CT-Guided Lung Biopsies: Assessment of Efficacy, Safety, and Service Efficiency

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Introduction

CT-guided lung biopsy is a well-established procedure for investigating pulmonary nodules.

This audit examines diagnostic adequacy, complication rates, procedural complexity, and service efficiency, comparing the results against BTS standards and a prior audit

Methods

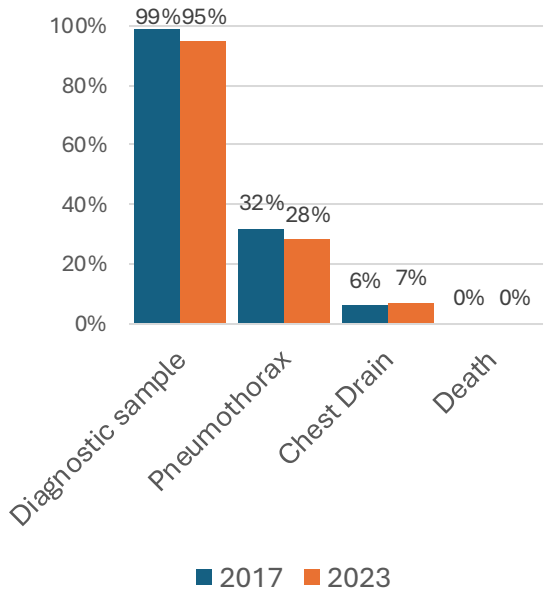
Between February 2020 and October 2023, 280 lung biopsy requests were received.

Of these, 80 were cancelled in advance, and 8 were cancelled on table. Analysis was conducted on the remaining 192 biopsies.

Further analysis on broader service data from 2018 to 2023 was conducted.

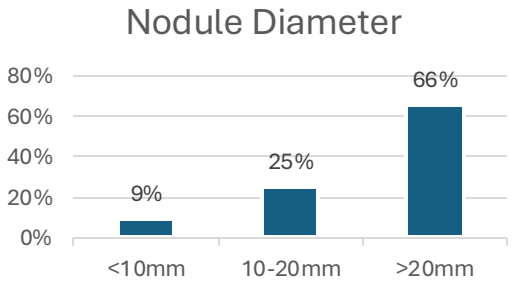
Results

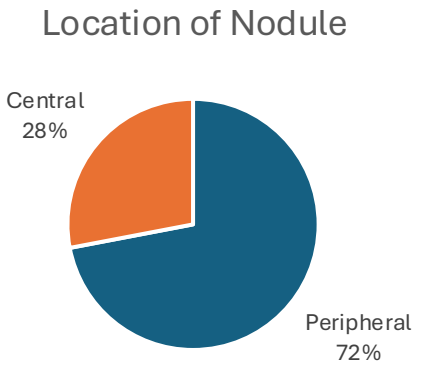
P1A	2017	2023	BTS
Diagnostic sample	99%	95%	>90%
Pneumothorax	32%	28%	<20%
Chest Drain	6%	7%	<3%
Death	0%	0%	0.1%

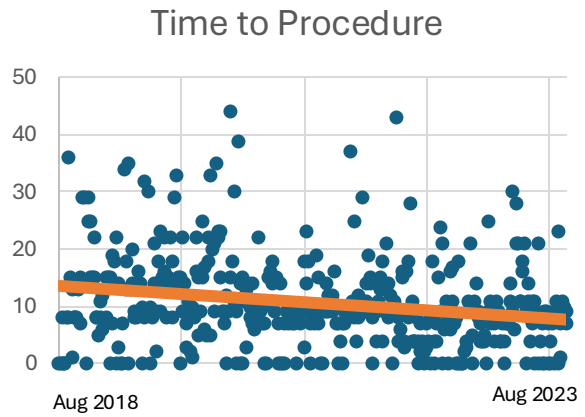


Diagnostic sample rate reduced between audits but remains within target. Despite a reduction in pneumothorax rate, there was a slight increase in chest drain rate.

Analysis of complexity factors revealed high proportion of small (<20mm) nodules (34%) and nodules located in the periphery of the lung (72%).







Between 2018 and 2023, the time from request to procedure decreased by 43%, from 14 days to 8 days

Conclusion

This audit demonstrates high diagnostic accuracy, although complication rates remain outside target likely due to the complexity of cases. Further improvements could be achieved through risk stratification strategies.

Notably, service efficiency has significantly improved over a 5 years period.