Integrated stop smoking interventions are essential to maximise the health benefits from lung cancer screening

In the current issue of Thorax, Williams et al., offer timely and much needed evidence regarding the optimal form of smoking cessation intervention in lung cancer screening. In 2022 the UK National Screening Committee (UK NSC) recommended targeted screening for lung cancer for those individuals identified to be at high risk and aged 55 to 74 years. This year the UK Government announced the national roll out of a targeted lung cancer screening programme and within their recommendations, proposed that smoking cessation service provision should be integrated. The roll out of such a programme has the potential to not only improve lung cancer outcomes but prevent or reduce the burden of multiple smoking related diseases, including cardiovascular and respiratory disease as well as multiple cancers through the implementation of co-located smoking cessation support. Evidence suggests that the combination of screening and smoking cessation decreases lung cancer specific and overall mortality (1).

Evidence shows that lung cancer screening can offer a 'teachable moment' for smoking cessation, a brief moment in which motivation to stop smoking can be enhanced (2, 3). This unique setting is likely to increase an individual's perceived risk of continued smoking, increase their emotional reaction to smoking and challenge the self-concept of a smoker. Williams et al have provided an important contribution to the evidence for embedding smoking cessation support in lung cancer screening through the outcomes of two trials- QuLIT 1 and QuLIT 2. Their findings have demonstrated that the offer of immediate smoking cessation support, including the provision of pharmacotherapy, within the UK targeted lung health check programme is associated with an increase in long term quit rates. QuLIT 1 offered an initial stop smoking consultation in person, whereas the Covid-19 pandemic necessitated an entirely telephone-based intervention. Combined data from both the QuLIT1 and QuLIT2 trials reported higher validated 12 month 7-day point prevalent quit rates in the intervention arm compared to usual care (12.1% vs 4.7%; $p<0.05$). Interestingly, the authors identify that 12 month quit rates were higher in the telephone only intervention (QuLIT2) but do highlight caution in interpretation of results given studies were not directly comparable. These findings add to the increasing evidence base that continued, opt-out stop smoking support rather than very brief advice and sign posting to community-based services is the most appropriate form of support for those likely to be eligible for lung cancer screening (4) but highlight that optimal intervention design is still unknown.

Integrating evidence-based smoking cessation support within lung cancer screening would be a highly effective use of limited healthcare resources and has the potential to translate into health benefits for a variety of smoking-related diseases. However, challenges such as public health budget cuts to stop

smoking services in the UK will likely impact the amount of available smoking cessation services and readily trained smoking cessation practitioners that could be utilised within lung cancer screening (5). Disparities in service provision, including a lack of community stop smoking services to refer smokers to, have been reported within existing Targeted Lung Health Check sites in England and where there are community services there are lengthy waiting times.

The degree to which lung cancer screening programmes advise patients around smoking cessation can range widely and data on the effectiveness of specific smoking cessation interventions integrated in lung screening trials is limited. Determining the optimal approach is therefore acknowledged to be a high priority by various health organisations (6, 7). Work from the SCALE collaboration has shown that to help maximise the reach of smoking cessation interventions, it is important to offer a wide range of cessation treatments (8). Furthermore, those who are eligible for lung cancer screening will have a long-term smoking history and will likely have attempted to stop smoking at multiple points in their lives. Outside of a screening setting, a lung screening eligible population may require a more intensive, person-centred form of behavioural support due to the complexities of behaviour change for this population (9). Similarly, the need for a more intensive form of intervention (i.e. continued support from a smoking cessation practitioner and immediate provision of pharmacotherapy) within a lung screening setting has been highlighted in a systematic review by Williams et al., 2023 (10).

Although we know that those eligible to attend lung screening view the integration of smoking cessation positively (11, 12), more participation-centred research that focuses on understanding what form of intervention works best for a lung-screening eligible population is needed. Ongoing research to assess the feasibility and effectiveness of smoking cessation interventions in LDCT screening (13-15) will shed light on some unanswered questions in this area. What is clear from the growing evidence base, however, is that investing in the integration of a high-intensity stop smoking intervention within lung cancer screening programmes is a vital component of a public health strategy that will positively impact on cancer, respiratory and cardio-vascular disease. Not doing so misses an unprecedented opportunity to capitalise on the widespread implementation of lung cancer screening in the UK.

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