

Addressing Disparities in Breast Cancer Screening: A Review

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Advances in early breast cancer detection through widespread adoption of screening mammography, along with continuing improvement in care and treatment, have substantially reduced breast cancer mortality in the United States.

This progress, however, remains inequitably distributed across patient populations. Stark disparities in breast cancer screening and survival rates exist among ethnic and racial minority women, stemming from a complex interplay of patient, provider, and health system-related factors.

Without a concerted effort to make the elimination of such disparities a priority of healthcare and public policy leaders, inequities in breast cancer care are destined to persist, to the detriment of providers and patients alike.

Breast Cancer Disparities by the Numbers

Breast cancer is the most common cancer in women and the second-leading cause of cancer death in the United States. The incidence of breast cancer has been increasing by about 0.5% each year¹; the American Cancer Society estimates that more than 280,000 new cases will be diagnosed and more

than 40,000 people will die of the disease in 2022.¹

Ethnic and racial minority women make up the majority of these women. Indeed, it is estimated that over 36,000 cases of breast cancer will be diagnosed in Black women in 2022, nearly 7000 of whom will succumb to the disease.² Despite the slightly higher incidence of breast cancer among White women, Black women have a 40% higher mortality rate.^{1,3} Among US Hispanic women, meanwhile, breast cancer is the most commonly diagnosed and the leading cause of cancer death, accounting for more than 14% of cancer deaths.⁴ Survival rates among Black and Hispanic women are also poor, as most are diagnosed at advanced stages of cancer and with more aggressive disease.

Breast Cancer Screening Rates: Racial, Sexual, Ethnic, and Disabled Populations

Black women are less frequently screened for breast cancer compared to White women and are also less likely to benefit from screening and genetic services.⁵ The prevalence of hereditary breast cancer genetic

mutations is higher in Black women than in White women, although lower than in women of Ashkenazi Jewish ancestry. Black women are less likely to be referred for genetic counseling and testing than White women.^{6,7}

The American College of Radiology (ACR) and Society of Breast Imaging (SBI) recommend that all women be assessed for breast cancer risk by age 30 to determine if screening earlier than age 40 is needed.⁸ Updates to and expansion of screening guidelines by the ACR have been effective in improving awareness in populations at elevated risk of breast cancer and in guiding screening and identification of patients. The ACR and SBI were the first to designate Black women as high-risk status.⁸

Sexual minority women, indigenous peoples, immigrants, and persons with disabilities are also less likely to receive screening than are heterosexual women, nonimmigrants, and women without disabilities. Knowledge gaps about their risks and need for screening also exist among lesbian, gay, bisexual, and transgender (LGBT) individuals. In addition to multilevel system barriers to screening and a lack of clinician knowledge and consensus on screening recommendations, transgender and gender-nonconforming individuals are also faced with stigma and discrimination in the healthcare community.⁹

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To address the lack of consensus in screening guidelines, the ACR and SBI have released guidance regarding screening in the transgender population and have also called for urgent screening attention toward transgender individuals.¹⁰

Breast cancer mortality rates among American Indian women have not declined since 1990, even though they have declined among all other US racial and ethnic groups. Indeed, screening rates among American Indian women of this group are estimated at 53.1%, the lowest of all groups.¹¹

Compared to their non-immigrant counterparts, immigrant women are less likely to undergo screening mammography and more likely to experience inequitable access to high-quality treatment, as well as have poorer outcomes.¹² Similarly, physically disabled women experience less access to screening services, due to reduced access to reliable transportation, inaccessible facilities, and inadequate and inaccessible mammography equipment.¹³

Narrowing these disparities is key to advancing health equity, increasing use of breast cancer screening, preventing delays in diagnostic evaluation, and improving health outcomes among individuals of all populations disproportionately burdened by health inequities.

Reasons for Disparities

Care disparities across the breast cancer continuum are multifaceted, and their impact on patient out-

comes have been well documented. Multiple social determinants, in concert with genetic, biological, and environmental factors, contribute to worse outcomes among ethnic and racial minority women.

Black and Hispanic women, for example, experience disproportionate poverty, inadequate access to higher-quality healthcare, absence of or inadequate health insurance, and differences in utilization of screening mammography.^{14,15} Unequal access to and utilization of screening mammography often lead to delays in detection, diagnosis, and treatment, amplifying disparities in patient outcomes.^{16,17}

In addition, calculators and models that assess and quantify lifetime risk for breast cancer may underestimate risk among racial and ethnic minority women and potentially discourage them from seeking enhanced screening and/or active surveillance.¹⁸ Black and Hispanic women are less likely than White women to be up to date with screening recommendations and to receive timely follow-up on results of abnormal screening and diagnostic mammography.¹⁹

Lawson, et al, found that structural healthcare system factors had the greatest impact on time-to-biopsy among racial and ethnic groups. Compared with White women, Asian, Hispanic, and Black women were at increased risk of failing to receive a biopsy within 30 days of an abnormal screening mammogram; Black women had the highest and most persistent risk of diagnostic delays of 90 days or longer.²⁰ Longer intervals

between screening and diagnosis lead to declines in screening benefits and more advanced cancers at diagnosis.²¹

Insufficient Health Insurance Coverage

Screening mammography benefited from the Patient Protection and Affordable Care Act, which expanded mandatory health insurance coverage for routine preventive services and prohibits cost sharing. However, the Hispanic population continues to have the highest uninsured rates of any major racial or ethnic group.⁴ Additionally, no requirement exists for insurance coverage of supplemental screening modalities, and coverage of digital breast tomosynthesis (DBT) varies by state.²² In addition to DBT, other advanced breast imaging technologies such as screening ultrasound and breast magnetic resonance imaging have improved cancer detection, particularly in women at increased risk for the disease. However, studies have shown that these technologies are unequally utilized and are associated with higher out-of-pocket expenses or co-payments. Variable access to these technologies further widens screening-related disparities.²³

Other Barriers to Screening

Disparities in breast cancer screening are also driven by lack of access to mammography, limited health literacy, language barriers, and lack of engagement among diverse populations.^{15,24}

Physicians who provide care for predominantly Black populations often practice in low-income neighborhoods and report an inability to provide care, such as diagnostic imaging, to their patients. Access to imaging facilities with advanced technology is also more limited in these communities.¹⁵ Populations living within rural areas, including many American Indian women, are also impacted by limited access to breast screening services.

Increasing mammography utilization requires these and other barriers to be effectively addressed. Low patient and primary care physician awareness of screening guidelines, variable provider referral and follow-up practices, and patient distrust of the healthcare system all influence breast cancer screening and detection. Variations in guidelines also lead to confusion and lack of adherence to appropriate breast cancer screening recommendations.²⁵ Patients may also experience logistical barriers such as inconvenient appointment hours, long clinic waiting times, and transportation issues.^{26,27}

Impact of the COVID-19 Pandemic

Although largely of temporary impact, the COVID-19 pandemic further widened breast cancer care disparities experienced by racial minorities, patients without health insurance, and those of lower socioeconomic status. The pandemic drove system-wide reductions in the usage of radiology services, particularly screening and diagnostic mammography, which experienced the greatest disruption and reductions in volume.²⁸ As a result, there were delays in follow-up examinations of patients with prior diagnoses. Compared to pre-pandemic figures, the number of diagnosed breast cancers dropped most significantly among Asian, Hispanic, and Black women (53%, 43%, 27%, respectively).²⁹ Delays in cancer diagnosis and treatment are

projected to lead to worsening breast cancer-related morbidity and mortality among these groups.³⁰

Radiologists Can Help Mitigate Care Disparities

Radiologists have multiple avenues to address disparities in breast cancer screening, diagnosis, and treatment. These include such measures as community outreach, diversity, equity, and inclusion education, and lobbying for new public policies related to breast cancer care and treatment.

Community Outreach

Developing and expanding strategic partnerships with communities can help radiologists better understand patient care inequities. For example, breast imaging specialists can engage in community outreach initiatives that “increase breast cancer awareness in underserved communities, identify high-risk women for risk-reduction strategies, and develop programs that assist women in navigating their breast care.”³¹

One such strategy is to enlist patient navigators and community health advocates (CHAs) to identify patients who are due for mammography screening, address individual barriers to care, and track patient follow through with mammogram referrals. Patient navigators and CHAs are invaluable for building community buy-in, providing patient education, assisting with appointment scheduling, and fostering adherence to care plans. Such interventions have demonstrated success in reducing delays and improving overall adherence to mammography screening and follow-up diagnostic care.³²⁻³⁴

Other innovative outreach initiatives, such as the use of mobile mammography vans to deliver screening services directly to women in underserved communities at no cost, have also been shown to improve screening utilization and reduce breast

cancer-related mortality.³⁵⁻³⁷ To mitigate disparities in time-to-biopsy and further evaluation, radiologists can offer same-day screening and biopsy appointments.^{27,38} Patient navigators and CHAs can further strengthen mobile mammography programs by encouraging attendance and optimizing adherence to follow-up care.³⁶

Additional helpful interventions include flexible scheduling, expanded appointments, and utilization of dedicated breast imagers. The needs of multilingual patients can be met through the use of online registration, informational videos, multilingual audio instructions, and interpreters.³⁹ Cost transparency and payment plans, along with transportation-based solutions, and hiring and retaining skilled radiologists and technologists can also help address barriers to screening access.¹⁵

Increasing Diversity

Radiology programs and departments can demonstrate their commitment to increasing diversity by implementing pipeline programs to increase representation of various ethnic and minority populations. Diversifying the radiology workforce has been shown to enhance trainee educational experiences, increase patient access to care, and improve patient outcomes. Developing mentorship programs for underrepresented minority trainees can foster inclusivity⁴⁰; racially diversifying the radiology workforce can bridge cultural gaps and has the potential to improve outcomes by ensuring that patients are treated by professionals who understand their background and needs.^{41,42} Such a workforce is also more likely to invest in and work to reduce health disparities in racial and ethnic minority communities.

Educating the next generation of radiologists about care disparities equips them to address the health needs of an increasingly diverse population.⁴³ Strategies to achieve these

goals include integrating disparities modules into residency and fellowship curricula, mandating competencies in health disparities, and incorporating diversity, equity, and inclusion (DEI) initiatives into the work of radiologists.

Narayan, et al, developed a blueprint to help radiology departments foster DEI within their ranks.⁴⁴ Gupta, et al, recommended a multilevel approach to integrating DEI into training programs⁴⁵ and the Association of Program Directors in Radiology developed training modules and videos to help execute an impactful DEI curriculum in residency programs.⁴⁶

Although the Accreditation Council for Graduate Medical Education mandates training in health disparities, many radiology programs have not implemented such curricula. This training can ensure that the next generation of radiologists is equipped to think critically about their role in addressing healthcare disparities. A survey by Song, et al, found that lack of resources was the most significant barrier to implementing a healthcare disparities curriculum; allocating financial resources specifically to addressing care disparities can help overcome this barrier.

Public Policy Initiatives

Radiologists can also help bring about system-wide changes in care delivery and effectively narrow the disparity gap by getting involved in policy initiatives.⁴⁷ The ACR and SBI play a critical role in collaborating with governmental agencies and other stakeholders to establish and advance policies, guidelines, and radiology priorities. Recent ACR and SBI updates and breast cancer screening guidelines specific to minority women and transgender individuals are raising awareness of screening in overlooked or underserved patient populations.

Radiologists can also help influence policy changes to reduce healthcare costs by recommending mandates for

insurance coverage of DBT and other innovative imaging technologies. They can also contribute by “actively initiating interdepartmental efforts to curb inappropriate imaging use and improve efficiency through performance improvement efforts.”¹⁵

Successfully addressing and eliminating breast cancer care disparities requires a multidimensional approach. Innovative, comprehensive interventions can increase patient access and increase diversity and inclusion in the radiology workforce. Equity can be achieved by addressing each component of the breast cancer care continuum, developing and expanding strategic partnerships with communities to better understand patient experiences related to disparities, and collaborating with professionals across multiple disciplines.⁴⁸⁻⁵¹

Conclusion

Mounting evidence demonstrates the existence of significant breast cancer screening, care, and outcome disparities among racial and ethnic minority women. These disparities arise largely from socioeconomic status, inadequate access to screening mammography, and other factors. Without making it a public health priority to address these inequities, such disparities are likely to persist, to the detriment of the healthcare system and the patients it exists to serve.

Through addressing and shaping community outreach, patient access, and workforce diversity, radiologists are uniquely positioned to help make high-quality breast cancer care accessible to all regardless of race, ethnicity, and gender identity.

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