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INTRODUCTION

Low-dose CT lung cancer screening is being implemented across England through regional programmes, aiming to improve early detection and access to curative-intent treatment. South Yorkshire and Bassetlaw is one of the first Cancer Alliances to achieve full regional rollout across multiple districts. We report stage distribution and treatment outcomes following full implementation of the programme.

METHODS

Programme-level data were collected from the South Yorkshire and Bassetlaw Lung Cancer Screening programme, including Doncaster, Bassetlaw, Rotherham, Barnsley and Sheffield. Variables included lung cancers detected, stage at diagnosis, treatment modality, and additional malignancies detected through the screening pathway. Outcomes were summarised descriptively.

DISCUSSION AND CONCLUSION

Key findings

- Full regional implementation of lung cancer screening across South Yorkshire and Bassetlaw was associated with a high proportion of early-stage cancer detection.
- 78.4%** of screen-detected lung cancers were diagnosed at **Stage I–II**, with **Stage I disease accounting for 67.1%**.
- The high proportion of surgical resection and radical radiotherapy/SABR supports the impact of screening on access to curative-intent treatment.

Interpretation

These findings suggest that large-scale regional lung cancer screening can deliver a favourable early-stage distribution in real-world clinical practice when linked to established diagnostic, MDT and treatment pathways.

Conclusion

Full regional rollout of lung cancer screening across a large UK Cancer Alliance resulted in high early-stage detection and a high proportion of curative-intent treatment. These data support continued implementation and evaluation of lung cancer screening programmes.

Future Direction for Research

- Future work should evaluate uptake, diagnostic pathway performance, district-level variation, treatment outcomes, and long-term survival following regional lung cancer screening implementation.

REFERENCES & ACKNOWLEDGEMENTS

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Artificial Intelligence (AI) Use Disclaimer

ChatGPT/OpenAI was used for language and formatting support only. Scientific content and final review remained author-led.

RESULTS

A total of 699 lung cancers were detected through the regional lung cancer screening programme.

Stage distribution

- Stage I disease represented **67.1%** of screen-detected cancers.
- 78.4%** of cancers were diagnosed at early stage (**Stage I–II**).
- The observed stage distribution was consistent with recent NHS England Lung Cancer Screening Programme data, with a numerically higher proportion of Stage I and Stage I–II disease in this regional cohort.
- Stage I distribution was broadly consistent across district programmes, ranging approximately from **60% to 75%**.

Treatment outcomes

- Treatment modalities are summarised in Table 2.
- The majority of patients underwent **surgical resection (62.5%)**.
- 15.7%** received radical radiotherapy or SABR.
- 11.5%** received systemic therapy.
- 7.3%** received best supportive care.

Additional findings

- The programme identified **104 additional malignancies**, including breast, urological, haematological and gastrointestinal cancers.
- Additional incidental findings required further investigation and surveillance pathways.

Table 1. Stage Distribution of Screen-Detected Lung Cancers

Stage	Number of cases	Percentage (%)
I	435	67.1%
II	79	11.3%
III	81	11.6%
IV	64	9.3%
Unknown	7	0.7%
Total	699	100%

Table 2 – Treatment modalities for Screen-Detected Lung Cancers

Treatment modality	Percentage (%)
Surgery	62.5%
Radical RT/SABR	15.7%
Systemic therapy	11.5%
Best Supportive care	7.3%
Other treatments	3.0%