



Supporting resource

Pathways for IPN management programmes

Even in health systems with limited resources or capacity, incidental pulmonary nodule (IPN) management programmes are capable of detecting lung cancer earlier as long as they have three core components – finding, tracking and managing – that ensure identified nodules are followed up effectively.¹

This diagram outlines these components and some of the most common approaches to implementing them. It is not an exhaustive list. Use it with the **framework to support the implementation of IPN management programmes** to identify the best way to find, track and manage IPNs in your health system.

Finding

Finding is about how lung nodules are detected on imaging, and how people are inducted into the IPN management programme.² This includes assessing each nodule's risk to determine whether it requires management in the IPN programme.²

Nodule identification

Approach

Radiologists review imaging and add a standardised statement to their report to refer the person to the IPN programme for further management.³

Non-thoracic clinicians need to be aware of the IPN management programme, and how and when to refer to the programme as per guidelines.¹⁴

Notes

There is a risk that radiologists do not add the statements. To minimise missed referrals, it can be added by default to reports on imaging that captures part of the lung, so radiologists must manually deselect it.⁵

Finding

Nodule identification

Approach

Radiologists review imaging; if an incidental finding is noted, the referring clinician assesses it and refers the person to the IPN management programme.⁶

Non-thoracic clinicians need to be aware of the IPN management programme, and how and when to refer to the programme as per guidelines.^{14 7}

Approach

An AI tool does a ‘first read’ of imaging and identifies nodules that require further investigation; the person is referred to IPN management programme staff to review.²

This approach typically reduces capacity demands on health systems, as it does not require a radiologist to review all imaging, and potentially malignant nodules are prioritised for review.¹⁸

AI tools could be embedded into a health system’s electronic medical records to work continuously at a much greater pace than a human workforce.¹⁸

Approach

A natural language processing (NLP) tool reviews radiology reports for mentions of IPNs; clinicians from the IPN management programme then review these reports.⁹

Non-standardised radiology reports can be a key barrier to effective noting of incidental findings.^{5 10} NLP reduces the need for radiologists to standardise their radiology reports.

NLP tools can run continuously and independently, so radiology reports can be constantly reviewed.¹¹

Notes

The efficacy and accuracy of AI tools vary. Care should be taken to ensure that the tools’ training data are applicable to the local population, and that feedback loops are implemented so the tools are continually improving.^{12 8}

Notes

An NLP tool requires training on local radiologist reporting patterns to effectively detect nodules in radiology reports.⁹

Finding

Risk assessment

Approach

AI software is integrated into the picture archiving and communication system (PACS); it automatically measures nodules and assesses them for risk using embedded nodule management guidelines. These outputs are then reviewed by radiologists/radiographers.⁸

Integrated software can help streamline care and reduce workforce capacity demands. It assesses all nodules volumetrically, as recommended in some IPN management guidelines.^{6,8}

Notes

The efficacy and accuracy of AI tools vary. Care should be taken to ensure that the tools' training data are applicable to the local population, and that feedback loops are implemented so the tools are continually improving.^{12,8}

Approach

Healthcare staff from the IPN management programme manually measure and assess referred nodules.

No additional software or tools are required for this approach, so it can be conducted in most health systems.

Notes

Manual measurement is time-consuming and may result in nodules not being measured volumetrically, even though this is recommended in some IPN management guidelines.^{6,12-14}

Approach

Healthcare staff from the IPN management programme use volumetry software that is embedded into the PACS to assist them in measuring and assessing nodules.^{6,13}

This blended approach partially automates the process while maintaining a high level of workforce oversight to ensure accuracy and reduce variation in measurements.

Tracking

Tracking is about ensuring that people in IPN management programmes are not ‘lost’ while receiving follow-up care.¹²



Managing

Managing is about the follow-up care that people in your IPN management programme receive. This includes how further diagnostic investigations, and treatment for anyone diagnosed with lung cancer, are provided in your health system.^{1,2}



References

1. Lung Cancer Policy Network. 2024. *Enhancing the earlier detection of lung cancer: effective management of incidental pulmonary nodules*.
2. Newman E, Skibo S. 2024. *AI Precision Oncol* 1(1): 26–29
3. Liao W, Tye S, Goss J, *et al*. 2026. *JAMA Netw Open* 9(4): e263171–e71
4. Roberts TJ, Lennes IT, Hawari S, *et al*. 2020. *Oncologist* 25(5): 431–37
5. Schmid-Bindert G, Vogel-Claussen J, Bollmann BA, *et al*. 2025. *Respiration*: 10.1159/000549849
6. Hazel Spence. 2026. Interview [video conference]. 14/04/26
7. Carrie Fehnel. 2026. Interview [video conference]. 20/04/26
8. Purohit L, Kiamos A, Ali S, *et al*. 2025. *Cancers (Basel)* 17(7): 1143
9. Myers RL, Parker W, Bartolomeu C, *et al*. 2024. *J Thorac Oncol* 19(10): S214
10. Cai T, Giannopoulos AA, Yu S, *et al*. 2016. *Radiographics* 36(1): 176–91
11. Basilio R, Carvalho AR, Rodrigues R, *et al*. 2023. *JCO Glob Oncol* 9: e2300191
12. Callister ME, Baldwin DR, Akram AR, *et al*. 2015. *Thorax* 70 Suppl 2: ii1–ii54
13. Emma O'Dowd. 2026. Interview [video conference]. 22/04/26
14. Iain Au-Yong. 2026. Interview [video conference]. 30/04/26
15. Francisco Sarmento. 2026. Interview [video conference]. 07/05/26
16. Francisco Sarmento. 2026. Interview [video conference]. 08/10/26
17. Rosie Brasier. 2026. Interview [video conference]. 15/04/26
18. Hardavella G, Karampinis I, Anastasiou N, *et al*. 2025. *Diagnostics (Basel)* 15(9): 1162
19. Gee PO. 2024. *Kidney360* 5(2): 262–63

