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Correcting the Course: Better Targeting CME Activities in Breast Cancer Care

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"Imagination at scale is our only recourse."[1]

"The right measure for successful health care isn't about the maximum possible for a few, but the average for everyone and the minimum opportunities available to even those with the fewest resources and privileges."[2]

The annual global burdens of breast cancer are currently 2.3 million cases and 700,000 deaths, two thirds of all deaths occurring in Asia and Africa, and these burdens are increasing.[3] Where are we addressing these challenges and where not? We are certainly increasing our understanding of the biology of breast cancer and developing more specific effective therapies, but a dominant goal of medical activities in many countries has become financial gain, and the organizational model of services has become grounded in optimal business practices instead of health care as a human right for all. Consequently, we are failing to serve the majority of women in the world who develop breast cancer. We need to dispassionately consider the shortcomings of our interventions for this disease and take to heart lessons from the COVID pandemic about population health in the CME for breast cancer care.[4] The Continuing Education Program Mission Statement of ASCO focuses on objectivity and rigor in increasing the competence and performance of the oncology team as well as continual assessment of practice gaps.[5] This commentary addresses critical gaps.

A brief summary of the population impact of current knowledge and common interventions

Causation and prevention

While much is known about the multistage and multifactorial causal biology of breast cancer, practical interventions that change outcomes, here meaning preventing clinical breast cancer, are limited to relatively small populations of high-risk individuals, who are most frequently citizens of high-income countries. Broad preventive interventions that change outcomes for populations are not available. For examples, avoidance of obesity in post-menopausal women and early age at first full-term pregnancy appear to reduce the risk of disease but applying this knowledge to populations is unfeasible and impractical.

Down-staging

"Early detection" of breast cancer that results in lower stage disease at the time of diagnosis, generically called "down-staging," has been long promoted as a strategy for improving outcomes from treatment. Intuitively, this concept is compelling, but in practice it has been remarkably difficult to support with rigorous data and even more challenging to apply to populations with convincing proof of benefit.

In clinical practice at present, only two downstaging strategies are applicable: mammography and clinical breast examination. Broadly, true "screening" mammography, that is mammography done in women without any signs or symptoms of clinical breast cancer, appears to be beneficial in populations of women aged 50 and older with higher incidence rates.[6] There are variable, but not insignificant, costs associated with applying this technology to such populations; the most important is diagnosis and treatment of premalignant lesions

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which would never have progressed to become clinical breast cancer in patients' lifetimes, (over-diagnosis).[6]

In individual women of any age and risk level, with no signs or symptoms of clinical breast cancer, the benefits of periodic breast examination are unproven, whether conducted by women themselves or by health professionals.[6]

As applied to populations in low- and middle-income countries (LMCs), with broad-based population pyramids and low absolute incidence rates, the practical implications of these state-of- the-art assessments have been well summarized by Harford: "Resources in LMCs might be better used to…encourage more women with palpable breast lumps to seek and receive treatment in a timely manner."[7]

Diagnosis

The potential benefits of prompt diagnosis, which may include less costly treatment, can only be realized in populations with strong primary health care systems and their associated greater public trust. The most remarkable demonstration of this truth occurred in the International Agency for Research on Cancer (IARC) trial of breast self-examination in the Philippines.[8] Women were successfully taught to find their own smaller breast tumors but decided not to seek diagnostic interventions because they did not believe that they could be successfully treated or that they had the financial resources for treatment.[8] The repeated assessment that more women need to be "made aware" of the significance of breast lumps is misplaced. Women of all levels of education and in multiple cultures easily recognize when they have an abnormality in one of their breasts. "Awareness" is not the barrier that prevents women from seeking medical assistance.[8] The strength of their local primary care networks and the prevailing human rights barriers are far more important issues.

Beyond these practical issues concerning if and when women present for diagnosis, the local surgical pathology capacities in many LMCs are so limited that histological diagnosis is often not accomplished when women do present with clinical signs of breast cancer.[9] In high-income countries, molecular characterization of histologically invasive tumors contributes to choosing more effective treatments, but the monetary costs and low availability of genomic testing prevent widespread application in LMICs.[10]

Treatment

The primary treatment for operable invasive breast cancer is mastectomy which is widely available under the care of qualified surgeons in most LMICs. A second major surgical intervention, adjuvant surgical oophorectomy, is worthy of consideration in premenopausal hormone receptor positive women, a number approaching half of all global new breast cancer cases annually, yet is significantly underapplied.[11] Human rights issues, barriers to care, and financial conflict of interest all play unfortunate roles in this situation.[11] This is particularly tragic because of provocative data strongly suggesting that, once women with prolonged follicular phases are exempted, the average benefit of surgical oophorectomy to women in follicular or luteal phases (easily confirmed by progesterone testing) exceeds the level of benefit from optimally given adjuvant treatments which are not received among high percentages of women in LMICs in any case.[12] The widespread presentation of this treatment option to women in LMICs could save 100,000 lives annually[13].

A major contributor to improved outcomes with breast cancer in high income countries has been the development of effective systemic therapies. In the decade from 2008-2017 in the United States, breast cancer mortality declined by 16%[14]. However, selection of optimal systemic therapies for individual patients is remarkably complex and ever-evolving.[10] In LMICs, the dearth of well-trained medical oncologists, as well as multiple operational barriers, stand in the way of applying these new treatments widely. Even with remarkably effective and cheap systemic treatments with limited side effects, such as oral tamoxifen for the two-thirds of global cases with hormone receptor positive tumors, the benefits are highly limited by poor long-term adherence.[15]

Current evidenced-based treatment guidelines recommend adjuvant radiation therapy to the chest wall and regional lymph nodes in patients with high risk but operable breast cancer.[16] The availability and feasibility of such treatment in the high fraction of women in LMICs who could benefit are painfully limited.[17]

Approximately half of all breast cancer patients in LMICs have incurable recurrent disease and need palliative care. Very few women, however, have access to such care, and when available, few receive care of a caliber to make a difference in their quality of life.[18,19]

Big picture realities and lessons of the time

The dominance of business models in medicine, and lessons from the COVID pandemic in the United States suggest that more public health thinking needs to be applied to this disease if significantly better outcomes for populations are to be achieved (Table 1).[4,20]

Table 1. Lessons from COVID pandemic[18,19]

Widespread lack of access to medical care
Overdependence on doctors
Overdependence on clinics and hospitals
Inadequate systems for chronic care and prevention
Lack of attention to mental health
Massive disparities in healthcare

Specifically, current educational activities emphasize biology and ignore social determinants of health, explicit values, and important quality-of -care metrics.[21,22] Service models are relatively inattentive to this chronic disease, have limited community accountability, and are dysfunctional and poorly organized. Transformational service models are needed with increased paraprofessional staffing, implemented diagnostic and treatment guidelines, major information technology systems, and disruptive business systems (Table 2).[23-27]

Table 2. Medical service models compared [modified from 22]

	Current Service Model	Community-Oriented Model
Health care posture	Reactive	Proactive
Activities design	Fixed	Flexible, responsive
Activity centers	Clinics, hospitals	Home, community, clinic, hospital
Focus of care	Communicable disease, maternal and child care	Public health, communicable and non-communicable disease, care over the lifespan
Accountability	Limited, top-down, efficiency- and cost-oriented	Community, value-care oriented with staff ownership consequent to continuing participation in model and plans
Governance	Dysfunctional organization and incentivisation with inadequate training and equipping	Guidelines defining routine processes, ongoing major training, complete point-of-care equipping, explicit values education, strong leadership
Community Action	Limited input	Attention to community issues central to successful care

Specific targeting activities identified

Firstly, the foregoing summary is clear in suggesting unproductive as well as potentially beneficial activities in our educational endeavors (Table 3).

Secondly, our system challenges can most practically be met by development of local demonstration/experimentation initiatives. Greater consideration needs to be given to community activities and organizations directed to addressing the social determinants of health. In the clinical setting, it is of significant importance to recognize that while specific breast cancer care components should be targeted (surgical pathology or radiation therapy, for example), improving outcomes for populations is going to require strengthening primary care systems. Trust in the local medical care system is critical to prompt diagnosis, efficient management, and sustained adherence to evidence-based treatment. Such trust is grounded in truly community-oriented primary care.

Table 3. Educational targeting activities critical to better outcomes in breast cancer

1. Articulate explicitly critical values in medical practice: concern for others, equality, empowerment of women, justice, transparency, accountability, and honesty
2. Attend to the full breadth of high-quality care metrics: efficacy, safety, efficiency, patient-centeredness, timeliness, and equity
3. Recognize the importance of social determinants of health
4. Encourage patients' active participation in their care
5. Facilitate the development of clinical practice guidelines for local diagnostic pathways and treatments
6. Explore and demonstrate greater use of information technology systems and tools in patient care
7. Increase surgical pathology training, stressing the importance of histological diagnosis
8. De-emphasize discussions of causation, prevention, and down-staging
9. Emphasize communicating the possibilities of cure

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