2023

Turning the Page on Breast Cancer in Ohio: Lessons learned from implementing a multilevel intervention to reduce breast cancer mortality among Black women

Tasleem J. Padamsee

Daniel G. Stover

Willi L. Tarver

Chasity M. Washington

Ryan D. Baltic

See next page for additional authors

Recommended Citation

Padamsee, T., J., et al. (2023). Turning the Page on Breast Cancer in Ohio: Lessons learned from implementing a multilevel intervention to reduce breast cancer mortality among Black women. Cancer, 129(S19). http://dx.doi.org/10.1002/cncr.34845

Authors

Tasleem J. Padamsee, Daniel G. Stover, Willi L. Tarver, Chasity M. Washington, Ryan D. Baltic, Cecilia R. DeGraffinreid, Clarissa R.B. Whiting, Ruvarashe Rumano, Clara N. Lee, Timiya Nolan, Bridget Oppong, Samilia Obeng-Gyasi, Amanda E. Toland, Brittany Bernardo, Heather Hampel, and Electra D. Paskett

Received: 5 August 2022 | Revised: 14 March 2023 | Accepted: 11 April 2023

DOI: 10.1002/cncr.34845

SUPPLEMENT ARTICLE

Turning the Page on Breast Cancer in Ohio: Lessons learned from implementing a multilevel intervention to reduce breast cancer mortality among Black women

Tasleem J. Padamsee PhD[1,2] | **Daniel G. Stover MD**[1] | **Willi L. Tarver DrPH, MLIS**[1,3] | **Chasity M. Washington MPH**[1] | **Ryan D. Baltic MPH**[1] | **Cecilia R. DeGraffinreid MHS**[1] | **Clarissa R. B. Whiting BS**[1] | **Ruvarashe Rumano MPH**[1,2] | **Clara N. Lee MD**[1,2] | **Timiya Nolan PhD**[4] | **Bridget Oppong MD**[1,3] | **Samilia Obeng-Gyasi MD, MPH**[1,3] | **Amanda E. Toland PhD**[1,3] | **Brittany Bernardo PhD**[5] | **Heather Hampel MS, LGC**[6] | **Electra D. Paskett PhD**[1,3]

[1]The Ohio State University James Comprehensive Cancer Center, Columbus, Ohio, USA

[2]The Ohio State University College of Public Health, Columbus, Ohio, USA

[3]The Ohio State University College of Medicine, Columbus, Ohio, USA

[4]The Ohio State University College of Nursing, Columbus, Ohio, USA

[5]Global Health Department, Denison University, Granville, Ohio, USA

[6]Department of Medical Oncology, City of Hope National Medical Center, Duarte, California, USA

Correspondence
Tasleem J. Padamsee, 280F Cunz Hall, 1841 Neil Avenue, Columbus, OH 43220, USA.
Email: padamsee.1@osu.edu

Abstract

Background: Turning the Page on Breast Cancer (TPBC) uses a multilevel approach to reduce breast cancer (BC) mortality among Black women. TPBC intervenes by (1) improving health care facilities' ability to conduct effective BC screening, follow-up, and treatment; (2) involving community-based organizations; and (3) providing education and personal risk information through a culturally relevant website. Ohio has among the worst BC mortality rates in the United States for Black women. TPBC is in its third year of providing targeted interventions in 12 Ohio counties with particularly high BC rates among Black women.

Methods: TPBC enrolls health care facilities, collects organizational and patient data, and conducts key informant interviews to inform the provision of appropriate evidence-based interventions. TPBC engages Black communities through community-based organizations and social media advertising. The TPBC website offers BC information, connects Black women to community BC resources, and provides access to a risk-assessment tool.

Results: TPBC has provided tailored information packets, evidence-based interventions, and systematic support for improving the tracking and follow-up of breast health care among patients in 10 clinical partnerships. The project has

---

The first two authors contributed equally to this work as joint first authors.

Support for this supplement has been provided by Pfizer Inc. through a Breast Health Equity initiative with the American Cancer Society.

provided education at community events monthly since mid-2021. The TPBC website (http://endbreastcancerohio.org) is promoted through social media (primarily Facebook) and community events to reach Black women aged 25–70 years. To date, 4108 unique users have visited the website, of whom 15.9% completed the risk assessment.

Conclusions: Novel strategies are needed to address persistent disparities in BC outcomes among Black women. TPBC demonstrates the potential effectiveness of multiple methods of community-based, clinic-based, and web-based engagement.

Plain Language Summary

- Turning the Page on Breast Cancer (TPBC) aims to reduce breast cancer mortality among Black women in Ohio by conducting multilevel, community-engaged interventions in 12 counties.
- Women are provided risk information and education at virtual and in-person community events and through a community-friendly website that was launched in November 2020.
- Almost 4000 women have visited the website, which offers community-targeted information, urges screening for individuals at elevated risk, and offers access to patient navigation services; 655 users have used a breast cancer risk-assessment tool on the site.
- Community-based organizations conduct educational efforts.
- TPBC partners with health care facilities, which are taught to improve their ability to conduct effective breast cancer screening, follow-up, and treatment.
- So far, TPBC has provided educational information, evidence-based intervention lists, tailored information packets, and ongoing quarterly support to partners in 10 counties.
- Evaluation will focus on aggregated data for screening and genetic testing referral at the clinic level.

KEYWORDS
African Americans, breast neoplasms, health disparity, minority and vulnerable populations, prevention and control, risk assessment

INTRODUCTION

Compared with their White peers, Black women across the United States are more often diagnosed with late-stage breast cancer (BC), less often receive stage-appropriate treatment, and have lower survival rates at more advanced disease stages.[1,2] The state of Ohio had the second worst mortality rate for BC in the United States in 2015,[3] with 35% higher BC mortality rates among Black women compared with White women.[4] This mortality disparity exists despite Black and White women's similar rates of screening mammograms (both groups are approximately 78% up to date with mammography screening) and BC incidence (124.8 per 100,000 Black women, 129.2 per 100,000 White women).[5] Existing data suggest factors that contribute to this substantial mortality disparity: higher rates of late-stage diagnosis, higher prevalence of triple-negative BC (TNBC) in Black women, and lesser local and systemic BC management.[5,6]

Extensive research has focused on the critical behavioral and environmental factors relevant to primary BC prevention, such as physical activity, alcohol consumption, breastfeeding, early-life conditions, and dietary factors.[1] But high rates of late-stage diagnosis and TNBC among Black women underline the importance of secondary and tertiary prevention as well. Reducing Black BC mortality requires ensuring guideline-concordant screening, prompt follow-up of abnormal screening results, prompt diagnosis and treatment, and consistent use of appropriate treatment. It also requires the identification of women at particularly high risk for BC and the use of appropriate screening and treatment regimens for these women. Addressing persistent racial disparities in BC-related outcomes will require novel strategies and a multilevel approach.[7]

Turning the Page on Breast Cancer (TPBC) is a statewide program designed to improve BC-related health outcomes and address the BC mortality disparity in Ohio. TPBC uses a multilevel approach to identify Black women at risk of BC and intervenes to reduce their risk by (1) improving the ability of health care facilities to screen for risk, refer patients to genetic counseling/testing (GC/GT) when necessary, and conduct effective BC screening, follow-up, and treatment; (2) involving community-based organizations in education; and (3) providing BC education and personal risk information through a community-friendly, culturally relevant website. TPBC recognizes race as a socially constructed category associated with health disparities that often result from systemic racism and discrimination. In TPBC activities, Black women are self-identified or identified as such within the health care facilities that serve them.

We focus our TPBC efforts in 12 specific Ohio counties (Figure 1), which we identified as having the highest rates of TNBC, late-stage BC, and a significant population of Black residents.[5,8] A wealth of prior research documents the multilevel origins of disparate cancer health outcomes and the necessity of intervening at multiple levels to resolve such disparities. In keeping with the Warnecke Model for Analysis of Population Health and Health Disparities,[7] TPBC operates simultaneously at multiple levels, enhancing an existing ecosystem of research and interventions to improve BC outcomes for Black women. *Women* aged 25–70 years are recruited to use the culturally relevant program website via social media, community channels, and through participating clinical partners, allowing them to enter information about themselves and receive education about breast health as well personalized risk information about BC. *Providers* from partner facilities learn from academic partners about current evidence-based BC screening/surveillance and communication strategies. *Health systems* are engaged in ongoing interaction with TPBC staff members, who assists them in implementing continuum-of-care patient navigation and in implementing systems to monitor patients for breast health (mammography, GC/GT, follow-up of abnormal test results, and treatment) to reduce loss to follow-up. *Community coalitions and organizations* are mobilized to address breast health by learning about BC in their communities, hosting TPBC staff at local community-wide events, promoting the TPBC website, and participating in ongoing conversation with and advising of the TPBC staff.

The TPBC project is intensively engaged with communities. Designed by experienced community-based participatory researchers and based on findings from long-time project–based relationships with Black communities in Ohio, TPBC uses many of the core principles of community-based participatory research. Specifically, TPBC relies on long-term relationships with community partners who share control of the priorities and implementation of interventions, works directly with established community-based organizations and clinics to assess needs and assets, regularly seeks input and guidance from community leaders, builds knowledge and capacity within all our partner organizations, recognizes Ohio's Black communities as units of identity, and develops educational materials and interventions consistent with the shared values, goals, and interests of these communities.[9,10]

The current report provides a process-level overview of the TPBC program. We describe the methods we are using at each of these levels as well as some of the challenges TPBC has navigated and successes TPBC has generated to date.

METHODS

Facility-level, health system-level, and provider-level activities

At the facility, health system, and provider levels, our intervention involves systematic engagement with one clinical partner in each TPBC county over 1 or more years. This intervention is designed to improve the ability of our clinical partners to facilitate access to GC/GT, guideline-appropriate BC screening, referrals, follow-up, and treatment for patients. Patient-level data will be collected at baseline, again at the end of each partner's participation in the program, and at yearly midpoints when possible.

Identifying clinical partners

To implement TPBC at the level of facilities, health systems, and providers, we aimed to form clinical partnerships within each of the 12 Ohio counties identified as having particularly high rates of BC mortality among Black women. Project staff used web searches and networks of clinical partners from past projects to conduct an environmental assessment within each target county, identifying Federally Qualified Health Centers, Community Health Centers, and other health care facilities that might be willing to partner with TPBC. In some counties, there was only one clinic of any substantial size; this then became our primary target. In others, our staff targeted clinics serving the low-socioeconomic status and predominantly Black residents of the county. Beginning in October 2020, we reached out to potential partner clinics to introduce TPBC and to locate individuals empowered to decide whether to participate in the program. To be eligible, facilities had to provide the following services: primary care, access to mammogram, follow-up on mammogram results, and referrals to GC/GT. In separate meetings with representatives of each eligible and interested clinic (administrators, staff members, health care providers), between two and four members of our Ohio State University (OSU) staff discussed the state of BC among Black women in Ohio and described the TPBC program in detail, including how target counties were selected, TPBC program goals, the TPBC website, what would be expected of the facility if they chose to participate, availability of breast health services and resources to patients within the county, and which services the clinic provides to its own patients. As a result of COVID-19-related precautions, all meetings and informational conversations occurred via remote platforms (i.e., Zoom [Zoom Video Communications, Inc.], Microsoft Teams

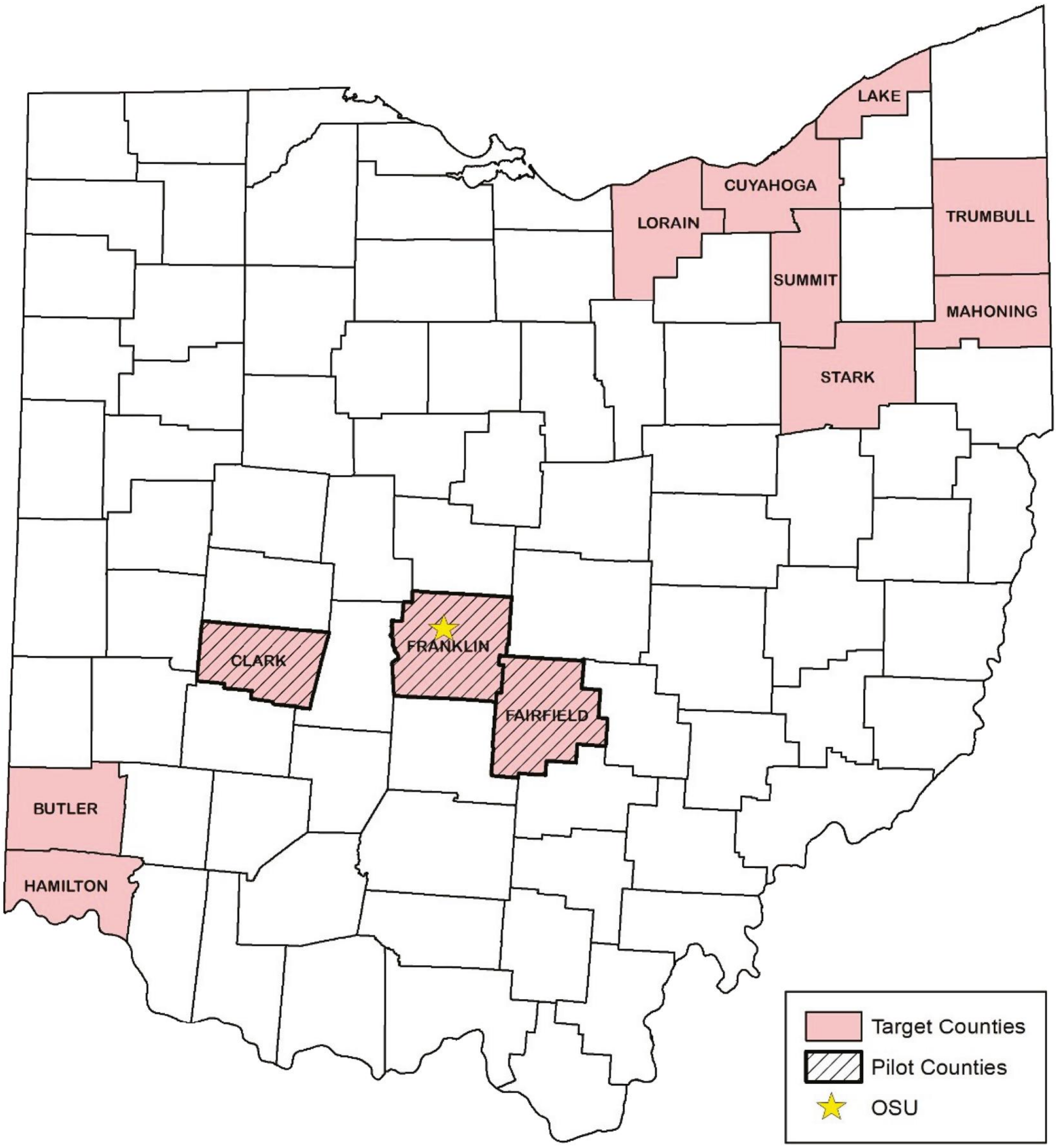


FIGURE 1 Target counties for the Turning the Page on Breast Cancer program. OSU indicates the Ohio State University.

[Microsoft Corporation]). Facility-level decision makers chose whether to participate based on these meetings and conversations. Participating clinics have identified individuals who serve as direct points of contact throughout the project along with well informed clinic staff members who complete the required organizational assessment (OA) and key informant interview (KII) on behalf of the facility.

Organizational assessments and baseline patient data

Representatives from each partner facility complete an OA and provide baseline data about patients at the point of enrollment in TPBC. Individuals eligible to supply these data include health care leaders or providers, managers, or office staff. Data are collected and managed using REDCap, a secure web-based software platform designed to support data capture for research studies.[11,12] The OA instrument was designed to collect information about the facility's personnel and resources (e.g., teleconferencing software), the volume of female patients it serves, characteristics of its patient population (e.g., age, race, insurance status, refugee/immigrant, limited English proficiency, income status, transportation needs), services provided to patients, use of electronic health records (EHR) and EHR system vendor, use of patient portals, patient education and testing capacity, which members of the clinic staff facilitate various components of cancer prevention and screening, means through which screening and tests results are communicated to patients, and COVID-19 restrictions. Patient data include, by race and ethnicity: (1) the proportion of patients within American Cancer Society guidelines for mammogram receipt within the last year, (2) the proportion of abnormal mammograms that were resolved within 60 calendar days (resolution was defined as completion of follow-up imaging and referrals), and (3) the number of patients referred to genetic counseling within the last year. We collect these three datapoints at baseline (facility enrollment), again once during each calendar year, and a final time at the end of each facility's participation in the program. Two-sided, paired *t*-tests or Wilcoxon signed-rank tests will be used to identify changes in each metric between baseline and completion of the program. Interim changes may also be documented; depending on the distribution of the data, paired *t*-tests or Wilcoxon signed-rank tests will be used to test for improvements in care metrics relative to baseline. These results will be reported in a separate outcomes article at the end of the TPBC project period.

Key informant interviews

The TPBC program provides appropriate evidence-based interventions (EBIs) to partner clinics, tailored to help each provide excellent BC screening and prevention services to Black women. To inform the provision of these EBIs, we conduct KIIs with representatives (an administrator or their designee) of our partner facility. Structured, one-on-one interviews are conducted by experienced members of our project staff by phone. Interview topics include patient awareness of information related to BC risk and screening; the clinic's screening recommendations, tracking methods, and follow-up processes; how screening results are communicated to patients; barriers patients experience to screening and follow-up; organizational efforts to improve screening and follow-up rates; use of the EHR in screening and follow-up; GC/GT recommendations and referrals; and barriers to genetic services. In addition to these topics, interviews also include tailored questions based on needs or gaps illuminated by the OA (e.g., if no one at the clinic was referring patients for genetic counseling at the time of the assessment, we ask about their process [if any] for identifying patients at high risk for BC). Interviews are recorded, and the ideas each key informant provides in answer to each interview question are catalogued using an Excel spreadsheet (Microsoft Corporation).

Provider intervention

A subgroup of the study team developed a provider education module. Content for the module was selected from evidence-based guidelines of the American Cancer Society, the Centers for Disease Control and Prevention, and the National Comprehensive Cancer Network. Four primary objectives were selected based on literature review, expert opinion, and community participant input:

1. Explain the current mammography guidelines and how often patients should receive mammograms.
2. Identify risk factors for genetic abnormality because of family history.
3. Identify patients at potential high risk for BC because of family history, and make recommendations for genetic counseling.
4. Identify patients who need mammograms.

The original plan for the provider intervention had been in-person presentations, including training in motivational interviewing. However, because of the COVID-19 pandemic, the intervention scale and format had to be changed. We developed slides that covered BC epidemiology and disparities, BC genetics, BC screening and surveillance, BC diagnosis, BC treatment, barriers to screening and GC/GT, and local resources for assistance. Members of the study team were recorded for the slide presentation (H.H., B.O., S.O.G.) and attended the provider education sessions virtually (H.H., C.N.L.).

Evidence-based interventions to improve breast health management

Based on a review of the National Cancer Institute's Evidence-Based Cancer Control Programs[13] and the scientific literature on BC and genetics-related interventions, the TPBC project staff assembled a list of EBIs for improving breast health management at the facility, health system, and provider levels. Members of the TPBC staff review the content of the OAs and KIIs from each enrolled clinic to identify gaps in each facility's management of patient breast health. Staff members then select the specific EBIs appropriate to address the gaps at each facility and share these tailored EBI lists with clinic contacts. During separate *EBI meetings* with representatives of each clinic, our TPBC staff then review the gaps and opportunities identified from the OA and KII and discuss the opportunities for improving breast health care—including the tailored list of EBIs. During these meetings, we also review the study website and the opportunity for a provider education session based on the presentation described above. In addition, clinics each receive a county-specific *information packet*, which includes a review of TPBC activities; information about the TPBC website and opportunity for patient navigation; a directory of breast screening, treatment, and genetic testing facilities in the county; and county resources for health care, employment, education, development, and social and emotional wellness.

Continuing clinic engagement

After completion of the EBI meeting, TPBC staff members aim to continue meeting with clinic partners every 2 months throughout the project engagement period. These meetings include conversations about changes that have been made to breast health management and opportunities for clinic partners to request additional help revising clinic processes or locating BC-related resources.

Direct community engagement

At the community level, our interventions include social media outreach and regular participation in community events to share

TPBC information and BC education; we also track data about the frequency and reach of these community-engagement activities. TPBC is guided by regular engagement with a study-specific Community Advisory Board (CAB).

Community events and publicity

The TPBC staff aims to provide a regular presence at community events within our 12 target counties, to provide BC education, introduce community members to TPBC, and to drive traffic to the TPBC website. Project staff use web searches and networks of partners from past projects to conduct environmental scans within each target county, assembling inventories of community groups and agencies with which we might partner to reach Black women. We have also developed a postcard that is distributed at community events; it contains information about TPBC as well as a QR code and URL to direct individuals to the risk-assessment page of the TPBC website (Figure 2). The goal of the TPBC is to attend community events at least monthly, taking advantage of events such as Breast Cancer Awareness Month to engage with communities more frequently when possible.

Did you know?

Black women in the United States are about 40% more likely to die of breast cancer than white women.

Together we can change that!

Nearly all breast cancers can be treated successfully if found early through screening.

Help us **Turn The Page On Breast Cancer**
by visiting **www.EndBreastCancerOhio.org**

Take a personal risk assessment and find out more about breast health, including where to schedule a mammogram, how to connect to community resources, and more.

Turning The Page On Breast Cancer

The James
The Ohio State University
Comprehensive Cancer Center

FIGURE 2 The Turning the Page on Breast Cancer postcard for distribution at community events.

Social media outreach

TPBC also uses social media advertisements designed to inform our target population about TPBC and the program website. Since November 30, 2020, we have used Facebook advertisements to serve TPBC ads to female residents of target counties aged 35 years and older. Our ads are culturally tailored to reach Black women and emphasize important times of the year—such as Breast Cancer Awareness Month, Black History Month, and Mother's Day. Facebook provides information on the performance of paid TPBC ads, including reach (the number of people who saw the ad at least once), impressions (the number of times the ad was on screen), and unique clicks (the number of people who clicked on the ad). We report preliminary metrics on these measures below; complete analyses will be presented in a future outcomes report.

Community Advisory Board

The TPBC CAB is comprised of 14 members: lay community members (including cancer survivors) from our target counties and representatives of health care delivery systems operating in these counties. In 1-hour quarterly meetings (starting February 2021), CAB members provide input on program materials, website content, and Facebook ads; they also help generate ideas about how to promote TPBC in their communities.

TPBC website

The TPBC website is a community-level intervention designed to provide culturally relevant information about BC and BC risk and to link interested viewers to risk assessment and patient navigation. As a publicly available resource, the TPBC website constitutes a community-level intervention in two ways. First, the website offers information and resources to all community members who may benefit from them, rather than only to those who are able to discuss BC-related issues with a health care provider, as is the case with more traditional clinic-based interventions. Second, the website has been designed specifically with Black women in mind; with input from Black women as well as researchers, clinicians, and other providers who specialize in serving Black women; and advertised directly to Black women and families. Website usage data are collected monthly; preliminary information about these measures is presented below, and a full summary will be reported at the end of the project period.

The TPBC website (publicly available at https://endbreastcancerohio.org/) was developed by a subset of the coauthors, composed of a cancer health informatics researcher with health information technology and web development experience (W.L.T.), a program director with experience in web development and social media outreach (R.D.B.), and a research coordinator with experience in social media outreach (C.R.B.W., R.R.). A multidisciplinary group composed of cancer prevention researchers (E.D.P., C.M.W., C.R.D., A.E.T.), oncologists (D.G.S.), genetic counselors (H.H.), and social scientists (T.J.P.) collaborated with the website team to generate content. In addition, we gathered BC information from authoritative online resources, such as the American Cancer Society and Komen Foundation, gaining permission to use this information when necessary. The final website is designed to be culturally appealing and includes original commissioned artwork as well as information about BC in general, BC among Black women, myths and facts related to BC, information for current and future collaborating clinicians, details of the risk-assessment and genetic testing processes, and references and links to related websites on BC and additional resources (Table 1). It also includes a web-based risk-assessment tool developed using Qualtrics,[14] an online survey builder. This tool replicates content of the Family History Screening-7 questionnaire,[15] a seven-question family history screening instrument recommended by the US Preventive Services Task Force.[16] Finally, the website includes a link to request additional information and assistance from our TPBC program navigator. The website launched in November 2020. The TPBC team uses Google Analytics to collect information about the number of page views, the number of visitors, and the length of stay on the TPBC website.

RESULTS

Turning the Page on Breast Cancer is an ongoing program (see Figure 3 for a timeline of TPBC activities). Since early 2020, we have been engaging actively with Black women, their communities, and

TABLE 1 Contents of the Turning the Page on Breast Cancer website.

Main topic (menu)	Subtopics
About breast cancer	What is breast cancer?
	What causes breast cancer?
	What is the lifetime risk for breast cancer in the general population?
	What are the risk factors for breast cancer?
	How to find or detect breast cancer
	What to know about mammography
Black women and breast cancer	What is the average American woman's risk of developing breast cancer during her lifetime?
	How does being Black or African American affect my risk for breast cancer?
	What is risk assessment?
	What's my risk? (access to web-based risk assessment tool)[15]
Information for providers	Partnering with federally qualified health centers
	Recruiting federally qualified health centers
	What is risk assessment?
	What is genetic counseling?
Additional resources	Ohio county-level resources including mammography facilities, genetic testing facilities, breast cancer treatment facilities
	National resources
What's my risk?	Access to web-based risk-assessment tool
Myths vs. facts	Addresses common misconceptions about breast cancer
Messages from the community	Testimonials from breast cancer survivors regarding their cancer journey
Contact a patient navigator	What is patient navigation?
	Who are patient navigators?
	Who needs patient navigation?
	What do patient navigators do?
	Does patient navigation work?
About us	Information about Turning the Page on Breast Cancer and project team
Local events	Upcoming events in from community partners
Contact us	Contact the project team with comments, messages, or questions

their health care providers in many of the Ohio counties where Black women are at highest risk for BC and poor BC outcomes. This section describes interim, process-oriented results; broader program results and findings will be reported in a future article.

Facility-level, health system-level, and provider-level activities

Starting with three pilot counties in the center of the state (Figure 1), the TPBC team began approaching health care facilities about potential partnerships in October 2020. We approached 40 facilities, each of which was a health system (owning multiple facilities) or a stand-alone clinic. Of these, 14 were identified as ineligible because they did not provide the full range of required breast health services. Of the 26 eligible clinics/health systems, 18 declined to participate because they did not have sufficient staff or resources to take on an additional project. The other eight chose to become TPBC partners; seven of these were stand-alone clinics, and one was a health system with facilities in three counties. As a result of these conversations and meetings, we enrolled clinical partners in 10 counties (nine were fully enrolled between December 2020 and March 2021; one is currently being enrolled): Clark, Cuyahoga, Fairfield, Franklin, Hamilton, Lorain, Lake, Mahoning, Stark, and Trumbull. In several cases, our clinical partners are health care systems that encompass multiple facilities throughout a county. Some of our clinical partners also represent the only facilities serving low-income patients within their county. Of these 10 partners, all provide primary care, one is a Federally Qualified Health Center, more than one half include dedicated women's health services, and several include on-site laboratories, surgical services, and/or telehealth appointments. Established clinic partnerships are all ongoing except one—that clinic was purchased by a new health care system and ended their TPBC involvement May 2022. Clinics that were approached but were not interested in participating, including all clinics we have approached in Butler and Summit counties, were mainly overwhelmed by COVID-19-related demands and were unable to engage in any additional activities. TPBC staff members continue to pursue new clinical partnerships in the three counties currently lacking one. Our staff locates potential clinics and contacts them to assess their clinic population and breast health services; they then request a meeting to introduce TPBC with all facilities that have breast health services. In some facilities, providers are interested in participating in TPBC, and management is in the process of deciding whether this is possible.

Each clinical partner received a tailored information packet soon after enrolling in TPBC. OAs and baseline patient data were collected from nine of our clinical partners between January and June 2021. KIIs were completed with 11 representatives from eight clinical partners between February 2021 and June 2022—one interview was completed with each partner soon after enrollment, and three follow-up interviews were conducted to clarify the current status of clinical practices when a new project coordinator joined the TPBC team. Interviews lasted between 24 and 57 minutes. These data revealed a range of needs and gaps related to the processes our clinical partners have in place to manage breast health among their patients. Most common among these were low rates of referral to GC/GT for relevant patients and lack of follow-up protocols for abnormal mammogram results.

Between July 2020 and June 2021, we developed the 42-minute video presentation designed to educate providers at participating

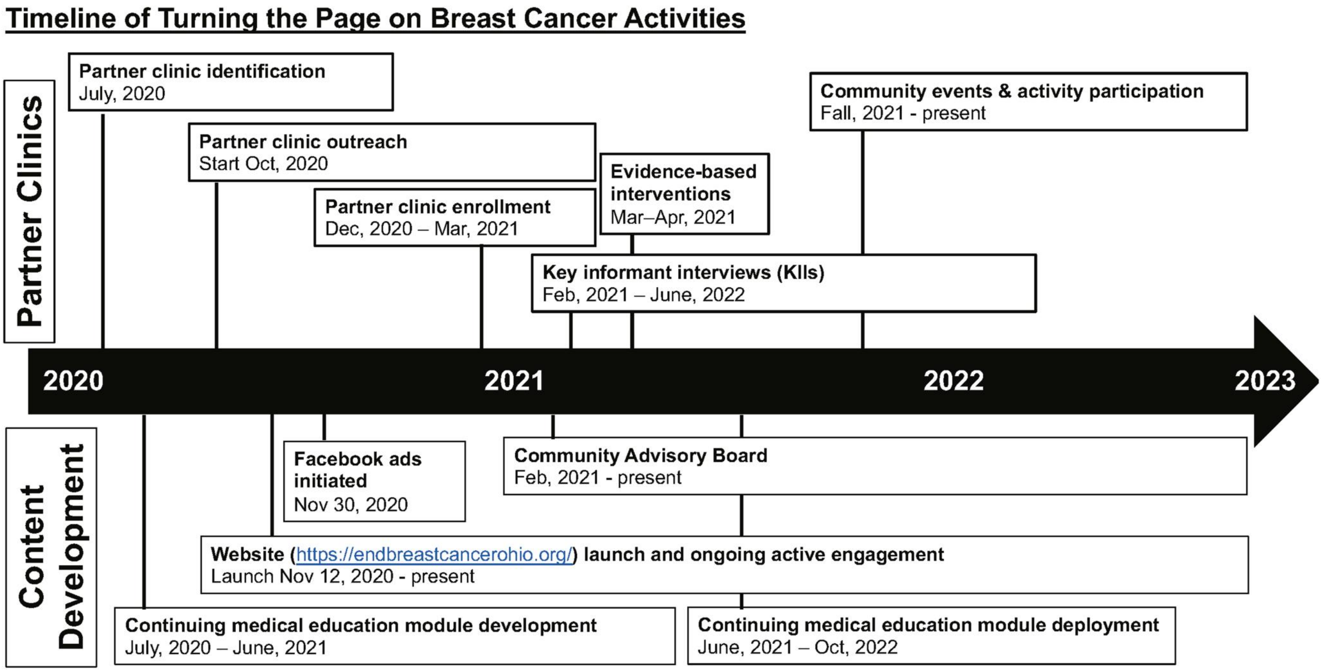


FIGURE 3 Timeline of Turning the Page on Breast Cancer activities.

sites about BC and GC/GT. Anonymous pre-education and post-education session surveys were administered to assess change in knowledge about breast health. The module has been approved for one Continuing Medical Education credit by the OSU Office of Continuing Medical Education. Through October 2022, we have held three meetings at which a total of 20 clinicians and administrators from participating clinics in five counties have completed the TPBC-developed provider education module.

The TPBC list of BC-related EBIs includes 10 proven interventions designed to improve uptake and guideline-adherent use of BC screenings by educating patients and health care providers, connecting patients with resources and support, and improving clinical processes.[17–26] The majority of these EBIs were developed specifically for use in Black, African American, or racially minoritized communities. Eight additional EBIs aim to increase screening for high BC risk, referral to and use of genetic counseling, and appropriate uptake of genetic testing.[27–34] Lists of EBIs were distributed to six of TPBC's clinical partners between March and October 2021, each tailored to breast health management needs and gaps identified by the OAs, baseline patient data, and KIIs. Commonly recommended EBIs are those that assist clinics with implementing systematic screening and follow-up processes. Meetings to discuss these EBIs took place with three clinical partners between March and April 2021.

TPBC staff members provide regular guidance and suggestions for ongoing improvement of BC and screening protocols to all clinical partners. All TPBC clinics are also distributing the TPBC postcard to patients to raise BC awareness and drive traffic to the TPBC website. Two *clinical champions* have been particularly engaged in implementing changes suggested by TPBC. At the patient level, these include scheduling mammograms as patients check out from appointments, maintaining pending mammogram orders at walk-in facilities, sending reminder cards to patients, and calling patients who have open orders or are due for mammograms. At the system and community levels, these include weekly administrative meetings to review data provided by TPBC-designed quality metric dashboards and revise action plans when needed, clinic-based outreach to local Black communities, working with a state program to secure financial assistance to uninsured and underinsured women, using a screening navigator and patient care coordinator who forge personal relationships with patients and addresses barriers to mammography, and providing interpretation services and bilingual staff schedulers. TPBC intends to nurture these activities among other clinical partners as well. End point measurements will allow us to assess the improvements in key dimensions of breast health management for Black women in Ohio over time.

Direct community engagement

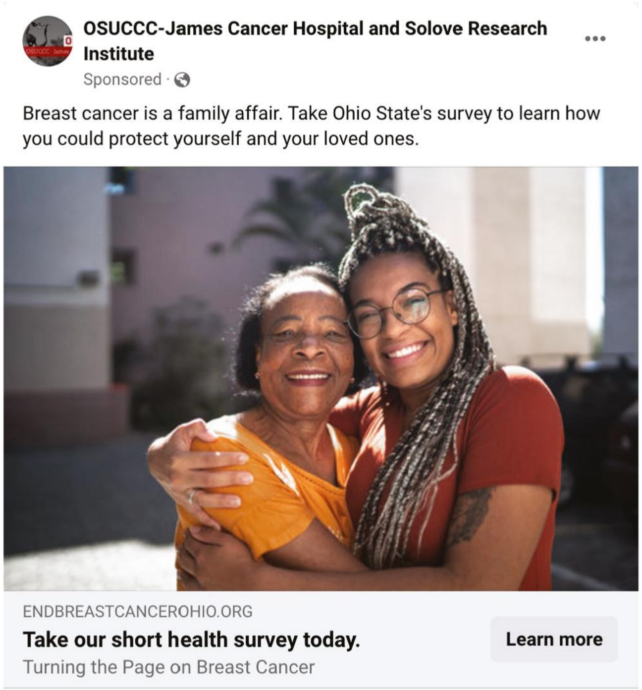
During 2020, many community events and activities were cancelled, shut down, or curtailed because of COVID-19; we also took precautions to protect our staff until COVID-19 vaccines were widely available around the middle of 2021. TPBC staff members participated in seven virtual community events during the Fall of 2021. Between April and October, TPBC staff participated in between one and nine community events per month. In total, we attended 22 in-person events and two additional virtual events during 2022, reaching between 30 and 250 attendees per event.

CAB meetings have yielded a range of helpful ideas about community events at which TPBC should be present, the content and timing of our Facebook advertising campaigns, and the content of the website. They have been particularly valuable in ensuring that TPBC interventions, including the website, are culturally appropriate to be implemented within Black communities in Ohio.

In total, eight Facebook ads were placed over an 18-month period (for example, see Figure 4). The total reach of the advertising campaign was 16,746 views, and 4108 users clicked on one of the advertisements. The average cost per click for this period was $0.64.

TPBC website

From November 12, 2020, through November 1, 2022, 4108 total users visited the website, of whom 3874 were residing in the United States. On average, US users visited 3.2 pages per session. The average bounce rate (the percentage of one-page sessions with no activity on the page) was 3.36%. During this period, the highest activity was reported during October 2021, which coincided with the start of our community outreach efforts, followed closely by October



OSUCCC-James Cancer Hospital and Solove Research Institute
Sponsored ·

Breast cancer is a family affair. Take Ohio State's survey to learn how you could protect yourself and your loved ones.

ENDBREASTCANCEROHIO.ORG
Take our short health survey today.
Turning the Page on Breast Cancer

FIGURE 4 Best performing Facebook advertisement for Turning the Page on Breast Cancer. OSUCCC indicates the Ohio State University Comprehensive Cancer Center.

2022. Excluding the homepage and risk assessment, which serve as landing pages, the most visited pages were the Community Resources, About Us, and About Breast Cancer pages. Approximately one half of visitors (*n* = 2147; 55.4%) accessed the website using a mobile device, 1179 visitors (30.4%) used a desktop computer, and 548 (14.2%) used a tablet device.

Of the website visitors, 2546 (65.7%) were from Ohio. The largest percentage of Ohio users (*n* = 952; 37.4%) were from the Columbus area, followed by Cleveland-Akron (*n* = 596; 23.4%); both of these metropolitan areas are within targeted counties (Franklin and Cuyahoga-Summit, respectively).

In total, 639 website visitors completed a risk assessment (see Table 2). The majority of these identified as non-Hispanic White (*n* = 339; 53.1%), followed by individuals identifying as Black (*n* = 226; 35.4%). Most visitors who completed the risk assessment were aged 60–69 years (*n* = 106; 16.6%) or 50–59 years (*n* = 106; 16.6%; see Table 3). Most risk-assessment completions were from Ohio (*n* = 556; 87.0%). Among those completed in Ohio, 61.9% were completed in our targeted counties (*n* = 344). Most visitors heard about the website through Facebook (*n* = 257; 40.2%), followed by flyers or community outreach events (*n* = 142; 22.2%).

Among visitors who completed the risk assessment, 63 requested to be contacted by a patient navigator. Among these, 14 (22.2%) identified as Black, and 45 (71.4%) identified as non-Hispanic White.

DISCUSSION

The nationwide racial disparity in BC mortality is particularly acute in Ohio because of the high rates of late-stage diagnosis and TNBC among Black women. Addressing this public health challenge requires novel strategies and a multilevel approach. TPBC takes up this challenge in some of the highest risk counties of the state, using community-engaged approaches to identify, educate, and care for Black women at risk. TPBC also helps reduce the risks of poor BC outcomes by improving clinical processes for managing breast health, involving community-based organizations in BC-related education, and providing information and personal risk information through an approachable, culturally appropriate website.

TABLE 2 Individuals who completed a risk assessment and how they heard about the risk-assessment tool.

	How did you hear about Turning the Page on Breast Cancer?							
Race	**Facebook**	**Flyer or community event**	**Friend or family referral**	**Newspaper or television story**	**Other**	**Recent medical appointment**	**Blank**	**Race totals, No. (%)**
American Indian or Alaska Native					1			1 (0.2)
Asian or Asian American	1	5	1		2	1	2	12 (1.9)
Black or African American	10	113	30	3	47	4	20	227 (35.5)
Black or African American, American Indian or Alaska Native	1							1 (0.2)
Don't know		1						1 (0.2)
Native Hawaiian/other Pacific Islander				1				1 (0.2)
White	230	13	21	5	24	2	44	339 (53.1)
White, American Indian, or Alaska Native			1					1 (0.2)
White, Black or African American		2			3	1	2	8 (1.3)
White, Black or African American, American Indian or Alaska Native, Asian or Asian American		1						1 (0.2)
White, Black or African American, Asian or Asian American				1	1			2 (0.5)
No response	15	7	4	2	5	1	11	45 (7.0)
Total, No. (%)	257 (40.2)	142 (22.2)	57 (8.9)	12 (1.9)	83 (13.0)	9 (1.4)	79 (12.4)	639 (100.0)

TABLE 3 Age and location (county) of website visitors who completed a risk assessment.

Variable	Total completions No.	%
Age, years		
18–19	5	0.8
20–29	29	4.5
30–39	63	9.9
40–49	65	10.2
50–59	106	16.6
60–69	106	16.6
70–79	57	8.9
80–89	4	0.6
Missing	204	31.9
County		
Butler[a]	3	0.5
Clark[a]	21	3.3
Cuyahoga[a]	15	2.3
Fairfield[a]	20	3.1
Franklin[a]	207	32.4
Hamilton[a]	16	2.5
Lake[a]	6	0.9
Lorain[a]	5	0.8
Lucas	4	0.6
Mahoning[a]	15	2.3
Montgomery	6	0.9
Richland	2	0.3
Stark[a]	8	1.3
Summit[a]	28	4.4
Trumbull[a]	28	4.4
Other	120	18.8
Missing	135	21.1

[a] Indicates a Turning the Page on Breast Cancer-targeted county.

Over the past 2 years, TPBC has implemented evidence-based approaches based on a multilevel model for addressing health disparities, yielding challenges, successes, and new insights. Central among the contemporary needs of Black women are access to culturally appropriate information about BC, education about BC risk, and linkage to health care providers who can support risk management and breast health. Existing evidence from our group and others demonstrates that Black women are disadvantaged with respect to information access, and lack of BC information is associated with reduced use of screening and risk-management behavior.[35,36] TPBC aims to overcome these barriers using a multilevel intervention that includes systematic engagement with partner clinics in 12 counties where BC rates among Black women are particularly high, direct engagement with community-based organizations and social media outreach in these counties, and an original, targeted website with educational, risk-assessment, and patient navigation components.

TPBC aims to improve the systems and processes through which our clinical partners manage breast health care and to improve BC-related awareness and education, risk assessment, and linkage to care among Black women throughout Ohio. Our expectation is that this work will ensure critical elements of the BC diagnostic continuum: that Black women receive systematic support to achieve regular screening, have every opportunity to understand their breast health and BC risk, and are not lost to follow-up when they receive abnormal mammogram results.[37]

Clinical process improvement is a critical tool to reduce health disparities but can be challenging in low-resource environments. The significant investment made by TPBC has yielded ongoing and productive clinical partnerships in most—but not all—of our target counties. Clinics that serve Black women in high-risk areas are stretched thin and are not always able to engage with quality-improvement efforts, even when they are supported by a no-cost partnership with an expert, university-based team. System-level transitions in clinic ownership or management can set back ongoing efforts to support population health but could hypothetically also open the door to new partnerships and clinical improvement activities. Over the past 2 years, COVID-19 has added to these strains,[38] limiting the capacity of clinics to make change. It is possible to implement new systems and novel, evidence-based practices even in low-resource environments, and university-based programs can effectively support these transitions—as evidenced by ongoing TPBC activities with our *clinical champions* and other partners.

As a multilevel intervention program aiming to make population-level improvements in health care and health outcomes, TPBC has also prioritized direct community engagement. Community organizations have been enthusiastic partners in this work, welcoming TPBC partners to virtual and in-person community events, distributing TPBC postcards and other educational materials, and maintaining relationships with TPBC staff over months or years. We have also found that traffic to the educational TPBC website increases in the counties and time periods in which TPBC staff and postcards are present at virtual or in-person community events. These direct forms of community engagement require significant and regular investment of time and resources to locate appropriate events, connect with organizers, and provide a well prepared staff presence. Sustaining these investments over time will require recognition of the importance of community-based health promotion from university, private, or state funders.

Our experience implementing the TPBC website illustrates that effectively targeting online health information to improve BC outcomes requires intensive community engagement. We found that ongoing input from both our multidisciplinary team and our CAB was essential to developing mobile-optimized, community-friendly, culturally appropriate website contents and design. For these reasons, the website has constantly evolved with new content and revisions. These have led to improvements in processes and content, including directing advertising traffic to the risk-assessment page rather than the homepage, the addition of pages including Community Events (April 2021) and Myths and Facts (October 2021) pages, and updates to the website and risk assessment to improve mobile user experience. From launch through April 2021, participants who clicked a Facebook ad were directed to the TPBC homepage. The Risk Assessment introductory page was redeveloped in April 2021 and deployed in May to become a new landing page for Facebook ad traffic, resulting in increased completed risk assessments compared with the first 5 months of advertising. The newly developed pages are quickly catching up to the original launch pages in page views, suggesting that these additions are popular with visitors and are increasing engagement with the website.

Uptake of personalized risk assessment has been a challenge during these early phases of use of the TPBC website—just under 14% of visitors so far have completed the risk assessment while on the website. Although exposure to the educational content of the site alone may be sufficient to support better breast health in some women, prior research supports the hypothesis that the personalized risk assessment could open up additional avenues for engagement—with BC screenings and follow-up broadly and with genetic counseling among high-risk women.[39] Our ongoing efforts to increase use of the TPBC risk-assessment tool complement work underway in other groups to understand and overcome barriers to risk assessment in Black women.[40]

Although the majority of women who have completed the risk assessment to date have not been Black, we have used strategies to increase visibility of the website within the target population. In October 2021, Facebook advertisements were refined further—through interest targeting—to better reach Black women. A Facebook Live event was held in October 2021 to educate women on BC awareness, screening, and genetic counseling. This video was then embedded on the newly developed Myths Versus Facts page. October 2021 and October 2022 were our best months for website traffic and completed risk assessments and can be attributed to direct community engagement, increased ad spending, and through search engine queries related to BC awareness and local events. Sending TPBC staff to community events and distributing postcards there has helped promote the website and risk-assessment tool. In the future, we will continue to work with leaders and stakeholders in the target communities to further promote the website to Black women. As shifts occur in the social media preferences of target users, it may also become necessary to advertise the website through newer social media platforms.[41]

Our approach to TPBC for Black women in Ohio has met with challenging circumstances, often stemming from the limits of community-level resources and from the effects of COVID-19 on community resources. TPBC's community-engaged, multilevel approach has yielded successes already as well; however, enrolling clinical partners interested in systematic improvement, attracting our target population to online educational material, and beginning to transform breast health care for Black women. It is clear that novel strategies are needed to address persistent disparities in BC outcomes among Black women. As an ongoing project, TPBC demonstrates the potential effectiveness of multiple methods for community-based, clinic-based, and web-based engagement to enhance BC awareness and education, personalized risk assessment and breast health prescriptions, screening, and referrals.

AUTHOR CONTRIBUTIONS

All authors contributed to designing the Turning the Page on Breast Cancer program and guiding its ongoing development.

Electra D. Paskett and **Heather Hampel** led design of the program and procurement of funding. **Willi L. Tarver**, **Ryan D. Baltic**, **Ruvarashe Rumano**, and **Clarissa R. B. Whiting** developed, revised, and monitored the website, with regular input from other authors. **Cecilia R. DeGraffinreid** led work on the key informant interview and organizational assessment components of the program. **Chasity M. Washington** led work on the community-engagement components of the program. **Willi L. Tarver**, **Ryan D. Baltic**, **Ruvarashe Rumano**, and **Clarissa R. B. Whiting** wrote original drafts of article sections pertaining to the website. **Clara N. Lee** led the health care provider education component along with **Samilia Obeng-Gyasi** and **Brittany Bernardo**; **Clara N. Lee** drafted content pertaining to this component. **Tasleem J. Padamsee** and **Daniel G. Stover** wrote the first draft of all other sections of the article. **Tasleem J. Padamsee** led the writing and revision process. All authors contributed to revisions and approved the submitted article.

ACKNOWLEDGMENTS

The work was funded by a Pfizer Global Medical grant (Breast Health Equity Initiative), the American Cancer Society, and PELOTONIA. It was also supported by The Ohio State University Comprehensive Cancer Center and the National Institutes of Health under grant number P30 CA016058. We thank the Recruitment, Intervention, and Survey Shared Resource at The Ohio State University Comprehensive Cancer Center for survey and database development. This publication was also supported in part by the National Center for Advancing Translational Sciences of the National Institutes of Health under grant number UL1TR002733. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

CONFLICT OF INTEREST STATEMENT

Daniel G. Stover reports personal fees from Novartis outside the submitted work. Timiya Nolan reports grants from the National Cancer Institute and is a fiduciary officer of the National Nursing Society outside the submitted work. Heather Hampel reports grants from the American Cancer Society; personal fees from Carelon, GI OnDemand, Genome Medical, Invitae Genetics, Natera, Promega-USA, and WebMD; travel support from Natera and WebMD; stock ownership in Genome Medical and GI OnDemand; and is a fiduciary officer of the National Society of Genetic Counselors outside the submitted work. Amanda E. Toland reports grants and personal fees from the National

Cancer Institute outside the submitted work. Electra D. Paskett reports research funding from the Merck Foundation and Genentech; grants/contracts from Guardant Health and Susan G. Komen; and personal fees from GlaxoSmithKline outside the submitted work. The remaining authors disclosed no conflicts of interest.

ORCID

Tasleem J. Padamsee https://orcid.org/0000-0001-6644-8084
Bridget Oppong https://orcid.org/0000-0002-1696-4491
Samilia Obeng-Gyasi https://orcid.org/0000-0002-5330-7247

REFERENCES

1. Williams DR, Mohammed SA, Shields AE. Understanding and effectively addressing breast cancer in African American women: unpacking the social context. *Cancer*. 2016;122(14):2138-2149. doi:10.1002/cncr.29935
2. Giaquinto AN, Sung H, Miller KD, et al. Breast cancer statistics, 2022. *CA Cancer J Clin*. 2022;72(6):524-541. doi:10.3322/caac.21754
3. U.S. Cancer Statistics Working Group. *U.S. Cancer Statistics Data Visualizations Tool, based on 2020 submission data (1999–2018)*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute; 2022. Accessed June 15, 2021. www.cdc.gov/cancer/dataviz
4. Ohio Department of Health. Breast Cancer in Ohio, 2010–2014. Accessed May 22, 2023. https://odh.ohio.gov/know-our-programs/ohio-cancer-incidence-surveillance-system/resources/breast-cancer-in-ohio-2010-2014
5. Ohio Department of Health. *The Ohio Cancer Incidence Surveillance System*, Ohio Department of Health; 2019. Accessed May 22, 2023. https://odh.ohio.gov/know-our-programs/ohio-cancer-incidence-surveillance-system/welcome-to
6. Ohio Department of Health. Ohio on Ohio Behavioral Risk Factor Surveillance System (BRFSS). Accessed May 22, 2023. https://odh.ohio.gov/know-our-programs/behavioral-risk-factor-surveillance-system/welcome-to
7. Warnecke RB, Oh A, Breen N, et al. Approaching health disparities from a population perspective: the National Institutes of Health Centers for Population Health and Health Disparities. *Am J Public Health*. 2008;98(9):1608-1615. doi:10.2105/ajph.2006.102525
8. U.S. Census Bureau. American Community Survey (ACS); U.S. Census Bureau; 2018.
9. McLean JE, Behringer B. Establishing and evaluating equitable partnerships. *J Community Engagement Scholarship*. 2008;1:66-71. doi:10.54656/nyqp1665
10. Detroit Urban Research Center. Community-Based Participatory Research Principles. Accessed May 22, 2023. https://www.detroiturc.org/about-cbpr/community-based-participatory-research-principles
11. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research Electronic Data Capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377-381. doi:10.1016/j.jbi.2008.08.010
12. Harris PA, Taylor R, Minor BL, et al. The REDCap consortium: building an international community of software platform partners. *J Biomed Inform*. 2019;95:103208. doi:10.1016/j.jbi.2019.103208
13. National Cancer Institute. Evidence-Based Cancer Control Programs (EBCCP). Accessed May 2022. https://ebccp.cancercontrol.cancer.gov/index.do
14. *Qualtrics*. Corporate website. Accessed May 22, 2023. https://www.qualtrics.com/
15. Ashton-Prolla P, Giacomazzi J, Schmidt AV, et al. Development and validation of a simple questionnaire for the identification of hereditary breast cancer in primary care. *BMC Cancer*. 2009;9(1):283. doi:10.1186/1471-2407-9-283
16. Nelson HD, Pappas M, Cantor A, Haney E, Holmes R. Risk assessment, genetic counseling, and genetic testing for BRCA-related cancer in women: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2019;322(7):666-685. doi:10.1001/jama.2019.8430
17. National Cancer Institute. The Witness Project. NCI Evidence-Based Cancer Control Programs (EBCCP). Accessed May 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=270521
18. National Cancer Institute. The Forsyth County Cancer Screening Project (FoCaS). Evidence-Based Cancer Control Programs (EBCCP). Accessed August 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=141840
19. National Cancer Institute. Targeting Cancer in Blacks (TCiB), Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=310347
20. National Cancer Institute. Reducing Barriers to the Use of Breast Cancer Screening. Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=127195
21. National Cancer Institute. Project SAFe (Screening Adherence Follow-Up Program). Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=307723
22. National Cancer Institute. Proactive System to Improve Breast Cancer Screening. Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=781582
23. National Cancer Institute. Prevention Care Management. Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=295722
24. National Cancer Institute. Mammography Promotion and Facilitated Appointments Through Community-Based Influenza Clinics. Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=305499
25. National Cancer Institute. Maximizing Mammography Participation. Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=236253
26. National Cancer Institute. Empowering Physicians to Improve Breast Cancer Screening (EPICS). Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=119841
27. Rimer BK, Glassman B. Is there a use for tailored print communications in cancer risk communication? *J Natl Cancer Inst Monogr*. 1999;1999(25):140-148. doi:10.1093/oxfordjournals.jncimonographs.a024190
28. Niendorf KB, Geller MA, Vogel RI, et al. A model for patient-direct screening and referral for familial cancer risk. *Fam Cancer*. 2016;15(4):707-716. doi:10.1007/s10689-016-9912-6
29. Bednar EM, Oakley HD, Sun CC, et al. A universal genetic testing initiative for patients with high-grade, non-mucinous epithelial ovarian cancer and the implications for cancer treatment. *Gynecol Oncol*. 2017;146(2):399-404. doi:10.1016/j.ygyno.2017.05.037
30. Senter L, O'Malley DM, Backes FJ, et al. Genetic consultation embedded in a gynecologic oncology clinic improves compliance with guideline-based care. *Gynecol Oncol*. 2017;147(1):110-114. doi:10.1016/j.ygyno.2017.07.141

31. Destounis S, Arieno A, Morgan R. Implementation of a risk assessment program in a breast-imaging community practice. *Breast Cancer*. 2016;23(2):273-278. doi:10.1007/s12282-014-0569-4
32. National Cancer Institute. Breast Cancer Risk & Genetic Testing. Evidence-Based Cancer Control Programs (EBCCP). Accessed May 15, 2022. https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=277363
33. Pasick RJ, Joseph G, Stewart S, et al. Effective referral of low-income women at risk for hereditary breast and ovarian cancer to genetic counseling: a randomized delayed intervention control trial. *Am J Public Health*. 2016;106(10):1842-1848. doi:10.2105/ajph.2016.303312
34. Mays D, Sharff ME, DeMarco TA, et al. Outcomes of a systems-level intervention offering breast cancer risk assessments to low-income underserved women. *Fam Cancer*. 2012;11(3):493-502. doi:10.1007/s10689-012-9541-7
35. Roman L, Meghea C, Ford S, et al. Individual, provider, and system risk factors for breast and cervical cancer screening among underserved Black, Latina, and Arab women. *J Womens Health (Larchmt)*. 2014;23(1):57-64. doi:10.1089/jwh.2013.4397
36. Padamsee TJ, Meadows R, Hils M. Layers of information: interacting constraints on breast cancer risk-management by high-risk African American women. *Ethn Health*. 2021;26(6):787-810. doi:10.1080/13557858.2018.1562053
37. Kerner JF, Yedidia M, Padgett D, et al. Realizing the promise of breast cancer screening: clinical follow-up after abnormal screening among Black women. *Prev Med*. 2003;37(2):92-101. doi:10.1016/s0091-7435(03)00087-2
38. Servick K, Cho A, Couzin-Frankel J, Guglielmi G. Coronavirus disruptions reverberate through research. *Science*. 2020;367(6484):1289-1290. doi:10.1126/science.367.6484.1289
39. Schwartz C, Chukwudozie IB, Tejeda S, et al. Association of population screening for breast cancer risk with use of mammography among women in medically underserved racial and ethnic minority groups. *JAMA Netw Open*. 2021;4(9):e2123751. doi:10.1001/jamanetworkopen.2021.23751
40. Keane H, Huilgol YS, Shieh Y, et al. Development and pilot of an online, personalized risk assessment tool for a breast cancer precision medicine trial. *NPJ Breast Cancer*. 2021;7(1):78. doi:10.1038/s41523-021-00288-8
41. Bhandari A, Bimo S. Why's everyone on TikTok now? The algorithmized self and the future of self-making on social media. *Social Media Soc*. 2022;8(1):20563051221086241. doi:10.1177/20563051221086241

How to cite this article: Padamsee TJ, Stover DG, Tarver WL, et al. Turning the Page on Breast Cancer in Ohio: Lessons learned from implementing a multilevel intervention to reduce breast cancer mortality among Black women. *Cancer*. 2023;129(S19):3114-3127. doi:10.1002/cncr.34845