

NCoBC 34th Annual Interdisciplinary Breast Cancer Conference

Committee Chair: Dr. Terry Sarantou

Committee Co-Chair: Dr. Asha Bhatt

CONFERENCE DATE:

MARCH 21-23, 2025

CONFERENCE LOCATION:

CAESARS PALACE LAS VEGAS, LAS VEGAS, NV, USA

Category I

Cancer Genetic Risk Assessment (CGRA) Certification: Experience from the First Five Years

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National Consortium of Breast Centers, Warsaw, Poland

Objective: Integrating cancer genetics, genomics and cancer risk assessment has become increasingly relevant to the care of patients and there is a need for clinicians across the spectrum of practice settings to acquire and demonstrate knowledge and competency in cancer genetics and risk assessment. National Consortium of Breast Centers (NCBC's) Certification Program in Cancer Genetics Risk Assessment (CGRA) is a voluntary, nationally accredited, examination-based certification program created to provide the assurance that healthcare providers with certification in CGRA possess the knowledge, skills and competency to provide cancer risk assessment services to patients and families. NCBC's CGRA certification was developed by a multidisciplinary committee of dedicated breast care, oncology, and cancer genetics professionals and approved by NCBC's board of trustees. Testing first became available in May 2020 with testing opportunities provided throughout the year. Testing options include both remote and in-person examination. The target audiences for certification are physicians, advanced practice nurses, physician assistants, and other skilled health care practitioners who care for at-risk unaffected and affected patients and their families.

Materials and Methods: A retrospective cohort of CGRA examination takers was collected from May 2020 (start of examination availability) through December 2024.

Analyzed data includes: total number of examination takers, pass/fail rates, and professional background and practice setting of passing cohort. Descriptive statistics were used for analysis.

Results: 2020-2024.

Total number of CGRA examination takers: 212

Total number (percent) passed: 187/212 (88.2%); failed: 25/212 (11.8%)

Professional background of CGRA certificants:

APP - 123/187 (65.8%)

MD - 25/187 (13.4%)

Other (RN/RT) - 39/187 (20.9%)

RN: 34/187 (18.2%); RT: 5/187 (2.7%)

Practice focus of CGRA certificants:

Breast Center - 12/187 (6.4%)

Gynecology - 14/187 (7.5%)

High Risk/Genetics - 16/187 (8.6%)

Oncology - 115/187 (61.5%)

Primary Care - 1/187 (0.5%)

Radiology - 4/187 (2.1%)

Surgery - 25/187 (13.4%)

Conclusion: During the first 5 years of CGRA certification eligibility, a notable number of healthcare providers and other healthcare professionals have sought and obtained certification in cancer genetic risk assessment through NCBC's CGRA certification program. The largest percentage of certificant holders are APPs, followed by other healthcare professionals (RNs and RTs), and physicians. The most prominent practice setting for certificant holders is oncology, with many other specialty practice settings represented, including the screening and preventive care spaces. In conclusion, the CGRA certification is a sought-after credential appealing to a broad group of healthcare providers/professionals across practice disciplines allowing for a diverse patient population to obtain cancer genetic and risk assessment-related care. It is anticipated that there will be continued provider interest to attain certification in this rapidly expanding field, particularly with recognition of CGRA by several nationally recognized accrediting bodies.

Keywords: CGRA, certifications

Category I-C. Education and Outreach

What's Best for Breast? An Annual Free Community Health Education Event

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Objective: To establish a free community health event open to the public, featuring presentations and interactive information sessions aimed at educating the North Carolina Community on breast cancer risk, prevention, and treatment, while providing resources and support for survivors.

Materials and Methods: What's Best for Breast was initiated in 2017 as an annual event at Duke University Medical Center. In 2017, colleagues met to address the lack of community education and engagement by creating a free breast cancer-focused event. Speakers, advocates, and sponsors were recruited. Flyers were distributed through clinics, in local public areas, and online. Marketing was also done through local TV and radio in various years. During the COVID-19 pandemic, the event transitioned to a virtual format (2020–2022). Participant demographics were recorded, and post-event surveys were distributed/collected at the event. The event's format and topics were refined yearly based on feedback. A women's health research symposium was added in 2024.

Results: Registration increased from 112 participants in 2018 to 423 in 2024. In 2020, only 47 participants registered for the virtual event.

- **Participant Demographics:**

Participant age distribution broadened over time: in 2017, no attendees were over 70 years, compared to 15% in 2024. The majority shifted from ages 51–60 yrs (44% in 2017) to 61–70 yrs (28% in 2024). When the event was virtual (2020), the majority of attendees were <30 yrs (24%).

The distribution of race and ethnicity has remained consistent for in-person events, but shifted during the pandemic:

- 2017: African American (27%), Caucasian (63%), Hispanic (5%), Asian (5%).
- 2020: African American (15%), Caucasian (76%), Hispanic (10%), Asian (12%).
- 2024: African American (31%), Caucasian (52%), Hispanic (6%), Asian (6%).

Participants with no personal breast cancer experience decreased – 2020: 42% *vs.* 2024: 9%

- **Event Engagement:**

In 2024, 89% of participants were first-time attendees.

- **Participant feedback:**

89% of participants say the event motivated them to improve their breast care.

93% of participants would consider attending the event again.

98% of participants would recommend the event to others.

Conclusion: “What's Best for Breast” has successfully engaged and educated the local community, as demonstrated by rising attendance and overwhelmingly positive feedback. The event continues to fulfill its mission of raising awareness and providing support for breast cancer patients, survivors, and previvors.

Keywords: Community health, free event, education

Category 1-C. Programs 2. Education and Outreach

Family History Assessment and the Impact on Breast Cancer Diagnosis

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Objective: The breast surgical nurse navigator and high-risk breast program (HRBP) advanced practice provider noticed a significant number of women, with a family history of breast cancer, coming through the organizations multidisciplinary breast cancer program (MDBP). These women should have been referred to the HRBP for validated risk assessments and screening recommendations based on family history of breast cancer, or a prior personal history of breast cancer diagnosed before age 50. Obtaining an accurate family history at each encounter with the patient is instrumental in identifying women who might qualify for enhanced screening and monitoring. Identifying women for high-risk screening can in turn detect breast cancer at an earlier stage, resulting in less aggressive treatment and better overall outcomes for the patient.

Materials and Methods: A retrospective review of the women seen in the MDBP identified an educational opportunity regarding the importance of screening patients to identify the need for a risk assessment. Identifying high risk patients before the development of a breast cancer, provides the opportunity for earlier interventions, which has the potential to ultimately decrease the amount of treatment indicated. This approach would then potentially result in less invasive treatment and decreased morbidity and mortality for the patient.

Results: Three hundred and twelve women diagnosed with breast cancer went through the MDBP at Deaconess Hospital, Inc. in 2024. Of those women, 142 had a family history of breast cancer that would have qualified them for a referral to the HRBP for formal risk assessment prior to their cancer diagnosis.

Conclusion: A total of 46% of patients that were seen in the MDBP in 2024 qualified for high risk assessment for breast cancer based on retrospective review of family history. Had these patients been assessed prior to their diagnosis of breast cancer, it is possible that they would have qualified for increased breast screening resulting in earlier diagnosis and decreased need for treatment interventions. Improvement in obtaining and documenting an accurate family history at each patient encounter helps to identify patients at increased risk for developing a breast cancer.

Keywords: Family history assessment, breast cancer diagnosis

Category I**Improving Adherence to National Guidelines Regarding Neoadjuvant Systemic Therapy in the Management of Breast Cancer: A Single-Institution Quality Improvement Initiative**

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Objective: Breast cancer remains one of the most frequently diagnosed cancers worldwide. There are various treatment options for breast cancer and many women will require neoadjuvant systemic therapy (NST) as part of their multi-modal treatment plan. As part of the Commission on Cancer Standard 7.2, this study assessed our institution's adherence to national guidelines in the multidisciplinary management of NST, aiming to highlight practices necessitating improvement.

Materials and Methods: A retrospective analysis included 100 patients at our institution who underwent NST between 2019 and 2023. Patients who completed NST and surgery were included in the analysis. Baseline, pre-intervention adherence to The American Society of Breast Surgeons (ASBrS) Consensus Guidelines was obtained. Using this data, three standards (Articles V, VIII, and IX) were selected to perform a quality improvement initiative. A second retrospective review was conducted of patients at the same institution from January 1, 2024 to December 31, 2024, using the same inclusion criteria as above. Adherence to the selected standards was obtained and compared to pre-intervention.

Results: After the initial review, there were 100 female patients [average age 52.5, average body mass index (BMI) = 29.1 60% African American] who had completed NST and surgery. Of 39 ASBrS guidelines, our institution was more than 90% compliant in 74% of the categories. Compliance fell below 90% in genetic testing (88%), timing of surgery after NST (80%), repeat imaging after NST (80%), appropriate placement of surgical clips along the lumpectomy cavity (57%), delayed breast reconstruction with planned radiation (39%), and radiation initiation within six weeks of surgery (75%). Improvement initiatives focused on genetic testing, timing of surgery after NST, and repeat imaging. Interventions for each included: in-clinic saliva genetic testing with invitae and hiring a second genetic counselor; earlier coordination between medical oncology and surgery to refer patients to surgery when patients had at least two chemotherapy cycles to complete; and post-NST imaging performed at the time of surgery referral. These initiatives were implemented in December of 2023. Our second review included 30 female patients (average age 55, average BMI = 29, 57% African American) who completed NST and surgery. Compared to the pre-initiative group, our compliance with genetic testing and timing of surgery both improved to 90%. Repeat imaging post-NST improved to 89%.

Conclusion: Quality improvement initiatives targeting three key areas of breast cancer care over the course of one year led to improved compliance and better patient outcomes. These findings highlight the importance of a multidisciplinary team and the value of regular conferences for fostering collaboration and ensuring the most effective care for patients.

Keywords: Neoadjuvant systemic therapy, management, quality improvement

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Category II

Transformative, Patient-Centric Care: Digital Screening Program Provides Equitable Access to Breast Cancer Risk Assessment and Genetic Testing

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Midstate Radiology Associates

Objective: Breast cancer screening disparities persist in the United States, underscoring the need for universal tools to provide equitable care. This study analyzes two years of data from 15 Midstate Radiology Associates (MRA) sites through Connecticut, where all women were offered a digital risk stratification platform. The platform is offered in five different languages and was designed to identify individuals at an elevated risk for breast cancer and determine eligibility for genetic testing based on national guidelines.

Materials and Methods: A retrospective analysis was conducted across MRA sites from 1/1/2023 to 12/31/2024 to evaluate patient demographics. Before mammograms, all patients were invited to the Ambry CARE Program to assess breast cancer risk using the Tyrer-Cuzick (v8.0) algorithm and determine eligibility for genetic testing based on NCCN[®] guidelines for hereditary cancers conditions. We analyzed patient ethnicity, age, and language preferences for those who completed the digital screening tool. High-risk patients, those eligible for genetic testing, and individuals who underwent testing—including those with positive mutations—were compared.

Results: Between 1/1/2023 and 12/31/2024, 91,513 assessments were sent to patients via SMS, email, and kiosks, with each method opened over 95% of the time. 77,095 assessments were completed, achieving an 84.2% completion rate. The tool supported over 1,100 patients in languages like Spanish, Polish, Chinese, and Vietnamese. Patient ethnicity was recorded as: White (73%), Hispanic/Latino (11%), Black/African American (6%), Asian (4%), French Canadian/Cajun (3%), Ashkenazi Jewish (2%), and 1% each for other ethnicities. 52% of respondents were aged 51-70, and 8,025 women (10.4%) had a Tyrer-Cuzick score over 20%. Among women with elevated lifetime breast cancer risk: White (71%), Hispanic/Latino (7.2%), Black/African American (5%), Asian (1.8%), French Canadian/Cajun (3.4%), Ashkenazi Jewish (2.6%), and 9% for other ethnicities. 67% were aged 41-60. Of 20,063 women (26%) eligible for genetic testing based on NCCN[®] guidelines, 69.4% were White, 8.6% Hispanic/Latino, 4.6% Black/African American, 1.7% Asian, 3.2% French Canadian/Cajun, 3.6% Ashkenazi Jewish, and 8.9% other ethnicities. 52% were aged 51-70. 6,051 women chose genetic testing, with 451 (9%) receiving positive results. Age and ethnicity distributions were similar across these groups with increase in percentage of Latin/Hispanic opting for genetic testing.

Conclusion: The digital tool effectively stratified breast cancer risk across diverse patient population, promoting equitable screening and education through multilingual options and personalized support.

Keywords: Digital screening, risk assessment, genetic testing

Category II

The Young Women's Program for Cancer Care at White Plains Hospital

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Objective: The incidence of cancer among young women has been rising at an alarming rate over the past several years. Moreover, as published in January 2025 by the American Cancer Society, those cancer incidence rates even surpass those among their male counterparts. At White Plains Hospital over the past 5 years, there have been over 1700 women under the age of 50 diagnosed with cancer.

Materials and Methods: The Young Women's Program for Cancer Care, established at White Plains Hospital in October of 2023, aims to recognize and address the unique needs of women under the age of 50 who have been diagnosed with cancer. Beyond providing exceptional medical care, the program encompasses all of the multidisciplinary and psychosocial aspects of care via dedicated navigation, education, programming, and support groups to treat and guide our patients with the most holistic approach.

Results: The Program has grown tremendously over the past year, already having enrolled 160 patients. There is a dedicated support group specifically tailored to this patient population, that meets regularly and is facilitated by our clinical social worker and clinical navigator, and that is even separate from the partnership that we have formed with psycho oncology providers for easy access for our patients. There is also scheduled educational programming that happens multiple times per month, led by speakers from our multidisciplinary team; topics have included important and relevant issues such as genetic testing, fertility preservation, nutrition, impact of alcohol on cancer risk, various exercise programs, meditation and wellness. There is also a separate ongoing sexual health series for our patients facilitated by a sexual health specialist.

Conclusion: In addition, we have been able to implement community building events such as group walks, holiday gatherings for patients and their loved ones, cosmetics events for those undergoing chemotherapy, and art therapy sessions, among others. Our goal is to help expedite excellent oncologic care while creating a warm and supportive environment that addresses all of the interdisciplinary needs of this patient population.

Keywords: Young women, support group

Category II

BMI, Cancer Risk Behaviors, and Readiness for Dietary Change Among Women Surviving with Breast Cancer

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Objective: Breast cancer survivors (BCS) are at increased risk of recurrence and poorer outcomes if they are overweight [bod mass index (BMI) = 25–29.9] or obese (BMI = 30+) compared to those with a healthy weight; nutrition counseling is a key component of their secondary prevention and supportive care. The stages of change (SoC) continuum, part of the transtheoretical model (TTM), conceptualizes dietary behavior change as a progression from not yet considering change (Precontemplation) to sustained change (Maintenance). We studied BCS readiness to change diet, along with other cancer risk behaviors, in relationship to BMI.

Materials and Methods: A secondary data analysis was conducted among N = 936 BCS who contacted a community-based cancer control organization

for information and support services during and after cancer treatment. Data (demographics, cancer prevention awareness, BMI, tobacco and alcohol use, physical activity) were collected 30 days later, including BCS dietary SoC.

Results: Among BCS, 37% were ≤45 years, 18.3% were non-white, 22.3% rated their general health as fair/poor, and 46.9% carried a pathogenic variant in BRCA. The M (SD) BMI was 27.1 (6.4), and 56.1% were overweight/obese. Among the risk behaviors assessed, 27.9% of BCS were current or former tobacco users, 33.5% had consumed 2+ drinks containing alcohol in the past 30 days (16.5% consumed 4+ alcohol drinks in 1 sitting), and 30% were not physically active: a majority were aware of cancer prevention guidelines for alcohol (92.7%), physical activity (95%), and nutrition (92.7%). Regarding TTM's SoC, Maintenance consistently had the largest percentage across all dietary behaviors: avoiding red meat (65.6%) and increasing fiber consumption (63.6) showed the highest maintenance. The Preparation and Action stages varied, with the highest proportion (29.8%) increasing fruit/vegetable consumption. The Precontemplation and Contemplation stages were relatively low for all behaviors (<20%). In bivariate analyses, BCS who were overweight/obese ($t = -4.23$, $df = 728$, $p < 0.001$), and engaged in less physical activity ($t = 6.8$, $df = 781$, $p < 0.001$), reported less dietary change readiness.

Conclusion: Effective dietary interventions may depend on BCS readiness for change (e.g., raising awareness for those in Precontemplation). The TTM can help tailor behavior change strategies to enhance BCS motivation, especially for overweight/obese and less physically active BCS at greatest risk for recurrence.

Keywords: BMI, survivorship, dietary changes

Table 1a. TTM stage of change for diet

	Precontemplation	Contemplation	Preparation	Action	Maintenance
Avoid high fat foods	8.2%	9.4%	13.0%	12.8%	56.6%
Avoid red meat	7.9%	4.9%	7.9%	13.8%	65.6%
Fiber consumption	5.0%	7.5%	11.4%	12.5%	63.6%
Fruit/vegetable consumption	3.0%	8.8%	16.0%	13.8%	58.4%

Table 1b. TTM stage of change (consolidated) for diet

	Precontemplation/contemplation	Preparation/action	Maintenance
Avoid high fat foods	17.6%	25.8%	56.6%
Avoid red meat	12.8%	21.7%	65.6%
Fiber consumption	12.5%	23.9%	63.6%
Fruit/vegetable consumption	11.8%	29.8%	58.4%

Category II. Subcategory F Survivorship Care

The Role of Structured Exercise in Breast Cancer Survivorship

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Objective: Survivorship care in breast cancer patients includes focusing on quality of life and lifestyle modification. Despite the known benefits of exercise during and after cancer treatment, breast cancer survivors often decrease their total physical activity post-diagnosis due to the fear of excessive exercise exertion. Our pilot interventional study investigates the effect of a structured exercise program on breast cancer survivorship and quality of life when a physician endorses exercise.

Materials and Methods: An observational study including female breast cancer patients aged 18 and older who completed their active cancer treatment between 6 to 12 months prior and were enrolled in a structured exercise program endorsed by their primary oncologic physician. A certified cancer fitness instructor led the 10-week exercise program. The program was offered by a third-party, not-for-profit organization and included evidence-based exercises recommended for cancer patients, targeting strength, resistance training, cardio, balance, and flexibility. Patients consented to complete the RAND 36-item Health Survey before and after the program. Primary outcomes were quality of life and compliance with the exercise program. The surveys were scored and formed eight scales. Within-subject changes in each scale were calculated and summarized across subjects with the mean change and 95% confidence interval (CI). Higher scores indicate greater improvement.

Results: Five female breast cancer patients participated in the exercise program. Compliance was 100%. Overall, there was a significant improvement in various components of quality of life, including physical functioning (mean within-subject change 13.0 points, 95% CI: 5.9 to 20.1), energy/fatigue (mean change 16.0, CI: 2.5 to 29.5), emotional well-being (mean change 9.6, CI: 1.3 to 17.9), and social functioning (mean change 12.5, 1.5 to 23.5).

Conclusion: Participating in a physician-endorsed structured exercise program during the survivorship period improves the quality of life of breast cancer patients. When regular exercise is endorsed explicitly by a treating physician, there are high compliance rates.

Keywords: Survivorship care, structured exercise

Category: Category II. Patient Care and Support

Subcategory B. Breast Cancer Navigation

Pre-Operative Education in Breast Surgery, A Quality Improvement Project

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Objective: Effective patient education before surgery is a critical component of care that impacts patient outcomes, satisfaction, and overall surgical success. Lack of standardization of this education and prolonged time between pre-operative consults and surgery could result in inadequate patient knowledge on the day of surgery and subsequent uncertainty, anxiety, and poor adherence to post-operative instructions or delays in accessing adjuvant care. This project aims to address this concern by implementing a standardized pre-operative video visit focused on patient education before upcoming breast surgery.

Materials and Methods: Patients undergoing breast surgery in a comprehensive cancer center at a tertiary academic center were enrolled. Pre-operative video visits were conducted by a Nurse Navigator (NN) one week before surgery. The NN covers logistical information about the surgery, addresses any missing orders, schedules needed postoperative appointments, addresses potential scheduling issues, and answers patient questions. Two validated surveys were administered anonymously to evaluate the effectiveness and impact of this preoperative visit: The state-trait anxiety inventory (STAI) and short assessment of patient satisfaction (SAPS). The STAI was administered before and after the visit. The Wilcoxon signed-rank test and unpaired t test were used to conduct comparative analysis of the pre- and post-appointment STAI values. Analysis was conducted on the overall anxiety score and scores for each individual question.

Results: In total, 50 patients completed the SAPS, 69 completed the pre-visit STAI, and 59 completed the post-visit STAI. There was no statically significant difference between the overall STAI score [mean (standard deviation)] before [34.71 (10.5)] versus after [34.56 (11.4)] the visit ($p = 0.8$) (Figure 1). However, there were p-values below 0.2 for two STAI questions and between 0.2–0.3 for two others (Table 1). When considering trends with a p-value below 0.2, patients felt more secure and pleasant after the visit. When considering trends with a p-value below 0.3, patients felt less frightened but more nervous after the visit. All patients felt satisfied (12%) or very satisfied (88%) with the effect of the preoperative visit, and other SAPS markers of satisfaction were similarly high (Table 2).

Conclusion: This educational initiative offers a quality improvement solution to standardizing patient education before breast surgery. Measures of patient satisfaction following the appointment were high, however the impact on anxiety levels remains nuanced. These finding highlight the complexity of pre-operative emotions that patients may experience as their breast surgery date approaches.

Keywords: Pre-operative education, quality improvement, educational

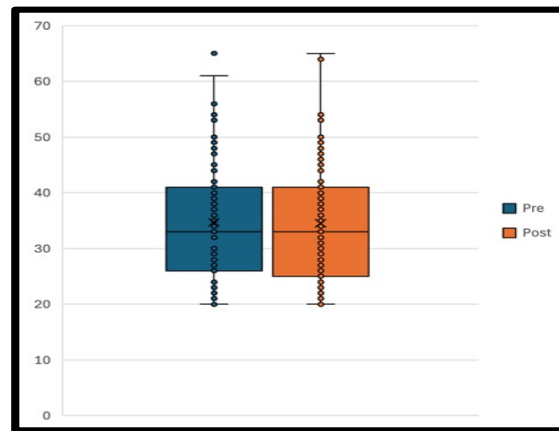


Figure 1. Total state-trait anxiety Inventory scores pre- versus post-educational visit

Table 1. Scores for each state-trait anxiety inventory question pre- versus post-educational visit. A value of 1 corresponds to “not at all” and 4 corresponds to “very much so”. The Wilcoxon Signed-Rank test was used to calculate the reported p-values

Question	Pre-visit	Post-visit	p-value	Question	Pre-visit	Post-visit	p-value
I feel calm	3.20	3.17	1.0	I feel strained	1.64	1.68	0.98
I feel secure	3.38	3.54	0.14	I feel upset	1.49	1.41	0.56
I feel at ease	3.07	3.07	0.94	I am worrying over possible misfortunes	1.84	1.76	0.77
I feel satisfied	3.25	3.27	0.62	I feel frightened	1.90	1.73	0.25
I feel self-confident	3.33	3.31	0.91	I feel uncomfortable	1.49	1.63	0.71
I am relaxed	2.81	2.85	0.79	I feel nervous	2.16	2.36	0.29
I feel content	3.26	3.31	0.67	I feel jittery	1.55	1.46	0.54
I feel steady	3.38	3.41	0.96	I feel indecisive	1.38	1.47	0.61
I feel pleasant	3.33	3.54	0.13	I am worried	2.12	2.14	0.86
I feel tense	2.06	2.15	0.59	I feel confused	1.19	1.24	0.79
Key: [1 = Not at all] [2 = A little] [3 = Somewhat] [4 = Very much so]							

Table 2. Percentage of respondents selecting each answer for the short assessment of patient satisfaction questions

Question	Very dissatisfied	Dissatisfied	Neither	Satisfied	Very satisfied
How satisfied are you with the effect of your pre-operative visit?	0	0	0	12	88
How satisfied are you with the education you have been given about the details of your surgery?	12	2	0	14	72
Do you feel satisfied that you were able to ask any questions that may affect your upcoming surgery?	4	0	0	4	92
Are you satisfied with the education you received during the pre-operative visit?	0	0	0	10	90
Statement	Strongly disagree	Disagree	Not sure	Agree	Strongly Agree
The healthcare professional who spoke with me was very thorough when going over my preoperative education.	4	0	0	8	88
The time you had with the healthcare professional during the pre-operative visit was too short.	50	40	4	0	4
Question	None of the time	Some of the time	Half the time	Most of the time	All of the time
How much of the visit time did you feel respected by the healthcare professional you spoke with?	0	0	0	0	100

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Category III

Comparison of Surgical Complications With Direct-to-Implant vs. Tissue Expander Reconstruction After Wise Pattern Skin-Sparing Mastectomy

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Objective: Wise Pattern Mastectomy is a common incision utilized in patients with large, ptotic breasts undergoing skin-sparing mastectomy and immediate breast reconstruction (IBR). This incision pattern is associated with an increased risk of delayed wound healing and skin necrosis which may be further influenced by the type of IBR performed. We compared surgical complications in patients undergoing IBR with Direct-to-Implant (DTI) vs. Tissue Expander (TE) after Wise Pattern Skin-Sparing Mastectomy (WSSM).

Materials and Methods: Patients who underwent WSSM and IBR from 2019–2023 were selected. Patient characteristics, clinical features, and surgical complications were compared between patients who underwent DTI vs. TE IBR. Multivariable logistic regression analysis was performed to identify factors associated with major complications [surgical site infection (SSI), skin necrosis requiring reoperation, and reconstruction loss] and any 30-day complication controlling for patient age, race, ethnicity, body mass index (BMI), presence of diabetes, tobacco use, neoadjuvant chemotherapy (NAC), reason for mastectomy, axillary surgery, mastectomy weight, and type of reconstruction.

Results: A total of 144 patients who underwent 217 mastectomies were evaluated: 73 bilateral (51%) and 71 unilateral (49%); 117 DTI (54%) and 100 TE (46%) (Table). Most patients were ≥50 years old (64%), White (83%), Hispanic (64%), and had a BMI <30 kg/m² (58%). NAC was utilized in 35% of patients. The reason for mastectomy was cancer in 64%, and axillary surgery was performed in 66% of cases. The mastectomy weight was ≥1000 grams in 41% of cases. Major complications occurred in 21% of cases: SSI in 12% (DTI 15% vs. TE 9%), skin necrosis requiring reoperation in 11% (DTI 12% vs. TE 10%), and reconstruction loss in 13% (DTI 15% vs. TE 10%). SSI and skin necrosis requiring reoperation were associated with reconstruction loss (SSI $p \leq 0.001$, skin necrosis $p \leq 0.001$). Multivariable analysis showed that breast weight ≥1000 grams was associated with major complications [odds ratio (OR) 2.82, 95% confidence interval (CI) 1.27–6.26, $p = 0.011$] and Hispanic ethnicity, current smoking, and DTI reconstruction were associated with any 30-day complication (Hispanic ethnicity: OR 3.33, 95% CI 1.62–6.87, $p = 0.001$; current smoking: OR 5.57, 95% CI 1.05–29.02, $p = 0.044$; DTI: OR 2.40, 95% CI 1.31–4.40, $p = 0.005$).

Conclusion: In patients undergoing WSSM with IBR, mastectomy weight ≥1000 grams was associated with an increased likelihood of major complications and Hispanic ethnicity, current smoking, and DTI reconstruction were associated with an increased likelihood of any 30-day complication. These factors should be considered when counseling patients regarding risk of complications and plans for IBR after WSSM.

Keywords: Surgical complications, direct-to-implant, tissue expander reconstruction, wise pattern

Category III

Patient Reported Satisfaction Outcomes After Breast Radiation Using Intraoperative Radiation Therapy vs. External Beam Radiation Therapy

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Objective: Intraoperative radiation therapy (IORT), is an alternative to postoperative whole breast irradiation for early-stage breast cancer. The aim of this study was to assess patient reported outcomes (PRO) on cosmetic results and radiation related adverse effects after IORT vs. external beam radiation therapy (EBRT).

Materials and Methods: Patients treated with IORT for ductal carcinoma *in situ* (DCIS) or early-stage breast cancer between 2017–2023 were asked to submit the pre-validated BREAST-Q survey tool for objective aesthetic evaluation. A matching cohort of patients treated with EBRT during the same time interval was also asked to submit the same survey.

Results: Eighty-eight patients were included, 56 (63.0%) with invasive ductal carcinoma (IDC) and 32 (36%) with DCIS. Thirty (68%) patients with IDC and 14 (31%) patients with DCIS had IORT. Patient satisfaction scores with breast cosmesis was higher in IORT group compared to EBRT (mean, 83.7 vs. 74.2; $p = 0.05$). Less radiation related adverse effects were reported after IORT (mean, 7.7) as compared with EBRT (mean, 10.6) ($p < 0.05$).

Conclusion: This study suggests that in comparison to EBRT, patients treated with IORT have higher satisfaction scores related to breast cosmesis and less radiation related adverse effects.

Keywords: Intraoperative radiation, external beam, outcomes

	EBR	IORT	Total	p-value
Patients	44 (50%)	44 (50%)	88 (100%)	
Age				
30-39 y	1 (1%)	0	1 (1%)	0.046
40-49 y	9 (20%)	1 (1%)	10 (11%)	
50-60 y	7 (16%)	7 (16%)	14 (16%)	
≥60 y	27 (61%)	36 (82%)	63 (72%)	
Race				
White	34 (77%)	37 (84%)	71 (81%)	0.417
Black	10 (23%)	7 (16%)	17 (19%)	
Other	0	0		
Ethnicity				
Hispanic	28 (64%)	22 (50%)	50 (57%)	0.196
Non-hispanic	16 (36%)	22 (50%)	38 (43%)	
BMI				
<18.4	0	1 (2%)	1 (1%)	0.658
18.5-24.9	12 (27%)	10 (23%)	22 (25%)	
25-29.9	19 (43%)	19 (43%)	38 (43%)	
>30	13 (30%)	14 (32%)	27 (31%)	
Clinical stage				
Tis	18 (41%)	14 (32%)	32 (36%)	0.183
T1	22 (50%)	9 (66%)	51 (58%)	
T2	4 (9%)	1 (2%)	5 (6%)	

Table 1. Comparison of BREAST Q Rasch score (satisfaction with breast)

	EBRT	IORT	p-value (t-test)
Total (for all stages)	74.2 (23.9)	83.7 (17.4)	0.050
Tis mean (SD)	67.8 (28.1)	87.9 (16.8)	
T1 mean (SD)	79.5 (20.4)	81.6 (17.9)	
T2 mean (SD)	74.3 (18.5)	82 (0)	

Table 2. Comparison of BREAST Q Rasch score (adverse effects of radiation)

	EBRT	IORT	p-value (t-test)
Total (for all stages) mean [SD]	10.6 (5.1)	7.7 (3.0)	0.004
Tis mean (SD)	11 (5.7)	6.6 (1.0)	
T1 mean (SD)	9.6 (4.6)	8.2 (3.6)	
T2 mean (SD)	14.5 (4.4)	8 (0)	

Category III

IntraOperative Cryoablation Therapy (IOCT): A Novel Alternative to Post-Lumpectomy Radiation Therapy

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Objective: Today, breast cancer patients have two choices for initial treatment of their breast cancer: 1) surgical excision of the cancer followed by radiation therapy or 2) removal of the cancerous breast (mastectomy). SenoGuard, an investigational intraoperative cryoablative therapy (IOCT) administered by a surgical team as an essential element of breast sparing surgery, offers a third option that would eliminate the need for radiation. We aimed to evaluate the feasibility and safety of cryoablation of the surgical cavity using a new 2 cm cryoablation probe and cryogenic system as a potential alternative to RT.

Materials and Methods: An excision was made within the breast tissue of a porcine animal model to simulate the technique used for tumor lumpectomy. A probe delivering a novel nitrogen-based cryogen was inserted into the surgical cavity to cryoablate the surrounding cavity. Data on the delivery of specific isotherms at various depths and time points within the surgical cavity using engineering and ex-vivo models was collected to assess the technique's precision and efficacy.

Results: The study found that the cryoprobe was able to deliver -20 °C isotherm to a depth of 1 cm from the cryoprobe surface following a 3-minute freeze cycle, demonstrating the potential for effective tissue cell destruction within this range. Extending the freeze cycle to 5 minutes resulted in delivery of the -40 °C isotherm to reach a depth of 1 cm, indicating a more intense and potentially more effective treatment for slightly larger tumor cavities.

Conclusion: Data from this feasibility study demonstrates that cryoablation could achieve similar results as those created by radiation therapy and that adjusting the duration of the freeze cycle could provide flexibility in treating a range of tumor cavity sizes. The ability to adjust freeze cycle duration based on tumor cavity size could eliminate the need for post-lumpectomy radiation therapy in certain patients. IOCT of the surgical cavity tissue immediately following tumor lumpectomy offers several potential advantages over traditional radiation therapy, including improved cosmetic outcome, a lower risk of side effects and greater accessibility and affordability for all patients.

Keywords: Cryoablation therapy, post-lumpectomy radiation therapy

Category III-A. Diagnostic Imaging, 1. Screening and Diagnostic Mammography

Do Not Overlook Me: Breast Cancer in Appalachian Women Ages 28–49 Diagnosed Through A Mobile Mammogram Unit (MMU) Program

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Objective: Unfortunately, both the incidence and mortality rates for women ages 20–49 diagnosed with breast cancer have continued to rise in the USA for the past two decades. Causality remains unknown; however, the controversy regarding screening this population persists. A paucity of data exists to define the effectiveness and diagnostic yield of mobile mammogram unit (MMU) screening in this cohort. Our data supports the screening recommendations of organizations such as the American College of Radiology, the Society of Breast Imaging, the American Society of Breast Surgeons, the National Comprehensive Cancer Network, the American Cancer Society, and the USPSTF among others, emphasizing the importance of screening this vulnerable population that otherwise would not have been screened.

Materials and Methods: A retrospective analysis of a prospectively maintained database including these women screened between 2008 and 2023 was performed. Frequency (n) and percentage (%) statistics along with Medians (Mdn) and interquartile ranges (IQR) were used to generate measures of prevalence within the population. The patient electronic health record was used to record demographic information.

Results: A total of $n = 15,124$ screenings were performed in this unique demographic population. The median age for the cohort was 44.7 years (IQR: 42.0–47.0). Most screenings were completed using 2D technology ($n = 10,209$, 67.5%). A total of $n = 2,779$ received their first-ever mammogram (18.4%). There were $n = 41$ malignancies detected (prevalence - 0.3%; age range 37–49) in 39 women. Interestingly, $n = 13$ of these 41 malignancies (32%) were detected in women having their first mammogram.

Conclusion: This data provides compelling evidence for utilization of MMU programs to screen this young, vulnerable population and revealed that 32% of breast cancers were identified at the time of their first ever mammogram with a median age of 44.7. Further studies are needed to validate early screening in this patient population.

Keywords: Mobile mammogram, demographic information, early screening

Category III

Comparative Analysis of Clinical Breast Exam *vs.* Bexa Breast Exam for Detection of Breast Abnormalities in Colombian Women Aged 40–50 Years Old

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Objective: Breast cancer (BC) remains a significant public health challenge in Cali Colombia, where mortality rates are second highest- particularly in women <50 years old, often presenting at advanced stages. Cancer control initiatives to coordinate care and reduce diagnostic delays are underway, however, initiatives aimed at addressing technology-assisted early detection in women age 40–49 are needed as clinical breast exam (CBE) is the national screening guideline for this age group. Bexa is a unique, painless, radiation-free, FDA-cleared, high-resolution pressure elastography device for detection of abnormal masses in the breast. To evaluate the performance of Bexa breast exam (BBE) vs CBE in the detection of abnormal breast masses.

Materials and Methods: Two hundred and eighty asymptomatic women aged 40–50 presenting for routine CBE at the Clínica de Mama in Cali, Colombia were enrolled in the study. All patients received CBE by a clinic physician, followed by BBE, which consists of a quadrant-by-quadrant clinical

evaluation of the entire breast using the proprietary form of high-resolution breast elastography as previously described by Kaufman et al. When a mass was localized by either modality, the area underwent focused ultrasound to characterize the finding. Ultrasounds were interpreted by fellowship trained breast radiologist.

Results: Of 270 eligible women, CBE and BBE were (negatively) concordant in 204 women. A total of 70 women had a confirmed mass (positive on two modalities). CBE detected a mass in 15 women (5.6%), vs BBE in 71 women (26.3%). Accuracy was significantly higher with BBE compared to CBE (99.6% *vs.* 75.9% $p < 0.001$). While sensitivity was similar for both groups (BBE: 99.5%, CBE: 97.5%), the specificity for BBE was 85% higher than CBE. CBE detected 5 false positives and 60 false negatives. Bexa detected one false positive. Of the false negatives detected by CBE, 16 had BIRADS scores of 3 or higher ($n = 9$ BIRADS-3, $n = 7$ BIRADS-4), indicating 26.7% were clinically important misses, with 11.7% suspicious for malignancy (BIRADS 4).

Clinical Significance of Masses Detected by Bexa: Of the 255 women with negative CBE, 23.9% ($n = 61$) were true masses as confirmed by BBE + focused ultrasound. with 75% classified as BIRADS 2, 14.7% BIRADS 3, and 10.3% BIRADS 4.

Conclusion: These data suggest that Bexa exhibits superior performance over CBE for detection of masses in women age 40–49 who are ineligible for mammography due to national guidelines. The BBE process stratifies risk and can identify women for whom further diagnostic evaluation is necessary: of the true masses found by BBE, 27% warranted either short-term surveillance or biopsy (BIRADS 3 or 4). While BBE is not intended to replace recommendations for early detection, it can support access, accuracy and adoption in women for whom CBE is their primary form of early detection. Evaluation of Bexa vs screening mammography is underway and will provide further insight into the expansive clinical utility of Bexa for technology-assisted early detection.

Keywords: Clinical breast exam, bexa breast exam, comparative