at Leicester Royal Infirmary and Leicester General Hospitals where all patients with incidental finding of lung cancer are initially assessed by the acute oncology nurses. Where appropriate, these patients are transferred to the endoscopy suite at Glenfield Hospital, where they are reviewed by the operating lung cancer physician. A bronchoscopy/EBUS is performed in the same setting before transferring them back to the other hospital site.

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?
Involvement of acute oncology and endoscopy staff to facilitate endoscopic investigations of such patients.

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
Analysing patients for one year prior to the implementation of this SCLC rapid pathway showed 55% of patients received chemotherapy. After the new process was introduced, the proportion of SCLC patients receiving chemotherapy increased to 71.4%, with the last NLCA data showing a further increase to 80% of SCLC patients receiving chemotherapy.

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APPOINTMENT OF A PATHWAY COORDINATOR IN BARTS HEALTH NHS TRUST

WHAT PROBLEM WERE YOU TRYING TO SOLVE?
Achieving the various time targets set by the NOLCP.

WHAT WAS YOUR APPROACH TO TACKLING THIS?
Appointing a pathway coordinator to oversee and coordinate all points on the pathway. This includes:

- acting on the outcome of our virtual MDT
- liaising with CT schedulers across all sites in the Trust to expedite scans and optimise capacity
- liaising with the patient to obtain blood tests if they have not had recent U&E’s, required within three months of a CT
- liaising with radiologists to ensure scans are imported in a timely manner
- liaising with PET schedulers and radiologists in the same manner
- leading on scheduling EBUS and bronchoscopy
- liaising with dedicated Lung Biomedical Scientist to ensure high-priority samples are flagged for expediting

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?
We would have been required to develop a business case for the Trust. Despite this we have yet to formally appoint to the post. However, we have run elements of the role as a pilot or shadow as proof of concept.

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
From the elements of this role piloted thus far we have:

- reduced time to first appointment
- all patients now have an upfront CT scan, all of which are reported prior to their appointment
- we have yet to pilot the other elements, but will collect data once the post is formally appointed to

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IMPLEMENTING A VIRTUAL MDT IN BART’S HEALTH NHS TRUST

WHAT PROBLEM WERE YOU TRYING TO SOLVE?
Upfront CT scanning as part of the NOLCP.

WHAT WAS YOUR APPROACH TO TACKLING THIS?
The NOLCP mandates CT scanning for all patients with “high clinical suspicion” of lung cancer prior to their first clinic appointment. Historically many centres, including our own, arranged a CT only for patients deemed high risk after reviewing the patient in clinic. Other centres, including others in our Trust, scanned the majority of patients referred, as a means of stopping the two week wait clock, irrespective of the degree of clinical suspicion. The former approach risks slowing down the pathway, the latter places an unnecessary burden on radiology departments and risks unnecessary radiation exposure.

At one site in our Trust we have implemented a daily ‘Virtual MDT’ where all new two week wait referrals are reviewed by a chest physician and specialist thoracic radiologist via an electronic messaging system built into our radiology (PACS) software. This enables CT scans to be prioritised for those patients who are truly high risk, freeing up scanning capacity in the process.

Following the success of this approach we have audited the CT requesting practices at the other two sites in our Trust and performed a shadow of the Virtual MDT process at one of these, to assess the impact that it may have had if it had been in place.

WHAT CHALLENGES DID YOU ENCOUNTER ALONG THE WAY, AND HOW WERE YOU ABLE TO SOLVE THEM?
We initially struggled to achieve buy-in from the sites currently performing up-front CT on all patients. However, following a pilot period of shadowing what would have happened had the Virtual MDT been in place at one site, both sites have now agreed to roll this out.

To roll this out over more than one site will require administrative support beyond what can be delivered by the clinicians involved. It will be supported by our Pathway Coordinator once in post, who will additionally liaise with schedulers and radiologists to further expedite the pathway.

One advantage we foresee of rolling this out over multiple sites will be increasing the pool of reviewers involved, as we have found a slow-down in reviewing when consultants are on annual leave. By creating a larger pool we hope to mitigate this effect.

WHAT WERE THE OUTCOMES, AND WHAT IMPACT DID THIS HAVE ON PATIENTS AND STAFF?
The CT scanning rate at the site where the Virtual MDT process was already embedded sits around the 50-60% mark. During the audit period, the baseline scanning rates at the other two sites were 18% and 92%. The subsequent shadow of the first of these sites suggested that this could have been reduced from 58% to 8% had the shadow been implemented (although interpretation is complicated by more ready access to CT scanning for GPs in the CCG covered by this hospital and a rate of 8% is probably unusually low). We are extending the shadow period to look into this further.

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AGENDA AND PRESENTATIONS

MAKING THE VERY BEST USE OF NHS RESOURCES AND OPPORTUNITIES TO IMPROVE OUTCOMES FOR LUNG CANCER PATIENTS IN ENGLAND

PROGRAMME
Manchester University NHS Foundation Trust, Wythenshawe Hospital, Manchester
Thursday 19th April 2018

Morning session: 11:00am – 13:15pm
Chair: Chris Harrison

11:00-11:15
Professor Mick Peake
Chair Clinical Advisory Group, UKLCC; Clinical Director, Centre for Cancer Outcomes, University College London Hospitals Cancer Collaborative
The case for change based on the UKLCC’s ‘25 x 25’ report and current statistics on lung cancer outcomes in the UK

11:15 – 11:30
Professor Chris Harrison
National Clinical Director for Cancer, NHS England
Opportunities for driving up standards of care and outcomes for lung cancer patients in the NHS now

11:45 - 12:00
Dr Neal Navani
Co-clinical Lead for the National Lung Cancer Audit
An overview from the NLCA of current data on variation in practice and outcomes within England and Wales

12:00 - 12:15
Professor David Baldwin
Lung CEG chair
The Service Specification and Optimal Care Pathways for lung cancer

12:15 – 12:30
Ms Clare Pearson
Senior analyst, National Cancer Registration and Analysis Service
Using national linked data to assess the achievement of the timings of the NOLCP

12:30 – 12:40
Ms Sue Maughn
Commissioning Director Cancer, NE London STP
The role of the STPs in the commissioning of best practice lung cancer services

12:40 – 13:10
Panel Discussion

13:10 – 14:00
Lunch
Afternoon session: 14:00 – 16:30

Chair: Professor Mick Peake

14:00 - 14:30
Dr Richard Booton
Lead Lung Cancer Clinician, Manchester University NHS Foundation Trust & GM Clinical Lead for Lung Cancer Screening

Dr Matt Evison
Consultant Respiratory Physician, GM Cancer Lung Pathway Board Director

A Multifaceted Approach to Improving Lung Cancer Outcomes – The Manchester Experience

14:30 - 14:45
Dr Liz Fuller
South Tyneside NHS Foundation Lung Cancer Lead

Experience of Implementing the National Optimal Lung Pathway in South Tyneside

14:45 - 15:00
Inderjit Singh
Head of Architecture and Cyber Security NHS England Digital division

Digital support for pathway implementation

15:00 - 15:30
Session 1

The questions
1. What are the major blocks you are experiencing in implementing optimal care and the NOLCP in your area?
2. How have local teams overcome some of the problems?
3. What things would make the biggest difference to the outcomes for lung cancer patients in your area?

15:30
Coffee

15:45
Session 2

The actions
1. Formulation of the key issues
2. Collation of examples of best practice – towards

16:30
Professor Mick Peake
Summary and close

Slides from each of the presentations at the meeting can be accessed online here: www.redhotirons.com/uklcc-lung-cancer-pathway-workshop

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13. Lung Cancer Clinical Expert Group, Clinical Advice to Cancer Alliances for the Commissioning of the Whole Lung Cancer Pathway, August 2017
14. Royal College of Physicians, National Lung Cancer Audit Annual Report 2017 (for the audit period 2016), January 2018
15. Presentation by Dr Neal Navani at the UKLCC meeting, April 2018 (data on file)
17. Royal College of Physicians, National Lung Cancer Audit Annual Report 2017 (for the audit period 2016), January 2018
18. Lung Cancer Clinical Expert Group, Clinical Advice to Cancer Alliances for the Commissioning of the Whole Lung Cancer Pathway, August 2017
19. NHS England and NHS Improvement, Refocusing H45 Plans for 2018/19, February 2018
20. NHS England and NHS Improvement, Refocusing H45 Plans for 2018/19, February 2018
22. NHS England, Cancer Waiting Times, July to September 2018
23. National Cancer Registration and Analysis Services, Routes to diagnosis data on file, September 2018
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