What is ACCORDS?
Adult and Child Center for Outcomes Research and Delivery Science

ACCORDS is a ‘one-stop shop’ for pragmatic research:
• A multi-disciplinary, collaborative research environment to catalyze innovative and impactful research
• Strong methodological cores and programs, led by national experts
• Consultations & team-building for grant proposals
• Mentorship, training & support for junior faculty
• Extensive educational offerings, both locally and nationally
# ACCORDS Upcoming Events

| Date               | Time         | Location          | Event Title                                               | Details                                                                 | Presenter                     
|--------------------|--------------|-------------------|-----------------------------------------------------------|------------------------------------------------------------------------|-------------------------------|
| December 18, 2023  | Zoom         |                   | **Statistical Methods for Pragmatic Research**           | Factorial Designs for Optimizing Intervention Development               | Maren Olsen, PhD (Duke)      
| January 10, 2024   | 10am MT      | Zoom              | **D&I Science Graduate Certificate Program Informational Webinar** | Learn about the upcoming application cycle, program requirements, and key competencies. |                                
| January 10, 2024   | Bushnell Auditorium, Zoom |       | **Ethics, Challenges, & Messy Decisions in Shared Decision Making** | Who’s Sharing What? The Challenges of Adolescent Shared Decision Making | Ellen Lipstein, MD (Cincinnati Children’s Hospital) 
| January 22, 2024   | AHSB 2200/2201, Zoom |       | **Statistical Methods for Pragmatic Research**           | Missing Data and Statistical Methods                                   | Jun Ying, PhD                 
| February 7, 2024   | Zoom         | Bushnell Auditorium, Zoom | **Ethics, Challenges, & Messy Decisions in Shared Decision Making** | Financial Toxicity and the Importance of Cost Discussions During Shared Decision Making | Mary Politi, PhD (Washington University in St. Louis) 
| February 26, 2024  | Zoom         |                   | **Statistical Methods for Pragmatic Research**           | Latent Class Analysis: Assumptions and Extensions                        | Rashelle Musci, PhD (Johns Hopkins Bloomberg School of Public Health) 

*all times 12-1pm MT unless otherwise noted*
Innovations in Pragmatic Research Methods

From Data to Equity, Policy, and Sustainability

June 5 - 7, 2024 | 10am-3pm MT

Registration is open now at www.COPRHCon.com
Ethics, Challenges, and Messy Decisions in Shared Decision-Making
2023-2024 Seminar Series

Shared Decision Making in Breast Surgery

Sarah Tevis, MD
Clara Lee, MD
Shared Decision Making in Breast Surgery

Dr. Clara Lee, Professor of Surgery
Dr. Sarah Tevis, Associate Professor of Surgery
Disclosures

• Funding Sources: Paul Calabresi K12 (K12CA086913), Doris Duke Foundation (2020141), Association for Academic Surgery Joel J. Roslyn Award

• No other disclosures
“care that is respectful of and responsive to individual patient preferences, needs, and values”…

and that ensures “that patient values guide all clinical decisions"
What Matters To You?

- Increase clinician’s awareness
- More meaningful conversations
- Customized plans of care
LOCAL

SURGERY
RADIATION
HORMONE THERAPY
CHEMOTHERAPY
TARGETED THERAPY

SYSTEMIC

LUMPECTOMY

MASTECTOMY
Twenty-Year Follow-up of a Randomized Trial Comparing Total Mastectomy, Lumpectomy, and Lumpectomy plus Irradiation for the Treatment of Invasive Breast Cancer

Bernard Fisher, M.D., Stewart Anderson, Ph.D., John Bryant, Ph.D., Richard G. Margolese, M.D., Melvin Deutsch, M.D., Edwin R. Fisher, M.D., Jong-Hyeon Jeong, Ph.D., and Norman Wolmark, M.D.

- Fantastic Evidence
  - Overall survival
  - Disease free survival
  - Locoregional recurrence

- Paucity of Evidence
  - Physical well-being
  - Psychological well-being
  - Sexual health
  - Cosmetic outcomes

<table>
<thead>
<tr>
<th>Existing Decision Aids</th>
<th>Diagnosis</th>
<th>Adjuvant Treatments</th>
<th>Surgery Description</th>
<th>Equivalent Survival</th>
<th>Reconstruction Options</th>
<th>Post-op Recovery</th>
<th>Long-term QOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Patchwork of Life*</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>x</td>
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<td>Healthwise*</td>
<td>x</td>
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<td>x</td>
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<tr>
<td>National Cancer Institute</td>
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<td>Take-home booklet</td>
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<td>Jewellery Box</td>
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<td>Decision Board</td>
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<tr>
<td>Options for Treating Breast Cancer</td>
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<td>Early Stage Breast Cancer: Choosing Your Surgery Video</td>
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<tr>
<td>Interactive Breast Cancer CDROM</td>
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</table>

*Breast surgery DAs included in the Ottawa Hospital Research Institute DA inventory*
Challenges to Incorporating QOL

- Little data on longitudinal outcomes
- How do patients want this information?
- Patients want to know about “patients like me”
Patient Reported Outcome Measures (PROs)

Any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else.

- U.S. Food and Drug Administration
Figure 1.

**Psychosocial Wellbeing**

- Pre-op
- Post-op 2 week
- Post-op 3 month
- Post-op 6 month
- Post-op 9 month
- Post-op 1 year

**Physical Wellbeing**

- Pre-op
- Post-op 2 week
- Post-op 3 month
- Post-op 6 month
- Post-op 9 month
- Post-op 1 year

**Psychosocial wellbeing score**

- Surgery
- Lumpectomy
- Mastectomy

**Physical wellbeing score**

- Surgery
- Lumpectomy
- Mastectomy

$p = 0.001$

$p = 0.25$

**Satisfaction With Breasts**

- Pre-op
- Post-op 2 week
- Post-op 3 month
- Post-op 6 month
- Post-op 9 month
- Post-op 1 year

**Sexual Wellbeing**

- Pre-op
- Post-op 2 week
- Post-op 3 month
- Post-op 6 month
- Post-op 9 month
- Post-op 1 year

- Surgery
- Lumpectomy
- Mastectomy

\[ p = 0.001 \]

\[ p < 0.001 \]
FIG. 1 Breast-conserving therapy BREAST-Q scores from baseline to 2 years after surgery

Chu et al. Ann Surg Onc 2023
Can we include PROs in shared decision making?

• Concerns
  • How much data is enough?
  • Will patients understand?
  • Will clinicians be receptive?

• Potential solutions
  • MSKCC, Denver Health
  • Pilot study of data displays
  • Qualitative study

STAY TUNED!
**What is a lumpectomy?**

Many women diagnosed with breast cancer will be offered lumpectomy, which may be referred to as breast-conserving surgery. A lumpectomy is the removal of the cancer with a small margin of surrounding healthy breast tissue.

**What is a mastectomy?**

A mastectomy is an operation where the breast is removed. The breast will appear flat after surgery. 

<table>
<thead>
<tr>
<th>Cancer Outcome</th>
<th>Lumpectomy</th>
<th>Mastectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar Survival</td>
<td>Less invasive procedure</td>
<td>More invasive procedure</td>
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<tr>
<td>10-year recurrence risk:</td>
<td>Shorter recovery time</td>
<td>Longer recovery time</td>
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<tr>
<td></td>
<td>Unlikely to need drains unless combined with reconstruction</td>
<td>Will need drains</td>
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<tr>
<td></td>
<td>More likely to require radiation after surgery</td>
<td></td>
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<tr>
<td></td>
<td>Higher rate of needing a second cancer surgery if a portion of cancer is left behind after the first surgery</td>
<td>Less likely to require radiation after surgery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower rate of needing a second cancer surgery for cancer left behind in the breast</td>
</tr>
</tbody>
</table>
What might my life look like with each OPTION?

The numbers below are from recent medical studies, where patients have reported how they felt about their quality of life 6 months after surgery.

However, no one can know what will happen to any one person.

**Life after Lumpectomy**

**Breast Appearance**
Nearly 7 in 10 patients return to pre-surgery satisfaction with breast appearance

**Emotional Health**
About 8 in 10 patients return to pre-surgery emotional health

**Life after Mastectomy**

**Breast Appearance**
Nearly 3 in 10 patients return to pre-surgery satisfaction with breast appearance

**Emotional Health**
About 6 in 10 patients return to pre-surgery emotional health
What is a meaningful difference?

- MSKCC study from 2011-2021
- Lumpectomy patients
- Used 0.2 SD
  - Baseline
  - Change from baseline to 1 year
- Minimal Important Difference (Baseline) = 3 – 4
- Minimal Important Difference (Δ) = 4 - 5
Preliminary Findings

- Patient preferences varied
- Patients favored:
  - Simplicity
  - Reading ease
  - Timepoints over recovery
What (non-surgical) factors impact PROs?

- Patient demographics
- Disease factors
- Axillary surgery
- Reconstructive surgery
- Baseline PROs
- Patient distress
- Receipt of supportive services
### Variables associated with PROs at 6 months after surgery

<table>
<thead>
<tr>
<th>↓ Physical well-being (6 months)</th>
<th>↓ Satisfaction with breasts (6 months)</th>
<th>↓ Sexual well-being (6 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older age</td>
<td>Lower satisfaction with breasts</td>
<td>High practical distress</td>
</tr>
<tr>
<td>More axillary surgery</td>
<td></td>
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<tr>
<td>Lower physical well-being</td>
<td></td>
<td></td>
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<tr>
<td>High emotional distress</td>
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<tr>
<td>High health related distress</td>
<td></td>
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<tr>
<td>High practical distress</td>
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</tr>
</tbody>
</table>
Future Goals

• Pilot test our decision aid
• Web-based decision aid “patients like you”
  • Collaborate with MSKCC
  • Integrates baseline information and treatment plan
  • Provides individualized expected long-term PROs
Clinician and Patient Engagement with a Breast Reconstruction Decision Support Tool (BREASTChoice)

Clara N. Lee, MD, MPP
University of North Carolina Chapel Hill
Overview

The BREASTChoice tool

Questions related to electronic health record integration

Future directions

Project Funded by the Agency for Healthcare Research and Quality (AHRQ) R18 HS026699
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San Francisco, CA

Milisa Rizer, MD, MPH  
Informatics Partner  
The Ohio State University
The Breast Reconstruction Decision

• Breast reconstruction choices:
  • Reconstruction vs. not
  • Timing (Immediate vs. delayed)
  • Type (Implant vs. autologous)

• Risk of complications from immediate reconstruction: 23% in first 1-2 years (range 5-52%)

• 70% of patients have knowledge deficits about risks

• Clinicians often think the complication risk is 2-5%

• Number of procedures: from 2-19, including “revisions”
Welcome to the Breast Reconstruction Education and Support Tool (B.R.E.A.S.T. Choice)

A woman who is having her breast removed as part of her breast cancer treatment may think about having breast reconstruction.

Breast reconstruction is surgery that can rebuild the shape and look of the breast.

There are many choices to make when thinking about breast reconstruction:

- Should I have breast reconstruction at all?
- If I want to have breast reconstruction, what type of breast reconstruction should I have?
- Should I start the process when I am having my breast removed, or later, after I am done with cancer treatment?

Whether to have breast reconstruction depends on your goals and what matters most to you. It is not needed for breast cancer treatment, but can help some women feel better about their body after breast cancer surgery.

As you learn about breast reconstruction, you can follow the order of the tool, or you can skip around to the sections that are most useful to you.
Should I have breast reconstruction?

Women of any age, race, or body type can consider **breast reconstruction**. But, it is not right for everyone. Below you can learn more about the pros and cons of breast reconstruction.

<table>
<thead>
<tr>
<th>Pros of Breast Reconstruction</th>
<th>Cons of Breast Reconstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your breasts might look more balanced when wearing a bra, swimsuit, or clothes.</td>
<td>Whether in clothes or not, a reconstructed breast is not a perfect match for a natural breast.</td>
</tr>
<tr>
<td>You regain breast shape without having to wear a breast form (prosthesis).</td>
<td>It often involves longer surgery and more than one surgery.</td>
</tr>
<tr>
<td>It might help you feel more comfortable with your body and &quot;feel like yourself&quot; again after your breast is removed.</td>
<td>After each surgery, there is a chance of an infection, swelling, pain, poor wound healing, or loss of blood to the tissue. Some of these can be treated with pills or creams. Others may need to be treated with more surgery.</td>
</tr>
</tbody>
</table>

Keep in mind breast reconstruction has little or no effect on finding breast cancer in the future. It also has little or no effect on the chance of breast cancer coming back in the future.
What matters to you as you think about what type of breast reconstruction might be the right choice for you?

1. How important is it to you to heal quickly from reconstruction?
   - 0 — Not at all important
   - 10 — Very important

2. How important is it that your breast feels and moves like a natural breast?
   - 0 — Not at all important
   - 10 — Very important

3. How concerned are you about possibly needing to replace implants later on?
   - 0 — Not at all concerned
   - 10 — Very concerned

4. How concerned are you about scarring in other areas of your body if you take tissue or muscle from that area for reconstruction?
   - 0 — Not at all concerned
   - 10 — Very concerned

5. How concerned are you about weakness in other areas of your body if you take tissue or muscle from that area for reconstruction?
   - 0 — Not at all concerned
   - 10 — Very concerned

6. How important is it to you to use your own tissues to create a breast?
   - 0 — Not at all important
   - 10 — Very important
Breast reconstruction can help some women feel better about their body after their breast is removed. It can also increase the chance of having a major wound infection, wound opening, or tissue damage. This chance is higher if women start the process at the time their breast is removed for cancer, compared to delaying reconstruction. With no risk factors, 1-2 out of 100 women have a major wound infection, wound opening, or tissue damage after a mastectomy alone. With no risk factors, 7 out of 100 women have a major wound infection, wound opening, or tissue damage after a mastectomy plus immediate breast reconstruction.

To help you understand your own risks from breast reconstruction done at the time your breast is removed, we reviewed your current health. With the same risk factors you have, 15 out of 100 women have a major wound infection, wound opening, or tissue damage. Your risk is higher because you have a number of conditions that have been related to complications and delayed wound healing. Click here to learn more about those conditions. Talk to your doctor about how this might affect your choice.

What does my risk mean?

Your risk shows the chance of having a major wound opening, wound infection or tissue damage compared to a person who has no risk factors. The risk estimate comes from looking at thousands of women and their outcomes from breast reconstruction. It’s just an estimate. No one knows who will or will not have one of these outcomes. Talk to your doctor or nurse if you want to learn ways to lower your risk.

This information about risk comes from data in your health record. Please click here to review and check your health data that make up this risk. Please answer all of these questions if some are missing, so we can give you a good estimate of your risk.
BREASTChoice Risk Prediction Model

• Developed + validated in >17,000 people; updated 2020 with institutional data, 6 month follow-up, favorable concordance statistic
• BMI
• Smoking or e-cigs (w/in past 6 months)
• Previous chest radiation
• Diabetes
• Congestive Heart Failure
• Hypertension (chronic)
• Depression (treated in past 2 years)
• Psychosis (ever)
A Randomized Controlled Trial Evaluating the BREASTChoice Tool for Personalized Decision Support About Breast Reconstruction After Mastectomy

Mary C. Politi, PhD,* Clara N. Lee, MD, MPP,† Sydney E. Philpott-Streiff, MPH,* Randi E. Foraker, PhD, MA,*, Margaret A. Olsen, PhD, MPH,* Corinne Merrill, BSN, RN,** Yu Tao, MS,* and Terence M. Myckatyn, MD***

Objective: To evaluate a web-based breast reconstruction decision aid, BREASTChoice.

Summary and Background Data: Although postmastectomy breast reconstruction can restore quality of life and body image, its morbidity remains substantial. Many patients lack adequate knowledge to make informed choices. Decisions are often discordant with patients’ preferences.

Methods: Adult women with stages 0–III breast cancer considering postmastectomy breast reconstruction with no previous reconstruction were randomized to BREASTChoice or enhanced usual care (EUC).

Results: Three hundred seventy-six patients were screened; 120 of 172 (69.8%) eligible patients enrolled. Mean age = 50.7 years (range 25–77). Most were Non-Hispanic White (86.3%) and had a college degree (64.3%). Controlling for health literacy and provider seen, BREASTChoice users had higher knowledge than those in EUC (84.6% vs. 58.2% questions correct; P <

usability (mean score = 6.3/7). Participants completed BREASTChoice in about 27 minutes.

Conclusions: BREASTChoice can improve breast reconstruction decision quality by improving patients’ knowledge and providing them with personalized risk estimates. More research is needed to facilitate point-of-care decision support and examine BREASTChoice’s impact on patients’ decisions over time.

Keywords: breast reconstruction, decision aids, risk prediction, shared decision making

Over 330,000 women are diagnosed with breast cancer each year,1 and about 40% undergo mastectomy surgery as part of
Patients + Clinicians Support Using the Tool: Benefits

“It was good at gathering and pulling my thoughts together in one place. That is definitely...going to help...most women...right at the time when they get their diagnosis...their brain is all over the place....” [Patient #150]

“A lot of times...they don't realize that they're a high-risk patient...If they went into their consultation already knowing that, that would be good.” [Clinician #134]

“I think it gives the patient a realistic outline of pros and cons of what their selected choices are, and sort of takes away the overwhelming information that they may seek if they were Googling this information. It's just giving a very straightforward, “This is your pro. This is your con.” [Clinician #129]

Clinician Role

- WU: click on BREASTChoice summary under patients’ name.
- OSU: pop up BPA (less work at first), but needed to “accept” (extra step)

- Skills: reviewing information using SDM (brief training)

- Benefits:
  - Patient outcomes from earlier RCT (knowledge, activation)
  - Clinician knowledge of risk and patient preferences
  - Shared decision making process
  - Possibility for better match between risk, preferences and choice
Clinicians Suggested Location for Summary: WU
This patient has data from the BREASTChoice decision support tool. Click the link to view the summary.

View BREASTChoice Summary Report
OSU: Accept/Dismiss: Extra Step

- This patient has data from the BREASTChoice Decision Support Tool.
- Add or Do Not Add.
- Do you want to add and view the data? Click accept to save this decision, or dismiss to ignore this message.

- Female, 31 y.o.
- MRN:
- Code: Not on file (no ACP docs)
- Admitted: No
- Pain Agreement: None
- BREASTChoice Patient Summary
- Care Team: No oncologist found
- Coverage: None
- Allergies: Not on File
- ACTIVE TREATMENTS
- None
BREASTChoice Summary

This is a summary of the patient’s preferences indicated in BREASTChoice on 03/01/20 about whether to have breast reconstruction, what type to have and when to have it.

Risk:
The patient’s risk factors are diabetes, and congestive heart failure.

Based on the patient’s risk factors, the patient’s chance of having a major wound infection, wound opening, or tissue damage after immediate breast reconstruction is about 16%. With no risk factors, a woman’s chance of having any of these outcomes after breast immediate reconstruction is about 7%.

Preferences:
Based on the patient’s risk and what matters most to her, she is unsure about whether to have reconstruction.

She said that to have the breast feel and look like a natural breast, to regain a breast shape as soon as possible after mastectomy, and to lower the chances of side effects from reconstruction were most important when thinking about whether to have reconstruction.

If she does have reconstruction, she is leaning toward flap-based reconstruction.

If she does have reconstruction, she is leaning toward delaying the procedure.

Questions for you:
The patient selected these questions to discuss with you on her next visit:
- How much will my insurance cover, for each type of reconstruction?
- How much feeling will I have after surgery?
- How long will I need drains after surgery?

She also entered her own questions:
- How will my activities be restricted, and for how long, post-surgery?
-
Smart Phrase: Minimize Work
Results: Did Clinicians Engage With BREASTChoice?

All clinicians (N=7 at WU; N=15 at OSU) completed training, supported study. At WU, motivation and workflow impacted use.

- Used/viewed the summary all or most of the time, 2
- Used/viewed the summary some of the time, 2
- Never viewed the summary at all, 3
- In previous work described less motivation than others, 2
- Never opened the EHR; had resident or assistant relay info, 1

2/7

3/7

2/7
Results: Did Clinicians Engage With BREASTChoice?

At OSU, technology challenges impacted engagement

- All but 1 accepted the BPA to view it at some point
  - But at first, delay in programming led to paper-based printout
  - Then, ~half initially dismissed the BPA before additional training
  - End of study, bug in program stopped completing summary
## Summary: Selected Patient Outcomes: ITT

<table>
<thead>
<tr>
<th></th>
<th>BREASTChoice (n=156)</th>
<th>Control (n=165)</th>
<th>Unadjusted Analysis</th>
<th>Adjusted Stratified Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DQI Knowledge</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>70.6 (13.2)</td>
<td>67.4 (14.7)</td>
<td>p=0.08</td>
<td></td>
</tr>
<tr>
<td>Median (IQR)</td>
<td>66.7 (66.7-77.8)</td>
<td>66.7 (55.6-77.8)</td>
<td>By site: p=0.04</td>
<td>By age: p=0.04</td>
</tr>
<tr>
<td><strong>Proportion of high-risk (32%+)</strong> patients choosing reconstruction**</td>
<td></td>
<td></td>
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<tr>
<td>Chose reconstruction</td>
<td>n=16</td>
<td>n=13</td>
<td>-28.6% (-57.9%, 0.8%)</td>
<td>p=0.056</td>
</tr>
<tr>
<td>% Chose reconstruction</td>
<td>10 (71.4%)</td>
<td>11 (100.0%)</td>
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<tr>
<td>Chose no reconstruction</td>
<td>4 (28.6%)</td>
<td>0 (0.0%)</td>
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<tr>
<td><strong>Knowledge as assessed in BREASTChoice tool</strong> (Range 27.3-100%)</td>
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<tr>
<td>Mean (SD)</td>
<td>n=147</td>
<td>n=154</td>
<td>-18.2% (-14.8, -21.6)</td>
<td>p&lt;0.001</td>
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<td></td>
<td>84.7 (13.8)</td>
<td>66.5 (15.8)</td>
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<td>p&lt;0.001</td>
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<td><strong>Exploratory Outcome</strong></td>
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<tr>
<td><strong>CollaboRATE Top Score Method</strong></td>
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<td></td>
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<tr>
<td>Less than every effort was made</td>
<td>n=141</td>
<td>n=156</td>
<td>3.7% (-7.6%, 14.9%)</td>
<td></td>
</tr>
<tr>
<td>Every effort was made</td>
<td>78 (55.3%)</td>
<td>92 (59.0%)</td>
<td></td>
<td>p=0.53</td>
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<tr>
<td></td>
<td>63 (44.7%)</td>
<td>64 (41.0%)</td>
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<td>p=0.26</td>
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<td>p=0.37</td>
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<tr>
<td>Summary: Selected Patient Outcomes: PP</td>
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<tr>
<td>71.4 (12.8)</td>
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<tr>
<td>Median (IQR)</td>
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<tr>
<td>66.7 (66.7-77.8)</td>
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<tr>
<td><strong>Control</strong> (n=165)</td>
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<tr>
<td>Unadjusted Analysis</td>
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<tr>
<td>p=0.03</td>
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<td>Stratified Analysis</td>
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<tr>
<td>By site: p=0.01</td>
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<tr>
<td>By age: p=0.02</td>
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<tr>
<td>By race: p=0.01</td>
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<tr>
<td><strong>Proportion of high-risk (32%+) patients choosing reconstruction</strong></td>
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<tr>
<td>Chose reconstruction</td>
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</tr>
<tr>
<td>n=13</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8 (66.7%)</td>
<td></td>
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<tr>
<td>Chose no reconstruction</td>
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<tr>
<td>n=13</td>
<td></td>
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<tr>
<td>4 (33.3%)</td>
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<tr>
<td>-33.3%</td>
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<tr>
<td>(–64.3%, 2.4%)</td>
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<tr>
<td>p=0.04</td>
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<tr>
<td><strong>Knowledge as assessed in BREASTChoice tool</strong></td>
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<tr>
<td>(Range 27.3-100%)</td>
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<tr>
<td>Mean (SD)</td>
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<td>n=147</td>
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<td>84.7 (13.8)</td>
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<td>n=154</td>
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<td>66.5 (15.8)</td>
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<td>-18.2%</td>
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<td>(-14.8, -21.6)</td>
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<td>p&lt;0.001</td>
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<td>p&lt;0.001</td>
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<td>p&lt;0.001</td>
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<td><strong>Exploratory Outcome</strong></td>
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<td>CollaboRATE Top Score Method</td>
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<tr>
<td>Less than every effort was made</td>
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<tr>
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<tr>
<td>73 (54.1%)</td>
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<tr>
<td>Every effort was made</td>
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<td>n=156</td>
<td></td>
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<tr>
<td>92 (59.0%)</td>
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<tr>
<td>4.9%</td>
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<tr>
<td>(-6.5%, 16.3%)</td>
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<td>p=0.19</td>
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<tr>
<td>p=0.27</td>
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</table>
Summary: Patient Outcomes

• Improved knowledge about reconstruction, and reconstruction type, timing, and complication risks.

• In PP analyses (those in the BREASTChoice group who accessed the intervention), fewer high-risk patients chose to have immediate reconstruction, a higher risk procedure than delayed or no reconstruction.

• BREASTChoice did not decrease decisional conflict, improve the match between preferences and surgical choice (match was high in both groups), or increase shared decision-making (also high in both groups)
Summary: Implementation Challenges

• Implementation of digital tools can vary
  - Clinician can fill in or view information solo
  - Clinician can engage with patient** (this is our goal)
  - Clinician/care team can send to patient to fill in or view solo

• Digital tools do not always support collaborative decision discussions

• Alert fatigue and EHR fatigue can be a barrier, even with stakeholder engagement and planning. Status quo is easier.

• How do we go from verbal support for an idea to use and change?
Barriers/Ideas to Address in Future Work

• How can BPA’s work without the “alert fatigue?”
• How does BPA design affect clinician use?
• How can patient-facing tools also include clinician components?
• How can we build upon existing workflows, with clinical champions?
  – Build into residency training?
Questions/Follow-Up

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