

# Increasing Breast Cancer Screening Rates in Difficult-to-Engage Patients

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Supplement to

**M A N A G E D**

**Care**

Volume 28, No. 2  
February 2019



**Genentech**

*A Member of the Roche Group*

This supplement is sponsored by Genentech, Inc.

# Increasing Breast Cancer Screening Rates in Difficult-to-Engage Patients

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## Introduction

Breast cancer is the second leading cause of cancer-related deaths among women (ACS 2018a). An estimated 266,120 new cases of breast cancer will be diagnosed in 2018 and as of 2015, an estimated 3,418,124 women are living with breast cancer in the United States (NCI 2018). According to American Cancer Society (ACS) estimates, breast cancer will account for more than 40,920 deaths in 2018, trailing only lung cancer in terms of mortality (ACS 2018a).

Breast cancer screening plays an important role in early detection and survival. When breast cancer is found at an early stage (localized disease), the 5-year relative survival rate is approximately 99%; however, the 5-year survival rate is 27% for a late-stage (distant disease) diagnosis, a drop in survival of more than 70% (ACS 2018a). Overall breast cancer death rates have decreased 39% over the past few decades, a decline attributed to improvements in treatment and early detection (ACS 2018a).

Although national guidelines differ regarding starting age and frequency, there is consensus that regular breast cancer screening with a mammogram is an important preventive measure for women (Table 1) (ACS 2018a, ACOG 2017, NCCN 2018, Siu 2016). Initiating regular screening at an earlier age and using additional imaging technologies may be indicated for women at higher risk for breast cancer (ACS 2018b).

The Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, through its Healthy People 2020 initiative, has set a goal that 81.1% of eligible women between the ages of 50 and 74 receive a mammogram within the past 2 years by 2020 (Healthy People 2018). National screening rates have remained steady over the past decade, despite significant public awareness campaigns. In 2015, only 71% of the eligible population, based on the most recent guidelines, received screenings (Healthy People 2018).

In order for mammography to achieve its potential to reduce morbidity and mortality, appropriate and timely screening of eligible candidates per national guidelines is necessary (Feldstein 2011, Sarma 2015). To improve

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## ABSTRACT

**Purpose:** Women in Utah have lower than average mammography rates. The objective of this pilot program was to increase breast cancer screening rates by developing and implementing patient engagement materials, targeted messaging, and optimized workflows intended to overcome screening barriers in a difficult-to-engage population.

**Design:** Observational study in 8 clinics in Utah.

**Methodology:** SelectHealth identified 8 clinics in Utah with breast cancer screening rates below the national average (N=1162 patients). The clinics were divided into 2 groups: 4 control clinics (n=686) and 4 pilot clinics (n=476) that were matched by screening rate, geographic region, and patient volume. The 4 pilot clinics received patient navigation scripts, self-mailer brochures, tent cards, and postcards to educate eligible screening candidates on the importance of breast cancer screening and motivate them to get a mammogram. In addition, pilot clinics utilized optimized process workflows.

**Results:** When the pilot program began in August 2017, the pilot clinics had an average screening rate of 62.2% and the control clinics had an average screening rate of 64.7%. After 4 months, screening rates for the pilot clinics were 73.1%, an increase of 10.9%, while screening rates for the control clinics increased by 7.7%.

**Conclusion:** Motivating women to get regular mammograms through a coordinated, patient-focused breast cancer screening awareness campaign can lead to an increase in screening rates.

screening rates, the barriers to screening need to be identified and addressed. Various studies have identified common barriers to mammograms, such as (Fayanju 2014, Feldstein 2011, Stoll 2015, Tejada 2009):

- Absence of a healthcare provider (HCP) recommendation
- Lack of, or incorrect, knowledge about mammography
- Cost or lack of insurance
- Fear of mammogram-associated pain
- Fear of finding breast cancer
- Being too busy
- Perception of being at low risk
- Concerns about mammogram accuracy

Evidence suggests that increasing overall engagement by HCPs as well as providing patient education may help address a variety of barriers to mammography, and support a positive shift in screening rates. Studies have demonstrated that providing patients with interventions such as reminders, counseling, educational discussions, and a screening recommendation can lead to increased screening rates (Davis 2014, Yabroff 1999).

SelectHealth, a health plan serving Utah and Idaho and affiliated with nonprofit Intermountain Healthcare in an integrated health system, in collaboration with Genentech, piloted an innovative breast cancer screening program to identify, understand, and eliminate barriers to screening in a difficult-to-engage population in Utah. In 2016, breast cancer screening rates in Utah were significantly below the national average — only 64.5% of Utah women aged 40 years and older had a mammogram in the last 2 years, compared with 72.3% of women nationally (UDOH 2018). The objectives of this pilot program were to uncover and identify the barriers to breast cancer screening unique to this sociodemographic and then develop and test the effectiveness of streamlined workflows and customized tools and messages designed to motivate eligible, difficult-to-engage

patients to complete a screening. To determine patient eligibility, SelectHealth uses the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) Breast Cancer Screening quality measure, which assesses whether women ages 50-74 had at least one mammogram to screen for breast cancer in the past 2 years (CMS 2018).

## Methods

Working together, Genentech and SelectHealth determined the resources and processes necessary for the success of the pilot program; however, Genentech did not engage with patients directly and did not have access to identifiable patient data.

**Resource development.** From October 2016 through December 2016, Genentech conducted the research phase of the pilot program, which aimed to:

- Validate patient barriers to screening
- Determine the applicability of messages to address these barriers
- Test graphical elements of the messages
- Identify the methods of communication that were most effective for this patient population

A two-phased research approach was employed for the

**TABLE 1**

## National Guidelines for Mammography in Average-Risk Women

[ACS 2018a, ACOG 2017, NCCN 2018, Siu 2016]

	ACOG	USPSTF	ACS	NCCN
Mammography initiation age	Offer starting at age 40. Initiate at ages 40-49 after counseling, if patient desires. Recommend by no later than age 50 if patient has not already initiated.	Recommend at age 50. Ages 40-49: The decision to start screening mammography in women before age 50 should be an individual one.	Offer option to begin at ages 40-44. Recommend at ages 45 and older.	Recommend at age 40.
Mammography screening interval	Annual or biennial	Biennial	Annual for women aged 40-54. Biennial with the option to continue annual screening for women 55 years and older.	Annual
Mammography stop age	Continue until age 75. Beyond age 75, the decision to continue should be based on a shared decision-making process that includes a discussion of the woman's health status and longevity.	The current evidence is insufficient to assess the balance of benefits and harms of screening mammography in women 75 years and older.	When life expectancy is less than 10 years.	Consider when severe comorbidities limit life expectancy to 10 years or less.

ACS=American Cancer Society; ACOG=American College of Obstetricians and Gynecologists; NCCN=National Comprehensive Cancer Network; USPSTF=U.S. Preventive Services Task Force.  
Mammography screening guidelines are current as of October 2018.

## INCREASING BREAST CANCER SCREENING RATES

breast cancer screening pilot program (N=38). Eligible yet noncompliant breast cancer screening candidates between 40 and 70 years old were identified from the general population in the Salt Lake City metro area in Utah and asked to participate in focus groups (n=22) or telephone interviews (n=16). Participants in both groups revealed challenges and barriers to breast cancer screening similar to research done on a national level (Fayanju 2014, Feldstein 2011, Stoll 2015, Tejada 2009). This research phase identified the following screening barriers:

- Uncertainty as to how frequently women should be having a mammogram and at what age they should start getting them
- Perception that due to lack of familial history, risk of breast cancer is lower, and therefore mammograms are not important
- Perception that self-examination is more likely to catch lumps
- Belief that mammograms are not accurate or reliable at detecting breast cancer
- Persistent and proactive breast cancer screening education and direction to screening candidates from providers is often missing

These gaps in knowledge about breast cancer and mammograms translated into limited motivation for a patient to schedule an appointment or discuss mammograms with their HCP.

The focus groups also tested messaging intended to increase a patient's understanding about breast cancer and the importance of mammograms. A key takeaway from this portion of the research was that patient engagement materials should clearly address and clarify misconceptions to help create a compelling case to schedule a mammogram and should be supported by a persistent recommendation from a provider.

Insights from this research phase of the pilot program led to the development of a breast cancer screening program called “*What’s Your Reason for a Mammogram?*,” or “*What’s Your Reason,*” consisting of patient engagement resources and tools optimized for integrated health systems (Table 2). The program materials were designed to:

- Challenge women to reflect on their priorities
- Change perceptions about the risks of breast cancer and the benefits of screening
- Decrease and overcome barriers to screening
- Drive women to action and schedule a mammogram

From September through December 2017, 4 patient engagement resources (a self-mailer brochure, tent card, postcard, and patient navigation script) were tested in 4 clinics in Utah.

Based on feedback from the pilot clinics, Genentech

**TABLE 2**  
***What’s Your Reason***  
**Pilot Program Resources**

**Tent Card:** Informational display piece for patient-accessible areas of providers’ offices and tabletops at outreach events. It contains a customizable feature to include organization-specific contact numbers.

**Patient Navigation Script:** A discussion guide designed to assist providers and call center staff with motivating breast cancer screening candidates to complete a mammogram. It contains customizable fields to allow for the inclusion of screening recommendations and transportation assistance, if available.

**Postcard:** A promotional mailer designed to boost awareness of the importance of breast cancer screening and activate eligible candidates to get a mammogram. It contains a customizable feature for the inclusion of organization-specific contact information.

**Self-Mailer Brochure:** An informational brochure to be mailed to patients to increase awareness of the importance of breast cancer screening. The brochure contains a customizable feature for the inclusion of organization-specific contact information, such as a list of local mammography centers.

**To view and download resources, visit <https://www.genentech-forum.com/programs-tools/reason-for-mammogram.html>**

Source: Genentech, Inc., South San Francisco, CA.

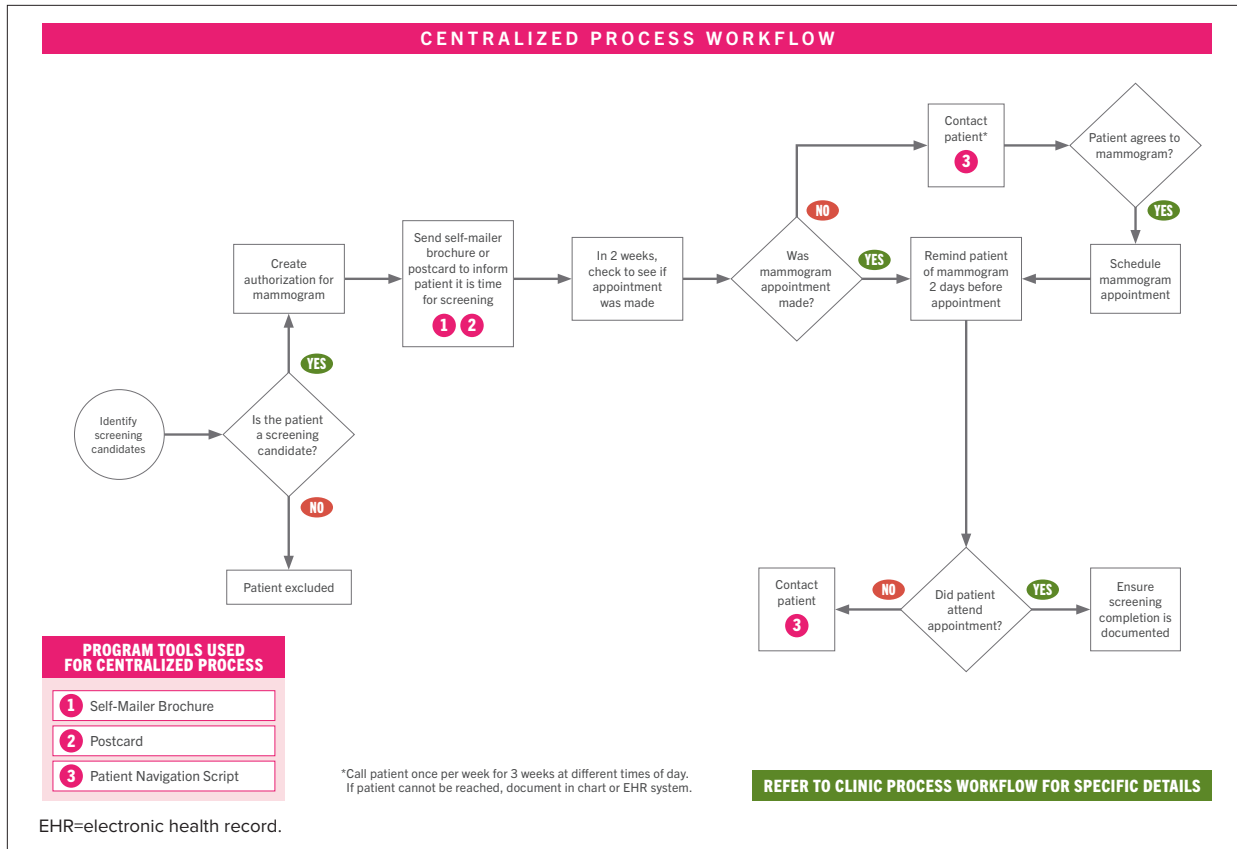
and SelectHealth refined the patient engagement materials, which are now available for use by the public to help increase awareness of the importance of breast cancer screenings and motivate women to schedule a mammogram (Table 2).

**Planning activities.** Prior to implementation of the pilot program, SelectHealth identified existing breast cancer screening-related processes in provider practices. Observations were made of primary care screening authorization processes and internal workflow efficiency. The outcomes of these reviews were used to develop optimal screening flows for both the central coordination office and clinics (Figures 1 and 2, page 5). Step-by-step frameworks were developed for implementation at the central office and clinic levels to optimize patient communication, remove patient barriers, and minimize physician burden.

The centralized process workflow outlined steps to streamline office coordinator efforts and improve the

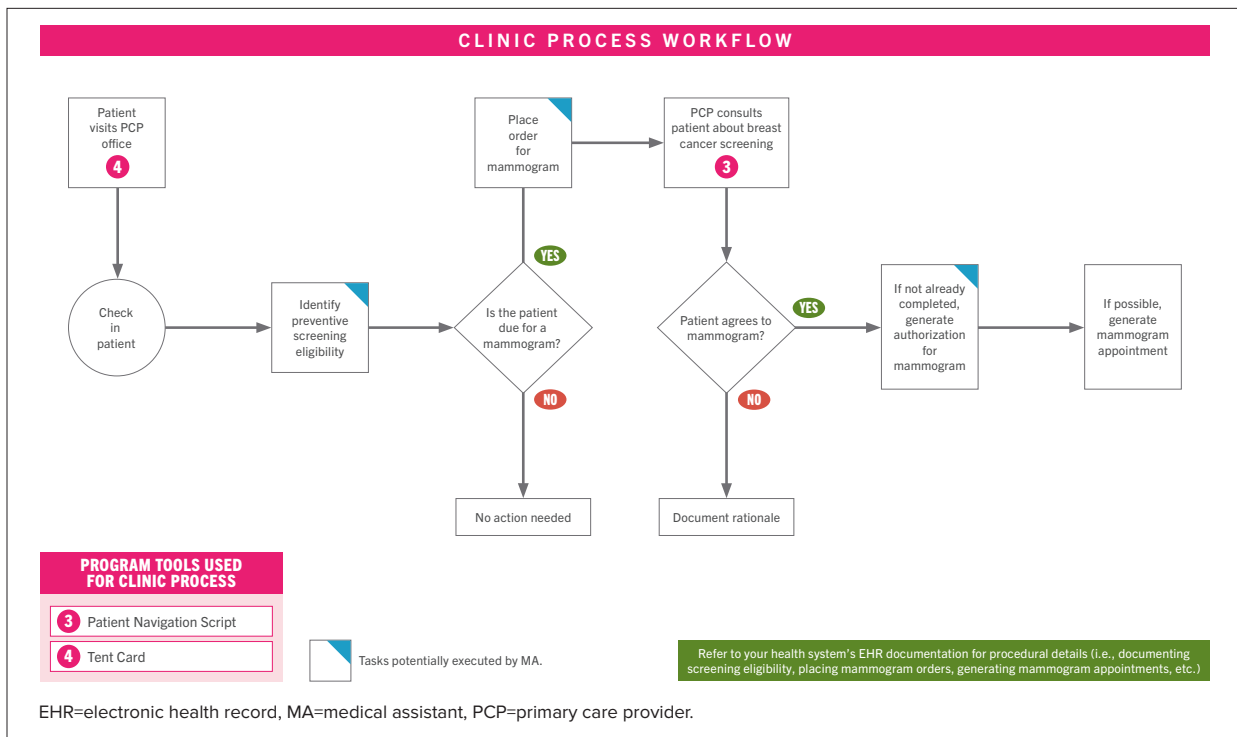
**FIGURE 1**

**Office coordinator (centralized) process workflow**



**FIGURE 2**

**Clinic (pilot site) process workflow**



chance that screening candidates followed through with a mammogram. Critical steps in the workflow included: screening candidate identification, preauthorization or referral of appropriate candidates to a mammography center, screening candidate outreach, and follow-up touchpoints with screening candidates.

The clinic process workflow highlighted a series of tasks to improve operational efficiencies, distribute workload within provider offices, and help to ensure that screening candidates are identified, contacted, and followed. Critical steps in this workflow included: preventive screening eligibility assessment, breast cancer screening consultation, mammography appointment scheduling at the conclusion of the primary care visit, and follow-up touchpoints to ensure that a mammogram is completed.

The hypothesis was that these workflows would streamline office activities, define staff roles and responsibilities, and increase focus on screening activities.

**Pilot inception.** Prior to initiation of the pilot program, SelectHealth’s patient-centered medical home (PCMH) department offered their clinics the opportunity to participate. Once 4 pilot clinics were selected, 4 control clinics were chosen with similar geographic regions and patient volumes. The pilot group consisted of 476 eligible patients and the control group consisted of 686 eligible patients.

The average breast cancer screening rate for the pilot and control clinics at the start of the pilot program in August 2017 was 62.2% and 64.7%, respectively. During the 4 months of the pilot program, the pilot clinics utilized *What’s Your Reason* tools and marketing resources to communicate the value of breast cancer screening to potential screening candidates at various points along the patient journey.

SelectHealth sent the self-mailer brochure to eligible screening candidates to inform them it was time to get their mammogram and elevate their understanding about the importance of screening. SelectHealth also provided pilot clinics with tent cards for display in waiting rooms, exam rooms, and at the front desk; patient navigation scripts to be used by providers to guide conversations with women and lead a discussion addressing any concerns; postcards for sending to eligible patients who had not been screened within the past year or to provide in person as a reminder; and informational self-mailer brochures to send directly to eligible screening candidates. Patient engagement materials were provided to and used by the pilot clinics; the central office was not involved in the distribution of the resources and *What’s Your Reason* resources were not available to control clinics.

Workflow changes included a focus on scheduling patients’ mammograms when they were in the office and making follow-up calls 2 to 3 weeks later to ensure the

**TABLE 3**

**Key Patient-Focused Messages Used in 2017 Pilot Program**

**KEY MESSAGE: All women are at risk for breast cancer**

**Supporting Messages:**

- In more than 8 out of 10 cases of breast cancer, there is no family history of the disease
- The American College of Obstetricians and Gynecologists recommends that women aged 40 and older get screened for breast cancer\*

**KEY MESSAGE: Getting a mammogram may save your life**

**Supporting Messages:**

- Women who are regularly screened for breast cancer are more likely to detect it early and be cured
- According to the American Cancer Society, mammograms can help to find breast cancer, often years before a lump is felt or symptoms develop

**KEY MESSAGE: There are many reasons to get a mammogram**

**Supporting messages:**

- Do it to have a better chance at life
- Do it to catch breast cancer early
- Do it for your family
- Do it for your peace of mind

\*Multiple breast cancer screening guidelines exist and can change frequently. Health systems may choose to use the most current national screening guideline that aligns with their organizational goals. See Table 1 for current screening guidelines as of October 2018.

mammograms were completed.









The resources provided consistent messages for optimal patient understanding and activation and were developed to be used together, individually, or as supplements to existing breast cancer screening programs (Table 3). The messages have broad applicability and can be reinforced during patient encounters to optimize screening-candidate engagement and overcome possible objections to screening.

**Results**

The pilot program included a total of 1162 patients who were identified as eligible for screening, but noncompliant under the NCQA HEDIS Breast Cancer Screening measure (an assessment of whether women ages 50-74 had at least one mammogram to screen for breast cancer in the past 2 years) (CMS 2018).

TABLE 4

**What's Your Reason Pilot Program Breast Cancer Screening Rates**

Clinic	Starting Rate: August 2017	Ending Rate: December 2017	% Increase
<b>Pilot Clinics</b>			
Clinic A	62.44%	78.20%	 15.76%
Clinic B	55.00%	66.67%	 11.67%
Clinic C	56.41%	66.13%	 9.72%
Clinic D	75.00%	81.40%	 6.40%
<b>Control Clinics</b>			
Clinic E	59.13%	68.84%	 9.71%
Clinic F	56.79%	64.58%	 7.79%
Clinic G	75.00%	82.19%	 7.19%
Clinic H	67.76%	73.86%	 6.10%

**Screening rates and patient outcomes.** Prior to the initiation of the program, the pilot clinics had an average screening rate of 62.2% and the control clinics had an average screening rate of 64.7% (Table 4). After 4 months, all clinics raised their screening rates between 6% and 16% and the average screening increase was 9.3%. Screening rates for the pilot clinics increased to 73.1%, an increase of 10.9%, while screening rates for the control clinics increased by 7.7%. Table 4 lists screening rate improvement by clinic.

**Provider and patient satisfaction.** SelectHealth used surveys to assess how satisfied providers and patients were with the resources provided. The survey results showed that provider/office personnel believed that the *What's Your Reason* patient engagement materials were effective in educating patients on the importance of breast cancer screening and in motivating patients to get a mammogram. Qualitative responses yielded staff appreciation for the patient engagement materials and noted that at least one or more were helpful and worked well for their clinic. The patient navigation script was noted as being particularly helpful in addressing common questions and objections to breast cancer screening.

## Discussion

This observational study demonstrated how a focused breast cancer screening program can help to overcome barriers to screening and motivate difficult-to-engage screening candidates. This pilot program resulted in an average breast cancer screening rate increase of about 11% in patients seen at clinics using *What's Your Reason* patient engagement materials and workflows.

At the implementation of this pilot program, SelectHealth's overall breast cancer screening rates were below the national average. At the end of the pilot program, rates for pilot clinics aligned with the national average, generating meaningful improvements in screen-

ing rates. Although it is difficult to attribute the increased screening rates to any single intervention during this pilot program, the combination of the tactics and healthcare provider engagement was a successful strategy. The clarity and consistency of messaging, from initial outreach materials to navigation script-assisted conversations between patients and physicians, may have contributed to improvements in screening rates.

This pilot program helped SelectHealth understand barriers to screening and challenges of patient engagement. From this process, the following best practices emerged:

- **Establish measurable goals:** Setting measurable goals is key to a screening program's potential for success. Goals to consider for a breast cancer screening campaign include mammography screening rate, patient and provider engagement and satisfaction, and improvements in patient outcomes (eg, stage at diagnosis)
- **Align with key stakeholders:** The success of a screening mammography program requires the coordination and engagement of many key stakeholders. Defining organizational objectives, identifying challenges, defining solutions, and optimizing workflows are important when establishing a breast cancer screening program
- **Evaluate and remove operational barriers to screening:** Streamlining the screening process could include strategies such as:
  - Minimizing provider visits by referring patients directly to a screening facility without having to see a primary care provider
  - Preauthorizing screening mammograms
  - Centralizing identification of screening candidates
  - Utilizing support staff to help with nonclinical

tasks such as identifying appropriate candidates for screenings, flagging patient charts for screening consultation with a primary care provider, or generating referrals

- Leveraging an electronic health record (EHR) system
- **Analyze current screening workflows and establish formal processes:** This includes identifying any unique challenges that exist in a health system and formalize processes to ensure consistency
- **Use a central office coordinator:** A centralized patient coordinator/navigator can help streamline efforts and alleviate confusion. Centralized tasks that may improve patient engagement include identifying, documenting, and initiating contact with candidates for mammography, addressing screening candidate concerns, tracking office visits, reminding patients of upcoming appointments, and following up on missed appointments
- **Employ a consistent set of messages:** Presenting messages in ways that are consistent and that the majority of potential screening candidates can relate to and understand is important for a program's success

## Conclusion

Quality measures and population health management are becoming areas of interest for healthcare organizations. It is becoming imperative that health systems evaluate ways to improve the health of their populations. Preventive health activities can lead to better survival results for a population as well as have the potential for quality improvement efforts.

Although breast cancer is a well-recognized condition and mammography is widely regarded as important, national screening rates have plateaued over the past decade. Identifying and addressing barriers to screening and providing solutions to remove those barriers is key to moving the needle on breast cancer screening rates.

This pilot program demonstrated how breast cancer screening rates can be meaningfully improved through a coordinated approach to screening. Keys to this process include targeted patient outreach, consistent messaging, aligned processes, and organizational commitment.

## Disclosures

The following stakeholders were involved in the development of this breast cancer screening pilot program: Genentech was responsible for the development of the *What's Your Reason* tools, and SelectHealth was responsible for the implementation and maintenance of the program. Genentech did not engage with patients directly and did not have access to identifiable patient data.

This pilot program was jointly funded by Genentech and SelectHealth. SelectHealth authors received no honoraria from Genentech. None of the authors have any conflicts of interest to declare. All authors made substantial contributions to this manuscript.

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