



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

Colorectal 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 colorectal cancer care, including specialized infrastructure, treatment accessibility, research funding, early detection, and palliative care.

- Incidence share: Most common cancer in men and third most common in women; third leading cause of cancer-related deaths
- Incidence rate: Approximately 21.3 per 100,000 population; higher in men (~24.2) than women (~18.1)
- Total new cases (latest data): Around 5,500-6,000 new cases per year
- Daily diagnoses: Approximately 15-16 new cases per day
- Deaths: Estimated 3,000-3,500 deaths annually
- 5-year survival rate: Overall around 23%; ~56% for early-stage (Stage I) and ~9% for late-stage (Stage IV)
- Most affected age group: Primarily adults aged 50-75; increasing cases also seen in those under 50
- Screening participation: No organized national program; stool-based tests recommended for ages 40-75, but uptake remains low; ~70% diagnosed at late stages



Infrastructure



- Major public hospitals and university medical centers (e.g., UMMC, Hospital Selayang, Hospital Pulau Pinang) offer colonoscopy, pathology, surgery, and oncology services.
- Existing referral pathways link primary care to specialist services in urban settings.

Opportunity

- Expand endoscopy capacity at district hospitals and train general surgeons in basic GI procedures.
- Leverage mobile diagnostic units and screening caravans for underserved areas.

Weakness

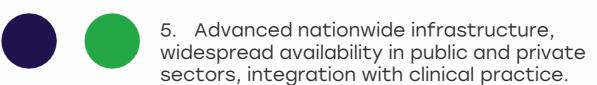
- Limited number of gastroenterologists and long waiting times for colonoscopy (~2-6 months in some public hospitals).
- Rural hospitals often lack facilities for endoscopy and histopathology.

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Threats

- Backlogs due to high demand, limited endoscopists, and aging equipment reduce diagnostic capacity.
- Urban-rural divide in infrastructure access persists.



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

Moderate infrastructure, primarily in private settings or research institutions.

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

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

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| Country | Specialized Centers | Genetic & Molecular Testing Infrastructure |
|----------------|------------------------|---|
| South Africa | <u> </u> | <u> </u> |
| Kenya | | |
| Nigeria | | |
| Egypt | | <u> </u> |
| Morocco | 0 | |
| Algeria | 0 | |
| Ethiopia | | |
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| Japan | | |
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Treatment Access, Research Funding and Awareness Campaigns



Strengths

- Public hospitals provide free/subsidized access to surgery, chemotherapy (e.g., FOLFOX/FOLFIRI), and supportive care.
- NGOs and MoH organize national cancer campaigns like "Colorectal Cancer Awareness Month."

Opportunity

- Increase CRC-specific public education in multiple languages and platforms.
- Encourage private-public partnerships to fund local CRC research and patient support.

Weakness

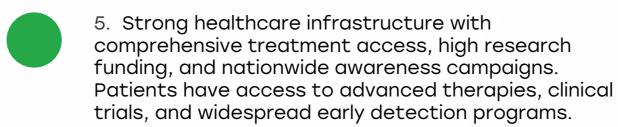
- Newer treatments such as targeted therapies (bevacizumab, cetuximab) often not accessible through public system without financial aid.
- Low public awareness of early CRC symptoms (e.g., rectal bleeding, changes in bowel habits).

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- Rising incidence in younger adults not matched by updated awareness and screening strategies.
- Low participation in screening due to stigma, fear, and cultural barriers.



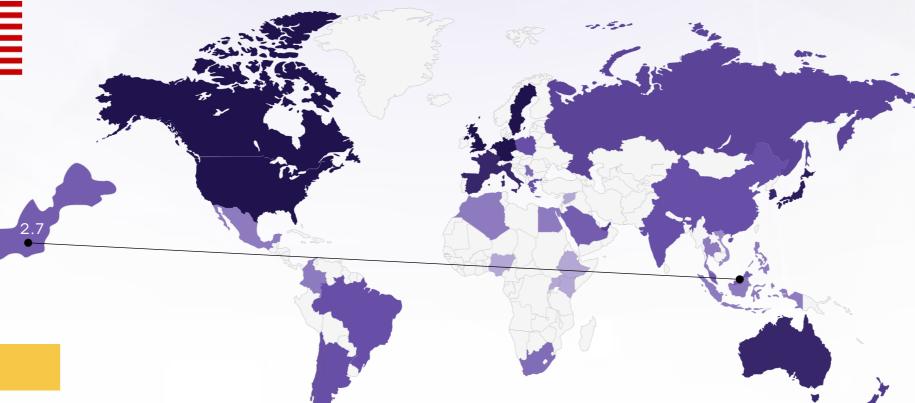
- 4. Well-developed system with good treatment availability, strong research funding, and effective but regionally focused awareness campaigns. Some disparities may exist in rural areas or between public and private sectors.
- 3. Moderate development, with specialized treatments available in major hospitals, research funding concentrated on specific cancers, and occasional but limited awareness efforts. Healthcare access may be restricted by cost or geography.
- 2. 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.

| South Africa | Country | Treatment Access | Research Funding | Awareness Campaigns |
|--|----------------|---------------------|---------------------|------------------------|
| Nigeria | South Africa | <u> </u> | <u> </u> | <u> </u> |
| Egypt | Kenya | | | |
| Morocco | Nigeria | | | |
| Algeria | Egypt | | | |
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| Japan | Ethiopia | | | |
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| Colombia United States Canada Australia New Zealand Greece Rwanda Uganda Serbia Saudi Arabia UAE Syria Indonesia Vietnam Philippines Russia | Argentina | | <u> </u> | <u> </u> |
| United States Canada Australia New Zealand Greece Rwanda Uganda Serbia Saudi Arabia UAE Syria Indonesia Vietnam Phillippines Russia | Chile | | <u> </u> | <u> </u> |
| Canada Australia New Zealand Greece Rwanda Uganda Serbia Saudi Arabia UAE Syria Indonesia Philippines Russia | Colombia | | | |
| Australia | United States | | | |
| New Zealand Image: Control of the control | Canada | | | |
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| Serbia Saudi Arabia UAE Syria Indonesia Vietnam Philippines Russia | Rwanda | | | |
| Saudi Arabia O O UAE O O Syria O O Indonesia O O Vietnam O O Philippines O O Russia O O | Uganda | | | |
| UAE Syria Indonesia Vietnam Philippines Russia | Serbia | | <u> </u> | <u> </u> |
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Survival Rates, Early **Detection** and Palliative Care



Strengths

- 5-year survival rates for early-stage CRC exceed 80% in wellresourced centers.
- Public hospitals offer multidisciplinary palliative care supported by NGOs.

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Weakness

- 60% of CRC cases diagnosed at Stage III/IV, especially outside urban centers.
- Inadequate community-based palliative care access in East Malaysia and rural areas.



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.

available but not widespread, and palliative care

services mainly in urban centers. Some patients

experience delays in diagnosis or limited end-of-life

3. Moderate survival rates, early detection



- Introduce red-flag referral systems in primary care for early CRC signs.
- Train community nurses in CRC symptom awareness and end-oflife care.

Threats

- Delayed diagnosis worsens outcomes and increases system cost burden.
- Societal taboos and low screening may lead to silent progression in early stages.



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 | 0 | 0 | |
| Kenya | | | |
| Nigeria | | | |
| Egypt | | | |
| Morocco | | | 0 |
| Algeria | | | 0 |
| Ethiopia | | | |
| India | <u> </u> | 0 | <u> </u> |
| Japan | | 0 | |
| South Korea | | 0 | |
| China | <u> </u> | 0 | 0 |
| Thailand | | 0 | |
| Singapore | | | |
| United Kingdom | | | |
| Germany | | | |
| France | | | |
| Netherlands | | | |
| Sweden | | | |
| Italy | | | |
| Spain | | | |
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| Brazil | | | <u> </u> |
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| Colombia | | | 0 |
| United States | | | |
| Canada | | | |
| Australia | | 0 | 0 |
| New Zealand | 0 | 0 | 0 |
| Greece | <u> </u> | 0 | 0 |
| Rwanda | | | |
| Uganda | | | |
| Serbia | 0 | 0 | |
| Saudi Arabia | <u> </u> | 0 | <u> </u> |
| UAE | 0 | 0 | 0 |
| Syria | | | |
| Indonesia | 0 | 0 | 0 |
| Vietnam | 0 | | 0 |
| Philippines | | <u> </u> | 0 |
| Russia | 0 | <u> </u> | <u> </u> |
| Malaysia | <u> </u> | | <u> </u> |
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Utilization of Biomarkers

Strengths

- KRAS/NRAS/BRAF testing is available in select public hospitals and private labs.
- Some public centers can test for microsatellite instability (MSI) and mismatch repair (MMR) deficiency.

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Opportunity

- Subsidize essential biomarker tests for treatment selection in metastatic CRC.
- Establish centralized labs to reduce cost and improve access.

Weakness

- Biomarker testing is not routinely available or reimbursed in most government settings.
- Long turnaround time and high cost (RM 1000-4000) for molecular testing in private sector.

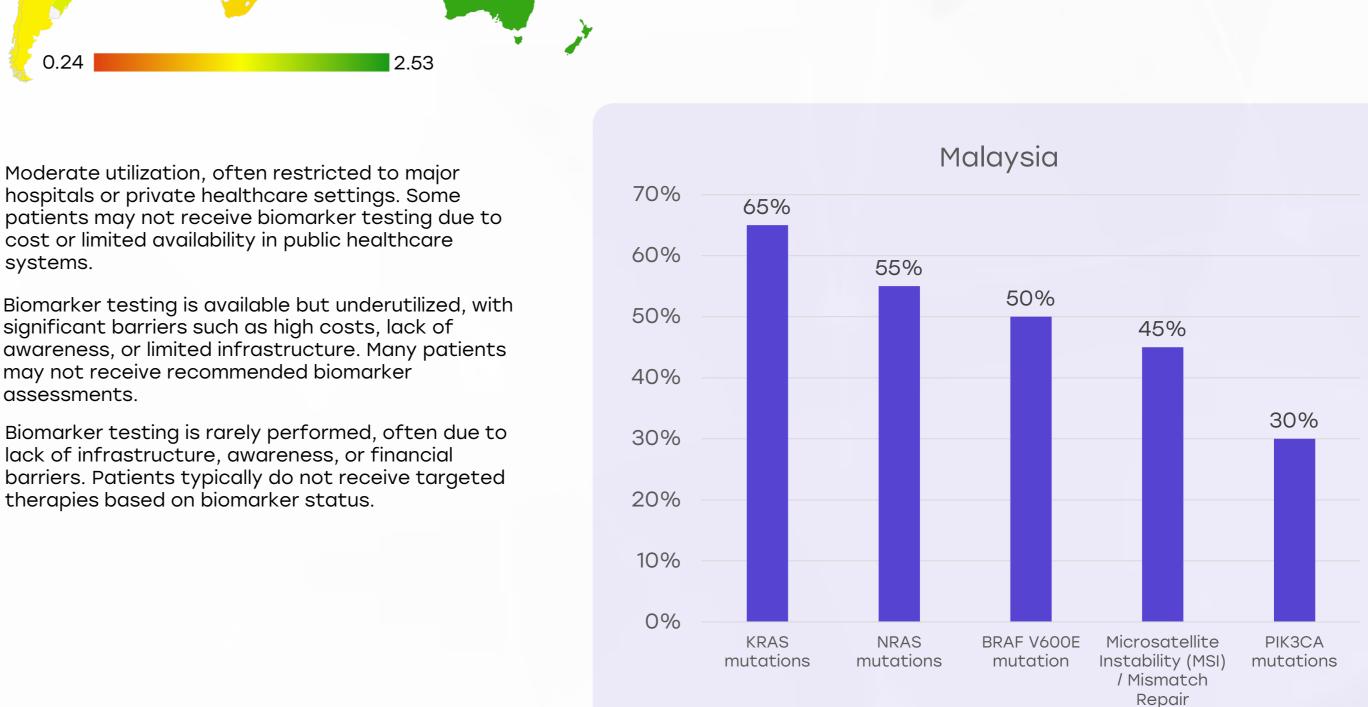
Threats

- Without biomarkerguided therapy, patients may receive suboptimal or unnecessary treatments.
- Limited awareness among clinicians may result in underutilization of testing.

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.

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.

lack of infrastructure, awareness, or financial barriers. Patients typically do not receive targeted therapies based on biomarker status.



Deficiency

(dMMR)



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Clinical Guidelines

Strengths

- Ministry of Health and local oncology societies follow international CRC management standards (e.g., NCCN, ESMO).
- MDTs used in larger centers for staging and treatment planning.

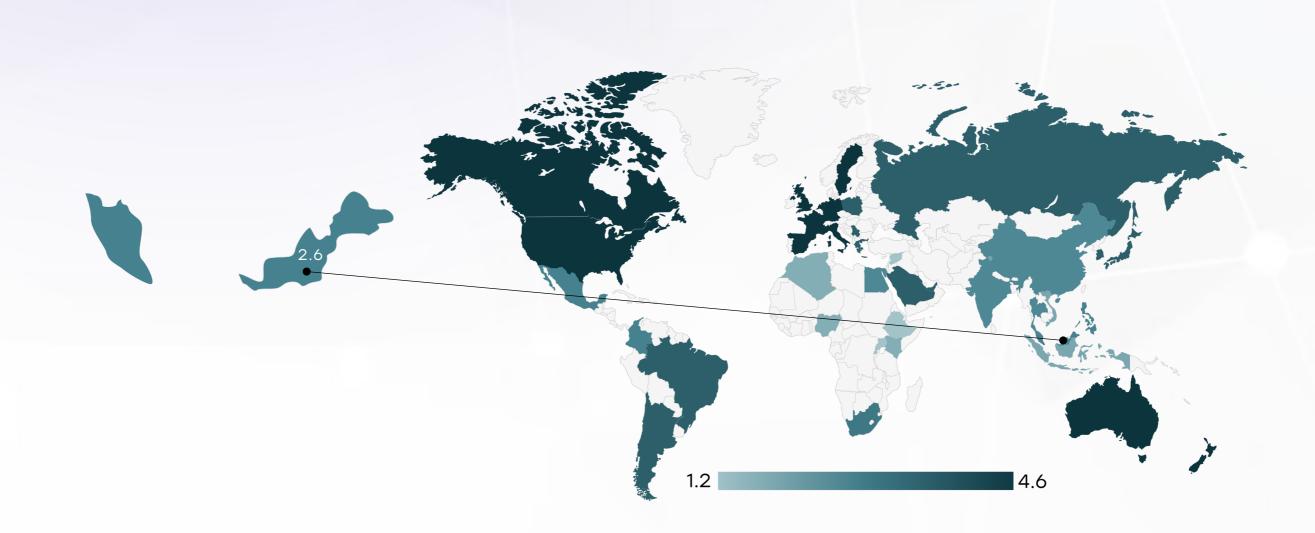
Opportunity

- National digital CRC care pathway could streamline implementation and auditing.
- CME and e-learning for primary and district-level practitioners.

Weakness

- Implementation of guidelines is inconsistent in secondary and district hospitals.
- GPs may not be updated on CRC referral protocols and staging criteria.

- Guideline adherence may vary due to human resource shortages or administrative workload.
- Health reforms could slow rollout of standardized care in all facilities.



| | 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 | * |



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Reimbursement

Strengths

- Public system covers basic CRC surgeries, chemotherapy (e.g., capecitabine, oxaliplatin), and diagnostics.
- Patients in the B40 income group can receive financial support via PeKa B40 and MySalam.

Opportunity

- Expand coverage under PeKa B40 to include targeted drugs and molecular tests.
- Centralized drug procurement to reduce price of biologics.

Weakness

- Targeted therapy and biomarker testing remain largely out-ofpocket in the public system.
- Delays in health technology assessments (HTA) and drug approvals.

- Public-private disparity in access to advanced care could widen outcome gaps.
- Budget pressures may limit expansion of reimbursement for innovative treatments.



- A structured reimbursement system exists, ensuring biomarker testing is covered through national healthcare systems, insurance, or publicprivate 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 | | |
| Germany | | |
| France | | |
| Netherlands | | |
| Sweden | | |
| Italy | | |
| Spain | | |
| Poland | | |
| Japan | | |
| South Korea | | |
| China | 0 | 0 |
| India | 0 | 0 |
| Singapore | 0 | 0 |
| Thailand | 0 | 0 |
| South Africa | 0 | 0 |
| Kenya | 0 | 0 |
| Nigeria | 0 | 0 |
| Egypt | 0 | 0 |
| Morocco | 0 | 0 |
| Algeria | 0 | 0 |
| Ethiopia | 0 | 0 |
| Mexico | | |
| Brazil | | |
| Argentina | 0 | |
| Chile | | |
| Colombia | | |
| New Zealand | | |
| Greece | | |
| Rwanda | 0 | 0 |
| Uganda | 0 | 0 |
| Serbia | | |
| Saudi Arabia | | |
| UAE | | |
| Syria | \circ | 0 |
| Indonesia | | 0 |
| Vietnam | | 0 |
| Philippines | 0 | 0 |
| Russia | | |
| Malaysia | | |
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Malaysia Lung Cancer Screening

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Strengths

- Malaysia has initiated fecal occult blood test (FOBT)-based CRC screening for adults aged 50-75 under MoH programs.
- Screening integrated in NCD programs in government clinics (Klinik Kesihatan).

Opportunity

- Scale up organized CRC screening with FIT/FOBT + colonoscopy for highrisk individuals.
- Leverage mHealth for reminders, education, and screening logistics.

Weakness

- Screening uptake remains low (~15-20%), especially among rural and male populations.
- Follow-up colonoscopy after positive FOBT is inconsistent.

- Public fear, stigma, and embarrassment about colonoscopy limit participation.
- Workforce shortages and equipment limitations delay followup procedures.

| 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 |