Editorials
Early diagnosis of lung cancer in people most at risk

THE PROBLEM

The current approach to the diagnosis of lung cancer is ineffective. By the time typical symptoms are apparent, the disease has usually spread beyond the primary site.[1] As a result, 80% of the 48 000 people a year who develop lung cancer in the UK have a poor prognosis, with fewer than 10% surviving for 10 years or more.[2] People over the age of 50 years, smokers, and those living in areas of socioeconomic deprivation are affected disproportionately.[2] Late diagnosis and higher levels of multimorbidity in these areas constitute another example of the Inverse Care Law.[3] Earlier diagnosis is likely to enable more patients to benefit from recent advances in surgery, pharmacological interventions, and radiotherapy.[4]

LUNG CANCER SCREENING

The 2011 National Lung Screening trial in the US achieved a 20% reduction in lung cancer deaths in smokers aged over 55 years after 5 years using low-dose computed tomography (LDCT) screening.[5] Successes with LDCT screening have been confirmed and extended by several other trials, including the recently reported NELSON study.[6] Following the UK Lung Cancer Study (UKLS), NHS England has commissioned pilots of lung health checks including LDCT.[7] In this approach to early diagnosis, smokers and ex-smokers older than 55 years prior to LDCT scanning are sent a validated questionnaire: the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial Model 2012 (questionnaire reference: PCLOm2012).Although the US Preventive Task Force recommends annual screening with LDCT in adults aged 50–80 years,[8] who have a 20 pack-year smoking history and who currently smoke or have quit smoking within the past 15 years, the UK Screening Committee does not yet recommend lung cancer screening.

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Targeting high-risk groups is likely to be preferable to population-wide screening for lung cancer as this will reduce the burden on imaging capacity, and avoid over-investigation of false-positive findings and the corresponding overdiagnosis and patient anxiety.

Optimising uptake among these high-risk groups will be another key factor for success. Addressing public awareness, acceptability, and ease of access to enhance uptake of cancer screening requires a comprehensive approach. In any proposal, collaborative (co-design) service design strategies need to be explored.[9] These would encourage early involvement of GP practices, including access to their electronic health records to identify smokers and their links to hard-to-reach communities, phlebotomy services, pharmacies, and public end-users.

Two ways of achieving better targeting may be more accurate identification of patients at risk by optimising algorithms to extract data from the GP electronic health records and biomarkers, such as C-reactive protein, circulating tumour-derived material, and autoantibody tests.[10] The Early detection of Cancer of the Lung Scotland (ECLS) trial of an autoantibody test reported relatively high uptake among people from more deprived groups and reduced late-stage disease in the intervention arm.[11]

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ROLE OF THE GP IN ADVANCING EARLIER DIAGNOSIS

Greater understanding is needed on how different combinations of electronic medical record searches, surveys, and biomarkers compare, both in terms of accuracy and uptake. Addressing ease of access (for example, via postal delivery or systematic or opportunistic visits) to enhance uptake of lung cancer screening, including public awareness, acceptability, endorsements, and reminders, is required.

Studies being designed and implemented now will provide data and analysis that should enable the UK screening committee to decide whether these new approaches are a useful way to target lung cancer screening in future. GP input addressing clinical and economic factors in a collaborative, integrated approach will be key to developing new studies that increase our patients' chances of successful treatment of early lung cancers and mitigate health inequalities.

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