



FROST & SULLIVAN
INSTITUTE



Related Thought Leadership: Healthcare



Early Diagnosis Is The Best Strategy To Fight Breast Cancer: Patient-Friendly, Precise, And Effective Options

Early Diagnosis Is The Best Strategy To Fight Breast Cancer: Patient-Friendly, Precise, And Effective Options

More than 2 million women across the world are diagnosed with breast cancer, each year. Though there are several courses of treatment, early detection can improve cancer management and treatment outcomes. To raise awareness of the need for early screening, October is observed as the breast cancer awareness month, every year.

For decades, breast self-examination was pushed as an easy technique for early identification. Though safe, it's hardly reliable. So, healthcare organizations recommend regular mammograms (an X-ray of the breast) for women over the age of 40.

However, there are several challenges here: false results from traditional mammograms; poor image quality, especially false positives in patients with dense breast tissue; ionizing radiation, often associated with risk of radiation-induced gene alteration and cancer formation; and the extreme pain and discomfort from breast compression during a mammography screening.

There are now several patient-friendly, precise, and effective options available to us.

Three-dimensional (3D) mammography (breast tomosynthesis or digital breast tomosynthesis) is advanced mammography that uses low-dose x-rays to produce clear 3D images that can help detect and diagnose the correct location of breast tumor. In fact, this mammography is sensitive enough to detect early breast cancer in women with no symptoms at all.

- Mammomat Inspiration's Prime Technology by Siemens Healthineers cuts the radiation dose by up to 30%, without compromising image quality

Breast ultrasound, often indicated as an adjunct to mammography, is a safe, non-invasive, radiation-free imaging. Techniques used to diagnose breast lump and other abnormalities.

- Automated breast ultrasound (ABUS) is the only FDA-approved breast cancer screening technology for detection in women with dense breast tissue, where mammography has low sensitivity; this radiation-free ultrasound is a good diagnostic for pregnant women

As '**patient comfort**' is now a vital parameter, novel devices now focus on making breast imaging a more comfortable experience.

- SmartCurve™ system by Hologic provides a curved compression surface
- Koning's Breast CT (KBCT) produces high-contrast real 3D images with no painful compression and just a 10-second radiation exposure.

Mobile or point-of-care breast imaging technologies are on the cards.

- Niramai and POC Medical systems are working on solutions that address the lack of medical centers/infrastructure/stable power supply/trained professionals to host the large mammography machines in remote and rural areas.

AI models are now being used to improve diagnostic accuracy, and reduce false positives and unnecessary biopsies. Simple blood tests that detect breast cancer cells before the tumor spreads and research regarding liquid biopsy for diagnosis are underway.

Genetic counseling is also another powerful tool that healthcare professionals use to assess the risk of developing cancer.

Inherited mutations in the two breast cancer susceptible genes—BRCA1 and BRCA2—increases the risk of developing breast cancer and ovarian cancer, compared with the general population. These women can engage in early/yearly screenings, maintain a healthy lifestyle, and may be undergo preventive cancer surgery, such as mastectomy.

The healthcare/medical industry is constantly striving to develop precision therapy for breast cancer, such as HR-positive or triple-negative breast cancer treatment, targeted radiotherapy, and minimally invasive surgery. However, efficacy of treatment is depends on the stage of diagnosis and intervention, making early diagnosis the best strategy to fight cancer.

Article by Debarati Sengupta, Industry Analyst, Frost & Sullivan & Frost & Sullivan Institute Ambassador