

# Advancing breast cancer in the developing world: Challenges in Zimbabwe

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## SUMMARY

Breast cancer has become the leading cause of cancer-related deaths in women living in Africa. Women in Zimbabwe experience some of the worst outcomes. A study of more than 1,400 Matabeleland South Province and Bulawayo City residents investigated the reasons for this shocking situation. This involved women and their families, health professionals, specialists, patient representatives, and other stakeholders. The study disclosed a range of reasons for major delays at every stage of the diagnostic pathway. Women and families delayed seeking help because of ignorance, lack of trust and the high cost of treatment. Health practitioners delayed referring patients because of a lack of training skills and confidence. Central hospitals postponed treatment because of a lack of specialisation and skills, and over-centralisation. In conclusion, many factors delay the presentation, diagnosis, and treatment of breast cancer in Zimbabwe. These factors are being addressed by the phased implementation of a programme prioritising training, new diagnostic skills, and resource-appropriate service reconfiguration, backed up by data collection, audit and public awareness initiatives.

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## INTRODUCTION

Women developing breast cancer (BC) in Sub-Saharan Africa (SSA) face some of the highest mortality rates in the world, and Zimbabwe epitomises these problems, with Bulawayo in the Matabeleland region reporting the worst three-year BC relative survival in the whole of SSA (3-year (yr) survival Bulawayo vs. Namibia: 22% vs. 85%).<sup>1,2</sup> Although human immunodeficiency virus (HIV), tuberculosis (TB) and malaria are the leading causes of death throughout Zimbabwe, breast

cancer is the second most common cause of all cancer deaths, after cervix uteri. The Association of Breast Surgery (ABS) in the UK and the United Bulawayo Hospitals (UBH) formed a Partnership in 2018 to investigate the reasons behind these shocking figures. They launched a Needs Project (NP) in Matabeleland South Province (MSP) the following year.

## OPERATIONAL ENVIRONMENT

MSP has a low-density, deprived population (760,000) that

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returns one of Zimbabwe's lowest scores for human development, income and education, and the highest scores for families requiring emergency support.<sup>3</sup> Twenty-five per cent live >10km from the nearest clinic, and 75% cannot afford medication or a bus fare.<sup>4</sup> Healthcare is provided mainly by the state, with patients paying for some tests, drugs, and nominal user fees. A patient's pathway with a possible BC is painfully slow, passing from rural clinics to district hospitals, provincial hospitals, and finally to central hospitals. Most roads are badly maintained, distances are long, ambulances are unpredictable, and accommodation and treatment are unaffordable, so many women seek help from traditional or faith healers instead. Nurses or midwives run cervical cancer screening services in designated clinics in the seven districts of MSP. The clinics are equipped for cervical image transfer, a capability that raises the potential to transfer breast and ultrasound (US) images for remote examination and reporting.

### MANAGING BC: A GROWING CHALLENGE FOR ZIMBABWE'S HEALTH SYSTEM

The combination of increasing life expectancy (from 47 to 62yr) and population growth (from 2.8 to 16.7 million) over the last 70 years leads to major increases in the incidence of BC.<sup>5,6</sup> This is reflected in the two-fold rise in the age-standardised incidence rate of BC reported from Harare, from 20.9/100,000 in 1994 to 44.6/100,000 in 2014.<sup>7</sup> The situation is made worse by the late presentation of most BC patients at a stage when the disease is incurable (96.9% stage III, IV or unknown vs. 3.1% stage II, nil Stage I).<sup>2</sup>

### INVESTIGATING KEY FACTORS LEADING TO UNACCEPTABLE BC OUTCOMES IN ZIMBABWE

The ABS/UBH partnership launched an NP in MSP and Bulawayo in 2019 to explore the main reasons for the delayed detection and treatment of BC in this region. The NP was carried out in two phases:

- (i) More than 50 senior stakeholders, including senior hospital and community clinicians and nurses, professional associations, university representatives and patients and their advocates 'brainstormed' on a range of factors responsible for poor outcomes. Key factors identified included a lack of awareness, unaffordable costs for travel, accommodation, diagnosis and treatment, and a shortage of specialist services and equipment.
- (ii) Qualitative and quantitative questionnaires were developed and validated to explore these factors with women and their families, health professionals, medical specialists, and lay groups. During three months in 2020, trained volunteers collected responses from >1,400 participants living in seven

districts in MSP and the Bulawayo Metropolitan Provinces, a combined population of around 1.3 million, before data collation and analysis.

### KEY FINDINGS OF THE NP

Major delays were discovered at every stage of the patient's diagnostic pathway.

(i) Women and their families delayed seeking advice because of a lack of understanding about BC, with only 25% knowing anything about breast lumps. Three-quarters of respondents were fearful of the disease. They trusted faith healers rather than conventional medicine, which is associated with transport, accommodation, and treatment costs.

(ii) Health professionals working in peripheral clinics and hospitals delay referring patients for specialist investigation because of a lack of basic knowledge, confidence, and diagnostic skills. Over 95% of patients waited more than three months for onward referral, with 85% consulting at least five doctors or nurses before receiving a diagnosis. A situation compounded by a lack of essential diagnostic equipment and facilities.

(iii) Central hospitals delay the investigation and treatment of BC due to a real shortage of specialist staff with the specialist training, equipment, and skills required for modern investigation and treatment. At the time of the study, there was only one functioning mammogram machine for the whole of MSP and Bulawayo, and no functioning linear accelerator machines for breast radiotherapy. Over 90% of respondents favoured greater BC specialisation and specialist training, with 80% supporting training in breast US, and US-guided core biopsy. Respondents highlighted the lack of communication between referring services and the central hospitals, with 90% supporting greater decentralisation of surgery to improve patient access and reduce their travel costs.

### IMPROVING BC OUTCOMES: SETTING PRIORITIES

The NP highlighted a range of coordinated developments that have real potential to support earlier BC detection, better management and better outcomes, reflecting the breast health global initiative's framework for establishing early detection in resource-limited settings.<sup>5</sup> These developments informed and underpinned the implementation phase of the project that was launched in 2021 by the ABS/UBH Partnership, introducing a range of high-impact, cost-sensitive interventions with the greatest chance of overcoming the delays and improving BC outcomes, including:

**Targeting education for healthcare staff**, with interactive online BC courses that are freely available to key healthcare practitioners in Zimbabwe and other low- and middle-in-

come countries (LMICs). Funding UK fellowships providing face-to-face training for nurses and doctors before returning to Zimbabwe with new diagnostic skills to establish and lead a new breast service. Education will be implemented more widely by developing a specialist breast curriculum with The College of Surgeons of East, Central and Southern Africa (COSECSA), an organisation with responsibility for training in fourteen SSA countries, supported by a memorandum of understanding recently agreed between COSECSA and the ABS.

**Transforming the current outdated and inefficient referral pathway** by opening three new pilot breast clinics in MSP offering accessible one-stop breast assessment, using clinical breast examination (CBE), breast US, immediate image transmission and remote online reporting. These clinics will be co-located alongside the well-established network of cervical screening clinics, already staffed by senior midwives and nurses. Most patients will be reassured and discharged back to their communities, avoiding a costly and worrying onward referral for further investigation.

**Designing and implementing a bespoke breast clinic database** to enable prospective data collection, audit, and quality assurance. Tracking changes in patient numbers and the stage at presentation will generate the key performance indicators that will be required increasingly to measure the effectiveness of early detection programmes in LMICs.<sup>6</sup> The database will also provide a platform for regular online multidisciplinary meetings, recording case-based discussions, treatment decisions, and outcomes.

**Engaging with the Ministry of Health and Child Care (MOHCC) at an early stage of the project and working with MOHCC Directors** to develop a memorandum of understanding that ensures that the project dovetails with the latest national strategies, including the national surgical, obstetric and anaesthesia strategic plan and the new national electronic health record system. As a result, the project has attracted the attention and support of the MOHCC. It is now gathering momentum as the preparations for opening the first pilot breast clinics go ahead. If this innovative model is shown to be effective, it will be extended to other provinces, backed up by new public education and awareness programmes, involving health workers, volunteers, community leaders, schools, patient advocacy groups, the media, and others.

## DISCUSSION

The project addresses the shocking outcomes facing women in Zimbabwe who develop BC and anticipates the future impact of a disease that has doubled over the last 20 years and continues to rise. It tackles the root causes of delayed presentation, breaking down the bottlenecks that leave patients

with little chance of early detection and cure, and incorporates learning and innovation to mitigate the factors delaying diagnosis at each stage, i.e., poverty, fear, poor access, skills deficit, lack of equipment, and specialisation. These health system failures are prevalent right across SSA countries for similar reasons, including lengthy referral pathways, inaccessible clinics, a lack of training and skills, and the high costs of investigation and treatment.<sup>7</sup> This leads to an unacceptable situation where many women wait more than six months before starting treatment, further reducing any remote chance of cure.<sup>8-10</sup>

Most studies reported from LMICs focus on patient-related delays, from the point of awareness of a breast abnormality to examination by a health professional when the patient enters the health system. By contrast, studies from high-income countries typically report delays between presentation through to diagnosis and treatment.<sup>11</sup> The NP of this study was unique in tracking delays throughout the entire patient pathway, exposing failures at every stage. Critical bottlenecks have been identified that must be addressed to ensure that women receive timely and appropriate care, starting with simple local initiatives to educate women, their families, volunteers, and health practitioners to encourage earlier presentation and treatment.<sup>12</sup> Clinical downstaging of BC by CBE and breast US in LMICs with little or no access to mammographic screening has been shown to increase the proportion of women diagnosed with earlier-stage disease, providing a more affordable alternative in settings like MSP where most women present with late-stage disease.<sup>13,14</sup> Combining these modalities with a coordinated public awareness programme has achieved significant reductions in late-stage disease in other low-income settings, including Malaysia, Sudan and Tanzania, serving as a template for MSP once the pilot clinics have the capacity and skills to manage an increased public demand.<sup>15,16</sup>

## THE NEXT CHALLENGE: A PHASED IMPLEMENTATION STRATEGY

The ABS/UBH partnership has established the building blocks for a new diagnostic BC service in MSP, and a phased approach will be adopted to ensure that improvements in treatment are introduced in an orderly and resource-sensitive way, as proposed by the Breast Health Global Initiative (BHGI).<sup>17</sup> Key phases will include:

Firstly, accelerating patient access by incremental clinic decentralisation and further training of the new workforce staffing the pilots, a process that will require the commitment of the MOHCC, financial support from NGOs and others, and expansion of the portfolio of remote, face-to-face and workplace training programmes.

## KEY MESSAGES FOR CLINICAL PRACTICE

- 1. Women in Zimbabwe who develop breast cancer often present with late-stage disease and face a very dismal prognosis.**
- 2. A fragmented and dysfunctional referral system compounds this situation, with in-built delays at every stage of a patient's pathway.**
- 3. Frontline clinical staff have no access to the training, skills, or equipment essential for investigating and referring of patients with suspected breast cancer.**
- 4. A lack of organisation, specialisation, and communication at all levels of the health service leads to poor patient management and fragmented care.**
- 5. Whole-system reform can reverse this inertia by creating a network of streamlined, accessible local diagnostic services, backed up by new skill sets, new equipment, and remote online reporting.**
- 6. Projects that align with new governmental health strategies and policies are more likely to attract valuable political and financial support.**

Secondly, equipping the diagnostic breast clinics with information technology, reliable internet connectivity, audit systems, and staff training is essential to monitor outcomes and compare the quality of care across the pilot sites.

Thirdly, securing a financial arrangement that supports the travel, accommodation, investigation, and treatment of the poorest patients with suspicious or malignant findings in the diagnostic clinics. NGO-funded vouchers help disadvantaged patients requiring further investigation of suspicious lesions detected during the cervical screening programme, providing a useful template for breast investigation and treatment in this disadvantaged group of women.

Launching a public awareness programme will be delayed until sufficient funding, capacity, knowledge, and skills have been developed to triage the demand generated by the programme.

Lastly, as the programme expands, the development of a centre of excellence in Bulawayo for BC treatment, training and research will help drive up standards of care across the country, but this will require political initiative and public support backed up by major funding.

## CONCLUSIONS

Zimbabwean women developing BC face unimaginable jeopardy, as most present at an incurable stage, exacerbated by abject poverty, ignorance, and fear of conventional medicine. Diagnostic and treatment services are remote, centralised, and unaffordable for many. Moreover, the level of knowledge and skill required to cope with the rising threat of BC is currently woefully inadequate, delaying access to effective care at every stage along the patient's pathway.

This whole system failure demands an entire system solution.

The project has the potential to generate a new framework of freely accessible, quality-assured diagnostic clinics, backed up by resource-appropriate skills and equipment. This will allow the rapid selection of patients for onward referral and treatment, ideally to a new comprehensive 'centre of excellence'. Ultimately, the project will stand or fall on the level of public support and the MOHCC's longer-term commitment to the initiative, informed by robust evidence of better patient outcomes.

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