

UK
National
Screening
Committee



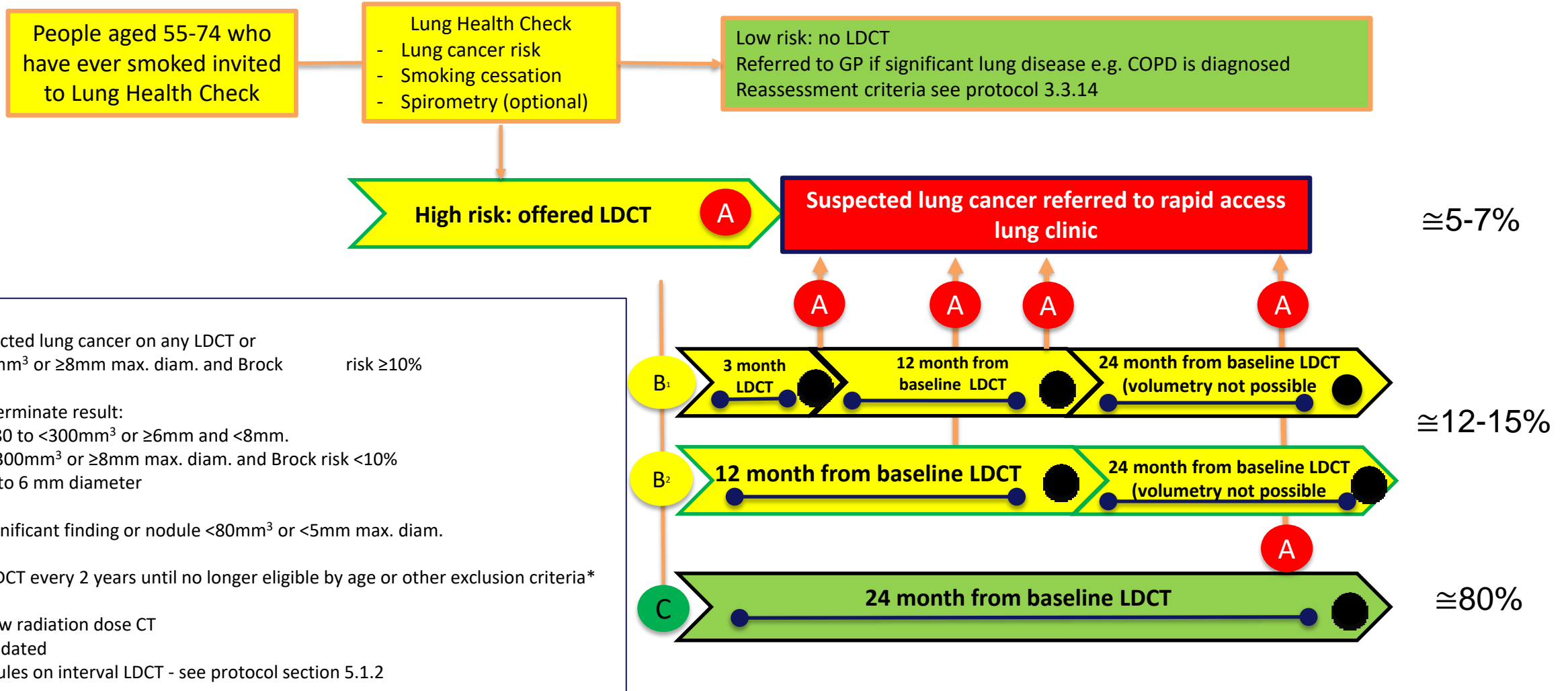
Developing a clinical pathway for modelling of targeted lung cancer screening:

Screening process and outcomes

Emma O'Dowd and Arjun Nair



Targeted Lung Health Check High Level Participant Journey (from Protocol Vs 2)





How is the low dose CT scan done?

Radiation from 1 LDCT- about 1 year's background radiation, or from 1 CT head scan

What happens during the lung scan?

You do not need to do anything to prepare for your scan.

- 1 During the scan, you will usually lie flat on your back on a bed that moves slowly through the CT scanner. The scanner is shaped like a ring and it rotates around a small section of your body as you pass through it.
- 2 Specially-trained staff (called radiographers) control the scanner from behind a screen in the CT room. You will be able to see and speak to them during the scan.
- 3 When a scan is taken, you will need to lie still and follow simple breathing instructions for 10 seconds. This makes sure the pictures are not blurred.
- 4 The scan is painless and you will be able to eat, drink and drive as normal before and after your scan.



NHSE Participant Leaflet- English version



How is the CT scan reported?

Radiologists

- Regular lung cancer experience
- Standardised LCS training
- Undertake regular QA

Reading method

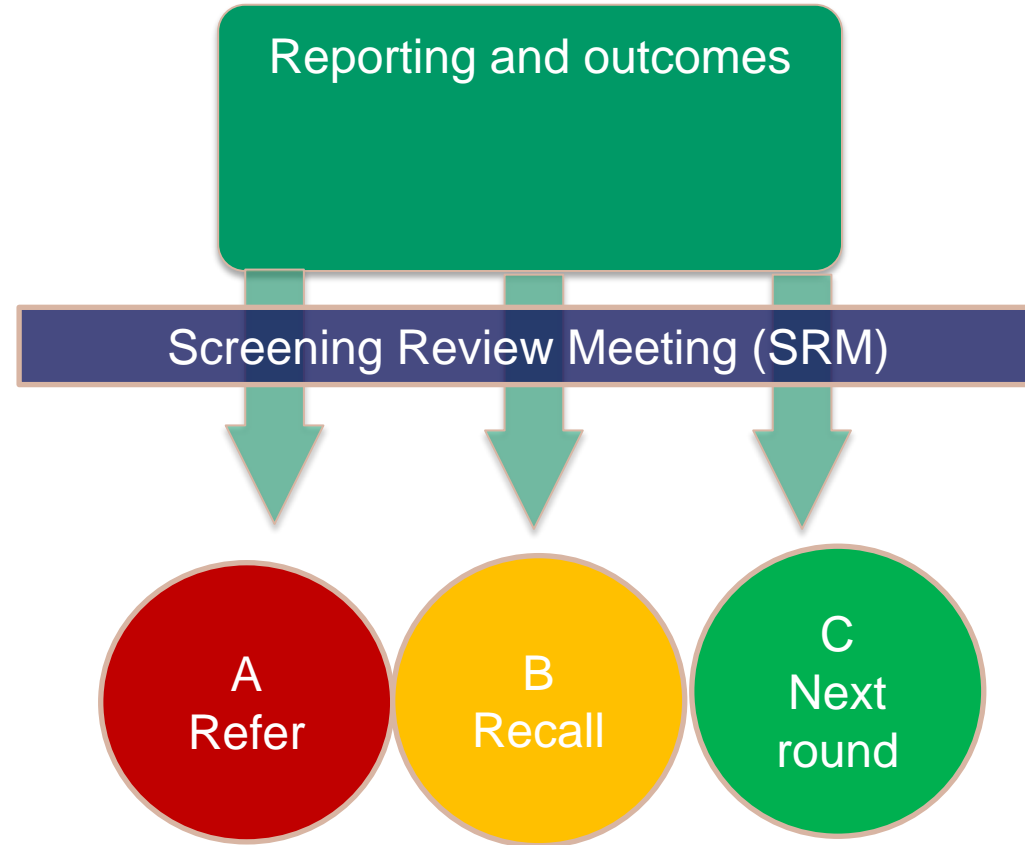
- Computer-aided detection (CAD) as an assistant reader MANDATED
- Dedicated LCS platforms
 - Access to old imaging

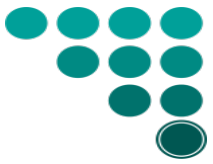
Reporting output

- Structured reporting-limited outcomes
- Nodules
 - Incidentals



TLHC reporting outcomes





Structured reporting of nodules and incidental findings

STUDY Family history of lung cancer:

Incomplete No Nodules

Clinical Relevant Info ⓘ
This is the first scan in the available patient history. It is considered as the baseline scan of this patient.
Recommended follow-up according to the BTS guidelines:

Coronary Calcium LMLAD: None
Coronary Calcium CIR: None
Coronary Calcium RCA: None
Emphysema Type: EmphysemaType

NODULES

Exam Classification: NEG
Comment:

Incidental Findings Yes No

DESCRIPTION

Emphysema	None	<input type="button" value="x"/>	<input type="button" value="trash"/>
Adrenal Opacity (Size)	17	mm	<input type="button" value="trash"/>



The most concerning finding will dictate the outcome

ID	Finding	30 Jan 2023	Comment
1	Segment/Lobe	Left Lower Lobe	
	Location	Slice 129 (FTH)	
	Status	Baseline	
	Type	Solid	
	Altered Morphology	-	
	Spiculated	No	
	Long Axis	7.5 mm	
	Short Axis	4.1 mm	
	Average Diameter	5.8 mm	
	Equivalent Diameter	5.6 mm	
	Volume	90 mm ³	
	Mass	74 mg	
	Volume Change (prior)	-	
	VDT (prior)	-	
	MDT (prior)	-	
	Volume Change (1st)	-	
	VDT (1st)	-	
MDT (1st)	-		
Malignancy Risk Estimation	2.5%		
2	Segment/Lobe	Left Lower Lobe	u
	Location	Slice 162 (FTH)	
	Status	Baseline	
	Type	Solid	
	Altered Morphology	-	
	Spiculated	No	
	Long Axis	5.7 mm	
	Short Axis	4.0 mm	
	Average Diameter	4.9 mm	
	Equivalent Diameter	4.9 mm	
	Volume	61 mm ³	
	Mass	51 mg	
	Volume Change (prior)	-	
	VDT (prior)	-	
	MDT (prior)	-	
	Volume Change (1st)	-	
	VDT (1st)	-	
MDT (1st)	-		
Malignancy Risk Estimation	1.0%		

NODULES											Total Nodules: 2
REFERENCE NODULE	NODULE ID	IMAGE NUMBER	LUNG SEGMENT	NEW	UNRELIABLE SEGMENTATION	SUBTYPE	VOLUME (MM ³)	MAJOR AXIS (MM)	MAJOR AXIS CORE (MM)	VDT(DAYS)	ACTIONS
	1	129	LL - Left Lower Lobe	✓		Solid	90	7.5	0		
	2	162	LL - Left Lower Lobe	✓	✓	Solid	61	5.7	0		

Exam Classification: SEQ-3M Override

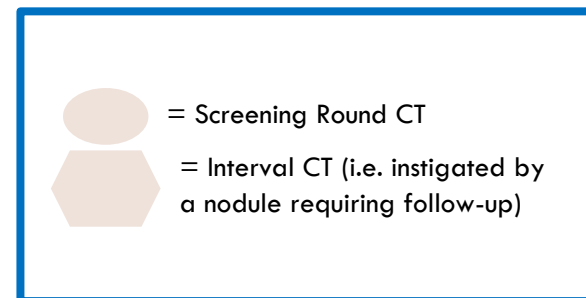
Comment:

Apr 22

Apr 26





Scenario B1:
Indeterminate solid nodule,
volumetry possible



Standardised letters- but phone call first if urgent finding



To participant

P6

PARTICIPANT NAME
PARTICIPANT ADDRESS

DATE

Dear **PARTICIPANT**

RE: Lung Health Check - CT Scan Results

Thank you for attending your Lung Health Check appointment.

The CT scan of your lungs on **INSERT DATE OF SCAN** has shown a small spot called a nodule.

This is a common finding on scans and is often nothing to worry about. In most cases this is an area of scarring or inflammation on the lungs.

Please be assured that this does not require immediate follow-up or further investigation.

We would like to invite you back in 12 months' time for an appointment to check in on your lung health. Your appointment details are as follows:

NAME OF SPECIALIST NURSE
DATE
TIME
LOCATION

If you are unable to make this appointment, wish to rearrange it, or have any further questions, please call the following number:



TELEPHONE NUMBER

If in the meantime you experience any symptoms that concern you, please contact your GP. Such symptoms include chest pain, breathlessness, a new cough that lasts more than three weeks or a change in an existing cough.

Yours sincerely,

LUNG HEALTH CHECK PROJECT TEAM

To GP

GP6

NAME OF GP
GP PRACTICE

DATE

Dear **NAME OF GP**

RE: Targeted Lung Health Check – repeat 12-month scan

Your patient **INSERT NAME** attended a lung health check on **INSERT DATE OF LUNG HEALTH CHECK**, followed by a low dose CT scan.

LUNG HEALTH CHECK RESULTS

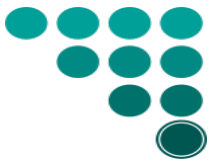
- Lung health check assessment
- Risk assessment
- Spirometry assessment
- Smoking cessation advice (if required)
- Any other lifestyle advice

CT SCAN PROFORMA

The CT scan has shown a nodule. As a matter of good practice, we would like to invite **INSERT NAME** back in 12 months' time for an appointment to check on their lung health.

Yours sincerely

LUNG HEALTH CHECK PROJECT TEAM



Managing the downstream impact

Regular meetings:

- Project team
- Stakeholders
- Secondary care

Screening review meeting



TLHC Process (Screening Review Meeting)

Crucial for managing incidental findings:

- Dilated thoracic aorta
- Aortic valve calcification
- Adrenal masses/ nodules
- Renal masses/ nodules

Access to previous imaging

Template letters/ outcomes

