Bridging Diagnostic Gaps in LMICs: Real-World Functionality of a One-Stop Breast Centre in South India

PS2 -02-13 - Debashri Shankarraman, MS,MRCS,FEBS; Nandini Govindarajan, MD; Geethapriya S, MD,DNB,FRCR,EDiR; Selvi Radhakrishna DNB,FRCS;
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Abstract

Breast cancer diagnosis in low- and middle-income countries is often delayed due to fragmented pathways. The One-Stop Breast Clinic (OSBC) model streamlines care by providing clinical examination, imaging, and biopsy in a single visit. This audit of 12,156 women seen at Chennai Breast Centre in 2024 assessed its performance. Among 2,777 new patients, 22.6% had malignancy, and over half required repeat imaging; 674 biopsies were performed. Repeat evaluations identified many missed biopsy indications and malignancies from external studies. Median time for triple assessment was 125 minutes, enabling treatment planning within 2–3 visits. The OSBC model improves diagnostic accuracy and reduces delays.

Introduction

In low- and middle-income countries (LMICs), fragmented diagnostic pathways often result in delayed breast cancer diagnosis and treatment. Patients are typically referred across departments (surgery, radiology, pathology), leading to multiple visits and potential loss to follow-up. The One-Stop Breast Clinic (OSBC) model, which integrates clinical evaluation, imaging, and biopsy into a single coordinated visit, aims to streamline this process. We present real-world data from a high-volume OSBC in South India to evaluate its diagnostic performance and workflow efficiency.

Objective

To assess the feasibility, diagnostic accuracy, and operational efficiency of the OSBC model in a private healthcare setting in India.

Methods and Materials

This retrospective audit included all female patients seen at Chennai Breast Centre from January 1 to December 31, 2024. Data were collected on patient demographics, imaging origin and quality, need for repeat evaluations, biopsy results, and diagnostic timelines. New symptomatic patients and follow-up visits were analyzed separately. Key outcome measures included the rate of repeat imaging/biopsy, time to biopsy, and time to treatment planning.

Chart 1. Need for repeat imaging in those with imaging work up done outside

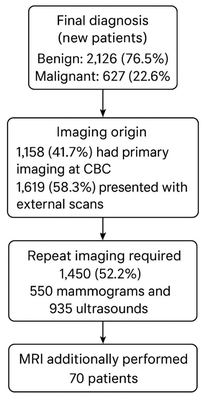


Chart 2. Age wise discrepancy in imaging done in external workup

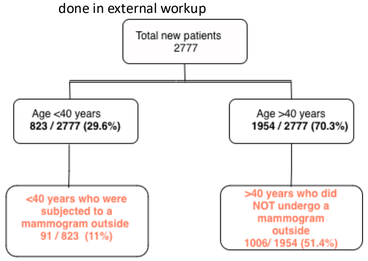
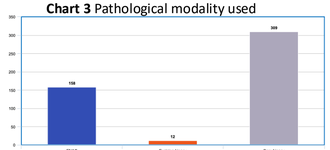


Chart 3 Pathological modality used



Results

Among 12,156 patients, 2,777 were new symptomatic cases; 9,379 were follow-ups. New patients ranged in age from 12–93 years (mean: 47.5);

Table 1. Distribution of patients needing interventions based on repeat imaging

Biopsy Category	n	%
Total Biopsies	**684**	-
Core biopsies	674	-
Punch biopsy	2	-
Stereotactic biopsy	8	-
Biopsies done after repeat imaging	495	-
Previously *not* advised biopsy externally	**384**	**77.6% - suggesting significant diagnostic upgrade**

Table 2. Distribution of patients needing a repeat biopsy based on repeat imaging

Need for repeat biopsies	N	%
Patients with prior external biopsy	479	
Repeat biopsy needed	120	25.1%
Malignant on repeat biopsy (False negative reported outside)	**75**	**62.5%**
Benign on repeat biopsy	45	37.5%

- **11%** of <40 yrs were subjected to mammograms and **51%** of those >40 yrs did not undergo mammograms **– suggesting suboptimal basic imaging.**
- FNACs were used as pathological diagnostic modality in 158 / 479 **(32.9%)** and Excision biopsy in 12 / 479 **(2.5%)**
- **Significant diagnostic upgrades were seen in 384 / 495 – 77.6%.**
- **25%** of patients with external biopsies had **discordance and required a repeat biopsy;** of these, **75 (62.5%) were malignant** (False negative reported outside)

This highlights a potential for missed malignancies with suboptimal external evaluations and emphasizes the critical need for quality-controlled, structured diagnostic workflows like the OSBC model.

Discussion

The best ways to optimize patient load and patient experience in LMICs include the following based on our experience:

Workflow Efficiency

Median time from patient entry to completion of history, clinical exam, imaging, and biopsy was 125 minutes. Biopsy reports were available within 72 hours. Unlike multispecialty hospitals that require multiple visits for triple assessment, the OSBC model completed this in a single session.

Integrated Pathway

- Visit 1: Triple assessment and biopsy
- Visit 2: Biopsy review; staging and baseline workup initiated for malignancies
- Visit 3: Treatment decision finalized with complete reports
- Visit 4: Preoperative documentation
- Visit 5: Daycare surgery

This model particularly benefits patients traveling long distances. Staging workup and general health evaluations are performed while awaiting pathology results, ensuring that treatment planning occurs within 2–3 visits. The approach enhances patient compliance, reduces dropouts, and improves system-level efficiency.

Conclusions

The OSBC model provides a practical, scalable solution to reduce diagnostic delays in LMICs. In this high-volume South Indian setting, triple assessment was achieved in <2 hours and definitive treatment planning within 3 visits. The model minimizes attrition, improves diagnostic accuracy, and optimizes patient flow. Expansion of such integrated breast care centers may be key to strengthening cancer care infrastructure in resource-limited settings.

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