Lung cancer case finding in COPD using low-dose CT

The South Tyneside Model
Lung cancer

- Largest cause of cancer-related death in the UK
- Late diagnosis is associated with poor outcomes
- Around 50% diagnosed at stage IV
- 1 year survival for stage IV just 17%
Our region

- South Tyneside has the highest rate of smoking in the North East\(^2\)
- Also has one of the highest incidences of lung cancer in the UK\(^3\)
- 1/3 patients present as emergency admission
Lung cancer incidence across the North East

Slide courtesy of Linda Wintersgill, Northern Cancer Alliance
Lung cancer screening

- Trial in US comparing low-dose CT with chest x-ray in heavy smokers
- 20% mortality reduction in low-dose CT group\(^4\)
- Further studies showing around 85% of cancers detected with low-dose CT screening are stage I or II\(^5\)
NELSON screening study

- Over 15,000 patients randomised to receive either LDCT or no screening
- LDCTs performed at baseline, 1 year, 3 years and 5.5 years
- Results presented September 2018 suggest 26% relative mortality reduction in male LDCT group at 10 years
Evidence clearly shows that Europe must start planning for implementation [of low-dose CT screening] within the next 18 months.

COPD and lung cancer

- COPD and emphysema are both independent risk factors for lung cancer, even when controlled for smoking exposure.
- Focusing on smoking alone may miss cancers in COPD patients who have other risks, such as asbestos exposure.
Both [airflow obstruction and emphysema] have been neglected by current guidelines identifying the target population that should undergo screening.

Aims and objectives

• Develop a lung cancer case-finding model within routine NHS practice
• Target an appropriate patient group
• Encourage smoking cessation
• Detect cancers early enough to offer curative treatment
• Cost-effective
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- Suitable asymptomatic patients identified by practice nurses at COPD annual review
- Practice nurses received written guidance and face-to-face training
- Offered low-dose CT and counselled by practice nurses
- Smoking cessation emphasised
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- Project underwent three month trial phase at 6 voluntary GP practices to assess feasibility
- Then rolled out to all GP practices within the CCG
- CCG business case successful with support from Trust with cost agreed for low-dose CT and report from radiologist for GPs
- Both low-dose CTs and reporting by radiologist performed out-of-hours
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• If radiologist suspects lung cancer then respiratory physician informed and appointment made in one-stop clinic
• Any other results are responsibility of GPs and they follow-up
• If nodule detected then GP arranges follow-up scan
Results

• 560 low-dose CTs performed
• 94 nodules detected
• 16.8% of low-dose CTs revealed a nodule
• All confirmed lung cancers offered curative treatment in the form of surgery or radical chemo/radiotherapy
• Example of lung cancer detected (patient underwent surgery)
• Many findings of bronchiectasis, ILD, and other cancers
• Patient below referred to respiratory consultant due to new finding of bronchiectasis
Successes

• GPs and practice nurses have embraced the project and all nodules detected are under follow-up
• Model has established lung cancer case finding within routine NHS practice
• Lung cancers being detected early enough to offer curative treatment
• Many other significant findings including other cancers, ILD, bronchiectasis
Challenges

• Ensuring all GPs are made aware of inclusion criteria

• How do we reach patients who are not attending their COPD annual review
Future work

• Project is ongoing and patients will be offered annual scans
• Cost-effectiveness and health economics
• Patient experience of project
References


Photography courtesy of Sally Ann Norman Photography (https://www.sallyannnorman.com)
Thank you

Any questions?

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