



The UK Yorkshire Lung Screening Trial: implementation of telephone-based risk assessment and mobile, community-based Low Dose CT screening.

Rhian Gabe

Professor of Biostatistics and Clinical Trials
Wolfson Institute of Population Health

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Randomised trials of LDCT screening for lung cancer

- 2011: US NLST, N = 53,454
- 2022: Europe NELSON, N = 15,789
- Meta-analyses with:
 - DANTE ITALUNG
- LUSI **SE** UKLS







~ 20% reduction in lung cancer mortality

- 2018 YLST, N = 89,917
 - 3 screening rounds over 6 years





Yorkshire Lung Screening Trial



- Participation "Lung Health Check"
- Accessibility mobile vans in community locations
- Location Leeds, areas of deprivation, high lung cancer mortality



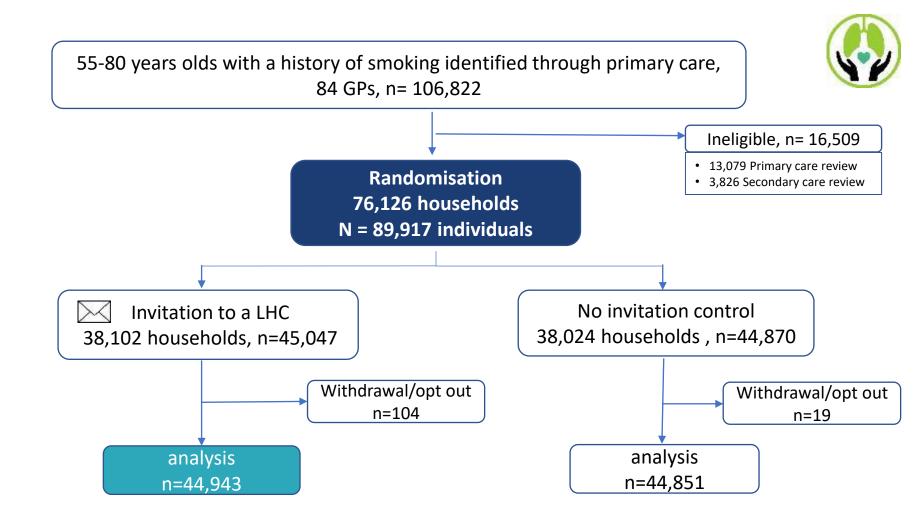




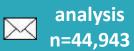
YLST Primary objectives



- Participation
 - Response to invitation to telephone to check eligibility
 - Attendance at the Lung Health Check on the van
- Performance of risk criteria
 - \circ USPSTF \circ PLCO_{m12} \circ LLP_{v2}
- Lung cancer outcomes by trial arm
 - Advanced stage (III-IV)



Participation







22,815 Telephone responders (51%) assessment: USPSTF, PLCO and LLP Median call time: 4.1 mins

22,128 non responders (49%)

7,853 High risk by any criteria – eligible for LHC appointment mobile van (34%)

14,962 Low risk - ineligible (66%)

6,819 attended <mark>(87%)</mark>

89% (1905/2150) current smokers accepted cessation support

1,034 Declined/DNA (13%)

Telephone Response – 1st round (1)

	Non-responders	Responders	Total invited	P value
Number, n (%)	22,128 (49.2)	<mark>22,815 (50.8)</mark>	44,943	
Age, mean (SD)	64.8 (7.1)	67.3 (7.1)	66.1 (7.2)	< 0.001
Sex, n (%)				<0.001
Female	9,969 (45.1)	11,477 (50.3)	21,446 (47.7)	
Male	12,158 (54.9)	11,338 (49.7)	23,496 (52.2)	
Indeterminate	1 (<0.1)	0	1 (<0.1)	
IMD quintile, n (%)				<0.001
1 - most deprived	8,102 (36.6)	5,539 (24.3)	13,641 (30.4)	
2	3,706 (16.8)	3,475 (15.2)	7,184 (16.0)	
3	3,537 (16.0)	4,084 (17.9)	7,621 (17.0)	
4	4,012 (18.1)	5,626 (24.7)	9,638 (21.4)	
5	2,744 (12.4)	4,067 (17.8)	6,811 (15.2)	
Missing	24 (0.1)	24 (0.1)	48 (0.1)	

Telephone Response – 1st round (2)

	Non-responders	Responders	Total invited	P value
Number, n (%)	22,128 (49.2)	<mark>22,815 (50.8)</mark>	44,943	
Ethnicity (derived), n(%)				<0.001
White	10,524 (47.6)	11,958 (52.4)	22,500 (50.1)	
Black or Black British	415 (1.9)	275 (1.2)	690 (1.5)	
Asian or Asian British	544 (2.5)	388 (1.7)	932 (2.1)	
Mixed	9,102 (41.1)	9,237 (40.5)	18,339 (40.8)	
Other	291 (1.3)	195 (0.9)	486 (1.1)	
Unclear	167 (0.8)	190 (0.8)	357 (0.8)	
Not stated	1,067 (4.8)	572 (2.5)	1,639 (3.7)	
COPD, n(%)	2,219 (10.0)	2,145 (9.4)	4,364 (9.7)	0.16
Smoking status (derived), n(%)				< 0.001
Current Smoker	8,907 (40.3)	4,528 (19.9)	13,435 (29.9)	
Ex-Smoker	12,990 (58.7)	18,046 (79.1)	31,036 (69.1)	
Never Smoker	5 (<0.1)	8 (<0.1)	13 (<0.1)	
Non-informative code	226 (1.0)	233 (1.0)	459 (1.0)	

Telephone Response

Multivariable analyses including age, sex, IMD, ethnicity, smoking status

	OR _{adj}	(95% CI)
Age (75+ v <60 years)	1.99	(1.87, 2.12)
Sex (Male v Female)	0.81	(0.78, 0.84)
IMD (Q1 v Q5)	0.58	(0.54, 0.62)
Ethnicity (Asian v White)	0.79	(0.68, 0.90)
Smoking (Current v Ex)	0.44	(0.42, 0.46)

Crosbie, Gabe, Simmonds et al. Participation in community-based lung cancer screening: the Yorkshire Lung Screening Trial. European Respiratory Journal, 2022



LHC Attendance

- 7,853 (34.4%) were eligible for a LHC on the mobile van
- 6,819 (86.8%) attended
- Multivariable analysis including age, sex, IMD, self-reported smoking status

	OR _{adj}	(95% CI)
Age (75+ v <60 years)	0.43	(0.34, 0.55)
Sex (Male v Female)	1.38	(1.21, 1.57)
IMD (Q1 v Q5)	0.78	(0.62, 0.98)
Smoking (Current v Ex)	0.63	(0.55, 0.73)

6,650 (97.5%) had a baseline LDCT scan



YLST future

- Second round participation
 - responders and non-responders/non-attenders were reinvited
- Third round until Oct 2024
 - o T4 & T2 scans
 - Nested RCT of Pathway Navigation in individuals not engaging (CI: Sammy Quaife)
- Evaluation of risk criteria, lung cancer outcomes, cost-effectiveness, smoking cessation, participation in co-cancer screening (Kidney, Bladder)



Summary

- YLST demonstrates a feasible approach to targeted lung cancer screening
 - 51% response, 34% eligible, 87% attendance,
 - 4.1 mins per telephone call, 89% smokers accepting cessation support
- Research is required to address uptake and inequalities in screening
- YLST findings + data on costs included in the UK NSC report
- which lead to......



September 2022 - UK NSC Recommendation



UK National Screening Committee

Lung cancer

Lung cancer is one of the most common types of cancer in the UK and worldwide. Around 48,000 people are diagnosed with lung cancer and about 35,000 people die from the disease every year in the UK. Smoking is the most common cause of lung cancer. Other causes include passive smoking and exposure to certain gases and chemicals.

» Read more about lung cancer on NHS UK

UK NSC screening recommendation

Based on the last UK NSC review of this condition that occurred in June 2022.

Screening for this condition is recommended.

Targeted screening for lung cancer is recommended for people aged 55 to 74 identified as being at high risk of lung cancer. Evidence shows that screening with low-dose computed tomography:

- · reduces lung cancer mortality
- is acceptable to patients and professionals if adequately resourced and quality assured

The UK NSC recommended that the 4 nations move towards implementation of targeted lung cancer screening with integrated smoking cessation service provision. The Targeted Lung Health Checks (TLHC) programme provides a feasible and effective starting point for implementation in England.



News Flash! 22 June

The Daily Telegraph

How to snag this year's hottest concert tickets



Mind the

Things older husbands can't say to a younger

wife



Ben Lawrence Literary fiction is a snobbish



-INSIDE-Beat the system NHS lung cancer test for every ex-smoker

Checks from middle age and mass rollout of scanning units to boost poor survival rates

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Acknowledgements

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Thank you

