Lung Health Check Operational Pilot for Wales

Executive Summary

Evaluation Report 2

March 2025

GIG CYMRU NHS WALES

Gwiriad Iechyd yr Ysgyfaint
Bwrdd Iechyd Prifysgol
Cwm Taf Morgannwg
University Health Board
Lung Health Check

GIG CYMRU NHS WALES

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Executive Summary

Background

1. Targeted low-dose CT (LDCT) screening for lung cancer has been recommended for implementation by the UK National Screening Committee. Lung cancer screening reduces lung cancer mortality by around 20% by finding lung cancer at an earlier stage.
2. Plans for the Wales Lung Health Check (LHC) Operational Pilot (OP) developed following scoping work by the National Strategic Clinical Network for Cancer.

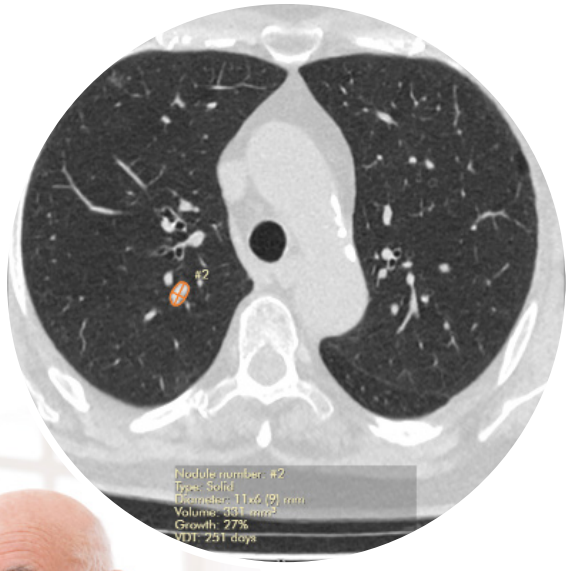
   The aims of the OP were to:

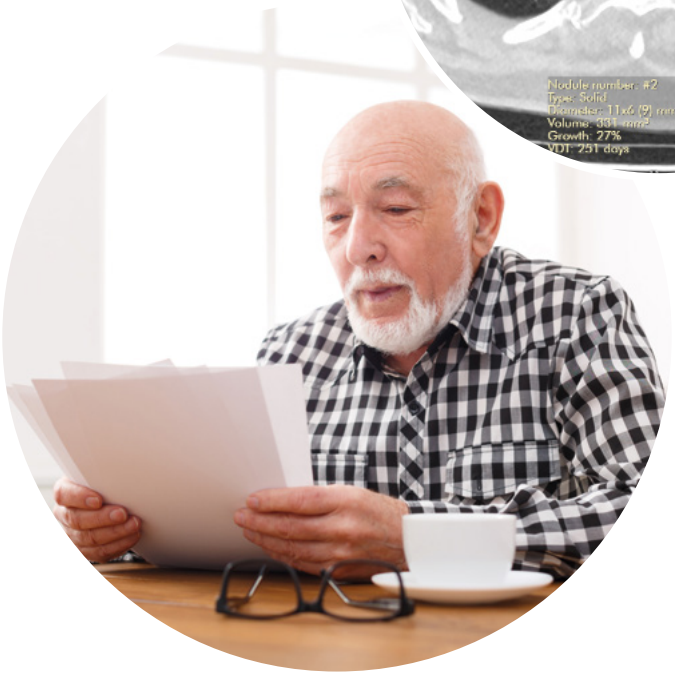
   a. Provide immediate health benefits to the pilot cohort

   b. Provide advance learning and modelling to support and de-risk the rollout of a future programme in Wales

   c. Develop a core team who would gain experience to be used as the nucleus for a future national rollout

3. This report, Evaluation Report 2, complements Evaluation Report 1 which previously reported on the inception, planning, delivery and results of the OP up to the point of completion of baseline and 3-month recall LDCT scans. This final report covers the remaining clinical activity of the OP and final screening results; integration of smoking cessation pathways; and participants' and healthcare professionals' experience of the OP.





Delivery

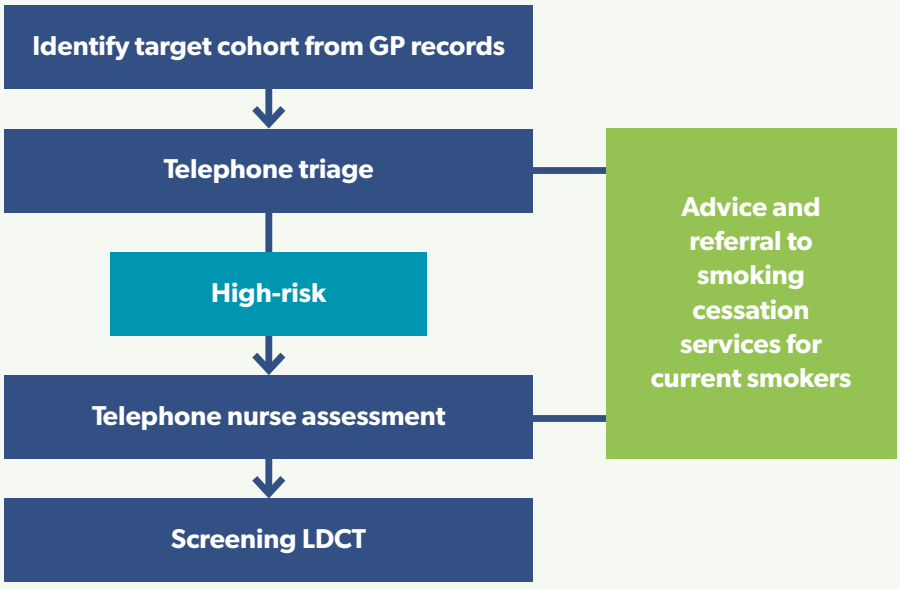
4. The OP was delivered by Cwm Taf Morgannwg (CTM) University Health Board with support from the National Strategic Clinical Network for Cancer, and funding from Industry and Third Sector groups.

5. The OP invited people from selected GP practices in North Rhondda aged 60-74 years who had ever smoked for a LHC. The LHC included an opt-out telephone triage appointment to determine the participant's personalised risk of developing lung cancer using standardised multivariable risk assessment tools. Those at high risk were offered a telephone nurse assessment followed by a screening LDCT scan. Current smokers were offered advice and opt-out referral to local smoking cessation services.

6. The OP formally commenced in August 2023 and completed in early 2025. LDCT screening scans were performed using a mobile CT scanner located at Ysbyty Cwm Rhondda. LDCT scans were reported by thoracic radiologists from across Wales supported by computer-aided detection lung nodule software.

7. All screening scans with potentially-actionable findings were discussed at a weekly Screening Review Meeting. Participants with suspected lung cancer underwent further investigation via the Single Cancer Pathway at the Royal Glamorgan Hospital lung cancer service. Participants with small lung nodules requiring surveillance were recalled for a further scan three and/or twelve months after their baseline scan.

Lung Health Check Pathway

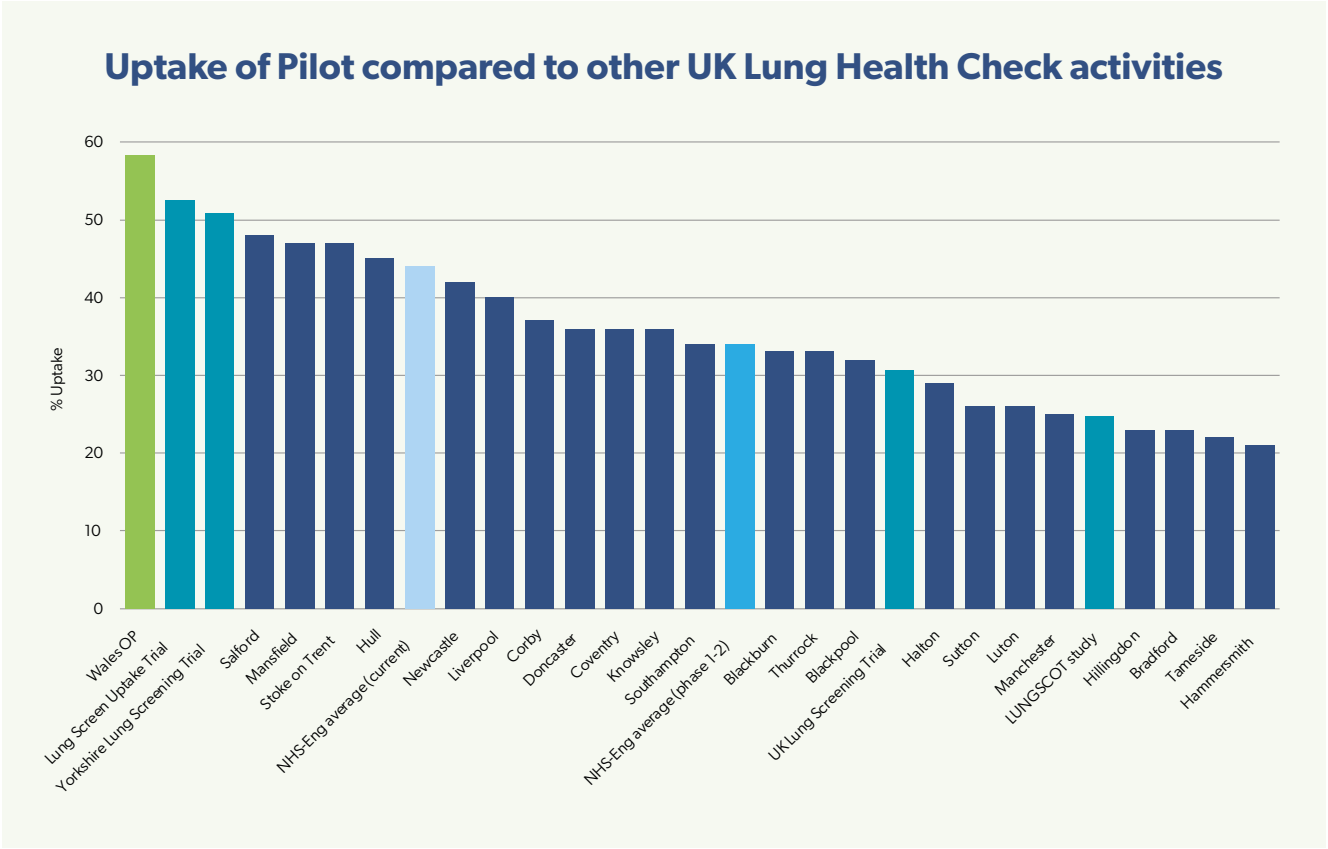


Clinical activity

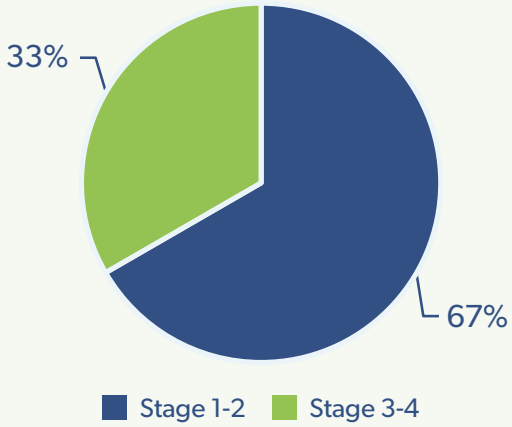
8. As previously reported, of those invited 1241/2128 (58.3%) completed a risk assessment at Telephone Triage. This compares favourably to other reported lung cancer screening/LHC activities elsewhere.

9. Of those referred for a baseline LDCT scan, 547/608 (90.0%) underwent this. Recall scans 3- and/or 12-months after a baseline scan were indicated for 17.6% of participants. In total, the OP delivered 690 LDCT scans to its main cohort.

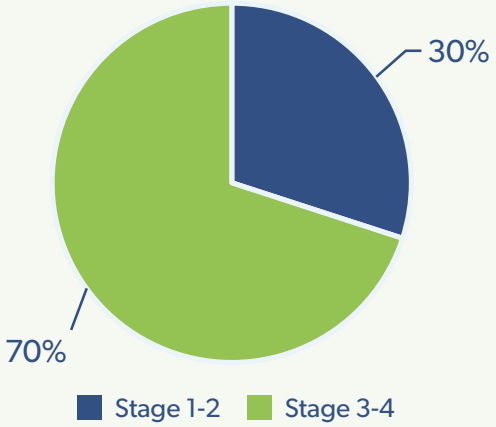
10. Thirteen participants underwent further investigation for suspected lung cancer (13/547, 2.4%), with twelve participants subsequently being diagnosed with lung cancer (12/547, 2.2%). Of the lung cancers diagnosed through the OP, 66.7% were diagnosed at an early stage (stage 1-2), 66.7% underwent surgical resection as the primary treatment modality, and 83.3% received treatment with radical (curative) intent. The proportion of lung cancers diagnosed at an early stage and undergoing radical treatment was substantially higher than for lung cancers diagnosed through usual care in Wales.



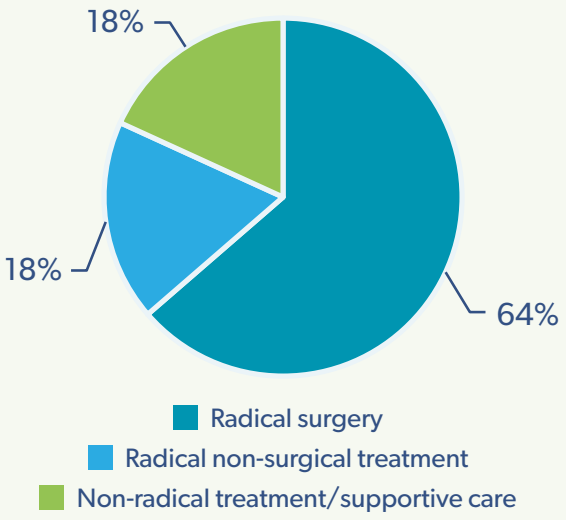
Stage of lung cancers diagnosed through the OP



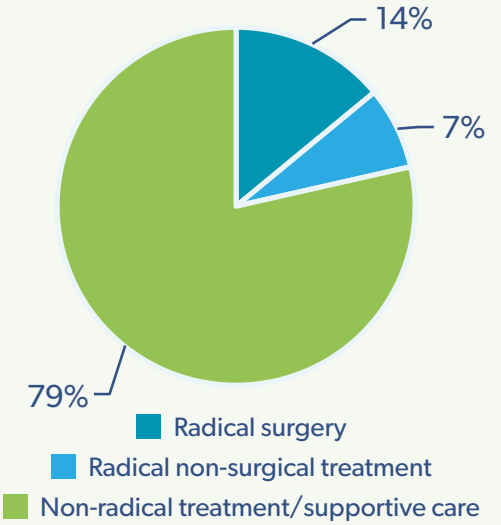
Stage of lung cancers diagnosed through usual care in Wales



Treatment intent/primary treatment modality of non-small cell lung cancers diagnosed though the OP



Treatment intent/primary treatment modality of non-small cell lung cancers diagnosed through usual care in Wales



11. One participant underwent investigation for suspected lung cancer and was not subsequently diagnosed with lung cancer (1/547, false positive rate: 0.2% of those scanned). No participants underwent invasive tests or surgical resection for benign disease.

12. The rate of actionable incidental findings was 7.3 per 100 baseline LDCT scans. The rate of actionable incidental findings for recall scans was substantially lower at 2.1 per 100 recall scans.

13. Attendance at 12-month recall scans was initially low, but improved following targeted intervention by the LHC Navigator.

14. Participants who had been found to be at high risk of lung cancer but had not undergone a baseline LDCT scan during the initial scanning period were offered an additional opportunity to complete their pathway. This increased the percentage of eligible participants who underwent a baseline LDCT scan from 75% to 83%.

Smoking cessation

15. Smoking cessation interventions were integrated into the OP's pathway, including advice and opt-out referral to the local NHS Wales Help Me Quit (HMQ) service for current smokers.

16. Of participants who completed a telephone triage appointment, 341/1241 (27.5%) were current smokers. Of these, 85/341 (24.9%) accepted referral to the HMQ service.

17. The integrated smoking cessation pathway proved complex to deliver: almost one-third of participants who agreed to referral did so through a route in the LHC pathway that was not the main intended pathway. This highlights the need for multiple entry points to smoking cessation services in order to maximise benefits.

18. Logistical challenges were encountered during a period when co-delivery of smoking cessation interventions was attempted alongside LDCT scanning. These included being unable to site smoking cessation counsellors close to the CT scanner; participants allowing time for their attendance for a scan only; and variable attendance at CT scan appointments by current smokers.

19. Participation in the OP appeared to have beneficial effects on smoking cessation beyond those captured through HMQ referral: participation in the LHC programme was stated as a trigger for successful quit attempts by many participants who chose to do so without additional support.

Participant experience

20. Feedback was sought from participants through an online survey. Feedback was universally positive, with 100% of respondents rating their overall experience of the OP as "Very good" (85%) or "Good" (15%), and 100% stating they would Strongly Encourage (79%) or Encourage (21%) a family member or friend to attend.

21. Respondents reported that they received "Just the right amount" of information with their invitation to the service (100%), that they felt comfortable having their appointment on the telephone (97.2% Strongly Agreed or Agreed), and that they were given clear guidance on next steps through the process.

22. Quotes from the feedback received included:

"I found everything about the service very good from the first telephone call to receiving the results."

"I'm so glad I went for this appointment. It has highlighted health problems I didn't realise I had. It's a must for anyone who gets the chance."

23. Two participants who were diagnosed and treated for lung cancers found through the OP discussed their experiences with the CTM Communications Team and agreed for their stories to be shared.

24. A selection of invitees who did not participate in the OP were contacted to explore reasons for this. Reported reasons for not participating were varied, including a lack of interest or active choice not to participate; poor health or functional status precluding participation; and competing priorities such as work or family.

Healthcare professional experience

25. The Clinical Lead and Radiologist Lead for the OP had numerous key responsibilities that would need to be replicated at national and/or local level in a future roll-out.

26. The LHC Clinical Team's responsibilities centred around a weekly Screening Review Meeting, with key tasks including preparing, delivering, and undertaking actions generated from the meeting.

27. The Clinical Team consisted of a Specialty Doctor, a Specialist Nurse and a Navigator. The team reported good job satisfaction and felt that the skills mix of a varied workforce was advantageous. There was a substantial volume of work that did not require a qualified doctor or nurse which was undertaken by the LHC Navigator.

28. Thoracic radiologists who contributed to LDCT reporting in the OP found the use of Artificial Intelligence Nodule Detection software, a lung cancer screening-specific reporting template, and protocols and support networks to inform their reporting, to all have been valuable features of the OP that should be replicated in a national programme.

29. Primary care was supportive of the OP and recognised benefits in their patients who had participated through earlier detection of lung cancer and smoking cessation. An increase in demand for appointments to discuss risk modification due to the incidental finding of coronary artery calcification was noted, and requires consideration during planning for a wider roll-out.

30. Due to the limited scale of the OP, downstream lung cancer diagnostic services were able to absorb the workload related to screen-detected lung cancers. Incidental findings requiring secondary care resulted in referrals to a wide range of specialties, but the number of referrals to any one service was usually small. The biggest impact was on echocardiography for the finding of aortic valve calcification. Prior engagement with the Cardiology service was noted to have been important: to gain "buy-in" of support for the OP and to agree the local pathway for this finding.

Conclusions

31. The stated aims of the OP have been successfully delivered:

a. Providing immediate health benefits to the pilot cohort

Lung cancers detected through the OP were more likely to undergo treatment with radical (curative) intent than lung cancers diagnosed through usual care in Wales. Participants also benefited from smoking cessation support, and targeted actions for clinically significant incidental findings. Protocols used in the OP ensured that potential harms to participants were minimised.

b. Providing advance learning and modelling to support and de-risk the roll-out of a future programme in Wales

The planning and delivery of the OP has provided an exceptional level of insight into the complexities and challenges of delivering lung cancer screening. The successful delivery of the OP has demonstrated that such challenges can be overcome through careful planning, leadership and collaboration.

c. Development of a core team to gain experience and be used as the nucleus for a future national roll-out

Members of the clinical and non-clinical teams who planned and delivered the OP are contributing to work underway by Public Health Wales to plan implementation of a national lung cancer screening programme in Wales.

32. The LHC OP has provided assurance that:

i. Lung cancer screening can be delivered effectively within the Welsh healthcare system

ii. Lung cancer screening is likely to yield benefits similar to those seen in studies, pilots and programmes elsewhere

iii. A lung cancer screening programme would significantly improve lung cancer outcomes compared to current care in Wales