Clinician Engagement with a Breast Reconstruction Decision Support Tool (BREASTChoice)

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Washington University in St Louis
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Overview

History of BREASTChoice tool development

Importance of patient and clinician engagement

Challenges to clinician engagement

Future Directions

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BREASTChoice History and Evidence

- 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”

Patients Want More Engagement

"Nobody told me I had an option…There was never a lot of discussion on the options."

[P19, no reconstruction]

"I never thought in advance that something may go wrong…doctors…don't get into detail like you would like."

[P1, Immediate, autologous reconstruction]

Hasak, Myckatyn, Grabinski, Philpott, Parikh, Politi, 2017. *Plastic and Reconstructive Surgery GO*.

Clinicians Are Not Always Practicing SDM

"Yeah. I do address these things…[but] sometimes I brush over it a little bit." *[Clinician 1]*

"Pain, complications…I don't really tell them about that." *[Clinician 10]*

"Not necessarily that it's pushed on them, but…I don't know if they [patients] always know that they have the option to just say, 'I just want the mastectomy.' " *[Clinician 12]*

Hasak, Myckatyn, Grabinski, Philpott, Parikh, Politi, 2017. *Plastic and Reconstructive Surgery GO*.

Pilot RCT: Higher Patient Knowledge, Activation

		BREASTChoice (*n*=60)	Enhanced Usual Care (*n*=60)	p value
Knowledge % correct	Mean (SD, Range)	84.6 (14.2, 36.4-100)	59.7 (18, 18.2-90.9)	**<0.001**
Certainty about Choice	Mean (SD, Range)	2.9 (1.2, 0-4)	2.5 (1.4, 0-4)	0.0998
Decision process quality	Mean (SD, Range)	65.1 (21.5, 13.3-93)	58.2 (20.7, 6.7-93)	0.060
Patient Activation (PAM) *% agreement* *"I am confident that…"*	I can tell my healthcare provider concerns I have about BR even when he/she doesn't ask.	96.5% (55/57)	98.3% (59/60)	0.612
	I can find trustworthy sources of information about my BR decision.	100.0% (57/57)	96.7% (58/60)	0.496
	I know the different options available for BR	98.3% (56/57)	83.3% (50/60)	**0.009**

Politi, Lee, Philpott-Streiff, Foraker, Olsen, Merrill, Tao & Myckatyn., 2020, *Annals of Surgery*

Pilot RCT: No Impact on Consultation Length

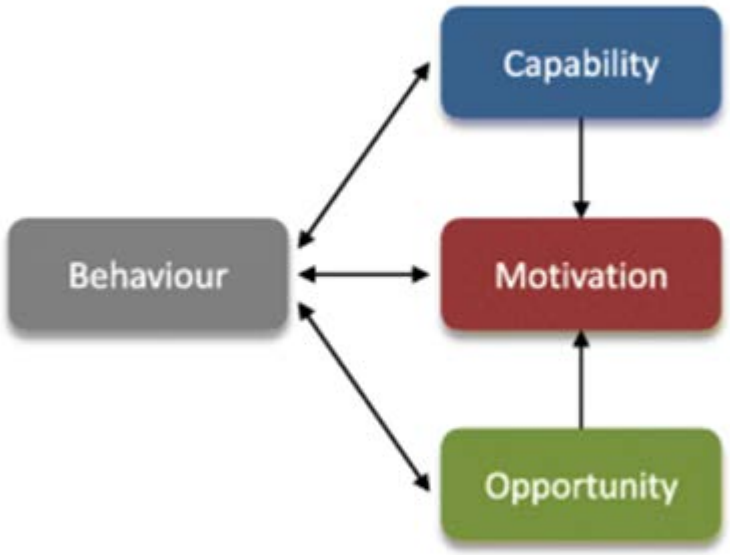
		BREASTChoice (*n*=60)	Enhanced Usual Care (*n*=60)	p value
Time spent on tool *minutes*	Mean (SD, Range)	32.9 (23.3, 9-130)	N/A	N/A
Consult time *minutes*	Mean (SD, Range)	29.7 (12.4, 10-58)	30 (13.7, 9-65)	0.884
Usability (CSUQ)	Mean (SD, Range)	6.3 (0.6, 1-7)	N/A	N/A

Clinicians told us after the study that they didn't know who used the tool. They wanted to engage with patients about risk and preferences.

Politi, Lee, Philpott-Streiff, Foraker, Olsen, Merrill, Tao & Myckatyn., 2020, *Annals of Surgery*

How Do We Get Clinicians to Engage With Tools?

COM-B Model for understanding behavior



Capability: skills, training

Motivation: beliefs, rewards, incentives

Opportunity: resources, automated aspect in Epic, social comparison

McDonagh et al., 2018, *Imp Sci*

How Do We Get Clinicians to Engage With Tools?

Normalization Process Theory

Coherence
What is the work? What are the benefits?

↓

Cognitive Participation
Who does the work? Who are the teams?

↓

Collective Action
How does the work get done? What is needed?

↓

Reflexive Monitoring
How is it understood? What is the impact?

Hooker and Taft, 2016; Hooker et al., 2015; Toye, 2016

Coherence: What is the work? What are the benefits?

B.R.E.A.S.T. Choice

Breast Reconstruction Education and Support Tool

Hi, CDS Testuser | Update Password | LOG OUT

Welcome | Let's Learn | Photo Gallery | Summary

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.

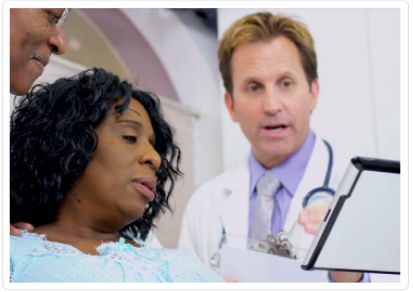
Breast reconstruction is surgery that can rebuild the shape and look of the breast.

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.

Pros of Breast Reconstruction	Cons of Breast Reconstruction
Your breasts might look more balanced when wearing a bra, swimsuit, or clothes.	Whether in clothes or not, a reconstructed breast is not a perfect match for a natural breast.
You regain breast shape without having to wear a breast form (prosthesis).	It often involves longer surgery and more than one surgery.
It might help you feel more comfortable with your body and "feel like yourself" again after your breast is removed.	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.

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?

2. How important is it that your breast feels and moves like a natural breast?

3. How concerned are you about possibly needing to replace implants later on?

4. How concerned are you about scarring in other areas of your body if you take tissue or muscle from that area for reconstruction?

5. How concerned are you about weakness in other areas of your body if you take tissue or muscle from that area for reconstruction?

6. How important is it to you to use your own tissues to create a breast?

Your Risk from Having Breast Reconstruction Surgery

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.

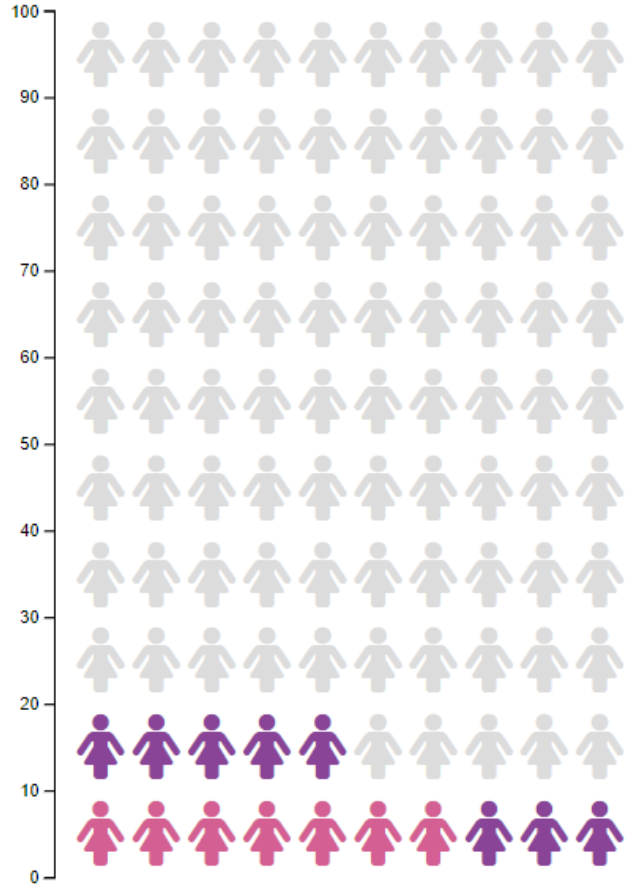
To help you understand your own risks from breast reconstruction done at the time your breast is removed, we reviewed your current health. With the same risk factors you have, **15** out of 100 women have a major wound infection, wound opening, or tissue damage. Your risk is higher because you have a 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.

Your Chance of Wound Infection, Wound Opening, or Tissue Damage after Breast Reconstruction

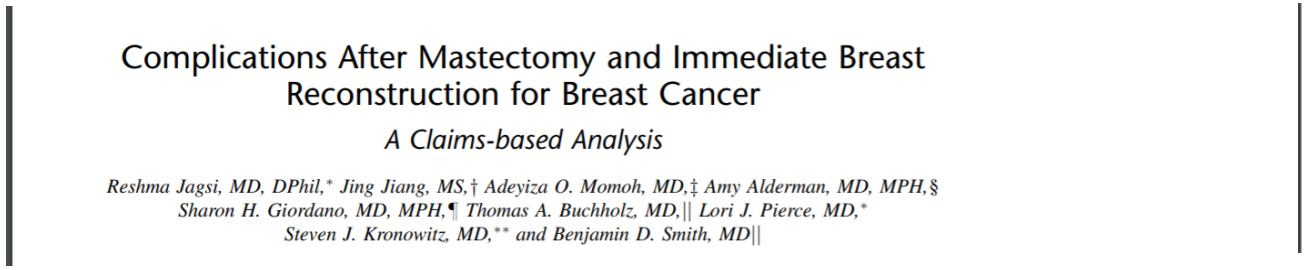


7 out of 100 women have these outcomes after breast reconstruction, even with no risk factors.

15 out of 100 women with the same risk factors as you have these outcomes after breast reconstruction.

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)


Complications After Mastectomy and Immediate Breast Reconstruction for Breast Cancer

A Claims-based Analysis

Reshma Jagsi, MD, DPhil, Jing Jiang, MS,† Adeyiza O. Momoh, MD,‡ Amy Alderman, MD, MPH,§ Sharon H. Giordano, MD, MPH,¶ Thomas A. Buchholz, MD,|| Lori J. Pierce, MD,* Steven J. Kronowitz, MD,** and Benjamin D. Smith, MD||*


Research

JAMA Surgery | Original Investigation

Comparison of Wound Complications After Immediate, Delayed, and Secondary Breast Reconstruction Procedures

Margaret A. Olsen, PhD, MPH; Katelin B. Nickel, MPH; Ida K. Fox, MD; Julie A. Margenthaler, MD; Anna E. Wallace, MPH; Victoria J. Fraser, MD

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]

Boateng, Lee, Foraker, Myckatyn, Spilo, Goodwin, Lee, Politi, 2021. *Medical Decision Making PP*.

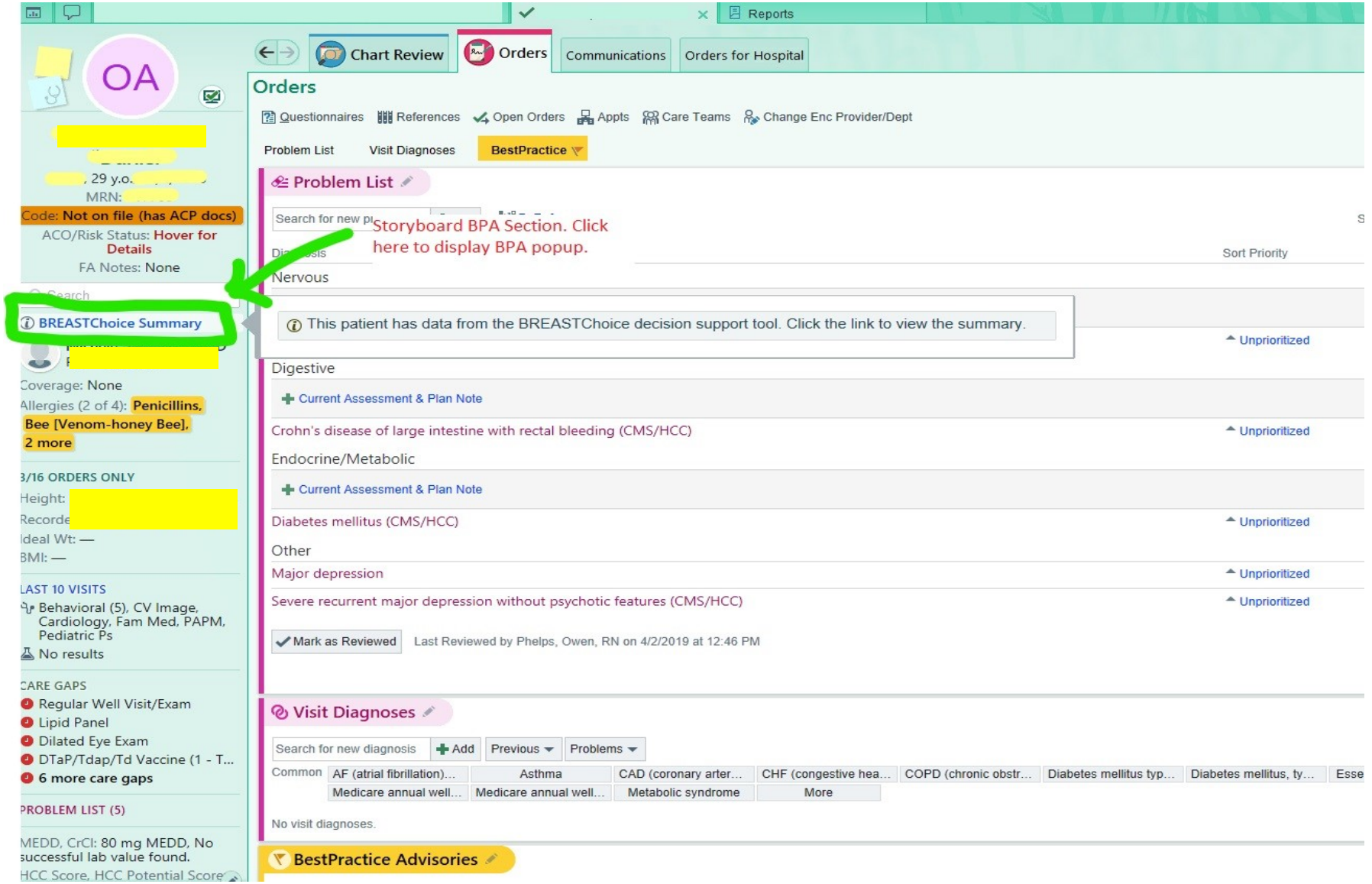
Coherence and Cognitive Participation

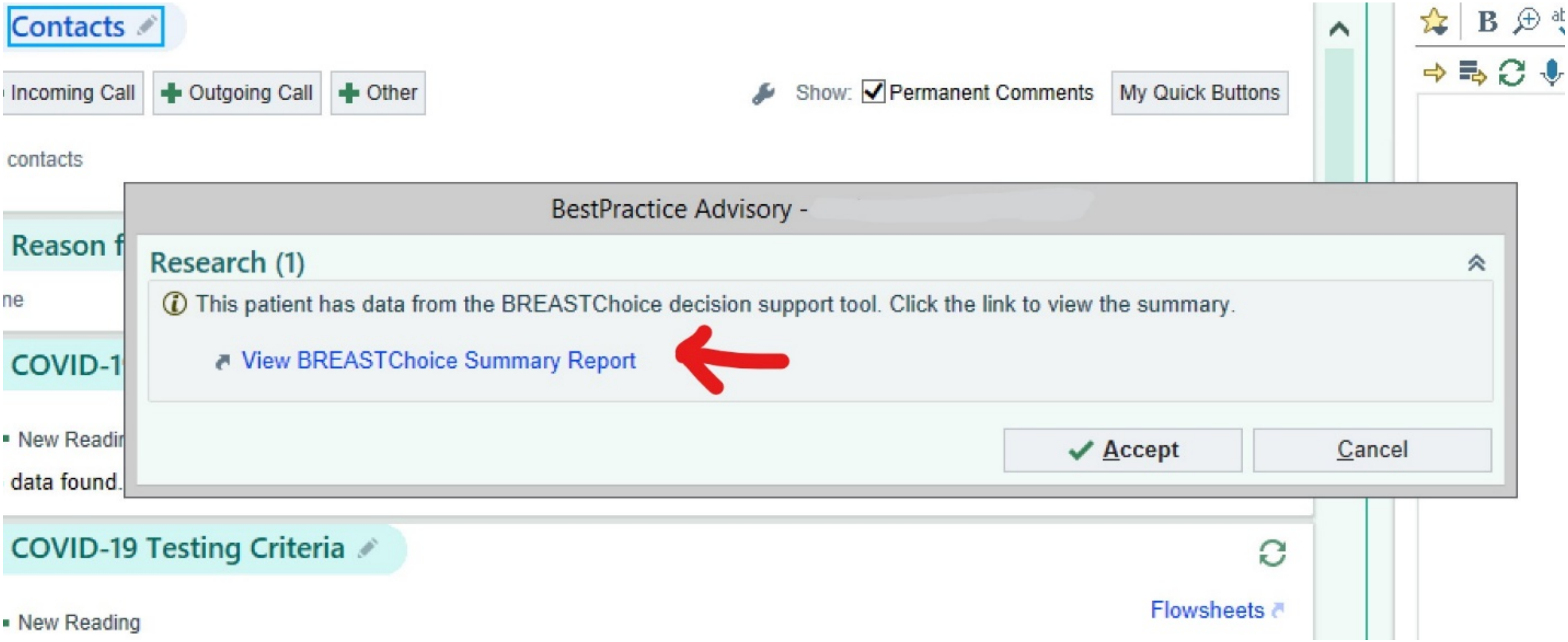
- Minimal work (WU): click on BREASTChoice summary under patients' name.
  Slightly more work (OSU): pop up BPA, need to "accept" and then "add"

- Skills: reviewing information using shared decision making (brief training)

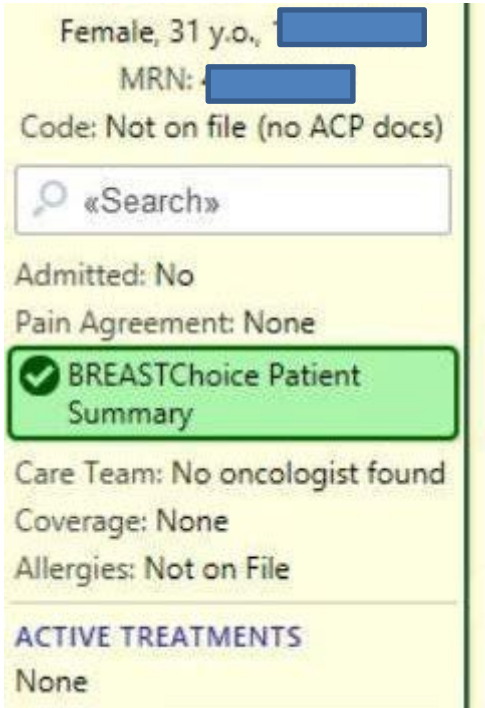
- Benefits:
  - Patient outcomes from earlier RCT (knowledge, activation)
  - Clinician knowledge of risk and patient preferences
  - Shared decision making process
  - Possibility for better match between risk, preferences and choice

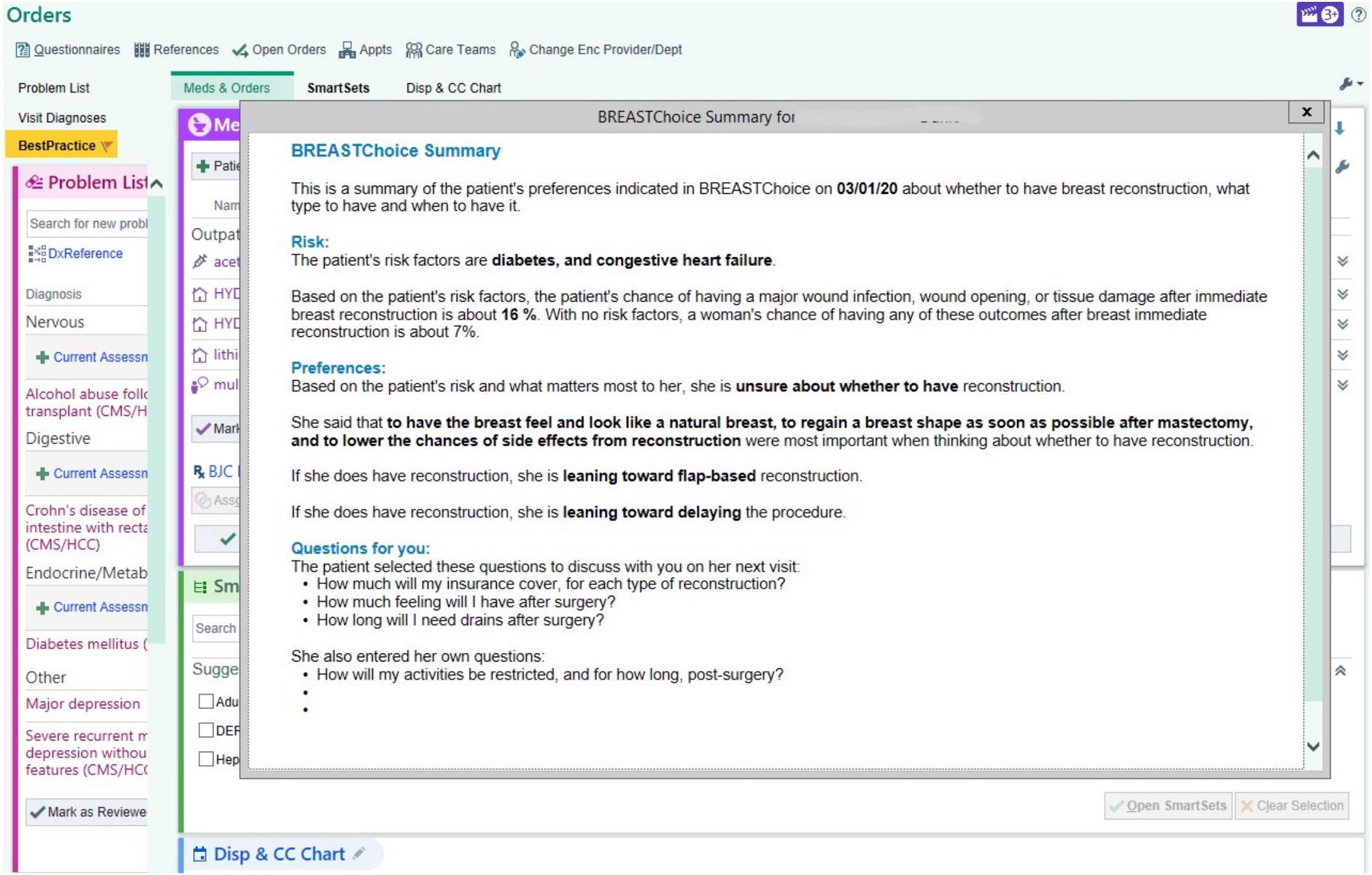
Clinicians Suggested Location for Summary: WU




Contacts
Incoming Call
Outgoing Call
Other
Show:
Permanent Comments
My Quick Buttons
contacts
Reason f
ne
COVID-1
New Readir
data found.
BestPractice Advisory -
Research (1)
This patient has data from the BREASTChoice decision support tool. Click the link to view the summary.
View BREASTChoice Summary Report
Accept
Cancel
COVID-19 Testing Criteria
New Reading
Flowsheets

OSU: Accept/Dismiss then Add: Extra Step




Orders
Questionnaires
References
Open Orders
Appts
Care Teams
Change Enc Provider/Dept
Problem List
Visit Diagnoses
BestPractice
Meds & Orders
SmartSets
Disp & CC Chart
Problem List
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Diagnosis
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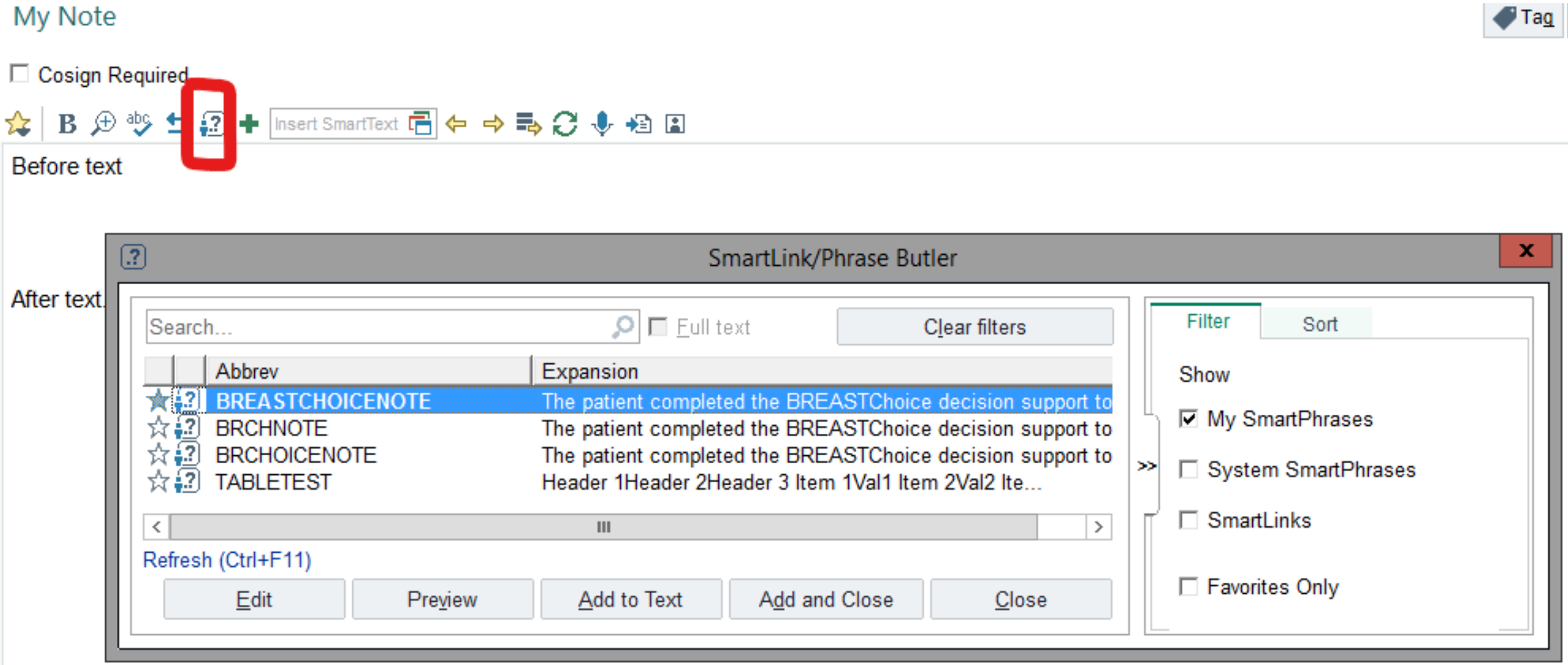
Other
Major depression
Severe recurrent m
depression withou
features (CMS/HC
Mark as Reviewe
BREASTChoice Summary for
BREASTChoice Summary
This is a summary of the patient's preferences indicated in BREASTChoice on 03/01/20 about whether to have breast reconstruction, what type to have and when to have 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?
Open SmartSets
Clear Selection
Disp & CC Chart

Smart Phrase: Minimize Work



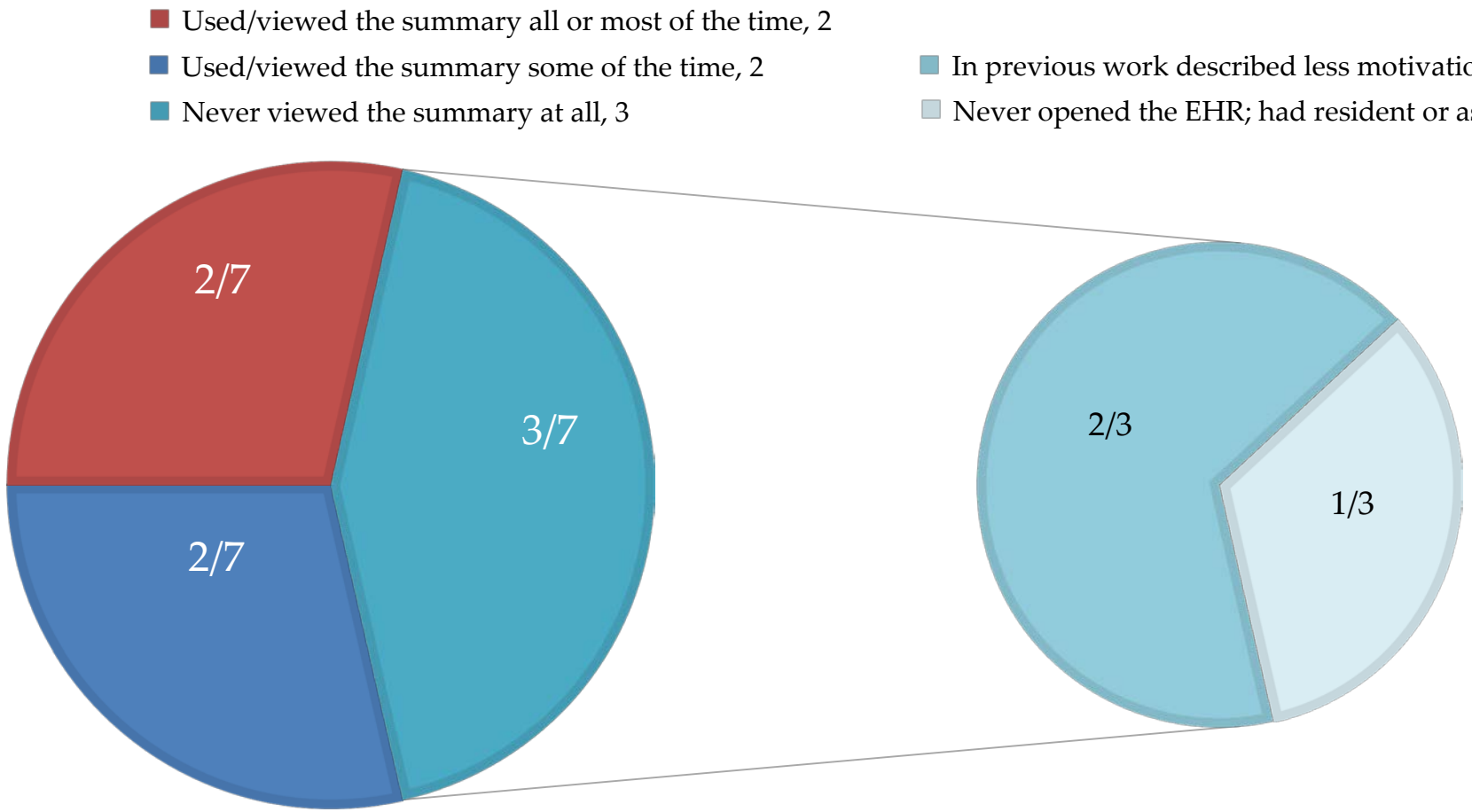
Cognitive Participation and Collective Action: Who does the work? How is the work supported?

- Researchers send a link to patients who consent via MyChart or Email
- Schedulers send a flyer to those eligible as a heads-up
- Surgical oncologists give flyers before referring to plastic/reconstructive
- Risk variables pulled from EHR; patients can edit if missing or inaccurate

Results: Did Clinicians Engage With BREASTChoice?

All clinicians (N=7 at WU; N=13 at OSU) completed training, supported study

At WU, motivation and workflow impacted use

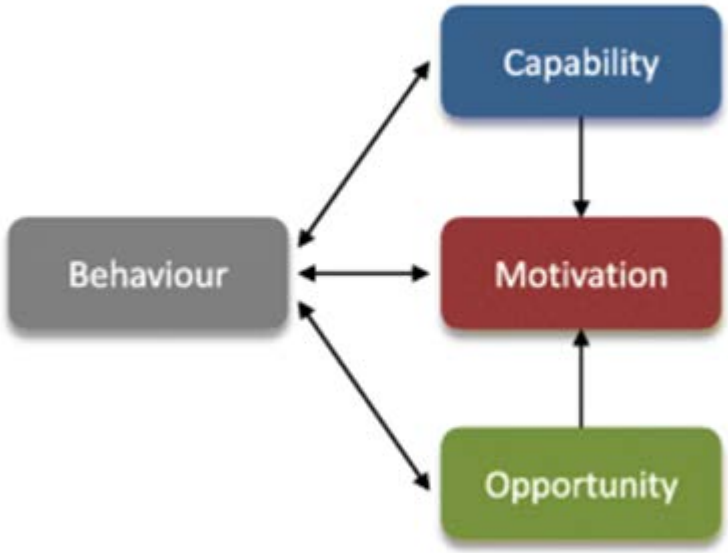


Results: Did Clinicians Engage With BREASTChoice?

At OSU, technology challenges impacted engagement

- 12/13 accepted the BPA to view it at some point
  - But at first, delay in programming led to paper-based printout
  - Then, 6/13 initially cancelled the BPA before additional training
  - End of study, bug in program stopped completing summary

Summary: COM-B Model



Capability: we provided training, had skills

Motivation**: for some, this was lacking

Opportunity: automated tool, engaged stakeholders, but did not observe workflow during usability testing due to COVID. Might have learned about lack of EHR use for some at WU. At OSU, technical difficulties impacted opportunity. Paper worked!

McDonagh et al., 2018, *Imp Sci*

Summary: 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 do local EMR restrictions/policies/culture limit or improve the effectiveness of that BPA?
- How can we build upon existing workflows, with clinical champions?
  - Build into residency training?

"What youth is used to, age remembers."

Questions/Follow-Up

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