Breast cancer is the second most diagnosed cancer worldwide, with approximately 2.3 million new diagnoses and almost 685,000 breast cancer-related deaths (CA Cancer J Clin 2021; https://doi.org/10.3322/caac.21660). In the United States, approximately 1 in 8 women will develop breast cancer over the course of their lifetime. Finding breast cancer early is one of the most important strategies to prevent deaths from breast cancer.

According to the American Cancer Society, when breast cancer is detected early and is in the localized stage, the 5-year relative survival rate is 99 percent.

In order to promote the early detection of cancer, the World Health Organization (WHO) has defined two distinct but related strategies: 1) screening, which refers to the tests and exams used to identify asymptomatic disease in a target population of apparently healthy individuals, and 2) early diagnosis, which refers to finding and recognizing symptomatic cancer at an early stage.

Studies have shown that low- and middle-income countries bear a growing and lopsided share of the disease burden (Am J Cancer Res 2020;10(5):1568-1591). Country case examples have highlighted the opportunities and obstacles of employing effective breast cancer early detection programs, and the complex interplay of barriers and facilitators to achieving early detection for breast cancer in real-world settings.

In all case studies, the indispensable obstacle is the same: the main cause of poor survival is a late-stage diagnosis. In these settings, multifaceted challenges to early detection, such as economic, social, geographic, and other interconnected issues, can hinder a woman’s access to early detection as well as judicious, effective, and affordable care. Efforts to overcome these challenges need to be multilonged to significantly decrease breast cancer mortality globally.

In a recent consensus article from the sixth Breast Health Global Initiative Global Summit, “Breast cancer early detection: A phased approach to implementation,” Ophira Ginsburg, MD, and colleagues describe phases of early detection programs in order to ensure that critical components for improving breast cancer outcomes are established in a rational manner (Cancer 2020; https://doi.org/10.1002/cncr.32887).

Essential components of breast cancer early detection programs include recognizing the target population, defining the diagnostic tools, explaining the program strategies, and determining the rollout and scale-up process. Of course, for each element, different alternatives may be implemented, thereby ensuing in varied strategies.

The phased implementation approach can be applied sequentially or in parallel, contingent on the specific environment in which implementation is taking place to advance high-quality breast health care. Overall, each phase necessitates continuous assessment and improvement to establish and sustain quality. Addressing any one of these phases in isolation will not improve breast cancer outcomes.

Expanding Cancer Awareness

As a prerequisite to implementing a breast cancer program, strategies for early detection, referral, diagnosis, and treatment of breast cancer should be standardized. It is also necessary that critical information required to understand resource needs throughout the whole clinical pathway are communicated among stakeholders, policymakers, health care administrators, and advocates to appropriately implement programs at various resource levels. Since 2014, collaborations under the Breast Cancer Initiative 2.5 (BCI2.5), a global campaign to reduce disparities in breast cancer outcomes and improve access to breast health care worldwide, have delivered evidence-based educational resources and reports to assist policymakers and health planners identify barriers in the delivery of breast health services and care at any resource level.

In parallel, health care professionals should be educated in accordance with the guidelines as the education of primary care providers to identify the early signs and symptoms of breast cancer is essential for swift referral through the health care system. Additionally, the general public should be educated for target populations in order to increase the awareness of the value of early detection, risk factors, and breast health.

A Robust Health Care System

Expanding cancer awareness or early diagnosis programs into a health care system that is not equipped to refer, diagnose, and treat the abnormalities it detects will be counterproductive, noted the authors. A robust health system must first develop the infrastructure and capacity to effectively provide the facilities to manage clinically detectable breast cancer before any screening program is implemented.

Moreover, the importance of system-related delays cannot be underestimated. Comprehensive breast cancer care requires an effective health system with trained community health care personnel. Untrained health workers are more likely to misdiagnose cancer. In general terms, all diagnostic tools are performer-dependent. Therefore, the main focus for workforce staffing should be to strengthen diagnostic skills in primary care and introduce essential diagnostic services comprising clinical breast exams, breast imaging, and tissue sampling with pathologic evaluation, the purported triple test of breast diagnosis.

In addition, the researchers suggest identifying a set of measures to monitor and evaluate a breast cancer early detection program to ensure the program continues to progress along a defined resource-stratified pathway. Furthermore, the metrics employed should have been previously associated with reduced breast cancer mortality.

In contrast, a lack of a robust health care system negates the benefits of early detection, builds distrust of the public health system, and increases dependence on unconventional treatment methods.

Policy Planning

However, human resource needs for breast cancer screening or early diagnosis depends on national policies and guidelines. Ginsburg and colleagues write that a fundamental shift in cancer program strategy is needed—from nongovernmental organization-supported initiatives to government ownership.

Comprehensive national cancer plans should be within the national health financing strategy to provide a framework and ensure the sustainability of population-based breast cancer program development.

The authors recommend the program should be modified to meet local needs and available resources and be integrated into existing services along the continuum of care. The inclusion of early detection interventions in indispensable health packages is critical because

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treatment of early disease is less expensive and will generate savings on medical costs. Moreover, mechanisms for financial protection should be in place to reduce the risks of incomplete diagnosis or treatment.

To gain further insights into a phased approach to implementing a breast cancer early detection, Oncology Times spoke to Ophira Ginsburg, MSc, MD, FRCP, Director of the High-Risk Cancer Genetics Program at Perlmutter Cancer Center, and Associate Professor in the Section for Global Health, Division of Health and Behavior Department of Population Health at NYU Grossman School of Medicine; and Electra D. Paskett, PhD, the Marion N. Rowley Professor of Cancer Research and Director of the Division of Cancer Prevention and Control; Professor in the Division of Epidemiology; Associate Director for Population Sciences and Community Outreach; and Director of the Center for Cancer Health Equity at The Ohio State University.

What are some barriers to care that can ultimately influence a woman’s opportunities for breast cancer early detection?

Ginsburg: “Women can face a variety of barriers to care and factors that may influence participation in breast screening programs in the U.S., such as logistical challenges in terms of traveling long distances, or where long work hours plus/minus childcare responsibilities can prevent a woman interested in screening to access services. There are also cultural and social aspects that might influence whether a woman chooses to undergo breast screening. All told, even if covered financially for screening itself, such as via Medicare, there can still be out-of-pocket costs for all the aspects of screening and care that can make the process difficult. In most countries, the U.S. included, women living in poverty, women of color, women from minority populations, immigrants, and undocumented women tend to participate less in cancer screening, are diagnosed with later-stage disease, and have worse outcomes due to a complex interplay of social, economic, and structural factors.”

Paskett: “Fear; lack of knowledge; no access to a screening facility; no referral to a screening center; poor-quality centers with no follow-up mechanisms for women with an abnormal test; lower access and use of genetic counseling and testing; and lack of insurance or poor insurance coverage, including lack of use of the Breast and Cervical Cancer Early Detection Program to pay for exams, all influence women’s opportunities for breast cancer early detection.”

The ultimate goal of an early detection program is to reduce breast cancer mortality. What are some metrics that can evaluate a program’s progress toward that long-term goal?

Ginsburg: “Programmatic goals can include quality metrics, a certain percentage coverage for at-risk population—generally 70 percent per WHO for screening programs, but ideally 90 percent in the U.S. and other high-income country settings. In the case of a typical comprehensive breast screening program with mammography in a high-resource setting, other important clinical data that should be tracked include number and percentage (based on pre-set defined denominator of target women) of DCIS, invasive cancer, and stage-specific data. Percentage of overdiagnosis should be tracked as well. Time from abnormal screening mammogram to diagnostic completion (with/without biopsy) is also critical to maintaining a high-quality program. These are the types of metrics used for quality control for 25 years at the Ontario Breast Screening Program, a model for such programs globally.”

Paskett: “Metrics that can evaluate a program’s progress include percent screened (up to date); time to follow-up of an abnormality and time to start treatment; treatment by guidelines; loss to follow-up; and stage shift.”

Essential components of breast cancer early detection programs include recognizing the target population, defining the diagnostic tools, explaining the program strategies, and determining the rollout and scale-up process.

The most recent statistics show that breast cancer is the most diagnosed cancer among Black women. Moreover, Black women are also more likely to develop breast cancer in their 40s—and to have more fast-growing forms of the disease that often prove difficult to treat. Are you aware of any state or national programs working to improve access to breast health care, promote breast cancer prevention, and ultimately improve health outcomes in this population?

Ginsburg: “Although not my area of expertise, I understand there are many programs at the grassroots level, as well as state programs, under the auspices of implementation research to reduce disparities (NIH funds high-quality research in this domain). [These programs] explore reasons for apparent biological determinants of breast cancer subtype. I refer to work by Dr. Funmi Olopade and colleagues at University of Chicago with African-American (AA) breast cancer data and comparing germline and tumor genetics with women with breast cancer in Nigeria. Most recently, Dr. Mary-Claire King’s group published a paper from the Carolina Breast Cancer Study to explore some of the biological aspects, while others are working with SEER data and also with women in AA communities to look at screening uptake—also accounting for possible difference in referral patterns and care (including adherence). In other cancers, such as colorectal and prostate cancer when adjusting for financial barriers, some but not all the differences in cancer health outcomes disappear.”

Paskett: “We have a study called Turning the Page on Breast Cancer. The website—live but still adding edits—can describe the study (https://endbreastcancerohio.org/). COVID has delayed us.”

The COVID-19 pandemic has resulted in many elective procedures being put on hold, and this has led to a substantial decline in cancer screening. Experts predict an unprecedented increase in the numbers of cancer cases and deaths because of delays in screening and care. What steps are being taken to overcome this challenge?

Ginsburg: “All major cancer organizations such as ASCO, ESMO, and CDC are trying to get the word out that it is essential during the pandemic to continue to go for your cancer screenings and to seek care promptly when [finding] a concerning symptom such as a new breast lump, vaginal or rectal bleeding, etc. Although most programs worldwide and certainly in the U.S. paused cancer screening programs for a couple of months during the first wave, we did learn that maintaining cancer services, including screening, is critically important. Early data suggests that such pauses and community fears of contracting the SARS-CoV-2 virus in hospitals or clinics have led to a dramatic drop in the number of cancers diagnosed compared with the same timeframe the year prior to the pandemic, along with a concomitant increase in patients with a first presentation of cancer in the ER—a concerning trend we must reverse through better communication and building of trust. In fact, with appropriate safety measures in place such as that in my own health system, the hospital is perhaps one of the safest places you can be in terms of COVID-19 transmission. We must do more to explain this to the public. Building and maintaining trust also involves frequent, clear messaging and being transparent about how we are protecting our patients and health workers at this challenging time. As many have been saying, cancer doesn’t stop for COVID.”

Paskett: “We need more as not enough is being done and efforts should focus on multiple levels to heighten awareness of this: at the facility level, open more appointments and send reminders; at the provider level, message patients with information about facilities being safe and the need to still screen; and at patient-level—it is okay to come in and get tested.”

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