

The role of smoking cessation services within the Targeted Lung Health Checks programme: executive summary

Key findings:

- Individuals who smoke and are eligible for lung cancer screening often have long and complex smoking histories, multiple failed attempts to quit smoking and multiple comorbidities attributable to their smoking behaviour.
- Evidence shows that attendance at lung cancer screening is a “teachable moment”, whereby current smokers may be more receptive to advice and support to change their smoking behaviour. There is thus an opportunity to provide better management of, and reduce the clinical and financial impact of smoking-related long-term health conditions through effective smoking cessation intervention. Further, given these health conditions are more prevalent in deprived groups, effective intervention has the potential to decrease health inequalities.
- Smoking cessation interventions delivered in lung cancer screening settings are acceptable, effective and highly cost effective.
- Existing evidence is stronger for co-located, immediately available, intensive interventions including behavioural support and pharmacotherapies/e-cigarettes, delivered by specialist trained staff.
- The current delivery model of smoking cessation interventions within the Targeted Lung Health Check pilots is resulting in relatively low uptake of support, and inconsistencies in provision according to locality which has the potential to exacerbate health inequalities.
- Failing to provide effective and equitable treatment for smoking in the lung cancer screening setting not only fails to capitalise on an unprecedented opportunity to reduce smoking prevalence in a high-risk group but also risks widening health inequalities.
- Rolling out gold standard treatment to every eligible smoker in a national lung cancer screening programme would cost an estimated £56million, and result in an additional ~30,000 long term abstinent smokers aged 55-74.

Lung cancer screening (LCS) with low dose computed tomography (LDCT) is the most effective way to reduce lung cancer mortality, allowing for earlier detection and more successful treatment outcomes. There is also evidence to suggest that LCS programmes may reduce all-cause mortality, and if those from socioeconomically disadvantaged groups are successfully engaged, an effective LCS programme could also contribute to reducing health inequalities.

The overall success of LCS programmes may be significantly influenced by smoking behaviour and attending for LCS may provide a “teachable moment”, whereby current smokers may be more receptive to advice and support to change their smoking behaviour. Smoking cessation reduces the risk of cancer at multiple sites, and risk of death from chronic obstructive pulmonary disease, heart disease and stroke. The UK national screening committee is currently considering the introduction of a national

screening programme for lung cancer following a consultation conducted in 2022. The consultation document stated that ‘smoking cessation should be an integral part of the screening programme’ but did not include any further information as to how this should be implemented or organised.

Evidence from numerous studies has shown that individuals eligible for LCS believe that the offer of stop smoking support is an acceptable part of the screening process and attendance at LCS and receipt of an abnormal scan result serve as a motivator for quit attempts and increase the chances of quitting smoking, regardless of stop smoking intervention. However, it has been clearly shown that the use of evidence-based stop smoking support increases the likelihood of a successful quit attempt by up to three times. A limited but growing evidence base as to the most efficacious and effective interventions to support smoking cessation in the LCS setting has shown limited benefit of low intensity interventions such as self-help materials, very brief advice followed by onward referral to external support services. Conversely, the provision of support on an opt-out basis, higher intensity interventions including telephone and/or face to face counselling and provision of pharmacotherapy and/or e-cigarettes have all shown high acceptability and promise for achieving long term smoking cessation.

The benefit of having stop smoking services co-located with the LCS programme, delivered by specialist trained smoking cessation advisors and providing immediate access to NRT and/or e-cigarettes has been demonstrated through pilot studies in Ontario, the CURE programme in Manchester and the YESS study in Yorkshire. Between 89 and 94% of eligible smokers accepted an initial consultation with a stop smoking practitioner at the time of their LCS appointment. The CURE programme then referred smokers to community-based services, with 38% of smokers attending an appointment with the community service. In comparison, the YESS study offered continued support with the same team of smoking cessation practitioners and reported 84.5% of smokers taking up ongoing cessation support, considerably higher than uptake seen in either the CURE model or TLHC programme. Quit rates were not available for smokers initiating quit attempts through the CURE programme, the YESS study reported around 1 in 5 smokers being successfully quit at 4-weeks, and nearly 1 in 3 smokers being quit at 3 and 12 months after the lung health check (the YESS study added a personalised intervention comprising the use of heart and lung images captured during the LDCT scan, highlighting areas of coronary artery calcification and emphysema, as part of the smoking cessation intervention delivered at the 4-week follow up, in a randomized controlled trial; there was no significant difference between study arms).

Table 1: summary outcomes for the Targeted Lung Health Check programme, the CURE model within the Manchester TLCH site and the YESS study model.

	TLHC Programme (%)	CURE (%)	YESS (%)
Offered VBA/cessation support	54	100	100
Accept onsite support		94	89
Accept ongoing LHC team cessation support	-	-	84.5
Accept onward referral	36	44	-
Attend onward referral	11	38	-
4 week quit rate – all smokers	^	^	15*
4 week quit rates – accepting support	^	^	20.1*

*self-report ^ data not available

The England Targeted Lung Health Check (TLHC) programme was announced in 2019, initially piloted in 23 areas of England with high rates of lung cancer mortality and increasing to 43 from 2022. The programme invites individuals at or above a pre-defined risk threshold for lung cancer to undergo an LDCT scan. The protocol for the programme states that stop smoking advice should be provided, face to face where participants attend; enhanced interventions including pharmacotherapy are encouraged and there should be sufficient capacity and infrastructure for delivery. However, there is no standard specified approach or details about how smoking cessation provision will be funded. A recent evaluation of the TLHC programme, undertaken by NHS England, found that only around half of current smokers (54%) reported receiving advice on quitting or reducing smoking (usually taking the form of very brief advice, with or without referral to support services), with 82% reporting that they found this advice helpful. Over the evaluation period, a total of 12,266 participants were recorded as being offered a smoking cessation course, of which 36% accepted the offer and 11% completed the course (though noting that there are issues with data collection and reporting). Despite the guidance regarding smoking cessation, delivery remains at the discretion of individual sites and varied from zero provision to an initial onsite appointment with provision of stop smoking aids followed by referral to community services. Almost all site leads indicated that they would like dedicated capacity in the service to offer full smoking cessation support or offer an initial cessation consultation with provision of quit aids followed by referral to a local service. Project leads requested dedicated funding for smoking cessation delivery as part of the TLHC programme and training for LHC nurses/others involved in supporting smoking cessation.

Adding to the TLHC experience, reflections from the Manchester LHC site and the YESS smoking cessation practitioners provide useful insight for consideration on how future service delivery could be most efficacious. The integration of smoking cessation as part of the lung health check and convenience provided through co-located services and immediate provision of quit aides, including e-cigarettes, combined with an opt out approach capturing as many smokers as possible were considered key opportunities for maximum impact. Recognising that those continued smokers are likely resistant to quitting, have long and complex smoking histories and require specialist support is also key in ensuring that these smokers get effective support.

Onward referral to community service was viewed as a hindering factor due to the large drop off in uptake seen via this route. Given the move from the NHS to local authority responsibility for smoking cessation services in 2013 and cuts to public health budgets and smoking cessation services in recent years there remain numerous unanswered questions about how such a model could work in practice. Indeed, some areas of the current TLHC pilot programme reported having no community service to refer on to, with reports of lengthy waiting list to access cessation services in other parts of the country. Consideration must be given to how the smoking cessation response can be scaled if the TLHC is further expanded to ensure consistency between localities and not widening inequalities through disparities in access to support.

Although studies concerning cost effectiveness vary in their assumptions, populations, payer perspectives and specific smoking interventions, they all find that smoking cessation services linked with lung screening programmes are extremely likely to be cost-effective at their respective willingness-to-pay thresholds. Many of the studies found the cost per QALY of screening programmes was at least halved by adding a smoking cessation component. The costs of providing a cessation intervention to

those eligible were largely offset by reducing the costs of screening and lower cancer treatment costs for fewer lung cancer treatments. Initial analyses of the YESS co-located model have estimated a cost per participant of £124. Modelling by researchers at UCL has estimated that offering cessation support alongside lung cancer screening to smokers meeting risk criteria would result in an additional ~30k long term abstinent smokers aged 55 to 74. This would reduce smoking prevalence to 10.6% from 10.8% in this age group. This is a 0.24 percentage point reduction (or 2.23% relative reduction) in smoking prevalence. If the anticipated uptake of screening were higher (modelled as 51% responding to the invite and 87% of these attending screening) this would lead to a substantially greater number of abstinent smokers

There is little doubt that the TLHC programme, and the potential introduction of a national LCS screening programme, heralds an unprecedented opportunity to provide effective stop smoking support to a population at high risk of smoking related morbidity and mortality. Carefully considered decisions and plans must be made to ensure that this opportunity is not missed.