An update in lung cancer patient stratification: from screening to pre-treatment assessments

S69 LUNG CANCER SCREENING – CUMULATIVE RESULTS FROM FIVE UK-BASED PROGRAMMES

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Introduction Lung cancer remains the leading cause of cancer related death globally. Low-dose CT (LDCT) screening of high-risk individuals reduces lung cancer specific mortality. An important requirement for any screening programme is to minimise harms, especially in those who do not have cancer. Data from randomised controlled trials is often used as the primary source from which to extrapolate risks of harm but they do not reflect modern, real-world practice. In this paper we present cumulative data on screening harms from five UK-based lung cancer screening programmes.

Methods In the UK, several implementation pilots and research studies have demonstrated that screening can be successfully delivered within or aligned to the NHS. These include: UK Lung Cancer Screening Trial (UKLS), Lung Screen Uptake Trial, Manchester Lung Health Checks, Liverpool Healthy Lung Project and Nottingham Lung Health MOT. Most sites used BTS nodule management guidelines. Positive results were defined as those referred for more than a repeat LDCT. False positives were those positive screens without an eventual diagnosis of lung cancer. Harms were categorised according to the need for further imaging, invasive investigations and/or surgery. Complications were categorised as per the National Lung Screening Trial (NLST).

Abstract S69 Table 1 Details of cumulative reported harms

Reported screening related harm		Total% (n)	Per 1000 screening scans
False positive rate	As a proportion of all LDCT scans	1.9% (219)	17
	As a proportion of all positive scans (i.e. false discovery rate)	46.7% (219)	-
Invasive investigation* for benign disease (excluding surgery)		0.5% (61)	5
Surgical resection for benign disease	As a proportion of all surgeries	4.6% (8)	1
	As a proportion of all LDCT scans	0.07% (8)	-
Major complication+ from invasive investigation/ treatment for benign disease		0% (0)	0
Deaths from invasive investigation/treatment for benign disease		0% (0)	0

*image guide biopsies or bronchoscopic procedures; +as defined by NLST

Results A total of 11,815 screening LDCTs were performed across the five programmes (2016–2020). Overall, 85.5% of screening scans were categorised as negative, 10.5% as indeterminate and 4% as positive. Lung cancer detection was 2.1%, ranging from 1.7% to 4.4% across sites. The surgical resection rate was 66.0%. Details of the cumulative reported harms are summarised in **table 1**.

Discussion This collaborative work provides up-to-date data on lung cancer screening performance and harms. The rate of positive (4%) and false positive (1.9%) screening results were significantly lower than NLST and the majority of European screening trials. Harms from investigation and treatment of non-malignant disease was minimised with no reported major complications or deaths. This provides reassurance that with the use of evidence-based practice and experienced MDTs, harms from false positive results can be minimised within screening. This information is important in the planning of larger scale implementation of lung cancer screening within the UK and beyond.

S70 THE WAKEFIELD LUNG HEALTH CHECK PILOT: BASELINE LUNG CANCER RELATED OUTCOMES

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Introduction Lung cancer typically presents at an advanced stage when it is associated with poor survival. Screening asymptomatic patients at high risk of lung cancer has been shown to reduce lung cancer mortality. In partnership with the West Yorkshire and Harrogate Cancer Alliance we conducted a community based targeted lung health check (LHC) pilot programme in Wakefield. Here we report our baseline cancer related outcomes.

Methods Ever smokers aged 55 to 75 registered at three large GP practices in deprived areas in Wakefield were invited to a community based LHC. They were assessed for symptoms and offered spirometry and smoking cessation. Lung cancer risk was assessed using the $PLCO_{m2012}$ tool. Those patients whose risk was $\geq$ 1.51% were offered a low dose CT (LDCT) on a mobile scanning unit within the local community. CT scan reports indicating possible lung cancer were referred directly to the diagnostic lung cancer MDT and the fast track clinic.

Results Of the eligible population, 1990 patients underwent a LHC and 697 proceeded to LDCT. 17 (2.4%) were diagnosed with lung cancer. 10 (58.8%) of cancers were diagnosed at stage I and II. Stage distribution is shown in figure 1.

Adenocarcinoma was the most common histological subtype in 6 (35.2%) patients. Other histology included; squamous cell carcinoma 3 (17.6%), small cell 2 (11.6%), carcinoid 2 (11.6%) and 1 (5.8%) mucoepidermoid carcinoma. In 3 (17.6%) the diagnosis of lung cancer was made on radiological grounds by the MDT.

Radical intent treatment was delivered to 15 (88.2%) of the 17 cancers. Modalities included; surgery 9 (52.9%), radical radiotherapy 3 (17.6%), chemoradiotherapy 2 (11.7%) and SABR 1 (5.8%). Two patients received best supportive care including palliative care.