Policy Brief
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Women's Voices in Action: Advancing Breast Cancer Prevention and Care for Universal Health Coverage in Low- and Middle-Income Countries

WGH | WOMEN IN GLOBAL HEALTH

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Women in Global Health stands in solidarity with women around the world who tirelessly champion gender equity in health, including breast cancer prevention and care. We honor their courage, expertise, and leadership in challenging systemic barriers, defending rights, and transforming health systems so that all women have equitable access to health care.

Abbreviations

AI	artificial intelligence
CHWS	community health workers
DALYs	disability-adjusted life years
GBCI	Global Breast Cancer Initiative
G-CSF	Granulocyte colony-stimulating factor
HER+2	human epidermal growth factor receptor 2
HICs	high-income countries
IARC	International Agency for Research on Cancer
LMICs	low- and middle-income countries
NAACCR	North American Association of Central Cancer Registries
PBCRs	population-based cancer registries
SDGs	Sustainable Development Goals
TAT	turnaround time
TNM	tumor, node, metastasis
UHC	universal health coverage
UICC	Union for International Cancer Control
WHO	World Health Organization

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Foreword

Breast cancer is now the most commonly diagnosed cancer in the world, yet too many women, especially in low- and middle-income countries (LMICs), still face late detection, financial hardship, fragmented care, and preventable loss of life. This brief underscores an urgent truth: improving breast cancer outcomes is both a public health imperative and a matter of gender equity. As climate change, rising care costs, and widening inequalities shape women's health, this publication comes at a pivotal moment, particularly as global leaders renew commitments to Universal Health Coverage (UHC). Without gender-responsive UHC, equitable prevention, early diagnosis, and quality treatment will remain out of reach for millions.

Women in Global Health is committed to a world in which no woman's health or economic security is compromised by systemic inequities. This brief advances a vision of stronger, more equitable health systems aligned with the UHC agenda, demonstrating how ostensibly gender-neutral policies drive late diagnosis, catastrophic expenditure, and preventable mortality, while underscoring solutions that place women at the core of resilient, people-centered care and leadership.

I extend my sincere appreciation to the contributors, researchers, advocates, and Women in Global Health Chapters whose insight shaped this publication, and to our partners who continue to champion innovation in breast cancer prevention, early detection, and care.
Every woman deserves timely, high-quality care, free from stigma, financial barriers, and discrimination. As we advance our policy agenda, I remain firmly committed to ensuring that women's leadership and lived experience guide our work.

I invite you to engage with the recommendations in this brief. Achieving UHC will not be possible without addressing breast cancer, and addressing breast cancer requires putting women at the center of policy and practice. Together, we can build health systems that work for all women and strengthen the resilience of societies as a whole.

Dr. Magda Robalo, Executive Director, a.i.
Women in Global Health

1. Key Messages

The world has now entered a period of accelerated action on cancer control within UHC agendas. As countries invest in stronger health systems and recovery from the COVID-19 pandemic, breast cancer has emerged as a defining test of equity and system readiness. Despite major scientific advances, far too many women, especially those in the Global South, continue to be diagnosed late, face substantial financial barriers, and experience preventable deaths. Closing these gaps is essential not only to improving cancer outcomes, but also to fulfilling the fundamental right to health embedded in UHC commitments as part of the Sustainable Development Goals (SDGs) for 2030.

Gender-transformative approaches must guide this effort. Breast cancer inequities are shaped by discriminatory gender norms, unpaid care burdens, financial dependence, and the exclusion of women's perspectives from decision-making spaces. Strengthening leadership, financing, data systems, and governance through a gender lens is not a "soft" add-on; it is a structural requirement for achieving earlier detection, timely treatment, and accountability in cancer care. This policy brief sets out the critical actions needed to advance equitable breast cancer prevention and care, and to ensure that women's rights, voices, and leadership are centered in the systems designed to protect their health.

Grounded in current evidence and aligned with the World Health Organization (WHO) Global Breast Cancer Initiative (GBCI), the following key messages outline where coordinated action will have the greatest impact on survival and equity:

- **Breast cancer is a growing global crisis:** It is now the most frequently diagnosed cancer among women worldwide, with the steepest increases in low- and middle-income countries (LMICs). Survival remains highly unequal; over 85 percent of women survive at least five years after diagnosis in many high-income contexts, compared with fewer than 40 percent in many LMICs.
- **Gender inequities drive delayed diagnosis and preventable deaths:** Financial barriers, harmful gender norms, stigma, and exclusion from decision making limit women's ability to access early detection and timely treatment.
- **Universal health coverage is essential for progress:** Integrating breast cancer services, including diagnostics, treatment, supportive medicines, and palliative care, into national UHC benefit packages is critical to ensuring access to early diagnosis and treatment, affordability, continuity of care, and reduced survival gaps.
- **Stronger cancer information systems are required:** Weak cancer registries and incomplete cause-of-death data conceal the true burden of disease and impede evidence-informed planning and accountability.
- **Women's leadership is a structural lever for change:** Women make up approximately 70 percent of the global health workforce but hold only about 25 percent of leadership

positions. Elevating women's voices, especially survivors and frontline health workers, improves system responsiveness, innovation, and equity.

- Community-driven solutions work: Locally led outreach, culturally tailored communication, and peer-navigation approaches are expanding access to screening and strengthening trust in underserved areas.
- Investing in breast cancer is cost-effective and socially transformative: Early detection and comprehensive treatment yield high economic returns, prevent financial hardship, and reduce the intergenerational impacts of maternal death.

Together, these priorities identify where immediate, coordinated action is most urgently needed to close survival gaps in LMICs and advance gender-responsive UHC policies and programs for breast cancer prevention and care. For Women in Global Health, strengthening breast cancer services within UHC is essential as we work to build inclusive, gender-equitable health systems that uphold women's rights and guarantee timely, affordable care for all.

2. Executive Summary

Breast cancer is now the most frequently diagnosed cancer among women worldwide, with particularly rapid increases in LMICs (World Health Organization [WHO], 2023a). While advances in prevention, early detection, and treatment have improved survival in many regions, profound inequities persist more than 85 percent of women in high-income countries (HICs) survive at least five years after diagnosis, compared with fewer than 40 percent in many LMICs (WHO, 2023b). These disparities are driven by delayed presentation, limited diagnostic and treatment capacity, high out-of-pocket costs, and gender-related barriers that restrict timely access to care.

The unequal burden of breast cancer is not only a biomedical challenge; it reflects systemic weaknesses in health financing, service organization, and entrenched gender norms. Stigma, low community awareness, services concentrated in urban centers, weak referral pathways, and severe oncology workforce shortages continue to result in late diagnosis and preventable mortality. Rural women and younger women are disproportionately affected, while weak cancer registries and fragmented screening programs undermine governments' ability to plan, resource, and evaluate breast cancer control efforts. Without accelerating progress in these areas, UHC cannot be realized, as cancer prevention, diagnosis, treatment, and palliative care are fundamental to the right to health.

Evidence shows that integrating breast cancer services into UHC is essential. Including essential cancer services, diagnosis, treatment, and palliative care within national benefits packages strengthens equitable access and financial protection (Johnson et al., 2020; Union for International Cancer Control [UICC], 2025). Between 1990 and 2019, global care quality improved and the gap between HICs and LMICs narrowed, with access to UHC strongly associated with better survival outcomes (Wang et al., 2024). As countries expand UHC coverage, prioritizing breast cancer services can accelerate progress toward equity in cancer outcomes.

Women's leadership is central to effective cancer policy and health system resilience. Insights from Women in Global Health's women leadership programs demonstrate how women health workers, survivors, and community leaders are driving earlier detection, strengthening advocacy, and reinforcing accountability within cancer care systems. Their lived experience and trusted community roles make them vital actors in shaping gender-responsive cancer strategies.

This policy brief calls for coordinated action to advance for breast cancer prevention and control, within the UHC context by:

- **Expanding early detection** through decentralized and culturally responsive approaches that reduce delays in diagnosis;
- **Improving equitable access** to diagnosis, treatment, and palliative care, with strong financial protection;
- **Increasing and sustaining financing** for core oncology services, infrastructure, and workforce development;
- **Advancing gender-transformative leadership** that centers women's voices, especially in the Global South, in health governance; and
- **Strengthening cancer data systems** with sex- and gender-disaggregated data to guide equitable, evidence-based planning.

Meeting the promise of UHC requires significant investment and focused policy action in LMICs, where the survival gap is greatest. Ensuring that women can access timely, affordable, high-quality breast cancer care, and equitably participate in shaping the systems that govern their health is essential to global progress. Addressing these inequities is both a moral and public health imperative, and critical to realizing the SDGs by 2030.

Women in Global Health recognizes that breast cancer is not only a health issue, but also a global crisis, and a matter of gender equity, human rights, and economic justice. We call on governments, donors, multilateral agencies, civil society, philanthropies, and the private sector to act urgently by committing sustained resources and centering women's leadership in building equitable breast cancer care for every woman, everywhere.

3. Background and Context

3.1 Global Statistics

Breast cancer is the most frequently diagnosed cancer among women worldwide, with an estimated 2.3 million new cases and 670,000 deaths in 2022 (WHO, GLOBOCAN, 2022). Survival outcomes, however, vary dramatically by geography. In the United States (U.S.), more than 99 percent of women diagnosed at the earliest stage survive at least five years, compared with only about 33 percent of those diagnosed at the most advanced stage (Centers for Disease Control and Prevention, 2022). Survival exceeds 85 percent in many HICs but remains below 40 percent in many LMICs, where delayed diagnosis, limited diagnostic capacity, and high out-of-pocket costs restrict access to timely care (WHO, 2023b).

The inequities are stark. Europe recorded nearly 600,000 new cases of breast cancer in 2022 (GLOBOCAN, 2022), and in the U.S., 310,700 invasive cases and 42,200 deaths were expected in 2024 (American Cancer Society, 2024). In Africa, 198,300 cases and 91,300 deaths were reported in 2022, reflecting constrained access to early diagnosis and treatment (GLOBOCAN, 2022).

Although breast cancer disproportionately affects postmenopausal women, incidence is rising fastest among younger women, particularly those under age 50. Between 1990 and 2021, new cases among women aged 15–49 more than doubled globally, with the steepest increases in low-resource settings (Cai et al., 2025). By 2040, incidence in this reproductive age group is projected to rise by nearly 47 percent (Cai et al., 2025). North Africa alone experienced a 166 percent increase in incidence and a 58 percent increase in mortality among adolescent girls and young women, creating unique clinical and social challenges (Tawfiles et al., 2025).

The Financial Case for Investing in Breast Cancer Care

Investing in breast cancer care is an economic opportunity, not merely a cost burden. Early diagnosis and comprehensive treatment are highly cost-effective and can generate long-term savings. For every US$1 invested, returns may reach up to US$7.80 through reduced treatment costs, improved survival, and preserved productivity (WHO Regional Office for the Eastern Mediterranean, 2024).

While HICs have achieved substantial mortality reductions over recent decades, e.g., Europe's mortality has dropped by roughly 30 percent since 1990, global progress is uneven. Outcomes still vary widely due to differences in screening uptake, stage at diagnosis, and treatment capacity (Siegel et al., 2018; Santucci et al., 2025). Many LMICs have not experienced similar gains. Without accelerated improvements in early diagnosis and affordable treatment, over 60 percent of new cases and 70 percent of breast cancer deaths are projected to occur in LMICs by 2050 (Kim et al., 2025; Coles et al., 2024).

Catastrophic Costs of Breast Cancer Care in Togo

In Togo, the average direct cost of breast cancer treatment exceeds US$14,000, and costs for human epidermal growth factor receptor 2 – positive disease (HER2+) may surpass US$12,000 (WHO CanScreen5, 2022). By contrast, Togo's GDP per capita is approximately US$1,043 (World Bank, 2024). Such disproportionate costs push households into financial crisis and limit access to life-saving treatment.

3.2 Economic and Social Burden of Late Detection

Advanced-stage breast cancer requires more aggressive and costly treatment, driving catastrophic health expenditures for many women and their families. In LMICs, these financial demands frequently exceed household income and can precipitate long-term and intergenerational poverty.

The burden of late detection is especially severe in resource-limited settings, where women are often in their most economically active years at diagnosis. Disease progression can result in job loss, reduced productivity, and premature death, eroding household income and national economic stability. Limited workplace health benefits, such as inadequate paid leave, further restrict women's access to preventive care and timely diagnosis.

In 2019, LMICs accounted for 74 percent of all disability-adjusted life years (DALYs) lost to breast cancer, illustrating the disproportionate social impact (Gao et al., 2024). Financial toxicity is widespread: 79 percent of patients with breast cancer in LMICs experience severe economic hardship, compared with 35 percent in HICs (Ehsan et al., 2023).

These effects extend far beyond individual patients. In 2020, cancer deaths in women resulted in over one million new maternal orphans globally, with the highest numbers in LMICs (Guida et al., 2022; IARC, 2024). One in four of these children lost their mothers to breast cancer alone (Guida et al., 2022; IARC, 2024). In sub-Saharan Africa, every 100 breast cancer deaths among women under age 50 result in over 200 maternal orphans (Galukande et al., 2021). Nearly half of maternal orphans due to cancer in 2020 were in Asia, and 35 percent in Africa (IARC, 2024). These children face heightened risks related to education, nutrition, and emotional well-being, deepening breast cancer's intergenerational consequences, especially in lower-income countries.

Evidence-Based Solutions for Rural–Urban Inequities

Multiple strategies have demonstrated effectiveness in strengthening rural cancer care:

- Patient navigation programs improve screening uptake and shorten time to diagnostic resolution in underserved and indigenous populations (Tian, 2022; Nayyar, 2023).
- Supportive services, including temporary accommodation and transportation assistance, improve treatment completion and appointment adherence (Fan, 2020; Chua, 2022; Wercholuck, 2022; Smith, 2025).
- Technology-enabled diagnostic networks, including telepathology and digital pathology, expand specialist reach and reduce turnaround time while maintaining quality assurance (El Jiar, 2024).
- AI-assisted diagnostic workflows are being piloted to support morphologic and molecular diagnostics in low-resource settings, though investment in connectivity, data governance, and validation remains essential (Rahman et al., 2025).

3.3 Rural–Urban Inequities in Access to Breast Cancer Care

The concentration of diagnostic and treatment services in urban centers deepens inequities in timely access to breast cancer care. Women in rural and underserved areas often face limited access to oncology specialists, inadequate information, long travel distances, and transport barriers that delay diagnosis and treatment (LeBlanc et al., 2022). As a result, rural women in many LMICs are more likely to present with late-stage disease. In India, for example, breast cancer incidence is lower in rural populations, yet mortality is significantly higher due to delays and poorer access to treatment (Khanna et al., 2024).

Travel burden remains a major driver of late presentation. Long distances to mammography or oncology services are strongly correlated with diagnostic delays (Chandak et al., 2019). Workforce shortages and fragmented referral pathways further impede timely diagnosis (Mwamba, 2023). In Mozambique, urban-based oncology services and limited diagnostic infrastructure prolong the interval from first symptom to confirmed diagnosis (Tulsidas, 2023).

Innovative delivery models are reducing these inequities. Mobile mammography units and decentralized outreach clinics extend screening and early detection services to communities where fixed-site capacity is limited, while remote subspecialist interpretation supports diagnostic accuracy (Johnston, 2020; Pascha, 2021). Telemedicine has emerged as an important tool for rural patients, expanding access to genetic counselling, symptom management, behavioral health, and palliative care (Knudsen, 2021). Coordinated "one-day, multi-specialist" clinics have also minimized travel burden and time away from work through virtual pre-visit planning and streamlined care (Bertagnolli, 2020; Levit, 2020). However, rural telehealth adoption still lags behind urban areas due to inadequate broadband coverage and limited reimbursement mechanisms (Hirko, 2020; Lee, 2024).

3.4 Social Barriers to Early Detection

Gender norms and stigma are consistently identified as major determinants of delayed help-seeking for breast cancer. Fear of mastectomy, shame, fatalistic beliefs, and anticipated social judgment deter women from seeking care even when they recognize symptoms (Oystacher, 2018; Mwobobia, 2025). Limited autonomy in health decision making and disproportionate caregiving responsibilities frequently prevent women from prioritizing their own health and accessing timely screening or treatment (WHO, 2021). Low health literacy further exacerbates late presentation in contexts where preventive practices are unfamiliar, and breast cancer is widely perceived as inevitably fatal (Yeong, 2024).

Stigma is reinforced by misinformation, initial reliance on traditional healers, and negative interactions with formal providers that diminish trust in health systems (Oystacher, 2018; Saldaña-Téllez, 2024). Multi-country analyses show that stigma, low awareness, financial barriers, and weak diagnostic readiness jointly impede early detection and timely access to appropriate treatment in African settings (Agbedinu, 2025). Even where screening services exist, uptake remains constrained by fear, misinformation, and unaffordable user fees, highlighting the need for culturally responsive health communication, survivor-led advocacy, and navigation support that builds trust and strengthens symptom recognition (Ponce-Chazarri, 2023; Wilkinson, 2022).

3.5 Workforce Bottlenecks in Breast Cancer Care

A global nursing shortage, concentrated in LMICs, remains a binding constraint on delivering guideline-concordant breast cancer care across prevention, diagnosis, treatment, and survivorship (WHO, 2025). An estimated 5.8 million nurses were missing from the global workforce in 2023, with the greatest deficits in the very settings where breast cancer mortality is highest (WHO, 2025). Strengthening nursing education, decent work, career pathways, and leadership roles is therefore essential to accelerating early diagnosis and treatment completion within UHC-oriented cancer plans (WHO, 2021).

Although women increasingly make up the oncology workforce, they comprise only about 36 percent of full-time oncology staff (Waldhorn et al., 2022). Scarcity of specialized training and structured career progression for oncology nursing in LMICs delays safe chemotherapy administration, symptom management, and patient navigation (Challinor et al., 2020). Early initiatives to expand advanced oncology-nursing roles, including regional master's programs, show feasibility but require sustained investment to reach scale (Lawal et al., 2023). The COVID-19 pandemic intensified burnout and redeployment, further weakening already stretched oncology teams (Semerci et al., 2023).

Pathology workforce gaps are even more acute. Sub-Saharan Africa has roughly one pathologist per 1 million people, compared with 1 per 8,000–20,000 in HICs, creating structural bottlenecks for tissue diagnosis, biomarker testing, and staging (Ngwa et al., 2022). Workforce aging, high case complexity, and long turnaround times further threaten diagnostic quality (Challinor et al., 2023). Prolonged delays from biopsy to treatment are consistently linked to advanced-stage presentation and excess mortality in LMICs (Subedi et al., 2024). In the WHO African Region, median pathology turnaround times frequently exceed nine weeks, with some countries sending samples abroad, delaying treatment initiation (WHO, 2022b). Limited immunohistochemistry capacity and significant inequities in laboratory accreditation further constrain therapeutic decision-making (WHO, 2022b; Price et al., 2024).

Radiology availability is similarly constrained. Africa has an estimated 2 radiologists per 1 million people, compared with around 116 per million in Europe and North America (Anazodo et al., 2023). Fourteen African countries reportedly have no radiologist at all, and even those with training programs, such as Ghana and Nigeria, remain far below international benchmarks (Edzie et al., 2023; Tahir et al., 2023). These shortfalls drive long waiting times for imaging, restrict access to biopsy and staging, and force dependence on overburdened generalists, contributing to late diagnosis and avoidable mortality.

Why Gender-Equitable Leadership Matters in Breast Cancer Care

Women comprise approximately 70 percent of the global health and care workforce, yet hold only about 25 percent of leadership positions, reflecting persistent vertical segregation that limits gender-responsive decision making in cancer control (WHO, 2021). They also earn, on average, 24 percent less than men in the sector, even when controlling for occupation, education, and working hours (WHO & International Labor Organization [ILO], 2022).

Workforce pressures are intensifying: women are leaving health roles in growing numbers linked to burnout and the "Great Resignation," deepening staff shortages (McKinsey & Company, 2023). Parenthood and domestic responsibilities disproportionately limit women's access to promotions, twice as often as for men (McKinsey & Company, 2023). Globally, women perform roughly 76 percent of unpaid care work, over three times men's contribution, further constraining their economic security and leadership opportunities (ILO, 2018).

If women remain excluded from the spaces where cancer priorities are set, their expertise and lived experiences cannot drive the solutions. Closing workforce gaps must therefore go hand-in-hand with closing leadership gaps, a prerequisite for equitable, accountable breast cancer control.

Mohamadamin and Shabila (2025) identify women's under-representation in leadership, exclusion from agenda-setting, and entrenched sociocultural bias as systemic barriers to responsive cancer services. Hawkes and Baru (2024) argue that closing this gap requires feminist leadership approaches that confront structural power imbalances and advance organizational justice, rather than narrow "fix-the-woman" strategies focused solely on individual skill-building.

Evidence shows that gender-balanced leadership drives improved outcomes. A scoping review of 137 studies found that women's leadership is associated with advances in six domains: financial performance and stability, innovation, ethical practice, improved health outcomes, stronger organizational climate, and the advancement of other women (Kalbarczyk et al., 2025). When decision-making power remains concentrated among men, despite a predominantly female health workforce, cancer pathways risk overlooking women's perspectives and lived experiences (WHO, 2021). Strengthening women's leadership is therefore not symbolic, it is a structural lever that also supports workforce retention, equitable career pathways, and sustainable oncology capacity, all of which are necessary to reduce delays in diagnosis and improve breast cancer outcomes.

3.6 Weak Cancer Information Systems Limit Monitoring and Accountability

Effective cancer control depends on population-based cancer registries (PBCRs), yet global coverage remains limited. Currently, only about 15 percent of the world's population is covered, restricting reliable monitoring of incidence, mortality, and survival in many settings (IARC, 2023). These gaps are compounded by weak civil-registration and vital-statistics systems: nearly 40 percent of global deaths go unregistered, and in low-income countries only around 8 percent of registered deaths have a medically certified cause, limiting accurate assessments of breast-cancer mortality and survival (WHO, 2024). Where PBCR deficits coincide with incomplete vital registration, data on stage at diagnosis, treatment, and outcomes are often missing or biased, hindering evaluation of early-detection and treatment initiatives despite the growing burden (Arnold, 2023).

The IARC Global Initiative for Cancer Registry Development supports PBCR expansion in LMICs through training and technical assistance, but substantial investment needs persist (IARC, 2023). In many settings, registries are absent, geographically limited, or incomplete, with rural populations especially under-represented. In India, only 16 percent of the population is covered by cancer registries, 32 percent in urban areas but fewer than 10 percent in rural areas, reflecting urban-centric surveillance and systematic underestimation of disease burden (Khanna et al., 2024). Even in high-income regions, data limitations remain. In Europe, despite a dense PBCR network contributing to the European Cancer Information System, variation in reporting timeliness, interoperability, and completeness constrains cross-country comparisons of stage and outcomes (Guerra et al., 2020; Giusti et al., 2024). Weak health information systems and incomplete cause-of-death data further undermine planning and resource allocation (Arnold et al., 2022).

Operational tools exist to improve consistency in stage and treatment documentation but remain under-utilized. CanReg5, IARC's platform for cancer case capture and quality checks, includes the CanStaging+ module for standardized staging and is available in multiple languages (Soerjomataram et al., 2021). Essential tumor-node-metastasis (TNM) offers simplified staging where diagnostic workups are limited (Pimeros et al., 2019). Where feasible, experts recommend recording separate T, N, and M classifications in line with the Union for International Cancer Control's *TNM Classification of Malignant Tumours, 8th Edition* to strengthen international comparability (Brierley et al., 2016).

A recent international survey of 141 PBCRs revealed marked variation in data completeness across regions and income groups (Van Eycken et al., 2025). Only 51 percent routinely capture initial treatment information and, although stage reporting has improved, classification differences limit comparability (Van Eycken et al., 2025). While 91 percent publish incidence statistics, only 60 percent publish survival data due to challenges in vital-status linkage and analytical capacity. About 62 percent use IARC's quality-control tool (IACR, 2024), and North American registries follow the North American Association of Central Cancer Registries (NAACCR) edits metafile (NAACCR, 2024).

Weak cancer information systems mask inequities, undermine accountability, and limit governments' ability to target investments that would improve timely diagnosis and survival. Strengthening data systems is therefore foundational, not optional, to advancing UHC in breast cancer care.

3.7 Cost Barriers and the Imperative of Universal Health Coverage

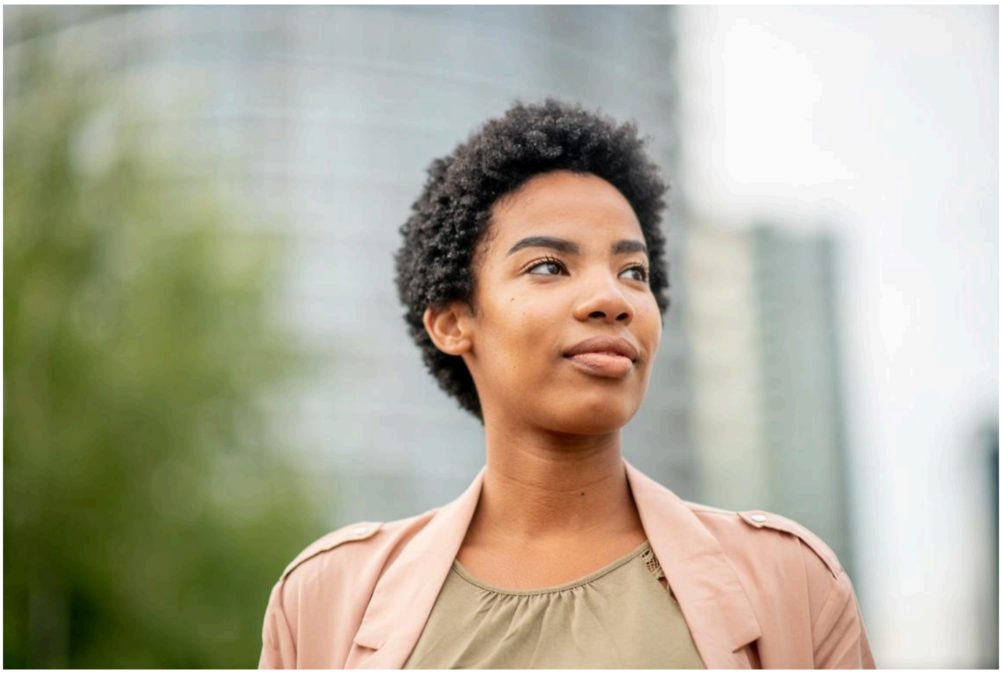
Between 1990 and 2019, global breast cancer care quality improved and disparities narrowed modestly across income levels (Wang et al., 2024). Progress has been closely linked to UHC: national service coverage is positively associated with breast cancer care quality in both high- and low-resource settings (Wang et al., 2024). Yet survival outcomes remain highly unequal. Five-year survival exceeds 90 percent in many HICs, but falls to approximately 66 percent in parts of India, and just 40 percent in South Africa (WHO, 2022a). Persistent late-stage diagnosis, limited access to timely and high-quality treatment, and inadequate inclusion of breast cancer services within Essential Health Benefits packages continue to drive these inequities (Anderson et al., 2021; Foerster et al., 2019; Gbenonsi et al., 2024; Wang et al., 2024).

Despite the growing global burden of breast cancer, financial protection remains weak. Across diverse LMIC contexts, women frequently incur catastrophic health expenditures in the process of seeking diagnosis and treatment. In Togo, fewer than 20 percent of patients have health insurance, leaving most women to shoulder the full cost of care (Ketevi et al., 2023). In Nigeria, more than 70 percent of women treated at a tertiary facility experienced catastrophic spending (Wuraola et al., 2024). Similar patterns are reported in Asia: 67 percent of affected households in China faced catastrophic expenditure despite insurance coverage (Sun et al., 2021), and 41 percent of women in Vietnam experienced severe financial toxicity (Ngan et al., 2021). Evidence from Kenya and Zambia shows that gaps in insurance coverage, high user fees, and unreliable procurement of essential medicines undermine UHC commitments and generate sustained financial hardship (UICC, 2025; Kesici & Yilmaz, 2023; Kaso et al., 2025). Affordability of supportive medicines, such as granulocyte colony-stimulating factor (G-CSF) and antiemetics, remains critical for continuity of care but is often inconsistent (Kesici & Yilmaz, 2023). Wealth and insurance status also directly influence access to earlier diagnosis. In Brazil, more than 80 percent of privately insured women are diagnosed at stages I–II, whereas over 40 percent of women reliant on the public health system, primarily serving rural and low-income populations, present with late stage III–IV disease (Guerra et al., 2020). Direct and indirect diagnostic costs, including those for imaging, biopsy, pathology, transportation, and lost wages, deter many women from seeking evaluation early (Srinath, 2024).

Financing constraints also limit early-diagnosis and palliative-care services, both essential components of UHC benefit packages. Although 70 percent of countries report cancer guidelines and 62 percent report screening programs, 40 percent face major access barriers, and fewer than half have operational palliative-care plans (Barrios, 2022; WHO, 2023b). Many LMICs rely on opportunistic rather than organized screening, resulting in inconsistent coverage, quality, and follow-up (Martei et al., 2022; WHO, 2023b). In sub-Saharan Africa, only 5 of 47 countries operate organized programs due to shortages of personnel, equipment, and referral infrastructure (Martei et al., 2022). Evidence from a cluster-randomized trial in Mumbai shows that repeated clinical breast examination with reliable referral can reduce mortality where mammography-based screening is not yet feasible (Mitra et al., 2021). Across Asia and Latin America, national guidelines exist on paper, but uptake remains low and data systems for monitoring early detection and care completion are incomplete (Ong et al., 2024; Puschel et al., 2023; Cuoghi et al., 2022; Sala et al., 2025).

Palliative-care access is similarly underfunded and uneven. Although 68 percent of African countries report some palliative-care provision, approximately 70 percent of services are concentrated in Uganda, Kenya, and South Africa (Bastos et al., 2024). Funding remains largely donor-dependent, limiting sustainability (Kagarmanova et al., 2021; Maseko et al., 2018; Rhee et al., 2018). Shortfalls in essential-pain medicines directly undermine UHC goals: morphine is available in only 52 percent of African countries, and median opioid consumption remains around 1 percent of minimum recommended levels (Bastos et al., 2021; Bastos et al., 2024).

Weak financial protection and limited-service coverage force delays in care, drive avoidable mortality, and constrain investment in the diagnostic and supportive-care systems needed to improve survival. As breast cancer is now the most frequently diagnosed cancer worldwide, ensuring timely access to essential services without financial hardship is fundamental to achieving UHC, and to closing the survival gap between women in high- and low-income countries (Wilkinson & Gathani, 2022).



4. Key Recommendations

Addressing breast cancer inequities requires more than clinical interventions, it demands action across the systems, structures, and relationships that shape women's health. Evidence from LMICs shows that delays in diagnosis and disparities in survival are driven not only by gaps in technology and infrastructure, but also by financial barriers, harmful gender norms, stigma, and exclusion from decision making. As outlined in Table 1 below, for Women in Global Health, a socio-ecological approach provides a strategic framework to tackle these interconnected drivers of inequity at multiple levels, from individual agency to national policy and adequate and sustainable health investments. To accelerate progress toward UHC, reforms must simultaneously strengthen accountability in governance, scale equitable access to quality services, and empower women with information, autonomy, and leadership opportunities.

Table 1: Women in Global Health's Socio-Ecological Approach to Addressing Breast Cancer Inequities

Public Policy (Society Level)

Leadership: Center women's voices in cancer prevention and control strategy
Elevate women as decision-makers, survivors, and advocates to ensure that breast cancer policies and programs reflect lived realities and advance gender-responsive UHC.

Financing: Mobilize sustainable resources for comprehensive care
Secure predictable, gender-responsive financing within UHC benefit packages to guarantee equitable access to early detection, treatment, supportive medicines, and palliative care without financial hardship.

Governance: Build inclusive, accountable systems

Strengthen governance mechanisms that ensure women’s participation and leadership in agenda-setting, decision-making, responsive service design, and monitoring of equity and quality across the cancer pathway.

Digital Health: Harness technologies for equitable access

Responsibly deploy digital tools, including AI-enabled risk communication and patient-navigation systems, to extend early detection, streamline referrals, and improve continuity of care within UHC frameworks.

Institutional (Health System Level)

Implement equitable, risk-stratified screening approaches

Adopt personalized protocols that address the needs of marginalized, vulnerable, and minority women, strengthening both population-based and employer-supported early detection programs to expand reach and ensure timely diagnosis.

Community (Local System Level)

Strengthen partnerships for equitable access to care

Foster collaboration between health facilities and community-based organizations to deliver outreach, navigation, and multidisciplinary services. Efficient referral mechanisms, supported by digital solutions, are essential for timely diagnosis and treatment.

Interpersonal (Family and Social Network Level)

Mitigate stigma through survivor-led communication and peer support

Use lived-experience storytelling and peer navigation networks to build trust, counter fear and misinformation, and create safe spaces where women feel supported to seek care early.

Individual (Knowledge and Agency Level)

Improve health literacy and empowerment to act on signs and symptoms

Provide culturally tailored education, case-based learning, and micro-credentialing to equip women with the information, confidence, and autonomy to access screening, genetic testing, and follow-up care.

4.1 Translating Women in Global Health's Socio-Ecological Approach into Actionable Strategies

Listed below are actions that strengthen prevention, early detection, treatment, and accountability through a gender-responsive UHC lens. Aligned with the WHO Global Breast Cancer Initiative (GBCI) and grounded in evidence-based practice, these strategies ensure that women, who comprise the majority of the health workforce and are those most affected by breast cancer, are fully centered in policy design, resource allocation, and system oversight.

A. Prevention and Awareness

Strengthen health literacy through tailored case-based learning and micro-credentialing: Integrate structured, culturally sensitive breast-cancer education into community outreach and primary care. Locally relevant case-based learning builds awareness of signs and symptoms, early detection, and referral pathways. Targeted micro-credentialing for frontline providers, educators, and community leaders standardizes accurate, culturally competent communication and expands reach.

Mitigate stigma through survivor-led narrative campaigns: Stigma remains a major barrier to early help-seeking. Policymakers should support survivor-led storytelling that normalizes screening, dispels misconceptions, and reinforces community empathy. Amplification through local media and trusted influencers accelerates behavioral change.

Establish nationally accessible psychosocial support and early-diagnosis hubs: Safe, confidential, and welcoming screening spaces increase uptake among hesitant groups. Countries should establish hubs offering counseling, health education, and early-diagnosis services. Community-building programs help reduce fear, increase trust, and support voluntary participation.

Leverage artificial intelligence (AI) for risk communication and engagement: AI-enabled digital tools, such as automated reminders and adaptive risk messaging, can help increase participation in screening and follow-up care, but they are most effective when combined with strong community education and trusted communication channels. Breast cancer education should therefore be systematically embedded into routine primary care and maternal health visits to build awareness of signs and symptoms and encourage timely help-seeking. To counter fear and misinformation, anti-stigma campaigns must be delivered in local languages, ensuring they are culturally resonant and accessible to women in rural and underserved communities. In parallel, standardized training for frontline providers in risk identification and referral processes is essential to ensure consistent early recognition of breast cancer signs and symptoms and timely linkage to diagnostic services. By pairing digital engagement with culturally grounded communication and provider readiness, health systems can accelerate early detection and reduce preventable delays in care.

B. Early Detection and Access to Treatment

Timely diagnosis and uninterrupted treatment are the strongest determinants of survival. Yet women, especially in LMICs, continue to experience late detection, fragmented referrals, high out-of-pocket costs, and limited supportive and palliative care. Comprehensive, equity-focused models embedded within UHC frameworks are essential.

Redefine high-risk populations to include underserved groups: Risk is shaped by inequitable access to timely diagnosis. Screening protocols should prioritize underserved groups to prevent systematic delays.

Adopt personalized, risk-stratified screening models: Embed validated, culturally adapted risk-assessment tools into primary care and outreach workflows to support earlier screening for high-risk women.

Strengthen community-engagement programs and local women's leadership: Partner with community-based women's organizations to build trust, align messaging with local norms, and ensure sustained participation.

Ensure gender-responsive access to diagnostic, treatment, and palliative services: Develop hub-and-spoke referral networks linking peripheral facilities with specialist centers, supported by telehealth and m-health for continuity of care. Decentralize diagnostics (e.g., portable ultrasound) to reduce travel burdens. Implement "fast-track" pathways to ensure biopsy and pathology confirmation within 2–4 weeks. Include essential breast cancer medicines (e.g., tamoxifen; basic chemotherapy) in national essential-medicines lists and fully cover them under UHC packages.

C. Leadership, Financing, Governance and Accountability

Transforming breast cancer prevention and care services requires strategic action in four mutually reinforcing domains. Leadership must center women's voices, especially survivors, frontline providers, and community advocates, to ensure that policies reflect lived experiences and drive gender-responsive priorities. Financing must mobilize sustainable, pro-poor resources that guarantee affordable access to early detection, treatment, supportive medicines, and palliative care as integral components of UHC. Governance must remove structural barriers, embed community participation in decision-making, and strengthen continuity of care across the cancer pathway. Finally, accountability must ensure transparency, structural monitoring, and measurable results through equitable data systems, performance indicators, and digital tracking of care outcomes.

Together, these four pillars form a comprehensive framework to close survival gaps, reduce financial hardship, and advance health equity for every woman affected by breast cancer.

Empower survivor-led advocacy and community mobilization: Recognize long-term breast cancer survivors as essential stakeholders in national and subnational decision-making, ensuring their expertise directly shapes service design and accountability. Their lived experience strengthens stigma-reduction efforts, builds trust in health systems, and aligns psychosocial support with women's real needs. Progress toward this goal can be demonstrated through measurable increases in survivor representation within cancer-policy consultations and through the formal integration of survivor-led initiatives into cancer-control strategies.

Promote gender-transformative leadership across oncology services: Increase women's representation in clinical, managerial, and policy leadership roles throughout oncology services so decision-making reflects the realities of those most affected. Leadership audits should track tangible progress, including the proportion of women represented in national and subnational cancer policy advisory bodies and measurable improvements in the gender balance of oncology leadership teams, with specific attention to roles held by frontline women providers and survivors. Strengthening women's leadership is essential to advancing responsive, equitable cancer care.

Establish a national financing platform for breast cancer: Mobilize domestic resources, raise public awareness, and engage private-sector and philanthropic partners to close service gaps across the continuum of care. Progress should be demonstrated through measurable annual increases in domestic and global financing, alongside expanded subsidized or fully covered screening and treatment services that reach low-income and underserved women. By institutionalizing a sustainable financing platform, not limited to awareness campaigns, countries can strengthen the affordability and continuity of breast cancer care and accelerate progress toward UHC.

Prioritize cost-efficient, high-impact screening within national budgets: Ensure fully subsidized, evidence-based early detection services (e.g., clinical breast exams) and genetic testing for high-risk women. Financing must be gender-responsive and embedded within UHC benefit packages to prevent catastrophic expenditure and increase treatment completion.

Establish population-level data-governance frameworks: Implement standardized, sex- and gender-disaggregated data on screening, stage at diagnosis, treatment initiation, survival, and financial protection to inform equitable policy action and resource allocation.

Operationalize hub-and-spoke referral networks for specialist care: Equip central hubs with multidisciplinary oncology teams while ensuring spoke facilities provide follow-up, psychosocial support, and care navigation to maintain continuity. Governance reviews should monitor the number of fully functioning regional hub-and-spoke systems and reductions in regional variation in time from diagnosis to treatment, confirming that referral pathways are efficient, equitable, and responsive to women's needs.

Deploy patient-navigation systems and digital technologies: Integrate culturally adapted navigation programs and AI-enabled tools that assist women throughout screening, diagnosis, treatment, and survivorship, addressing barriers related to literacy, language, and disability.

Establish accountability for survivor engagement and health-equity outcomes: Create monitoring frameworks to evaluate the inclusiveness, reach, and behavioral impact of survivor-led initiatives and digital outreach. Progress should be assessed through measurable improvements in women's access and experience, including reduced diagnostic delays and treatment interruptions, increased screening uptake in underserved communities, and the expansion of survivor-led peer support networks that provide ongoing guidance and encouragement. Tracking these indicators ensures that gender-responsive strategies deliver tangible gains in earlier detection, continuity of care, and women's agency in navigating their health.

5. Call to Action

Advancing breast cancer prevention and care demands urgent, gender-transformative action grounded in evidence, equity, and accountability. Despite global progress, women, especially those in low-resourced and marginalized communities, continue to experience delayed diagnosis, limited access to quality care, financial hardship, and structural gender barriers that shape health-seeking behavior and outcomes.

Transforming awareness into meaningful change requires policies and investments that elevate women's lived experiences and leadership at every level. Women in Global Health calls on all stakeholders to act with urgency:

Governments and Policymakers

Embed gender-responsive strategies in national cancer control plans, prioritizing early detection, timely and quality treatment, and financial protection. Strengthen data systems with sex- and gender-disaggregated indicators to guide equitable policy design, investment, monitoring, and accountability.

Health Care Providers

Integrate person-centered breast health services within primary care, expand community-based early-detection models, and ensure gender-sensitive, culturally competent workforce development. Engage survivors and women advocates as co-designers in service delivery and quality improvement.

Donors and Global Health Funders

Increase financing for gender-transformative initiatives, women-led innovation, and implementation research in LMICs to scale equitable access to early detection, diagnostics, and treatment.

Private Sector and Pharmaceutical Actors

Advance equitable access through fair pricing, inclusive research and development, local manufacturing, and partnerships that deploy innovative diagnostics and therapeutics to underserved populations.

Media Organizations

Combat misinformation by disseminating accurate and accessible content that promotes early detection, survivor empowerment, and informed decision-making.

Civil Society Organizations

Strengthen women's collective power by ensuring their leadership shapes policy priorities, governance and accountability mechanisms, linking grassroots advocacy to national and global decision-making.

Communities and Survivors

Champion early help-seeking, expand peer-support networks, and co-create solutions that reflect women's psychosocial and practical needs, recognizing survivors not as passive recipients of care, but as essential architects of change.

6. Conclusion

Breast cancer is a global equity challenge that demands more than incremental improvements in technology and clinical care. Closing the survival gap, now widest in the countries least equipped to manage rising incidence, requires health systems that protect women from financial hardship, recognize their autonomy, and embed their leadership in decision-making at every level. UHC cannot be realized if millions of women continue to face delayed diagnosis, unaffordable treatment, and preventable loss of life.

Evidence shows what works: decentralized early-detection services, strong referral systems, access to quality treatment, equitable financing, and governance structures that hold institutions accountable for outcomes. But progress will only accelerate when women's voices, those of frontline health professionals, advocates, and survivors, shape how priorities are set, resources are allocated, and impact is measured.

Governments, donors, civil society, and private sector partners must sustain momentum and resource breast cancer prevention and care as both a health and human rights imperative. Every woman, wherever she lives, should be able to recognize signs and symptoms, access timely and high-quality treatment, complete care without financial devastation, and participate fully in the systems that govern her health.

Investing in women's health is investing in families, communities, and national economies. By centering gender equity within breast cancer strategies, countries can save lives today and transform the future of cancer care for generations to come.

About Women in Global Health

Founded in 2015, Women in Global Health is a women-led movement powered by thousands of members in over 65 Chapters across 60 countries. Our mission is to advance gender equity and women's leadership in global health. By strengthening women's voice and agency, and by driving gender-transformative policies, laws, and practices, we are working to build health systems that are more inclusive, accountable, and equitable.

Join the movement to transform global health for women.

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References

Agbedinu, K., Antwi, S., Aduse-Poku, L., Akakpo, P. K., Larrious-Lartey, H., Aboah, V. O., Mensah, S., Nyarko, V., Amponsah-Manu, F., Nsaful, J., Dampson, R., Nortey, M., Aja, I., Sheriff, M., Dokurugu, M. A., Affram, N., Mremi, A., Mwakyembe, T., Kamita, M., … Jiagge, E. (2025). A scoping review on barriers to cancer diagnosis and care in low- and middle-income countries. *Cancer Epidemiology, Biomarkers & Prevention, 34*(7), 1066–1073. https://doi.org/10.1158/1055-9965.EPI-25-0120

Anazodo, U. C., Ng, J. J., Ehiogu, B., et al. (2023). A framework for advancing sustainable magnetic resonance imaging access in Africa. *NMR in Biomedicine, 36*(3), e4846. https://doi.org/10.1002/nbm.4846

Anderson, B. O., Ilbawi, A., Martins, V., & Varghese, C. (2021). The Global Breast Cancer Initiative: A strategic collaboration to strengthen health care for non-communicable diseases. *The Lancet Oncology, 22*(5), 578–581. https://doi.org/10.1016/S1470-2045(21)00071-1

Arnold, M., Morgan, E., Rumgay, H., Mafra, A., Singh, D., Laversanne, M., Vignat, J., Gralow, J. R., Cardoso, F., Siesling, S., & Soerjomataram, I. (2022). Current and future burden of breast cancer: Global statistics for 2020 and 2040. *The Breast, 66*, 15–23. https://doi.org/10.1016/j.breast.2022.08.010

Asare, E. A., Cowan, L., & Onega, T. (2024). Use of telehealth to improve healthcare access and outcomes in surgical oncology. *Journal of Surgical Oncology, 130*(7), 1502–1508. https://doi.org/10.1002/jso.27844

Bacchi, C. L. (1999). *Women, policy and politics: The construction of policy problems*. SAGE Publications. https://doi.org/10.4135/9781446217887

Barrios, C. H. (2022). Global challenges in breast cancer detection and treatment. *The Breast, 62*, S3–S6. https://doi.org/10.1016/j.breast.2022.03.003

Bastos, F., Garralda, E., Montero, A., Rhee, J. Y., Arias-Casais, N., Luyirika, E., … Tripodoro, V. A. (2024). Comprehensive scoping review of palliative care development in Africa: Recent advances and persistent gaps. *Frontiers in Health Services, 4*, 1425353. https://doi.org/10.3389/frhs.2024.1425353

Belete, N. G., Bhakta, M., Wilfong, T., Shewangizaw, M., Abera, E. A., Tenaw, Y., Shawel, M., Seife, H., Habtamu, B., Wondwossen, N., & Wood, E. A. (2025). Exploring the impact of breast cancer support groups on survivorship and treatment decision-making in eastern Ethiopia: A qualitative study. *Supportive Care in Cancer, 33*(5), 419. https://doi.org/10.1007/s00520-025-09475-w

Bertagnolli, M. M. (2020). Cancer care in the rural United States: A visitor's perspective from Appalachian Ohio; Pine Ridge, South Dakota; and Sidney, Montana. *JCO Oncology Practice, 16*(7), 405–407. https://doi.org/10.1200/OP.20.00244

Bhoo-Pathy, N., Yip, C. H., Peters, S. A. E., Kimman, M., Sullivan, R., Jan, S., … Suharti, C. (2017). Policy and priorities for national cancer control planning in low- and middle-income countries: Lessons from the ASEAN Costs in Oncology prospective cohort study. *European Journal of Cancer, 74*, 26–37. https://doi.org/10.1016/j.ejca.2017.01.030

Cai, Y., Dai, F., Ye, Y., & Qian, J. (2025). The global burden of breast cancer among women of reproductive age: A comprehensive analysis. *Scientific Reports, 15*(1), 9347. https://doi.org/10.1038/s41598-025-19347-0

Centers for Disease Control and Prevention. (2022). *Health and economic benefits of breast cancer interventions*. U.S. Department of Health and Human Services. https://www.cdc.gov/nccdphp/priorities/breast-cancer.html

Challinor, J. M., Alqudimat, M. R., Teixeira, T. O. A., & Oldenmenger, W. H. (2020). Oncology nursing workforce: Challenges, solutions, and future strategies. *The Lancet Oncology, 21*(12), e564–e574. https://doi.org/10.1016/S1470-2045(20)30513-0

Chandak, A., Nayar, P., & Lin, G. (2019). Rural–urban disparities in access to breast cancer screening: A spatial clustering analysis. *The Journal of Rural Health, 35*(2), 229–235. https://doi.org/10.1111/jrh.12308

Chia, J. L. L., He, G. S., Ngiam, K. Y., Hartman, M., Ng, Q. X., & Goh, S. S. N. (2025). Harnessing artificial intelligence to enhance global breast cancer care: A scoping review of applications, outcomes, and challenges. *Cancers, 17*(2), 197. https://doi.org/10.3390/cancers17020197

Chua, A., Nguyen, E., Puah, L. L., Soong, J., & Keesing, S. (2022). Experiences of people with cancer from rural and remote areas of Western Australia using supported accommodation in Perth while undergoing treatment. *Current Oncology, 29*(2), 1190–1200. https://doi.org/10.3390/curroncol29020101

Coles, C. E., Earl, H., Anderson, B. O., Barrios, C. H., Bienz, M., Bliss, J. M., … Zikmund-Fisher, B. (2024). The Lancet Breast Cancer Commission. *The Lancet, 403*(10439), 1895–1950. https://doi.org/10.1016/S0140-6736(24)00747-5

Cuoghi, I. C., da Silva Soares, M. F., Dos Santos, G. M. C., Dos-Reis, F. J. C., Poli-Neto, O. B., de Andrade, J. M., … Tiezzi, D. G. (2022). 10-year opportunistic mammographic screening scenario in Brazil and its impact on breast cancer early detection: A nationwide population-based study. *Journal of Global Health, 12*, 04061. https://doi.org/10.7189/jogh.12.04061

Dhatt, R., & Keeling, A. (2021). Delivered by women, led by women: The future of global health leadership. *Leader to Leader, 2021*(100), 43–47. https://doi.org/10.1002/ltl.20568

Dhatt, R., John, P., & Thompson, R. (2024). Unlocking potential: Women's leadership and innovation for health. In *Resilient health* (pp. 703–712). Academic Press.

Edzie, E. K. M., Dzefi-Tettey, K., Asemah, A. R., Brakohiapa, E. K., Asiamah, S., Quarshie, F., Amankwa, A. T., Raj, A., Nimo, O., Boadi, E., Kpobi, J. M., Edzie, R. A., Osei, B., Turkson, V., & Kusodzi, H. (2023). Perspectives of radiologists in Ghana about the emerging role of artificial intelligence in radiology. *Heliyon, 9*(5), e15558. https://doi.org/10.1016/j.heliyon.2023.e15558

Ehsan, A. N., Wu, C. A., Minasian, A., Singh, T., Bass, M., Pace, L., … Ranganathan, K. (2023). Financial toxicity among patients with breast cancer worldwide: A systematic review and meta-analysis. *JAMA Network Open, 6*(2), e2255388. https://doi.org/10.1001/jamanetworkopen.2022.55388

El Jiar, M., Eliahiai, I., Chaib, S., Elmorabit, K., Mouatakid, M., Kharmoum, J., & Chraibi, M. (2024). The state of telepathology in Africa in the age of digital pathology advancements: A bibliometric analysis and literature review. *Cureus, 16*(7), e63835. https://doi.org/10.7759/cureus.63835

European Commission. (2020). *Breast cancer burden in EU-27.* https://ecis.jrc.ec.europa.eu/sites/default/files/2023-12/Breast_cancer_en-Dec_2020.pdf

European Observatory on Health Systems and Policies. (2021). *State of health in the EU: Portugal country health profile 2021*. OECD Publishing. https://doi.org/10.1787/2f5e2e8d-en

Eurostat. (n.d.). *Cancer screening statistics*. European Commission. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Cancer_screening_statistics

Fan, Q., Nogueira, L., Yabroff, K. R., Hussaini, S. M. Q., & Pollack, C. E. (2022). Housing and cancer care and outcomes: A systematic review. *Journal of the National Cancer Institute, 114*(12), 1601–1618. https://doi.org/10.1093/jnci/djac141

Foerster, M., Anderson, B. O., McKenzie, F., *et al.* (2019). Inequities in breast cancer treatment in sub-Saharan Africa: Findings from a prospective multi-country observational study. *Breast Cancer Research, 21*, 93. https://doi.org/10.1186/s13058-019-1174-4

Galukande, M., Schüz, J., Anderson, B. O., Zietsman, A., Adisa, C., Anele, A., Parham, G., Pinder, L. F., Mutumba, S., Lombe, D., Cabanes, A., Foerster, M., & McCormack, V. (2021). Maternally orphaned children and intergenerational concerns associated with breast cancer deaths among women in sub-Saharan Africa. *JAMA Oncology, 7*(2), 285–289. https://doi.org/10.1001/jamaoncol.2020.6583

Gao, M., Wik, S. L., Yu, Q., Xue, F., Chan, S. C., Chow, S. H., Adebisi, Y. A., Zhong, C. C., Lucero-Prisno, D. E., Wong, M. C., Huang, J., & Global Health Focus Epidemiology Group. (2024). Disease burden, risk factors, and temporal trends in breast cancer in low- and middle-income countries: A global study. *Public Health Challenges, 3*(3), e223. https://doi.org/10.1002/puh2.223

Gbenonsi, G. Y., Martini, J., & Mahieu, C. (2024). An analytical framework for breast cancer public policies in sub-Saharan Africa: Results from a comprehensive literature review and an adapted policy Delphi. *BMC Public Health, 24*, 1535. https://doi.org/10.1186/s12889-024-18937-5

George, A. (2015). Women's leadership and governance in health: A review. *Journal of Health Management, 17*(2), 147–158. https://doi.org/10.1177/0972063415585973

Giusti, F., Martos, C., Carvalho, R. N., Zadnik, V., Visser, O., Bettio, M., & Van Eycken, L. (2024). Facing further challenges in cancer data quality and harmonisation. *Frontiers in Oncology, 14*, 1438805. https://doi.org/10.3389/fonc.2024.1438805

Gori, S., De Rose, F., Ferro, A., Fabi, A., Angiolini, C., Azzarello, G., … Zambelli, A. (2024). Follow-up of early breast cancer in a public health system: A 2024 AIGOM consensus project. *Cancer Treatment Reviews, 131*, 102832. https://doi.org/10.1016/j.ctrv.2024.102832

Guerra, M. R., Nogueira, M. C., Malta, D. C., Côrrea, C. S. L., de Souza, M. D. F. M., Curado, M. P., & Bustamante-Teixeira, M. T. (2020). Inequalities in the burden of female breast cancer in Brazil, 1990–2017. *Population Health Metrics, 18*(Suppl 1), 8. https://doi.org/10.1186/s12963-020-00211-1

Guida, F., Kidman, R., Ferlay, J., Schüz, J., Soerjomataram, I., Kithaka, B., Ginsburg, O., Mailhot Vega, R. B., Galukande, M., Parham, G., Vaccarella, S., Canfell, K., Ilbawi, A. M., Anderson, B. O., … McCormack, V. (2022). Global and regional estimates of orphans attributed to maternal cancer mortality in 2020. *Nature Medicine, 28*(12), 2563–2572. https://doi.org/10.1038/s41591-022-02109-2

Gupta, S., Sinha Gupta, S., De, A., Banerjee, R., & Goel, S. (2024). Socio-cultural and financial issues against breast cancer screening behaviour among eligible Indian women: Evidence for action. *Breast Cancer Research and Treatment, 205*(1), 169–179. https://doi.org/10.1007/s10549-024-07244-7

Hawkes, S., & Baru, R. (2024). Dismantling the structures of inequality: Why we need feminist leadership in the health sector. *BMJ, 386*, e078927. https://doi.org/10.1136/bmj-2023-078927

Hirko, K. A., Kerver, J. M., Ford, S., Szafranski, C., Beckett, J., Kitchen, C., & Wendling, A. L. (2020). Telehealth in response to the COVID-19 pandemic: Implications for rural health disparities. *Journal of the American Medical Informatics Association, 27*(11), 1816–1818. https://doi.org/10.1093/jamia/ocaa156

Hughes, A. E., Lee, S. C., Eberth, J. M., Berry, E., & Pruitt, S. L. (2020). Do mobile units contribute to spatial accessibility to mammography for uninsured women? *Preventive Medicine, 138*, 106156. https://doi.org/10.1016/j.ypmed.2020.106156

International Agency for Research on Cancer. (2023). *The value of cancer data.* https://gicr.iarc.fr/about-the-gicr/the-value-of-cancer-data/

International Agency for Research on Cancer. (2024, March). *Maternal orphans due to cancer: The intergenerational impact of cancer deaths in women* (IARC Evidence Summary Brief No. 5). https://www.iarc.who.int/wp-content/uploads/2024/03/IARC_Evidence_Summary_Brief_5.pdf

International Association of Cancer Registries. (2024). *Check and conversion program.* http://www.iacr.com.fr/index.php?option=com_content&view=article&id=72:iarccrgtools&catid=68&Itemid=445

International Federation of Pharmaceutical Manufacturers & Associations. (2023). *Equitable access to oncology innovation report*. https://www.ifpma.org

International Labour Organization. (2018). *Care work and care jobs for the future of decent work.* https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40dgreports/%40dcomm/%40publ/documents/publication/wcms_633135.pd

Johnston, K., Smith, D., Preston, R., Evans, R., Carlisle, K., Lengren, J., … Larkins, S. (2020). From the technology came the idea: Safe implementation and operation of a high-quality teleradiology model increasing access to timely breast cancer assessment services for women in rural Australia. *BMC Health Services Research, 20*(1), 1103. https://doi.org/10.1186/s12913-020-05950-9

Kabeer, N., & Natali, L. (2013). Gender equality, economic growth, and women's agency: A review of the evidence. *Gender & Development, 21*(2), 271–287. https://doi.org/10.1080/13552074.2013.801641

Kagarmanova, A., Donald Mwesiga, M., Sisk, M. L., Kabagambe, C., Nyakaisiki, S., Marentette, T., … et al. (2021). Palliative care in Uganda: Quantitative descriptive study of key palliative care indicators 2018–2020. *BMC Palliative Care, 21*, 55. https://doi.org/10.1186/s12904-021-00757-4

Kalbarczyk, A., Banchoff, K., Perry, K. E., Pram Nielsen, C., Malhotra, A., & Morgan, R. (2025). A scoping review on the impact of women's global leadership: Evidence to inform health leadership. *BMJ Global Health, 10*(2), e015982. https://doi.org/10.1136/bmjgh-2024-015982

Kaso, A. W., Regesu, A. H., Haftu, H. K., Agero, G., Jima, G. H., Kaso, T., Hailu, A., Biesma, R., & Stekelenburg, J. (2025). Magnitude of catastrophic health expenditure and its determinants among cancer patients in low- and middle-income countries: A systematic review and meta-analysis. *BMC Health Services Research, 25*(1), 1533. https://doi.org/10.1186/s12913-025-13723-4

Kesici, Z., & Yilmaz, V. (2023). Insurance-based disparities in breast cancer treatment pathways in a universal healthcare system: A qualitative study. *BMC Health Services Research, 23*(1), 112. https://doi.org/10.1186/s12913-023-09108-0

Ketevi, A. A., Adani-Ifè, S., Sena, A. K., Besssolo, L., Bassowa, A., Edem, L.-A., Diakite, A., Andele, K. A., Katende, B., Rahim, A. A., Douaguibe, B., Ajavon, D. R. D., Aboubakari, A. S., & Akpadza, K. (2023). Direct medical cost of breast cancer care in Lomé: Case of Sylvanus Olympio University Hospital and International Cancer Centre. *Open Access Library Journal, 10*(9), 1–10. https://doi.org/10.4236/oalib.1110724

Khanna, D., Sharma, P., Budukh, A., Vishwakarma, R., Sharma, A. N., Bagal, S., … Pradhan, S. (2024). Rural–urban disparity in cancer burden and care: Findings from an Indian cancer registry. *BMC Cancer, 24*(1), 308. https://doi.org/10.1186/s12885-024-12041-y

Kiely, B., Travado, L., Smith, A. L., Timeus, I. A., Kim, S.-B., Haidinger, R., … Cardoso, F. (2025). Increasing awareness of and referral to support services in advanced breast cancer: A global expert review and call to action for 2025–2035 (Goal 7). *The Breast*, 104604. https://doi.org/10.1016/j.breast.2025.104604

Kim, J., Harper, A., McCormack, V., Sung, H., Houssami, N., Morgan, E., … Fidler-Benaoudia, M. M. (2025). Global patterns and trends in breast cancer incidence and mortality across 185 countries. *Nature Medicine, 31*(4), 1154–1162. https://doi.org/10.1038/s41591-025-03502-3

Knudsen, K. E., Willman, C., & Winn, R. (2021). Optimizing the use of telemedicine in oncology care: Postpandemic opportunities. *Clinical Cancer Research, 27*(4), 933–936. https://doi.org/10.1158/1078-0432.CCR-20-3720

Kong, Y.-C., Wong, L.-P., Ng, C.-W., Taib, N. A., Bhoo-Pathy, N. T., Yusof, M. M., Aziz, A. F., Yehgambaram, P., Ishak, W. Z. W., Yip, C.-H., & Bhoo-Pathy, N. (2020). Understanding the financial needs following diagnosis of breast cancer in a setting with universal health coverage. *The Oncologist, 25*(6), 497–504. https://doi.org/10.1634/theoncologist.2019-0426

Lawal, N. H., Maliti, B. K., Maree, J. E., Nanre, M. N., Niyomugabo, C., Odai, R. M. A., … Fitch, M. I. (2023). Growth and development of oncology nursing in Africa. *Annals of Palliative Medicine, 12*(5), 1026035–1021035. https://doi.org/10.21037/apm-22-1022

LeBlanc, G., Lee, I., Carretta, H., Luo, Y., Sinha, D., & Rust, G. (2022). Rural–urban differences in breast cancer stage at diagnosis. *Women's Health Reports, 3*(1), 207–214. https://doi.org/10.1089/whr.2021.0082

Lee, M., Tsai, M. H., Tillewein, H., & Luckey, G. S. (2024). Rural–urban disparities in telemedicine use among U.S. adults with cancer. *Telemedicine and e-Health, 30*(6), 1539–1548. https://doi.org/10.1089/tmj.2023.0572

Levit, L. A., Byatt, L., Lyss, A. P., Paskett, E. D., Levit, K., Kirkwood, K., … Schilsky, R. L. (2020). Closing the rural cancer care gap: Three institutional approaches. *JCO Oncology Practice, 16*(7), 422–430. https://doi.org/10.1200/OP.20.00174

Liebermann, E., Sego, R., Vieira, D., Cheng, Q., Xu, B., Arome, M., … So, W. K. (2023). Roles and activities of nurses in cancer prevention and early detection in low- and middle-income countries: A scoping review. *Asia-Pacific Journal of Oncology Nursing, 10*(7), 100242. https://doi.org/10.1016/j.apjon.2023.100242

Luyirika, E., Lohman, D., Ali, Z., Atieno, M., Mahenge, A., Mmbando, P., … et al. (2022). Progress update: Palliative care development between 2017 and 2020 in five African countries. *Journal of Pain and Symptom Management, 63*(5), 729–736. https://doi.org/10.1016/j.jpainsymman.2021.12.026

Martei, Y. M., Dauda, B., & Vanderpuye, V. (2022). Breast cancer screening in sub-Saharan Africa: A systematic review and ethical appraisal. *BMC Cancer, 22*, 203. https://doi.org/10.1186/s12885-022-09265-1

McKinsey & Company. (2023, March). *Women in the healthcare industry: An update* [Report]. https://www.mckinsey.com/industries/healthcare/our-insights/women-in-healthcare-and-life-sciences-the-ongoing-stress-of-covid-19

Mittra, I., Mishra, G. A., Dikshit, R. P., Gupta, S., Kulkarni, V. Y., Shaikh, H. K. A., … Badwe, R. A. (2021). Effect of screening by clinical breast examination on breast cancer incidence and mortality after 20 years: Prospective, cluster randomised controlled trial in Mumbai. *BMJ, 372*, n256. https://doi.org/10.1136/bmj.n256

Monticciolo, D. L., Newell, M. S., Moy, L., Niell, B., Monsees, B., & Sickles, E. A. (2018). Breast cancer screening in women at higher-than-average risk: Recommendations from the ACR. *Journal of the American College of Radiology, 15*(3), 408–414. https://doi.org/10.1016/j.jacr.2017.11.034

Mwamba, M., Lombe, D. C., Msadabwe, S., Bond, V., Simwinga, M., Ssemata, A. S., … Aggarwal, A. (2023). A narrative synthesis of literature on the barriers to timely diagnosis and treatment of cancer in sub-Saharan Africa. *Clinical Oncology, 35*(9), e537–e548. https://doi.org/10.1016/j.clon.2023.05.011

Mwobobia, J. M., Sardana, S., Abouelella, D., Posani, S., Ledbetter, L., Graton, M., Osazuwa-Peters, N., & Knettel, B. A. (2025). Experiences of cancer-related stigma in Africa: A scoping review. International Journal of Cancer, 156(12), 2265–2282. https://doi.org/10.1002/ijc.35376

Nayyar, S., Chakole, S., Taksande, A. B., Prasad, R., Munjewar, P. K., Wanjari, M. B., … Wanjari, M. (2023). From awareness to action: A review of efforts to reduce disparities in breast cancer screening. *Cureus, 15*(6), e40674. https://doi.org/10.7759/cureus.40674

Newman, L. A. (2017). Breast cancer disparities: Socioeconomic factors versus biology. *Annals of Surgical Oncology, 24*(10), 2869–2875. https://doi.org/10.1245/s10434-017-5977-1

Ngan, T. T., Van Minh, H., Donnelly, M., & O'Neill, C. (2021). Financial toxicity due to breast cancer treatment in low- and middle-income countries: Evidence from Vietnam. *Supportive Care in Cancer, 29*(11), 6325–6333. https://doi.org/10.1007/s00520-021-06210-z

Ngwa, W., Addai, B. W., Adewole, I., Ainsworth, V., Alaro, J., Alatise, O. I., … Kerr, D. (2022). Cancer in sub-Saharan Africa: A *Lancet Oncology* Commission. *The Lancet Oncology, 23*(6), e251–e312. https://doi.org/10.1016/S1470-2045(22)00143-3

O'Donovan, J., Newcomb, A., MacRae, M. C., Vieira, D., Onyilofor, C., & Ginsburg, O. (2020). Community health workers and early detection of breast cancer in low-income and middle-income countries: A systematic scoping review of the literature. *BMJ Global Health, 5*(5), e002466. https://doi.org/10.1136/bmjgh-2020-002466

Ong, S. K., Haruyama, R., Yip, C. H., Ngan, T. T., Li, J., Lai, D., … Anderson, B. O. (2024). Feasibility of monitoring Global Breast Cancer Initiative framework key performance indicators in 21

Asian National Cancer Centers Alliance member countries. *EClinicalMedicine, 67*, 102365. https://doi.org/10.1016/S2589-5370(23)00542-4

Oystacher, T., Blasco, D., He, E., Huang, D., Schear, R., McGoldrick, D., Link, B., & Yang, L. H. (2018). Understanding stigma as a barrier to accessing cancer treatment in South Africa: Implications for public health campaigns. *The Pan African Medical Journal, 29*, 73. https://doi.org/10.11604/pamj.2018.29.73.14399

Pace, L. E., & Keating, N. L. (2024). *New recommendations for breast cancer screening—In pursuit of health equity. JAMA Network Open, 7*(4), e2411638. https://doi.org/10.1001/jamanetworkopen.2024.11638

Pace, L. E., de Dieu Uwihaye, J., Mukandayisenga, V., Fata, A. M., Rositch, A. F., Byiringiro, J., … Cubaka, V. (2025). *Early experience scaling up a breast cancer early detection initiative integrated with cervical cancer screening in Rwanda. BMJ Global Health, 10*(10), e014567. https://doi.org/10.1136/bmjgh-2025-014567

Patil, P., Sarang, B., Bhandarkar, P., Ghoshal, R., Roy, N., & Gadgil, A. (2023). Does women's empowerment and their socioeconomic condition affect the uptake of breast cancer screening? Findings from NFHS-5, India. *BMC Women's Health, 23*(1), 7. https://doi.org/10.1186/s12905-022-02147-5

Pascha, V. A. M., Sun, L., Gilardino, R., & Legood, R. (2021). Telemammography for breast cancer screening: A cost-effective approach in Argentina. *BMJ Health & Care Informatics, 28*(1), e100351. https://doi.org/10.1136/bmjhci-2021-100351

Piñeros, M., Parkin, D. M., Ward, K., Chokunonga, E., Ervik, M., Farrugia, H., … Bray, F. (2019). Essential TNM: A registry tool to reduce gaps in cancer staging information. *The Lancet Oncology, 20*(2), e103–e111. https://doi.org/10.1016/S1470-2045(18)30811-2

Ponce-Chazarri, L., Ponce-Blandón, J. A., Immordino, P., Giordano, A., & Morales, F. (2023). Barriers to breast cancer-screening adherence in vulnerable populations. *Cancers, 15*(3), 604. https://doi.org/10.3390/cancers15030604

Puschel, K., Paz, S., Fowler, M., Vescovic, Z., Fuentes, I., Sanchez, C., & Acevedo, F. (2023). Breast cancer screening in Latin America: The challenge to move from opportunistic to organized-systematic screening. *Medical Research Archives, 11*(11), 1–15. https://doi.org/10.18103/mra.v 11i11.4752

Rahman, A., Cheng, C. L., Salim, R., Goh Di Shen, H., Gallagher, W. M., & Iqbal, J. (2025). Digital pathology and AI: Enhancing molecular diagnostics in low- and middle-income countries. *Expert Review of Molecular Diagnostics*. Advance online publication. https://doi.org/10.1080/14737159.2025.2581687

Rao, R., Kuerer, H., Cristofanilli, M., Brigilio, K., Shukla, S., Rao, M., & Krishnamurthy, S. (2008). Breast cancer in the Asian Indian population of the United States: A call for screening and education. *The Breast Journal, 14*(4), 402–403. https://doi.org/10.1111/j.1524-4741.2008.00613.x

Rebner, M., & Pai, V. R. (2020). Breast cancer screening recommendations: African American women are at a disadvantage. *Journal of Breast Imaging, 2*(5), 416–421. https://doi.org/10.1093/jbi/wbaa067

Rhee, J. Y., Garralda, E., Namisango, E., Luyirika, E., de Lima, L., Powell, R. A., … Harding, R. (2018). Factors affecting palliative care development in Africa: In-country experts' perceptions in seven countries. *Journal of Pain and Symptom Management, 55*(5), 1313–1320.e2. https://doi.org/10.1016/j.jpainsymman.2017.12.029

Sala, D. C. P., Tanaka, O. Y., Luz, R. A., Balsanelli, A. P., Venancio, S. I., Louvison, M. C. P., & Baumann, A. A. (2025). Barriers and facilitators of the implementation of mammography screening in the Brazilian public health system: Scoping review. *BMC Public Health, 25*(1), 1659. https://doi.org/10.1186/s12889-025-19622-0

Saldaña-Téllez, M., Meneses-Navarro, S., Cano-Garduño, L., & Unger-Saldaña, K. (2024). Barriers and facilitators for breast cancer early diagnosis in an indigenous community in Mexico: Voices of Otomí women. *BMC Women's Health, 24*(1), 33. https://doi.org/10.1186/s12905-023-02875-2

Santucci, C., Mignozzi, S., Levi, F., Malvezzi, M., Boffetta, P., Negri, E., & La Vecchia, C. (2025). European cancer mortality predictions for the year 2025 with focus on breast cancer. *Annals of Oncology, 36*(4), 460–468. https://doi.org/10.1016/j.annonc.2025.01.014

Semerci, R., Baykara, F., Mezgebu, E., Celis, E., Banayat, A., Tupaz, A. J., … Challinor, J. (2023). Current global oncology nursing with highlights from five low- and middle-income countries. *Asia-Pacific Journal of Oncology Nursing, 10*(1), 28–33.

Siddharth, S., & Sharma, D. (2018). Racial disparity and triple-negative breast cancer in African-American women: A multifaceted affair between obesity biology and socioeconomic determinants. *Cancers, 10*(12), 514. https://doi.org/10.3390/cancers10120514

Smith, A. J., Pancoe, S., Lynch, M. P., Wachlin, M., Powell, K., Hinkle, S. N., … Ko, E. M. (2025). Rideshare services for transportation assistance in gynecologic oncology: A quality improvement study. *BMC Health Services Research, 25*(1), 251. https://doi.org/10.1186/s12913-025-12296-6

Soerjomataram, I., Ervik, M., Fox, C., *et al.* (2021). CanStaging+: An electronic staging tool for population-based cancer registries. *The Lancet Oncology, 22*(8), 1069–1078. https://doi.org/10.1016/S1470-2045(21)00219-4

Soerjomataram, I., Cabasag, C., Bardot, A., Fidler-Benaoudia, M. M., Miranda-Filho, A., Ferlay, J., … Bray, F. (2023). Cancer survival in Africa, Central and South America, and Asia (SURVCAN-3): A population-based benchmarking study in 32 countries. *The Lancet Oncology, 24*(1), 22–32. https://doi.org/10.1016/S1470-2045(22)00704-5

Srinath, A., van Merode, F., Rao, S. V., & Pavlova, M. (2023). Barriers to cervical cancer and breast cancer screening uptake in low- and middle-income countries: A systematic review. *Health Policy and Planning, 38*(4), 509–527. https://doi.org/10.1093/heapol/czad014

Subedi, R., Houssami, N., Nickson, C., Nepal, A., Campbell, D., David, M., & Yu, X. Q. (2024). Factors influencing the time to diagnosis and treatment of breast cancer among women in low- and middle-income countries: A systematic review. *The Breast, 75*, 103714. https://doi.org/10.1016/j.breast.2024.103714

Sun, C., Shi, J., Fu, W., Zhang, X., Liu, G., Chen, W., & He, J. (2021). Catastrophic health expenditure and its determinants among households with breast cancer patients in China: A multicentre, cross-sectional survey. *Frontiers in Public Health, 9*, Article 704700. https://doi.org/10.3389/fpubh.2021.704700

Tahir, M., Ashraf, S., Tariq, W., Cheema, M., Asghar, M., & Yousaf, Z. (2023). The future role of forensic radiology: Scope and challenges. *Radiología, 65*(4), 385–386. https://doi.org/10.1016/j.rx.2023.02.007

Tawfiles, D., Chen, J., Tawfiles, M., Jones, S., Ho, F. D. V., Feliciano, E. J. G., … Dee, E. C. (2025). Female breast cancer burden among adolescent and young adults in North Africa. *Breast Cancer (Tokyo, Japan), 32*(6), 1336–1345. https://doi.org/10.1007/s12282-025-01755-x

Tian, L., Huang, L., Liu, J., Li, X., Ajmal, A., Ajmal, M., Yao, Y., & Tian, L. (2022). Impact of patient navigation on population-based breast screening: A systematic review and meta-analysis of randomized clinical trials. *Journal of General Internal Medicine, 37*(11), 2811–2820. https://doi.org/10.1007/s11606-022-07641-y

Tulsidás, S., Fontes, F., Brandão, M., Lunet, N., & Carrilho, C. (2023). Oncology in Mozambique: Overview of the diagnostic, treatment, and research capacity. *Cancers, 15*(4), 1163. https://doi.org/10.3390/cancers15041163

Union for International Cancer Control (UICC). (2025). *Closing the breast cancer gap in low- and middle-income countries.* https://www.uicc.org/news-and-updates/news/25-10-closing-breast-cancer-gap-low-and-middle-income-countries

Union for International Cancer Control. (2025). *Strengthening equitable access to breast cancer care through national health policies* (Policy report). https://www.uicc.org/sites/default/files/2025-10/uicc_breast-cancer-advocacy_report_fa-1.pdf

Van Eycken, L. J., Giannopoulos, E., Tittenbrun, Z., Piñeros, M., Mery, L., Rahal, R., Helliwell, T. R., Kohler, B. A., Aitken, J. F., Rous, B. A., O'Sullivan, B., Johnson, S. E., Gospodarowicz, M. K., & Brierley, J. D. (2025). Future of population-based cancer registries: A global perspective-A survey of population-based cancer registries. *International journal of cancer,* 157(8), 1566–1576. https://doi.org/10.1002/ijc.35516

Waldhorn, I., Dekel, A., Morozov, A., Alon, E. S., Stave, D., Tsrooya, N. B., Schlosser, S., Markel, G., Bomze, D., & Meirson, T. (2022). Trends in women's leadership of oncology clinical trials. *Frontiers in Oncology, 12*. .https://doi.org/10.3389/fonc.2022.885275

Wang, M., Song, S., Jin, Y., & Zheng, Z. (2024). Role of universal health coverage in improving quality of breast cancer care: An international comparison study. *BMJ Public Health, 2*(2), e000863. https://doi.org/10.1136/bmjph-2023-000863

Weber, E., Carmona-Gonzalez, C. A., Boucher, M., Eisen, A., Laing, K., Melvin, J., … Gelmon, K. A. (2025). Canadian recommendations for germline genetic testing of patients with breast cancer: A call to action. *Current Oncology, 32*(6), 290. https://doi.org/10.3390/curroncol32060290

Wercholuk, A. N., Parikh, A. A., & Snyder, R. A. (2022). The road less traveled: Transportation barriers to cancer care delivery in the rural patient population. *JCO Oncology Practice, 18*(9), 652–662. https://doi.org/10.1200/OP.21.00677

Wheeler, S. B., Spencer, J. C., Pinheiro, L. C., Carey, L. A., Olshan, A. F., & Reeder-Hayes, K. E. (2018). Financial impact of breast cancer in Black versus White women. *Journal of Clinical Oncology, 36*(17), 1695–1701. https://doi.org/10.1200/JCO.2017.77.6310

Wilkinson, L., & Gathani, T. (2022). Understanding breast cancer as a global health concern. *The British Journal of Radiology, 95*(1130), 20211033. https://doi.org/10.1259/bjr.20211033

Women in Global Health. (2023). *The state of women and leadership in global health.* https://womeningh.org/sheshapes/

World Bank. (n.d.). *Togo.* World Bank Open Data. Retrieved December 8, 2025, from https://data.worldbank.org/country/togo

World Health Organization. (2019). *Delivered by women, led by men: A gender and equity analysis of the global health and social workforce* (Human Resources for Health Observer Series No. 24). World Health Organization.

World Health Organization. (2021, June). *Closing the leadership gap: Gender equity and leadership in the global health and care workforce* (Policy action paper). https://www.who.int/publications/i/item/9789240025905

World Health Organization. (2021). *Gender and health.* https://www.who.int/news-room/questions-and-answers/item/gender-and-health

World Health Organization. (2021). *Global strategic directions for nursing and midwifery 2021–2025.* World Health Organization.

World Health Organization. (2022a). *Breast cancer inequities: The Global Breast Cancer Initiative.* https://www.who.int/initiatives/global-breast-cancer-initiative/breast-cancer-inequities

World Health Organization. (2022b). *The gender pay gap in the health and care sector: A global analysis in the time of COVID-19.* https://www.who.int/publications/i/item/9789240052895

World Health Organization. (2023a). *Breast cancer: Key facts.* https://www.who.int/news-room/fact-sheets/detail/breast-cancer

World Health Organization. (2023b). *Global breast cancer initiative implementation framework: Assessing, strengthening and scaling up services for the early detection and management of breast cancer.* World Health Organization.

World Health Organization. (2023c). *WHO launches bid to tackle inequalities behind global breast cancer threat.* https://news.un.org/en/story/2023/02/1133132

World Health Organization. (2024a). *Assessment of breast cancer control capacities in the WHO African Region in 2022.* WHO Regional Office for Africa.

World Health Organization. (2024b). *Civil registration and vital statistics.* https://www.who.int/news-room/fact-sheets/detail/civil-registration-and-vital-statistics

World Health Organization. (2025). *Breast cancer control: Progress report 2025.* World Health Organization.

World Health Expo. (2024). *South Africa faces radiologist shortage amid AI adoption.* https://www.worldhealthexpo.com/insights/medical-technology/south-africa-faces-radiologist-shortage-amid-ai-adoption

World Health Organization Regional Office for the Eastern Mediterranean. (2024). *Women's cancer in the WHO Eastern Mediterranean Region: Situation analysis and investment case report.* WHO Regional Office for the Eastern Mediterranean.

World Health Organization & International Labour Organization. (2022). *The gender pay gap in the health and care sector: A global analysis in the time of COVID-19.* https://www.who.int/publications/i/item/9789240052895

Wuraola, F. O., Blackman, C., Olasehinde, O., Aderounmu, A. A., Adeleye, A., Omoyiola, O. Z., Kingham, T. P., Fodero, R. F., Adisa, A. O., Lumati, J., Dare, A., Alatise, O. I., & Knapp, G. (2024). The out-of-pocket cost of breast cancer care in Nigeria: A prospective analysis. *Journal of Cancer Policy, 42*, 100518. https://doi.org/10.1016/j.jcpo.2024.100518

Yeong, S. W., Lee, S. W., & Ong, S. C. (2024). Cost of illness of breast cancer in low- and middle-income countries: A systematic review. *Health Economics Review, 14*(1), 56. https://doi.org/10.1186/s13561-024-00536-0

Zhao, J., Zhao, Q., Liu, W., Zhang, B., Li, N., & Qi, S. (2022). Factors affecting breast cancer screening behaviors in women: A cross-sectional study based on health belief model in China. *BMC Public Health, 22*, 1–11. https://doi.org/10.1186/s12889-022-13257-0