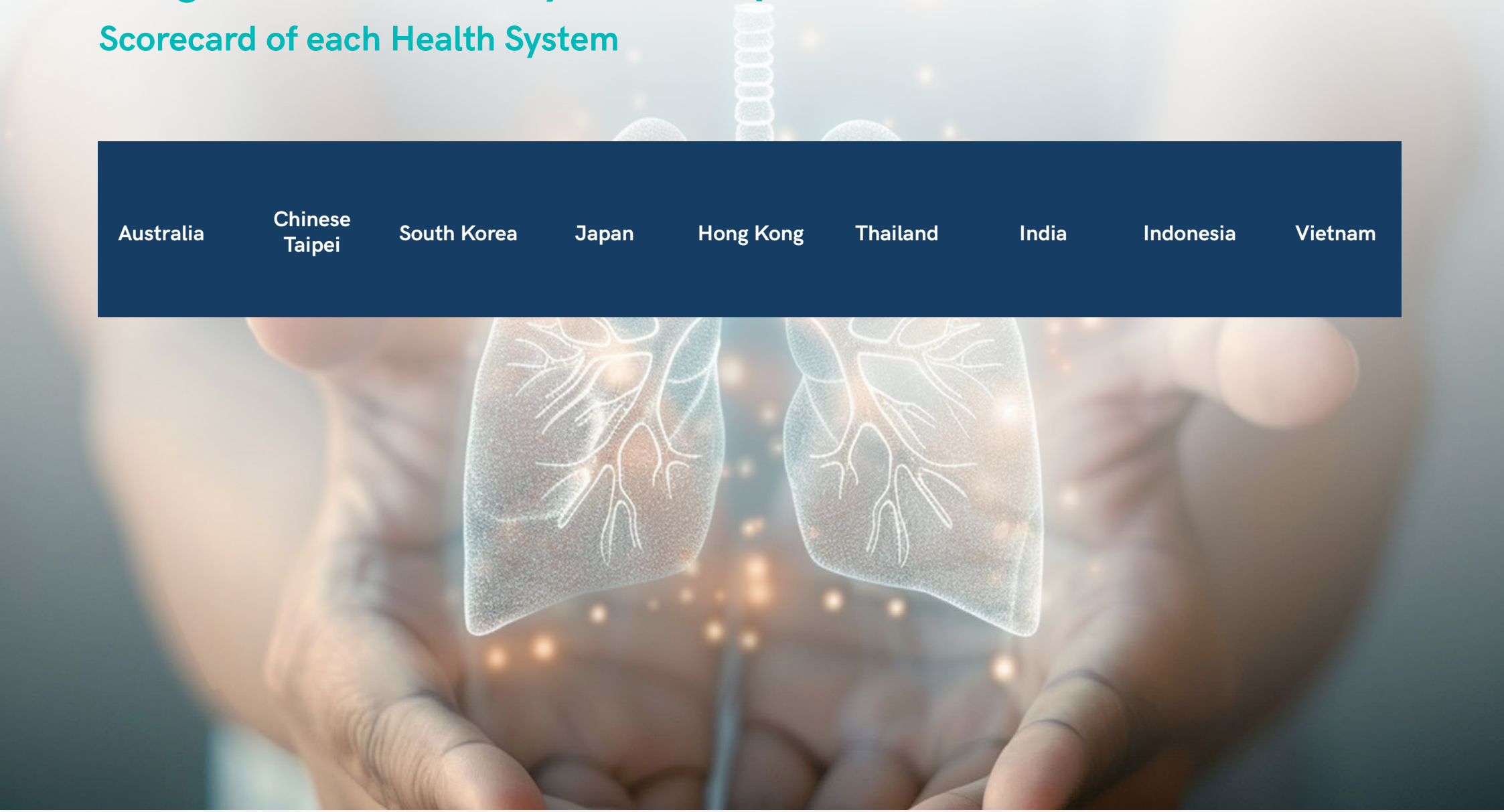
Lung Cancer Health System Snapshot

Scorecard of each Health System

Australia	Chinese Taipei	South Korea	Japan	Hong Kong	Thailand	India	Indonesia	Vietnam



Lung Cancer Health System Snapshot

Scorecard of Australia

Australia

1. Lung Cancer Health System Snapshot – Australia Scorecard Results and Future Opportunities

Domain	Indicator		Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	2	+2	• The Australian Cancer Plan 2023–2033 is a comprehensive national strategy designed to address cancer prevention, early detection, treatment, and survivorship over the next decade. • The plan serves as a blueprint for enhancing cancer services and addressing disparities in care across the health system.
	2	Currency of national cancer control plan	0 – 2	2	+2	• The latest iteration of the plan spans the period from 2023 to 2033.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+6	• The Plan covers the entire cancer care continuum by integrating Optimised Care Pathways (OCPs) across seven key steps: prevention and early detection, diagnosis, treatment, survivorship, end-of-life care, and supportive care. • Each stage provides best practice recommendations, with specific actions outlined for the next 2 and 5 years.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	1		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	1		
	9	Inclusion of an implementation plan for cancer control	0 – 2	2	+2	• A detailed implementation plan is included in the NCCP, outlining specific 2- and 5-year actions for each of the six Strategic Objectives. • It also identifies the responsible stakeholders and funding sources for each action.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	1	+1	• The Plan identifies six Strategic Objectives that require national focus and effort to improve cancer experiences and outcomes over the next decade and beyond. • Each objective includes a 10-year ambition, 2- and 5-year goals, along with priority actions to help achieve these targets.
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	2	+2	• Each priority action under the Strategic Objectives includes details on funding sources and budget allocations. • The plan is funded by the Australian government, with specific funding sources identified for each action.
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	3	+7	• A National Strategic Action Plan for Lung Conditions was published in February 2019, along with a supporting document, focusing on eight priority areas, including lung cancer. • However, there is no evidence to suggest that the plan has been funded or implemented.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	1		• The National Strategic Action Plan for Lung Conditions outlines a person-centred approach to addressing lung conditions in Australia, including lung cancer. • Its core priorities focus on prevention and risk reduction, as well as raising awareness and reducing stigma.
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	0		• The National Strategic Action Plan for Lung Conditions does not highlight the specific, measurable outcome/ targets within a specific timeframe.
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	2		• The Lung Cancer Evaluation and Policy Programme (LEAP) provides a protocol for modelled evaluations aimed at maximising the long-term health and economic benefits of lung cancer interventions in Australia.
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	1		• While a budget breakdown has not been formally released, a press statement from May 2023 announced that the Federal Minister for Health and Aged Care allocated $263.8 million in government funding to begin implementing a National Lung Cancer Screening Programme in Australia.
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				22		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	2	+2	• The Medical Services Advisory Committee (MSAC), an independent non-statutory committee responsible for evaluating medical services for funding, provided its advice

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						• to the Minister for Health and Aged Care in late 2022 regarding the implementation of a National Lung Cancer Screening Programme. • MSAC supported the establishment of a biennial screening programme for asymptomatic individuals at high risk for lung cancer. Specifically, MSAC recommended screening for individuals aged 50 to 70 with a smoking history of at least 30 pack-years, including current smokers and those who quit within the last 10 years.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	1	+1	• There have been no lung cancer control initiatives in the past two years. • However, the National Lung Cancer Screening Programme, set to begin by July 2025, marks the first new national cancer screening programme in nearly 20 years, aiming to enable early detection and save lives.
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	14	+2	• Australia has national objectives and a dedicated agency (Department of Health and Aged Care) responsible for tobacco control.
					+2	• Tobacco advertising is banned on national TV and radio. The Tobacco Advertising Prohibition Act 1992 restricts all forms of tobacco promotion, and state laws limit sponsorships, point-of-sale advertising, and retail display.
					+2	• Tobacco excise duties are adjusted biannually, increasing in March and September, based on average weekly earnings.
					+1	• It is illegal to sell or supply tobacco products to individuals under 18 years of age.
					+2	• Tobacco products must carry health warnings and are required to be sold in plain packaging without branding to reduce their appeal
					+2	• Enforcement policies exist for tobacco control, with smoking bans in place across enclosed licensed premises in most states • Over 90% of smokers reported compliance following these bans.
					+3	• Australia is a party to the WHO Framework Convention on Tobacco Control. • The 2023-24 Budget includes $737 million for tobacco and vaping harm reduction measures, complementing new national tobacco control legislation announced in 2022. • The government collaborates with domestic and international stakeholders to develop tobacco control policies.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	3	+1	• The Australian Government is investing $63.4 million in the "Give Up For Good" campaign, which uses four creative approaches to raise awareness about the harms of smoking and vaping while encouraging Australians to access expanded quit support services.
					+1	• The Queensland government offers a 12-week nicotine replacement therapy programme with weekly telephone counselling for smokers, targeting vulnerable groups in regional areas.
					+1	• Since 1997, the national Quitline has been promoted through the National Tobacco Campaign, leading to a significant increase in calls for cessation support.
					0	• In 2019, cold turkey was the most popular quitting method among Australian smokers (35%), followed by nicotine replacement therapy (NRT) (23%), doctor assistance (14%), e-cigarettes (12%), cessation medications (10%), mobile apps (9%), and Quitline (3%). • A study of 201 participants showed NRT was the most commonly used cessation method, with a 30.6% quit rate, while varenicline had a 47.5% quit rate, and bupropion had a 23.5% quit rate.
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	3	+1	• Smoking is illegal in enclosed public spaces across all Australian states and territories, including on public transport, in office buildings, shopping malls, schools, cinemas, and airports.
					+1	• State laws prohibit smoking in certain outdoor areas, such as al fresco dining areas, children's playgrounds, and beaches. • In areas without state bans, local governments have implemented smoking restrictions in various council-controlled outdoor spaces.
					+1	• Public education campaigns and anti-smoking television advertisements are regularly aired in Australia to discourage smoking.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	5	+1	• The Australian Radon Action Plan (2021-2025) addresses strategies for managing radon exposure in Australia.
					+1	• The National Clean Air Agreement is the key legislation for managing air pollution in Australia, with strategies tailored to specific geographic location.
					+1	• Government initiatives include investments in clean energy projects, promoting cleaner transport options, and developing a National Energy Workforce strategy.
					+2	• Australia has established product emissions standards to prevent high-emitting products from entering the territory and to reduce air pollutants. • The government has adopted the Australian Design Rule 80/04, mandating Euro VI standards for heavy vehicles from November 2024 (for new models) and November 2025 (for existing models), to reduce harmful emissions in the transport sector.
					0	• A campaign, supported by healthcare organisations, aims to restrict fossil fuel advertising, likening it to tobacco ads due to the significant health risks of air pollution.

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						• However, no major public health campaigns have been launched by the government to inform Australians about the hazards of air pollution and protective measures.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• Legislation exists covering workplace safety and health in Australia.
					+1	• Persons conducting a business or undertaking (PCBU), employers, and company directors are responsible for managing work health and safety (WHS) risks through a step-by-step process: identifying hazards, assessing risks, controlling risks, and reviewing control measures.
					+1	• Workers exposed to hazardous chemicals, lead, or asbestos are required to undergo health monitoring.
					+1	• Comcare provides education and training on the Work Health and Safety Act 2011 (WHS Act) and the Safety Rehabilitation and Compensation Act 1988 (SRC Act).
	8	E-cigarettes regulation	0 – 4	4	+1	• The government has announced reforms to progressively ban non-therapeutic vapes in Australia. • After January 1 and March 1, 2024, only therapeutic vapes sold in pharmacies that meet enhanced product standards will be legal. • Tobacconists, vape shops, and convenience stores will no longer be allowed to supply any type of vape.
					+1	• E-cigarettes are banned in areas where smoking is prohibited, cannot be displayed at retail outlets, and cannot be sold to people under 18, alongside other restrictions.
					+1	• The same advertising and sponsorship bans that apply to tobacco products also apply to vapes.
					+1	• E-cigarettes are banned in smoke-free areas under the Smoke-free Environment Act 2000. • These areas include enclosed public spaces and specific outdoor public areas like playgrounds, public swimming pools, sports venues, public transport stops, and within 4 meters of building access points. • Additionally, e-cigarettes cannot be used in cars with children under 16.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	1	+1	• As the leading independent cancer control organisation, Cancer Council Australia represents its stakeholders to the government and Parliament, making submissions on various national issues. • Recognised as the peak body for lung conditions by the Department of Health, Lung Foundation Australia collaborates with corporate and community partners to fulfil its mission of improving lung health in Australia.
Contribution of patient organisations and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	2	+2	• Lung Foundation Australia, which supports people with lung diseases, collaborated with the Australian Government Department of Health to develop the first National Strategic Action Plan for Lung Conditions. • While primarily a clinician-based research group, Thoracic Oncology Group of Australasia (TOGA) also engages in advocacy efforts.
	11	Existence of civil society	0 – 3	3	+3	• Lung Foundation Australia is a national organisation providing support for people with lung diseases and collaborating on lung health initiatives. • Clinical Oncology Society of Australia (COSA) Lung Cancer Support Group is a group within COSA dedicated to supporting individuals affected by lung cancer. • Cancer Council Australia (CCA) is the leading independent cancer control organisation, advocating for cancer prevention, treatment, and support across Australia.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	2	+2	• Civil society has the opportunity to provide input and comment on Health Technology Assessment (HTA) recommendations. • For example, Lung Foundation Australia and Cancer Council Australia regularly provide submissions and feedback on HTA processes, including input on the listing of new treatments and technologies on the Pharmaceutical Benefits Scheme (PBS) or Medical Benefits Schedule (MBS).
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	1	+1	• In Australia, Lung Foundation Australia is a key lung cancer-specific patient organisation that contributes to clinical guideline development. • Additionally, the Cancer Council Australia and the COSA Lung Cancer Support Group also play significant roles in supporting lung cancer patients and influencing clinical guidelines.
	14	Patient organisation participation in cancer control plan development	0 – 1	1	+1	• As the leading independent cancer control organisation in the nation, Cancer Council Australia represents its stakeholders to the Australian Government and Parliament. • The organisation regularly makes submissions to the government and parliamentary inquiries on various national health issues, particularly those related to cancer prevention, treatment, and support.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	1	+1	In Australia, several civil society organisations actively contribute to Health Technology Assessment (HTA) recommendations. Examples include: • Lung Foundation Australia: This organisation provides input on the assessment of new lung cancer treatments and technologies, offering perspectives on patient needs and

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						priorities during public consultations with the Pharmaceutical Benefits Advisory Committee (PBAC) and Medical Services Advisory Committee (MSAC). • Cancer Council Australia: As a leading cancer advocacy group, Cancer Council Australia regularly participates in HTA processes, submitting feedback on cancer-related technologies and treatments under review for inclusion in the Pharmaceutical Benefits Scheme (PBS) or Medical Benefits Schedule (MBS). • Rare Cancers Australia: This organisation advocates for rare cancer patients, providing submissions and comments on HTA processes to ensure that treatment options for rare cancers are considered during evaluations by PBAC and MSAC.
	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	1	+1	• The Lung Ambition Alliance (a collaboration between AstraZeneca and Lung Foundation Australia) aims to improve support and outcomes for lung cancer survivors and their families throughout the entire patient journey. • This includes managing ongoing care, promoting self-management, and supporting informed decision-making regarding treatment, lung care, well-being, and survivorship from diagnosis onward.

	17	Community engagement and empowerment	0 – 2	2	+2	• Cancer Australia's Framework for Health Equity in Cancer Outcomes focuses on empowering and engaging communities by:
						  ○ Engaging and empowering diverse population groups.
						  ○ Co-designing tailored health programmes, services, and strategies to meet specific needs.
						  ○ Enhancing the experiences of patients, carers, and families across the cancer care continuum.
						• The framework adopts an intersectional and health equity approach, acknowledging that individuals from multiple priority groups face compounded challenges in accessing equitable care.

Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	2	+2	• Clinical practice guidelines for lung cancer treatment, originally published in 2017, are currently being revised and updated in stages. These guidelines cover key areas such as screening, diagnosis, treatment, palliative care, and shared decision-making. • Relevant resources include guidelines from COSA (Clinical Oncology Society of Australia) and eviQ, a comprehensive clinical resource for cancer treatment protocols.
	19	Currency of clinical guidelines for lung cancer	0 – 2	2	+2	• The eviQ Lung Cancer guidelines underwent updates in 2022, reflecting the latest evidence in lung cancer treatment protocols.
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	1	+1	• Cancer Australia is developing a National Lung Cancer Screening Programme (NLCSP), which will use low dose computed tomography (LDCT) scans to screen high-risk individuals. • The programme aims to reduce lung cancer mortality through early detection and is expected to be fully implemented by 2025.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• Australia has adopted the IASLC guidelines for lung cancer screening, which recommend the use of serum biomarker testing as an adjunctive tool alongside low dose computed tomography (LDCT) screening. • This comprehensive approach enhances early lung cancer detection by combining imaging with biomarker testing to improve screening accuracy.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	*No data*	
	23	Inclusion of NGS in screening guidelines	0 – 3	0	*No data*	
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• The clinical guidelines for lung cancer diagnosis, as outlined by RACGP, emphasise the importance of early detection through a combination of risk assessment, imaging techniques such as low-dose CT (LDCT), and biopsy.
	25	Diagnosis timeframe	0 – 2	2	+2	• The Optimal Care Pathway for people with lung cancer includes a Fast Track referral pathway, which outlines specific timeframes for diagnosing suspected lung cancer patients.
	26	Post-diagnosis referral intervals	0 – 2	2	+2	• The guidelines outlining the recommended timeframes for lung cancer referrals in Australia are detailed in the Optimal Care Pathway for people with lung cancer, developed by Cancer Australia. • This pathway provides clear guidance on referral timeframes, including the 14-day window from GP referral to specialist appointment and the time from diagnosis to the initiation of cancer-specific treatment.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• The Optimal Care Pathway for people with lung cancer was released in June 2016 and has been endorsed by Cancer Australia and Cancer Council. • These guidelines cover essential aspects such as screening, diagnosis, treatment, palliative care, and shared decision-making.
	28	Patient navigation programme	0 – 1	1	+1	• Australia utilises a nurse-led navigation approach, or trained laypeople as patient navigators, to help lung cancer patients navigate their treatment pathways. • This approach ensures that patients receive guidance and support throughout their care journey, improving access to services and coordination of care.

Australia

	29	Referral system	0 – 1	1	+1	• In Australia, a well-defined referral system exists for lung cancer patients, guiding them from primary care to secondary and tertiary care. • Cancer Council Australia's guidelines stress the importance of rapid referral, recommending that general practitioners (GPs) refer patients with suspected lung cancer to a specialist within 14 days. • This system includes pathways for diagnosis and management, ensuring timely treatment, which is vital for improving patient outcomes.
	30	Established programmes for further care management	0 – 1	1	+1	• Australia has established programmes for the ongoing care management of lung cancer through initiatives led by Cancer Australia. • These programmes focus on improving outcomes across the lung cancer care continuum, including diagnosis, treatment, and survivorship, with an emphasis on patient-ed care and evidence-based practices.
	31	Shared decision making	0 – 1	1	+1	• In Australia, the Clinical practice guidelines for the treatment of lung cancer, published by Cancer Australia, cover screening, diagnosis, treatment, palliative care, and shared decision-making.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The recommendation that lung cancer patients be treated by a multidisciplinary team (MDT) comes from the Optimal Care Pathway for people with lung cancer, endorsed by Cancer Australia and Cancer Council Australia. • These guidelines emphasise the importance of coordinated care involving specialists from various disciplines to ensure comprehensive and effective treatment for lung cancer patients.
	33	Referral pathway to supportive/ palliative care	0 – 1	1	+1	• The Lung Cancer Optimal Care Pathway provides a clear referral pathway to supportive and palliative care services for lung cancer patients, ensuring that their holistic needs are met throughout the treatment process. • Additionally, training in supportive and palliative care is included in the Physician Readiness for Expert Practice (PREP) Programme, which prepares medical professionals in advanced care for lung cancer patients.
	34	Psychological burden	0 – 1	1	+1	• The guidelines for lung cancer care in Australia address the psychological needs of patients, outlining specific conditions under which patients should be referred to a psychologist, psychiatrist, or social worker.
TOTAL SCORE (Sufficient political will and coordination)				70		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	0	0	• Lung cancer screening is currently not covered by the Medicare Benefits Scheme (MBS) in Australia, indicating that individuals at risk of lung cancer do not have access to government-funded screening programmes, such as low-dose computed tomography (LDCT), through the national healthcare system. • However, in May 2023, the Australian Government announced a budget of $264 million over four years for lung cancer screening through the National Lung Cancer Screening Programme (NLCSP), targeting eligible populations, with the programme set to commence in July 2025.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	3	+3	• Molecular testing for EGFR mutations, ALK, and ROS1 rearrangements, as well as PD-L1 expression, is government-funded in Australia. • These test results are essential for patients to access corresponding targeted treatments, ensuring appropriate and personalised therapy options for lung cancer.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	3	+3	• The following drugs are reimbursed for different indications of lung cancer therapy: o Afatinib o Crizotinib o Pembrolizumab o Nivolumab o Atezolizumab o Osimertinib
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	2	+2	• The Australian Government's 2022-23 funding is primarily aimed at improving overall cancer control at the national level, rather than allocating specific amounts to particular communities or initiatives. Key areas of funding include: o National leadership in cancer control o Development and promotion of evidence-based best practice cancer care o Funding for cancer research and enhancing national data capacity o Providing cancer information and resources to both consumers and health professionals
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	1	+1	• Currently, there are no financial support programmes available for lung cancer screening. • The National Lung Cancer Screening Programme (NLCSP), starting in July 2025, will provide free low-dose CT scans every two years to eligible high-risk groups, such as individuals aged 50-70 with a significant smoking history, benefiting vulnerable populations including those in rural areas and First Nations communities who often face barriers to equitable care.

Australia

						• Financial support programmes for general cancer screening may be available through specific state health departments, but navigating these can sometimes be complex.
	6	Existence of patient financial support programmes and associated out-of-pocket expenses for lung cancer diagnosis	0 – 3	1	+1	• Apart from government funding schemes like the Medicare Benefits Scheme (MBS), Cancer Council provides financial support for general cancer services including diagnostic tests and medicines. • Lung cancer civil societies, such as Lung Foundation Australia also do not offer direct financial aid for diagnostic costs, mainly limiting to supportive services.
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	2	+2	• In addition to government funding schemes like the Pharmaceutical Benefits Scheme (PBS), the Cancer Council provides financial assistance for utility bills, accommodation, and travel expenses, and offers access to pro bono services for financial, legal, and workplace advice. • State and territory-based Patient-Assisted Travel Schemes also help cover travel and accommodation costs for rural or remote cancer patients needing to travel for treatment. As support varies by state, there are ongoing policy plans to formulate a national best practice standard to ensure consistent access to these travel subsidies across the territory. • Lung Foundation Australia also supports patients through peer support groups, nurse helplines, and educational resources focused on palliative care and managing the stigma associated with lung cancer, emphasising emotional, informational, and community support.
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	2	+2	• Despite universal health coverage and government-funded social welfare programmes, Australians with cancer often face significant financial burdens. For those diagnosed with lung cancer between 2011 and 2015, the average out-of-pocket expenses (OOPE) in the first 12 months amounted to AU$2,442, with a range of AU$601–$3,374. The presence of private health insurance (PHI) exacerbated these costs, with patients holding PHI incurring expenses up to nine times higher than those without. • A study of 400 cancer patients in rural Western Australia further underscores the financial strain, revealing an average OOPE of AU$2,179, with 11% spending over 10% of their household income on cancer-related expenses, especially those with PHI. • This financial distress is recently reflected in a 2024 Daffodil Centre study, which found that Australians with cancer are increasingly overwhelmed by rising out-of-pocket healthcare costs and cost-of-living pressures, leading to a 29% increase in demand for the Cancer Council's Financial Support Services.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				14		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	2	+2	• Australia has a population-based cancer registry through the Australian Cancer Database (ACD), operated by the Australian Institute of Health and Welfare (AIHW). The ACD collects data on cancer diagnoses, treatments, and outcomes from sources such as state and territory cancer registries, hospitals, pathology labs, and death registries. • Additionally, the Australasian Association of Cancer Registries (AACR), formed in 1982, represents eight Australian state and territory cancer registries, the New Zealand Cancer Registry, and the AIHW. It promotes uniformity in cancer data collection across the region. • Additional cancer registries in Australia include the Victorian State Registry, which covers data collection from 19 hospitals within the state of Victoria. This registry contributes to the broader efforts of cancer data collection and management at the national level.
	2	Registry integration and linkage	0 – 3	2	+2	In terms of registry integration and linkage: • Data for the Australian Cancer Database (ACD) are collected from jurisdictional cancer registries, not directly from hospitals. All Australian states and territories have legislation making cancer and certain neoplasms notifiable diseases, requiring hospitals, pathology labs, and other institutions to report cases to their respective registries. • Each state and territory cancer registry provides these data annually to the Australian Institute of Health and Welfare (AIHW), which compiles them into the ACD, the sole national repository for cancer incidence data. • Australia uses a networked and coordinated data collection system through the Population Health Research Network (PHRN), tailored to the federation structure and the national health system, to ensure comprehensive data integration and accessibility.

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	3	Registry population coverage	0 – 2	2	+2	• Australia has comprehensive population coverage for cancer data through its population-based cancer registries in each state and territory. • These registries likely cover almost the entire population, ensuring extensive and accurate data collection for cancer diagnoses, treatments, and outcomes across the territory.
	4	Operational status of registry	0 – 3	2	+2	• Data from the ACD are used to report on national cancer statistics such as incidence, trends, projections, survival and prevalence. • A new version of the ACD is produced each year. Each version is referred to by the most recent year for which all the state and territory cancer registries have provided data.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	3	+3	In terms of specialised lung cancer registries in Australia: • The Victorian Lung Cancer Registry (VLCR), established in 2012, is a well-established cancer outcome registry managed by the Cancer Research Programme within the School of Public Health and Preventive Medicine at Monash University. • The Australia and New Zealand Lung Cancer Clinical Quality Registry (ANZLCR) is currently in development, with the goal of optimising lung cancer care across the region.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	2	+2	Programmes are run through: • Cancer Australia: Community-funded Cancer Councils offer information and support to people affected by cancer, including specialised resources for Aboriginal and Torres Strait Islander communities and culturally and linguistically diverse (CALD) communities. • Lung Foundation Australia: The Lung Cancer Search & Rescue campaign ensures that Australians searching online for lung cancer information can access the best resources, including insights from Australians living with lung cancer who provide valuable, relatable support.
	7	Existence of community-based outreach programmes	0 – 3	3	+3	• The Cancer Council Western Australia runs the Find Cancer Early campaign, an educational programme aimed at raising awareness about the early detection of lung cancer. • Lung Foundation Australia offers the Lung Learning Hub, providing educational resources for lung cancer patients and the public. They also deliver evidence-based training and education specifically designed for healthcare professionals.
	8	Existence of clinical associations	0 – 3	2	+2	• Lung Cancer Australia involves a broad range of stakeholders, including clinicians, though not exclusively focused on them. • Thoracic Society of Australia and New Zealand (TSANZ) comprise specialists and clinicians focused on lung health, including those working in lung cancer.
	9	Educational programmes for providers	0 – 1	1	+1	• Lung Foundation Australia provides evidence-based training and education for health professionals through resources like The Lung Learning Hub, which offers comprehensive educational materials aimed at improving lung cancer care and outcomes.
TOTAL SCORE (Robust surveillance protocols and public education)				19		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	1	+1	In terms of healthcare provider and infrastructure distribution for cancer care in Australia: • Geographical Challenges: Australia's vast geography presents challenges in reducing healthcare disparities, particularly in remote and less populous regions. • Cancer Service Distribution: A 2019 paper highlighted that healthcare organisations with cancer services are primarily located in the most populous states such as NSW, Queensland and Victoria. • Australian Comprehensive Cancer Network (ACCN): Launched in 2024 by Cancer Australia, the ACCN aims to address these disparities by providing coordinated and equitable access to cancer services across the health system, regardless of location.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	2	+2	• The upcoming National Lung Cancer Screening Programme (LCSP), starting in July 2025, presents a crucial opportunity to address the significant lung cancer burden in Aboriginal and Torres Strait Islander communities. • Although the need for an equitable approach to the LCSP has been recognised, much remains unknown about effective implementation strategies tailored to meet the needs of Indigenous Australians.

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	3	Number of radiologists	N/A			• In 2020, there were 2,350 full-time clinical radiologists in Australia, equating to 91.5 clinical radiologists per million people.
	4	Number of radiation oncologists	N/A			• In 2016, there were 345 radiation oncologists, with 25.8% working in the private sector.
	5	Number of surgeons	N/A			• In 2010, there were 6.24 general surgeons per 100,000 individuals.
	6	Number of thoracic surgeons	N/A			• In 2010, there were 1.53 cardiothoracic surgeons per 100,000 individuals.
	7	Number of medical oncologists	N/A			• In 2016, there were 620 registered medical oncologists in Australia.
	8	Number of pathologists	N/A			• In 2016, 1,007 pathologists were employed, with 31.2% in the private sector, and over 87% identifying as clinicians in the National Health Workforce Survey.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	5	+5	• Australia's Lung Cancer Screening Programme (LCSP) is organised and set to commence in July 2025. This programme will provide structured screening using low dose computed tomography (LDCT) to target high-risk individuals, aiming to reduce lung cancer mortality.
	10	Level of screening uptake	0 – 2	0	N/A	
Availability and Accessibility of Health System Infrastructure	11	Number of CT scanners	N/A			• There are 70 CT scanners per 10 million population in 2021.
	12	Number of PET scanners	N/A			• There are 15 PET scanners per 1 million population.
	13	Number of MRI scanners	N/A			• There are 15 MRI scanners per 1 million population.
	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 1	1	+1	• Diagnostic imaging modalities are available in the majority of hospitals in Australia.
	15	Availability of/ access to Biopsy	0 – 2	2	+2	• Access to biopsies in Australia varies depending on disease presentation, local expertise, and available resources. • Generally, in Australia, sufficient tissue is obtained during biopsy to establish a diagnosis and, where necessary, molecular testing is performed.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	2	+2	• EGFR, ALK, ROS1, and PD-L1 testing are reimbursed under Australia's national public health system through the Medicare Benefits Schedule (MBS). • These molecular tests are crucial for guiding targeted lung cancer treatments and ensuring appropriate therapy for patients.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	2	+2	
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	1	+1	• Next-Generation Sequencing (NGS) facilities in Australia are expanding, particularly in the private sector. • However, the absence of a federated system limits national integration and coordination of NGS services, potentially impacting widespread accessibility and data sharing across the health system.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	2	+2	• Australia has well-established Comprehensive Genomic Profiling (CGP) infrastructure supported by an expansive network of facilities. • This infrastructure ensures broad access to molecular profiling services across the health system.
	20	Availability of/ access to Companion diagnostics	0 – 2	2	+2	• Most Companion Diagnostics (CDx) tests are covered under the national public health system in Australia. • However, manufacturers often need to cover the costs of CDx tests during the approval process, which can last over two years.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	2	+2	• Access to large NGS panels covering additional genetic mutations is relatively high, supported by government funding. • Following the positive review and recommendation of small NGS panels by the Medical Services Advisory Committee (MSAC) in November 2022, which confirmed their cost-effectiveness and financial viability, the Federal government announced in the May budget that reimbursement for small gene panels began in November 2023 for selected cancers, including NSCLC. This represents a significant advancement in the diagnosis and treatment of lung cancer patients. • Investment in genomics is increasing, with next-generation sequencing (NGS) being discussed in the Cancer Plan 2030.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	2	+2	• Most advanced-stage lung adenocarcinoma cases undergo EGFR mutation testing, though not all patients are tested.

Australia

						• Molecular testing is available locally at larger centres or through send-away tests, typically performed at diagnosis of advanced disease. • Testing methods vary from single-gene assays to larger NGS panels, depending on local resources and referral pathways.
	23	Availability of/ access to Surgery	0 – 2	2	+2	• Two-thirds of patients with stage I to II lung cancer receive curative surgery, with two-thirds of these surgeries occurring within 14 days of diagnosis. • 23% of patients lack access to thoracic surgery within multidisciplinary teams. Thoracic surgery is available at 56 out of 73 sites (76.7%), with greater representation in metropolitan areas compared to regional centres.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	1	+1	• There is a deficit of 68 radiotherapy megavoltage machines (MVM) relative to demand. • The unmet need is approximately -33.17%, indicating a significant shortfall between the observed and expected number of MVMs.
	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	2	+2	• Lung Foundation Australia has introduced the National Pulmonary Rehabilitation Strategy Framework 2023–2026 for mental health support. • This programme provides psychosocial support for patients with chronic lung disease, requiring a referral from a GP or lung specialist.
	26	Availability of/ access to Rehabilitation	0 – 2	2	+2	• Lung Foundation Australia launched the National Pulmonary Rehabilitation Strategy Framework 2023 – 2026. • There is a Pulmonary Rehabilitation programme, where Patients need a referral from a GP or Lung Specialist to join a programme.
	27	Availability of/ access to Palliative care	0 – 2	2	+2	• Medical oncology and palliative care services are available at 79 institutions, covering 72% of all known institutions treating lung cancer in Australia.
	28	Availability of/ access to lung cancer therapy	0 – 3	3	+3	• Targeted therapies and immunotherapies for NSCLC are widely accessible in Australia. Chemotherapies, immunotherapies, and targeted therapies are also showing promise and are relatively accessible for SCLC. • Recent updates to the Pharmaceutical Benefits Scheme (PBS) reflect increased access to innovative lung cancer therapies: ○ Durvalumab: Starting December 2023, durvalumab will be reimbursed through the PBS for stage III NSCLC following chemoradiotherapy, irrespective of PD-L1 or mutation status. ○ Osimertinib: Effective June 1, 2024, osimertinib will be reimbursed for early-stage (Stage IB to IIIA) epidermal growth factor receptor mutation (EGFRm) positive NSCLC as adjuvant therapy following surgical resection. ○ Additional NSCLC Therapies: From September 1, 2024, revisions to PBS restrictions will allow more flexible access to crizotinib, entrectinib, alectinib, brigatinib, ceritinib, and lorlatinib. Authority applications for these treatments can now be submitted in real-time via the Online PBS Authorities system, in writing, or by telephone.
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	*N/A*		
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**36**		

Lung Cancer Health System Snapshot – Australia's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Australia
Integration and Expansion of Screening, Diagnostic and Treatment Services	• Australia's vast geography results in disparities in access to screening, diagnostic, and treatment facilities, with rural and remote areas facing significant barriers. • For example, despite government funding for NGS panels since Nov 2023 in response to the positive recommendation from the Medical Services Advisory Committee (MSAC), access to NGS services varies by region, with urban areas having better access compared to rural and remote regions. The coverage is also limited and there is ongoing discussion about expanding these reimbursements.	• There is a growing investment in establishing genomics departments and discussions of NGS in Cancer Plan 2030. Despite advancements in funding, increasing access to larger NGS panels and integrating these services across more regions can enhance personalised treatment approaches. • The planned National Lung Cancer Screening Programme (NLCSP) starting in 2025 also presents an opportunity to improve early detection, particularly for Aboriginal and Torres Strait Islander communities.
Improvement in Accessibility and Equity of Care	• There are disparities in access to multidisciplinary teams and specialised services, with some regions lacking essential thoracic surgery representation and mental health support. • Ensuring that the new NLCSP reaches all demographic groups equitably, including Indigenous communities is crucial.	• The launch of the Australian Comprehensive Cancer Network (ACCN) aims to address disparities and ensure equitable access to cancer services health system-wide, potentially improving outcomes across different regions. • Government-funded initiatives, such as the National Pulmonary Rehabilitation Strategy Framework, provide structured support for patients, which could be expanded to enhance mental health and palliative care services.
Optimisation of Treatment Pathways and Policy Enhancements	• The limitation of immunotherapy to a single instance per treatment pathway could restrict access for patients who relapse, potentially impacting long-term management and outcomes. • Low familiarity among healthcare providers with newer genomic tools and therapies could hinder effective implementation and patient access.	• Recent updates in PBS reimbursement policies present an opportunity to reassess and optimise treatment pathways, aiming to better align with patient needs and improve clinical outcomes. • Initiatives such as the Lung Learning Hub offer evidence-based education for healthcare professionals, which can enhance the quality and consistency of lung cancer treatment.

Lung Cancer Health System Snapshot

Scorecard of Chinese Taipei

Chinese Taipei

1. Lung Cancer Health System Snapshot – Chinese Taipei Scorecard Results and Future Opportunities

Domain	Indicator		Rangetai	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	2	+2	• Chinese Taipei has a National Cancer Prevention Programme (2024-2030), also known as the Fifth Phase of the National Cancer Control Programme (第五期國家癌症防治計畫 2024-2030 年).
	2	Currency of national cancer control plan	0 – 2	2	+2	• Chinese Taipei's National Cancer Prevention Programme was updated and in place from 2024.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+6	• Prevention: Focuses on reducing cancer risk factors, promoting healthy lifestyles, and aligning efforts with the WHO's 2030 target to eliminate cervical cancer. This involves the use of data and new technologies to enhance prevention and treatment efficacy. • Screening: Aims to improve cancer screening programmes for early detection, ensuring access to timely and high-quality diagnostic services to enhance outcomes. • Diagnosis and Treatment: Emphasises timely access to high-quality diagnostic and treatment services, as outlined in a comprehensive action plan that includes the application of new technologies and improving overall care quality. • Palliative Care: Ensures that all healthcare personnel involved in palliative care under National Health Insurance receive essential education and ongoing training to enhance the provision of end-of-life care health system-wide. • Survivorship: Promotes the integration of community resources and regional care alliances to expand support for cancer survivors and caregivers through collaborations with non-governmental organisations.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	1		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	1		
	9	Inclusion of an implementation plan for cancer control	0 – 2	2	+2	• The NCCP outlines implementation strategies, yearly plans, steps, and the division of labour. • It includes timelines, resource needs, and two appendices: a Gantt chart for execution and a funding requirements table for each project.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	1	+1	• The NCCP includes a section on "Action Goals," aiming to establish strategies for preventing cancer risk factors, enhancing cancer screening, providing high-quality treatment, and leveraging data and new technologies to improve overall prevention and treatment outcomes. • It also aligns with the WHO 2030 target to accelerate the elimination of cervical cancer.
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	2	+2	• Specific budget sources are mentioned on page 74 of the NCCP.
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	3	+8	• A dedicated lung cancer plan exists, with the standalone "First Phase National Lung Cancer Prevention and Control Plan (2022-2025)", focusing specifically on lung cancer prevention, screening, and treatment efforts.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	1		• While the Lung Cancer Screening Programme and Tobacco Control Programme are examples of key components of the lung cancer plan, specific goals or detailed objectives for these programmes have not been outlined.
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	1		• The plan sets specific goals, such as increasing early-stage lung cancer detection rates (doubled to 42% by 2025 from 21% in 2015) and improving the 5-year relative survival rate for lung cancer patients (doubled to 48% by 2021-2025 from 24% in 2011-2015) and reducing premature mortality rate. • While the broader lung cancer control efforts are evident, detailed targets and specific objectives beyond these key goals are not elaborated, particularly in relation to tobacco control and lung cancer screening.
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	2		• Chinese Taipei actively monitors and evaluates the lung cancer control initiatives through inter-departmental collaboration and the Cancer Prevention and Control Policy Committee, which includes experts and scholars who review and revise the plan as needed on a rolling basis.
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	1		• The plan includes financial resources for lung cancer screening. Starting July 2022, low-dose computed tomography (LDCT) screening will be funded through a National Health Insurance designated statutory budget. • The National Health Insurance Department will incorporate lung cancer screening in hospital funding and expand coverage to include follow-up medical expenses for cases with positive screening results.

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TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**23**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	2	+2	• The Ministry of Health and Welfare launched the Lung Cancer Early Detection Programme to provide biannual low-dose computed tomography (LDCT) lung screening in Jul 2022 for high-risk groups, making Chinese Taipei the first health system to do so for heavy smokers and individuals with a family history of lung cancer.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	2	+2	Chinese Taipei's government collaboration and partnerships in lung cancer control can be considered strong based on several aspects: • Collaboration with Medical Institutions: The government has actively partnered with medical institutions health system-wide, ensuring access to low dose computed tomography (LDCT) equipment. These institutions have signed cooperation contracts to provide free lung cancer screening services, demonstrating effective integration of resources. • Partnerships with Scientific and Technological Associations: Chinese Taipei continues to collaborate with lung cancer-related scientific and technological associations. These partnerships facilitate ongoing discussions and improvements in the implementation of the National Lung Cancer Prevention and Control Plan, enabling evidence-based policy adjustments and rolling revisions
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	13	+2	• National objectives on tobacco control and a national agency (HPA) for tobacco control exist (Tobacco Hazards Prevention Act Article 2). • HPA assesses and publishes annual key performance indicators (e.g. maintaining the adult smoking rate at or below 12.9 %).
					+2	In Chinese Taipei, tobacco advertising and promotion are strictly regulated: • Advertising Ban: The Tobacco Hazards Prevention Act prohibits all forms of tobacco advertisement, promotion, and sponsorship across various media channels, including TV, radio, and print. • Display Restrictions: Under the same Act and related regulations (e.g. Regulations for Signs and Warnings at Places for Selling Tobacco Products), the display of tobacco products or containers at points of sale is restricted. Displays are only allowed to the extent necessary for consumers to identify brand names and prices, effectively minimising promotional exposure.
					+2	In Chinese Taipei, tobacco taxation is structured as follows: • Taxation Rates: Taxes on tobacco products account for about 54% of the retail price. Specific tax rates include NT$1,590 per 1,000 cigarettes, per kilogram of cut tobacco, and per kilogram of cigars under the Tobacco and Alcohol Tax Act. Additionally, the Health and Welfare Surcharge imposes an additional NT$1,000 per 1,000 cigarettes, per kilogram of cut tobacco, and per kilogram of cigars. • Regular Increases: Chinese Taipei regularly reviews and adjusts tobacco taxes. Significant increases occurred in 2009 and 2017, with NT$20 added per pack of cigarettes each time. According to the "Smoking Harm Prevention Act," a biannual evaluation by the Ministry of Health and Welfare and Ministry of Finance, alongside experts in relevant fields, determines the need for further tax increases based on factors such as smoking rates and economic conditions. If deemed necessary, these adjustments are submitted to the Executive Yuan for approval.
					+1	• In Chinese Taipei, the sale of tobacco products is prohibited to individuals under the age of 20, as outlined in Articles 16 and 17 of the Tobacco Hazards Prevention Act. This law aims to prevent youth access to tobacco products and reduce early smoking initiation.
					+1	• In Chinese Taipei, the law requires that health warnings be displayed on tobacco packages, as mandated by Article 9 of the Tobacco Hazards Prevention Act and related regulations. These warnings must be prominently featured to inform consumers of the health risks associated with tobacco use.
					+2	• Chinese Taipei's Tobacco Hazards Prevention Act, amended on March 22, 2012, is enforced through local government health bureaus, which publicise the regulations and strengthen compliance efforts. • Penalties, including fines, are imposed for violations of these regulations, as outlined in Articles 26 to 44 of the Act.

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					+1	• While Chinese Taipei is not a party to the WHO Framework Convention on Tobacco Control (FCTC) due to its non-membership in the WHO, its Legislative Yuan passed the FCTC, and the President ratified it as domestic law in 2005. • Chinese Taipei's Tobacco Hazards Prevention Act aligns with the principles of the FCTC, incorporating its guidelines into various tobacco control and prevention measures.
					+2	• In Chinese Taipei, funding for tobacco control is allocated and governed by the "Tobacco Product Health Welfare Donation Allocation and Operation Measures," as outlined in Article 4. • The government has engaged third-party organisations such as the Consumer Culture and Education Foundation to conduct undercover investigations into compliance with age restrictions on tobacco sales. • Additionally, the Tung Foundation is commissioned to run national programmes like the "Quit Smoking and Win Competition," encouraging smokers over 20 to participate in smoking cessation efforts.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	4	+1	• In 2002, Chinese Taipei began using Tobacco Health and Welfare Surcharges to fund fixed subsidies for smoking cessation services. As of January 2023, the subsidy rates were increased to encourage greater participation from healthcare professionals in offering these services, aiming to enhance support for individuals seeking to quit smoking.
					+1	• To encourage smokers to quit, Chinese Taipei exempted the copayment for smoking cessation medication starting on May 15, 2022. • This policy aims to make smoking cessation treatments more accessible and affordable, further supporting individuals in their efforts to quit smoking.
					+1	• By 2022, Chinese Taipei had 3,463 medical institutions offering smoking cessation services, covering 99.4% of the territory's townships and urban areas, with the potential to reach 100% through a mobile medical care programme. • Additionally, a toll-free helpline is available to help smokers create personalised cessation plans and access relevant information. • In 2022, the 6-month smoking cessation success rate was 29% for those receiving in-person services and nearly 40% for those using the helpline.
					+1	• In 2002, Chinese Taipei introduced the use of Tobacco Health and Welfare Surcharges to fund fixed subsidies for smoking cessation services. • As of January 2023, these subsidy rates were increased to encourage more healthcare professionals to participate in providing smoking cessation support, aiming to expand the reach and effectiveness of these services.
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	3	+1	• National smoke-free legislation in Chinese Taipei prohibits smoking in indoor public places, including workplaces, restaurants, and bars, as stipulated in Article 18 of the Tobacco Hazards Prevention Act.
					+1	• Chinese Taipei's smoke-free legislation also extends to certain outdoor areas, including parks, leisure and entertainment locations, areas surrounding cultural or social education institutions, and the outdoor areas of welfare institutions for the elderly, as outlined in Article 19 of the Tobacco Hazards Prevention Act.
					+1	• The department regularly issues press releases and public campaigns to raise awareness about smoke-free environments and the dangers of second-hand smoke.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	4	0	• There is no evidence of a national policy or programme for radon control in Chinese Taipei.
					+1	• Chinese Taipei's National Protection Plan includes a section on air quality maintenance, with the most recent being the 2020-2023 Air Pollution Prevention and Control Action Plan, implemented by the Ministry of Environment. • In the second phase of the air pollution control plan (2024-2027), the government will intensify precise control measures, aiming to reduce the number of days with red warnings for unhealthy 8-hour average ozone levels and achieve an 80% reduction in PM2.5 compared to 2019 levels.
					+1	• The Chinese Taipei government's promotion of energy transition has achieved significant progress. The installed capacity of renewable energy has increased sevenfold, from 1.9 GW in 2016 to 13.9 GW by August 2023.
					+2	• Chinese Taipei has implemented policies aimed at reducing air pollutant emissions from both industrial sources and vehicles. These measures include reducing emissions from boilers, controlling pollution from state-owned enterprises, revising control fees for stationary sources of pollution, and improving factory monitoring.

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						• Additionally, vehicle emission standards are enforced under the New Vehicle Control Plan to further mitigate air pollution from mobile sources.
					No data	
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• Chinese Taipei has legislation in place covering workplace safety and health, ensuring that employers adhere to regulations designed to protect the well-being of employees.
					+1	• Chinese Taipei has established procedures to identify and mitigate exposure risks in the workplace. According to the General Guidance on the Chinese Taipei Occupational Safety and Health Management System (2007), hazard identification and risk assessments must be conducted prior to any modification or introduction of new work methods, materials, processes, or machinery.
					+1	• The Labour Health Protection Regulation, based on the Occupational Safety and Health Act, mandates that employers provide regular health screening examinations for employees and conduct special health exams for workers exposed to health hazards. • For job sites with stipulated permissible exposure limits, employers are required to ensure that workers' exposure remains below these limits.
					+1	• Safety and health education and training are mandated under Chinese Taipei's Occupational Safety and Health Act. • Employers are required to provide these programmes to ensure that employees are knowledgeable about workplace safety procedures and health risks, helping to promote a safer and healthier work environment.
	8	E-cigarettes regulation	0 – 4	4	+1	• A complete ban on smoking products such as e-cigarettes, including their manufacture, import, sale, supply, display, advertising and use.
					+1	• Since e-cigarette sales are entirely banned, so age limits do not apply.
					+1	• E-cigarette advertising is banned.
					+1	• E-cigarettes are banned in public areas (e.g., public transport, civic buildings, restaurants, cafes, pubs, and/or bars).
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	1	+1	• Chinese Taipei's Health Promotion Administration (HPA) has collaborated with key lung cancer-related academic and medical societies, including the Chinese Taipei Lung Cancer Society, to organise lung cancer screening conferences. These efforts aim to encourage eligible individuals to access screening services promptly. • The discussions, based on cost-effectiveness analysis and scientific evidence, focused on the benefits, eligibility criteria, and resource needs for the programme.
Contribution of patient organisations and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	2	+2	• Chinese Taipei has several patient-driven organisations, including the "Lung and Longevity Association," "Chinese Taipei Lung Cancer Patients Diagnosis, Treatment, Health Education and Care," and the "Lung Disease Prevention and Treatment Foundation." • These groups provide support and advice to lung cancer patients and advocate for lung cancer prevention and treatment issues through citizen participation platforms directed at government units.
	11	Existence of civil society	0 – 3	3	+3	• In Chinese Taipei, civil societies such as the "Lung and Longevity Association," "Chinese Taipei Lung Cancer Patients Diagnosis, Treatment, Health Education and Care," and the "Lung Disease Prevention and Treatment Foundation" play an active role. • These patient-led organisations provide support and guidance to lung cancer patients while advocating for improved lung cancer prevention and treatment policies through citizen participation platforms and engagement with government authorities.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	2	+2	• Since 2015, Chinese Taipei has encouraged patients to provide input to the National Health Insurance Administration (NHIA) on new medicines and devices through various forums and online platforms. • This includes a platform allowing patients to join meetings of the Pharmaceutical Benefits and Reimbursement Scheme Joint Committee. • Chinese Taipei was the first health system in Asia to establish such a platform, ensuring patient perspectives are considered in reimbursement decisions. Additionally, the NHIA offers training to patient groups to enhance their communication skills. • The Cancer Prevention and Treatment Policy Committee also includes civil society representatives, allowing them to participate in the planning and monitoring of cancer-related policies.
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	1	+1	• In Chinese Taipei, the Chinese Taipei Psycho-Oncology Society, along with lung cancer experts, has developed the "Clinical Care Guidelines for Psycho-Oncology in Lung Cancer" to provide comprehensive psychological support and care for lung cancer patients.
	14	Patient organisation participation in cancer control plan development	0 – 1	1	+1	• The Cancer Prevention and Treatment Policy Committee in Chinese Taipei includes representatives from civil society organisations, allowing them to participate in the planning and monitoring of cancer prevention and treatment policies.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	1	+1	• Since 2015, patients in Chinese Taipei have been encouraged to provide input to the National Health Insurance Administration (NHIA) on new medicines and devices through various forums, including online platforms. • Starting in June 2019, patient representatives from the Chinese Taipei Alliance of Patient's Organisation and Formosa Cancer Foundation have also been invited to participate and offer feedback at NHIA Pharmaceutical Benefits and Reimbursement Scheme (PBRS) meetings.

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	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	1	+1	• Merck, a science and technology company, has signed a Memorandum of Understanding (MoU) with Chinese Taipei's National Health Research Institute (NHRI). • This collaboration aims to leverage their combined R&D and technological expertise to strengthen Chinese Taipei's National Precision Medicine Programme, with a focus on cancer testing and treatment. • Additionally, they will work together on the 2030 Precision Health System initiative to enhance the health and wellbeing of Chinese Taipeiese citizens.
	17	Community engagement and empowerment	0 – 2	2	+2	• In the fifth phase of Chinese Taipei's National Cancer Plan, it highlighted the goal of strengthening the cancer prevention and control system by vertically integrating health units, medical institutions, and non-governmental organisations to reinforce the cancer prevention and treatment network. • The NCCP includes Strategy 1, which focuses on reducing cancer risk, enhancing prevention, and addressing risk factors. • This includes improving cancer health knowledge throughout the life cycle, promoting public responsibility for health, and utilising the "National Health Insurance Quick and Easy" initiative through education and outreach efforts.
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	2	+2	• Hospitals and cancer centres in Chinese Taipei adhere to the National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines for lung cancer treatment. • The Chinese Taipeiese government has also integrated input from a team of physicians with the NCCN guidelines to develop its own national guidelines for lung cancer care.
	19	Currency of clinical guidelines for lung cancer	0 – 2	2	+2	• The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) for lung cancer screening (LCS) were first developed in 2011 and have been updated annually. • The most recent update was in 2024.
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	1	+1	• On July 1, 2022, Chinese Taipei's Ministry of Health and Welfare launched the Lung Cancer Early Detection Programme, offering biannual low-dose computed tomography (LDCT) lung screening for high-risk groups. • Chinese Taipei became the first health system to provide lung screening for heavy smokers and individuals with a family history of lung cancer, marking a significant step in early detection and prevention efforts.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• Chinese Taipei's Lung Cancer Early Detection Programme, launched on July 1, 2011, provides low-dose chest tomography (LDCT) screenings every two years for high-risk individuals. The programme targets two main groups: ○ **Family History of Lung Cancer**: Males aged 50-74 and females aged 45-74 with immediate blood relatives (parents, children, or siblings) diagnosed with lung cancer. Smokers in this group must agree to smoking cessation services. ○ **Heavy Smokers**: Individuals aged 50-74 with a smoking history of over 30 pack-years, who are either still smoking or have quit within the last 15 years.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	0	• Biomarker testing yet to be included as a publicly funded screening tool in Chinese Taipei.
	23	Inclusion of NGS in screening guidelines	0 – 3	0	0	• NGS related is yet to be included in screening guidelines.
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• In Chinese Taipei, hospitals and cancer centres follow the National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines for lung cancer. • These guidelines provide comprehensive recommendations covering lung cancer screening, diagnosis, treatment, and shared decision-making, ensuring standardised and high-quality care.
	25	Diagnosis timeframe	0 – 2	2	+2	• Chinese Taipei has a fast-track referral pathway for lung cancer diagnosis, following the NCCN Guidelines. • These guidelines recommend specific timeframes for diagnosing patients with low and high suspicion of lung cancer, ensuring timely diagnostic referrals and prompt treatment initiation.
	26	Post-diagnosis referral intervals	0 – 2	2	+2	• The Lung Cancer Early Detection Plan (P5-6) in Chinese Taipei includes a directive for hospitals to implement fast-track annual screenings and ensure patient compliance with the screening schedule. • This initiative aims to improve early detection and streamline the screening process.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• In Chinese Taipei, hospitals and cancer centres follow the National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines for the treatment of lung cancer. • These guidelines provide comprehensive recommendations covering screening, diagnosis, treatment, shared decision-making, and palliative care, ensuring a holistic approach to patient care.
	28	Patient navigation programme	0 – 1	1	+1	• The National Health Insurance Cancer Treatment Quality Improvement Programme in Chinese Taipei has encouraged hospitals to promote timely medical treatment for cancer patients.
	29	Referral system	0 – 1	1	+1	• Chinese Taipei's National Health Insurance Referral Implementation Measures include specific provisions aimed at streamlining the referral system, ensuring that patients are efficiently referred to appropriate healthcare providers.
	30	Established programmes for further care management	0 – 1	1	+1	• Chinese Taipei's first phase of the National Lung Cancer Prevention and Control Plan (2022-2025) includes established programmes for further care management.

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						• These programmes are designed to provide comprehensive care and ongoing management for lung cancer patients, ensuring continuity of care throughout the treatment process and beyond.
	31	Shared decision making	0 – 1	1	+1	• Shared decision-making is included in the NCCN guidelines.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The NCCN Guidelines recommend that lung cancer patients receive treatment from a multidisciplinary care team.
	33	Referral pathway to supportive/ palliative care	0 – 1	1	+1	• The NCCN Guidelines include a referral pathway to palliative care services for cancer patients, including those with lung cancer. • Additionally, Chinese Taipei's Ministry of Health supports training in supportive and palliative care to ensure healthcare professionals are equipped to provide compassionate, end-of-life care.
	34	Psychological burden	0 – 1	1	+1	• The NCCN Guidelines do not specifically address the psychological burden of lung cancer or include a referral pathway to psychological support services. • However, in practice, psychological support services are available at specialised centres that treat advanced cancer cases. • The government oversees the quality of cancer care services through a national accreditation programme, which medical centres must periodically renew. • Psychological support services are also part of the accreditation criteria, ensuring their integration into comprehensive cancer care.
TOTAL SCORE (Sufficient political will and coordination)				**70**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	4	+4	• In Chinese Taipei, low-dose computed tomography (LDCT) screening for lung cancer is not currently covered by the National Health Insurance (NHI). • However, the screening is priced relatively low (approximately $150-$230) and is offered as a free charitable service to selected groups, including teachers, firefighters, middle- to low-income women, and Indigenous people.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	3	+3	• The National Health Insurance (NHI) in Chinese Taipei reimburses testing for EGFR mutations in patients with advanced non-small cell lung cancer (NSCLC) and most other therapies.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	2	+2	• Several lung cancer targeted therapies and immunotherapies are reimbursed under the National Health Insurance including Afatinib. Crizotinib, Pembrolizumab, Nivolumab, Atezolizumab, and Osimertinib. • Funding coverage will be expected to increase in the next few years. In July 2024, the Chinese Taipei Executive Yuan approved the 'Cancer New Drug Accessibility Improvement and Ten-Billion New Cancer Drug Fund Planning' policy, dedicating NT $10 billion (US$ 314 million) for new cancer drugs by 2025. • There are plans to expand eligibility for EGFR-mutation therapy, extending beyond the current stage 4 (metastasised) lung cancer to include patients with stage 3b EGFR-mutated lung cancer with local invasiveness or metastasis.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	2	+2	The fifth phase of the National Cancer Plan includes strategies to strengthen cancer prevention and treatment services in certain areas and special groups. Implementation methods are: • Address gender disparities in health service utilisation, such as improving colorectal cancer screening rates among men compared to women. • Implement age- and gender-specific screening strategies, utilising media channels and accessible services for lower-screening age groups. • Enhance awareness and action for those who have not been screened, set targets for first-time screenings, and encourage identification of eligible individuals who have not yet been screened. • Support counties and cities with lower cancer screening rates and positive case tracking completion rates to improve and set goals.
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	3	+3	• The lung cancer early detection programme in Chinese Taipei offers free low-dose chest CT scans to individuals who meet the screening criteria.
	6	Existence of patient financial support programmes and associated out-of-pocket expenses for lung cancer diagnosis	0 – 3	2	+2	• Academic institutions, medical centres, and local or international biotechnology companies offer a range of clinically oriented in-house or commercial NGS panels. • NGS has been partially reimbursed by the National Health Insurance (NHI) since May 2024; however, patients are required to pay out-of-pocket for the remaining cost of the test.
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	2	+2	• There are NPOs and NGOs in Chinese Taipei such as Cancerway that provide financial support.
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	1	+1	• Mean direct medical costs of $18,410 (USD) incurred in the first 3 years after diagnosis between 2007 and 2014. • Sum of direct medical and indirect costs = $18,410 + $532 (Indirect morbidity costs) + $23,540 (Indirect mortality costs) = $24,072 (USD).

Chinese Taipei

TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**19**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	2	+2	• The Chinese Taipei Cancer Registry (TCR), established in 1979 by the Ministry of Health and Welfare (MoHW), is organised and funded by the Health Promotion Administration and operated by the National Public Health Association, with support from the Cancer Registry Advisory Board. • It collects data on newly diagnosed cancer patients from hospitals with 50 or more beds. • TCR data are noted for their high quality, including completeness, timeliness, and accuracy.
	2	Registry integration and linkage	0 – 3	3	+3	• The Data Science Centre of the Ministry of Health and Welfare provides a cancer-themed database that integrates various cancer-related data sources, including health insurance medical treatment, underwriting, death statistics, cancer registration, and screening files.
	3	Registry population coverage	0 – 2	2	+2	• The Chinese Taipei Cancer Registry (TCR) covers almost the entire population, with 98.4% coverage.
	4	Operational status of registry	0 – 3	3	+3	• Hospitals in Chinese Taipei report newly diagnosed cancer cases within 1 year, and the data undergo review and consolidation, matching the U.S. cancer registry's release schedule. • The Chinese Taipei Cancer Registry meets NAACCR quality standards and is highly accurate, with 38 out of 55 accuracy indicators at least 95% and 10 between 90-95%.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	3	+3	• Chinese Taipei has established the Chinese Taipei Cancer Registry (TCR) system since 1979. Medical institutions are required to report summary information on the epidemiology, diagnosis, and treatment of various new cancers, including lung cancer.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	2	+2	• The CTC-FAST team boosts public awareness of lung cancer prevention through education and outreach. • The Formosa Cancer Foundation suggested two members for interviews, providing crucial insights to improve public education on lung cancer prevention. • This collaboration aims to develop a comprehensive approach to enhance the effectiveness of educational efforts.
	7	Existence of community-based outreach programmes	0 – 3	2	+2	• Chinese Taipei regularly holds press conferences with academic and association organisations to promote lung cancer screening. • They use print posters, radio broadcasts, TV ads, and other media to encourage early screening and raise public awareness about lung cancer.
	8	Existence of clinical associations	0 – 3	1	+1	Clinical Associations in Chinese Taipei: 1. Chinese Taipei Lung Cancer Society (TLCS): Focuses on lung cancer research and clinical practice. 2. Chinese Taipei Society of Pulmonary and Critical Care Medicine (TSPCCM): Includes members with a focus on lung health, including lung cancer.
	9	Educational programmes for providers	0 – 1	1	+1	• There have been lung cancer diagnosis education programmes organised by the HPA and lung medical societies.
TOTAL SCORE (Robust surveillance protocols and public education)				**19**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	2	+2	• Most cancer patients are diagnosed and treated in hospitals with 50 or more beds. • Chinese Taipei has ten major medical centres and one comprehensive cancer hospital. • Hundreds of regional and district general hospitals also participate in cancer care.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	1	+1	• The National Health Insurance Agency (NHIA) is committed to ensuring equal access to care. • Despite this commitment, there are still gaps in achieving full equity in access to cancer care.
	3	Number of radiologists	*N/A*			• Based on the 2023 End-of-Year Statistics for Medical Professionals in Chinese Taipei, there are 1,407 radiologists.
	4	Number of radiation oncologists	*N/A*			• Based on the 2023 End-of-Year Statistics for Medical Professionals in Chinese Taipei, there are 409 radiation oncologists.
	5	Number of surgeons	*N/A*			• Based on the 2023 End-of-Year Statistics for Medical Professionals in Chinese Taipei, there are 8,180 surgeons.
	6	Number of thoracic surgeons	*N/A*			• Based on the 2023 End-of-Year Statistics for Medical Professionals in Chinese Taipei, there are 98 thoracic surgeons.
	7	Number of medical oncologists	*N/A*			• According to the Cancer Medical Society of the Republic of China, there are 493 oncologists.
	8	Number of pathologists	*N/A*			• According to the Chinese Taipei Society of Pathology, there are 887 pathologists.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	5	+5	• Launched in July 2022, the Chinese Taipei National Lung Cancer Early Detection Screening Programme targets both smokers and non-smokers with a family history of lung cancer. It employs a modified Lung-RADS guideline issued by the American College of Radiology for managing nodules.
	10	Level of screening uptake	0 – 2	1	+1	• According to the HPA Cancer Prevention and Control Division, it was reported that about 500,000 people are eligible for free lung cancer screening, but only about 50,000 made use of the programme in its first year.

Chinese Taipei

	11	Number of CT scanners	N/A			• There are 595 CT scanner units in 2024.
	12	Number of PET scanners	N/A			• There are 70 PET scanner units in 2024.
	13	Number of MRI scanners	N/A			• There are 334 MRI scanner units in 2024.
	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 1	1	+1	• Contrast-enhanced CT scans for thoracic and abdominal regions and whole-body 18F-fluoro-2-deoxy-D-glucose (FDG) PET scans are routinely used.
	15	Availability of/ access to Biopsy	0 – 2	2	+2	• Biopsy methods are based on the availability of modalities. • Performed in a few medical centres in northern Chinese Taipei for tumours with central airway invasion, typically under conscious sedation by pulmonologists. • The widely available CT- or Ultrasound-Guided Core Needle Biopsy transthoracic approach used when lesions are close to the chest wall or when transbronchial methods are not feasible. • Tumour classification is confirmed through histologic or cytologic examination in more than 96% of cases.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	2	+2	• The TW Biobank has been launched as part of Chinese Taipei's precision medicine initiative. • Chinese Taipei has developed comprehensive infrastructures and supply chains in health management, disease prevention, diagnosis, treatment, rehabilitation, data science, and manufacturing. • The biobanking infrastructure and large-scale storage of biological data and specimens from the precision medicine initiative are valuable assets for advancing precision health.
Availability and Accessibility of Health System Infrastructure	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	2	+2	• While EGFR and PD-L1 are reimbursed under the national public health system based on online website sources, there is no clear evidence indicating that specific testing for ALK and ROS1 is not clearly indicated as reimbursed under the national public health system.
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	2	+2	• Despite the absence of a formal national plan for NGS, discussions on implementation strategies and potential reimbursement by the National Health Insurance Administration (NHIA) have occurred in 2024. • Currently, healthcare provider awareness of NGS is predominantly seen in the private sector, where high out-of-pocket costs are common. • A reimbursement decision for NGS is announced in May 2024, covering 19 eligible cancer types (including NSCLC) with a once-per-lifetime claimable benefit for each type.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	2	+2	• There is a well-established comprehensive genomic profiling infrastructure with expansive network in Chinese Taipei.
	20	Availability of/ access to Companion diagnostics	0 – 2	1	+1	• Access to companion diagnostics (CDx) in Chinese Taipei is partially covered under the national public health system. • However, due to the limited scope of this coverage, many CDx tests are often funded by pharmaceutical companies that offer targeted therapeutics. • Since NGS has been reimbursed since May 2024, it may potentially enhance access to genetic testing for patients.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	2	+2	• Despite the absence of a formal national plan for NGS, discussions on implementation strategies and potential reimbursement by the National Health Insurance Administration (NHIA) have occurred in 2024. • Currently, healthcare provider awareness of NGS is predominantly seen in the private sector, where high out-of-pocket costs are common. • A reimbursement decision for NGS was announced in May 2024, covering 19 eligible cancer types with a once-per-lifetime claimable benefit for each type.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	2	+2	• For small biopsy specimens of non-small cell lung cancer (NSCLC), an initial panel of immunohistochemical markers, such as p40 and TTF-1, is recommended. • Following a pathologic diagnosis, molecular testing for targetable mutations is routinely conducted, particularly for EGFR mutations, which are found in about 55% of lung adenocarcinoma patients in Chinese Taipei. • For patients with EGFR wild-type lung cancer, testing for ALK rearrangement is also performed.
	23	Availability of/ access to Surgery	0 – 2	2	+2	• As of 2007, the National Health Insurance (NHI) in Chinese Taipei fully reimburses thoracoscopic lung resections, including wedge resection, lobectomy, and pneumonectomy. • Additionally, pulmonary segmentectomy has been covered by the NHI since 2014.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	2	+2	• Based on expert opinion, all regional hospitals and medical centres provide radiation therapy.

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	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	2	+2	• Chinese Taipei has guidelines related to lung cancer and psycho-oncology clinical care.
	26	Availability of/ access to Rehabilitation	0 – 2	2	+2	• According to expert opinion, there are rehabilitation programmes established for lung cancer patients.
	27	Availability of/ access to Palliative care	0 – 2	2	+2	• According to expert opinion, there are palliative care programmes established for lung cancer patients.
	28	Availability of/ access to lung cancer therapy	0 – 3	3	+3	• Targeted therapies, gefitinib and erlotinib, have been reimbursed by Chinese Taipei's National Health Insurance since 2004 and 2007, respectively, for patients with NSCLC who meet the above requirements based on evidence and clinical need.
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	1	+1	• It took an average of 27 months (783 days) to obtain approval from the Chinese Taipei FDA and NHI reimbursement for a new cancer drug. • Before TFDA approval, drug companies tended to provide access to the drug through an EAP programme. According to estimates from several experts, the EAP programme generally started at least 6 months after the global launch.
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				39		

2. Lung Cancer Health System Snapshot – Chinese Taipei's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Chinese Taipei
Enhancing Biomarker Testing and Precision Medicine	• Although EGFR and PD-L1 testing are reimbursed, specific tests for ALK and ROS1 are not explicitly covered under the National Health Insurance (NHI). • There is no formal national plan for Next-Generation Sequencing (NGS), and there are no formalised local guidelines for its use.	• The upcoming reimbursement decision for NGS in May 2024, which will cover 19 cancer types, presents an opportunity to expand access to precision medicine. • Chinese Taipei's existing biobanking infrastructure and precision medicine initiative (TW Biobank) can be utilised to enhance the implementation of comprehensive biomarker testing.
Boosting Public Awareness and Engagement in Screening Programmes	• Despite the availability of a government-funded LDCT screening programme, evidence suggests that uptake remains relatively low. Despite efforts through press releases and media, there is still a need to boost public awareness and participation in screening programmes. • Biomarkers and NGS have not yet been clinically incorporated into lung cancer screening, although initial evidence shows promise in enhancing early detection and personalising treatment approaches.	• Enhance public education on lung cancer risk factors and the importance of screening to increase awareness and participation in screening programmes, thereby improving the chances for early detection and effective treatment. • Strengthen collaboration with lung cancer advocacy groups and use diverse outreach strategies, including public awareness campaigns and media efforts, to improve education and boost screening uptake. • Expand the lung cancer early detection programme and integrate more comprehensive screening methods to improve early detection rates and overall patient outcomes.
Expanding Access to and Quality of Care Across Regions	• There are disparities in access to high-quality cancer care across different regions, particularly between urban and rural areas. • The availability of specialised diagnostic and therapeutic resources varies, affecting timely and equitable access to care.	• Strengthening cancer care infrastructure in underserved regions can help address geographic disparities. • Develop key regional cancer centres to decentralise care and reduce the disparity between urban and rural access to high-quality cancer diagnostics and treatment. • Secure increased funding and support through multi-stakeholder collaboration such as government, non-governmental organisations, and industry partners to enhance infrastructure, resources, and financial support in underserved regions.

Lung Cancer Health System Snapshot

Scorecard of South Korea

South Korea

1. Lung Cancer Health System Snapshot – Korea Scorecard Results and Future Opportunities

Domain	Indicator		Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	2	+2	• Korea has an operational national cancer control plan, the 4th Comprehensive Cancer Control Plan (2021-2025).
	2	Currency of national cancer control plan	0 – 2	2	+2	• The NCCP covers the years 2021 to 2025.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	5	+1	• The 4th Comprehensive Cancer Control Plan in Korea addresses all key areas of cancer care. It emphasises the advancement of cancer prevention and screening efforts and outlines specific promotional tasks for enhancing these areas. The plan supports the expansion of research infrastructure to improve early detection and diagnosis, including the development of remote management models for cancer care. In terms of treatment, it focuses on strengthening cancer treatment effectiveness and coverage. For palliative care, the plan builds on previous successes by continuing to enhance services. Additionally, it addresses survivorship support by preparing measures to aid cancer survivors, particularly during infectious disease outbreaks, through both face-to-face and remote support services.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1		+1	
	5	Diagnosis is a component of the national cancer control plan	0 – 1		+1	
	6	Treatment is a component of the national cancer control plan	0 – 1		+1	
	7	Palliative care is a component of the national cancer control plan	0 – 1		+1	
	8	Survivorship support is a component of the national cancer control plan	0 – 1		0	
	9	Inclusion of an implementation plan for cancer control	0 – 2	2	+2	• The plan includes a section dedicated to implementation and promotion tasks, complete with performance indicators and a detailed schedule or timeline for each task.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	1	+1	• The Plan features a section titled "Vision, Target, and Promotion Strategies," outlining four key promotional strategies.
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	1	+1	• The plan briefly addresses the budget allocated for specific promotional tasks and is funded by the Ministry of Health and Welfare.
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	0	0	• A specific lung cancer control plan has neither been published nor discussed by the government or health ministry.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1			
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1			
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2			
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1			
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**13**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	2	+2	• The Korean National Cancer Centre (NCC) developed and published lung cancer screening guidelines using low dose computed tomography (LDCT) in 2015. These guidelines recommend annual LDCT screening for high-risk individuals aged 55 to 74 years, specifically those with at least a 30-pack-year smoking history, including current smokers and former smokers who have quit within the past 15 years. • In 2016, the Korean Ministry of Health and Welfare launched the Korean Lung Cancer Screening Project (K-LUCAS), aligned with the NCC's guidelines. K-LUCAS is a health system-wide, multicentre, prospective study designed to evaluate the effectiveness and feasibility of LDCT screening, with the goal of considering the implementation of a national lung cancer screening programme in Korea.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	2	+2	
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	11	+2	• South Korea has established national objectives for tobacco control and has a dedicated national agency to oversee these efforts.
					+1	• Tobacco advertising is prohibited on national TV and radio. Additionally, at least one national anti-tobacco mass media campaign was conducted up until 2016.
					+1	• Tobacco prices have remained unchanged since their increase in 2015. Although prices have not risen, consumer purchasing power has improved. To address affordability, tobacco taxation policies should be updated in line with current income levels and inflation rates.
					+2	• Tobacco packages must carry a label prohibiting sales to individuals under the age of 19.
					+2	• Health warnings are mandated on tobacco packages, and plain packaging requirements are enforced.
					+1	• Penalties for violations of tobacco control regulations are in place.
					+1	• South Korea is a signatory to the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC).
					+1	• The government has shown a commitment to tobacco control by allocating financial resources to smoking prevention and control programmes, with the budget for these efforts growing to 6 billion KRW.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	4	+1	• The most recent national anti-tobacco campaign was launched in 2022.
					+1	• Smoking cessation services are widely accessible, including treatment programmes, counseling, therapy, health checkups, and nutrition consultations through the National Smoking Cessation Service.

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					+1	• Since February 2015, the South Korean National Health Insurance has provided financial support for smoking cessation treatments, available at community-based clinics, hospitals, and public health centres. This support includes coverage for counseling and medication, extending to financially vulnerable populations.
					+1	• Among those enrolled in the National Smoking Cessation Services (NSCS), 41.2% had successfully quit at baseline.
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	3	+1	• National smoke-free legislation is in place for indoor offices and public transportation.
					+1	• The Constitutional Court recently affirmed the constitutionality of the law that designates public facilities, including outdoor spaces, as non-smoking areas.
					+1	• Various anti-tobacco campaigns have been launched over the years to emphasise the impact of tobacco on personal health and society. These campaigns address the effects of smoking on the human body, societal harms, the dangers of second-hand smoke, and the expansion of non-smoking areas.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	6	+1	• South Korea has established radon control programmes
					+1	• The Clean Air Conservation Act governs air pollution control. The Ministry of Environment's master plan aims to reduce fine dust concentration by over 35% by 2030, compared to 2018 levels.
					+1	• The government supports clean energy technology through subsidies and loans for low-pollution vehicles and exhaust gas reduction devices.
					+1	• By 2022, the government announced plans to close 30 coal-fired power plants by 2034, replace some with natural gas plants, and improve power efficiency and emissions control.
					+1	• Regulations require vehicles and ships to adhere to permissible emission levels set by Presidential Decree.
					+1	• South Korea is part of the Climate & Clean Air Coalition and participates in the 'BreatheLife' campaign, which focuses on air pollution awareness and solution.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• South Korea has legislation in place that covers workplace safety and health.
					+1	• The Korea Occupational Safety & Health Agency (KOSHA) provides accreditation for risk assessments.
					+1	• Special and general health examinations are conducted to screen for occupational diseases and other health issues with oversight from the Working Environment Measurement Institution.
					+1	• Korea Occupational Safety & Health Agency (KOSHA) offers safety and health training programmes, including the development and distribution of materials on preventing occupational accidents.
	8	E-cigarettes regulation	0 – 4	3	+1	• Nicotine-containing e-cigarettes are classified as tobacco products and are regulated accordingly.
					+1	• The sale and distribution of e-cigarettes to individuals under 19 years old are prohibited.
					0	• Advertising of e-cigarettes is permitted, but nicotine-containing e-cigarette ads can only appear a maximum of 10 times per magazine per year.
					+1	• The use of e-cigarettes is banned in public places and on public transportation, except in designated smoking areas.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	0	0	• Currently, there are no collaborations or joint programmes between civil societies, patient organisations, and policy groups or government bodies in South Korea.
Contribution of patient organisations and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	0	0	• Additionally, no specific lung cancer patient organisation has been identified.
	11	Existence of civil society	0 – 3	2	+2	• The Korean Cancer Association actively promotes cancer research and support through collaboration with various societies and institutions. It organises conferences and events to disseminate the latest research and advancements in lung cancer treatments.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	0	0	• Currently, there are no patient organisations or civil societies involved in decision-making bodies.
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	0	0	• Currently, patient organisations do not contribute to the development of clinical guidelines in South Korea.
	14	Patient organisation participation in cancer control plan development	0 – 1	0	0	• There are no patient organisations or civil societies focused on lung cancer involved in the development of the National Cancer Control Plan in South Korea.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	0	0	• Currently, civil society does not have the opportunity to comment on HTA (Health Technology Assessment) recommendations.
	16	Civil society collaborations/ participation in joint programmes with the private sector	0 – 1	0	*No Data*	
	17	Community engagement and empowerment	0 – 2	1	+1	• The National Cancer Information Centre (NCIC), established in June 2005, offers comprehensive cancer-related information services. Its primary aim is to provide the public, cancer patients, and their families with up-to-date, evidence-based information and practical advice to address concerns and uncertainties about cancer.
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	2	+2	• The Korean Society of Medical Oncology (KSMO) has endorsed the Pan-Asian adapted ESMO Clinical Practice Guidelines for managing patients with metastatic non-small cell lung cancer. Additionally, the Korean Association for the Study of Lung Cancer (KASLC) published its own lung cancer treatment guidelines in 2010.
	19	Currency of clinical guidelines for lung cancer	0 – 2	1	+1	• The Pan-Asian adapted ESMO Clinical Practice Guidelines for the management of metastatic non-small cell lung cancer were last updated in 2018.

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	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	1	+1	• In Korea, lung cancer screening guidelines were established in 2015 for high-risk individuals—those with a smoking history of 30 pack-years or more and aged 55 to 74 years. Following the successful completion of the Korean Lung Cancer Screening Demonstration Project (K-LUCAS), which ran from February 2017 to December 2018, the National Lung Cancer Screening Programme (NLCSP) was officially launched in July 2019.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• The Korean National Cancer Centre's national guidelines recommend biennial low-dose computed tomography (LDCT) screening for individuals aged 54 to 74 who have a smoking history of 30 pack-years or more. This screening is part of the National Cancer Screening Programme (NCSP).
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	*No Data*	
	23	Inclusion of NGS in screening guidelines	0 – 3	0	*No Data*	
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• The Korean Society of Medical Oncology (KSMO) has endorsed the Pan-Asian adaptation of the European Society for Medical Oncology (ESMO) Clinical Practice Guidelines (CPG) for managing patients with metastatic non-small cell lung cancer (NSCLC).
	25	Diagnosis timeframe	0 – 2	0	0	• Both the Korean Association for the Study of Lung Cancer (KASLC) and the Pan-Asian adapted ESMO guidelines do not specify a time frame for the diagnosis of suspected lung cancer. However, patients generally have easy access to hospitals, and the waiting time for referrals is relatively short in South Korea.
	26	Post-diagnosis referral intervals	0 – 2	0	0	• Neither the Korean Association for the Study of Lung Cancer (KASLC) nor the Pan-Asian adapted ESMO guidelines include a specific referral pathway for rapid access to advanced care.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• The Korean Association for the Study of Lung Cancer (KASLC) released the lung cancer treatment guidelines in 2010.
	28	Patient navigation programme	0 – 1	0	0	• Currently, Korea does not have a patient navigation programme, but one is under development to enhance support and coordination for lung cancer patients.
	29	Referral system	0 – 1	1	+1	• South Korea has a structured referral system for lung cancer patients, facilitated by the National Health Insurance Service (NHIS). This system ensures a well-coordinated process from primary care to specialised centres for further diagnostic evaluation and treatment. The goal is to minimise delays and provide timely, appropriate care for patients suspected of having lung cancer.
	30	Established programmes for further care management	0 – 1	0	0	• Not present.
	31	Shared decision making	0 – 1	0	0	• Current guidelines in Korea do not cover shared decision-making for lung cancer.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The ESMO guidelines, followed by Korea's healthcare professionals, recommend that lung cancer patients be treated by a multidisciplinary care team.
	33	Referral pathway to supportive/ palliative care	0 – 1	0	0	• The ESMO guidelines do not specify a referral pathway to supportive or palliative care services.
	34	Psychological burden	0 – 1	1	+1	• The guidelines do not address the psychological burden of lung cancer comprehensively. While the KASLC guidelines briefly acknowledge the mental stress patients may experience while waiting for diagnostic results, they do not provide a referral pathway to psychological support services.
TOTAL SCORE (Sufficient political will and coordination)				**49**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	4	+4	• The National Lung Cancer Screening Programme (NLCSP) is reimbursed by the National Health Insurance Service (NHIS) of Korea. The government has announced plans to implement this national programme using low-dose computed tomography (LDCT) for high-risk populations with at least a 30 pack-year smoking history.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	3	+3	• The Korean HIRA recommends comprehensive diagnostic approaches for lung cancer, including chest CT, PET-CT, brain CT or MRI, EBUS transbronchial needle aspiration, and mediastinoscopy of enlarged mediastinal lymph nodes, as well as molecular tests for driver mutations • Government reimbursement covers tests for EGFR, ALK, ROS1, and programmed death-ligand 1 (PD-L1) mutations. Since 2018, plasma DNA testing for EGFR mutations and 50% insurance coverage for next-generation sequencing (NGS) have been available.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	2	+2	• Most lung cancer drugs listed in the WHO Essential Medicines List (NEDL) are primarily funded or reimbursed by the government.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	1	+1	• There is no dedicated cancer-specific budget, with only the Ministry of Health and Welfare's (MOHW) general yearly budget available. In 2024, the only cancer-related expenditure involves "infrastructure augmentation," which includes a KRW 500 million allocation for installing state-of-the-art equipment at local cancer centres. There is no specific funding for equity-promoting initiatives.
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	0	*No Data*	
	6	Existence of patient financial support programmes and associated out of pocket expenses for lung cancer diagnosis	0 – 3	0	*No Data*	
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	0	*No Data*	

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	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	2	+2	• In South Korea, out-of-pocket spending on healthcare was 6.1% of final household consumption in 2021. • For cancer patients diagnosed between 2004 and 2010, out-of-pocket costs were estimated to be 15–20% of total insurance costs, with lung cancer incurring the highest share of these costs.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**12**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	2	+2	• The South Korea Central Cancer Registry (KCCR), overseen by the National Cancer Centre (NCC), collects, manages, analyses, and distributes data on cancer incidence, prevalence, mortality, and survival. It integrates data from the hospital-based Korean Central Cancer Registry, 11 population-based cancer registries, and site-specific cancer registries.
	2	Registry integration and linkage	0 – 3	3	+3	• Since 2002, the KCCR has developed the Korea National Cancer Incidence Database (KNCIDB) by integrating data from the KCCR database, 11 population-based regional cancer registries, ad-hoc medical record review surveys, and the cancer mortality database from Statistics Korea. • This comprehensive integration enables precise national cancer incidence measurement and supports research and treatment planning.
	3	Registry population coverage	0 – 2	2	+2	• The registry likely covers almost the entire population
	4	Operational status of registry	0 – 3	2	+2	• The National Cancer Control Institute (NCCI) has not been actively updating or releasing new data, with the latest report issued in 2016.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	3	+3	• The Korean Association for Lung Cancer (KALC) Registry (KALC-R) is a health system-wide registry developed by the KALC in collaboration with the Korean Central Cancer Registry (KCCR).
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	2	+2	• All.Can Korea is a collaborative initiative involving patient advocacy groups, healthcare professionals, public health policy experts, legal counsellors, and BMS. Pharmaceuticals Korea Ltd. The Korean Cancer Association addresses the critical issues in cancer therapy through its health system-wide 'Right Decisions in Cancer Care' initiative. This programme emphasises the importance of medical professionalism, education for patients and clinicians, and aims to shape healthcare policy.
	7	Existence of community-based outreach programmes	0 – 3	0	0	• Currently, there are no known community outreach programmes
	8	Existence of clinical associations	0 – 3	3	+3	• In Korea, clinical associations that play key roles in the management of lung cancer include the Korean Association for Lung Cancer (KALC) and the Korean Academy of Tuberculosis and Respiratory Diseases (KATRD). KALC serves as the primary organisation dedicated to healthcare professionals specialising in lung cancer, while KATRD is involved in the broader management of lung diseases, encompassing lung cancer.
	9	Educational programmes for providers	0 – 1	0	0	• Currently, there are no clinical lung cancer educational programmes specifically targeted towards healthcare providers in Korea
TOTAL SCORE (Robust surveillance protocols and public education)				**17**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	2	+2	• The Regional Cancer Centre Support Programme aims to address regional disparities in cancer care by designating hospitals in provincial areas as Regional Cancer Centres (RCCs). The government provides support to these centres to enhance their cancer care infrastructure.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	2	+2	• In the Republic of Korea, universal health insurance covers all residents, with a 5% copay for cancer work-ups and treatments. For low-income individuals, the maximum copay is approximately $1,000 as of 2016.
	3	Number of radiologists	*N/A*			• Currently, there are 4,206 radiologists in South Korea.
	4	Number of radiation oncologists	*N/A*			• In 2020, there were 280 radiation oncologists in South Korea.
	5	Number of surgeons	*N/A*			• In 2017, there were 11.65 general surgeons per 100,000 people in South Korea.
	6	Number of thoracic surgeons	*N/A*			*No Data*
	7	Number of medical oncologists	*N/A*			• As of 2015, there were 504 physicians accredited with a speciality in medical oncology and/or haematology in Korea.
	8	Number of pathologists	*N/A*			• The Korean Society of Pathologists has 1,154 members, comprising clinical pathologists.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	5	+5	• Lung cancer screening in South Korea is organised centrally, with a population-based programme that is operational and covers the entire target population. The programme follows standardised protocols and guidelines, recommending screening primarily for current and former smokers.
	10	Level of screening uptake	0 – 2	1	+1	• In 2019 and 2020, approximately 23% of the roughly 690,000 eligible individuals participated in the national lung cancer screening programme using LDCT.
	11	Number of CT scanners	*N/A*			• 42 CT scanners per 1M population.
	12	Number of PET scanners	*N/A*			• 35.5 PET scanners per 1M population.
	13	Number of MRI scanners	*N/A*			• 35.48 MRI units per 1M population.

South Korea

Availability and Accessibility of Health System Infrastructure	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 2	2	+2	• The Korean Health Insurance Review and Assessment Service (HIRA) encourages the use of chest CT, PET-CT, brain CT or MRI, EBUS-guided transbronchial needle aspiration, or mediastinoscopy (currently infrequently used) for evaluating enlarged mediastinal lymph nodes, as well as molecular tests for driver mutations, followed by multidisciplinary team (MDT) discussions for lung cancer treatment planning. • Most referral centres are equipped with bronchoscopes, endobronchial ultrasound (EBUS), endoscopic ultrasound, multidetector CT scans, magnetic resonance imaging (MRI), and positron emission tomography (PET) CT scan instruments.
	15	Availability of/ access to Biopsy	0 – 2	2	+2	• In South Korea, tumour biopsies are available through several methods: bronchoscopy or EBUS is used in 47.1% of cases, CT-guided lung biopsy in 38.2%, image-guided lymph node biopsy in 5.6%, and surgical biopsy. (including thoracoscopy or mediastinoscopy) for the remaining cases.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	2	+2	• South Korea has an expansive network of testing infrastructure and is developing a national cancer genomics database. This initiative aims to enhance the accessibility and integration of genomic information across the healthcare system, supporting advanced cancer research and personalised treatment approaches.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	2	+2	
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	2	+2	• Korea boasts an expansive data and testing infrastructure that supports next-generation sequencing (NGS) testing. This includes resources like South Korea's K-MASTER clinical trial referral platform, which facilitates access to advanced genomic testing and supports personalised cancer treatment.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	2	+2	• Korea has a well-established comprehensive genomic profiling (CGP) infrastructure, supported by an expansive network that facilitates extensive data collection and advanced testing capabilities.
	20	Availability of/ access to Companion diagnostics	0 – 2	1	+1	• Some companion diagnostics (CDx) are covered centrally under the public health system in Korea. The National Health Insurance Service (NHIS) reimburses the cost for certain types of CDx, though coverage may be limited by relatively low reimbursement rates.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	2	+2	• Since 2016, precision medicine has been a National Strategic Project in Korea, with numerous research and development initiatives underway. The Fourth National Cancer Control Plan (2021-2025) aims to utilise genomic data, and discussions are ongoing to expand the use of next-generation sequencing (NGS) in cancer care. • Local guidelines for precision medicine are available, and reimbursement covers both small and large panels used for diagnosing solid and blood cancers. However, recent policy changes have resulted in reduced reimbursement for panels related to non-small cell lung cancer (NSCLC) and other solid tumours. • Since 2018, plasma DNA testing for detecting EGFR mutations has been included in the coverage. The government also started providing 50% insurance coverage for NGS in 2018, leading to the implementation of various NGS platforms in large institutions, including Illumina, Thermo Fisher Scientific, and self-developed panels.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	2	+2	
	23	Availability of/ access to Surgery	0 – 2	2	+2	• Accessibility to surgery remains limited for low-income patients and those living outside major cities. A study using data from the KNHI database revealed that over 60% of lung cancer surgeries were performed in Seoul, indicating a pattern of centralised treatment.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	2	+2	• Radiotherapy is available at 95 centres across the health system, with most hospitals equipped with state-of-the-art linear accelerators. These facilities offer advanced treatments such as intensity-modulated radiotherapy (IMRT), respiratory gating, and image-guided radiotherapy.
	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	0	0	• The Lung Cancer Comprehensive Care Programme (LC^3P) is a proactive and holistic prehabilitation initiative designed to support lung cancer survivors as they transition to life after treatment. The programme focuses on providing comprehensive care to enhance recovery and quality of life during this critical period. • This initiative is based on the results of a recent small clinical trial conducted by a single institution.
	26	Availability of/ access to Rehabilitation	0 – 2	1	+1	• Since January 2017, pulmonary rehabilitation has been covered by the National Health Insurance Service (NHIS) • However, only 20.9% of 43 tertiary and general hospitals offer pulmonary rehabilitation, with a focus primarily on respiratory education rather than the high-intensity programmes recommended by guidelines.
	27	Availability of/ access to Palliative care	0 – 2	1	+1	• In Korea, terminal cancer patients are often referred to palliative care too late, with the timing of referrals being influenced by various socioeconomic and medical factors.
	28	Availability of/ access to lung cancer therapy	0 – 3	2	+2	• Lung cancer therapy is widely accessible to most Koreans and is covered up to 95% of its cost by the National Health Insurance Service for lung cancer patients. • However, in clinical settings, the drug's availability is constrained by the current status of MFDS approval and the pricing and reimbursement (P&R) process, which can take several months to years post-approval. • Drugs that have already been approved overseas may not be approved domestically, or even if they are approved, the reimbursement process may be delayed, extending the time required for actual treatment. These delays in approval and reimbursement make it difficult for patients to receive the latest treatments promptly. • Despite this, most targeted therapies and immunotherapies are available to Korean lung cancer patients. Additionally, South Korea's P&R system and regulations are evolving to facilitate earlier access to new medications.

South Korea

	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	0	*No Data*
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**35**	

2. Lung Cancer Health System Snapshot – Korea's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Korea
Enhancing Lung Cancer Advocacy and Comprehensive Support	• A stronger patient voice is needed among lung cancer patients in South Korea. Currently, there are limited or no lung cancer-specific patient organisations or civil societies. Lung cancer advocacy is relatively inactive compared to other types of cancer in the health system. • Advocacy groups in South Korea need more support from philanthropic foundations, similar to the support breast cancer advocacy groups receive, which has resulted in a stronger advocacy presence.	• While financial support for patients through reimbursement mechanisms in Korea is relatively strong, as demonstrated by the government supporting cancer patients by lowering their copayments from 20-30% to 5%, this support needs to extend beyond financial benefits. • Currently, patient organisations are small and unstructured, but they should be strengthened to amplify patients' voices and improve care. • The government has begun including patients in multidisciplinary team care, which is a positive step, but there is a need to improve psychological support and referral pathways for lung cancer patients. • Additionally, as 5-year survival rates improve, a robust survivorship programme is needed to ensure comprehensive care for patients.
Boosting Lung Cancer Screening Uptake and Accessibility	• South Korea's relatively new National Lung Cancer Screening Programme is faced with low uptake rates, with only 23% of eligible individuals screened in 2019 and 2020. A key issue is the lack of public awareness programmes. While the government reaches out to every eligible individual via mail, there are no targeted campaigns to encourage screening	• Enhancing public awareness through targeted multimedia campaigns and improving accessibility, particularly in underserved areas, could significantly boost screening uptake rates • Additionally, there is a need to expand LDCT screening to include never-smokers due to the high and rising incidence of lung cancer in this group. Initial conversations and plans, such as ongoing small-scale feasibility studies for LDCT screening for never-smokers, are in place, but they have not yet been fully implemented.
Enhancing Lung Cancer Care through Improved Referral Systems and Psychological Support	• South Korea currently lacks a special or fast-track referral system for lung cancer patients, despite the rapid progression of the disease in some cases. The existing referral systems follow routine processes, which can be insufficient given the variable progression rates of lung cancer. • Additionally, referral pathways to psychological care for lung cancer patients, their families, and caregivers are suboptimal. Current guidelines do not acknowledge the psychological burden of lung cancer or describe referral pathways to appropriate services. However, good examples of psychological support do exist in South Korea. Participants at the workshop highlighted the presence of support services at various cancer centres. Unfortunately, these services are not often utilised or actively promoted to lung cancer patients. It was suggested that specific guidelines and referral pathways to psychological support services should be formally introduced into the national guidelines to ensure patients across the health system consistently receive the same standard and quality of care.	• To improve the care of lung cancer patients in South Korea, a special or fast-track referral system should be established to address the rapid progression of the disease in certain cases. Implementing such a system would ensure timely and efficient treatment, potentially improving patient outcomes. • Additionally, the integration of specific guidelines and referral pathways to psychological support services into the national guidelines is crucial. Promoting and utilising existing psychological support services at cancer centres can help address the significant psychological burden on lung cancer patients, their families, and caregivers.

Lung Cancer Health System Snapshot

Scorecard of Japan

Japan

1. Lung Cancer Health System Snapshot – Japan Scorecard Results and Future Opportunities

Domain	Indicator		Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	2	+2	• Japan has launched its National Cancer Control Plan (NCCP), known as the Fourth Basic Plan for Cancer Control (2023-2028).
	2	Currency of national cancer control plan	0 – 2	2	+2	• The NCCP has been updated within the last two years, with the current version covering 2023 to 2028.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+6	• The 2023-2028 NCCP outlines targets and measures for primary prevention, secondary prevention, early detection and diagnosis, treatment, palliative care, and survivorship support.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	1		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	1		
	9	Inclusion of an implementation plan for cancer control	0 – 2	2	+2	• The plan provides a detailed description of the current situation and issues in each sector, along with sector-specific measures to address them.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	1	+1	• The Plan includes a section dedicated to 'Overall Goals and Sector-Specific Goals,' as well as another section on 'Sectoral Policies and Individual Targets.
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	1	+1	• A funding source has been identified: the Ministry of Health, Labour and Welfare will provide the financing for the plan.
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	0	0	• The government or health ministry has not published a specific lung cancer control plan.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	0		
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	0		
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	0		
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	0		
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**14**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	2	+2	• The LC-SCRUM, a large ongoing study in collaboration with industry, government, and academia, is currently being conducted under the leadership of the National Cancer Centre East, in which the participants can undergo the cancer gene panel test free of charge.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	2	+2	
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	8	+2	• National objectives for tobacco control are established, and a dedicated national agency for tobacco control is in place.
					0	• Although advertising is banned on national TV and radio, tobacco advertising is self-regulated by the industry, and there is no clear evidence supporting the effectiveness of this ban.
					+2	• The excise tax on cigarettes includes a mixed tax rate: a specific tax rate of EUR 80.0 per 1,000 cigarettes (effective April 1, 2024) and an ad-valorem tax rate of 32.0% of the retail price. A plan was adopted to increase the cigarette tax by ¥3 per cigarette over four years (2018-2022), with further price hikes in October 2021.
					+1	• Tobacco products and heated tobacco products (HTPs) cannot be sold to individuals under 20 years of age.
					+1	• Health warnings are legally required to appear on tobacco packages.
					+1	• Penalties are in place for violations of tobacco control regulations.
					+1	• Japan is a signatory to the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC).
					0	• Japan Tobacco International (JTI) has the right—and obligation—to express its views on regulations affecting its products and the industry. Enforcement measures are inadequate, and Japan ranks lowest globally in terms of tobacco industry interference.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	2	+1	• The Ascure smoking cessation programme is a 24-week, fully remote online initiative, offering 6 sessions through a smartphone app developed by CureApp Inc. It's free and accessible to vulnerable populations.
					0	• There is no national mass media campaign for smoking cessation up to 2016. As of 2018, smoking cessation treatment, although covered by universal health insurance, is underused due to limited access and a lack of media promotion.
					+1	• The eHealth website features a Quit Smoking Support page but lacks a Quitline system. The Ascure programme includes interactive online sessions, a digital diary, and home delivery of nicotine replacement therapy.
					0	• The Ascure programme has a low completion rate (30%), with many participants dropping out before completing the programme.
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	2	+1	• Indoor smoking is banned in restaurants, hotels, and offices.
					0	• There are no smoke-free regulations for outdoor areas.

Japan

					+1	• Campaigns are in place to prevent passive smoking and reduce second-hand smoke exposure.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	5	+1	• Radon control programmes are in place in Japan.
					+1	• The Air Pollution Control Act governs air pollution in Japan, with commitments to reduce methane and HFCs, including efforts in agriculture and international support, such as funding for Vietnam. Urban air pollution strategies are geographically categorised.
					+1	• Japan's 6th Strategic Energy Plan (2021) and the GX Decarbonisation Power Supply Bill (2023) aim to increase non-fossil fuel generation to 59% by 2030, up from 31% in 2022.
					+2	• Emission regulations in Japan are defined by the Air Pollution Control Laws, which set standards for industrial emissions and motor vehicles.
					0	• There are currently no public awareness campaigns/ educational initiatives aimed at informing the public about the health risks associated with air pollution and mitigating exposure.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• Legislation addresses workplace safety and health.
					+1	• Risk assessments identify and mitigate occupational hazards to prevent accidents and enhance safety.
					+1	• Employers must ensure worker health and safety, with state support for environmental monitoring, medical checkups, and passive smoking prevention.
					+1	• The Japan Industrial Safety & Health Association provides education and training programmes.
	8	E-cigarettes regulation	0 – 4	1	0	• Nicotine-containing e-cigarettes have been banned since 2010 under the Pharmaceutical Affairs Act, but nicotine-free e-cigarettes are not regulated.
					+1	• E-cigarette sales are restricted and require a prescription. Age restrictions implied by tobacco regulations are set at 20 years.
					0	• Advertising restrictions on e-cigarettes are minimal, with no ban on promotional activities. Social media and influencers are increasingly used for marketing.
					0	• E-cigarette use in public places is restricted depending on nicotine content, with no comprehensive ban on their use.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	1	+1	• The Japan Lung Cancer Society (JLCS) collaborated with the Japanese Society for Radiation Oncology (JASTRO) to establish a consensus-based CT atlas that delineates lymph node stations for radiotherapy in lung cancer treatment.
Contribution of patient organisations and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	2	+2	• Zenganren is a patient organisation in Japan, serving as a federation of various cancer patient groups.
	11	Existence of civil society	0 – 3	3	+3	• The Japan Cancer Society and the Japan Lung Cancer Society are both civil societies. The former is a national civic organisation, while the latter is a professional and academic society dedicated to lung cancer research, education, and the dissemination of information among medical professionals.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	2	+2	• Japan's PMDA has published guidelines on patient involvement in medicine development and regulations, providing a structured approach to incorporating patient input. However, in HTA activities, the patient community is not formally included. While the PMDA actively supports patient capability and involvement, similar efforts are lacking in the HTA body.
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	1	+1	• Japan (One Step) is a lung cancer-specific patient organisations that actively contributes to the development of clinical guidelines.
	14	Patient organisation participation in cancer control plan development	0 – 1	1	+1	• The Cancer Control Promotion Council engages patients and citizens to represent cancer patients in the formulation of prefectural cancer control promotion plans. In cancer research, a guidebook for patient and citizen involvement has been published, and efforts are underway to incorporate their participation in research and development proposals.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	0	0	• Civil societies in Japan do not have the opportunity to comment on HTA recommendations.
	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	1	+1	• The Japan Lung Cancer Society is collaborating with pharmaceutical companies such as Takeda, Amgen, and AstraZeneca, as well as patient advocate groups and non-profit organisations, to conduct public lectures aimed at improving lung cancer medical care and raising disease awareness.
	17	Community engagement and empowerment	0 – 2	2	+2	• Under the Cancer Control Act, the Cancer Control Promotion Council will be established to formulate the Basic Plan to Promote Cancer Control Programmes. The council's members will be appointed by the Ministry of Health, Labour and Welfare and will include representatives of cancer patients and their families or the bereaved, cancer care professionals, and academic experts. The council will have up to 20 members.
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	2	+2	• The Japanese Society of Medical Oncology (JSMO) has endorsed the Pan-Asian adapted ESMO (European Society for Medical Oncology) Clinical Practice Guidelines. Additionally, the Japan Lung Cancer Society (JLCS) has released its own local Lung Cancer Practice Guidelines.
	19	Currency of clinical guidelines for lung cancer	0 – 2	2	+2	• The Japan Lung Cancer Society (JLCS) has revised its lung cancer treatment guidelines several times over the years, with the most recent edition published in November 2023.
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	1	+1	• The Japanese Respiratory Society (JRS) guidelines for lung cancer screening primarily recommend low dose computed tomography (LDCT) for high-risk populations, including

						long-term smokers. These guidelines are part of Japan's broader efforts to implement opportunistic lung cancer screening within the healthcare system.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	1	+1	• In Japan, low dose computed tomography (LDCT) is available and used opportunistically for lung cancer screening in high-risk individuals. However, it has not yet been adopted as the recommended screening method for population-based screening by the government. Currently, chest X-ray (CXR) and sputum cytology are recommended for population-based lung cancer screening in Japan.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0		*No Data*
	23	Inclusion of NGS in screening guidelines	0 – 3	0		*No Data*
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• The Japan Lung Cancer Society (JLCS) published the "Guidelines for Diagnosis and Treatment of Lung Cancer" to offer comprehensive recommendations for diagnosing and treating lung cancer.
	25	Diagnosis timeframe	0 – 2	2	+2	• Although specific guidelines are not present, experts indicate that they are not necessary due to the excellent access to high-quality tertiary hospitals.
	26	Post-diagnosis referral intervals	0 – 2	2	+2	• Experts suggest that guidelines for post-diagnosis referral intervals are not required due to the excellent access to high-quality tertiary hospitals. Neither the lung cancer guidelines issued by the Japan Lung Cancer Society nor the ESMO guidelines include a referral pathway for rapid access to secondary or tertiary care.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• The Japan Lung Cancer Society (JLCS) has released local Lung Cancer Practice Guidelines that cover screening, diagnosis, treatment, and palliative care.
	28	Patient navigation programme	0 – 1	0	0	• Patient navigation programmes are not mentioned in the lung cancer guidelines.
	29	Referral system	0 – 1	0	0	• Referral systems are not mentioned in the lung cancer guidelines.
	30	Established programmes for further care management	0 – 1	0	0	• Established programmes for further care management are not mentioned in the lung cancer guidelines.
	31	Shared decision making	0 – 1	0	0	• The guidelines issued by the Japan Lung Cancer Society (JLCS) do not mention shared decision-making.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The lung cancer guidelines issued by ESMO, which Japan references, recommend that patients be treated by a multidisciplinary care team.
	33	Referral pathway to supportive/ palliative care	0 – 1	1	+1	• According to governmental regulation, every registered cancer centre should have a palliative care team. Although this is mentioned in the lung cancer guidelines, no specific referral pathway to supportive or palliative care services is described.
	34	Psychological burden	0 – 1	1	+1	• The lung cancer guidelines do not address the psychological burden of the disease or include a referral pathway to psychological support services.
TOTAL SCORE (Sufficient political will and coordination)				**54**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	4	+4	• Chest radiography is now nationally available with public assistance for individuals over 40 years old, and sputum cytologic testing is offered for high-risk patients. However, low dose computed tomography (CT) screening, despite recent emphasis, has not yet been included in the list of lung cancer screening items covered by public funds.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	3	+3	• Multiple single-gene tests for EGFR, ALK, and other mutations have been used sequentially. The Oncomine Dx Target Test, approved in 2019, costs approximately $1,000, with 70% to 100% of the cost covered by national health insurance.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	3	+3	• In Japan, universal health insurance provides all citizens with access to systemic cancer therapy at low costs; Regulatory reforms ensure that therapies approved overseas are reimbursed. • As of 2021, several unapproved or off-label drugs for thoracic cancers, including cemiplimab and osimertinib, are pending approval in Japan.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	1	+1	• Every year, there is a drafted budget for promotion of cancer control measures. • No specific budget allocation breakdown but they do look to use the budget to provide support for treatment environments as appropriate to life stages (e.g., paediatric, adolescent, and young adult (AYA) generation; as well as elderly cancer patients).
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	3	+3	• Patient out-of-pocket costs for CT scans in Japan are only $20-30, attributed to the support from the national health insurance system.
	6	Existence of patient financial support programmes and associated out of pocket expenses for lung cancer diagnosis	0 – 3	3	+3	• Comprehensive health system-wide programmes ensure minimal out-of-pocket expenses and extensive financial assistance for lung cancer diagnosis, supported by insurance mandates and government-funded initiatives, accessible to most/all, including the uninsured and financially challenged.
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	0		*No Data*
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	3	+3	• In 2021, out-of-pocket spending on healthcare in Japan relative to final household consumption was 2.4%. In 2010-2011, lung cancer's out-of-pocket expenses amounted to ¥1,102,000, with refunds and benefits totalling ¥681,000. With a co-payment rate of 10%.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**20**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	2	+2	• Japan has a comprehensive cancer registry that covers the entire population. Japan's National Cancer Registry (NCR) covers the entire population, requiring all hospitals to

						submit new cancer case data. The National Cancer Centre (NCC) oversees both the NCR and hospital-based cancer registries.
	2	Registry integration and linkage	0 – 3	2	+2	• Japan's Population-Based Cancer Registry Database System (PBCRDS) allows prefectures to manage past and current cancer data within the National Cancer Registry (NCR). However, challenges remain in fully utilising this data for research and cancer control. To advance these efforts, a system for effective, safe data use and linkage with other sources is essential.
	3	Registry population coverage	0 – 2	2	+2	• The National Cancer Registry System (NCRS) likely covers almost the entire population. By March 2020, 45 prefectures had adopted the Population-Based Cancer Registry Database System (PBCRDS) to source and manage this data.
	4	Operational status of registry	0 – 3	3	+3	• The 2019 cancer registry data informs the annual cancer statistics report published by the Foundation for Promotion of Cancer Research, with the latest report released in 2024.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	3	+3	• The Japanese Joint Committee for Lung Cancer Registry (JJCLCR) is a collaborative effort by the Japan Lung Cancer Society, Japanese Association for Chest Surgery, and Japanese Respiratory Society. Its primary goal is to register lung cancer cases diagnosed and treated in Japan, providing essential data for the prevention, diagnosis, and treatment of lung cancer.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	2	+2	• The Japan Lung Cancer Society (JLCS) holds six public workshops annually in major and regional cities like Tokyo and Osaka. These workshops are open to both healthcare professionals and lung cancer patients, as well as their families, offering the latest knowledge on lung cancer to support treatment and recovery. JLCS doctors provide lectures on their areas of expertise, and patients can attend for free by pre-booking.
	7	Existence of community-based outreach programmes	0 – 3	0	0	• There are no known community outreach programmes.
	8	Existence of clinical associations	0 – 3	3	+3	• Clinical associations involved in lung cancer care in Japan include the Japanese Society of Medical Oncology (JSMO), the Japan Lung Cancer Society (JLCS), and the Japanese Society for Radiation Oncology (JASTRO).
	9	Educational programmes for providers	0 – 1	1	+1	• The Education and Training Committee of the Japan Lung Cancer Society (JLCS) focuses on advancing multidisciplinary knowledge in lung cancer treatment. Their initiatives include quickly disseminating the latest information to doctors and promoting educational activities. They will hold the "Update in Thoracic Oncology 2024" event to enhance physicians' and medical professionals' understanding of the latest lung cancer treatments.
TOTAL SCORE (Robust surveillance protocols and public education)				**18**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	2	+2	• Access to treatment for common cancers like lung, stomach and colorectal cancers has been balanced across Japan. Among the 270 institutions, 53.7% had medical oncology departments, with a median of three physicians per department.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	3	+3	• Approximately 80% of cancer patients were admitted to hospitals within a 45-minute drive from their homes. Among liver and lung cancer patients, about 23% of patients travelled over 45 minutes to reach their hospitals, compared to roughly 15% for stomach and colorectal cancers. The challenge of equalising treatment for liver and lung cancers is compounded by limited resources for specialised care. While recent health policies in Japan aim to promote equal access to cancer care, there is a need for strategies that balance patient burdens with resource availability.
	3	Number of radiologists	*N/A*			• There are currently 0.63 diagnostic radiologists per 10K population.
	4	Number of radiation oncologists	*N/A*			• There are currently 0.089 radiation oncologists per 10K population certified by the Japan Radiological Society and the Japanese Society for Radiation Oncology.
	5	Number of surgeons	*N/A*			*No Data*
	6	Number of thoracic surgeons	*N/A*			• In 2015, there were 1.03 thoracic surgeons per 10K population.
	7	Number of medical oncologists	*N/A*			• In 2013, there were 0.0867 medical oncologists per 10K population certified by the Japanese Society of Medical Oncology (JSMO).
	8	Number of pathologists	*N/A*			• Currently, Japan has 0.21 pathology specialists per 10K population. Of these, 642 hospitals employ full-time pathology specialists, averaging 3.3 specialists per hospital.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	5	+5	• A centrally organised, population-based screening programme with chest radiography and sputum cytologic testing is established and operational, covering the entire target population with standardised protocols and guidelines.
	10	Level of screening uptake	0 – 2	2	+2	• In 2019, 53.4% of males and 45.6% of females aged 40-69 received lung cancer screening.
Availability and Accessibility of Health System Infrastructure	11	Number of CT scanners	*N/A*			• Japan has 111.49 CT scanners per 1M population.
	12	Number of PET scanners	*N/A*			• Japan has 4.62 PET scanners per 1M population.
	13	Number of MRI scanners	*N/A*			• Japan has 55.21 machines per 1M population.
	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 2	2	+2	• Japan has one of the highest rates of diagnostic imaging equipment, including CT, MRI, and PET scanners, in the world. Many of these tools are covered by national health insurance, making diagnostic imaging highly accessible.

	15	Availability of/ access to Biopsy	0 – 2	2	+2	• High level of access to biopsy procedures.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	2	+2	• In Japan, LC-SCRUM is the largest cancer genomic screening consortium, encompassing over 200 hospitals. The industry provides testing infrastructure, information databases, and clinical support to medical institutions.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	2	+2	• Health insurance coverage for OncomineDXTT (a small NGS panel) and AmoyDx (a multiplex PCR) has significantly enhanced access to serum biomarker testing in clinical practice in Japan. • EGFR, ALK, ROS1, and PD-L1 tests are reimbursed under the national public health system.
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	2	+2	• Expansive data and testing infrastructures support NGS testing, such Japan's C-CAT genomic database.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	2	+2	• Japan has a well-established comprehensive genomic profiling (CGP) infrastructure with an expansive network.
	20	Availability of/ access to Companion diagnostics	0 – 2	2	+2	• Most companion diagnostics (CDx) are covered health system-wide by the public health system. CDx tests deemed necessary following PMDA drug approval are guaranteed reimbursement.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	2	+2	• Japan has made significant investments in a national framework to enhance readiness for NGS Despite high levels of healthcare professional Local guidelines for NGS are available, and while 70-90% of Comprehensive Genomic Profiling costs are reimbursed, this coverage is restricted to advanced metastatic cancers and can be claimed only once per lifetime.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	2	+2	• Molecular testing is conducted in over 80% of patients with advanced lung cancer before starting first-line treatment.
	23	Availability of/ access to Surgery	0 – 2	2	+2	• High availability and access to surgery procedures.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	1	+1	• There is a shortage of radiotherapy megavoltage machines relative to demand.
	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	1	+1	• One of the key areas of focus for the National Cancer Centre Japan's J-SUPPORT (Japan Supportive, Palliative, and Psychosocial Oncology Group) is Psycho-Oncology and Survivorship Care.
	26	Availability of/ access to Rehabilitation	0 – 2	1	+1	• Pulmonary rehabilitation is less prevalent compared to pharmacological treatments in Japan. Outpatient pulmonary rehabilitation is notably less common than for other conditions, highlighting a need for improved implementation. • For overall cancer care, less than 40% of designated cancer hospitals offer outpatient cancer rehabilitation.
	27	Availability of/ access to Palliative care	0 – 2	2	+2	• Access to palliative care in Japan is well established but not entirely sufficient. Approximately 400 government-registered cancer centres across the health system include palliative care teams, with some featuring dedicated palliative care units. This system ensures widespread availability of supportive and palliative care services for cancer patients throughout Japan.
	28	Availability of/ access to lung cancer therapy	0 – 3	3	+3	• Due to its universal health insurance system, Japan offers some of the highest levels of access to lung cancer treatment globally. However, there are growing concerns about the long-term sustainability of this access.
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	0	*No Data*	
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**40**		

2. Lung Cancer Health System Snapshot – Japan's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Japan
Strengthening Tobacco Control	• Lobbying by tobacco companies presents challenges to implementing strongest anti-tobacco legislation. The current Tobacco Control Plan by the Ministry of Health adopts a gradual approach, aiming for a stepwise reduction in smoking spaces and tobacco use. This method reflects a balance between public health goals and the interests of various stakeholders.	• Intensify efforts to implement stronger tobacco control measures, even within the current cautious approach. Advocate for stricter policies and build public awareness to counter tobacco industry influence. Learn from global best practices to enhance the effectiveness of the Tobacco Control Plan.
Sustaining Japan's Health Insurance System	• Japan's comprehensive health insurance system, while providing excellent access to treatments, is becoming financially unsustainable. The high costs are placing a significant strain on the government budget.	• Explore strategies to gradually reduce health insurance coverage while maintaining essential services. Consider reforms that balance coverage and cost-effectiveness, learning from other APAC countries with less comprehensive but more sustainable systems. Japan's experience can serve as a cautionary example for other nations. Other APAC countries should aim to develop models that ensure broad access without imposing unsustainable financial burdens on the healthcare system.
Centralising Cancer Treatment	• The decentralised distribution of cancer centres and physicians across Japan leads to inefficiencies, particularly in providing specialised care and conducting advanced clinical trials.	• Focus on centralising complex cancer treatments and clinical trials in a few major centres within key prefectures. This will enhance the quality of care, improve resource utilisation, and foster advancements in cancer treatment. Maintain localised access to general care while concentrating expertise and specialised treatments in centralised hubs.

Lung Cancer Health System Snapshot

Scorecard of Hong Kong

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1. Lung Cancer Health System Snapshot – Hong Kong Scorecard Results and Future Opportunities

Domain		Indicator	Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	2	+2	• Hong Kong has an operational national cancer control strategy.
	2	Currency of national cancer control plan	0 – 2	2	+2	• The cancer control plan covers the period from 2019 to 2025.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+6	• **Prevention and Screening**: Focuses on reducing risk factors and implementing evidence-based population screening, with specific targets for risk reduction, vaccination, and screening. • **Early Detection and Diagnosis**: Includes strategies for early risk assessment, improving referral communication, enhancing diagnostic triage, collaborating with the private sector for diagnostics, and introducing new diagnostic technologies. • **Timely and Effective Treatment**: Aims to support patient-centred care, augment service capacity, provide better drugs and treatments, and modernise treatment facilities, with expected outcomes of effective, equitable treatment and upgraded medical equipment. • **Survivorship and Palliative Care**: Involves caring for patients in primary settings, initiating quick referral mechanisms, engaging community partners, establishing sustainable models for survivors, and enhancing palliative support.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	1		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	1		
	9	Inclusion of an implementation plan for cancer control	0 – 2	1	+1	• The cancer strategy does not detail action plans regarding timelines, funding, and resource allocations.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	1	+1	• The cancer strategy outlines key focus areas with individual strategies, targets, and expected outcomes, highlighting the involvement of key stakeholders like the Hospital Authority.
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	1	+1	• Broad funding sources for the plan have been identified, with different aspects supported by groups such as the Department of Health, the Health and Medical Research Fund, and the Hospital Authority.
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	0	0	• A specific lung cancer control plan has not been published by the government or the health ministry.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	0		
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	0		
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	0		
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	0		
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**13**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	2	+2	• HK has a Cancer Expert Working Group on Cancer Prevention and Screening (CEWG), under the Centre for Health Protection which publishes recommendations for lung screening and prevention for HCPs.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	2	+2	
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	11	+2	• Government objectives on tobacco control are in place, and a national agency for tobacco control exists.
					+2	• Advertising of tobacco products is banned on national TV and radio. At least one national mass media campaign ran during the survey period (up to 2016). Product displays at points of sale are also illegal.
					+1	• The tobacco tax rate was increased by approximately 31.5% (HK$0.6 per cigarette) in the 2023-24 Budget and by 32% (HK$0.8 per cigarette) in the 2024-25 Budget, although it was frozen in most years over the past two decades.
					+1	• Hong Kong has banned the sale of tobacco to individuals under 18 since 1994.
					+1	• The law mandates health warnings on tobacco packages, and the government is considering imposing plain packaging requirements.
					+1	• Penalties are enforced under the Smoking (Public Health) Ordinance (Cap. 371), with a maximum fine of HK$25,000 for selling tobacco products to anyone under 18.
					+1	• Hong Kong is a party to the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC).
					+2	• Annual expenditures on tobacco control were about HK$346 million, according to a Legislative Council document. However, Hong Kong does not allocate a specific portion of tobacco tax revenue to smoking cessation services or other healthcare purposes. • The Department of Health funds local non-governmental organisations (NGOs) and universities to provide free smoking cessation services.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	3	+1	• The Department of Health (DH) launched in 2024, the Quit in June campaign in support of May 31 as World No Tobacco Day. The campaign encourages smokers to attempt to quit to reduce the risk of tobacco-related diseases and deaths.
					+1	• There is a range of free smoking cessation services that include counseling and medication support. The Smoking Cessation Centre also offers a "residential smoking cessation plan" for ex-smokers, which provides free mailed smoking cessation

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						medication and telephone follow-up to help people quit smoking at home, particularly targeting geographically vulnerable populations.
					+1	• The Integrated Smoking Cessation Hotline (1833 183) offers professional counseling and arranges referrals to various smoking cessation clinics, providing services such as assessment, counseling, drug treatment, and follow-up.
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	3	+1	• National smoke-free legislation exists for indoor offices, public transport, restaurants, cafes, pubs, and bars.
					+1	• Certain public outdoor places are designated as statutory no-smoking areas. These areas include escalators, public pleasure grounds, bathing beaches and their vicinities, adjacent barbecue areas, public swimming pools and their vicinities, including sidewalks immediately adjacent to the pools, diving boards, and spectator stands.
					+1	• The Hong Kong Council on Smoking and Health (COSH) launched the "Second-hand smoke, no more" publicity and promotion campaign in 2021 to raise awareness about the dangers of smoking. The campaign encouraged people to urge smokers around them to quit and to refuse both smoking and second-hand smoke, aiming to build a smoke-free environment. The programme included publicity street stops in Hong Kong, Kowloon, and the New Territories, as well as publishing children's picture books to convey the message about the dangers of second-hand smoke.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	6	+1	• An environmental radiation monitoring programme is in place.
					+1	• Hong Kong has air quality objectives set by the Environment Protection Department. In June 2021, the Government announced the Clean Air Plan for Hong Kong 2035, outlining long-term goals and strategies to enhance air quality and make Hong Kong a liveable city with air quality on par with major international cities by 2035.
					+1	• The Hong Kong government is promoting clean energy sources, aiming to increase their share in the fuel mix for electricity generation from 7.5% to 10% by 2035, and subsequently to 15% through local renewable energy projects, regional cooperation, and joint ventures.
					+1	• The Ninth Technical Memorandum (TM), issued in June 2021, will tighten the emission caps for sulfur dioxide (SO2), nitrogen oxides (NOx), and PM10 by approximately 70% to 90% from 2026 onwards compared to the First TM. Additionally, the Fuel for Vessels Policy mandates that all vessels use compliant fuel, such as those with sulfur content not exceeding 0.5% or liquefied natural gas, within Hong Kong waters, whether they are sailing or berthed.
					+1	• The Government has adopted stricter fuel and vehicle emission standards, including tightening the emission standards for first-registered motorcycles to Euro 4 from October 2020, and for first-registered light buses (over 3.5 tonnes) and buses (up to 9 tonnes) to Euro VI.
					+1	• The Clean Air Schools for Hong Kong (CASHK) project, led by the Clean Air Network (CAN), aims to address air pollution in schools. The project involves a workshop developed in collaboration with Humans Matter to introduce the Clean Air Schools Action Framework. After over 12 months of measuring and visualising campus air quality, the project has shifted towards actions to improve the air quality that children breathe daily.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• Legislation is in place covering workplace safety and health.
					+1	• A Safe Management System is implemented to conduct regular safety audits, risk assessments, and reviews of the safety inspection programme.
					+1	• Occupational health assurance programmes require arranging health surveillance and regular medical examinations for workers. Under legal requirements, proprietors or contractors must arrange health surveillance and medical checks for workers handling carcinogenic substances, asbestos, working in compressed air, or underground, as stipulated by the Factories and Industrial Undertakings (Carcinogenic Substances) Regulations, the Factories and Industrial Undertakings (Asbestos) Regulation, the Factories and Industrial Undertakings (Work in Compressed Air) Regulations, and the Factories and Industrial Undertakings Regulations.
					+1	• Proprietors or contractors must ensure that all workers are fully aware of the safety and health hazards associated with their processes. Additionally, training programmes include instruction on operating procedures, safe work practices, emergency evacuation and response, safety procedures, and other relevant topics to protect both the workers and their colleagues.
	8	E-cigarettes regulation	0 – 4	4	+4	• As of April 30, 2022, a ban has been enacted on the importation, promotion, manufacture, sale, or possession of alternative smoking products, including electronic smoking products, heated tobacco products, and herbal cigarettes, for commercial purposes. The restrictions on smoking in public places, workplaces, and public transport now also apply to e-cigarettes. Furthermore, the regulations that govern tobacco advertising, promotion, and sponsorship are extended to include e-cigarettes.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	0	0	• Currently, there are no collaborations or joint programmes/initiatives, including lobbying efforts, between civil societies/patient groups and policy organisations/ministries/government bodies.
	10	Existence of patient organisations	0 – 2	0	0	• No lung cancer specific patient organisations have been identified in Hong Kong.
	11	Existence of civil society	0 – 3	1	+1	• Hong Kong has several cancer civil societies, but none specifically focus on lung cancer.

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Contribution of patient organisations and civil societies to lung cancer care and management						• The Hong Kong Anti-Cancer Society aims to reduce the cancer burden in Hong Kong by advocating for cancer prevention and early detection, providing treatment, rehabilitation, palliative care, and holistic support to cancer survivors and their families, and increasing awareness and knowledge about cancer through education, research, and advocacy. • The Society's Jockey Club Cancer Rehabilitation Centre, a renovation project converting the former Nam Long Hospital into a cancer patient rehabilitation centre, exemplifies their commitment to supporting cancer patients.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	1	+1	• To better understand patient needs for shaping service directions and formulating improvement measures, the Hospital Authority has commissioned the JC School of Public Health and Primary Care at The Chinese University of Hong Kong to conduct a patient survey starting in the third quarter of 2023. This survey, conducted through telephone interviews and online questionnaires, aims to enhance understanding of patient experiences in public hospitals and identify needs and expectations for quality and service improvement. The survey will cover key aspects including: (1) Service Convenience; (2) Environment and Facilities; (3) Care and Treatment; and (4) Doctor-Patient Relationship.
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	0	0	• Currently, patient organisations are not involved in the development of clinical practice guidelines.
	14	Patient organisation participation in cancer control plan development	0 – 1	0	0	• Currently, patient organisations do not participate in the development of cancer control plans.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	0	0	• There is no clear evidence that civil society has the opportunity to comment on Health Technology Assessment (HTA) recommendations.
	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	0	0	• Currently, there are no known collaborations or joint programmes/initiatives, including lobbying efforts, between civil societies and the private sector.
	17	Community engagement and empowerment	0 – 2	1	+1	• Hong Kong's cancer control plan, which extends through 2025, includes a goal to empower cancer patients by developing a medical-social collaboration model. While there are some community engagement and empowerment efforts, underserved populations still lack opportunities for meaningful participation in cancer-related activities and decision-making processes.
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	1	+1	• There are no lung cancer-specific guidelines covering diagnosis, treatment, support/palliative care, and shared decision-making for patients with lung cancer. However, the Centre for Health Protection has published recommendations on prevention and screening for lung cancer.
	19	Currency of clinical guidelines for lung cancer	0 – 2	2	+2	• The latest screening guidelines for lung cancer were published in 2023.
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	1	+1	• The Cancer Expert Working Group on Cancer Prevention and Screening (CEWG) has published screening guidelines for lung cancer.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• The recommendations by the Cancer Expert Working Group on Cancer Prevention and Screening (CEWG) endorse low dose computed tomography (LDCT) as a screening modality for lung cancer.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	*No Data*	
	23	Inclusion of NGS in screening guidelines	0 – 3	0	*No Data*	
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	0	0	• There are no lung cancer specific guidelines that cover diagnosis, treatment, support/ palliative care and shared decision making for patients with lung cancer.
	25	Diagnosis timeframe	0 – 2	0	0	• Not present.
	26	Post-diagnosis referral intervals	0 – 2	0	0	• Not present.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• Hong Kong adheres to international guidelines for lung cancer treatment.
	28	Patient navigation programme	0 – 1	0	0	• Not present.
	29	Referral system	0 – 1	1	+1	• In Hong Kong, the referral system for lung cancer is well-defined within the public healthcare system managed by the Hospital Authority. Primary care physicians refer patients with suspected lung cancer to specialist outpatient clinics or directly to tertiary care centres for comprehensive evaluation and treatment.
	30	Established programmes for further care management	0 – 1	0	0	• Not present.
	31	Shared decision making	0 – 1	1	+1	• Hong Kong currently follows international guidelines that emphasise shared decision-making.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• Hong Kong currently follows international guidelines that emphasise the involvement of multi-disciplinary team.
	33	Referral pathway to supportive/ palliative care	0 – 1	1	+1	• Hong Kong currently follows international guidelines that emphasise referral pathway to supportive/ palliative care.
	34	Psychological burden	0 – 1	1	+1	• Hong Kong currently follows international guidelines that emphasise psychological burden.
TOTAL SCORE (Sufficient political will and coordination)				**50**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	1	+1	• Lung cancer programmes are available in Hong Kong, but they are mostly in the private sector and are unlikely to receive public funding.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	3	+3	• Most diagnostic tests are publicly funded health system-wide either with minimal restrictions/ included within universal healthcare.

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	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	1	+1	• Hong Kong has the Community Care Fund Medical Assistance Programmes, which provide financial assistance to Hospital Authority patients for purchasing specified self-financed (SFI) cancer drugs, including those for lung cancer.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	1	+1	• There is no specific budget allocated for cancer; funding is generally included within the broader health sector budget according to the Hong Kong government's budget.
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	1	+1	• Financial support for cancer care is available through Hong Kong's Cancer Fund.
	6	Existence of patient financial support programmes and associated out of pocket expenses for lung cancer diagnosis	0 – 3	2	+2	• There are financial assistance and awareness initiatives aimed at reducing moderate out-of-pocket expenses for lung cancer diagnosis. These efforts include mechanisms to address gaps in coverage and eligibility criteria.
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	3	+3	• Patients with financial difficulties are supported by a means-tested safety net through the Samaritan Fund (the Fund) Programmes and the Community Care Fund (CCF).
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	2	+2	• Even with the referral discount offered by some private providers (typically 30%), patients diagnosed with cancer in the private sector still face out-of-pocket co-payments amounting to several thousand dollars for diagnostic services.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**14**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	2	+2	• The Hong Kong Cancer Registry (HKCaR), established in 1963, is a population-based registry overseen by the Hospital Authority (HA).
	2	Registry integration and linkage	0 – 3	2	+2	• While various types of outcome data are collected, the registry aims to further integrate the HKCaR database with the information systems of both public and private hospitals and laboratories, as well as standardise the reporting format.
	3	Registry population coverage	0 – 2	2	+2	• The registry likely covers almost the entire population. The Clinical Data Analysis and Reporting System (CDARS) is a territory-wide electronic medical database managed by the Hospital Authority (HA) of Hong Kong, encompassing 43 public hospitals and 120 public outpatient general and specialist clinics.
	4	Operational status of registry	0 – 3	3	+3	• The Hong Kong Cancer Registry (HKCaR) has been actively updating and publishing data, though the most recent data available is from 2021. According to updates as of November 2023, the registry releases data from two years prior each year.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	0	0	• Not present.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	1	+1	• The Hong Kong Anti-Cancer Society is a non-profit organisation with the longest history in Hong Kong. We focus on providing updated cancer information and practical educational programmes for a wide range of communities, from grassroots members of the general public to professionals.
	7	Existence of community-based outreach programmes	0 – 3	0	0	• There are no known community outreach programmes currently available.
	8	Existence of clinical associations	0 – 3	1	+1	• The Hong Kong Thoracic Society (HKTS) focuses on lung cancer among other respiratory diseases.
	9	Educational programmes for providers	0 – 1	0	0	• There are currently no known clinical lung cancer educational programmes specifically targeted towards providers.
TOTAL SCORE (Robust surveillance protocols and public education)				**11**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	2	+2	• The Hospital Authority oversees 43 public hospitals and institutions, 49 specialist outpatient clinics, and 74 general outpatient clinics, all organised into seven hospital clusters based on location. • Most cancer services, including diagnostic radiology, pathology, endoscopy, surgery, radiotherapy, chemotherapy, and palliative care, are primarily provided at regional hospitals or specialised cancer centres. Some diagnostic radiology, endoscopy, and palliative care services for cancer patients are also available at other cluster hospitals.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	2	+2	• Cancer screening access in Hong Kong needs improvement, especially for South Asian ethnic minorities who face higher poverty rates. The IMPACT project aims to enhance screening accessibility for these groups. Despite universal health coverage and subsidised screening programmes for low-income individuals, ethnic minorities have lower uptake rates. This disparity is due to health illiteracy, limited access to information, language barriers, and cultural issues.
	3	Number of radiologists	*N/A*			• The Hong Kong College of Radiologists has 660 registered fellows.
	4	Number of radiation oncologists	*N/A*			*No Data*
	5	Number of surgeons	*N/A*			• There are 2.857 surgeons per 10K population in Hong Kong.
	6	Number of thoracic surgeons	*N/A*			• There are 0.187 cardiothoracic specialists per 10K population in Hong Kong.
	7	Number of medical oncologists	*N/A*			• There are over 200 registered oncologists in Hong Kong, working across both the private and public sectors.
	8	Number of pathologists	*N/A*			• As of June 2024, the Hong Kong College of Pathologists has 353 fellows.
	9	Lung cancer screening programme scale and existence status	0 – 5	3	+3	• Hong Kong does not have a government-sponsored lung cancer screening programme; screening remains largely opportunistic.

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Availability and accessibility to lung cancer screening programmes	10	Level of screening uptake	0 – 2	1	+1	• No specific data is available for lung cancer screening. However, general findings indicate that less than 40% of South Asian ethnic minorities in Hong Kong utilise cancer screening services.
Availability and Accessibility of Health System Infrastructure	11	Number of CT scanners	*N/A*			• There are 2.9 CT scanners per 1 M population.
	12	Number of PET scanners	*N/A*			*No Data*
	13	Number of MRI scanners	*N/A*			*No Data*
	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 2	1	+1	• In Hong Kong's public healthcare system, PET-CT scans are categorised as private services under Radiology Services, Group VI (Nuclear Medicine). • The cost of a PET scan may be reimbursed by insurance if it is prescribed by a doctor and used for diagnosis and treatment. • The Hospital Authority (HA) aims to advance diagnostic services by installing additional advanced imaging machines and introducing new technologies.
	15	Availability of/ access to Biopsy	0 – 2	2	+2	• Liquid biopsy for EGFR testing is fully reimbursed.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	2	+2	• In Hong Kong, several notable facilities offer serum biomarker testing. These include the Faculty of Medicine at The Chinese University of Hong Kong (CUHK), SGS Hong Kong, Parkway Laboratory Services Central, and DiagCor.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	2	+2	• Hong Kong provides full reimbursement for liquid biopsy EGFR testing.
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	1	+1	• Currently, Next-Generation Sequencing (NGS) facilities are expanding in Hong Kong, but their availability is largely limited to academic institutions and centres of excellence.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	1	+1	• Molecular profiling facilities in Hong Kong are primarily expanding within academic institutions and centres of excellence. The Department of Health, the Hospital Authority, universities, and private hospitals provide high-quality clinical genetics services, including molecular profiling. However, there is no dedicated clinical department for genetic and genomic services in the Hospital Authority, and the availability of such services varies significantly across different hospital clusters.
	20	Availability of/ access to Companion diagnostics	0 – 2	0		*No Data*
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	1	+1	• Next-generation sequencing (NGS) is a growing focus in national strategies, with plans to expand capacity by early 2024 to increase accessibility. • A pilot programme for reimbursing small gene panels was introduced in early 2023 for patients with non-small cell lung cancer (NSCLC), highlighting ongoing efforts to support genomic profiling.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	2	+2	• There is a mid-to-high level of access to genetic testing and molecular profiling in the public sector.
	23	Availability of/ access to Surgery	0 – 2	1	+1	• In Hong Kong, the public sector operates four thoracic surgical centres serving approximately 7.4 million residents. • However, access to timely treatment can vary significantly between the public and private sectors. In wealthier Hong Kong, private health insurance allows for faster referrals and quicker access to specialists and surgical procedures. • In contrast, patients in the public system often face longer waiting times for specialist consultations, diagnostic investigations, and surgical interventions.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	2	+2	• There is a mid-to-high level of access to radiation therapy/radiotherapy in the public sector.
	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	2	+2	• There is a mid-to-high level of access to Psychosocial/ mental health support in the public sector.

	26	Availability of/ access to Rehabilitation	0 – 2	2	+2	• Certain hospitals in Hong Kong have established specialised programmes to support patients with chronic obstructive pulmonary disease (COPD).
						  ○ Pulmonary Rehabilitation Centre at Tung Wah Eastern Hospital, offers a comprehensive rehabilitation programme for in-patients with COPD.
						  ○ Hong Kong Sanatorium & Hospital (HKSH) provides a pulmonary rehabilitation programme that requires a physician's referral.
						  ○ Both programmes emphasise multi-disciplinary assessment and training, focusing on education, bronchial hygiene, stress management, self-care skills, daily living activities, and endurance training.

	27	Availability of/ access to Palliative care	0 – 2	2	+2	• Hong Kong has developed the Strategic Service Framework for Palliative Care as an overarching blueprint to guide clinicians and executives in aligning palliative care service initiatives with operational planning. This framework aims to ensure that palliative care services are effectively integrated and coordinated, enhancing the quality of care for patients.
	28	Availability of/ access to lung cancer therapy	0 – 3	3	+3	• Hong Kong has relatively high access to and availability of lung cancer therapies, including innovative and biologic drugs such as targeted therapies and immunotherapies, extending beyond the WHO list.
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	2	+2	• Obtaining access to lung cancer treatments typically takes between 3 to 6 months from the global first launch.
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**34**		

Hong Kong

2. Lung Cancer Health System Snapshot – Hong Kong's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Hong Kong
Dedicated Lung Cancer Control Plan	• Hong Kong does not have a centralised and comprehensive lung cancer control plan. The current focus is primarily on preventive strategies, such as tobacco control, with less emphasis on screening, diagnostics, treatment, and management. This lack of a dedicated plan poses challenges for a systematic approach to lung cancer management.	• Hong Kong could improve its lung cancer care by developing a comprehensive control plan that integrates screening, prevention, and treatment strategies, including both tobacco control and early detection measures. Enhancing collaboration with family doctors and primary care practitioners through targeted training programmes would ensure effective early detection and management of lung cancer. Additionally, launching pilot programmes for LDCT screening in high-risk populations could provide crucial evidence of the benefits of early detection, potentially driving significant policy changes.
Building Momentum for Screening through Data, Partnerships, & Public Advocacy	• Research on public demand for lung cancer screening is limited. Moreover, concerns about capacity and financial resources for low-dose CT (LDCT) screening continue to present challenges to advancing in this area. • The current suboptimal screening rates result in patients being diagnosed at later stages of the disease. Late-stage diagnosis significantly limits treatment options and leads to poor prognoses.	• Hong Kong could enhance lung cancer care by advocating for policy changes that prioritise lung cancer screening. Utilising data from pilot programmes and research can demonstrate potential long-term cost savings and health benefits. Furthermore, forming public-private partnerships could secure the necessary funding and support for screening programmes and follow-up care. Increasing public awareness through targeted campaigns can help build support for screening, generate demand, and potentially influence government policy and funding decisions.
Integration and Accessibility of Care	• There is a need for improved integration across primary, secondary, and tertiary care levels (i.e., horizontal integration). Currently, lung cancer management is primarily handled by specialists at the tertiary care level, with minimal involvement from family physicians at the primary care level.	• Hong Kong could improve horizontal integration across its healthcare system by fostering collaboration among primary care providers, oncologists, social workers, NGOs, and other allied health services. Implementing care coordination models can streamline patient pathways and enhance the overall efficiency of care. Additionally, increasing funding for community-based services that provide social and psychological support will promote a more holistic approach to patient care and better support lung cancer survivors.

Lung Cancer Health System Snapshot

Scorecard of Thailand

Thailand

1. Lung Cancer Health System Snapshot – Thailand Scorecard Results and Future Opportunities

Domain	Indicator		Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	2	+2	• Thailand's National Cancer Control Programme (NCCP) was developed by the National Cancer Institute (NCI) of Thailand.
	2	Currency of national cancer control plan	0 – 2	2	+2	• The National Cancer Control Programme (NCCP) covers the period from 2018 to 2022.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+5	• The NCCP strategies cover a wide range of areas, including cancer prevention, early detection, treatment, palliative care, cancer informatics, research, and capacity building. However, the plan does not explicitly include strategies for survivorship support, which is an important aspect of ongoing care and quality of life for cancer survivors.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	1		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	0		
	9	Inclusion of an implementation plan for cancer control	0 – 2	1	+1	• The NCCP includes detailed implementation strategies, covering key elements such as objectives, goals, development guidelines, strategic support activities, success indicators, and responsible agencies. • However, the plan lacks clear timelines, and the annual analytical results are not effectively promoted or announced across the health system.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	1	+1	
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	1	+1	• The NCCP briefly mentions that the Research Council of Thailand will serve as the primary agency responsible for organising meetings to establish a structure for allocating research funding in alignment with the national cancer research framework developed by the National Cancer Institute. Identified funding sources and agencies within the NCCP include the Office of the Health Promotion Fund and the Thailand Research Fund (TRF).
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	0	0	• A specific lung cancer control plan has not yet been published by the government or the health ministry.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	0		
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	0		
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	0		
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	0		
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**12**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	1	+1	• The government, particularly the Ministry of Public Health, primarily focuses on cancer treatment. Their efforts involve coordinating with national societies, healthcare policy units, and the Ministry of Finance to establish regulations and reimbursement systems for cancer treatments.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	1	+1	• Banphaeo General Hospital (Public Organisation), in collaboration with the Digital Economy Promotion Agency (depa) and AstraZeneca Thailand, has launched the "Don't Wait. Get Checked" campaign. The initiative aims to utilise AI technology to enhance and expand early-stage lung cancer screening in Thailand.
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	13	+2	• National objectives for tobacco control and a national agency dedicated to tobacco control are in place.
					+2	• Advertising of tobacco products is banned on national TV and radio. At least one national anti-tobacco mass media campaign has been broadcast in Thailand (up to 2016). Retail product displays of tobacco are also prohibited.
					+2	• Thailand employs a mixed excise tax system for cigarettes, consisting of a uniform specific excise duty of B1.2 per stick and an ad valorem rate that varies with cigarette price. Both rates saw a marginal increase in 2021, alongside revisions to the segment benchmark prices.
					+1	• The minimum age for tobacco sales is 21.
					+2	• The law requires health warnings to be displayed on tobacco packages. As of February 2021, Thailand, has implemented plain packaging.
					+1	• Penalties are in place for violations of tobacco control regulations.
					+1	• Thailand is a signatory to the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC). • At the request of the Royal Thai Government, the Joint Needs Assessment for implementing the WHO FCTC was conducted in Thailand from June 12 to 16, 2023. This assessment was carried out by the Convention Secretariat in collaboration with the Ministry of Public Health (MoPH), the WHO FCTC Knowledge Hub. The assessment involved extensive bilateral meetings with relevant ministries.
					+2	• The National Budget and the Thai Health Promotion Foundation serve as funding mechanisms for tobacco control.
	4		0 – 4	3	0	• There has been no smoking cessation campaign in the past two years.

		Existence and comprehensiveness of smoking cessation policies/ initiatives			+1	• Free consultation for smoking cessation is available. The Thailand National Quitline (TNQ) partners with the National Health Security Office (NHSO) to offer free smoking cessation consultations to beneficiaries of the Universal Coverage Scheme (UCS). Each UCS beneficiary can access expert consultations through the hotline up to 12 times a year.
					+1	• Thailand's national smoking cessation service, the SMART Quit Clinic Programme (FAHSAI Clinic), offers smoking cessation services through a multidisciplinary team. By 2021, 552 FAH-SAI Clinics had been established across all 77 provinces of Thailand. Smoking cessation services are also available at over 16,053 community pharmacies, which are part of the universal coverage system promoted and developed by the government. The National Quitline is accessible and free across all networks.
					+1	• The self-reported point prevalence of smoking cessation was 33.9% at 3 months and 38.2% at 6 months.
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	3	+1	• National smoke-free legislation exists for indoor offices, public transport, and establishments such as restaurants, cafes, pubs, and bars.
					+1	• Smoking is prohibited in certain outdoor areas, including facilities for exercise, sports training, sports competitions, public parks, zoological parks, amusement parks, children's playgrounds, and markets.
					+1	• In 2019, Thailand launched the "Stop Destroying Your Child's Dream" campaign to raise social awareness about the dangers of second-hand smoke in homes and to encourage smokers to quit.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	4	0	• There is no evidence of policies or programmes in place to control radon.
					+1	• While Thailand does not have a specific air quality strategy, there are broad national ambient air quality standards. The government collaborates with the Asian Institute of Technology (AIT) to address air pollution issues in densely populated areas, including Bangkok and Chiang Mai.
					+1	• Thailand released the Thailand Integrated Energy Blueprint (TIEB), covering the period from 2015 to 2036. This blueprint integrates five key energy plans from 2015, focusing on oil, power, gas, energy efficiency, and alternative energy development.
					+1	• The proposed Clean Air Bill introduces comprehensive measures to manage and control activities and potential sources of air pollution, including point sources (such as factories and businesses), open burning, vehicles, and transboundary pollution from neighbouring countries.
					+1	• The Ministry of Industry of Thailand published three regulations in the Royal Gazette on 3 July 2023, set to take effect on 1 January 2024. These regulations will implement the Euro 5 emission standard in Thailand, making the corresponding Thai Industrial Standard mandatory for newly manufactured vehicles.
					0	• Charoen Pokphand Foods Public Company Limited (CP Foods) has launched a campaign addressing PM 2.5 air pollution, particularly in Northern Thailand. The initiative urges Thai citizens to prevent stubble burning after the corn harvest. However, this effort is not government-led.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	3	+1	• Legislation exists covering workplace safety and health.
					0	• Although the Occupational Safety and Health Act requires employers to conduct risk assessments, the types of businesses that must perform these assessments and the assessment frequency are not clearly defined by the law.
					+1	• Occupational health and wellness measures include health surveillance for workers exposed to hazards, health promotion initiatives, and access to basic medical services. The Safety, Occupational Hygiene, and Workplace Environment Act B.E. 2554 (2011) mandates that employers provide health check-ups for employees working with risk factors and requires employers to monitor the working environment and practices.
					+1	• Training is provided on workplace risks as required by the Occupational Safety and Health Act. This includes information on job-specific hazards, safe work practices, emergency procedures, and the use of personal protective equipment (PPE).
	8	E-cigarettes regulation	0 – 4	4	+4	• Thailand completely prohibits electronic cigarettes • A complete ban on e-cigarettes also implies that no advertising is permitted.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	0	0	• There are no mention of any lung cancer patient organisations or civil society collaborations in joint programmes with the government.
Contribution of patient organisations and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	0	0	• No specific lung cancer patient organisations have been prominently identified in Thailand. While smaller patient organisations may be present, they are dispersed across the health system and have not yet gained significant visibility.
	11	Existence of civil society	0 – 3	1	+1	• Civil society organisations involved in the UN Thematic Working Group on NCD Prevention and Control in Thailand include Action on Smoking and Health (ASH) Thailand and the Thai NCD Alliance.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	2	+2	• Established in 2008, the National Health Assembly (NHA) offers a structured platform for various stakeholders—including citizens, civil society, academic and research organisations, multisectoral government agencies, and the private sector—to develop and negotiate public health policy resolutions through consensus.
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	0	0	• Patient organisations typically do not contribute to the development of clinical guidelines.

	14	Patient organisation participation in cancer control plan development	0 – 1	0	0	• There are no mention of patient organisations or civil society groups focusing on lung cancer participating in the development of the National Cancer Control Plan.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	1	+1	• Civil society also has the opportunity to provide feedback on HTA recommendations.
	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	*No Data*		
	17	Community engagement and empowerment	0 – 2	*No Data*		
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	2	+2	• Clinical practice guidelines for lung cancer exist, published by the National Cancer Institute.
	19	Currency of clinical guidelines for lung cancer	0 – 2	1	+1	• The guidelines for the diagnosis and treatment of lung cancer (2nd edition) were updated within the last five years.
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	0	0	• There are no local lung cancer screening guidelines in Thailand. Doctors follow the guidelines established by the National Lung Screening Trial (NLST) 2011.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• The screening guidelines recommend low-dose computed tomography (LDCT) as the primary tool for lung cancer detection, aligning with current standard practices and evidence-based recommendations. However, experts in Thailand primarily follow international guidelines.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	0	• The National Lung Screening Trial (NLST) was a randomised clinical trial that recommended LDCT as the sole method for lung cancer screening. Other international guidelines, such as those from the NCCN and USPSTF, also recommend LDCT exclusively for lung cancer screening. The CHEST guidelines similarly emphasise LDCT for screening, with biomarker tests primarily associated with diagnostic and therapeutic strategies rather than initial screening for lung cancer.
	23	Inclusion of NGS in screening guidelines	0 – 3	2	+2	• Plans are underway to utilise NGS in lung cancer screening. Genomics Thailand, initially led by the Thailand National Institute of Health, Department of Medical Sciences, Ministry of Public Health (DMSc-MoPH), launched the "Precision Medicine" (PM) implementation research programme in 2019. This five-year strategic programme, running until 2023, focuses on genomic epidemiology to estimate genetic factors influencing susceptibility to specific diseases or traits among Thais. It aims to advance genomic-based testing and screening programmes for both clinical and public health applications in Thailand.
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• The clinical guidelines published by the National Cancer Institute covers diagnosis for lung cancer.
	25	Diagnosis timeframe	0 – 2	1	+1	• The Service Plan for Cancer (2018-2022), published by the Ministry of Public Health, outlines that suspected lung cancer patients should be fast-tracked for diagnosis. • However, implementation has been inconsistent, particularly in rural provinces. The guidelines also specify timeframes for diagnostic referrals.
	26	Post-diagnosis referral intervals	0 – 2	2	+2	• The Service Plan for Cancer (2018-2022) includes a strategy for the prompt and timely diagnosis and treatment of cancer. • Patients are required to receive treatment within specified timeframes, such as undergoing surgery within 4 weeks (28 days) of diagnosis.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• The clinical guidelines published by the National Cancer Institute covers treatment for lung cancer.
	28	Patient navigation programme	0 – 1	0	0	• A patient navigation programme is not included in the guidelines.
	29	Referral system	0 – 1	0	0	• A patient referral system is not included in the guidelines.
	30	Established programmes for further care management	0 – 1	0	0	• Established programmes for further care management are not included in the guidelines.
	31	Shared decision making	0 – 1	1	+1	• The clinical guidelines published by the National Cancer Institute covers shared decision making for lung cancer.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The clinical guidelines published by the National Cancer Institute recommends the involvement of a multi-disciplinary team.
	33	Referral pathway to supportive/ palliative care	0 – 1	1	+1	• The clinical guidelines published by the National Cancer Institute covers palliative for lung cancer.
	34	Psychological burden	0 – 1	0	0	• The guidelines do not address the psychological burden of lung cancer or specify a referral pathway for psychological support.
TOTAL SCORE (Sufficient political will and coordination)				**51**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	1	+1	• There is no clear government policy for the reimbursement of lung cancer screening. Lung cancer screening is only covered if the patient has a medical condition, such as chest pain, that requires investigation. The reimbursement system for cancer screening procedures, including those for high-risk lung cancer or colonoscopy, is also unclear, particularly for populations with Universal Coverage Scheme (UC) or Social Security Scheme (SSS) coverage.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	3	+3	• Most diagnostic tests are publicly funded health system-wide, with the exception of NGS testing, which is not reimbursed. Biomarker tests are reimbursed on a targeted approach. • The government covers single-gene EGFR mutation testing for lung cancer patients, with reimbursement for first-generation EGFR inhibitors if the test is positive.

						• Reimbursement for EGFR mutation, ALK, PD-L1, and ROS-1 testing is available only for patients with CSMBS coverage. For patients with UCS or SSS coverage, only EGFR mutation testing is covered.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	1	+1	• Most lung cancer chemotherapy drugs are reimbursed, but this coverage primarily applies to patients under the CSMBS. • Immunotherapy and targeted therapy are generally not reimbursed under any of the three schemes in Thailand.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	1	+1	• There is no specific budget breakdown for cancer-related funding provided by the Ministry of Public Health. • In 2024, the National Health Security Office Board (NHSB) approved a budget of 44 million baht to expand access to essential high-cost drugs under the Universal Coverage (UC) Scheme. • However, these allocations did not provide a detailed breakdown for cancer-related funding.
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	0	0	• There are no financial support programmes specifically designed to assist patients with the costs of lung cancer screening.
	6	Existence of patient financial support programmes and associated out of pocket expenses for lung cancer diagnosis	0 – 3	0	0	• There is a lack of financial support programmes specifically for lung cancer diagnosis.
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	1	+1	• There are no financial support programmes specifically for lung cancer treatment. • Patients often rely on clinical trials at university hospitals, which typically cover the costs of novel or standard treatments, thereby avoiding out-of-pocket expenses.
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	1	+1	• While basic investigations and treatments are provided, many specific investigations and advanced treatments, such as targeted therapies and immunotherapies, are not covered. • Novel drugs are also not funded for patients under the UCS or SSS coverage, leading to significant out-of-pocket expenses for patients. The situation is further compounded by the absence of financial assistance programmes.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**8**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	1	+1	• Thailand has 15 distinct PBCRs, but no single centralised registry. • Significant progress has been made with provincial hospitals developing hospital-based cancer registries (HBCRs).
	2	Registry integration and linkage	0 – 3	2	+2	• The data from the current 15 population-based cancer registries (PBCRs) is sourced from the National Health Security Database.
	3	Registry population coverage	0 – 2	1	+1	• Thailand has 15 distinct PBCRs covering about one-third of the population.
	4	Operational status of registry	0 – 3	2	+2	• The National Cancer Institute (NCI) has been actively updating data for hospital-based cancer registries, with the latest report released in 2022. However, there have been no updates for the population-based cancer registry, and the "Cancer in Thailand" book, which is expected every three years, has not been published since 2018.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	1	+1	• Since 2017, there has been only one specialised project for a population-based cancer registry focused on lung cancer. • Funded by ESMO, the Evaluating Medical Oncology Outcomes (EMOO) in Asia study was a collaborative initiative with the IARC and partner institutions in Indonesia, Malaysia, Singapore, and Thailand. This project established a clinical annotated lung cancer registry to examine incidence, diagnostic, clinical information, and outcomes for patients diagnosed between 2017 and 2019.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	0	0	• There are no relevant patient education programmes or support resources available.
	7	Existence of community-based outreach programmes	0 – 3	0	0	• There are no known community outreach programmes in place.
	8	Existence of clinical associations	0 – 3	1	+1	• Thai Society of Clinical Oncology (TSCO) is a key organisation that unites clinicians specialising in lung cancer and other cancers. This society is instrumental in advancing oncology practices and supporting healthcare professionals working in the field. • Thoracic Society of Thailand (TST) focuses on lung health, including lung cancer. This society engages healthcare professionals dedicated to improving the management and treatment of thoracic conditions, contributing to enhanced patient care and outcomes.
	9	Educational programmes for providers	0 – 1	1	+1	• Educational programmes for experts and involved healthcare providers are offered by the national society (Thai Society of Clinical Oncology, TSCO) or by each cancer centre within university-based hospitals.
TOTAL SCORE (Robust surveillance protocols and public education)				**9**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	2	+2	• In 2021, Thailand's Ministry of Public Health and the National Health Security Office launched the "Cancer Anywhere" project to improve access to cancer treatments, especially for patients in remote or rural areas. • Under this initiative, Universal Coverage Scheme patients can receive treatment at any public hospital, regardless of their original registration. This project supports the Thai National Cancer Control Programme's goal of ensuring equitable access to cancer care across the health system.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	1	+1	• Access to lung cancer care in Thailand varies depending on the insurance scheme. Most people (72%) are covered under the Universal Coverage (UC) scheme. • There is a disparity in access across the three schemes.

Thailand

						• Patients covered under the Civil Servant Medical Benefit Scheme (CSMBS) have access to novel drugs through a preauthorisation process known as the Oncology Prior Authorisation Programme (OCPA). In contrast, patients under the Universal Coverage Scheme (UCS) can only use drugs listed on the national drug list. If they require other medications, they must pay out of pocket.
	3	Number of radiologists	*N/A*			• 81 radiologists per 10 K population.
	4	Number of radiation oncologists	*N/A*			• 4 radiation oncologists per 10 K population.
	5	Number of surgeons	*N/A*			• 251 surgeons per 10 K population.
	6	Number of thoracic surgeons	*N/A*			• 2.2 thoracic surgeons per 10 K population.
	7	Number of medical oncologists	*N/A*			• 0.0261 medical oncologists per 10 K population.
	8	Number of pathologists	*N/A*			• 5.7 pathologists per 10 K population.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	1	+1	• There is limited evidence of national-level opportunistic programmes for lung cancer. Screening is generally available only at selected larger hospitals.
	10	Level of screening uptake	0 – 2	1	+1	• The level of access and uptake for lung cancer screening in Thailand is currently low due to the lack of provision and reimbursement.
Availability and Accessibility of Health System Infrastructure	11	Number of CT scanners	*N/A*			• 2.41 CT scanners per 1M population.
	12	Number of PET scanners	*N/A*			• 0.09 PET scanners per 1M population.
	13	Number of MRI scanners	*N/A*			• 0.37 MRI scanners per 1M population.
	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 2	1	+1	• The use of PET scans is gradually increasing, particularly in university-based hospitals, enhancing diagnostic accuracy and staging. However, there are currently only nine PET scan machines in Thailand: seven in Bangkok, one in Chiang Mai in the northern region, and one in Khon Kaen in the northeastern region. • Imaging for newly diagnosed lung cancer is routinely conducted with computed tomography (CT) scans, but the quality of imaging is often subpar in rural areas.
	15	Availability of/ access to Biopsy	0 – 2	1	+1	• Due to limited resources, tissue diagnostic procedures for lung cancer vary by hospital and region. • Bronchoscopy and transbronchial biopsy are generally preferred for both central and peripheral lung lesions, while transthoracic needle biopsy (TTNB) or aspiration (TTNA) is chosen for lesions near the pleura. TTNB or TTNA is typically performed by either an interventional radiologist or a pulmonologist, depending on the physician's experience and available equipment. University-based and tertiary care hospitals usually have both specialists to perform these procedures.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	1	+1	• Testing infrastructure is expanding, with established data systems that are still developing in robustness. • Comprehensive genomic profiling for clinical applications is currently available only at select leading tertiary hospitals in Thailand.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	1	+1	• EGFR testing is reimbursed under the national public health system. • Biopsy and biomarker testing are also covered under Universal Health Care (UHC); however, next-generation sequencing (NGS) is not included in the reimbursement.
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	1	+1	• Fully equipped molecular diagnostic laboratories with advanced NGS platforms for genetic testing and molecular profiling for lung cancer diagnosis and personalised treatment are available at some university-based hospitals and in the private sector.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	1	+1	• There are currently few diagnostic centres, but efforts are underway to scale up their availability.
	20	Availability of/ access to Companion diagnostics	0 – 2	1	+1	• CSMBS offers more generous access to precision medicine compared to UCS and SSS. • All three health insurance schemes provide some access to precision medicine tests for targeted cancer therapies. • However, gaps remain in access to tests for serious adverse drug reactions, dose adjustments, and cancer risk prediction.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	1	+1	• EGFR, ALK and ROS1 tests are reimbursed, but NGS testing is not covered for patients covered under the UCS or SSS scheme.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	1	+1	• Genetic testing and molecular profiling are often only available at university-based hospitals or specialised cancer centres within tertiary care facilities.
	23	Availability of/ access to Surgery	0 – 2	1	+1	• Thailand has fewer than 200 active thoracic surgeons registered with the Society of Thoracic Surgeons of Thailand. Although thoracic surgeons are distributed health system-wide, the majority are concentrated in Bangkok. This concentration, coupled with the long waiting times for lung cancer surgery, is a significant concern. • The use of robotic-assisted thoracic surgery is infrequent due to its high cost and lack of reimbursement. Additionally, surgeons have limited experience with this technique.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	1	+1	• Currently, there are only 35 radiation therapy (RT) facilities operating across Thailand: 16 in Bangkok, 13 in the northern region, two in the central region, two in the southern region, one in the eastern region, and one in the western region.

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	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	1	+1	• Psychological and mental health support is available only at tertiary centres.
	26	Availability of/ access to Rehabilitation	0 – 2	1	+1	• Rehabilitation services are available but are limited to tertiary centres.
	27	Availability of/ access to Palliative care	0 – 2	1	+1	• Palliative care has been a national strategy since 2014. However, access to and the quality of palliative care vary significantly across the health system due to a range of factors at multiple levels.
	28	Availability of/ access to lung cancer therapy	0 – 3	2	+2	• Access to advanced therapies, such as targeted therapy and immunotherapy for lung cancer, is limited to patients covered under the Civil Servant Medical Benefit Scheme (CSMBS).
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	2	+2	• Patients may wait approximately 3 to 6 months to receive certain drugs for lung cancer.
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**23**		

2. Lung Cancer Health System Snapshot – Thailand's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Thailand
Develop a Dedicated Lung Cancer Control Plan	• Thailand does not have a specific national plan for lung cancer, making it difficult to coordinate efforts and resources across the health system. The current National Cancer Control Programme (NCCP) for 2023-2032 does not specifically address lung cancer.	• Push for greater policy advocacy by using the Thai Cancer Information Network (TCIN) to present data on lung cancer incidence and mortality to policymakers, highlighting the urgent need for a comprehensive national plan.
Implement & Expand Lung Cancer Screening Programmes	• Lung cancer screening is not reimbursed, leading to low uptake. Concerns about false positives, particularly due to the high incidence of tuberculosis in Thailand, further complicate the implementation of screening programmes. Policymakers and clinicians are hesitant to embrace lung cancer screening without clear evidence of cost-effectiveness and clinical benefit.	• Participation in lung cancer screening studies is crucial for Thailand to assess the suitability of national screening programmes, as it would build an evidence base on the efficacy of screening in local and regional populations.
Address Inequities in Access to Lung Cancer Care	• There is a significant gap between the healthcare coverage provided under the CSMBS and UCS and SSS. Patients under UCS and SSS have limited access to diagnostic services and novel and advanced therapies, often needing to pay OOP for essential treatments that are more readily available to CSMBS beneficiaries, leading to delays in treatment. For diagnostics, currently, reimbursement is provided only for single-gene EGFR mutation testing for first-generation EGFR inhibitors. Other diagnostic and treatment services have limited subsidies and funding, with CSMBS offering the most extensive coverage. • Regarding NGS testing, the medical community is collaborating with authorities to explore options for increased funding and has engaged pharmaceutical companies for support. Progress in this area has been relatively slow.	• Policy reforms should ensure equitable access to treatments and diagnostics across all schemes by implementing unified drug price negotiations and exploring partial reimbursement models to enhance access for UCS and SSS beneficiaries.

Lung Cancer Health System Snapshot

Scorecard of India

India

1. Lung Cancer Health System Snapshot – India Scorecard Results and Future Opportunities

Domain	Indicator		Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	1	+1	• The merger of the NCCP with the non-communicable diseases (NCD) plan in 2008 led to the creation of the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease, and Stroke – NPCDCS), which was formally launched in 2010 and last updated in 2016. • Recently renamed as the National Programme for Prevention and Control of Non-Communicable Diseases 2023 – 2030 (NP-NCD), the programme now covers a broader scope of NCDs. As part of this update, the Ministry of Health and Family Welfare (MoHFW) has released Operational Guidelines as an overarching framework to provide state-level programme managers with guidance for effective implementation.
	2	Currency of national cancer control plan	0 – 2	2	+2	• The latest NP-NCD 2022 – 2030, which covers cancer control, was most recently updated in 2023.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+5	• The NP-NCD 2022 – 2030 includes objectives, strategies and activities covering prevention, screening/ early detection, diagnosis, treatment and to some extent, palliative care. However, it provides limited to no mention of survivorship support.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	1		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	0		
	9	Inclusion of an implementation plan for cancer control	0 – 2	1	+1	• The NP-NCD 2022–2030 outlines broad strategies, responsible stakeholders, and resource and service delivery requirements at different healthcare levels that serve as guidance. However, detailed implementation plans ('District Health Action Plan' – DHAP) will be developed and executed by State/Union Territories programme managers.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	0	0	• The NP-NCD 2022–2030, despite covering the period from 2023 to 2030, outlines broad objectives without distinguishing between short-, medium-, and long-term goals.
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	1	+1	• The NP-NCD 2022–2030 includes a key section dedicated to finances, which mentions the funding of NP-NCD under the common NCD flexi-pool of the National Health Mission (NHM). • However, the State/ Union Territories are required to develop their respective budgetary proposals. While formulating interventions for NCDs, they must incorporate the budget within the State NHM Programme Implementation Plan (PIP).
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	0	0	• There is no dedicated lung cancer plan or strategy from the government or the health ministry. • Although advances have been made, lung cancer receives less attention and focus compared to other cancer types such as cervical, breast and oral.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	0		
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	0		
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	0		
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	0		
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**10**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	1	+1	• Lung cancer, as part of the broader cancer and NCD control efforts, is managed by various stakeholders at both the national and state levels in a decentralised manner. • At the national level, the Ministry of Health and Family Welfare (MoHFW), Government of India (GOI), along with agencies like the Indian Council of Medical Research (ICMR) and National Cancer Grid (NCG), a collaborative network of cancer centres and organisation are actively involved in cancer control. • Meanwhile, State/ Union Territories Health Governments formulate and implement their respective state-specific strategies/ plans, once approved.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	1	+1	• In 2024, the Government of Goa signed a memorandum of understanding (MoU) with AstraZeneca India to accelerate lung cancer detection through the deployment of AI-based screening technology. • This agreement enables the tool to be deployed in all district hospitals and select primary health centres (PHCs) across the state, offering free LDCT scans for individuals aged 24-75 for a period of one year.
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	10	+2	• National objectives for tobacco control are established, and a national agency for tobacco control exists.
					+1	• All tobacco advertisements, promotion and sponsorships are banned. Ban on retail product display is uncertain.
					+1	• In 2023, the Indian government imposed the highest GST rate of 28% on cigarettes and tobacco products. • However, it has been observed that tobacco taxes in India are not regularly adjusted for inflation and have not increased significantly; tobacco products are also increasingly affordable over time.

India

					+1	• The sale of tobacco products is prohibited to persons under the age of 18. There are no restrictions on internet sales or the sale of small packets of cigarettes or other tobacco products, with weak enforcement.
					+1	• The law mandates that graphic health warnings must cover 40% of tobacco product packaging. • However, there is no requirement for the adoption of plain packaging currently.
					+1	• Studies have shown significant gaps in the implementation of existing tobacco control policies, particularly the National Tobacco Control Programme (NTCP), in India due to factors such as a lack of research, training, capacity, and adequate resources. In 2024, stricter enforcement of India's National Tobacco Control Law—COTPA 2023—was identified as a priority area. • Penalties exist for violation of tobacco regulations.
					+1	• India is a party to the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC).
					+2	• National Tobacco Control Programme (NTCP) has resulted in provision of dedicated funds and manpower for implementation of the Programme. The effort was funded by the MoFHW and later co-financed by the state governments. • As part of the NTCP, the Government of India (GoI) has implemented various programmes in collaboration with other sectors. For instance, MoHFW-GoI introduced school-based tobacco control programmes along with the 'Tobacco-Free Educational Institution' (ToFEI) guidelines for all educational establishments across India, to raise awareness about the harmful and long-term effects of tobacco use and to promote healthy, tobacco-free educational environments. The Department of School Education & Literacy further collaborated in this effort and developed a "ToFEI Implementation Manual" for schools, which was launched on World No Tobacco Day in 2024.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	2	0	• No smoking cessation campaign has been identified in the past two years, with the exception of the "What Damage Will This Cigarette/Bidi Do" smoking cessation campaign published in 2018.
					+1	• The National Tobacco Control Programme (NTCP) calls for the establishment of Tobacco Cessation Centres (TCCs) in District Hospitals, offering free, pharmacotherapy and counseling services. Additionally, counsellors appointed for AIDS and TB control also provide tobacco cessation services at the primary level.
					+1	• As part of the National Tobacco Control Programme (NTCP), mCessation is a free mobile phone text-message service that provides tailored behavioral support for the general population who cannot or do not prefer face-to-face assistance in quitting smoking.
					0	• A study reported that while approximately 30% of tobacco users in India have attempted to quit, the rate of successful quitting is only around 5%, according to the WHO.
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	3	+1	• Smoking is completely banned in many public places and indoor workplaces, such as healthcare, educational, and government facilities, as well as on public transport. However, the law permits the establishment of designated smoking areas in certain establishments, such as airports and hotels with 30 or more rooms.
					+1	• Smoking in all public places is banned under the Prohibition of Smoking in Public Places Rules 2008 and COTPA. With respect to outdoor places, open auditoriums, stadiums, railway stations, bus stops/stands are smoke free. • Sub-national jurisdictions may enact smoke free laws that are more stringent than the national law.
					+1	• In 2018, a national tobacco control mass media campaign titled "Clinical" was launched, featuring a 30-second Public Service Announcement (PSA) highlighting the dangers of second-hand smoke (SHS) and promoting the quitline number. The campaign emphasised the risks of stroke and heart disease among non-smokers due to SHS exposure and encouraged smokers to quit to protect others. • Also in 2018, the Bruhat Bengaluru Mahanagara Palike (BBMP) Special Commissioner, in collaboration with the "Partnership for Healthy Cities – Smoke-Free Bengaluru Initiative," launched a campaign to raise awareness about the harms of tobacco use, the environment, and second-hand smoke. This initiative, which included 'No Smoking' signs and public communication, led to a 27% reduction in smoking in public places in Bengaluru, as reported by a local survey in 2023.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	4	0	• There are no policies or programmes in place to control radon.
					+1	• India's National Clean Air Programme (NCAP) aims to improve air quality health system-wide, focusing on approximately 132 "non-attainment" cities where air pollution standards are not being met. The NCAP offers a framework for developing air quality management plans and provides guidance on policies across various sectors. • In 2020, the Government of India allocated approximately $1.7 billion to fight air pollution over the next five years in 42 Indian cities with populations exceeding one million, with the condition that these cities reduce their air pollution levels by 15% every year.
					+1	• India is combating air pollution through actions such as expanding renewable energy, promoting electric vehicles, and supplying LPG cooking fuel to millions of households.

						• For instance, the "Shoonya – Zero Pollution Mobility". campaign, administered by the NITI Aayog, aims to improve air quality in India by accelerating the deployment of electric vehicles (EVs) for ride-hailing and delivery services.
					+2	• The Government of India is envisaging a revision of its the ambient air quality standards and has strengthened vehicular and industrial emission standards in recent years. • For instance, Bharat Stage emission standards (BSES) are implemented in India to reduce vehicular emissions and there are several stages of BS norms (BS–I, BS-II, BS-III, BS-IV and BS-VI) proposed since 2000. Bharat Stage VI emission standards, implemented in 2020, have led to stricter norms for vehicular emissions.
					0	• There are few to no public awareness campaigns addressing air pollution-related health risks identified. • To support action on air pollution, Warrior Moms, a Pan-India movement advocating for children's right to breathe clean air, launched the 'Know Your Rights' campaign. This initiative aims to empower citizens with information about their rights to clean air and a healthy environment, and to educate communities on the relevant laws, regulations, and policies.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• Legislation covering workplace safety and health exists, governed by the 'Occupational Safety, Health and Working Conditions Code, 2020.' This Act, enacted in Sep 2020, consolidates and amends laws regulating the occupational safety, health and working conditions of employed workers in various sectors including factories, plantations and transportation.
					+1	• Proposed safety systems for potential workplace hazards and mitigation measures in place for hazard identification and risk assessment.
					+1	• As per the Factories Act of India 1948 (now subsumed into Occupational Safety, Health and Working Conditions Code, 2020), it is mandatory to conduct periodic health check-ups every year for all contractual and permanent employees working in manufacturing industries. • Medical examinations, including the criteria for detecting and reporting occupational diseases, should be extended to employees even after they have ceased employment if they are suffering from an occupational disease that arose out of or in the course of their employment. Employers are also required to monitor and measure employees' exposure to hazards.
					+1	• The National Safety Council of India (NSCI) aims to promote safety consciousness among workers to prevent accidents, minimise dangers and risks and arrange related education and awareness programmes. • The Indian Association of Occupational Health (IAOH) is an association of over 3000 members comprising health professionals, industrial hygienists, safety professionals, social workers and others. It aims to promote occupational health through various initiatives such as conducting training courses, workshops etc.
	8	E-cigarettes regulation	0 – 4	4	+1	• E-cigarettes are regulated under the Prohibition of Electronic Cigarettes (Production, Manufacture, Import, Export, Transport, Sale, Distribution, Storage, and Advertisement) Act in force since 2019.
					+1	• The law bans the production, manufacture, import, export, transport, sale, and distribution of -cigarettes, effectively prohibiting their sale entirely.
					+1	• A complete ban would strongly suggest that no advertising is allowed.
					+1	• While the complete ban implies restrictions in public areas, a public notice has been issued for stricter enforcement of the law due to observed violations, where e-cigarettes are still easily available online and at tobacco shops.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	0	0	• Published evidence on partnerships between civil societies, patient groups, and the government is scarce. • Most collaborations, if any, are typically led by NGOs in partnership with individual hospitals. For example, in 2016, the Lung Care Foundation collaborated with Sir Ganga Ram Hospital, New Delhi, to provide free lung cancer screening for smokers.
Contribution of patient organisation and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	2	+2	• Lung Connect India is a lung cancer support group and community run by cancer patients, caregivers, and survivors. It aims to support lung cancer patients at every touch point in their journey by addressing their physical, functional, emotional, social, and financial needs.
	11	Existence of civil society	0 – 3	2	+2	• The Lung Care Foundation (LCF), established in May 2015, is a not-for-profit organisation dedicated to promoting lung health, including the prevention of lung cancer, in India. It focuses on education, research, and improving patient access to quality and timely clinical care.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	0	0	• Existing patient advocacy groups/ civil societies currently have limited representation in decision-making processes. However, they have occasional opportunities to provide feedback such as relating to healthcare policy and delivery improvements on a case-by-case basis.
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	0	0	• Patient groups currently have limited influence and involvement in the development of clinical guidelines. • However, patient advocacy efforts, particularly by Lung Connect India, have increased over the past two years, with opportunities to have their voices heard by providing

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						feedback and advocacy for policy changes, through various interactions and platforms on a case-by-case basis.
	14	Patient organisation participation in cancer control plan development	0 – 1	0	0	• Patient groups currently have limited influence and involvement in the development of the cancer control plan. • However, patient advocacy efforts, particularly by Lung Connect India, have increased over the past two years, with opportunities to have their voices heard by providing feedback and advocacy for policy changes, through various interactions and platforms on a case-by-case basis.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	0	0	• There is no conclusive evidence indicating that civil societies have a formal role in contributing to HTA recommendations. However, the importance of inclusive stakeholder engagement, which may involve civil societies, has been emphasised as a valuable aspect of the HTA process.
	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	0	0	• There is limited published evidence demonstrating that civil societies currently collaborate or participate in joint programmes with the private sector, although small-scale collaborations may exist.
	17	Community engagement and empowerment	0 – 2	1	+1	• Published evidence on government-led community engagement efforts to reach underserved populations remains limited. Most initiatives are driven by NGOs, which also face challenges in achieving broad and effective geographical reach due to the territory's vast size and diversity.
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	1	+1	• The process of evidence synthesis for developing Indian lung cancer guidelines began in early 2024, starting with systematic reviews and meta-analyses. • Currently, clinicians commonly refer to a combination of international guidelines (e.g., NCCN, ESMO) alongside local guidelines, such as the National Cancer Grid (NCG) 2019 Guidelines, titled "Thoracic Malignancies Management Guidelines".
	19	Currency of clinical guidelines for lung cancer	0 – 2	2	+2	• While local clinical practice guidelines are still being developed, several expert consensus statements on lung cancer management and care are available. • The most recent is the India Expert Consensus Statement on the Clinical Management of Stage III Non-Small Cell Lung Cancer in India (2023). Previous statements include the India Expert Consensus Statement on Management/Treatment of Advanced NSCLC (2021) and the India Consensus Guidelines for Biomarker Testing in NSCLC (2019).
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	0	0	• Current evidence-based guidelines do not exist for the prevention, screening, diagnosis, management, and palliation of lung cancer in India. • However, a local expert opinion statement on lung cancer screening in India was recently published in May 2024.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• Although India does not have local screening guidelines, it generally follows existing international and Asian guidelines that recommend individuals at high risk of lung cancer to be screened using LDCT.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	0	• Currently, there is limited evidence in India to support or guide the implementation of blood-based biomarker evaluations in clinical practice for lung cancer screening.
	23	Inclusion of NGS in screening guidelines	0 – 3	0	0	• Currently, there is limited evidence in India to support or guide the implementation of blood-based biomarker evaluations in clinical practice for lung cancer screening.
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• While there are currently no evidence-based national guidelines, an Indian expert consensus statement on biomarker testing in NSCLC is available and can serve as a reference for informed decision-making. • A prominent local guideline that is commonly referred to and covers diagnosis is the National Cancer Grid (NCG) 2019 Guidelines, titled "Thoracic Malignancies Management Guidelines".
	25	Diagnosis timeframe	0 – 2	0	0	• Existing guidelines or expert consensus do not specify intervals for diagnostic referrals for suspected lung cancer cases, focusing mainly on diagnostic and staging procedures. • Rapid referral pathways between primary care and specialist clinics for suspected lung cancer cases do not exist in India, resulting in many patients being referred and diagnosed late, with delays of over 3 months from symptom onset to diagnostic procedures and a definitive diagnosis.
	26	Post-diagnosis referral intervals	0 – 2	0	0	• Existing guidelines or expert consensus do not specify rapid pathways or intervals between diagnosis and initial treatment for diagnosed lung cancer patients. • Studies have found that, on average, it takes 4 – 6 months from the onset of symptoms to the initiation of treatment in India.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• While there are currently no evidence-based national guidelines, an Indian expert consensus statement on biomarker testing in NSCLC is available and can serve as a reference for informed decision-making. • A prominent local guideline that is commonly referred to and covers treatment is the National Cancer Grid (NCG) 2019 Guidelines, titled "Thoracic Malignancies Management Guidelines".
	28	Patient navigation programme	0 – 1	1	+1	• While there are no clear regulations or guidelines related to patient navigation, physician training and patient programmes are increasingly available. Key organisation providing patient navigators and physician training for lung cancer care include the Lung Connect India Foundation and Kevat at TMH Mumbai. Other organisation include Sadbhavna Trust, Konark Foundation, and Gunvanti Trust.
	29	Referral system	0 – 1	0	0	• Existing guidelines or expert consensus do not specify any referral system or pathway from primary to tertiary care. A study has found that only 27% of primary physicians

						referred their lung cancer patients to specialty centres for evaluation due to low index of suspicion for lung cancer.
	30	Established programmes for further care management	0 – 1	0	0	• Existing guidelines or expert consensus does not mention or specify any linkage for lung cancer patients to programmes for further care management.
	31	Shared decision making	0 – 1	0	0	• Existing guidelines or expert consensus do not mention shared decision-making. • Reports indicate that this concept is not yet widely practiced in India, being largely limited to major tertiary care centres and academic institutions, or only in discussions involving high treatment costs.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The role of multidisciplinary team (MDT) care is highlighted in local expert consensus statements and is recommended by experts/ medical societies across the patient continuum of care, including screening, diagnosis, accurate staging, and management of advanced NSCLC.
	33	Referral pathway to supportive/ palliative care	0 – 1	0	0	• Currently, evidence-based guidelines for lung cancer prevention, screening, diagnosis, management, and palliation do not exist in India. • Local expert consensus statements briefly state that timely palliative care referral for patients with newly diagnosed incurable lung cancer can improve quality of life and reduce depression rates compared to usual care, but no specific referral pathways are mentioned.
	34	Psychological burden	0 – 1	0	0	• Existing guidelines do not mention or cover the psychological burden of the disease. Similarly, it has been reported that quality psychological services (e.g. counselling) are also generally lacking in India.
TOTAL SCORE (Sufficient political will and coordination)				**43**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	0	0	• There are limited to no government schemes that fund for lung cancer screening at the national or state levels and is mainly paid out of pocket by patients if performed.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	1	+1	• There are limited to no government schemes that fund lung cancer diagnostics at the national or state levels, and these tests are mainly paid out of pocket by patients if performed. • The national funding scheme, Ayushman Bharat, covers only selected basic diagnostic services such as CT scans. • However, some hospital-led initiatives aim to increase access to diagnostic services. For example, the Rajiv Gandhi Cancer Institute and Research Centre (RGCI&RC) in Delhi has collaborated with AstraZeneca to set up a Centre of Excellence (CoE) to enhance the availability of subsidised, high-quality, and validated NGS (molecular panel) testing for eligible individuals diagnosed with lung cancer in India.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	1	+1	• Ayushman Bharat scheme funds basic essential drugs chemotherapies such as gemcitabine, carboplatin, cisplatin, docetaxel and paclitaxel; coverage for advanced treatments is almost non-existent.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	1	+1	• Funding for (lung) cancer is part of the broader non-communicable diseases (NCDs) under the NP-NCD Plan. There is no specific breakdown for cancer care published, and it has been reported to be insufficient with high out-of-pocket expenditures. Furthermore, only 39% of the population was covered by health insurance as of 2023. • Published reports revealed that Rs 36,000 crore has been allocated to the National Health Mission (NHM) for 2024-25, making up 40% of the Ministry of Health and Family Welfare's budget. This supports the implementation of the NCD plans at the state level. • Additional government funding is available to support financially disadvantaged populations, but it is often limited in geographical/institution reach, services included, and overall funding coverage.
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	2	+2	• There are some initiatives in place to increase access to lung cancer screening, but broader coverage is still needed. • For instance, Lung Care Foundation (LCF) promotes LDCT screening for early lung cancer detection and offers free screening programmes. • As part of the #BeatLungCancer campaign, LCF, in collaboration with Sir Ganga Ram Hospital and Mahajan Imaging, offers LDCT screening at heavily subsidised rates for early detection of lung cancer. • Full subsidies are available for underprivileged individuals who meet eligibility criteria.
	6	Existence of patient financial support programmes and associated out-of-pocket expenses for lung cancer diagnosis	0 – 3	1	+1	• Financial assistance programmes for lung cancer diagnosis are limited. • The key government programme identified is the Health Minister's Cancer Patient Fund (HMCPF), established in 2009 under Rashtriya Arogya Nidhi (RAN). It operates through 27 Regional Cancer Centres (RCCs) as a Revolving Fund. The HMCPF provides financial assistance of up to RS. two lakhs for cancer patients living below the poverty line, with cases requiring more funding referred to the Ministry for approval. It primarily covers treatment but also includes selected diagnostic services such as PET scans and tumour markers. • Another identified organisation is the Copywithcancer-Madat Trust.

	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	2	+2	• Several organisations and funds supporting lung cancer treatment at the national and state level, provided by the government, NGOs, and hospitals exist. • Government-funded schemes, including the Prime Minister National Relief Fund (PMNRF), Chief Minister Relief Fund, and Health Minister Cancer Patient Fund (HMCPF), cover treatments such as surgery, radiation therapy, and anti-cancer chemotherapy, but generally exclude innovative drugs. • Other organisation that provide financial support, including improving access to targeted therapies, are Tata Trust, Copewithcancer-Madat Trust and Cancer Patients Aid Association (CPAA).
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	1	+1	• In India, cancer treatment contributes to the substantial out-of-pocket expenditure, which exceeds 62%. • Although financial assistance programmes exist, they are inadequate to cover the catastrophic costs of treatment. • A study revealed that 75% of the sample experienced catastrophic expenditure, with 38% of insured individuals facing financial catastrophe compared to 93% of those without insurance.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**9**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	2	+2	• The Indian Council of Medical Research (ICMR) performs the systematic collection of national cancer data through population-based cancer registries (PBCRs) and hospital-based cancer registries (HBCRs). • Under the ICMR – National Centre for Disease Informatics & Research (NCDIR) – National Cancer Registry Programme (NCRP), there are currently 38 PBCRs registered, of which 36 are located in twenty states, and 2 are in two Union Territories.
	2	Registry integration and linkage	0 – 3	2	+2	• PBCRs collect data on new cancer cases occurring in populations from multiple sources of registrations such as government hospitals, nursing homes, clinics etc. • Recent reports state the need for an expansion of cancer registration efforts to cover a broader spectrum of healthcare institutions, including private hospitals, diagnostic labs, imaging centres, and primary care facilities.
	3	Registry population coverage	0 – 2	1	+1	• The coverage by the NCRP network is 16.4% in India. This is estimated to cover less than 15% of the urban population and less than 1% of the rural population. • Many cancer cases in rural and remote areas often go unreported due to low awareness and lack of reporting mechanisms.
	4	Operational status of registry	0 – 3	2	+2	• Under the NCRP, the cancer registry is being developed, though challenges persist in ensuring data accuracy, completeness, and timely submission and reporting. • For instance, since cancer is not a centrally notifiable disease, standardised data collection remains difficult. Moreover, mortality data collection faces gaps, such as incomplete and inaccurate certification of the cause of death. • However, progress is being made, with recent updates to cancer notification laws expanding the list of states where cancer is now recognised as a notifiable disease.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	0	0	• There is no lung cancer-specialised PBCR in India.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	1	+1	• Lung Care Foundation actively conducts educational programmes in schools and for the general public. In 2019, in partnership with the All India Management Association (AIMA), the foundation organised a talk on the health impacts of air pollution.
	7	Existence of community-based outreach programmes	0 – 3	2	+2	• Lung Care Foundation, in collaboration with Sir Ganga Ram Hospital, launched the #BeatLungCancer campaign in 2019 to raise awareness about lung cancer. The initiative promotes early screening, timely treatment, and shares patient success stories to inspire others. • Additionally, the foundation has partnered with YouWeCan, a non-profit organisation for cancer patients, to extend outreach efforts and empower communities with information for proactive lung cancer detection and treatment.
	8	Existence of clinical associations	0 – 3	2	+2	• The Indian Society for Study of Lung Cancer (ISSLC) is the sole professional body in India focused on advancing lung cancer research, education, and advocacy. Other associations that also address lung cancer include the Indian Chest Society and the India Cancer Society.
	9	Educational programmes for providers	0 – 1	0	0	• No educational programmes targeted toward providers have been identified.
TOTAL SCORE (Robust surveillance protocols and public education)				**12**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	1	+1	• Reports have revealed that India's poorest often travel hundreds of kilometres to access cancer care. Despite nearly 70 percent of India's population living in rural areas, most of the health system's cancer facilities are concentrated in a few major cities. • Access to cancer care significantly declines outside tier 1 cities such as Chennai, Mumbai, and Kolkata. In rural India, the availability of cancer treatment is markedly lower compared to urban areas.

	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	1	+1	• Access to oncology services in India is limited, particularly in rural and some urban areas, leading patients to travel long distances and visit multiple hospitals before reaching a cancer centre and receiving a confirmed diagnosis and treatment. • The transition from primary and secondary care to tertiary cancer centres is challenging, with socio-economic factors contributing to health-related inequities that affect general healthcare access, including cancer care.
	3	Number of radiologists	*N/A*			• India has 346 radiologists per 10,000 cancer patients.
	4	Number of radiation oncologists	*N/A*			• India has 3 radiation oncologists per 10,000 cancer patients.
	5	Number of surgeons	*N/A*			• India has 273 surgeons per 10,000 cancer patients.
	6	Number of thoracic surgeons	*N/A*			• There are over 1,000 cardiothoracic vascular surgeons performing cardiothoracic surgery in over 175 centres.
	7	Number of medical oncologists	*N/A*			• There are no known figures on the actual number of medical oncologists in India, but published figures range from 350 to 1,000. • A 2017 report highlighted that India has fewer than 1,000 formally trained medical oncologists, with estimates from the Indian Society of Medical and Paediatric Oncology (ISMPO) suggesting fewer than 350 members.
	8	Number of pathologists	*N/A*			• Latest reports state that there are about 5,500 qualified pathologists in India.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	1	+1	• India does not have a national lung cancer screening programme due to challenges such as high costs, logistical difficulties, resource constraints and the high prevalence of tuberculosis which potentially leads to a high rate of false positives, hindering large-scale LDCT implementation. • Pilot and proof-of-concept studies are in progress to assess the role and effectiveness of LDCT screening in smokers, offering potential insights for broader implementation. • However, lung cancer screening is not widely implemented in practice.
	10	Level of screening uptake	0 – 2	0	0	• There is no published data assessing or reporting the uptake of lung cancer screening in the health system due to its limited practice and uptake.
Availability and Accessibility of Health System Infrastructure	11	Number of CT scanners	*N/A*			• India has 73.4 CT scanners per 10,000 cancer patients.
	12	Number of PET scanners	*N/A*			• India has 359 PET/CT scanners.
	13	Number of MRI scanners	*N/A*			• India has 17.5 MRI machines per 10,000 cancer patients.
	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 2	1	+1	• Chest radiograph and CT scan is the cornerstone and routine diagnostic imaging tool utilised for suspected lung cancer, but PET-CT scans is considered the most accurate for non-invasive lung cancer staging. • However, when PET-CT is not readily available or not used due to potential high false-positive rate, centres often rely on contrast-enhanced CT scans. Additionally, MRI, primarily focused on the brain, is used when PET-CT is insufficient for detecting brain metastases. • Access to advanced imaging modalities like PET-CT scan is primarily concentrated in urban areas like Bengaluru, Delhi, Mumbai, and patients in rural regions who may have to travel long distances due to this geographical disparity.
	15	Availability of/ access to Biopsy	0 – 2	1	+1	• While basic diagnostic methods like flexible bronchoscopy are increasingly available in India, access to advanced techniques such as endobronchial ultrasound (EBUS) and transthoracic sampling remains limited. Notably, less than 1% of hospitals have dedicated interventional radiology setups, which restricts access to these more advanced diagnostic methods.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	1	+1	• Biomarker testing lab facilities are primarily concentrated in urban areas and large medical centres, with limited access in rural areas. Patients residing in rural areas could face logistical challenges in accessing specialised tertiary centres or diagnostic facilities that offer genetic testing.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	1	+1	• At present, routine biomarker testing is primarily limited to the two most common oncogenic alterations (EGFR mutations by real-time PCR and ALK rearrangements by IHC) at limited large-scale facilities, and mainly paid out of pocket. • However, due to the high prevalence of EGFR mutations and ALK/ROS1 rearrangements, access to biomarker testing and facilities has been ramping up recently. The Department of Health Research and ICMR has launched a health system-wide DHR-ICMR Advanced Molecular Oncology Diagnostic Services project to provide biomarker testing for lung cancer free of cost health system-wide.
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	1	+1	• While the use of broad next-generation sequencing (NGS) panel testing is increasing, it is still limited by both cost and availability. • However, accredited facilities and laboratories that offer locally developed and validated broad NGS panel testing have increased in number in the past few years.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	1	+1	• Molecular diagnostic testing facilities are mostly restricted to referral tertiary care hospitals or academic centres or large private laboratories in India.
	20	Availability of/ access to Companion diagnostics	0 – 2	1	+1	• In general, India does not have a universal reimbursement policy for companion diagnostics across all states or healthcare settings. However, some private insurance plans and larger hospitals might cover the cost of these tests. partially and on a case basis.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	1	+1	• Despite the potential to be more cost-effective than single-gene testing, NGS remains unaffordable for many cancer patients in India. • The overall economic burden, including the cost of sequencing and subsequent targeted therapies, can be significant. Given India's limited resources, inadequate insurance

						coverage, and high out-of-pocket expenses, the financial impact of precision therapy may be particularly pronounced.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	1	+1	• Despite the potential of molecular profiling in cancer treatment, its adoption in India remains inadequate infrastructure and low awareness among HCPs about its benefits and cost-effectiveness in clinical practice.
	23	Availability of/ access to Surgery	0 – 2	1	+1	• Though surgery remains the principal treatment for early-stage lung cancer, the number of patients who are eligible for surgery or undergo surgery varies between 1.5% and 5.3%. • Surgical oncologists and thoracic surgeons are typically located in comprehensive cancer care and tertiary centres.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	1	+1	• While radiotherapy therapy forms an integral component of lung cancer management, there is a huge disparity between rural and urban sectors in terms of accessibility to radiotherapy facilities and cost of treatment. • Similarly, the current volume of radiotherapy equipment is around sufficient to cater to half of the population of India, with waiting times in the public sector ranging from 1 week to 2 months.
	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	1	+1	• Direct and indirect psychological interventions are essential to improve lung cancer treatment outcomes. While these practices are common in developed nations, they are not widely implemented in India, and their impact on treatment outcomes remains under-documented.
	26	Availability of/ access to Rehabilitation	0 – 2	1	+1	• There is a need to integrate cancer rehabilitation services into standard oncology care, as persistent disparities in rehabilitation facilities contribute to increased disability, reduced functioning, and mental health challenges for cancer patients and survivors.
	27	Availability of/ access to Palliative care	0 – 2	1	+1	• While there is insufficient thorough evaluation of the health system's unmet needs for palliative care, it has been reported that fewer than 1% of individuals have access to opioid-based pain relief—an essential component that can greatly enhance quality of life.
	28	Availability of/ access to lung cancer therapy	0 – 3	1	+1	• A study revealed that the average budget shortfall for lung cancer treatment is 74%. Innovative targeted therapies are often either not reimbursed or only partially reimbursed. • Despite advancements, newer-generation EGFR and ALK inhibitors and immunotherapy are used infrequently due to cost. • For instance, many patients who progress on first-line TKI treatment are offered platinum-based chemotherapy instead of osimertinib, and not all patients with ALK-rearranged NSCLC receive ALK TKIs.
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	0	*No Data*	
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**18**		

2. Lung Cancer Health System Snapshot – India's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for India
Advancing Lung Cancer Awareness and Stigma Reduction	• Lung cancer advocacy in India, though growing, is still in its early stages and has yet to reach the levels seen in cancers like breast and colon cancer. • Stigma and low awareness persist, largely due to the association with smoking, discouraging many from seeking screening and early diagnosis, or from accepting that early detection can lead to effective treatment or cure. • While prominent advocacy groups like Lung Connect India are leading community engagement and support efforts, their influence remains limited. Broader outreach is needed to drive more impactful, large-scale change.	• Expand comprehensive awareness campaigns to address stigma and enhance early screening and prevention of lung cancer, with a focus on underserved and rural communities where resources are limited. • Empower primary healthcare workers and district facilities in advancing awareness, facilitating screening, and promoting early detection. • Strengthening grassroots-level initiatives can help bridge care gaps and improve early diagnosis, leading to better outcomes in resource-limited regions.
Expanding Access to Innovative Lung Cancer Diagnostics and Treatments	• The self-pay nature of the healthcare system limits access to tests and treatments, with national and state programmes offering only partial coverage. • Innovative therapies like Targeted Therapies (TT) and Immuno-Oncology (IO) are costly and less accessible, especially for underserved populations who rely on government financial support • Although efforts by advocacy groups, such as those led by Lung Connect India, are underway to include innovative therapies in government funding schemes like Ayushman Bharat, challenges remain in strengthening advocacy, influencing policy, and mobilising a unified voice, hence limiting the impact reach.	• Explore opportunities to enhance the availability and accessibility of advanced medical treatments through health programmes and financial support initiatives. The potential of integrating TT and IO into government programmes could improve affordability, access and health outcomes. • Public-private partnerships present a promising avenue for improving access to life-saving therapies. • Supporting advocacy efforts and their role in policy development can also amplify impact.
Strengthening Infrastructure and Labour for Lung Cancer Care	• Resources vary across India, with a wide range of capabilities, infrastructure and resources differing by region and city. • Geographical access to diagnostic facilities is limited, particularly in smaller cities and rural areas, where distribution remains unequal. • Furthermore, the absence of an organised referral system hampers continuity of care for patients, particularly those from smaller towns/ cities, resulting in wasted time and resources. • Although major cancer centres are expanding geographically, there remains a shortage of trained oncologists, pathologists, and support staff to address the growing lung cancer burden.	• Invest in training programmes to increase the number of oncologists and other specialists, and expand cancer care facilities using successful models, such as Tata Memorial Centre, into underserved regions. • Improve staffing levels to ensure cancer care facilities are well. equipped and operational, particularly in rural and semi-urban areas. • Strengthen diagnostic capabilities in smaller cities and develop. efficient sample transport mechanisms to larger centres for analysis. • Upgrade basic treatment capabilities in smaller towns and establish a more structured referral system to facilitate access to comprehensive care in larger cities.

Lung Cancer Health System Snapshot

Scorecard of Indonesia

Indonesia

1. Lung Cancer Health System Snapshot – Indonesia Scorecard Results and Future Opportunities

Domain	Indicator		Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	1	+1	• The National Action Plan for Cancer Control (2020-2024), revised from the 2015-2019 edition, is in draft but has not been formally implemented yet. It will be integrated into the broader National Plan for Non-Communicable Diseases (NCDs).
	2	Currency of national cancer control plan	0 – 2	1	+1	• The NCD plan is still in draft, with the latest published version formally operational till 2019.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+6	• The NCCP includes goals, objectives and priority evidence-based interventions in relation to prevention, early detection and diagnosis, treatment, palliative care, and survivorship.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	1		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	1		
	9	Inclusion of an implementation plan for cancer control	0 – 2	1	+1	• No detailed implementation action plan was stated or found, except a broad plan outlining the guiding ideology of cancer prevention and treatment.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	0	0	• Based on the latest evidence and status, the plan mainly covers short and long-term goals only spanning till 2024.
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	0	0	• The plan does not identify a funding source.
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	0	0	• There is no dedicated lung cancer strategy by the Ministry of Health yet.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	0		
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	0		
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	0		
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	0		
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**9**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	1	+1	• Lung cancer control in Indonesia is mainly driven and coordinated by the Ministry of Health (Kementerian Kesehatan, KEMKAS), with NGOs playing roles such as raising awareness, providing patient support, and advocating for policy changes, while clinical associations contribute through research and clinical guidelines.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	1	+1	• While there are limited government-driven partnerships and collaborations, key cancer centres are making efforts to advance general cancer control. • Notably, the Dharmais National Cancer Centre in Jakarta has teamed up with the University of Indonesia, the University of New Mexico, and the Tata Memorial Centre to improve cancer diagnosis and treatment through the Extension for Community Healthcare Outcomes (ECHO), Cancer Patient Navigation (NAPAK), and an oncology nurse capacity-building programme. • NGOs and patient groups are also working to advance lung cancer advocacy and awareness through campaigns and partnerships.
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	9	+2	• National objectives on tobacco control and a national agency for tobacco control exist.
					0	• Advertising for tobacco on national TV and radio is still permitted. Product display and point-of-sale advertising are only banned in certain cities, such as Bogor and Depok.
					+2	• The Ministry of Finance has increased tobacco excise rates annually. The most recent regulation, 109/PMK.010/2022, was signed on December 15, 2022, raising tobacco tax rates by approximately 12.5%.
					+1	• While regulations prohibit the sale of tobacco products, e-cigarettes, and heated tobacco products (HTPs) to individuals under 18, enforcement remains a significant challenge. Focus group discussions revealed that many respondents in Yogyakarta were unaware of any restrictions in place.
					+1	• National law mandates health warnings on tobacco packages to cover 40% of both the front and back of all cigarette packages.
					+1	• Enforcement of tobacco regulations remains weak, as highlighted by the ASEAN Tobacco Control Report. The relaxed regulation of advertising and media portrayals, coupled with the Health Minister's need to intervene publicly, suggests that cigarette advertising restrictions are not a priority. • Penalties are in place for violations of tobacco control regulations.
					0	• Indonesia has not signed the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC).

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					+2	• Tobacco control funding mechanisms include the National Budget, Tobacco Tax, and Tobacco Excise Tax. • Papua Provincial Government passed Regulation No. 29 of 2023, mandating comprehensive smoke-free policies in public places, workplaces, and public transportation, along with a ban on e-cigarettes and all forms of tobacco. This progress is attributed to collaborations with organisations like The Union, APCAT, ADINKES, the Ministry of Health, and the Ministry of Home Affairs, which have supported these efforts since 2020.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	3	+1	• Smoking cessation campaigns are part of the primary healthcare system, with various types of campaigns conducted at both the health facility and district levels.
					+1	• During the National Planning Meeting on Tobacco Cessation, hosted by WHO Indonesia and the Ministry of Health, participants reached consensus on three key recommendations for future action. One proposal emphasised leveraging digital technology by enhancing the mobile cessation app to ensure broader access to tobacco cessation assistance, particularly for financially and geographically vulnerable populations. These recommendations form the basis for a comprehensive National Action Plan (NAP) on tobacco cessation, which will be developed in 2024 (not yet released).
					+1	• As of 2018, 234 out of 9,909 (2.4%) primary health centres, 414 health professionals, and 337 teachers had received smoking cessation training since 2014. Additionally, a free quitline service, available at 0-800-177-6565 from 8 a.m. to 4 p.m., has been operational since 2016.
					No data on success rates of smoking cessation services identified	
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	2	+1	• Indonesia regulates seven types of places as smoke-free environments, including healthcare facilities, educational institutions, public transportation, workplaces, playgrounds, places of worship, and selected public areas designated as smoke-free zones.
					0	• There is no coverage for outdoor areas, except for playgrounds and public transportation when motorcycles are used.
					+1	• Indonesia launched the #LungsOnTheRun campaign across five cities, utilising a hybrid online-offline advocacy approach to strengthen smoke-free laws and policies on tobacco marketing, advertising, and promotion.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	3	0	• There are no policies or programmes in place to control radon.
					0	• The national government does not have a comprehensive air quality strategy yet, though air quality and climate change are included in the National Mid-Term Plan (RPJMN) 2020-2024 as part of the national development priorities. • An air quality strategy, known as 'Strategi Pengendalian Pencemaran Udara (SPPU)', is currently implemented, but it is primarily focused on Jakarta.
					+1	• Indonesia's revised National Energy Policy, which lowers the renewable energy target from 23% to 17-19% by 2025, still reflects a commitment to clean energy as part of its broader goal of achieving carbon neutrality by 2060.
					+2	• In 2022, Indonesia signed the Just Energy Transition Partnership (JETP) agreement, securing USD 20 billion in public and private financing to support its energy transition. The JETP targets include capping power sector emissions at 290 million tons of CO2eq by 2030, accelerating renewable energy to contribute 34% of power generation, and achieving Net Zero Emissions in the power sector by 2050. • The Indonesian Ministry of Environment and Forestry requires all new gasoline vehicles to meet Euro 4 emission standards as of September 2018, and all new diesel vehicles to meet Euro 4/IV standards from April 2021, replacing the Euro 2/II standards.
					0	• While Indonesia participates in the Climate & Clean Air Coalition and supports the 'BreatheLife' campaign, which aims to raise awareness about the health and climate impacts of air pollution and promote solutions, there are no comprehensive centrally-led public awareness campaigns in place.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• Legislation exists covering workplace safety and health.
					+1	• Health and Safety Risk Assessments are mandatory for workplaces certified under ISO standards.
					+1	• Regular medical check-ups are required by law, conducted by a doctor appointed by the employer and authorised by the Director General in charge of Labour Inspection (Article 8 of the Occupational Safety Law). Occupational health efforts by workplace management, including in industry and offices, are recorded and reported as part of occupational health surveillance for policy input and OSH programme development.
					+1	• Health and safety training is provided to workers.
	8	E-cigarettes regulation	0 – 4	3	+1	• In 2017, the Indonesian government authorised the use of e-cigarettes and established a regulatory framework that includes licensing, product standards, and taxation for their trade. • The government has recently announced plans to implement tighter regulatory controls on e-cigarette use.

					+1	• With the issuance of GR 28/2024, the government has added new restrictions, which include raising the minimum age to purchase tobacco products and e-cigarettes from 18 to 21 years.
					+1	• A key restriction under GR 28/2024 is the government's official ban on producers, importers, and distributors of tobacco products and e-cigarettes from advertising their products on digital social media platforms.
					0	• Despite tighter regulations, there is no evidence indicating that e-cigarettes are banned in public spaces. • Except in some provinces, such as Papua, the provincial government has enacted a landmark regulation (Regulation No. 29 of 2023) mandating comprehensive smoke-free policies in public places, workplaces, and public transportation, including a ban on e-cigarettes and other forms of tobacco in these areas.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	0	0	• There is limited to no published evidence of formal collaborations between lung cancer groups and the government.
Contribution of patient organisations and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	1	+1	• Patient support groups such as Cancer Information & Support Centre (CISC) Indonesia and Priangan Cancer Care (PrCC), covering lung cancer exist.
	11	Existence of civil society	0 – 3	1	+1	• General cancer civil societies covering lung cancer exist, the most prominent being the Indonesian Cancer Foundation (Yayasan Kanker Indonesia, YKI).
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	1	+1	• Representation of patient groups and civil societies in decision-making bodies and processes is generally limited. However, the Indonesian Cancer Foundation (YKI) is notably reported to have strong ties with the government and plays a role in bridging the gap between government programmes and patient needs. This suggests that some form of mechanism for consultation and feedback is likely in place, though the feedback incorporation process and approach are not known. • Experts have cited successes by such groups in advocating for better funding and the inclusion of new drug indications or cancer drugs in the JKI, including efforts with the House of Representatives (Dewan Perwakilan Rakyat).
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	0	0	• There is limited evidence suggesting the representation and influence of patient groups and civil societies in the development of clinical guidelines.
	14	Patient organisation participation in cancer control plan development	0 – 1	0	0	• Published reports suggest that patient groups and civil societies typically have limited representation and influence in the development of the national cancer control plan, except the prominent NGOs such as YKI. • The recent National Cervical Cancer Plan 2023–2030 demonstrates the involvement of YKI, indicating that non-profit organisations may be gradually playing a more active role in future.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	1	+1	• Civil society has the opportunity to comment on Health Technology Assessment (HTA) recommendations.
	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	1	+1	• PT Takeda Indonesia collaborated with the Indonesian Cancer Foundation to participate in commemorating Lung Cancer Awareness Month in 2022 by holding educational media activities that discussed the importance of proper diagnosis for lung cancer patients.
	17	Community engagement and empowerment	0 – 2	1	+1	• There are no established cancer advocacy platforms in Indonesia, with limited advocacy knowledge and readiness within the oncology community. • One exception is the recent initiative IPKP ('Indonesia Peduli Kanker Paru'), a national movement led by CISC Lung and The Indonesian Society of Respirology.
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	2	+2	• The Ministry of Health published the Indonesian Guidelines for Lung Cancer Management ('Panduan Penatalaksanaan Kanker Paru' – PNPK) in 2023, under Decree No. HK.01.07/MENKES/1438/2023. • The Indonesian Society of Respirology (ISR) has also released a Consensus Statement on Lung Cancer Screening and Early Detection in 2023.
	19	Currency of clinical guidelines for lung cancer	0 – 2	2	+2	• The latest Indonesian Guidelines for Lung Cancer Management was published in 2023.
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	1	+1	• The Indonesian Society of Respirology (ISR) released a Consensus Statement on Lung Cancer Screening and Early Detection in 2023. • Experts anticipate that the Ministry of Health will officially endorse the statement within the next year.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• The screening guidelines recommend that individuals at high risk for lung cancer should be screened using LDCT every two years.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	0	• The screening guidelines do not include biomarker testing as a routine tool for lung cancer screening but briefly state its potential as a developing alternative.
	23	Inclusion of NGS in screening guidelines	0 – 3	0	0	• There is no mention of NGS as a screening tool in the guidelines.
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• The Indonesian Guidelines for Lung Cancer Management cover prevention, screening, early detection, diagnostics, treatment and palliative care.
	25	Diagnosis timeframe	0 – 2	0	0	• The Guidelines do not mention a recommended timeframe for referring suspected lung cancer patients.
	26	Post-diagnosis referral intervals	0 – 2	0	0	• The Guidelines do not mention a recommended timeframe between diagnosis and initial treatment for diagnosed lung cancer patients.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• The Indonesian Guidelines for Lung Cancer Management cover prevention, screening, early detection and treatment.

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	28	Patient navigation programme	0 – 1	0	0	• The Indonesian Guidelines for Lung Cancer Management does not mention a patient navigation programme. • Recent progress includes eight hospitals in Indonesia, including Dharmais, sending representatives to study the cancer patient navigation programme at Tata Memorial Centre in Mumbai, India, through year-long scholarships.
	29	Referral system	0 – 1	1	+1	• A referral system exists in public hospitals, outlining the referral pathway from Puskesmas to the four hospital levels (A to D) based on specialist availability, supporting facilities, and therapies covered by JKN. • For lung cancer patients, referrals may lead to national referral hospitals in Jakarta, primarily RSCM, Dharmais National Cancer Hospital, and Persahabatan Hospital.
	30	Established programmes for further care management	0 – 1	0	0	• The guidelines do not cover any form of established programmes linking individuals to resources.
	31	Shared decision making	0 – 1	0	0	• The guidelines do not cover shared decision-making.
	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The guidelines mention a multidisciplinary approach to lung cancer from diagnosis, emphasising the need for rapid and targeted treatment to facilitate effective management.
	33	Referral pathway to supportive/ palliative care	0 – 1	1	+1	• The guidelines recommend referring all lung cancer patients for palliative rehabilitation management from the time of diagnosis to improve their quality of life. For advanced lung cancer patients, specific cases for referral are also outlined.
	34	Psychological burden	0 – 1	1	+1	• The guidelines address psychological disorders as functional impairments affecting daily activities and social participation. • It recommends psycho-socio-spiritual assessments and emphasises including routine psychological screening in comprehensive chronic pain evaluations to manage both pain and psychological well-being.
TOTAL SCORE (Sufficient political will and coordination)				**45**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	3	+3	• Lung cancer screening at primary healthcare is paid for by a capitation scheme. • BPJS Kesehatan will continue to promote preventive health measures through screenings, with plans to expand to 14 types of screening services, including lung cancer.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	3	+3	• Most lung cancer diagnostic procedures are covered in the JKN with a referral system in public hospitals. • For molecular testing, only the EGFR test is covered as of 2023 according to PMK No.3/2023.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	1	+1	• For patients with advanced NSCLC and EGFR mutations, only a few first-generation (gefitinib, erlotinib) and second-generation (afatinib) EGFR tyrosine kinase inhibitors (TKIs) are covered by JKN.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	1	+1	• The budget for cancer care is outlined in the National Health Account Report, with the most recent update from 2020. Although several funding sources exist, the overall budget for cancer care services, particularly for underserved or vulnerable populations, remains limited. • For instance, JKN, a primary funding source for cancer treatment, has improved healthcare access but has faced budget deficits, leading to funding restrictions. Patients still bear significant out-of-pocket costs, imposing financial strain, especially on vulnerable populations.
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	2	+2	• Hospitals may offer patient financial support initiatives, but these are typically too limited in scale to create a significant impact. • For instance, as part of a lung cancer awareness initiative by Brawijaya University's Faculty of Medicine, a free lung health screening programme was introduced at Saiful Anwar General Hospital.
	6	Existence of patient financial support programmes and associated out of pocket expenses for lung cancer diagnosis	0 – 3	1	+1	• There are limited patient financial support programmes for lung cancer diagnosis, aside from some pharmaceutical assistance, which is generally limited in scope. Molecular-level diagnostic procedures, except for EGFR testing, are particularly lacking in coverage.
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	2	+2	• Apart from JKN as the primary funding source, the Indonesian Cancer Foundation (YKI) has a special access scheme for reduced drug prices on select therapies, such as osimertinib, through pharmaceutical patient assistance programmes. While these initiatives provide some support, they are limited in scope and reach, operating on a case-by-case basis.
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	1	+1	• The BPJS Kesehatan programme has been reported to frequently experience delays and inefficiencies, causing late payments and inadequate patient support. As a result, patients often face increased out-of-pocket costs, having to cover expenses upfront while awaiting reimbursement.

						• Additionally, a study on the financial burden of lung cancer treatment in Indonesia highlights that, while the National Health Insurance (JKN) covers some aspects of cancer care, patients still bear significant out-of-pocket expenses, particularly for treatment-related costs.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**14**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	1	+1	• Indonesia has yet to establish a national PBCR, though the Ministry of Health initiated efforts in 2007, starting with a hospital-based registry in Jakarta. • Indonesia's cancer registry has since expanded into a national PBCR network covering 26 of the 34 regions. • Individual hospital-based cancer registries form the regional PBCR and are then submitted to Dharmais National Cancer Centre, which has been appointed as the national cancer control centre since 2016.
	2	Registry integration and linkage	0 – 3	2	+2	• A population-level data registry exists, with efforts to integrate it into the Satu Sehat big data platform currently being led by the Digital Transformation Office (DTO). However, it is still limited to specific data sources.
	3	Registry population coverage	0 – 2	1	+1	• Latest published data reports that Indonesia currently has 14 PBCRs that cover 14% of the population.
	4	Operational status of registry	0 – 3	1	+1	• Indonesia's cancer registry remains in its early stages, with challenges in data comprehensiveness, accuracy, and timeliness. Published PBCR data/ reports are mainly limited to standalone hospital-based registries. • Existing challenges include difficulties in coordinating cancer case recording and reporting between healthcare facilities, compounded by limited awareness among medical personnel and administrative inefficiencies. Passive data collection methods and the need for verification by medical professionals further affect the accuracy and standardisation of the registry.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	0	0	• There is no specialised lung cancer PBCR in Indonesia.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	1	+1	• Despite efforts by NGOs and patient groups like the Indonesian Cancer Foundation and CISC Lung to improve lung cancer education and support, substantial gaps persist in accessibility, programme implementation, and overall reach.
	7	Existence of community-based outreach programmes	0 – 3	2	+2	• The National Lung Cancer Awareness Movement (Peduli Kanker Paru – IPKP), a series of public communication and advocacy programmes launched in 2020, was initiated by the Cancer Information and Support Centre Association (CISC) for Lung and the Indonesian Society of Respirology (Perhimpunan Dokter Paru Indonesia). • The launch highlighted the urgent need for effective lung cancer management in Indonesia and called on the public and key stakeholders to address this leading cause of cancer-related deaths. • The movement features regular public discussions as an informative, educational, and interactive platform. The #LUNGTALK virtual programme has been established as a routine platform for community outreach, providing a forum for discussions and consultations with patients, survivors, medical personnel, communities, and media to enhance awareness and advocacy on lung cancer in Indonesia.
	8	Existence of clinical associations	0 – 3	1	+1	• The Indonesian Association for the Study of Thoracic Oncology (IASTO) is a clinical association dedicated to lung cancer and other thoracic malignancies. • Additional clinical associations related to cancer and lung diseases include the Indonesian Society of Respirology (ISR) and the Indonesian Oncology Association (POI).
	9	Educational programmes for providers	0 – 1	0	0	• Apart from small-scale educational activities led by the three key cancer centres in Indonesia, no comprehensive educational programmes targeting healthcare providers have been identified.
TOTAL SCORE (Robust surveillance protocols and public education)				**9**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	1	+1	• As the world's largest archipelago with over 13,000 islands and varying population density and infrastructure levels, Indonesia experiences significant regional disparities in its healthcare system. • Cancer care is largely centralised in Jakarta, requiring patients from other regions to be referred to hospitals in Jakarta. • Despite a steady increase in the number of oncologists, most are concentrated in the western part of the region, leading to poorer health outcomes in many eastern provinces and rural areas due to inconsistent service quality.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	1	+1	• Inequality in access to cancer treatment persists in Indonesia. While JKN covers cancer treatment and care, not all cancer drugs are included, leading to significant out-of-pocket expenses for life-saving medications. • Additionally, cancer patients frequently face long travel distances outside their local areas to receive care.
	3	Number of radiologists	*N/A*			• Indonesia has 26 radiologists per 10,000 cancer patients.

Indonesia

	4	Number of radiation oncologists	N/A			• Indonesia has 1 radiation oncologist per 10,000 cancer patients.
	5	Number of surgeons	N/A			No Data
	6	Number of thoracic surgeons	N/A			• There are about 200 cardiothoracic and vascular surgeons in Indonesia.
	7	Number of medical oncologists	N/A			• Indonesia has 139 oncologists and haematologists in 17 provinces.
	8	Number of pathologists	N/A			• Indonesia has 681 anatomic pathology doctors as of 2019.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	2	+2	• There is currently no government-mandated national lung cancer screening programme, but efforts have been made by the Health Ministry to provide LDCT lung cancer screening services at community health services (puskesmas). • Furthermore, the incorporation of lung cancer screening into national guidelines and the development of a screening consensus in 2023 marks progress, likely paving the way for broader adoption in the future.
	10	Level of screening uptake	0 – 2	0		No Data
Availability and Accessibility of Health System Infrastructure	11	Number of CT scanners	N/A			• Indonesia has 7.9 CT scanners per 10,000 cancer patients. • There are plans to increase the availability of CT scanners through the Indonesia Health System Strengthening Project led by the World Bank.
	12	Number of PET scanners	N/A			• As of the latest publicly available data from 2016, there are 4 PET/CT scanners in Indonesia (3 in Jakarta and 1 in Bandung). • Additional scanners have been planned for other cities in the coming years, starting with Samarinda City on Kalimantan Island and Solo in Central Java in the near future.
	13	Number of MRI scanners	N/A			• Indonesia has 2.0 MRI machines per 10,000 cancer patients.
	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 1	1	+1	• The vast geography of Indonesia poses significant challenges in ensuring equitable access to healthcare services. • In general, the demand for radiological services exceeds the available resources and infrastructure, placing strain on the current system. • There is also uneven geographical distribution of radiology facilities. Provinces such as Java and Sumatra have more accessible healthcare services and a higher radiologist-to-population ratio than the national average. In contrast, remote provinces like West Papua lack sufficient numbers of radiologists to meet their population's needs.
	15	Availability of/ access to Biopsy	0 – 2	1	+1	• Advanced biopsy procedures, such as endobronchial ultrasound, endoscopic ultrasound, and transthoracic needle aspiration, are generally available only at top national referral hospitals. • For instance, while interventional pulmonologists at RCSM (Dr. Cipto Mangunkusumo Central General Hospital), one of the top national referral hospitals, can perform a range of biopsy procedures, more advanced services, such as endobronchial ultrasound (EBUS), are limited to fewer than ten hospitals across six provinces. Endoscopic ultrasound examination is even more rarely practiced.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	1	+1	• Except for EGFR testing, which is somewhat more available at top national referral centres, most other lung cancer biomarker testing needs to be sought at private facilities.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	1	+1	• PCR-EGFR testing is the most common biomarker test and is covered by JKN. However, access is limited to fewer than 10 provinces, mostly in Java. • Other molecular tests, such as PD-L1 IHC testing, are commonly sought at private molecular laboratories. These tests are not yet covered by JKN and may be paid out of pocket or supported by pharmaceutical companies on a case-by-case basis.
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	1	+1	• Basic capabilities for genetic testing exist, but advanced procedures are not yet routinely used in clinical care. • Advanced services, such as NGS-based whole genome sequencing (WGS), are primarily utilised in research projects or settings, such as the Indonesia National Genome Project, and are available in research labs like the Eijkman Institute. • However, notable initiatives such as the Biomedical and Genomic Science Initiative (BGSi) launched in 2022, supported by the UNDP and the Indonesian Ministry of Health, plan to expand from the current 17 WGS labs to 29 labs to enhance disease surveillance and precision medicine through WGS.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	1	+1	• Major molecular profiling facilities are primarily located in research settings, such as the Molecular Biology and Proteomics Core Facilities (MBPCF) at Universitas Indonesia. • Not all major hospitals have immunohistochemistry and molecular testing capabilities. Currently, fewer than 10 provinces, mostly in Java, can perform these tests. • • Despite growth in molecular profiling due to facility expansions, challenges remain, including limited infrastructure, lack of formal training, and the need to extend services beyond research institutes.
	20	Availability of/ access to Companion diagnostics	0 – 2	1	+1	• Only the EGFR test is covered by the National Health Insurance as of 2023, according to PMK No.3/2023, but other tests such as ALK, ROS-1, PD-L1, and BRAF are paid out of pocket.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	1	+1	• NGS/comprehensive genomic profiling services are not yet routinely used in clinical care and are limited to selected disease areas, such as infectious diseases. These

						services are mainly performed at a few top national referral centres and research institutes, often requiring out-of-pocket payments.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	1	+1	• Comprehensive molecular profiling and genetic services are primarily available at top national cancer centres (e.g., RSCM, Dharmais Hospital), private companies (e.g., Genetika Labs), and research institutes. • Single-gene genetic testing, primarily EGFR, is available only at a few Type A hospitals.
	23	Availability of/ access to Surgery	0 – 2	1	+1	• The availability of thoracic surgeons has not kept pace with demand, with 19 of 38 provinces lacking these specialists. Most are concentrated in Jakarta and focus primarily on cardiac surgery.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	1	+1	• Over 50% of cancer patients require radiotherapy for treatment or palliative care. • Despite advancements, significant disparities in access persist. Most of the radiation oncology facilities are located on the island of Java and 60% of the centres were operating with a single machine. • Indonesia's National Roadmap for improving radiotherapy services, a plan established in 2010 and updated every 5-years, aims to expand services across more provinces and enhance healthcare professionals' capacity. The plan includes adding 20 new machines to the existing 60 and establishing radiotherapy centres in 18 of the 34 provinces as part of a broader cancer control strategy.
	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	1	+1	• There are frameworks and guidelines in place to provide psychosocial support in cancer care in Indonesia, but gaps remain in meeting the comprehensive needs of patients and their caregivers. • Furthermore, under the National Health Insurance scheme (JKN), psychological assistance services are theoretically accessible to caregivers and patients, as outlined in Presidential Regulation Number 82 of 2018. However, practical barriers, such as the difficulty of scheduling consultations and the need for referrals, often hinder access to these essential services.
	26	Availability of/ access to Rehabilitation	0 – 2	1	+1	• Rehabilitation services and cancer control research are primarily concentrated in major cities like Jakarta and Surabaya, limiting access for patients in rural areas. • Even in major cities, rehabilitation services are not consistently available across all tertiary facilities as recommended.
	27	Availability of/ access to Palliative care	0 – 2	1	+1	• The implementation of palliative care in Indonesia, despite being governed by policies such as the Decree of the Minister of Health (KMK) number 812 of 2007 and the National Guideline for Palliative Cancer Programme 2015, has been slow and inconsistent. • Currently, palliative care services are primarily concentrated in major cities with cancer treatment facilities, resulting in significant disparities in access, particularly in rural areas. • A study further revealed that only 1% of terminal cancer patients in Indonesia receive palliative care services.
	28	Availability of/ access to lung cancer therapy	0 – 3	1	+1	• Chemotherapy remains the primary systemic therapy for both NSCLC and SCLC in Indonesia, as it is covered by JKN. • However, innovative drugs like targeted therapies and immunotherapies are less accessible due to limited availability and coverage. • Further, cancer treatment in Indonesia remains centralised in Jakarta, requiring patients from other regions to be referred to hospitals in the capital city to gain access.
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	0	*No Data*	
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**19**		

Indonesia

2. Lung Cancer Health System Snapshot – Indonesia Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Indonesia
Strengthening Comprehensive Lung Cancer Prevention Policies	• Existing policies for lung cancer prevention are limited, and there is a need for more robust support and political commitment to strengthen these measures. • Indonesia has not ratified the Framework Convention on Tobacco Control (FCTC), which impacts the effectiveness of tobacco control and smoking cessation efforts. • The legalisation of e-cigarettes has introduced additional challenges to tobacco control and lung cancer prevention. • There is no national air quality strategy to address air pollution, and current efforts are confined to Jakarta, leaving gaps in broader lung cancer prevention efforts.	• Revise and expand lung cancer prevention policies to encompass a more holistic and effective strategy. This includes strengthening existing smoking regulations, integrating global best practices from frameworks like the FCTC, and addressing emerging challenges such as the impact of e-cigarettes on public health. • Develop targeted regulations for e-cigarettes to curb their potential exacerbation of smoking-related health risks, and integrate these measures into a broader tobacco control framework to enhance lung cancer prevention.
Enhancing Focus and Implementation of Lung Cancer Screening	• Recent attention to lung cancer screening has increased among the government and the general community following the COVID-19 pandemic, but a comprehensive national programme is still in its early stages. • Despite established benefits, the value of lung cancer screening is not yet widely recognised or implemented in the Indonesian context. • Current government-funded screening efforts are small-scale and confined to community health centres, with limited additional funding schemes to expand access to a wider population.	• There is an opportunity to broaden the scope of lung cancer screening beyond small community health centres to include a wider range of facilities, potentially increasing early detection rates and reaching a larger segment of the population. • Leveraging current guidelines on lung cancer screening can help develop standardised protocols and targeted approaches, ensuring consistent and effective implementation across various population groups. • Exploring the integration of lung cancer screening into existing tuberculosis control programmes presents a promising opportunity. By establishing a clear referral pathway for TB-negative patients, this approach could enhance early detection of lung cancer while advancing a comprehensive strategy for respiratory health.
Improving Access and Advocacy for Lung Cancer	• There is limited access to comprehensive services, especially advanced lung cancer diagnostics and treatments, which results in significant out-of-pocket expenses, particularly for patients in underserved communities. • Patients frequently experience delays in obtaining advanced therapies, with financial support programmes primarily limited to JKN and, to some extent, pharmaceutical-funded initiatives. • The scarcity of lung cancer-specific advocacy groups further limits efforts to raise awareness and drive policy change.	• Strengthening partnerships across government sectors, healthcare institutions, and international collaborations can improve access to comprehensive lung cancer services, including advanced diagnostics and treatments. • Developing lung cancer-specific advocacy groups can boost awareness, engage the public, and stimulate important policy discussions, amplifying patient voices and aligning healthcare priorities. • Exploring innovative funding solutions and enhancing current initiatives can reduce the financial burden on patients and ensure timely access to essential therapies.

Lung Cancer Health System Snapshot

Scorecard of Vietnam

Vietnam

1. Lung Cancer Health System Snapshot – Vietnam Scorecard Results and Future Opportunities

Domain	Indicator		Range	Score	Justification	
Presence of a well-implemented & comprehensive lung cancer-specific plan						
Operational & Up-to-Date National Cancer Control Plan	1	Existence of an operational national cancer control plan	0 – 2	1	+1	• The earlier approved National Cancer Control Plan (NCCP) 2015 – 2025 has been merged into the latest National Plan for Prevention and Control of Non-Communicable Disease (NCD) 2022 – 2025 under Decision No: 155/QD-TTg. which covers cancer control, and the Yearly Plan for the period 2024 – 2025 has been approved.
	2	Currency of national cancer control plan	0 – 2	1	+1	• The NCD plan has been updated within the last 5 years for the period 2022 to 2025.
Comprehensive National Cancer Control Plan	3	Prevention is a component of the national cancer control plan	0 – 1	1	+4	• The NCD Plan 2022 – 2025 covers prevention, screening and early detection, diagnosis and treatment, with outlined strategies; however, there is limited to no mention of palliative care and survivorship support.
	4	Screening/ early detection is a component of the national cancer control plan	0 – 1	1		
	5	Diagnosis is a component of the national cancer control plan	0 – 1	1		
	6	Treatment is a component of the national cancer control plan	0 – 1	1		
	7	Palliative care is a component of the national cancer control plan	0 – 1	0		
	8	Survivorship support is a component of the national cancer control plan	0 – 1	0		
	9	Inclusion of an implementation plan for cancer control	0 – 2	2	+2	• The NCD Plan 2022–2025 includes a broad implementation plan outlining key strategies, activities, and the responsibilities of implementing stakeholders for the entire period. Each year, responsible stakeholders are required to submit a Yearly Plan detailing timelines, activities, and KPIs for each disease and obtain approval from the Ministry of Health.
	10	Definition of overarching goals/ specific objectives for cancer control	0 – 1	0	0	• The NCD Plan 2022 – 2025 includes a section listing specific goals and targets for cancer control up till 2025 (i.e. short-term goals only).
	11	Inclusion of a budget/ financing plan for cancer control	0 – 2	1	+1	• The NCD Plan 2022 – 2025 includes a section on the implementation plan which outlines various broad funding sources, including the national budget (health insurance fund) and local budgets.
Operational & Up-to-Date Dedicated Lung Cancer Control Plan	12	Existence of dedicated lung cancer plan/ strategy in the national cancer control plan	0 – 3	0	0	• There is no dedicated lung cancer strategy, plan, or programme by the Ministry of Health yet. • Lung cancer is not viewed as a political priority in the 2024 to 2025 period.
Comprehensive Dedicated Lung Cancer Control Plan	13	Definition of goals / specific objectives for lung cancer control	0 – 1	0		
	14	Inclusion of desired outcomes/targets for lung cancer control	0 – 1	0		
	15	Monitoring and evaluation of lung cancer control initiatives	0 – 2	0		
	16	Existence of a budget/ financing plan for lung cancer control	0 – 1	0		
TOTAL SCORE (Presence of a well-implemented & comprehensive lung cancer-specific plan)				**9**		
Sufficient political will and coordination						
Lung Cancer Policy and Planning	1	Government bodies involvement and coordination in lung cancer control	0 – 2	1	+1	• There is no centralised government coordination for lung cancer. • Various functions under the Ministry of Health, such as the Medical Services Administration (MSA), together with the National Institute for Cancer Control, are the main bodies responsible for the health system's broader cancer control, including lung cancer.
	2	Government collaboration and partnerships in lung cancer control	0 – 2	1	+1	• The health ministry's Medical Services Administration (MSA) and AstraZeneca have signed an agreement to expand the "Vietnam Healthy Lung" programme in 2021-2023. This is the second phase of the programme following the success of the first phase in 2017-2020. In this phase, lung cancer has been added as a new field as a respiratory problem, in addition to the earlier areas (asthma and COPD).
	3	Existence and comprehensiveness of tobacco control public health policies/ laws	0 – 14	11	+2	• National objectives for tobacco control are established, and a national agency for tobacco control exists.
					+1	• Tobacco advertising and promotion are prohibited, with the exception of point-of-sale displays of tobacco products.
					+1	• Vietnam does not regularly adjust the tobacco tax level. A tobacco tax rate of 65% was applied from 2008 until 2015. The National Assembly approved the revised tax law to increase tobacco tax rate to 70% to be effective from 1 January 2016 and 75% from 1 January 2019 until the present.
					+1	• The minimum age for tobacco sales is 19. There are no restrictions on the sale of tobacco products via the Internet or the sale of single cigarettes, with weak enforcement of laws.
					+1	• Health warnings such as rotating combined picture and text health warnings are required to cover 50 percent of the front and back of unit and outside packaging and labelling.
					+2	• Strengthened monitoring and inspection of tobacco control law enforcement as mentioned in the ASEAN Tobacco Control report. Penalties exist for violation of tobacco regulations.
					+3	• Vietnam is a party to the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC).

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						• Vietnam Tobacco Control Fund (VNTCF) and voluntary contributions from national and international organisations and individuals are examples of funding sources for tobacco control programmes and initiatives. • Partnerships with NGOs and other sectors to support tobacco control efforts exist. For instance, in 2023, the Centre for Creative Initiatives in Health and Population (CCIHP) in collaboration with the Department of Teachers and Education Managers organised a dialogue between Ministry of Education Training (MOET) representatives and schools, parents and children on smoke-free school.
	4	Existence and comprehensiveness of smoking cessation policies/ initiatives	0 – 4	2	0	• No smoking cessation campaign identified in the past 2 years.
					+1	• Village Health Workers are trained to provide multi-session home-based counselling in the villages which helps increase access to geographically vulnerable populations.
					+1	• In September 2015, Vietnam launched a national smokers' telephone Quitline, located in Bach Mai Hospital in Hanoi, and a pilot programme on smoking cessation in 5 regional hospitals that offer smokers free tobacco cessation counselling. • Currently, there are two official toll-free Quitlines supported by Vietnam Tobacco Control Fund. One in northern Vietnam was established in 2015 and run by Bach Mai Hospital. The Quitline programme is delivered by 10 certified counsellors.
					No data	
	5	Existence and comprehensiveness of smoke-free environment policies	0 – 3	2	+1	• Smoking is banned in most indoor places.
					0	• No smoke-free legislation for outdoor public places, except the outdoor premises of health facilities.
					+1	• Campaigns are in place to prevent passive smoking and reduce second-hand smoke exposure. • For instance, WHO launched a three-month social media campaign against smoking in Vietnam in 2018, in partnership with key tobacco control partners to call on the community to respect the tobacco control law and the community's health by ending indoor smoking in public places to prevent secondhand smoke exposure. • The Vietnam Women's Union and the Vietnam Tobacco Control Fund (VNTCF) with support from global health organisation Vital Strategies launched a new media campaign "Quit Smoking to Protect Your Loved Ones" in May 2021, exposing the harm of secondhand smoke exposure.
	6	Policies addressing environmental/ air pollution in reducing respiratory health risks	0 – 6	4	0	• There are no policies or programmes in place to control radon.
					+1	• The National Plan on Air Quality Management 2021-2025 is in place to manage and minimise air pollution. The Plan includes stricter regulations on new vehicle emission standards and enhanced monitoring of industrial emissions, among others.
					+1	• Vietnam's Hydrogen Energy Development Strategy to 2030 and Vision to 2050 (the "Hydrogen Energy Strategy") sets out a range of development targets for the hydrogen industry. Promotion of renewable energy is outlined in Vietnam's Power Development Plan 2021-2030.
					+2	• Law on Environmental Protection (No. 55/2014/QH13) includes National Technical Regulation on Emission of various industries. • Passenger vehicles in Vietnam must comply with Euro 5(V) emissions standards, while diesel and other heavy-duty vehicles must comply with Euro 4(IV). 2d 3 wheeled motorcycles and other vehicles are required to comply with either Euro 2(II) or 3(III). Vietnam plans to adopt Euro VI standards for all vehicle classes by 2024.
					0	• There are currently no public awareness campaigns/ educational initiatives aimed at informing the public about the health risks associated with air pollution and mitigating exposure identified.
	7	Existence and comprehensiveness of occupational hazard reduction efforts	0 – 4	4	+1	• Legislation addresses workplace safety and health exists.
					+1	• With regard to hazardous factors, employers must regularly control and manage them in accordance with technical requirements to ensure occupational safety and health at the workplace. At least once a year, they must organise inspection and assessment of these factor as prescribed by law.
					+1	• Employers are responsible for establishing and managing occupational health records of workers, health records of victims of occupational diseases; informing workers about results of health check-up, medical examination for detection of occupational diseases; and reporting on the health of workers under their management to competent health management agencies annually.
					+1	• Workplace health and safety training is provided.
	8	E-cigarettes regulation	0 – 4	0	0	• There is currently no legal framework for e-cigarettes in Vietnam yet. However, government agencies are working on a pilot management policy for e-cigarettes, which will be submitted to the Prime Minister for consideration.
					0	• The sale of e-cigarettes is formally not allowed on the Vietnamese market yet, although they can be smuggled in, traded, or purchased illegally through different channels from traditional stores to e-commerce websites.

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					0	• Since there is no legal framework yet, there are currently no restrictions on the advertising, promotion, sponsorship; or packaging and labelling of e-cigarettes, although not officially allowed in Vietnam yet.
					0	• Since there is no legal framework yet, there are no restrictions on the use of e-cigarettes in public areas, although not officially allowed in Vietnam yet.
	9	Lung cancer patient organisation and/or civil society collaborations / participation in joint programmes with government	0 – 1	0	0	• There is limited published evidence indicating collaborations or participation in joint programmes with government bodies.
Contribution of patient organisations and civil societies to lung cancer care and management	10	Existence of patient organisations	0 – 2	1	+1	• Bright Future Fund, a non-profit organisation founded in 2011, supports the care and treatment of cancer patients in Vietnam, including lung cancer.
	11	Existence of civil society	0 – 3	0	0	• No civil societies in the (lung) cancer field have been identified.
	12	Lung cancer patient/ civil society representation in decision-making bodies	0 – 2	0	0	• There is limited representation and influence for existing patient groups and civil societies in decision-making processes.
	13	Patient organisation contributions towards clinical guidelines development	0 – 1	0	0	• There is limited representation and influence for existing patient groups and civil societies in clinical guidelines development.
	14	Patient organisation participation in cancer control plan development	0 – 1	0	0	• There is no mention of patient group involvement in the national cancer control plan development.
	15	Civil society contribution towards health technology assessment recommendations	0 – 1	0	0	• Civil societies in Vietnam do not have the opportunity to comment on HTA recommendations.
	16	Civil society collaborations / participation in joint programmes with the private sector	0 – 1	1	+1	• The Bright Future Fund has collaborated with several industry partners such as AstraZeneca, Gene Solutions Lab, Roche, Takeda and AstraZeneca to improve patient access to treatment and care. • For instance, from 2016 to 2020, Bright Future Fund partnered with Roche Pharma, to implement a Tarceva treatment programme for NSCLC patients at 13 oncology hospitals across Vietnam. • More recently, a MoU has also been signed with AstraZeneca Vietnam to focus on activities to raise cancer awareness, organise cancer patient clubs, provide financial support and build comprehensive care programmes. • As part of this, a community-based campaign "Love your Lungs" has also been launched in Aug 2023, focusing on early detection and treatment.
	17	Community engagement and empowerment	0 – 2	1	+1	• Although initiatives to improve patient care have been undertaken, community engagement and empowerment can be further strengthened. • For instance, patient groups such as the Bright Future Fund have established Cancer Patient Clubs to organise activities for patients and caregivers, and screening awareness campaigns and community-based screening programmes (for select cancer types) have been implemented.
Lung cancer guidelines for screening, diagnosis, treatment and management	18	Existence of clinical guidelines for lung cancer	0 – 2	2	+2	• Lung cancer guidelines existed in Vietnam since 2018. In 2023, National Cancer Hospital (K Hospital), Vietnam Cancer Association and NCCN collaborated to develop a NCCN Harmonised Guidelines for Vietnam, published on the NCCN website. This guideline covers screening, diagnosis and treatment.
	19	Currency of clinical guidelines for lung cancer	0 – 2	2	+2	• The NCCN Harmonised Guidelines was published in 2023.
	20	Lung cancer clinical guidelines coverage for lung cancer screening	0 – 1	1	+1	• The NCCN Harmonised Guidelines cover lung cancer screening, diagnosis and treatment.
	21	Type of lung cancer screening tool recommended in screening guidelines	0 – 3	2	+2	• As part of the NCCN Harmonised Guidelines, the screening guidelines recommend that individuals at high risk for lung cancer should be screened using LDCT.
	22	Inclusion of biomarker testing in screening guidelines	0 – 3	0	0	• The NCCN Harmonised Guidelines do not mention or recommend biomarker testing in the lung cancer screening guidelines.
	23	Inclusion of NGS in screening guidelines	0 – 3	0	0	• The NCCN Harmonised Guidelines do not mention or recommend NGS testing in the lung cancer screening guidelines.
	24	Lung cancer clinical guidelines coverage for lung cancer diagnosis	0 – 1	1	+1	• The NCCN Harmonised Guidelines covers lung cancer screening, diagnosis and treatment.
	25	Diagnosis timeframe	0 – 2	0	0	• The NCCN-Vietnam Harmonised guidelines does not mention a recommended timeframe or fast-track referral pathway for suspected lung cancer patients.
	26	Post-diagnosis referral intervals	0 – 2	0	0	• The NCCN-Vietnam Harmonised guidelines does not specify any timeframe for the interval between diagnosis and initial treatment for diagnosed lung cancer patients.
	27	Lung cancer clinical guidelines coverage for lung cancer treatment	0 – 1	1	+1	• The NCCN Harmonised Guidelines covers lung cancer screening, diagnosis and treatment.
	28	Patient navigation programme	0 – 1	0	0	• The NCCN-Vietnam Harmonised guidelines does not mention any patient navigation programme to help promote access.
	29	Referral system	0 – 1	1	+1	• The NCCN-Vietnam Harmonised guidelines does not mention or specify any referral system from primary to secondary to tertiary care. • However, there are existing local regulations that delineate the clinical protocols and referral pathways for each disease.
	30	Established programmes for further care management	0 – 1	0	0	• The NCCN-Vietnam Harmonised guidelines does not mention or specify any linkage for lung cancer patients to programmes for further care management.
	31	Shared decision making	0 – 1	0	0	• The NCCN-Vietnam Harmonised guidelines does not mention shared decision-making.

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	32	Involvement of multi-disciplinary team	0 – 1	1	+1	• The NCCN Harmonised Guidelines mention multidisciplinary evaluation at several points within the patient care continuum, including during interpretation of clinical findings, diagnostic evaluation and therapy.
	33	Referral pathway to supportive/ palliative care	0 – 1	1	+1	• The NCCN Harmonised Guidelines mention integrating palliative and supportive care at several points within the patient care continuum and include a separate "NCCN Guidelines for Palliative Care" with a detailed referral pathway. • However, it is worth noting that in practice, palliative care is identified as a gap requiring improvement in Vietnam.
	34	Psychological burden	0 – 1	0	0	• The NCCN Harmonised Guidelines do not mention the psychological burden of the disease. Similarly, it has been mentioned that psychosocial and mental health support is lacking in the health system, though there are ongoing efforts aiming to improve this.
TOTAL SCORE (Sufficient political will and coordination)				**40**		
Comprehensive & sustainable funding for lung cancer care						
Existence of public reimbursement for lung cancer screening, diagnosis and treatment	1	Existence of publicly funded/ reimbursed screening test for lung cancer	0 – 4	1	+1	• The National Health Insurance partially covers LDCT lung cancer screening for eligible individuals with specific indication/ presentation and suspected of lung cancer. Ad-hoc LDCT lung cancer screening is available in some private and level I hospitals.
	2	Existence of publicly funded/ reimbursed testing/diagnostic services for lung cancer	0 – 3	1	+1	• A few single-gene tests for EGFR, ALK, and ROS1 are partially reimbursed by the National Health Insurance, whereas other tests such as HER-2, MET, KRAS and PIK3CA, although recommended, are not covered by the insurance. • However, NHI reimbursement for advanced diagnostic techniques including bronchoscopy and imaging modalities, such as CT and MRI in level I and II hospitals has been increasingly used and associated with increased detection of thoracic malignancies. • Advanced imaging techniques, like PET-CT, are covered once per year.
	3	Existence of publicly funded/ reimbursed drug therapy for lung cancer	0 – 3	1	+1	• There are varying National Health Insurance coverage levels for different drug types, for instance, at 50% and 100% of costs. • Advanced targeted therapies and immunotherapies are mostly not covered, except for a few (Gefitinib, erlotinib, afatinib) with 50% funding. • Only chemotherapies, as included in the WHO Essential Medicines List, are covered 100%.
Equitable Allocation of Funding and Resources	4	Allocation of funding/ resources	0 – 2	1	+1	• There is no evidence of a specific budget breakdown, but it has been reported that funding for cancer prevention programmes, as a part of NCD-targeted programme, accounted for only 2.5% to 3.5% of the national health budget and has been in decline during recent years.
Patient Financial Support and Access to Lung Cancer Care	5	Existence of patient financial support programmes for lung cancer screening	0 – 3	1	+1	• There are no dedicated patient financial support programmes for lung cancer screening, but there are for other cancer screenings.
	6	Existence of patient financial support programmes and associated out of pocket expenses for lung cancer diagnosis	0 – 3	1	+1	• No evidence of identified patient financial support programmes for lung cancer diagnosis.
	7	Existence of patient financial support programmes for lung cancer treatment	0 – 3	2	+2	• Some form of patient financial support services, such as by the Bright Future Fund, which has been providing support for cancer patients in Vietnam since 2011, exist. However, there are still significant gaps in reaching widespread coverage to increase access to lung cancer treatment.
	8	Out-of-pocket expenses and availability of mechanisms to improve access to lung cancer treatment	0 – 3	1	+1	• A significant proportion of households have been pushed into poverty due to catastrophic expenditure on cancer care. In 2023, hospital statistics reported that 37.4% of cancer patients fell into poverty due to high treatment costs, with patients bearing up to 70% of these costs themselves. • For instance, it has been reported that despite having a health insurance card, a substantial proportion of lung cancer patients at K Hospital in 2020 still faced catastrophic costs due to treatment expenses. • Although patient support funds, such as the Bright Future Fund, help alleviate some of this burden through assistance programmes for cancer therapy provided by pharmaceutical companies, patients often still face significant out-of-pocket expenses.
TOTAL SCORE (Comprehensive & sustainable funding for lung cancer care)				**9**		
Robust surveillance protocols and public education						
Existence and operational status of a PBCR	1	Existence of a population-based cancer registry	0 – 2	1	+1	• Vietnam has nine regional cancer registries, of which two are population-based cancer registries (in Hanoi and Ho Chi Minh City) and seven are hospital-based cancer registries.
	2	Registry integration and linkage	0 – 3	2	+2	• The two biggest registries, Hanoi and Ho Chi Minh City cancer registries, cover 45 and 30 hospitals respectively, and have the best overall data quality. • Current statistics are however largely based on figures from hospital inpatient and outpatient records as well as pathology diagnostic laboratories' logs and reports. • However, the health system is starting to see a gradual development of a cancer registry that incorporates different aspects into one database.
	3	Registry population coverage	0 – 2	1	+1	• The two population-based cancer registries in Hanoi and Ho Chi Minh City cover approximately 20% of the Vietnamese population.

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	4	Operational status of registry	0 – 3	2	+2	• The first and latest report for the PBCR in Hanoi and Ho Cho Minh PBCR was published in December 2023.
Existence and operational status of a specialised lung-cancer PBCR	5	Presence of a specialised lung-cancer PBCR	0 – 3	0	0	• There is no evidence of a lung cancer-specialised PBCR in Vietnam.
Presence of education programmes for providers and the general public	6	Availability of patient education programmes and support resources	0 – 2	1	+1	• Bright Future Fund has run projects and campaigns targeted at the community and cancer patients to improve awareness of and screening for lung cancer since 2023.
	7	Existence of community-based outreach programmes	0 – 3	1	+1	• Bright Future Fund has run projects and campaigns targeted at the community and cancer patients to improve awareness of and screening for lung cancer since 2023.
	8	Existence of clinical associations	0 – 3	1	+1	• No lung cancer-dedicated clinical associations have been identified. • The Vietnam Cancer Association (VCA) was established in 1989 under Decision No. 63/THYDH and has a total of 1454 members at present. The Association has the participation of several member Associations: Hanoi Cancer Association, Thua Thien Hue Cancer Association, Can Tho Cancer Association, Ho Chi Minh City Cancer Association • Another cancer-related professional society identified is the Vietnam Society of Pathology and Cytology (VSPC).
	9	Educational programmes for providers	0 – 1	1	+1	• There are several educational programmes for training healthcare providers, organised by institutions such as National Cancer Hospital, Vietnam National Oncology Association, National Cancer Institute, including both short-term and long-term training programmes.
TOTAL SCORE (Robust surveillance protocols and public education)				**10**		
Availability and access to effective screening programmes, precise diagnostics and innovative treatments						
Capacity and equity of workforce / trained healthcare specialists distribution	1	Healthcare provider and infrastructure distribution	0 – 2	1	+1	• There is often an uneven distribution of healthcare facilities across central, provincial, and district hospitals. Access to care varies widely across the 63 provinces, especially between rural and urban areas. • For example, mountainous and remote regions face significant shortages of healthcare workers, with the number of physicians per population in the Northwest, Central Highland, and Mekong Delta Regions falling below the national average.
	2	Fairness and equality in the delivery of healthcare services for lung cancer	0 – 3	1	+1	• There are notable disparities in healthcare services and resource distribution across the four different hospital levels (level I to IV), as well as the different provinces/ regions.
	3	Number of radiologists	*N/A*			• The seven largest hospitals providing thoracic oncology services in Vietnam have 127 radiation oncologists.
	4	Number of radiation oncologists	*N/A*			• The seven largest hospitals providing thoracic oncology services in Vietnam have 99 radiation oncologists.
	5	Number of surgeons	*N/A*			• The seven largest hospitals providing thoracic oncology services in Vietnam have 1,402 surgeons.
	6	Number of thoracic surgeons	*N/A*			• The seven largest hospitals providing thoracic oncology services in Vietnam have 55 specialty thoracic surgeons.
	7	Number of medical oncologists	*N/A*			• The seven largest hospitals providing thoracic oncology services in Vietnam have 434 medical oncologists.
	8	Number of pathologists	*N/A*			• The seven largest hospitals providing thoracic oncology services in Vietnam have 69 pathologists.
Availability and accessibility to lung cancer screening programmes	9	Lung cancer screening programme scale and existence status	0 – 5	2	+2	• There is no national lung cancer screening programme yet, as gaps such as the lack of conclusive evidence demonstrating its local cost-effectiveness remain. • Although the Ministry of Health has recommended lung cancer screening with LDCT since 2018, its implementation has been limited. Lung cancer screening has not been viewed as a political priority yet. • Ad hoc LDCT lung cancer screening is available in some level I and private hospitals and is targeted toward specific patient populations in the community.
	10	Level of screening uptake	0 – 2	0	*No Data*	
	11	Number of CT scanners	*N/A*			• Vietnam has 7.3 CT scanners per 10,000 population.
	12	Number of PET scanners	*N/A*			• Vietnam has 11 PET/CT scanners.
	13	Number of MRI scanners	*N/A*			• While there is Vietnam has 3.1 MRI machines per 10,000 population.

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Availability and Accessibility of Health System Infrastructure	14	Availability of/ access to diagnostic imaging modalities (i.e. CT, PET, CT-PET, MRI scan)	0 – 1	1	+1	• While there have been some developments, widespread access to diagnostic imaging modalities throughout Vietnam, such as CT and MRI, is still limited due to the expensive infrastructure and lack of highly skilled human resources to run and interpret test results. • Advanced Vietnamese radiologists worked mainly in big cities like Ho Chi Minh, Danang, and Hanoi; therefore, there is a significant different in human resource level among the Vietnamese provinces.
	15	Availability of/ access to Biopsy	0 – 2	1	+1	• Advanced diagnostic and staging approaches such as endobronchial ultrasound, endoscopic ultrasound and transthoracic needle aspiration are generally available in big level I hospitals only.
	16	Availability of/ access to Serum biomarker testing lab facilities	0 – 2	1	+1	• While guidelines recommend biomarker testing, clinical laboratories capable of conducting tests for biomarkers such as EGFR, ALK, ROS-1, BRAF, and HER2 are not widely available or routinely performed in clinical settings. • It has been reported that only EGFR testing is better established in Ho Chi Minh City and Hanoi, and even this testing is presumed to occur primarily within academic centres.
	17	Availability of/ access to Serum biomarker/ tumour marker testing	0 – 2	1	+1	• While testing for EGFR, ALK, and ROS1 are partially reimbursed by the National Health Insurance, it has been found that few laboratories perform them routinely.
	18	Availability of/ access to Next-generation sequencing facilities	0 – 2	1	+1	• Basic capabilities for genetic testing exist, but there are still gaps. • For instance, whole genome and whole exome sequencing are not yet routinely available for clinical care. However, through collaboration with private firms, Vietnam is gradually expanding the availability of genomic medicine.
	19	Availability of/ access to Molecular profiling facilities	0 – 2	1	+1	• Access to quality pathology services is a key challenge. • Many modern techniques for immunohistochemistry and comprehensive molecular analysis are only available at a small number of comprehensive cancer centres, and testing accuracy is still limited. • Large-scale facilities, although present, are mainly limited to research settings, e.g. Vietnam's Institute of Genomic Research.
	20	Availability of/ access to Companion diagnostics	0 – 2	1	+1	• While some major oncology hospitals and private healthcare providers may offer companion diagnostics, they are often not reimbursed by the National Health Insurance.
	21	Availability of/ access to Next-generation sequencing/ comprehensive genomic profiling	0 – 2	1	+1	• NGS/ comprehensive genomic profiling services, such as whole genome and whole exome sequencing, are not yet routinely available for clinical care.
	22	Availability of/ access to Genetic testing/ molecular profiling	0 – 2	1	+1	• Molecular testing is generally available at a small number of comprehensive cancer centres/ major oncology hospitals, but not at provincial hospitals. • Single gene genetic testing such as EGFR and to some extent, ALK and ROS1 are available mainly at major oncology hospitals and partially covered by the National Health Insurance. However, other gene testing services are commonly paid out of pocket by patients.
	23	Availability of/ access to Surgery	0 – 2	1	+1	• Since the majority of the patients are diagnosed at late stages, only 10% to 15% of lung cancer patients undergo resection in Vietnam, mostly at level I and II hospitals, with lobectomy performed in most cases. • Robotic-assisted thoracic surgery was recently introduced in three hospitals but seldom performed due to the high cost and only partial reimbursement.
	24	Availability of/ access to Radiation therapy/ radiotherapy	0 – 2	1	+1	• Access to radiotherapy facilities is limited. There are 44 radiotherapy centres: 24 in North, seven in Central, and 13 in South Vietnam, most of which are located within level I and II hospitals.
	25	Availability of/ access to Psychosocial/ mental health support	0 – 2	1	+1	• There is a lack of psycho-oncology and supportive care in Vietnam, and resources and expertise in this area are required.
	26	Availability of/ access to Rehabilitation	0 – 2	1	+1	• Although generally available in hospitals, there is limited available information on access to cancer rehabilitation services. Existing data suggests that therapy is still commonly limited to pharmacological treatments, with little support for other forms of therapy.
	27	Availability of/ access to Palliative care	0 – 2	1	+1	• Palliative care services in Vietnam have been implemented mostly at major cancer centres and general hospitals in Hanoi, Ho Chi Minh City. However, many patients require home-based palliative care which is not yet implemented in the health system. • A home-based treatment programme has been underway at the HCMC Oncology Hospital since 2011 and similar models are starting up across the health system, but numbers are still low. • There is a need to enhance community-based and home-based palliative care in Vietnam, which can only be scaled up with the support of government health insurance.

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	28	Availability of/ access to lung cancer therapy	0 – 3	1	+1	• An unpublished survey indicated that access to advanced lung cancer therapy is limited: only 22% of eligible lung cancer patients received targeted therapies, including tyrosine kinase inhibitors and immune checkpoint inhibitors, and only 0.2% received immunotherapy, while over 74% received chemotherapy during their treatment from 2016 to 2018.
	29	Timeliness and efficiency of receiving lung cancer treatment	0 – 3	0	*No Data*	
TOTAL SCORE (Availability and access to effective screening programmes, precise diagnostics and innovative treatments)				**19**		

2. Lung Cancer Health System Snapshot – Vietnam's Top Opportunities to Advance Lung Cancer Care and Management

Theme	Current Challenge	Opportunity for Vietnam
Strengthening Prevention Efforts	• A comprehensive approach to addressing lung risk factors is lacking. Specifically, the policy framework for newer risk factors, such as e-cigarettes, has not yet been developed.	• Enhance the prevention policy landscape to be more effective and comprehensive, such as by amending the Law on Prevention and Control of Harmful Effects of Tobacco (2012) to include e-cigarettes in the current plan.
Enhancing Political Priority and Focus for Lung Cancer Screening	• Lung cancer screening is currently not viewed as a political priority despite its proven benefits, leading to insufficient policy support and funding. • There is limited awareness and understanding among policymakers and stakeholders about the value of lung cancer screening. • There is also a lack of local evidence to demonstrate the feasibility and benefits of establishing a lung cancer screening programme.	• Strengthen the case for lung cancer screening by generating local cost-effectiveness evidence to support the feasibility of establishing a screening programme. Learn from other health systems in the region that have successfully implemented national lung cancer screening programmes, identify key success factors and best practices, and seek guidance or partnership opportunities from regional experts.
Offering Holistic Support and Care for Lung Cancer Patients	• Lung cancer patients require more holistic support throughout the entire care continuum. Currently, support for palliative care and survivorship is inadequate. • Additionally, the high catastrophic costs associated with advanced therapies pose a significant challenge, since around 70% - 80% of patients are diagnosed at a late stage (Stage III or IV), where systemic therapy, particularly advanced innovative drugs, will be the mainstay.	• Enhance support for lung cancer patients by strengthening psychological and palliative care services, to provide more holistic support and care throughout the care continuum. • Additionally, expanding existing patient support schemes or introducing new schemes that are similar can benefit a larger number of patients and help alleviate the financial burden associated with advanced therapies.