

Gastric Cancer Factsheet: Insights & Key Developments

Key Insights on Gastric 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. Gastric Cancer Screening

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

- Incidence share: Gastric cancer is not in the top 10 male cancers, but more common in older adults.
- Incidence rate: Approximately 8 per 100,000 men per year.
- Total new cases (2022): About 400-450 men.
- Daily diagnoses: Around 1–2 men per day.
- Deaths (2022): Roughly 300-350 men.
- 5-year survival rate: Estimated 40-50%.
- Most affected age group: Predominantly 70 years and older.
- Screening participation: No routine national screening, but high-risk individuals may receive endoscopic checks.



Singapore © Infrastructure

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Strengths

- Singapore has world-class cancer care infrastructure at NCCS (Singapore National Cancer Centre) and NCIS at **NUH**-public tertiary centres offering integrated oncology services, top-tier diagnostics, and researchled care.
- The Singapore Gastric Cancer Consortium (SGCC) is a multidisciplinary translational research network driving clinical innovation across public hospitals and universities

Opportunity

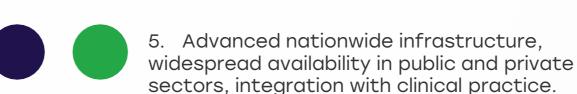
- Continued support for platforms like SGCC and biotech spinouts (e.g. Mirxes) can strengthen infrastructure for biomarker testing and precision treatment pipelines.
- Ongoing investments in research and simulation labs at NUH and NCCS support growth in molecular pathology and data-driven diagnostics.

Weakness

- · Singapore's incidence of gastric cancer is low-intermediate, so mass screening via endoscopy is not offered, and many general clinics lack evolved endoscopic capacity.
- Public hospital wait times for endoscopy may be long, leading some patients to use private facilities at additional

Threats

- Resource limitations in expanding endoscopic and biomarker infrastructure beyond flagship centres may leave regional/private settings underserved.
- Public complacency due to low incidence may limit political support for targeted infrastructure enhancements.



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.

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Treatment Access, Research Funding and Awareness Campaigns



Strengths

- The universal healthcare system with MediShield and MediSave subsidies ensures most core gastric cancer treatments (surgery, chemotherapy, diagnostics) are affordable with minimal out-of-pocket burden.
- The Singapore Cancer Society runs public education, subsidized screening campaigns, and patient support services-including outreach via 365CPS "Stay CLEAR of Gastric Cancer" campaigns

Opportunity

- Expansion of biomarker-based blood tests (e.g. GASTROClear microRNA assay) into community clinics could raise early detection awareness and demand
- Collaboration with corporations and public outreach programs can integrate gastric cancer messaging into broader preventive care frameworks (e.g. Healthier SG).

Weakness

- Public awareness campaigns rarely highlight gastric cancer specifically; messaging tends to focus on screened cancers (breast, colorectal, cervical).
- Screening uptake among highrisk groups may still be hindered by perceived invasiveness or cost of endoscopy.

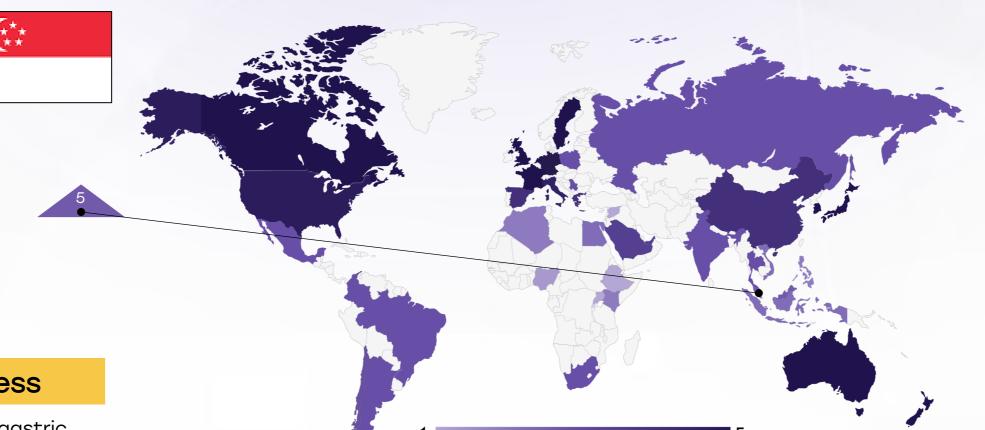
- Screening uptake may plateau if messaging remains too general and does not reach targeted groups.
- Public trust may be affected by perceptions about the reliability of tumor marker screenings, as evidenced in anecdotal reports

- 5. Strong healthcare infrastructure with comprehensive treatment access, high research funding, and nationwide awareness campaigns. Patients have access to advanced therapies, clinical trials, and widespread early detection programs.
- 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.

| Country | Treatment Access | Research Funding | Awareness Campaigns |
|----------------|---------------------|---------------------|------------------------|
| South Africa | 0 | | 0 |
| Kenya | | | |
| Nigeria | | | |
| Egypt | <u> </u> | | |
| Morocco | 0 | | |
| Algeria | 0 | | 0 |
| Ethiopia | | | |
| India | 0 | | <u> </u> |
| Japan | | | |
| South Korea | | | |
| China | | | |
| Thailand | | | |
| Singapore | | | |
| United Kingdom | | | |
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| Netherlands | | | |
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| Chile | <u> </u> | \bigcirc | <u> </u> |
| Colombia | <u> </u> | | |
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| Canada | | | 0 |
| Australia | | | 0 |
| New Zealand | 0 | | 0 |
| Greece | <u> </u> | <u> </u> | <u> </u> |
| Rwanda | | | |
| Uganda | | | |
| Serbia | <u> </u> | | <u> </u> |
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| UAE | <u> </u> | <u> </u> | 0 |
| Syria | | | • |
| Indonesia | <u> </u> | | 0 |
| Vietnam | <u> </u> | | 0 |
| Philippines | | | 0 |
| Russia | | 0 | 0 |
| Malaysia | <u> </u> | | |



Survival Rates, Early Detection and Palliative Care



Strengths

- Stage I gastric cancer in Singapore has a ~90% curative potential; early-stage detection correlates with excellent outcomes.
- Multidisciplinary and supportive oncology and rehabilitation services are available through SCS and NCCS, providing holistic patient care

Opportunity

- Integration of early-risk blood testing with targeted endoscopy referrals could shift stage distribution toward earlier detection.
- Expansion of community-based rehabilitation and palliative support networks (e.g. via Singapore Cancer Society satellite centers) could improve patient quality of life

Weakness

 Only ~37% of gastric cancer patients are diagnosed at early stages—far lower than breast or colorectal cancers—leading to poorer overall survival patterns.

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 Structured palliative care for gastric cancer is available but not uniformly implemented across institutions.

- Late presentation continues to hinder survival improvements. Without systematic surveillance, many cases remain undetected until advanced stages.
- Underinvestment in symptom recognition education may sustain low early-detection rates.

- 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-of-life care.
 - 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 | 0 | | |
| Morocco | | | |
| Algeria | | | |
| Ethiopia | | | |
| India | <u> </u> | <u> </u> | <u> </u> |
| Japan | | | |
| South Korea | | | |
| China | 0 | | |
| Thailand | <u> </u> | | <u> </u> |
| Singapore | | | |
| United Kingdom | | | |
| Germany | | | |
| France | | | |
| Netherlands | | | |
| Sweden | | | |
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| Spain | | | |
| Poland | | | |
| Mexico | <u> </u> | | |
| Brazil | | | |
| Argentina | | | |
| Chile | <u> </u> | | <u> </u> |
| Colombia | | | |
| United States | | | |
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| Saudi Arabia | <u> </u> | <u> </u> | <u> </u> |
| UAE | <u> </u> | <u> </u> | <u> </u> |
| Syria | | | |
| Indonesia | <u> </u> | | |
| Vietnam | <u> </u> | | |
| Philippines | <u> </u> | | |
| Russia | <u> </u> | <u> </u> | <u> </u> |
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Utilization of Biomarkers

Strengths

- Singapore hospitals such as NCCS are equipped to perform established biomarker testing (HER2, MSI/MMR, PD-L1) using IHC or NGS platforms in line with global standards.
- Advanced research via SGCC and Duke-NUS has uncovered tumour immune microenvironment subtypes that could lead to new biomarker-driven therapies

Opportunity

- Adoption of tests like CLDN18.2 and FGFR2b IHC/NGS in tertiary centre labs could support early local trials and research collaborations
- Integration of validated blood-based tests (miRNA panels, pepsinogen) into risk stratification pathways can expand biomarker-based screening in high-risk groups

Weakness

- Biomarker panels for emerging markers (CLDN18.2, FGFR2b) are not widely available in routine practice; to research settings.
- Companion diagnostics for these emerging targets are not yet widely reimbursed or integrated into public care protocols.

Threats

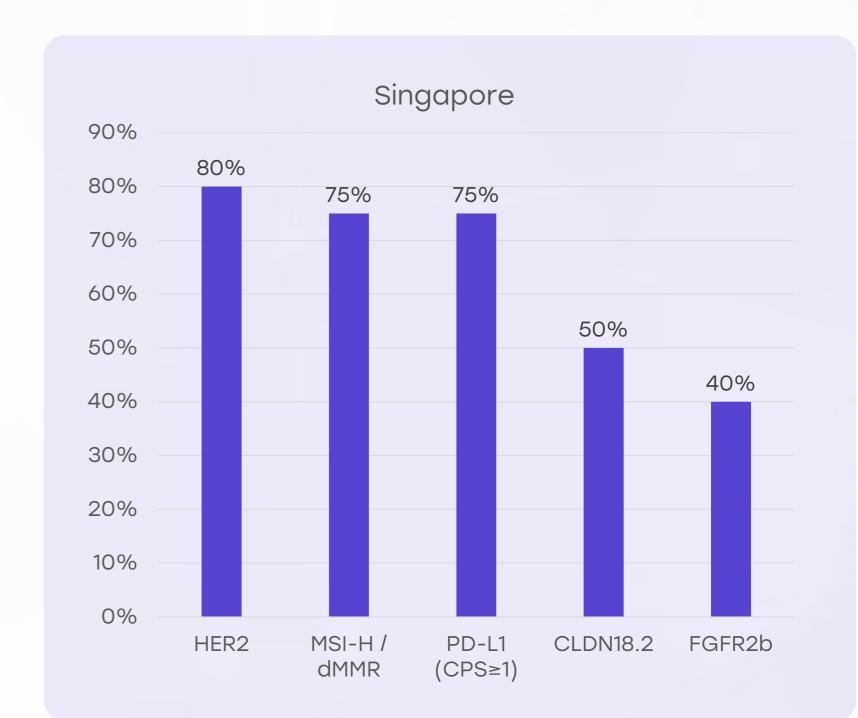
- Lack of public reimbursement pathways for advanced testing may limit broader clinical application.
- · Slower adoption of markers beyond HER2 may hinder patient access to nextgeneration therapies.

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.

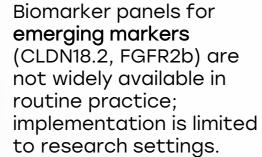
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Biomarker testing is available but underutilized, with significant barriers such as high costs, lack of awareness, or limited infrastructure. Many patients may not receive recommended biomarker assessments.

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.











Singapore Clinical Guidelines

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Strengths

- The Academy of Medicine, Singapore has published guidelines recommending targeted screening for high-risk individuals and use of serum biomarkers (pepsinogen, microRNA) for risk assessment.
- NCCS and NCIS multidisciplinary tumour boards adhere to international care guidelines and integrate biomarker-guided protocols where available.

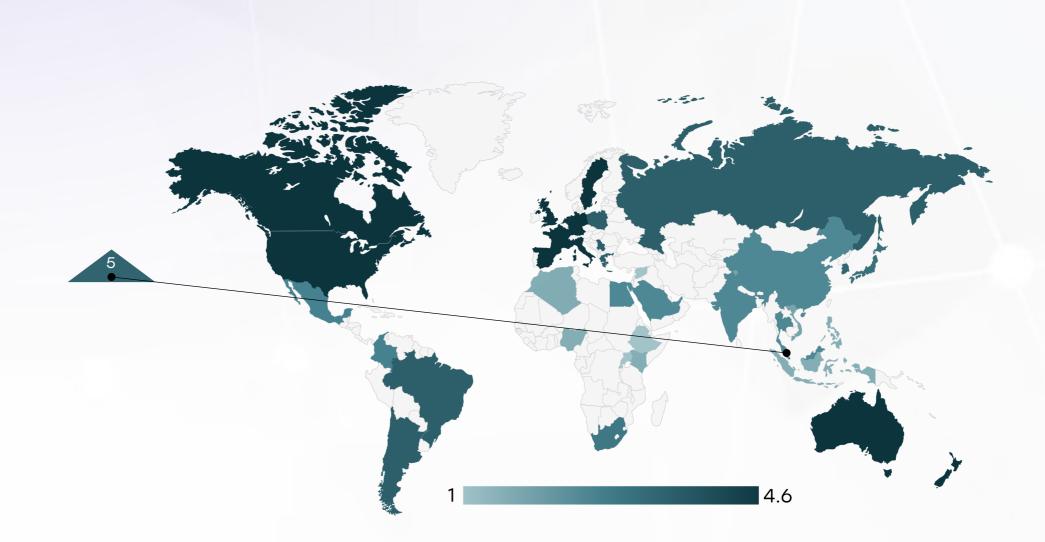
Opportunity

- Updating clinical guidelines to integrate blood-based risk tests (e.g. miRNA assay) with endoscopy algorithms could improve early detection.
- Formal clinical pathways can be developed to adopt biomarker testing (including emerging markers) in public tertiary care.

Weakness

- Recommendations for screening and surveillance are weak in strength and apply only to high-risk individualsnot for population-wide
- There is limited national guidance on utilization of new biomarkers like CLDN18.2 and FGFR2b.

- Slow guideline evolution and lack of reimbursement policy may delay real-world adoption.
- Variability in practice across private vs public sectors may introduce inconsistency in care standards.



| | 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

- Singapore's healthcare financing systems (MediSave, MediShield Life) subsidize major diagnostic and treatment costs; most gastric cancer care-including endoscopy, CT, chemotherapy-is accessible with minimal personal cost.
- Subsidies are available through public hospitals and community clinics, including approved blood-based tests (~S\$200) covered in part by MOH schemes or philanthropic funding

Opportunity

- Including validated bloodbased biomarkers in public subsidised risk assessment programs (e.g. under Healthier SG) could scale early detection affordably.
- Expanding insurance or subsidy support for biomarker testing and emerging targeted therapy (e.g. CLDN18.2-directed agents) could improve equity.

Weakness

- While GASTROClear and pepsinogen/miRNA blood tests are available, **private-pay** segments and variability in subsidy eligibility may deter some people from adopting them.
- Targeted therapies for biomarkers beyond HER2 may not yet be fully funded under public schemes.

- Funding gaps or costsharing limitations may limit broad access to emerging diagnostics or novel therapies.
- Private/public sector disparities might result in unequal care options based on ability to pay.



- 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 | | \bigcirc |
| United Kingdom | | |
| Canada | | |
| Australia | | |
| Germany | | |
| France | | |
| Netherlands | | |
| Sweden | | |
| Italy | | |
| Spain | | |
| Poland | | |
| Japan | | |
| South Korea | | |
| China | | |
| India | 0 | 0 |
| Singapore | | |
| Thailand | | |
| South Africa | | |
| Kenya | 0 | |
| Nigeria | 0 | |
| Egypt | | |
| Morocco | | |
| Algeria | | |
| Ethiopia | | |
| Mexico | | |
| Brazil | | |
| Argentina | | |
| Chile | | |
| Colombia | | |
| New Zealand | | |
| Greece | | |
| Rwanda | 0 | 0 |
| Uganda | 0 | 0 |
| Serbia | | |
| Saudi Arabia | | |
| UAE | | |
| Syria | 0 | 0 |
| Indonesia | | 0 |
| Vietnam | | 0 |
| Philippines | 0 | 0 |
| Russia | | |
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Gastric Cancer Screening

Strengths

- While there is no national screening program, targeted screening initiatives are recommended for high-risk individuals aged ≥50 with multiple risk factors; evidence supports endoscopy every 2 years in selected subgroups.
- Singapore Cancer Society and 365 Cancer Prevention campaigns (e.g. "Stay CLEAR") sponsor risk-based blood testing programs for eligible adults aged 40+ (~S\$200) to identify individuals for further evaluation.

Weakness

- Singapore lacks a populationbased gastric cancer screening program; endoscopy remains reactive rather than preventive.
- Uptake of subsidized risk tests may be limited by awareness and program reach.

Opportunity

- Scaling up targeted high-risk screening (combining GASTROClearwith risk factors) could serve as an efficient early detection model.
- Pilot community-based programs using mobile clinics or polyclinics could expand reach among eligible older or at-risk groups.

- Low overall incidence may continue to deter policymakers from investing in organized screening.
- Without clear long-term outcome data, screening programs may be hard to justify at scale.

| Country | Gastric 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 | Gastric 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 |