



# Lung Cancer Factsheet: Insights & Key Developments

Key Insights on Lung Cancer Care and Infrastructure

### Core Pillars:

- 1. Infrastructure
- 2. Treatment Access, Research Funding and Awareness Campaigns
- 3. Survival Rates, Early Detection and Palliative Care
- 4. Utilization of Biomarkers
- 5. Clinical Guidelines
- 6. Reimbursement
- 7. Lung Cancer Screening

Lung cancer remains one of the most prevalent cancers worldwide, affecting millions of individuals each year. Despite advancements in diagnostics, treatment, and awareness, disparities in access to care, molecular testing, and specialized centers persist.

This factsheet provides a comprehensive overview of key pillars shaping lung cancer care, including specialized infrastructure, treatment accessibility, research funding, early detection, and palliative care.

- Incidence: ~81,748 new lung cancer cases annually (5.8% of all cancers).
- Mortality: ~75,031 deaths per year (5.3% of cancer-related deaths).
- Gender Distribution:
  - Males: ~58,970 cases.
  - Females: ~22,778 cases.
- Common Subtypes:
  - Adenocarcinoma (most prevalent) 34.3% in males, 52.7% in females.
  - Small-cell lung cancer ~15% of cases.
- Age Group Distribution: Highest in 60-70 years age group.
- Regional Variations:
  - Higher incidence in metro cities due to pollution.
  - Northern and Eastern India show higher prevalence.
- 5-Year Survival Rate: ~15-19% overall, lower for advanced-stage diagnosis.
- Stage at Diagnosis: ~70% diagnosed at an advanced stage (III/IV).
- Smoking Prevalence:
- ~29% of adults use tobacco in some form.
- Passive smoking also a significant risk factor.





 India has a mix of tertiary cancer centers such as Tata Memorial Centre (Mumbai), AIIMS (Delhi), and PGIMER (Chandigarh) with advanced diagnostics and treatment.

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#### Weakness

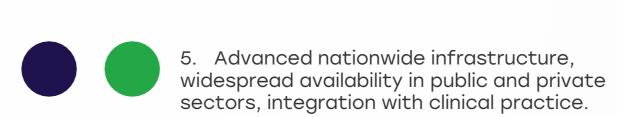
 Access to infrastructure is highly uneven-advanced imaging (PET-CT, molecular pathology) is concentrated in metros; rural areas face long travel distances and delays.

# Opportunity

 Expansion under the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) is enabling infrastructure development in tier-2 and tier-3 cities.

#### Threats

 Shortages of trained oncologists, radiologists, and lab technicians limit effective use of infrastructure in many public hospitals.



4. Strong infrastructure in major hospitals and cancer centers, some regional disparities.

3. Moderate infrastructure, primarily in private settings or research institutions.

2. Limited infrastructure, available only in select centers or for high-cost private testing.

1. Minimal or no infrastructure, testing mostly unavailable or sent abroad.

Country	Specialized Centers	Genetic & Molecular Testing Infrastructure
South Africa	0	<u> </u>
Kenya		
Nigeria		
Egypt	0	0
Morocco	0	
Algeria	0	
Ethiopia		
India	0	
Japan		
South Korea		
China	0	
Thailand		
Singapore		
United Kingdom		
Germany		0
France	0	
Netherlands		
Sweden		
Italy		
Spain	0	
Poland	0	
Mexico		
Brazil	0	
Argentina	0	
Chile	0	
Colombia		
United States		
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New Zealand	0	
Greece	0	
Rwanda		
Uganda		
Serbia	0	
Saudi Arabia		
UAE	0	
Syria		
Indonesia		
Vietnam		
Philippines		
Russia		
Malaysia	0	





Treatment Access, Research Funding and Awareness Campaigns

# Strengths

 Public insurance schemes like
 Ayushman Bharat PM-JAY offer some cancer treatment support to economically vulnerable populations.



#### Weakness

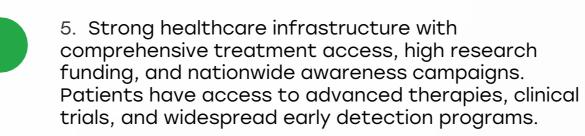
 Out-of-pocket expenditure remains high, especially for targeted therapies or immunotherapy. Clinical research in lung cancer is modest compared to global levels, and awareness campaigns are limited.

## Opportunity

 Government-industry collaborations (e.g., with Roche, Cipla, or Biocon Biologics) can improve access to newer treatments and generic options.

# Threats

 Socioeconomic disparities, low literacy, and cancer stigma delay healthcare-seeking behavior and limit participation in clinical trials.



- 4. Well-developed system with good treatment availability, strong research funding, and effective but regionally focused awareness campaigns. Some disparities may exist in rural areas or between public and private sectors.
- 3. Moderate development, with specialized treatments available in major hospitals, research funding concentrated on specific cancers, and occasional but limited awareness efforts. Healthcare access may be restricted by cost or geography.
- Limited system where cancer treatment is available only in select urban centers, research funding is minimal or sporadic, and awareness campaigns are rare or underfunded. Patients often face long wait times or financial barriers.
- 1. Poor infrastructure with severe barriers to treatment, little to no research funding, and lack of structured awareness campaigns. Cancer care is largely inaccessible, with many patients relying on out-of-pocket expenses or external aid.

Country	Treatment Access	Research Funding	Awareness Campaigns
South Africa	0	<u> </u>	
Kenya			
Nigeria			
Egypt			
Morocco			
Algeria			
Ethiopia			
India	0	<u> </u>	<u> </u>
Japan			
South Korea			
China	0	<u> </u>	0
Thailand	0	<u> </u>	<u> </u>
Singapore			
United Kingdom			
Germany			
France			
Netherlands			
Sweden			
Italy			
Spain			0
Poland	0	<u> </u>	
Mexico	0		0
Brazil	0	<u> </u>	0
Argentina	0		
Chile	<u> </u>		
Colombia			
United States			
Canada			
Australia			
New Zealand	0		
Greece	0	$\bigcirc$	
Rwanda			
Uganda			
Serbia	<u> </u>	$\bigcirc$	<u> </u>
Saudi Arabia	0	$\bigcirc$	
UAE	0	$\bigcirc$	
Syria			
Indonesia	<u> </u>		<u> </u>
Vietnam	<u> </u>		<u> </u>
Philippines			<u> </u>
Russia	0	<u> </u>	0
Malaysia		<u> </u>	<u> </u>





Survival Rates, Early **Detection** and Palliative Care

#### Strengths

• Palliative care is being integrated into community-level services with support from Kerala's model and NGOs like Pallium India.

Opportunity

early detection

efforts through

primary health

across India is

ongoing.

NPCDCS is promoting

workers; expansion of

palliative services



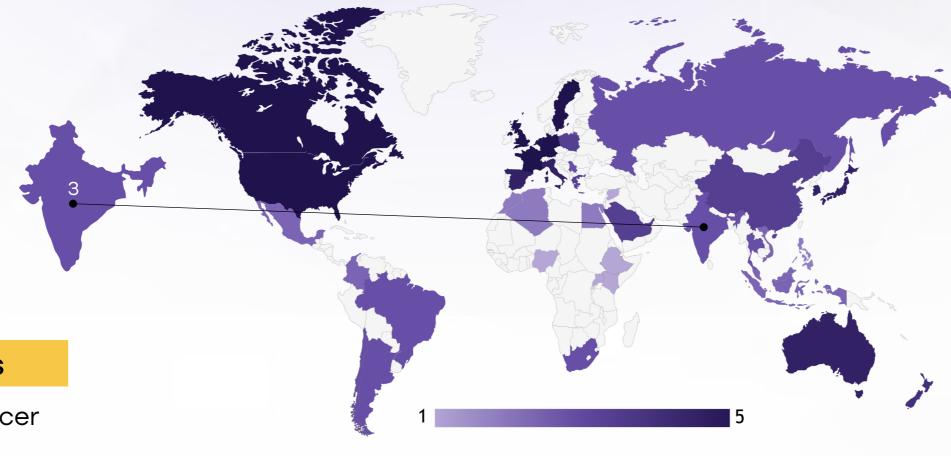
#### Weakness

 Most lung cancer patients are diagnosed at advanced stages (III or IV), with 5-year survival estimated at 5-10% in many registries.

# **Threats**

• Delayed diagnosis due to non-specific symptoms and overlap with TB; lack of standardized referral pathways from primary to tertiary

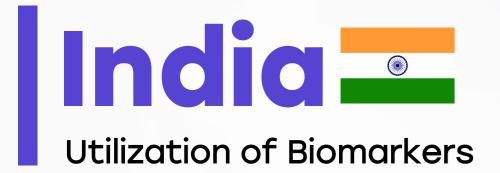
care.



- 5. High survival rates, strong early detection programs, and well-established palliative care services. Patients have access to timely diagnosis, advanced treatments, and comprehensive end-oflife care.
- 4. Good survival rates, effective early detection efforts, and accessible but regionally limited palliative care. Some disparities may exist in rural areas or for specific cancer types.
- 3. Moderate survival rates, early detection available but not widespread, and palliative care services mainly in urban centers. Some patients experience delays in diagnosis or limited end-of-life care.
- 2. Low survival rates, early detection efforts are inconsistent or underfunded, and palliative care is minimal or only available in select hospitals. Cancer patients face significant access barriers.
- 1. Very low survival rates, poor early detection infrastructure, and almost no palliative care services. Many patients are diagnosed late and lack proper support for pain management and end-of-life care.

Country	Survival Rates	Early Detection	Palliative Care
South Africa	<u> </u>	<u> </u>	<u> </u>
Kenya			
Nigeria			
Egypt			
Morocco			
Algeria	0		
Ethiopia			
India	0	0	<u> </u>
Japan			
South Korea			
China	0	<u> </u>	0
Thailand	0	<u> </u>	<u> </u>
Singapore			
United Kingdom			
Germany			
France			
Netherlands			
Sweden			
Italy		0	
Spain			
Poland	0	<u> </u>	0
Mexico		<u> </u>	
Brazil	<u> </u>	<u> </u>	<u> </u>
Argentina	0	0	<u> </u>
Chile	0	<u> </u>	<u> </u>
Colombia		<u> </u>	
United States			
Canada			
Australia			
New Zealand	<u> </u>		
Greece	<u> </u>		
Rwanda			
Uganda			
Serbia	<u> </u>		
Saudi Arabia			
UAE		<u> </u>	
Syria			
Indonesia	<u> </u>		<u> </u>
Vietnam			<u> </u>
Philippines			<u> </u>
Russia		<u> </u>	<u> </u>
Malaysia	<u> </u>		<u> </u>





 EGFR, ALK, and PD-L1 testing is available at premier institutes and private labs (e.g., SRL Diagnostics, Thyrocare).



#### Weakness

 Biomarker testing is not standardized or widely reimbursed; patients often pay out-of-pocket and face delays in obtaining reports.

# Opportunity

 India's strong pharmaceutical and diagnostic sector can enable affordable incountry biomarker testing solutions.

#### **Threats**

 Inequitable access to testing between urban and rural areas risks exacerbating treatment delays and health disparities.



4. Biomarker testing is commonly used, but access may be limited in certain regions or patient groups. Some disparities exist in coverage or affordability, but it is still a crucial part of cancer diagnostics

3. Moderate utilization, often restricted to major hospitals or private healthcare settings. Some patients may not receive biomarker testing due to cost or limited availability in public healthcare systems.

2. Biomarker testing is available but underutilized, with significant barriers such as high costs, lack of awareness, or limited infrastructure. Many patients may not receive recommended biomarker assessments.

1. Biomarker testing is rarely performed, often due to lack of infrastructure, awareness, or financial barriers. Patients typically do not receive targeted therapies based on biomarker status.







 Indian Council of Medical Research (ICMR) has published evidence-based guidelines for lung cancer management tailored to national context.



#### Weakness

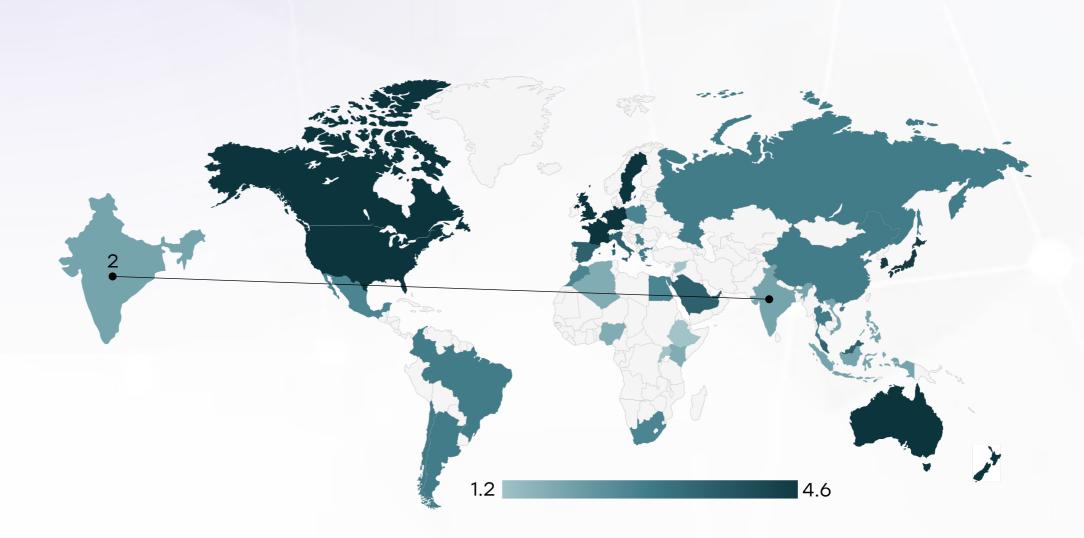
 Adherence to these guidelines varies across public and private sectors, and many clinicians still follow Western protocols inconsistently.

# Opportunity

 Digitized platforms and telemedicine (e.g., ECHO) can help train primary physicians and ensure standardization.

#### Threats

 Lack of audit systems or feedback loops makes it difficult to assess guideline implementation effectiveness.

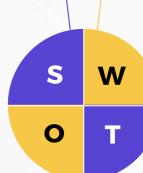


	Very High	High	Medium	Low	Very Low
Clinical Guideline Implementation	*	*	0	×	*
Feasibility of Integration	*	×	*	0	*
Adoption of International Guidelines	*	*	*	0	*
Engagement with Updates	*	*	*	*	0
ESMO Guidelines Implementation	*	*	*	0	*





 Public insurance schemes like PM-JAY cover basic lung cancer treatments (e.g., surgery, chemotherapy, radiotherapy) in empaneled hospitals.



#### Weakness

 Advanced therapies (targeted therapy, immunotherapy) are not covered under most public schemes, and even private insurance has caps.

# Opportunity

 Negotiated pricing for biosimilars (e.g., trastuzumab biosimilars, nivolumab) may improve affordability.

#### Threats

 Fragmented insurance landscape and lack of comprehensive national reimbursement framework reduce equitable access.



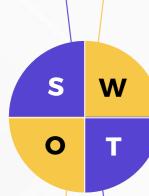
- A structured reimbursement system exists, ensuring biomarker testing is covered through national healthcare systems, insurance, or public-private partnerships. Patients face no direct financial burden.
- A reimbursement framework is in place, but patients may still have out-of-pocket expenses such as co-pays, limited coverage, or financial caps on testing.
- No formal reimbursement system exists, meaning patients must fully cover the cost of biomarker testing out-of-pocket.

Country	Reimbursement Framework	No-cost Access
United States		0
United Kingdom		
Canada		
Australia	0	
Germany		
France		
Netherlands		
Sweden		
Italy		
Spain	0	
Poland		
Japan		
South Korea		
China	0	
India	0	0
Singapore		
Thailand		
South Africa	0	0
Kenya	0	0
Nigeria	0	0
Egypt	0	0
Morocco	0	0
Algeria	0	
Ethiopia	0	0
Mexico	0	0
Brazil	0	0
Argentina	0	0
Chile	0	0
Colombia	0	0
New Zealand		
Greece	0	
Rwanda	0	0
Uganda	0	0
Serbia		
Saudi Arabia	0	0
UAE		
Syria	0	0
Indonesia		0
Vietnam		O
Philippines	0	0
Russia		
Malaysia		





 Pilot studies on LDCT (Low-Dose CT) for high-risk populations are being conducted in select research settings.



#### Weakness

 No national screening program; LDCT is expensive and not feasible for large-scale rural deployment. High burden of TB complicates diagnosis.

# Opportunity

 Development of Aldriven chest X-ray triage tools could offer low-cost risk stratification in rural areas.

#### Threats

 Competing health priorities (e.g., TB, diabetes, maternal care) crowd out investment in cancer screening infrastructure.

Country	Lung Cancer Screening
United States	Annual LDCT (50-80 years, high-risk smokers)
United Kingdom	LDCT for high-risk individuals (55-74 years)
Canada	LDCT for high-risk individuals (55-74 years)
Australia	No national program, high-risk groups advised LDCT
Germany	No national program, under evaluation
France	No national LDCT screening
Netherlands	Participating in European screening studies
Sweden	No national LDCT screening
Italy	Regional pilot LDCT screening
Spain	No national LDCT program
Poland	No national program
Japan	No national LDCT program
South Korea	LDCT for high-risk individuals (50-74 years)
China	No national LDCT program
India	No national LDCT program
Singapore	No national LDCT program
Saudi Arabia	No national LDCT program; some hospital-based opportunistic screening
UAE	No national LDCT program; early-stage pilot studies ongoing in select hospitals
Syria	No national LDCT program; screening not prioritized due to conflict
Malaysia	No program; high-risk CT pilots

Country	Lung Cancer Screening
Thailand	No national LDCT program
South Africa	No national LDCT program
Kenya	No national LDCT program
Nigeria	No national LDCT program
Egypt	No national LDCT program
Morocco	No national LDCT program
Algeria	No national LDCT program
Ethiopia	No national LDCT program
Mexico	No national LDCT program
Brazil	No national LDCT program
Argentina	No national LDCT program
Chile	No national LDCT program
Colombia	No national LDCT program
New Zealand	No national LDCT program
Greece	No national LDCT program
Rwanda	No national LDCT program
Uganda	No national LDCT program
Serbia	No national LDCT program
Indonesia	No national LDCT program; opportunistic screening in private sector
Vietnam	No national LDCT program; early pilot screening studies in Hanoi and Ho Chi Minh
Philippines	No national LDCT program; feasibility and awareness programs under discussion
Russia	No formal national LDCT program; regional pilot screening programs in large cities