Enhancing Early Breast Cancer Detection in Medchal-Malakajgiri: Integrating iBreastExam Scanners in Government Hospitals

Overview

Breast cancer is a significant and growing public health challenge, particularly in Telangana's urban districts like Medchal-Malakajgiri. It is the leading form of cancer among women, accounting for about 35.5% of all female cancer cases in Hyderabad and bearing a rising incidence rate anticipated to grow substantially in the coming years. Early detection is critical to improving survival rates and reducing mortality, yet access to affordable, efficient, and non-invasive breast cancer screening remains limited—especially for marginalized women in low-income and migrant communities.

This project proposes the installation and integration of the iBreastExam—a revolutionary, handheld, FDA-cleared breast cancer screening device—in three government hospitals across Medchal-Malakajgiri District, Telangana. By doing so, it aims to bridge significant healthcare gaps, improve early detection, and expand access to life-saving cancer screening for nearly 4,000 underserved women annually.

Project Rationale and Need

The burden of breast cancer is particularly alarming in Medchal-Malakajgiri, one of the most urbanized districts facing rapid demographic growth and healthcare challenges. Despite advancements, awareness levels in vulnerable communities remain low; fewer than 40% of women undergo regular breast examinations as per NFHS-5 data. Many women rely on government hospitals with limited infrastructure, where mammography units and trained radiologists are scarce, causing delays in diagnosis and treatment.

Conventional mammography, while widely used, is costly, requires radiation exposure, and depends heavily on specialized personnel and facilities. High costs and technical requirements make it inaccessible for the marginalized populations who are at greatest risk. There is a pressing need for an affordable, portable, and non-invasive screening device to be integrated into public healthcare systems to enable mass screening without the infrastructure demands of standard mammograms.

The iBreastExam Device

Developed by UE LifeSciences Ltd., the iBreastExam is an ultra-portable, battery-operated handheld device that uses advanced tactile sensing technology to detect tissue abnormalities characteristic of breast lesions. Unlike mammography, it is radiation-free, painless, and requires minimal operator training (typically 1-2 days). Each screening can be done quickly, providing real-time feedback to healthcare providers.

In terms of accuracy, the iBreastExam offers around 86% sensitivity in detecting palpable lumps, comparable or superior to ultrasound, and surpassing screening rates in many resource-limited settings. It complements traditional methods and is particularly advantageous where mammography and MRI are prohibitively expensive or unavailable. Cost-wise, while mammography units can cost between ₹1 to 3 crores with per-test costs high, the iBreastExam

device costs around ₹11 lakhs with affordable sensor cartridges, making it ideal for wide-scale screening initiatives.

Project Goals and Objectives

The core goal is to enhance early breast cancer detection among women from marginalized, low-income, and migrant communities in Medchal-Malakajgiri District, ensuring accessible, affordable, and accurate screening through government hospital integration of the iBreastExam Scanner.

Key objectives include:

- Improve Early Detection: Screen at least 4,000 women annually using iBreastExam devices in three targeted government hospitals.
- Capacity Building: Train healthcare workers—including doctors, nurses, and health workers—on the device's operation and screening protocols to ensure sustainable program delivery.
- Increase Accessibility: Offer painless, radiation-free breast cancer screening directly within public healthcare facilities, removing barriers linked to traditional mammography.
- Community Awareness: Conduct public outreach programs encouraging women to participate in regular breast cancer screening.
- Strengthen Health Systems: Fully integrate the device into existing hospital workflows and establish structured referral pathways for diagnostic follow-up and treatment of high-risk cases.
- Data-Driven Monitoring: Collect and analyze screening data to track outcomes, program performance, and refine protocols.

Implementation and Sustainability

The project timeline targets equipment procurement, staff training, installation, and launch within a defined period. Three government hospitals will be equipped with iBreastExam Scanners and integrated into routine service offerings.

Sustainability is embedded through continuous training, community engagement, and official collaboration with the Department of Medical and Health Services, Medchal-Malakajgiri District. Referral systems will connect women needing advanced diagnostics and oncological care with appropriate centers. Regular monitoring and impact reporting will maintain program quality and transparency.

Public awareness campaigns will further encourage community acceptance and use of screening services, reducing stigmatization and misinformation about breast health.

Expected Outcomes

Qualitative improvements include increased breast cancer awareness, higher willingness among marginalized women to undergo screening due to the non-invasive nature of the test, and strengthened trust in public health services.

Quantitatively, the project aims to:

- Screen 5,000 women annually from marginalized communities.
- Ensure 80% or more of trained health professionals demonstrate proficiency in using the device.
- Raise screening rates by at least 40% in targeted hospital catchment areas.
- Decrease late-stage breast cancer diagnoses through earlier detection.
- Achieve at least 70% referral for diagnostic follow-up among women screened positive.
- Maintain thorough documentation and follow-up for at least 90% of screened patients.

Complementary Technologies: Cervical Cancer Screening

Alongside breast cancer screening, an AI-driven cervical cancer screening platform enhances early detection of cervical precancerous and cancerous lesions. Using advanced AI algorithms, this system provides rapid, reliable analysis of cervical images, automating diagnosis to reduce dependence on manual interpretation by trained pathologists. When combined with the iBreastExam initiative, it offers comprehensive cancer screening for women with limited access to diagnostic services.

Comparative Advantages and Innovation

- Cost Efficiency: The iBreastExam is substantially less expensive than mammography and MRI units, making it suitable for low-resource public health setups.
- Operational Simplicity: Only brief training is needed for widespread adoption by frontline health workers.
- Portability and Safety: Its handheld, battery-powered design facilitates outreach in difficult-to-access urban slums and hospital OPDs without radiation concerns.
- Integration Capability: Fits seamlessly within existing government hospital settings and workflows, enhancing system-wide cancer screening coverage.

Organizational Experience

The project is spearheaded by Mahita, a Hyderabad-based NGO with over 30 years' experience promoting gender equality, health, and empowerment among marginalized communities. Mahita's past initiatives in vaccination, community health education, and emergency relief demonstrate proven capabilities in managing large public health campaigns in urban and rural Telangana. Their established partnerships with government health officers and frontline workers ensure successful project implementation and community acceptance.

By integrating the iBreastExam device into government hospitals and coupling it with robust training, referral mechanisms, and community outreach, this project has the potential to transform breast cancer screening in Medchal-Malakajgiri District. It promises increased early detection rates, accessible and affordable care for marginalized women, and alignment with national health objectives and Sustainable Development Goals (SDG 3 – Good Health and Well-being; SDG 5 – Gender Equality). Complemented by AI-powered cervical cancer screening platforms, the initiative paves the way for comprehensive women's cancer prevention strategies, strengthening Telangana's public health infrastructure and saving thousands of lives.


CAPACITY BUILDING PROGRAM
EARLY DETECTION
BREAST & CERVICAL CANCER
MEDICAL & HEALTH FUNCTIONARIES
IBREASTEXAM &CERVAICAL DEVICES
26-28th May, 2025
Primary Health Centre, Alwal, Medchal Malkajgiri Distric


iBreastExam
IndianOil Aarogyam
iBreastExam™ (Model iBE1)
S/N: i2412-01098 Mfg: 12/2024
UE Lifesciences (India) Pvt.Ltd.
+91 22 26102610
info@uelifesciences.com


mahita
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Dy. DMHO
Malkajgiri Division
District Medical & Health Officer
Medchal Malkajgiri District
iBreastExam
Collector & District Magistrate
Medchal Malkajgiri District


SCREENING OF BREAST & CERVICAL
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