

Lung Cancer Screening in Asia Pacific region: a scoping review for current screening policy guidelines and best practices

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1 BACKGROUND

Despite accounting for 61% of global lung cancer mortality, the uptake of low-dose computed tomography (LDCT) screening in Asia remains markedly lower than in Western countries.¹ Notably, nearly half of the cases in the region arise among never-smokers, underscoring distinct disparities in lung cancer patterns. Consequently, the identification of high-risk individuals and the implementation of targeted LDCT screening programs are essential to facilitate early-stage detection and improve survival outcomes.

OBJECTIVES

The study aimed to:

- 01 Map lung cancer policies across 16 Asia-Pacific countries;
- 02 Ascertain barriers to equitable screening;
- 03 Assess challenges along patient journey;
- 04 Identify key factors influencing lung cancer screening programs at different stages of the patient journey; and
- 05 Document best practices for LDCT screening.

2 METHODS

An assessment framework was developed to guide the data-gathering process. We conducted a comprehensive review of peer-reviewed publications, policy documents, government websites, technical reports, and gray literature to examine the landscape of lung cancer policies, including clinical guidelines, national cancer control plans, screening programs, and patient pathways.

The review further explored unmet needs and challenges throughout the patient journey and identified evidence-based best practices for lung cancer screening aimed at improving early detection and reducing mortality. Countries in scope were selected purposively to ensure representation of diverse healthcare systems and income levels.

COUNTRIES IN SCOPE



3 RESULTS

Lung cancer policies and readiness for LDCT markedly differs across the 16 countries. The key unmet needs for lung cancer care and management across countries were identified as **low awareness, overburdened health systems, late diagnosis, lack of screening programs, and weak coordination across multi-disciplinary care teams.**

The key factors influencing the uptake of lung cancer screening program were organized using Proctor et al.’s (2011)² Implementation Outcomes Framework and are illustrated in Table 1 below.

While Australia has recently launched its first National Lung Cancer Screening Program (NLCSP) on 1 July 2025, offering free LDCT to high-risk population, other countries have piloted LDCT screening programs in China, Japan, and South Korea, and smaller initiatives were observed in Hong Kong, Taiwan and Singapore. Furthermore, recognizing the high-risk among never-smokers China, Taiwan and South Korea have also developed appropriate risk-prediction models to determine lung cancer screening eligibility.

Table 1: Factors influencing the uptake of lung cancer screening program

	ACCEPTABILITY	ADOPTION	APPROPRIATENESS	COSTS	FEASIBILITY	PENETRATION	SUSTAINABILITY
BARRIERS	Patient	▪ Fear of result and its impact	▪ Low awareness of the program	▪ Concern about unnecessary radiation exposure from LDCT scan	▪ Reimbursement and financial protection	▪ Travel to the screening center	▪ Living in Remote location
		▪ Smoking related stigma and guilt	▪ Over diagnosis, false positives and incidental findings			▪ Challenges with following up with Appointments	▪ Not registered with healthcare provider or unaware
	Providers	▪ Workforce and infrastructural capacity	▪ Poor clinical awareness of current recommendations	▪ Service implementation and quality assurance	▪ Uncertain cost effectiveness	▪ Poor coordination of multidisciplinary teams	▪ Limited time and capacity for expanded access
ENABLERS		▪ Attitude towards tests	▪ Low participation and compliance				▪ Inadequate funding
		▪ Limited programs					
	ENABLERS	▪ Embed conversations in community	▪ Explain benefits to patients in appropriate format	▪ Address patient's concerns	▪ Take a holistic wellness approach towards screening	▪ Link underserved communities with multidisciplinary teams remotely	▪ Send reminders to attend scheduled appointments
		▪ Provide decisions aids to refer to after pre-screening appointments	▪ Run targeted awareness initiatives to reach communities	▪ Engage and co-design campaign with faith leaders and community health workers	▪ Link with other screening programs	▪ Offer mobile screening in public spaces	▪ Channelize message dissemination through trusted channels
				▪ Assess cost effectiveness and appropriately allocate budget to build infrastructure capacity			

Case Study: Taiwan - The Taiwan Lung Cancer Screening for Never Smoker Trial (TALENT)³

Prioritized risk factors beyond smoking to identify target population for lung screening

Value of the Screening Program

- Taiwan’s TALENT trial demonstrated the effectiveness of LDCT screening in a high-risk population of never-smokers
- Designed to **inform screening strategy in never- smokers** and **establish a risk prediction model** to identify individuals most likely to benefit from a national LDCT program
- Between 2015 and 2019, TALENT recruited 12,011 participants aged 55–75
- 96.5% of cases were detected at early stages of 0 and I**
- Taiwan pioneered family history-based eligibility for lung cancer screening
- National LDCT program launched in July 2022, covers heavy smokers and never-smokers with a family history of lung cancer

Key take aways

Better outcomes in lung cancer start with a screening approach that is patient-centred, risk-informed, and enhanced by biomarker-driven insights.

- 1 Lung cancer screening criteria often miss a significant proportion of cases, particularly among light smokers and never-smokers.
- 2 Integrating risk prediction models with biomarker testing has the potential to improve patient selection and enhance screening eligibility criteria.
- 3 A patient-centred approach is essential , with program design focused on patient needs, accessibility, and outcomes.
- 4 Biomarker testing can improve screening precision in high-risk populations by reducing false-positive findings and unnecessary follow-up investigations.
- 5 In lower-risk populations, biomarkers can identify individuals who can benefit from screening , enabling a more targeted, personalized, and equitable screening strategy.
- 6 Strategic Stakeholder engagement is critical for adopting national screening program.

4 CONCLUSION AND IMPLICATIONS

Across the Asia–Pacific region, policies and readiness for LDCT screening vary considerably. Nonetheless, many countries have introduced or piloted LDCT programs. To implement LDCT screening, five factors listed in Figure 1 that align evidence, economics and evidence are pivotal and have proven to be effective in most settings.

Figure 1: Five Critical Enablers of LDCT Program Adoption



REFERENCES

1. Chao Li et al. Global burden and trends of lung cancer incidence and mortality – 2023; 2. Proctor E et al. Outcomes for implementation research – 2011; 3. Yang et al. National Lung Cancer Screening Program in Taiwan: The TALENT Study – 2021