NOLCP Implementation Guide

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Lung Clinical Expert Group
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Document Title: NOLCP Implementation Guide

(National Optimal Lung Cancer Pathway)

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Prepared by:
The NOLCP Implementation Guide was developed as a result of discussion with the Chair and members of the Lung CEG. It also draws on work from the lung work stream of the ACE programme.

Audience:
This document is intended for lung cancer service providers, commissioners and cancer alliances. It will also be of interest to those involved in developing cancer policy.

Groups consulted:
The Lung Clinical Expert Group is chaired by David Baldwin and includes representation from the full range of professions involved in delivering lung cancer services as well as patient groups and commissioners. They were all able to contribute and comment on this document. Exemplar sites were also involved in commenting on descriptions of their services.

Purpose:
The NOLCP and this Implementation Guide are designed to help lung cancer service providers and their commissioners see the basic structure of an effective and efficient lung cancer pathway.

The aim of the document is to encourage local services to review and reorganise their services in a way that ensures efficient and effective use of resources and a fast pathway from referral to diagnosis and then treatment, without compromising patient experience.

The NOLCP Implementation Guide supports the NOLCP which is also available as a separate document.

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Executive Summary

The National Optimal Lung Cancer Pathway and this NOLCP Implementation Guide, provide a road map for service providers and commissioners who are aiming to improve their local lung cancer services.

The Implementation Guide breaks down the NOLCP into 4 parts and provides extra detail on each part of the pathway. Alongside the detail, there are links to case studies of services that have implemented aspects of the NOLCP.

The examples that are provided should inspire other services to make changes, on the basis that those arrangements have been successfully implemented in other localities.

No one Trust has yet fully implemented the NOLCP but we expect to have more examples of good practice soon as the implementation of the NOLCP spreads and progresses throughout the country. Cancer Alliances are expected to play a key role in supporting and facilitating implementation in local areas.

Introduction

There is good evidence for variation in all aspects of lung cancer care in the UK throughout the patient's journey from presentation through diagnosis and treatment. But all services should provide the same high standards. The National Optimal Lung Cancer Pathway (NOLCP) is a recommended pathway, developed following wide stakeholder consultation by the Clinical Expert Group for Lung Cancer, NHSE. It accompanies the National Commissioning Guidance for Lung Cancer.

It sets tight timeframes for each stage of the pathway to enable treatment for most to start by **Day 49, and diagnosis by Day 28,** well within national standards. It recommends a range of features to be in place including, straight-to-CT, test bundles, rapid turnaround times, use of protocols and flexibility of scheduling.

In essence, this optimal pathway is about ensuring that each stage of the pathway happens quickly, that communications with patients are effective and that the entire lung team works in a coordinated but flexible way, focusing always on the patient's journey.

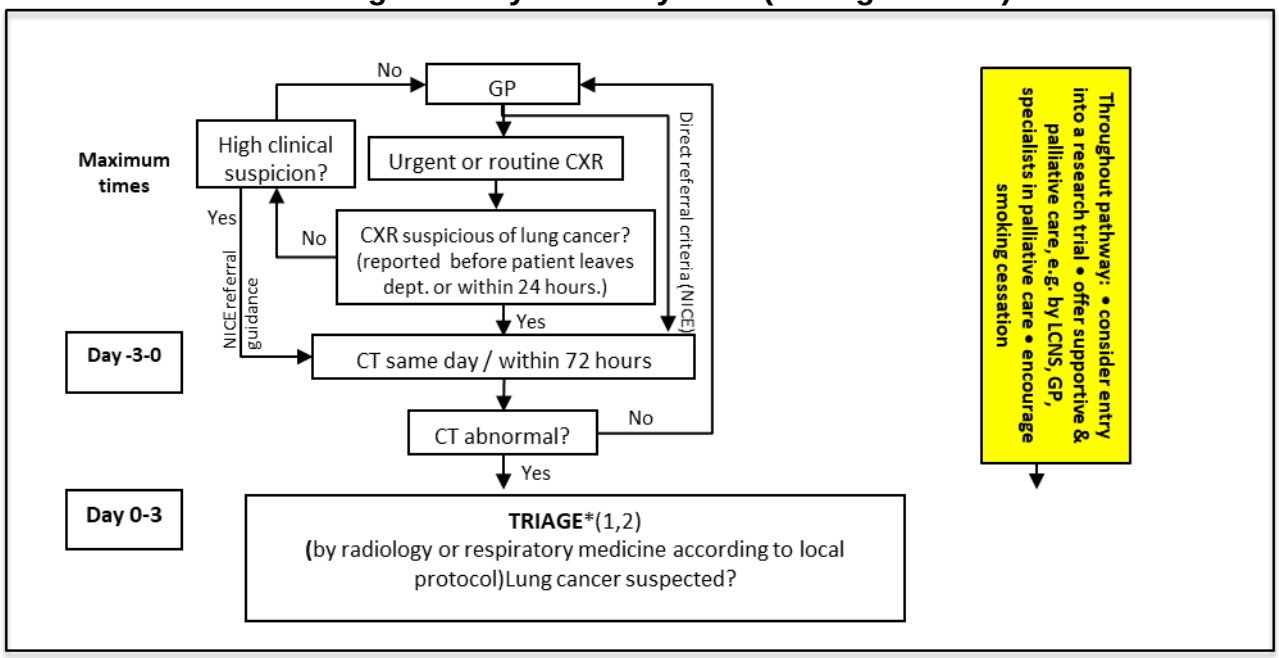
Implementation

The implementation of this pathway may present challenges. It is likely to require both a formal project structure and extra short term resource to implement. Additional service capacity may be required in the longer term but the starting point should be to ensure that all current resources are being used as effectively as possible.
This Implementation Guide breaks down the pathway into 4 parts to enable more detailed scrutiny. It provides examples of where and how aspects of the pathway have been implemented in the UK and will be updated as and when more examples of optimal arrangements are available to share. The complete NOLCP diagram is at Appendix A and a list of all associated documentation is provided in Appendix B.

Benefits

The potential returns from the implementation of the NOLCP are significant. Bringing forward the diagnosis and then treatment will have a large impact because patients with lung cancer have high early mortality rates, emergency admission rates and rapid deterioration in performance status.
A large number of people are affected by lung cancer, and the investment of time and effort into improving lung cancer pathways will have a positive impact on patient experience and clinical outcomes. It should also create better team work and achieve more effective use of valuable resources.

1A Part 1A of the Lung Pathway: Primary Care (Managed route)



1A.1 The Referral

The initial identification and referral of patients with suspected lung cancer is dependent on primary care. Prompt recognition, risk assessment and referral is essential to reduce delay in diagnosis and to reduce the high proportion of lung cancer patients who are diagnosed via emergency admissions.

NICE Guidelines 12 sets out the framework for primary care to use in deciding when to make a referral for suspected lung cancer.

There are currently two decision support tools that GPs may find helpful to use when considering whether or not an urgent referral should be made. The Risk Assessment Tool (RAT) available at and QCancer**.** There is currently insufficient evidence to identify which of these tools is most accurate but either/both may be helpful in alerting and reminding GPs about potential risk.

1A.2 The Chest X-Ray

The Chest X-Ray (CXR) is usually the first diagnostic test performed and this process should occur quickly. The NOLCP stipulates that once a CXR image has been acquired, it should, preferably, be reported before the patient leaves the department in order to facilitate the prompt arrangement of a CT scan where the CXR is abnormal. This 'hot reporting' arrangement is ideal but some units achieve the targets of this stage of the NOLCP by reporting CXRs within 24 hours, and this is also allowable within the NOLCP timeframe. Hot reporting, with the use of radiographer reporters is currently being trialled at the Homerton Hospital to ensure quality standards are maintained throughout the process. See also section 1A.5 on 'maximising radiology capacity'.

This initial part of the NOLCP sets a maximum of **6 days** from acquisition of the CXR image to urgent clinic attendance with CT result available - but with this preferably happening within 1 or 2 days.

1A.3 Abnormal CXR Results

If the CXR result is abnormal, then the NOLCP states that a CT scan should take place on the **same day or within 3 days.** In order to achieve this speed between CXR and CT, Trusts are likely to need a 'straight-to-CT' arrangement to be in place.

Key elements of a Straight-to-CT arrangement include:

- GP refers patient for a CXR having explained to them that a CT may also be required
- Radiologist/Radiographer spots a potential cancer on CXR and either arranges a CT directly or puts ALERT on report
- ALERT code triggers notification to cancer team with cc to GP
- Referral checked by Physician or Radiologist to confirm CT is appropriate
- Patient contacted by secondary care and CT scan booked for earliest date – this can be done on the same day as the CXR.

Please see *ACE 'Straight to CT' Quick Reference Guide* for more information.

See Section 4 of the ACE Report for specific examples of the substantial improvements achieved following the introduction of straight-to-CT pathways.

While the Straight-to-CT arrangement caters well for patients with abnormal CXR Results, possibly up to 25% of lung cancers are not referred on the basis of the initial CXR so a normal or near normal CXR result does not necessarily rule out cancer.

1A.4 Normal CXR Results

Access to CT is therefore also needed for patients who receive a normal CXR result, but where the combination of clinical symptoms and risk factors continue to cause concern. For these patients, some Trusts offer a *Direct Access-to-CT* pathway.

The key elements of a Direct Access-to-CT pathways are:

- Normal CXR result received
- Clinical symptoms and risk factors indicate increased risk
- GP refers directly to CT, setting out reasons for concern on referral form
- CT scan performed within same timeframe as those with abnormal results

Nottingham University Trust offers their GPs a Direct Access to CT pathway and more information about their pathway is provided in the ACE report. Some Trusts recommend use the urgent cancer (2WW) pathway for patients where concerns persist despite a normal CXR result. What is key is that those patients also have access to a CT scan within 3 days.
If a patient's clinical symptoms and risk factors are such that a CT is advisable whatever the CXR result, then CXR referral forms could include the option of ordering a CT scan at the same time as the CXR to save time.

1A.5 Maximising radiology capacity

The commissioning guidance highlights the importance of Trusts having prompt access to thoracic and interventional radiology expertise for optimal delivery of the whole pathway. There is currently a national shortage of radiologists and in order to

achieve the timings set out in the NOLCP, it is crucial that Trusts maximise the use of their radiology resource.

A number of places have increased their capacity through development and use of radiographer reporters for GP referred CXRs. See references to two ACE projects in the Radiology section of the ACE Lung Pathways Report.

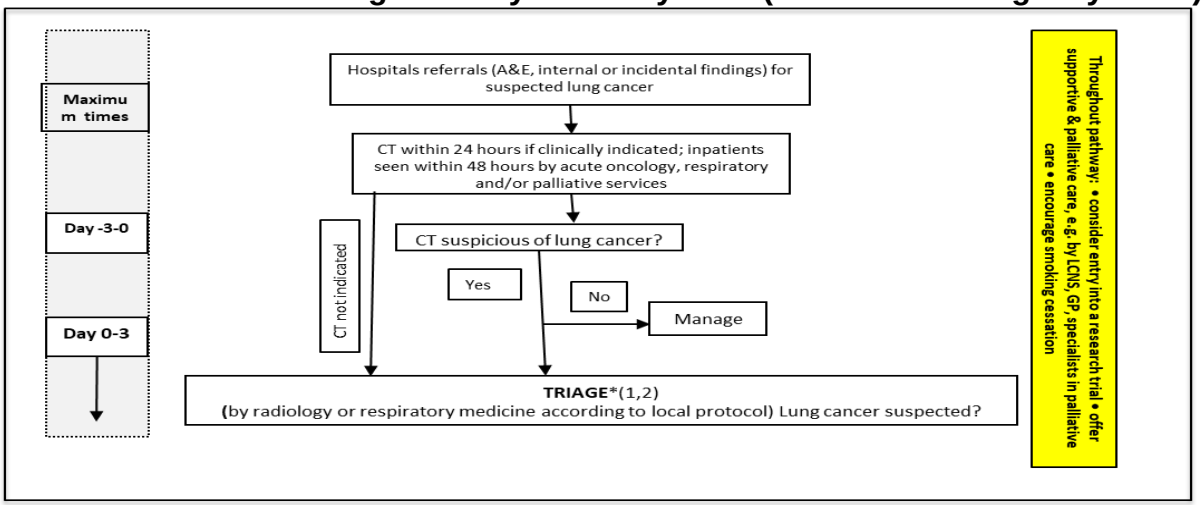
The Homerton and University College London have also put in place a hub and spoke model for the development of radiographer reporters which provides centralised work based learning and support in tandem with accredited post graduate education. More detail is available here.

Cheshire and Merseyside are also developing plans to:

1.) Train and mentor radiography practitioners to report GP requested CXRs
2.) Use virtual collaboration between units to match network capacity and demand based upon real time monitoring
3.) Improve access to home reporting of radiology to increase productivity, recruitment and retention of staff.

The majority of Trusts in C&M are signed up to a sharing agreement and have access to a shared PACS system and CRIS so they can all view the same images and reports. The local radiology community also have an established joint reporting hub for out of hours reporting.

1B Part 1B of the Lung Pathway: Primary Care (Incidental/Emergency route)

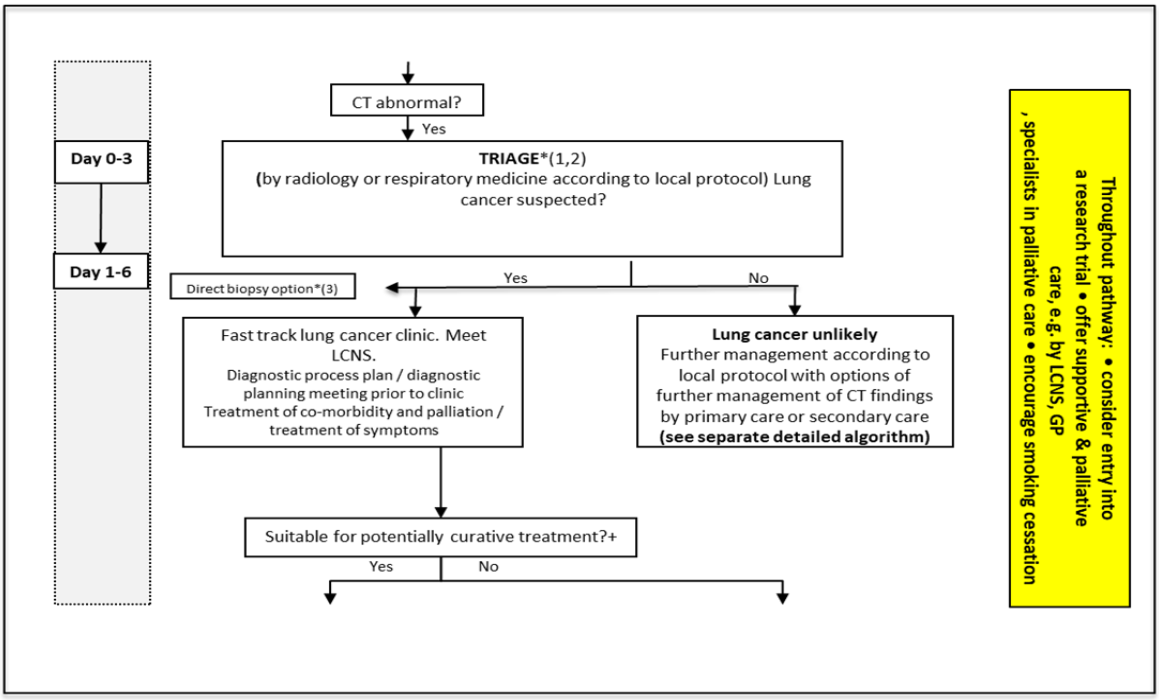


1B.1 'Non-managed' Routes

This part of the pathway deals with patients that have arrived in secondary care through a route other than a GP referral for suspected lung cancer. The NOLCP stipulates that all hospital referrals should be provided with a CT scan **within 24 hours** if clinically indicated; and inpatients should be seen **within 48 hours** by acute oncology, respiratory and/or palliative care services.
A large proportion of lung cancers (around 35%) are diagnosed following an emergency admission or are identified incidentally through routine appointments. It is vital that patients identified through those routes are referred into the established lung cancer pathway as quickly as possible. The different routes in to secondary care should merge together at the Triage stage when the outcome of the CT scan is available. All patients should follow the same pathway subsequently and be addressed with the same level of urgency.

Of the lung cancer patients that are diagnosed via an emergency admission, a significant proportion of those will have been seen in primary care within the preceding months. A more urgent access route for patients too unwell to wait for the 2WW process, may help to reduce unnecessary admissions. *Kettering General Hospital* developed a Rapid Access Lung Cancer Service to cater for those patients and saw significant reductions in emergency admissions for lung cancer as a result. At Kettering, all 2WW referrals are vetted promptly. Those identified as at high risk of admission are reviewed urgently on an ambulatory care unit usually by the next day. Patients incidentally diagnosed with suspected lung cancer in A&E are also reviewed on the ambulatory care unit when feasible. Patients with particular symptoms are then expedited. A more detailed description of their service is available here.

2 Part 2 of the Lung Pathway: CT, Triage and OPA



2.1 Following the CT Scan Result

This stage of the pathway begins when the CT result is available. The CT scan result together with the clinical information available *should* provide enough information for

a lung physician or radiologist to decide whether or not a patient should be put on a cancer pathway or be discharged/redirected from it. Where lung cancer is suspected, patients should be seen within a cancer clinic within a maximum of 3 days.

If lung cancer can be ruled out at this 'Triage' stage, the patient may still need referral to a respiratory clinic for further assessment/management, but this is separate from the cancer pathway and could be actioned by the referring GP once they are notified.

Ideally, cancer clinic appointments should be reserved for patients where imaging results indicate a likely cancer so that cancer skills and resources can remain focussed on those most likely to have lung cancer.

There is no requirement for a 2WW patient to be seen in a cancer clinic. If their CT scan results and clinical information are sufficient to rule out lung cancer, they can be discharged from the cancer pathway by letter, phone or whatever arrangement has been agreed locally. See ACE Report**.**

If the CT results are suggestive of cancer then the patient needs to be progressed urgently. The NOLCP recommends that arrangements are in place for daily review and prompt access to a cancer clinic. A diagnostic review process should take place prior to the clinic and generate a preliminary diagnostic/treatment plan. If daily clinic slots are not available, 3 days should be the maximum interval between CT result and communication with the patient about next stages.

2.2 Triage (Initial Diagnostic Review Process)

The initial review process identified in the pathway as 'Triage' may happen within a formal diagnostic planning meeting – often referred to as a Diagnostic MDT or it may happen as a more informal process where the Lung Cancer Physician acts as coordinator and seeks advice as and when required. The arrangements need to be appropriate for the local team and take into account levels of expertise and ease of communication channels.

The diagnosis, staging and fitness assessments should be completed with reference to the British Thoracic Society guidelines for the radical management of lung cancer and the NICE guidelines for the investigation and management of suspected lung cancer.

An example of how one Trust organises their diagnostic review process is provided by the *University Hospitals of Leicester* who channel all new referrals through a twice weekly Lung Clinic, and for an hour prior to the Clinic they have a pre-clinic diagnostic MDT attended by key members of the Lung Team where the patients' diagnostic pathway is planned. More detail of the Leicester arrangement is available here. Appropriate multi-disciplinary input needs to be part of the process but it is also important that unnecessary delay is minimised.

2.3 Direct to Biopsy

Where the initial review process has identified that a patient is likely to have cancer but that it is unlikely to be suitable for curative treatment, then it may be appropriate for the patient to go 'Direct to Biopsy' at this stage.

In *Kettering hospital*, the physicians perform FNAC of supraclavicular lymph nodes and US guided peripheral lung biopsies in order to reduce the need for radiology resource and to speed up their pathway.

At the *Royal Free London NHS Trust (Barnet Hospital)* they have established an ambulatory lung biopsy technique, eliminating the requirement for elective biopsy beds. Most patients (85%) are discharged 30 minutes after biopsy instead of the more typical 4 – 6 hours or in-patient post-biopsy monitoring. The availability of a portable Heimlich-valve chest drain (HVCD) means that even those who develop a pneumothorax can be discharged and managed at home. Since 2012, the ambulatory lung biopsy service has enabled the Trust to perform, on average, over 300 outpatient lung biopsies a year. It is important that this approach does not put patients at risk and services that introduce this approach should proceed cautiously at first with respect to rapid discharge.

By finding ways to avoid the use of scarce resources e.g. Radiology or NHS Beds, these services have been able to speed up their pathways and use resources more effectively.

2.4 Cancer Clinic/OPA

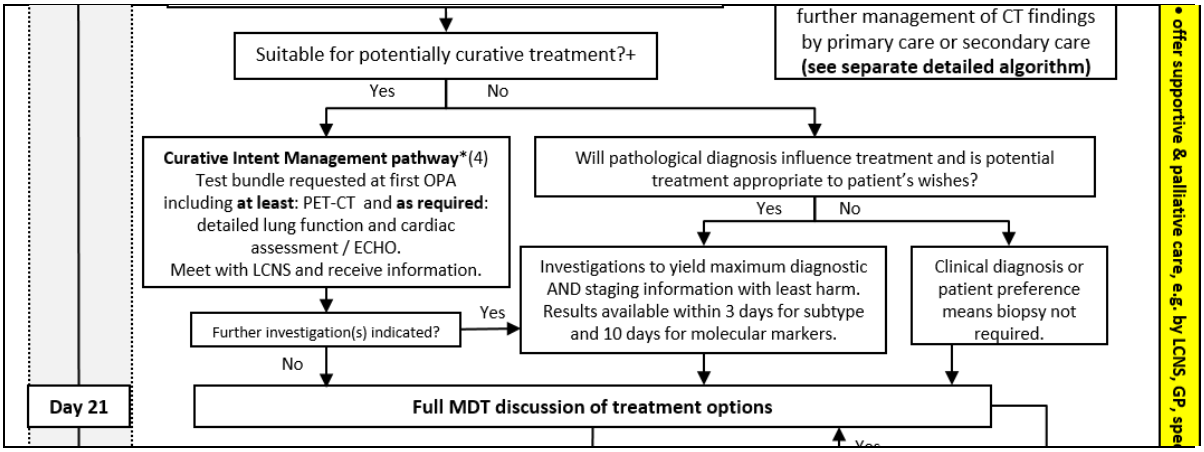
Cancer clinic space should be reserved for patients where lung cancer is suspected. An initial diagnosis and diagnostic plan should be available prior to the appointment and request forms for relevant tests can be completed in the meeting and with the

agreement of the patient. In some Trusts, e.g. Leicester as above, provisional bookings for key tests will be made beforehand to speed up the process, and then cancelled if the patient chooses a different course.

At the Liverpool Heart and Chest Hospital, this stage of the process is managed in a different way. Once the Lung cancer physician has completed his/her review of the patient notes and imaging results, the patient is contacted by a Clinical Nurse Specialist (CNS) by telephone. A full assessment is carried out by the CNS and then the additional tests required (as requested by the physician) are booked with the patient over the phone. The Lung Physician then meets with the patient once all the tests have been completed, he/she has a staged diagnosis and is able to discuss treatment options.

This arrangement has proved popular with both patients and local GPs and ensures that the lung cancer physician's skills are reserved for patients with confirmed lung cancers. More information on this Liverpool pathway is available here.

3 Part 3 of the Lung Cancer Pathway: Further Diagnostics and MDT



3.1 Test 'bundles' and One Stop Clinics

As illustrated within the NOLCP, any patient that is potentially suitable for a curative treatment, will need a range of tests, or a 'test bundle'. It is likely to include at least a PET CT, often an EBUS, and may require detailed lung function and transfer factor testing. It may also include cardiac and exercise testing. All tests need to happen as quickly as possible (within 14 days max) and in the most efficient way. Where tests are appropriate to be done within the same day, they should be arranged in this way for maximum convenience to the patient and minimal delay.
An example of how *South Tyneside* organises its one stop clinic is provided here.

3.2 Flexible sessions

For many Trusts, delays occur because of lengthy turnaround times for certain procedures. In relation to PET CT, some Trusts have been successful at negotiating improved turnaround times with their PET CT provider. In *Nottingham*, a sudden bulge in referrals pushed turnaround times to unacceptable levels. When this was raised with the provider, they then added Saturday and evening sessions to improve their service. This involved the local ARSAC license holders having to renegotiate

their job plans with the local Trust as well as making new arrangements with the PET CT provider.

3.3 Advanced booking

Advanced booking is another technique used in some Trusts. A certain number of slots for EBUS, bronchoscopy etc. are reserved in advance on the basis that clinics are likely to generate the need for a certain number of these procedures. If and when the actual need is less than the number of slots pre-booked, the waiting list coordinator phones patients on other lists to offer them the slots so there are no wasted sessions. When this system was introduced in *Nottingham*, it reduced the pathway by one week and only very rarely has a slot ever been left vacant.

3.4 Pathology turn-around times

The NOLCP stipulates that histology turnaround times for the initial diagnostic report should happen within 48 hours but additional molecular testing to guide targeted therapies e.g., EGFR gene mutation, ALK gene rearrangement and PD-L1 expression, will take longer- possibly a further 5 – 10 days. Some pathology departments 'reflex test' for molecular markers, rather than waiting for the MDT decision and request. This arrangement can save valuable time, particularly for samples from patients with advanced stage disease. A more detailed description of this is available in the ACE report.

3.5 Small Cell Lung Cancer

In order to ensure a speedy response to a potential small cell lung cancer, an alert system can be used by Pathology to flag up a potential SCLC to the Lung Cancer MDT. They in turn can ensure that an oncology appointment is made for a time when the full pathology report will be available to review. An example of how this might work and what information should be provided on the alert is provided by Oxford.

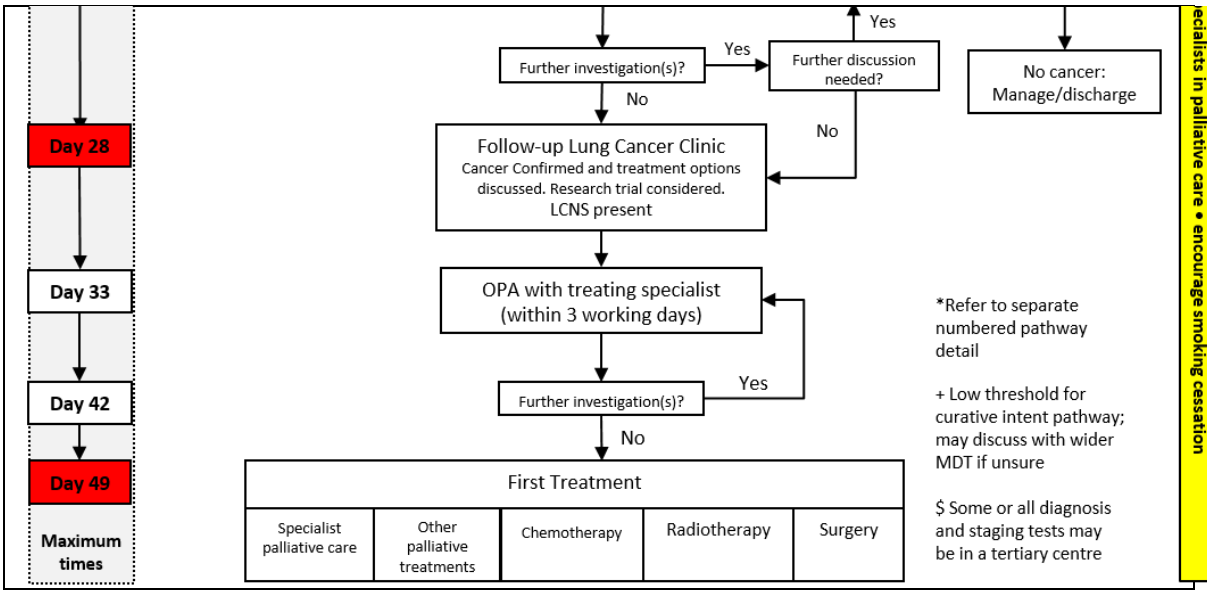
3.6 The Treatment MDT

There have been a number of publications produced on how the Treatment MDT should function including most recently the CRUK commissioned report, *Meeting Patients' Needs: Improving the effectiveness of Multidisciplinary team meetings in cancer services*.

A key recommendation is that the use of agreed protocols could obviate the need for some more straightforward patients to be discussed within an MDT, freeing up valuable time for complex patients to be discussed more thoroughly. As well as enabling a more effective use of resources, this approach could speed up the pathway of some patients.

The scope for using protocols to ensure the MDT functions effectively and that all patients' needs are addressed adequately within the process, still needs further consideration and discussion in local and national settings. The test bundles in the NOLCP amount to protocols that reduce MDT discussions.

4 Part 4 of the Lung Cancer Pathway: Treatment Options discussed and planned



4.1 Treatment Options

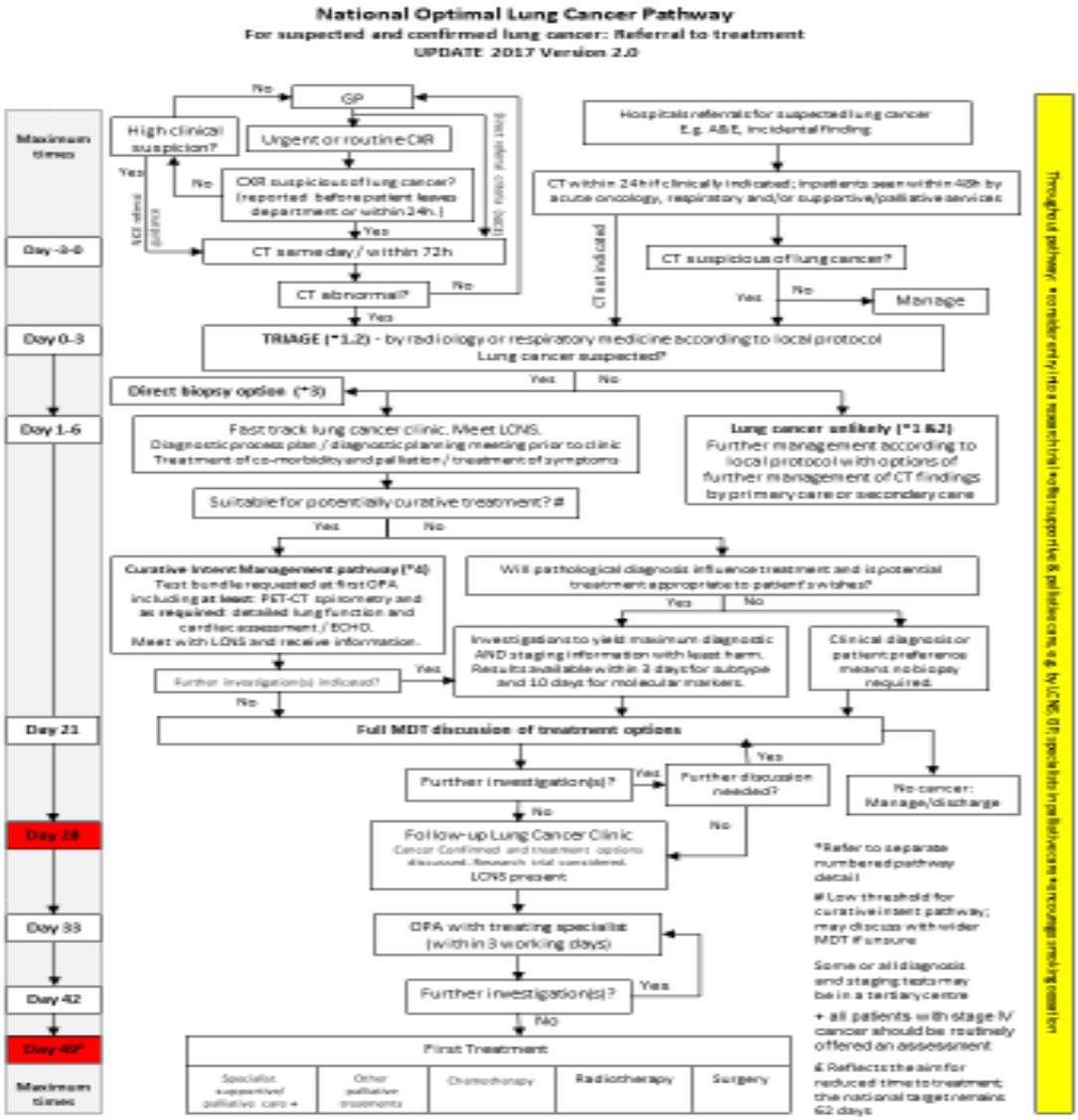
Once a treatment has been agreed with a patient, the NOLCP expects the treatment to start quickly and **within 14 days** of the MDT recommendation. In the case of radical radiotherapy, however, the 14 days may need to start from the date when the patient meets with the treating specialist, to allow time for the planning, verification and checking processes.

To ensure that the referral for treatment happens as efficiently as possible, prompt notification to the treating specialist is needed. This should include the results of pre-operative tests already performed such as lung function and biopsy reports. In *Manchester* they use a standardised MDT proforma for collecting all relevant data for the treatment decision, which is then also used as the referral and is sent directly from the MDT. In *Bristol* they have a protocol and referral form specifically for thoracic surgery referral, which avoids the need for formal dictated referral letters. A copy of this is available here.

Lung teams should also consider simultaneous scheduling of assessment by treating specialist with a treatment session. This has been effectively demonstrated for small cell lung cancer in Oxford, (section 3.5) where diagnostic pathology triggers both an outpatient appointment with the oncologists and a chemotherapy treatment appointment. Some modelling will be necessary to determine what proportion of patients assessed actually accept treatment. Some treating specialists may elect to assess patients on day of treatment. Efficient use of time in planning complex radiotherapy treatment by oncologists, radiographers and physicists is necessary to reduce the time to curative-intent radiotherapy.

Getting patients started on treatment as quickly as possible must remain a key goal. With the more recent emphasis on achieving earlier diagnosis (within 28 days), the importance of ensuring treatment also starts promptly should not be diminished.

APPENDIX A: National Optimal Lung Cancer Pathway



APPENDIX B: Lung Cancer Pathways - Associated Documents

NHS England/Lung Cancer Clinical Expert Group

- Lung Cancer Commissioning Guidance
  Comprehensive guidance which includes quality standards and key metrics

- National Optimal Lung Cancer Pathway (NOLCP)
  1 overall pathway diagram, and 4 others that provide specific details

- NOLCP Implementation Guide [1]
  Provides more detail of the NOLCP and links to examples

- Lung Cancer Pathway - Self Assessment Guide
  Ideally to be used as part of a facilitated change process

NHS England/CRUK/Macmillan (ACE Programme outputs)

ACE Final Report: *Improving diagnostic pathways for patients with suspected lung cancer*
Straight to CT: Quick Reference Guide
Days to Diagnosis Chart (Automated)
Summary reports of ACE Projects
Qualitative survey results: Lung pathways in place 'Top/Bottom' performers
Radiology decision support tool – for CXR Results (developed by BSUH)

Short Case Studies (Examples of what is happening around the country)

- Kettering Ambulatory Care Service
- Royal Free London Ambulatory Lung Biopsy service
- Leicester Diagnostic MDT arrangements
- South Tyneside: one stop clinic
- Liverpool Heart and Chest: Streamlined cancer pathway

Summarised in the appendix of the ACE Report:

- Nottingham's GP Direct Access to CT pathway
- Straight-to-CT ACE Projects - Brighton, Crawley and North Staffordshire
- Manchester Lung cancer pathway - sector working

Sample protocols/referral forms

Bristol's thoracic surgery protocol/referral form
Oxford's Alert system/protocol for Small Cell Lung Cancer

[1] Produced with the support of Cancer Research UK