

INTRODUCTION

Backgrounds

- For lung cancer survivors, guidelines recommend chest CT surveillance every 6 or 12 months to facilitate early detection of recurrence and second primary lung cancer (SPLC), with higher frequency for advanced-stage disease (Schneider BJ; NCCN).
- Real-world adherence to surveillance guidelines and its determinants remain poorly characterized.

Aims

- Characterize longitudinal CT surveillance patterns over five sequential imaging rounds
- Evaluate patient factors and clinical outcomes associated with distinct surveillance patterns

METHODS

Data: SEER-Medicare (2007-2020)

Baseline CT

- First CT >1-year post-diagnosis to allow treatment completion

Surveillance CT

- Exams <3 months of a prior CT assumed to reflect diagnostic (vs. surveillance) and excluded
- On time (6 to <18 months)
- Delayed (18 to <24 months)
- Missed (no CT within 24 months)

Statistical Methods

- Cluster sequence analysis
- Multinomial logistic regression

DISCUSSION AND CONCLUSION

Actionable Take Away Message

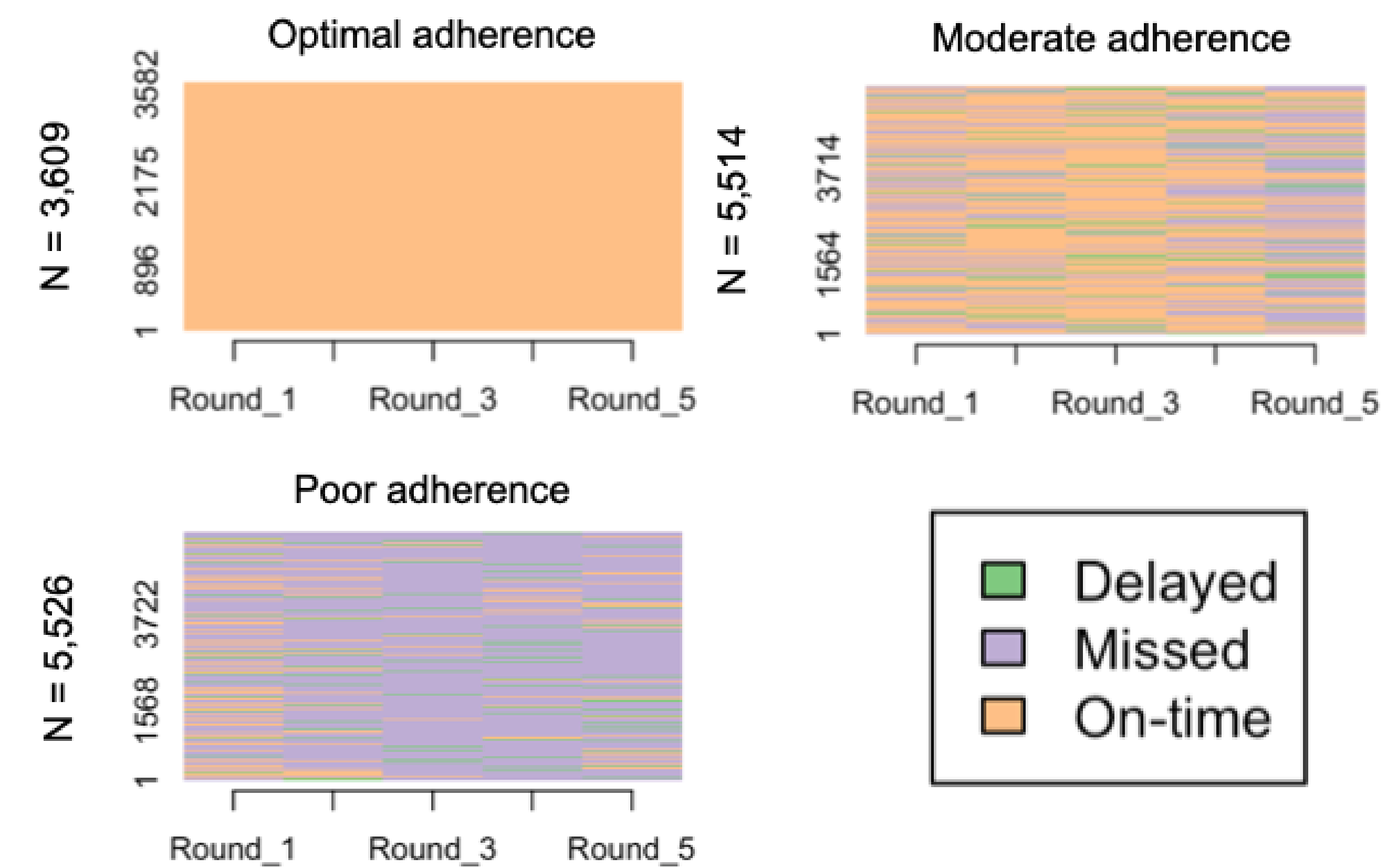
- Real-world CT surveillance is heterogeneous, with fewer than one-quarter maintaining optimal adherence.
- Older age, Western U.S. residence, and neighborhood deprivation were associated with poor adherence.
- Suboptimal surveillance was associated with lower SPLC detection and higher mortality, underscoring potential clinical consequences of non-adherence.

Future Direction for Research

- Develop and validate evidence-based surveillance guidelines
- Apply causal inference methods to evaluate whether surveillance patterns influence SPLC stage shift at detection and mortality reduction.

RESULTS

Fig 2. Five-round longitudinal CT surveillance patterns beginning 1 year after diagnosis among 5-year lung cancer survivors



- Three surveillance patterns identified
- Optimal (24.6%)
- Moderate (37.6%)
- Poor (37.7%)

Fig 2. Associations of patient features with moderate and poor surveillance patterns vs. optimal adherence in multinomial logistic regression

Variable	Moderate		p-value	Poor		p-value
	aOR	(95% CI)		aOR	(95% CI)	
Age groups						
65-69	Ref			Ref		
70-74	1.06	(0.94-1.19)	0.32	1.14	(1.01-1.28)	0.03 *
75-79	1.13	(0.98-1.29)	0.09	1.22	(1.06-1.40)	<0.01 *
80-84	1.45	(1.24-1.69)	<0.01 *	1.82	(1.53-2.17)	<0.01 *
85+	1.75	(1.33-2.30)	<0.01 *	2.44	(1.85-3.20)	<0.01 *
Geographic region						
Northeast	Ref			Ref		
Midwest	1.08	(0.93-1.27)	0.32	0.72	(0.60-0.86)	<0.01 *
South	1.13	(0.98-1.29)	0.09	0.80	(0.70-0.92)	<0.01 *
West	1.31	(1.16-1.47)	<0.01 *	1.42	(1.26-1.60)	<0.01 *
Area deprivation index tertile						
1 st (least deprived)	Ref			Ref		
2 nd	1.04	(0.93-1.17)	0.51	1.19	(1.05-1.33)	<0.01 *
3 rd (most deprived)	1.20	(1.06-1.35)	<0.01 *	1.42	(1.26-1.60)	<0.01 *
Second primary lung cancer						
No	Ref			Ref		
Yes	0.74	(0.52-1.05)	0.10	0.59	(0.40-0.88)	<0.01 *
Lung cancer death						
Alive	Ref			Ref		
Lung cancer death	1.57	(1.37-1.80)	<0.01 *	1.31	(1.14-1.50)	<0.01 *
Other cause of death	1.55	(1.38-1.75)	<0.01 *	1.57	(1.39-1.76)	<0.01 *

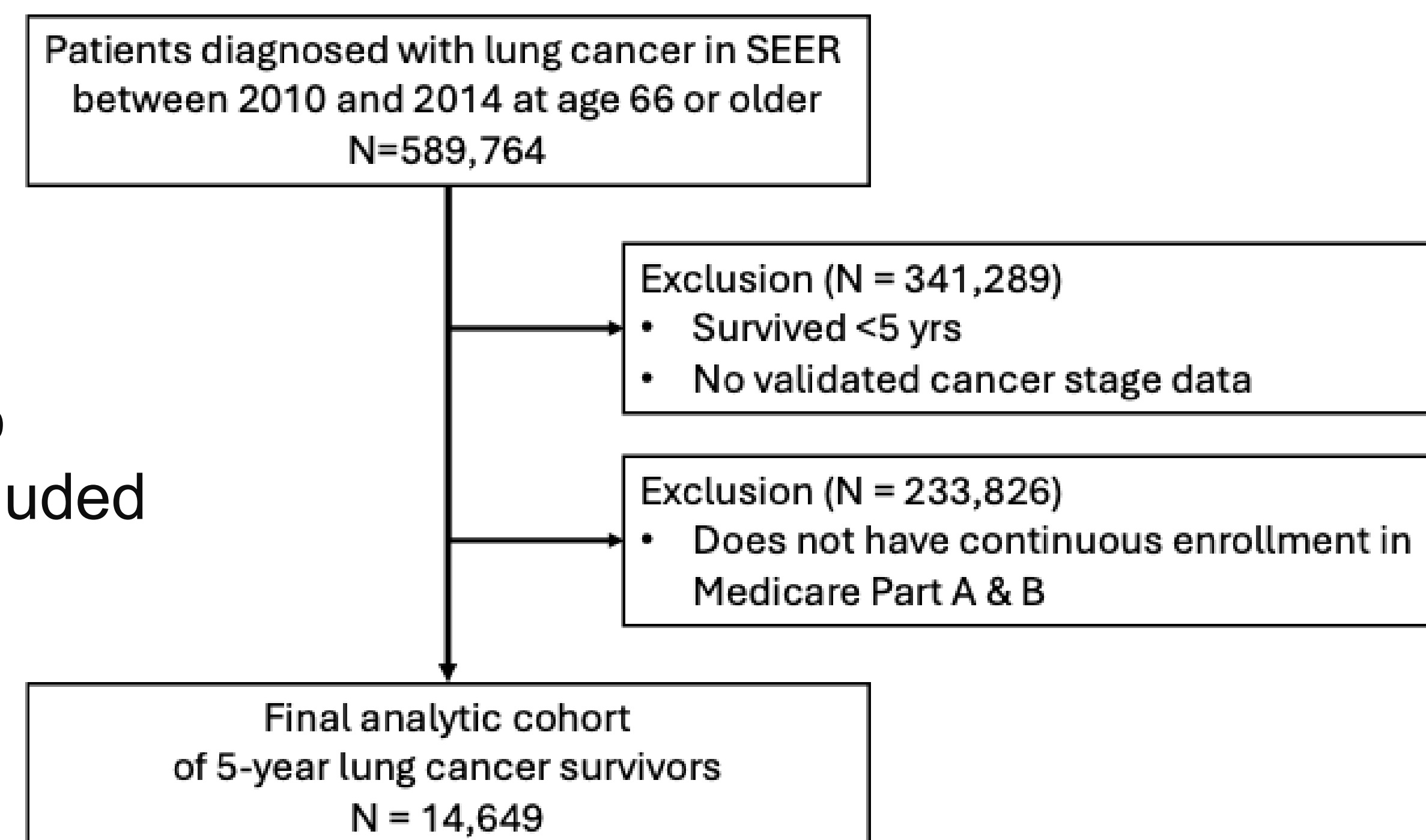


Fig 1. Flow diagram of cohort selection

REFERENCES & ACKNOWLEDGEMENTS

- Schneider BJ, Ismaila N, Aerts J, et al. Lung cancer surveillance after definitive curative-intent therapy: ASCO guideline. J Clin Oncol.2020;38(7):753-766.
- National Comprehensive Cancer Network. Treatment by Cancer Type, 2026. Accessed March 1, 2026.
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