Saudi Arabia

Population: 36.4 million (2022)
GDP per capita: USD 30,448 (2022)
Life expectancy: 77 years (2021)
Total health expenditure: 6.0% of GDP (2021)
Source: World Bank

Breast cancer

- Breast cancer is the most common cancer type in women (**29%** of all new cancer cases) and responsible for **20%** of all cancer deaths among women in Saudi Arabia.
- Breast cancer tends to be diagnosed at an earlier age in the Middle East and Africa (MEA) region than in Western countries, approximately 10 years earlier. In 2022, 89% of cases in Saudi Arabia were in women below the age of 65.

9 out of 10 women diagnosed with breast cancer in Saudi Arabia are under 65 years.

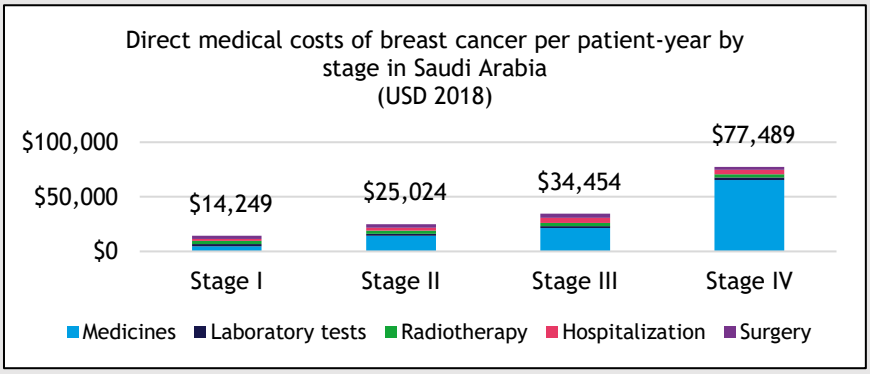
Health system and governance of breast care

Description

- All local citizens and public sector expatriates have free public health care access. Private sector expatriates must have compulsory health insurance provided by their employer, usually receiving care in the private sector. Employer insurance offers a basic care level, leading many white-collar private-sector expatriates to purchase additional private health insurance for extended coverage. Only if someone has no private insurance and is treated in the private sector, there will be significant out-of-pocket expenses, according to local experts.
- Cancer care is widely available through several public entities, including the Ministry of Health hospitals, university hospitals under the Ministry of Higher Education, and specialized institutions catering to various government sectors. In these facilities, **all Saudi citizens receive free treatment**.
- **The main national cancer care centers are located in Riyadh, Jeddah, and Dammam**. They offer modern cancer treatment and have qualified medical staff. Yet these big centers are overcrowded, because patients from all over the country try to get treatment there. During recent years, the MoH has established "**satellite centers**" in other cities, **such as Mecca, Medina, and Qassim.**

The National Plan for Cancer Control for the period of 2014-2025 aims to reduce breast cancer mortality by 30%. The plan includes various objectives, such as increasing awareness about breast cancer symptoms among health care workers and the implementation of an integrated population-based level screening program.

- **Approximately half of the economic impact of breast cancer stems from indirect costs.** These costs are linked to productivity losses when patients are unable to work, either temporarily or permanently, or due to premature death. This challenge is particularly significant in the MEA region, where populations are younger, and breast cancer tends to manifest about a decade earlier than in Western countries. For example, a study estimated that in Saudi Arabia, **the annual indirect costs attributable solely to morbidity (excluding mortality) range between international dollars (int$) 219 and 265 million**.
- The direct medical costs for breast cancer treatment escalate with the stage at diagnosis. For instance, **treating late-stage breast cancer in Saudi Arabia can be more than 5 times as costly as treating early-stage breast cancer**, underscoring the critical value of early detection to reduce the economic burden.



Main recommendations

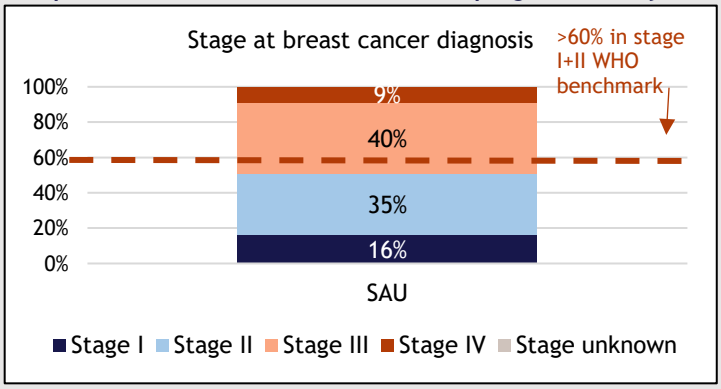
- Emphasize and strengthen the participation of patient organizations in the decision-making processes.
- Continue prioritizing downstaging of breast cancer at diagnosis to reduce the economic burden of breast cancer.
- Evaluate the impact of the National Cancer Plan to assess progress over time.
- Introduce an efficient electronic appointment system at primary health care centers allowing women to schedule visits at convenient times.
- Explore patient navigation strategies to create clear, easy-to-follow referral pathways.

- Breast cancer patients are advised to initially seek medical attention at primary health care centers by walking in, rather than making pre-arranged appointments. Waiting in lines can be a deterrent for some women, causing them to skip primary care and go directly to hospitals when their symptoms worsen.
- Until recently, mammography screening was not free in the private sector. If a healthy woman wanted to do a mammography screening, a physician would need to put symptoms in the medical record in order to make the referral available for free. This has changed recently and now mammography screening is listed among reimbursable services in the insurance policy.

Early detection

Main challenges

- The graph below indicates that a significant number of breast cancer diagnoses at the Saad Specialist Hospital between 2004 and 2011 were made at advanced stages. The situation is anticipated to have improved since then, thanks to **modernization, urbanization, and increased health awareness, further supported by initiatives such as the Breast Cancer Early Detection project,** which was launched in 2012. Nonetheless, there is a **lack of more recent and comprehensive national data to evaluate progress in early detection.**



- **The national screening program offers mammography every two years to women aged 40-69 years.** Mammography has been available in all regions since 2005 and a nationwide breast cancer screening center was established in Riyadh in 2007. **Despite free provision of breast cancer screening, it appears that participation rates are still low.**
- Studies have identified that the fear of discovering cancer significantly hinders self-examinations and participation in screening programs.
  - ❖ This apprehension includes fears related to physicians, medical examiners, hospitals,
  - ❖ and the potential social implications of being diagnosed as there is still some level of social stigma surrounding breast cancer.
- Local experts noted that there is lack of encouragement from general practitioners and nurses to participate in screening.
- There is also a gap between knowledge and practice. A study among female employees at King Saud University aged 40 years and above showed that **51% reported intending to undergo mammography; however, only 19% received a mammography.**

Elevated BRCA and TP53 mutation rates

Saudi Arabian breast cancer patients show a 10% prevalence of BRCA mutations, higher than global averages, with a notably high frequency of BRCA1 mutations. Additionally, a 40% prevalence of TP53 mutations, among the world's highest, has been reported.

- Local experts noted that there is no organized way to screen high-risk women and follow-up on their family members. There are only some fragmented screening services, e.g., at the King Faisal Specialist Hospital & Research Center and National Guard hospital.
- There is a notable shortage of health care workers specializing in genetics, with only **6** genetic counselors reported in 2018.
- There is also a limited number of laboratories for genetic testing. People may need to travel to laboratories located in other regions to receive genetic counseling services.

Main recommendations

- Work on a call-recall system to alert women about upcoming screenings via SMS, calls, or emails.
- Promote transparency by making quality indicators of the effectiveness of the breast cancer screening program readily accessible.
- Collaborate with local religious leaders, community elders, and women's group leaders to promote breast cancer screening.
- Provide primary care practitioners with materials about breast cancer screening to share during ordinary appointments.
- Prioritize BRCA mutation screening to identify women at high risk.
- Train health care professionals in basic genetic counseling.
- Deploying mobile units for genetic testing to remote areas.

Diagnostic services

Main challenges

- **There is a significant shortage of technicians and radiologists with expertise in breast cancer**, hindering the screening process.
- A **lack of skilled health care experts, including pathologists**, can contribute to delays in breast cancer diagnosis. According to the 2021 MoH report on newly enrolled employees in fellowship programs and higher studies by specialty, histopathology had notably fewer enrollees, with only **5 individuals**, compared to radiology, which had 91.
- Access to biomarker testing is guaranteed. However, not all health care facilities possess the capabilities to conduct the tests. According to local experts, in cases where peripheral centers lack the necessary resources to analyze tissue samples, they employ a spoke-and-hub approach, sending the samples to larger hospitals for biomarker testing.

Test	Access to biomarker testing to Saudi citizens and expats
Essential biomarkers (ER, PR, HER2, Ki-67)	Available for all
Gene expression profiles (Oncotype DX, Mamma Print, etc.)	Available for all
Newer biomarkers (PIK3CA, BRCA1/2, PD-L1, NTRK, dMMR/MSI-H, TMB-H)	NTRK and TMB-H are not routinely reimbursed, while the rest of the tests are.

Main recommendations

- Recruit more radiologists or develop specialized training programs for radiographers in mammography or consider implementing telemammography.
- Promote workforce development in pathology.
- Evaluate the proportion of patients receiving essential biomarker testing and testing for newer biomarkers at all institutions across the country.

Treatment

Main challenges

- In Saudi Arabia, the **fragmentation of the health care system** makes uniform treatment guidelines challenging, leading to variability in patient care across different providers.

Comprehensive coverage for breast cancer care

The Cooperative Health Insurance Council mandates that health insurance covers the treatment of benign growths and breast cancers up to a maximum of 500,000 Saudi riyals (approximately 133,285 USD as of August 2023), covering the full spectrum of patient care.

- There is a **lack of patient support groups** and Arabic-centric platforms, especially affecting conservative women. However, the rise of online groups like “Najia” since 2016 has been a positive development.
- A notable gap exists in the geographical availability of oncology centers in the northern and southern regions. In these regions, there are only hospitals with satellite units to administer chemotherapy. Once diagnosed, patients from these areas should be sent to bigger hospitals.
- In rural areas, the **scarcity of oncologists** leads to general or family physicians providing cancer care, which may compromise the quality of treatment.
- Sometimes general surgeons perform surgeries instead of breast surgeons, leading to suboptimal treatments.
- As of 2023, there are a total of **49 radiation therapy machines** available in the country. The current number is below the standards set by international recommendations. The lack of radiation therapy impacts primarily rural areas.
- While the availability of modern breast cancer medicines is not a concern, **the delivery of medicines may pose challenges.** For instance, an administrative process is required to obtain medicines that have just been approved or that have been acquired by the MoH through “central purchase”.
- With Saudi Vision 2030, there is a **shift towards adopting a value-based pricing system for medicines**, utilizing health technology assessment (HTA) to guide pricing and reimbursement decisions, but this is yet to be implemented broadly.

Main recommendations

- Expand culturally sensitive, Arabic-centric online and offline support platforms nationwide.
- Continue prioritizing initiatives to train and recruit medical oncologists and nurses.
- Develop a digital platform to integrate procurement, inventory management, and distribution processes for medicines.
- Enhance rural access to radiation therapy, considering hypofractionated therapy to complete therapy courses more quickly and save resources.