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Improving Provider Ordered Annual Breast Cancer Screening in Primary Care

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Alexis Manzella, RN

A DNP project proposal

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Approval Page

This is to certify that the DNP Project Final Report by

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has been approved by the DNP Project Team on

for the Doctor of Nursing Practice degree

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Acknowledgments

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Thank you to the stakeholders and staff for your support and dedication to my project at the Federally Qualified Health Center. You have given me the best opportunity to develop and implement a project within your organization.

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Abstract

Significance and Background: Breast cancer is the most common cancer in women throughout the United States. Specifically, the state of Connecticut has one of the highest rates of breast cancer in the country. Multiple evidence-based organizations have developed specific guidelines for screening in clinical practice. These guidelines specify when a woman should be screened and how frequently. A project was put in place at a FQHC in Connecticut to increase the number of breast cancer screenings ordered, based on clinical guidelines. Evidence supported the use of provider education to increase the number of mammograms ordered (Marks,2022).

Purpose: Increase the number of mammograms ordered by Internal Medicine and OBGYN providers across the health system. Deliver education to providers and nursing staff regarding breast cancer screening guidelines.

Methods: Plan-Do-Study-Act. *Plan:* Identify the stakeholders and people involved in the process, as well as identify the scope and scale of the project. *Do:* Educational sessions were conducted followed monthly check-ins with the organization. PowerPoint educational materials were disseminated to providers and nursing staff. *Study:* Data was gathered on the number of mammograms ordered by Internal Medicine and OBGYN providers as well as follow-up phone calls were placed to patients who were ordered mammograms. *Act:* Present data to organizational stakeholders.

Outcome: Over the twelve- week implementation period, there were a total of 663 mammograms ordered. 374 (56.4%) of them were ordered by OBGYN providers and 289 (43.6%) were ordered by Internal Medicine providers. This reflected an overall 18% decrease in mammograms ordered by primary care providers compared to those ordered by OBGYN providers. Of the seventy patients that received follow- up phone calls, because of lack of knowledge regarding their screening appointments, seventeen had already attended their mammogram screening. Twelve patients had their mammograms scheduled and the dates were upcoming. Six patients canceled original appointments because they wanted to reschedule in more convenient locations. Two patients never scheduled their mammograms due to financial situations. Two patients planned to attend their mammogram appointment later in the spring and one person missed their appointment due to being ill. The remaining thirty patients were unable to be contacted by the project leader.

Discussion: The implementation of a project to increase the number of screening mammograms ordered by Internal Medicine and OBGYN providers by educating providers and staff did not increase the number of mammograms ordered. Although educational sessions were geared towards the importance of screening guidelines and breast cancer rates, the project team leader speculated additional time allowed on provider and staff education would have resulted in additional mammogram screenings for this patient population.

Keywords: breast cancer, provider education, mammograms, screening, prevention.

Problem Identification and Evidence Review

Description of the Problem

According to the World Health Organization (WHO) breast cancer is the most common cancer worldwide and the leading cause of cancer- related deaths amongst women. Breast cancer accounts for 12% of all cancer diagnoses worldwide. Breast cancer rates are even higher in low-income countries (World Health Organization, n.d.). Higher rates of breast cancer fatalities are found in lower income areas amongst the disadvantaged populations. These women are also more likely to receive a late-stage diagnosis. According to the Centers for Disease Control (CDC) breast cancer is the second most common cancer in women. Black women are dying at a higher rate than white women from this disease. In the United States in 2020 there were 239,612 new breast cancer cases reported in females and approximately 42,273 females died from breast cancer (Centers for Disease Control, 2020). The American Cancer Society estimates by the end of 2023 there will be 43,170 women in the United States that die from breast cancer and 297,790 women will be newly diagnosed. (American Cancer Society,2023). Most cases of breast cancer are found in women ages 50 and older but young women can also be affected. According to Healthy People 2030, in 2021 there were 19.4 breast cancer deaths per 100,000 women. The Healthy People 2030 target goal is to decrease the number of deaths to 15.3 per 100,000 women (Healthy People 2030, n.d.).

The state of Connecticut has one of the highest rates of breast cancer in the country. According to the Connecticut Department of Public Health, 13.5% of women in Connecticut have been diagnosed with breast cancer whereas the national rate is 12.5% (Connecticut Department of Health,2022). The American Cancer Society estimates by the end of 2023 there will be 3,620 women in Connecticut newly diagnosed with breast cancer (American Cancer

Society, 2023). Evidence supports that annual breast cancer screenings result in earlier diagnosis and more effective treatment for women diagnosed with breast cancer. The current annual breast cancer screening rates for Connecticut women ages 40 and higher is 78% (Connecticut Department of Health,2022). One of the major reasons the screening rates are low is because providers are not ordering annual breast cancer screenings for women in the appropriate age range. Breast cancer is a leading cause of premature mortality among US women. When breast cancer is detected and treated early, the chances of survival are very high (Ginsburg,2020).

Connecticut currently has a program called the State of Connecticut Early Detection and Prevention Program. This program serves nearly 4,400 women annually. They provide free mammograms as well as other women's health related screenings and services. The program is in place to specifically serve women who are underserved and live below the poverty line. The primary objective of the program is to significantly increase the number of women who receive breast and cervical cancer screening, diagnostic and treatment referral services. This program serves women ages 19-64, although women must be between the ages of 40-64 in order to receive a mammogram through the program, unless they have specific risk factors. All services are offered free of charge through the Connecticut Department of Public Health's contracted health care providers located statewide (Connecticut Department of Public Health, n.d.).

Various groups have similar but differing recommendations for women's screenings. For example, The American College of Obstetricians and Gynecologists recommends offering mammography to average-risk women beginning at age 40 years and to initiate screening by no later than age 50 years. Women at average risk of breast cancer should have screening mammography every 1 or 2 years. Women who are at average risk are women who have about a

13% lifetime risk of developing breast cancer. This means there is a 1 in 8 chance they will develop breast cancer. This also means there is a 7 in 8 chance they will never have the disease (American Cancer Society, 2023). Women aged 75 years and older are not recommended to undergo screening and the choice should be a provider-patient decision-making process (American College of Obstetrics and Gynecology, 2021).

United States Preventive Services Taskforce recommends women ages 40-74 should be screened every other year starting at age 40. More research is needed to make a recommendation for or against screening after age 74 (United States Preventative Taskforce,2023). The American Cancer Society recommends the following criteria for breast cancer screening. Women between the ages of 40 - 44 have the option to start screening with a mammogram every year and women aged 45 - 54 are recommended to get mammograms every year. Women 55 and older can then switch to a mammogram every other year or continue yearly mammograms. Screening should continue as long as a woman is in good health and is expected to live at least 10 more years (American Cancer Society, n.d.).

Description of Local Problem

In the practice setting at Southwest Community Health Center, it has been reported that their annual breast cancer screening rates are not meeting uniform data set measures. Southwest Community Health Center is a federally qualified health center that receives funding from Health Resources and Services Administration (HRSA). The HRSA-supported Women's Preventive Services Guidelines were originally established in 2011 based on recommendations from a Department of Health and Human Services. Since the start of the program, there have been advancements in science and gaps identified in the existing guidelines, including a greater

emphasis on practice-based clinical considerations (Health Resources and Services Administration,2023).

Many of the patients served at Southwest Community Health Center belong to minorities, and/or live below the poverty line. This results in certain challenges to the delivery of care, including limited health literacy, linguistic and/or cultural barriers, and financial barriers, such as inability to afford the prescribed testing/treatment, as well as difficulty affording transportation to medical appointments. These barriers can lead to patients not knowing when or how to ask their healthcare provider for annual screenings. The federally qualified health center has a program called the Michelle Project. This is a comprehensive screening program for early cancer detection. They offer a variety of screenings including on-site mammograms.

Clinical Question

An evidence search was performed to identify effective practices in place to ensure women within the recommended age range are having their breast cancer screenings.

1. For health care providers in a FQHC (P) will a breast cancer screening protocol (I) vs. usual screening © increase screening rates during annual wellness exams (O)?

Evidence Search Plan for External Evidence

A search of the following databases was conducted; CINAHL, Cochrane Library and, PubMed. The keywords searched were breast cancer screening, providers, breast cancer screening AND physicians, ordering annual screenings, breast cancer screening rates, breast cancer screening guidelines, breast cancer screening patient education, mammograms, breast

cancer screening AND mammograms, breast cancer screening AND nurse practitioners. Specific article requirements included published between the years of 2011-2021, Adults, Women, English language, and full-text. Criteria used when selecting articles for rapid critical appraisal included percentage of screenings increased, patient outcomes, use of evidence-based practice, and provider feedback.

Evidence Search Plan and Results for Internal Evidence

To fully understand this internal medicine practice problem, this DNP collaborated with the director quality improvement, the medical director and chair of the obstetrics and gynecology (OB/GYN) department to collect data on mammography screening referral across the OBGYN and internal medicine departments. Data was collected 12 weeks prior to the implementation protocol, during the 12-week implementation phase and 12 weeks after to assess sustainability and practice change.

Evidence Appraisal Summary, Synthesis, and Recommendations

Appraisal of each article was performed using the John Hopkins Critical Appraisal Tool. Appendix A displays the use of the John Hopkins tool for one of the articles appraised. Five articles were reviewed. These five articles had levels of evidence ranging from I to IV(Appendix B). An evidence summary table with details of all the appraised articles is found in Appendix B.

Five articles were reviewed that focused on the outcome that providers were ordering annual breast cancer screenings. The five articles had levels of evidence I, II, III, and IV. (Appendix B). Ordering annual screenings resulted in lower mortality rates, earlier diagnoses, and less patient anxiety. Based on the evidence, the recommendation is for providers to order annual breast cancer screening for women who meet the screening criteria.

In a large RCT conducted in a two-physician internal medicine practice. Some of their interventions included activities targeting the health care sector such as the formation of local physician planning groups, a series of informational mailings, medical office staff training sessions, and reminder system support. All of this was done in order to increase the number of ordered breast cancer screenings in their office. Within the first year of the study, they noticed a 36% increase in mammograms ordered and by the fourth and last year the office reached an 80% increase in mammograms ordered. (Jones,2021).

Similarly, at the University of South Carolina, a DNP student conducted a quality improvement project to address the barriers to patient follow through with mammography and to recommend strategies to improve the current breast screening process. This student analyzed clinic screening ordering processes and conducted chart reviews weekly. The interventions included assessing barriers to mammography during registration of clinic visit, alerting staff and providers of participants that meet criteria for mammography by flagging or marking the patients' charts, then providing a tailored provider message regarding the importance of mammography and relevance of all steps of the screening process, with an emphasis on financial counseling. At the end of the 12-week project there was a 31% increase in patients completing their annual mammogram screenings (Smalls ,2021).

Another multi-physician's primary care office performed a RCT and implemented a program to increase breast cancer screenings deterring that using an office-based system is an efficient way to improve annual breast cancer screenings. This internal medicine group worked to make annual screening a protocol. They did so by starting off the program ordering screenings for patients they saw on a more regular basis, such as patients with chronic conditions and those

who attend regular visits. By doing so they reached a 22% increase in screenings within the first 4 months of implementation (Marks,2022).

Additionally, Mandelblatt and colleagues ran a RCT to determine if physician reminder systems were effective in increasing mammograms being ordered. This trial found that physician reminders and audit with feedback each significantly increased use of mammography and clinical breast examination by approximately 5% to 20%. In community-based settings, the effects of physician education also had a positive impact on mammography and clinical breast examination rates, which ranged from 6% to 14% (Mandelblatt, 2019).

Havrilesky and colleagues performed a systemic review on breast cancer screening literature for updating American Cancer Society screening guidelines. They reviewed prior studies, focused on women ages 40 and older with no upper limit, who do not have a history of breast cancer. They found patients who went for annual screening compared to biannual screening, were having earlier stage diagnoses and much smaller tumor sizes. They also found improved quality of life, decreases in mortality rates, and longer life expectancy (Havrilesky, et al., 2014).

The evidence demonstrates that patients who go for yearly breast cancer screenings have better outcomes. Implementing programs to ensure providers are ordering these screenings, proves to have a positive impact. Patient outcomes that are improved by attending annual breast cancer screenings include reduced mortality and cancers are found at an earlier and more treatable stage.

Project Plan

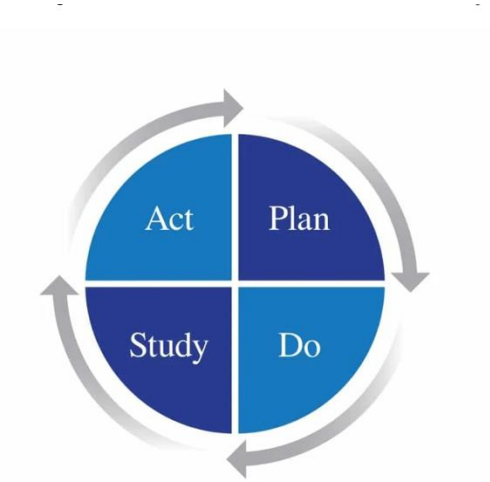
Project Goals

1. To increase the number of annual breast cancer screenings ordered by primary care providers.
2. Develop a breast cancer screening protocol that will benchmark measures using best evidence.
3. To educate primary care providers about the breast cancer protocol and positive impact for early cancer detection
4. Collaborate with IM and OBGYN departments to create a workflow for ordering mammograms.

Framework

The Institute for Healthcare Improvement PDSA model will be used for project implementation and to guide the change. The Plan-Do-Study-Act (PDSA) Worksheet is a useful and accurate tool for documenting a test of change. The PDSA cycle is utilized for testing change by developing a plan to test the change, carry out the test, observe the consequences, and lastly determine what modifications should be made to the test.

Figure 1 PDSA Cycle Diagram



The evaluation portion of this project will be completed using the Advancing Research and Clinical Practice Through Close Collaboration (ARCC) Model. This model has a specific focus on the implementation of evidence-based practice and sustainability using a system-wise method. This is done to achieve quality outcomes.

Context

The project setting includes all Internal Medicine and OBGYN departments across all the FQHC locations in Bridgeport, Connecticut. The participants included the providers within those departments and the nursing staff.

Description of Setting

A federally qualified health center that provides medical, dental, behavioral health services, health education, disease prevention programs, and community outreach programs. This FQHC serves the Bridgeport area and surrounding communities.

Project Participants and Targeted Population

The participants in this project were the DNP student project leader, the internal medicine and OBGYN providers, quality improvement team, and nursing staff at the FQHC. The targeted population is women aged 40 and over who are due for their annual mammograms.

Project Team Members and Roles

The Chief Medical Officer Dr. Richard Wintermute M.D served as the project mentor. Joan Lane, MPH, served as Project Coordinator. The Quality Assurance team at the FQHC reviewed and approved the project plan to ensure it met the quality improvement standards of the organization. Susan DeNisco DNP, APRN, FNP-BC, FAANP, is a Professor of the Family Nurse Practitioner/Doctor of Nursing Practice at Sacred Heart University, an Internal Medicine provider at the FQHC, and Constance Glenn DNP, APRN, FNP-BC served as project faculty advisors.

Key Stakeholders and Buy-in

The key stakeholders at the FQHC include the Chief Medical Officer, Richard Wintermute M.D., the Quality Assurance team, the Internal Medicine and OBGYN Health providers. Riveting evidence from the literature review was distributed to stakeholders during the project proposal. A clear and concise presentation of the proposed roles of the stakeholders will be discussed. The DNP student presented the purpose of the project, project goals, and the methodology supported by evidence. A clear explanation of the FQHC policy regarding annual breast cancer screening, was provided.

Plan Phase

The first PDSA cycle included identifying the stakeholders and people involved in the process, as well as identifying the scope and scale of the project. The project leader's plan was to educate providers, nursing staff, and patients at the FQHC about the importance of annual

mammograms. The goal was to have at least a 20% increase in the number of mammograms ordered, by the end of the project implementation. Educational materials and patient geared handouts was submitted for approval.

Do Phase

The implementation process is proposed to begin with the project leader presenting to OBGYN and internal medicine providers regarding the importance of ordering qualified patients' annual mammograms. While the project was being implemented the project leader performed bi-weekly chart audits of the qualifying female patients that have been seen. If a mammogram was ordered but the patient still had not received one or does not have an appointment scheduled, the project leader followed up with the patient via phone call. The project leader also met with nursing staff and providers throughout the process for educational check-ins and reminders to order mammograms. Patient education handouts were also provided during this time. The handout is intended for providers and nursing staff to give to their patients at their appointments The patient handout will include screening guidelines, information and statistics on breast cancer in the United States and Connecticut, and provided information regarding free screening through the Michele Project at the FQHC.

Study Phase

In this phase, the team determined if the PDSA cycle has gone according to plan, if the project prediction was accurate, and any other observations that may have occurred as a result (IHI, n.d.). Data collection for this project was completed through the EMR. The goal was to have 95% provider compliance in ordering mammograms. Data is planned to be collected and analyzed biweekly along with chart audits and staff check ins. The project leader reviewed the

data to analyze the outcomes and determine if improvements were being made in ordering mammograms.

Act

The last step in this PDSA cycle, at this point, the project leader can decided to adopt, adapt, or abandon the process. The PDSA cycle is meant to be continuous; even the best processes can be improved and become more consistent. You can further refine your processes by repeating the cycle. (IHI, n.d.). Here, the project leader would address, and revise processes based on project performance and data outcomes. The process was refined at the end when patient follow-up phone calls were placed.

Evaluation

The estimated implementation period was 12 weeks, running from December 2023-February 2024. Data was provided from patient medical records and by the data analyst to reflect the number of women within the screening age range, seen in the office. The data obtained during both the initial implementation period and the post implementation period assessed the number of mammograms ordered during that time -period and by which provider.

Dissemination

Dissemination, at a local level, is an essential step in the QI practice process. The sharing of results with QI team members and related administrative units is fundamental to implementing system or process improvement (Stevens,2018). Internal dissemination was in the form of updates during team meetings, company emails, and updates via newsletters. The newsletters can be utilized to show appreciation and encouragement to the staff involved in the project. External dissemination is a process that is performed after project findings are analyzed to ensure data and

conclusions are in order. External dissemination of QI project findings can aid institutions in learning from one another's experience with optimizing care delivery and can help set appropriate expectations for interventions and improvement targets in future projects (Jones,2021). External dissemination was achieved through advertising awareness on social media posts and advertising through the health center about the importance of breast cancer screening.

Dissemination of Project Results Locally and Regionally

Local, regional, and even state-wide dissemination are ways to share important findings of the quality improvement project. This can help guide other providers and lead to pertinent changes within health systems. A final power point presentation and poster of this quality improvement project will be presented for the FQHC team, and Sacred Heart University faculty and student members. Additionally, the poster presentation will be specifically completed for the Davis & Henley College of Nursing community highlighting the important aspects of the project. Completed poster presentation for consideration at the Connecticut Advanced Practice Registered Nurse Society's (CTAPRNS) annual conference in order to reach much broader audience with hopes to bring awareness.

Barriers to Implementation and Sustainability

Providers Not Remaining Compliant with Ordering Screenings

Many times, healthcare providers are busy and if they are not accustomed to a routine, they are more likely to forget. Providers forgetting to order annual mammograms is a major barrier to both the project and the patient. This can result in missed breast cancer diagnoses or delayed

diagnoses, all of which will negatively impact the patient. Some providers did not remain compliant with the project and some patients were not ordered their annual mammograms.

Lack of Transportation

Many patients served at the FQHC have limited resources at home and rely on public transportation. Patients with limited access to transportation are more likely to miss their appointments and screenings. Providers doing their best to send patients to screenings centers closest to their neighborhoods could assist with this barrier. This remained a barrier for some patients because they do not live close to a facility that offers mammograms, they do not own cars, and they are unable to afford public transportation.

Non-Compliance From Nursing Staff

Nursing staff will be working closely with the providers to remind them to order annual mammograms. Nursing staff can become busy, and it can become easy for the reminder to fall through the cracks. If the nursing staff does not remind the physician, there is more likely a chance that the mammograms will not be ordered. Although the nursing staff remained compliant, nursing leadership remained a barrier to implementation.

Cultural and Language Barriers

SWCHS is a federally qualified health center that has a diverse patient population. Serving many patients of multiple backgrounds that speak different languages. Language barriers can impede on the care provided and patient outcomes. If a patient does not fully understand the provider than they are not going to attend their screening appointments. Cultural barriers to mammograms include low perceived need and modesty. Out of the seventy patients I reached

during the follow-up phone calls, none of them mentioned cultural barriers to attending their annual mammogram screening.

Patient Specific Barriers

There are many reasons why patients could be avoiding annual mammograms. They could be fearful of the test and feel embarrassed. Patients can feel embarrassed to be exposed during the test. They can also feel afraid of any pain or discomfort caused by test and be fearful of test results. Many patients are afraid of being exposed to the radiation that is emitted during these tests. We can mitigate these barriers by educating our patients. Informing them that the benefits outweigh the risks when it comes to mammogram screening. We can also reassure them to not feel any shame or embarrassment during the test. Suggesting the patient bring a family member or close friend with them to their screening can also aid in relieving their anxiety of getting a mammogram.

Estimated Timeline

The estimated timeline for project completion (Appendix C) reflects the project plan, anticipated completion of multiple aspects and major tasks pertaining to the project.

Budget

Final project expenses will include the time and portion of salary of those involved in the project as well as the cost of printing the marketing and educational materials. The time spent on this project by the Project Coordinator, Quality Improvement Specialist, and Project Mentor is projected to be 5% of each member's estimated annual salary. Lastly, the cost associated with printing the provider and patient educational materials is estimated to cost around $325. The final project cost is estimated to cost $12,991.16 as shown in Table 1.

Table 1. *Estimated Project* Costs

Personnel Time		**Estimated cost**
DNP Student as Project Leader	$45/hour x 25 hours Educational Material Development: 18 hours Educational Sessions: 7 hours **Total hours: 25 hours**	**$1,125**
Project Coordinator	5% of average annual salary $65,000	**$3,250**
Project Mentor	5% of average annual salary $110,000	**$5,500**
Quality Improvement Specialist	5% of average annual salary $82,000	**$4,100**
Materials		
HP67 Color Ink Cartridge	$17.89 x 3 cartridges	**$53.67**
HP Multipurpose white 8.5” x 11” one ream (500 sheets)	$9.69	**$9.69**
Staples color printing double sided on white card stock 8.5” x 11”	$1.53 x 75	**$114.75**
Total Estimated Cost		**$14,153.11**

Exact numbers related to education costs can’t be provided because education will be provided to providers, nursing staff, and patients. Some people will require more education than others depending on factors such as education level. Spending as much time as possible educating patients about annual mammograms will lead to higher patient comfort levels as well as more self- advocating for mammograms.

Review for Ethical Considerations

This project was presented to the FQHC team, with the hope of approval from the team as well as the Chief Medical Officer of the FQHC. This project meets the criteria for a quality improvement project based on the DNP quality improvement checklist (Appendix D). Approval was received from the Institutional Review Board at Sacred Heart University (Appendix E).

Project Implementation, Evaluation, Return on Investment

Project Implementation

A twelve-week implementation period began on November 7th 2023 and ended on February 7th, 20204. This phase was initiated by receiving approval from the chief medical officer and was followed by providing education about breast cancer screening guidelines to providers and nursing staff. Two thirty-minute virtual educational in-service sessions were completed and open to all staff to attend. The in-services education included who is responsible for ordering mammograms and how to do so using the epic EMR system. The number of attendees at each session was recorded by my faculty advisor. The educational material was sent to the nurse managers, chief medical officer, and to anyone else who requested the material. The purpose of the educational sessions was to establish rapport with providers and nursing staff across multiple locations, introduce the breast cancer screening project, and provide education regarding breast cancer screening guidelines, the FQHC breast cancer screening policy, and be available to answer any questions. Lastly, the project leader attended monthly provider meetings that included discussions and check-ins regarding the project. During the implementation process, barriers were encountered which resulted in deviations from the original project plan.

Barriers to Implementation

Lack of Staff

The Federally Qualified Health Center in which the project took place is understaffed. The project implementation occurred across the entire health system due to internal medicine and OBGYN providers practicing in different locations. Multiple locations are understaffed making it difficult to prioritize the project and optimize the outcome. Less nursing staff made it difficult for the nurses to prioritize preventative endeavors, such as reminding providers to order mammograms, because they were dealing with acute issues. Lack of staff impacts the outcome of the project because fewer mammograms were ordered resulting in fewer women attending their screening.

Lack of Buy-In from Internal Medicine Providers

Many of the internal medicine providers at the health center believe that strictly OBGYN providers should be ordering annual mammograms. Prior to the implementation of my project, majority of the mammograms ordered were ordered by OBGYN providers. My educational sessions with staff included emphasis on the importance of both teams collaborating with equal responsibility to order mammograms. Internal medicine providers felt it was not their responsibility to order these exams and therefore some of those providers did not order annual mammograms. The practice mentor who is also the chief medical officer and an OBGYN physician, was very involved with educating the internal medicine staff regarding the importance of ordering mammogram screenings.

Ineffective Communication from Nursing Leadership

The ineffective communication from nursing leadership was an unintentional barrier faced at the FQHC. The health center environment is extremely busy, and it is difficult to get

leadership together during monthly meetings and staff educational sessions. Lack of time and commitment from nursing leadership was a barrier to implementation of this project. Better communication and participation in the project from nursing leadership could have led to higher participation rates from nursing staff to remind providers to order screening mammograms.

Patient Non-Compliance with Appointments

Patients occasionally miss their appointments whether they cancel in advance or no-show. Patients that were due for a mammogram and missed their appointment were also a barrier to implementation. If a patient does not come for their appointment, then we have no way of knowing if they are due for a mammogram and could potentially miss or delay their mammogram for the year. Missed appointments have been an implementation barrier.

Evaluation

After the initial implementation period of twelve weeks, November 7th, 2023 to February 7th, 2024 data was provided by the data analyst to reflect the number of mammograms ordered during this period. In order to assess patient specific barriers and social determinants of health, phone calls were randomized and placed to patients that were ordered mammograms during the implementation phase. Patients were asked if they attended their annual mammogram, and if not, the DNP project leader inquired what their barrier was to attend their appointment. Educational interventions were performed based on patient responses.

Process Measures

The process measures included introducing the breast cancer screening project to the staff at the federally qualified health center and providing educational sessions to nursing staff and providers in order to assist them in identifying the right patients to order mammograms for. The

educational sessions provided valuable information regarding the breast cancer screening recommendations from multiple medical societies, as well as a step-by-step guide on how to order a mammogram from their electronic medical records system. Statistical data regarding breast cancer rates in Connecticut and information on populations who are disproportionately affected was provided during the educational sessions. Resources available to provide mammograms to those who are under the poverty line or uninsured were also mentioned in the educational sessions. Two half-hour virtual educational sessions were conducted, as well the educational PowerPoint was made available to all.

Outcome Measures

Outcome measures for this project included the number of mammograms ordered by Internal Medicine and OBGYN providers. Additionally, follow-up phone calls were made to patients that were ordered mammograms within the period of implementation. A quick phone interview was conducted to inquire if they attended their mammogram. If they did not attend or schedule their mammogram, the project leader spoke with the patient to identify any barriers they encountered to completing their mammogram.

Pre-implementation data was provided by the data analyst to reflect recent mammogram ordering practices at the FQHC over a period of eleven months, from January 1, 2023, to November 6th, 2023. During this eleven-month period there was a total of 2,704 mammograms ordered. 1, 227 (45.4%) mammograms were ordered by internal medicine providers and 1,477 (54.6%) mammograms were ordered by OBGYN providers. After the initial 12-week implementation period there was a total of 663 mammograms ordered. 289 (43.6%)

mammograms were ordered by internal medicine providers and 374 (56.4%) were ordered by OBGYN providers.

This data reflects at an 18% overall decrease in total mammograms ordered, a 21% decrease in mammograms ordered by internal medicine providers and a 13% decrease in mammograms ordered by OBGYN providers.

Figure 2

. Total Mammograms Ordered and Completed during the Pre-Implementation Phase

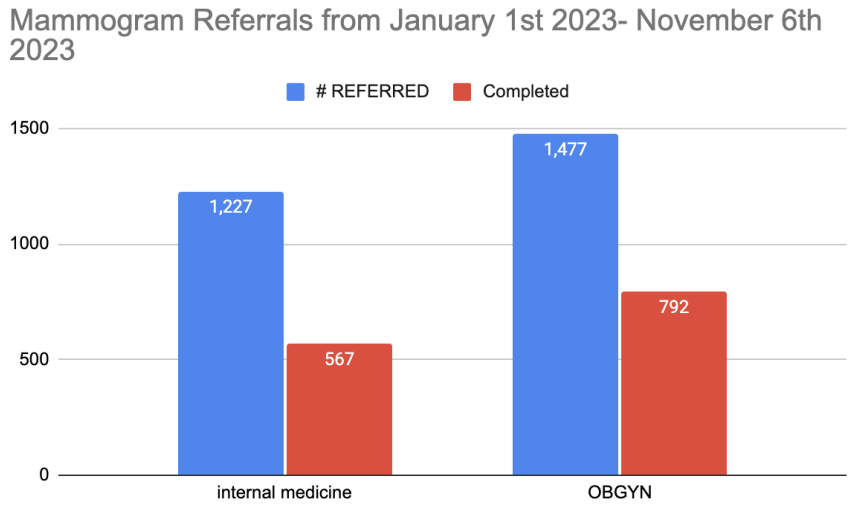
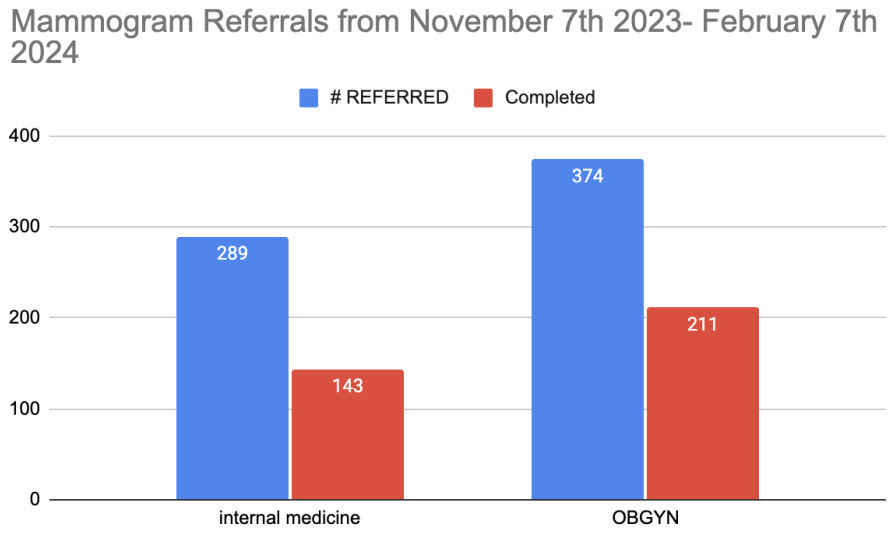


Figure 3

. Total Mammograms Ordered and Completed during the Implementation Phase



When comparing the percentage of mammograms ordered by each department in total before and during the implementation period, the percentage rate of mammograms ordered by OBGYN providers increased from 53.6% to 56.4%. Whereas the overall percentage of the mammograms ordered from internal medicine providers decreased from 45.4% to 43.6%.

Figure 4

Figure 1

. Mammograms Ordered Pre-Implementation Period by Specialty

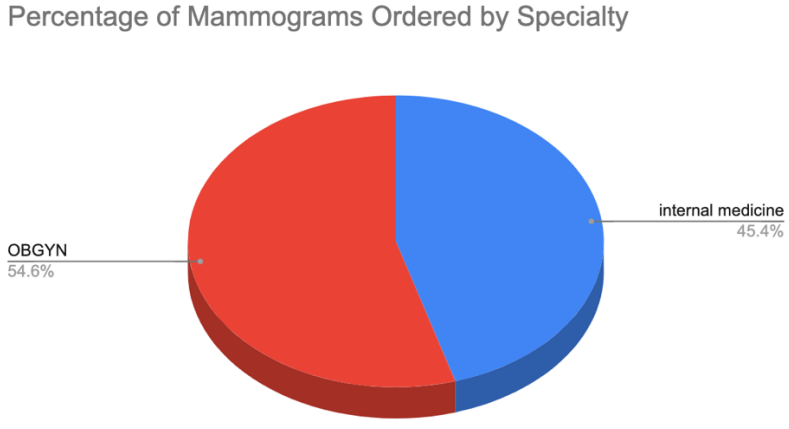
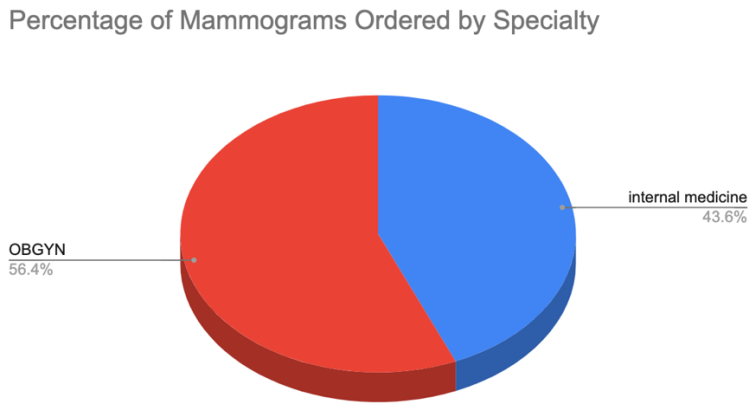


Figure 5

. Mammograms Ordered During the Implementation Period by Specialty



Post –Implementation Follow-Up Phone Calls

Follow-up phone calls were made to a total of seventy randomized patients, post-implementation. Out of the seventy patients contacted, seventeen had already attended their mammogram screening. Twelve patients had their mammograms scheduled and the dates were upcoming. Six patients canceled original appointments because they wanted to reschedule in more convenient locations. Two patients never scheduled their mammograms due to financial situations. Two patients planned to attend their mammogram appointment later in the spring and one person missed their appointment due to being ill. The remaining thirty patients were unable to be contacted by the project leader although voicemails were left for twenty-five of them.

The patients that faced financial barriers were provided information about the Connecticut Early Detection and Prevention Program which offers mammograms free of charge. The patients who stated they were hoping to receive mammograms at a facility closer to them

provided me with the name of the facility they wanted, and I passed this information to the chief medical officer. Every patient that was contacted received education on breast cancer screening irrespective of whether or not they already attended their appointment. Out of the forty patients I was able to reach, 42.5% had already received their annual mammogram and 30% were already scheduled and awaiting their upcoming appointment.

Return on Investment

The final project expenses included the time of those involved in the project and the cost of printing the staff educational materials. The project leader spent approximately 15 hours developing educational material and about 10 hours delivering group education to providers, nursing staff, and calling patients. The time spent on this project by the Project Coordinator, Quality Improvement Specialist, and Project Mentor was projected to be 5% of each member' s estimated annual salary. Lastly, the cost associated with printing staff educational materials was about $124. The final project cost was $14,153.11 as shown in Table 1.

Table 2. *Estimated Project* Costs

Personnel Time		**Estimated cost**
DNP Student as Project Leader	$45/hour x 25 hours Educational Material Development: 15 hours Educational Sessions: 10 hours **Total hours: 25 hours**	**$1,125**
Project Coordinator	5% of average annual salary $65,000	**$3,250**
Project Mentor	5% of average annual salary $110,000	**$5,500**

Quality Improvement Specialist	5% of average annual salary $82,000	**$4,100**
Materials		
HP67 Color Ink Cartridge	$17.89 x 1 cartridges	**$53.67**
HP Multipurpose white 8.5” x 11” one ream (100 sheets)	$9.69	**$9.69**
Staples color printing double sided on white card stock 8.5” x 11”	$1.53 x 75	**$114.75**
Total Estimated Cost		**$14,153.11**

Return on investment cannot be specifically calculated as this project focused on education with the aim to increase the number of provider - ordered mammograms. Increasing education regarding the breast cancer rates in Connecticut and the breast cancer screening guidelines, will help lead to increased mammograms ordered by providers and increased attendance to mammograms by patients. It is hoped that providers can feel more comfortable ordering mammograms and patients can feel more comfortable attending them which can lead to an improvement overall health outcomes.

Dissemination

Implications of Project Results to Organization and Community

The implementation of a project to increase the number of mammograms ordered by internal medicine and OBGYN providers is important and useful in the outpatient setting. A family doctor or gynecologist can write an order for a diagnostic mammogram (National Breast Cancer Foundation,2024). The project was intended to increase the rate of screening

mammograms ordered, unfortunately the project did not achieve this goal. However, this project helps highlight that breast cancer screening is indeed an area for improvement at the FQHC. If I were to do the project again, I would follow up more frequently with staff and providers such as meeting biweekly instead of monthly. I would also audit charts on a weekly basis and contact patients to follow up on whether or not they scheduled their ordered mammogram. I would also encourage the participation of more staff in order to maintain involvement and engagement of the project across the health center.

Dissemination of Project Results Locally and Regionally

Local and regional dissemination is a great way to share results amongst of the project and inform health systems and organizations about the key findings. A final power point presentation of this quality improvement project was presented for the FQHC team, ALTOP grant team, and Sacred Heart University members. Additionally, a poster presentation will be completed for the Davis & Henley College of Nursing community highlighting the aspects of the project earl April 2024.

Key Lessons Learned

One of the most important key lessons learned for this project is the importance of adequate time management. Allotting enough time for each phase of the project is extremely important to the overall success of the project. A lot of time was spent on the provider and staff education and some of that time could have been spent at the health center promoting the project. There were multiple virtual educational sessions that could have been offered in person, allowing for more momentum of the project. Spending more time on-site with providers and nursing staff could have a made difference in the results of the project.

Another key lesson learned is the importance of communication. Multiple providers and nursing staff were involved in the project. Communicating the importance of ordering mammogram screenings and communicating who is responsible to do so is important. Communicating with providers the importance of their role in ordering mammograms is something I could have emphasized more. Ineffective communication amongst nursing leadership can also make it difficult to carry out the project effectively. Going forward I would designate a nurse champion to be in charge of reminding nursing staff to remind providers to order mammogram screenings during patient appointments.

Sustainability Plan

Quality improvement projects take time and continuous monitoring in order to get significant results. Ineffective communication amongst nursing leadership and lack of buy-in from some providers made it difficult to obtain the desired results of this project. Convincing providers about the importance of their role in this project is a task that drives the results of the project. Establishing a policy for internal medicine and OBGYN providers to order mammograms is something that can be done to sustain the project and lead to improvement. Designating a nurse champion to remind providers and nursing staff about the project and their role to maintain project sustainability. The nurse champion could promote continuous monitoring of the project and provide feedback to the QI team. Positively promoting a culture of change in this busy FQHC by encouraging involvement in the project to providers and nursing staff is important. Offering staff incentives would be another way to celebrate the staff's commitment to the project.

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Appendix A

Description of Evidence Search

A search of the following databases was conducted: CINAHL, Cochrane Library, and PubMed. The keywords searched were breast cancer, screening, education, providers, physicians,

nurse practitioners, patients, mammograms. Limits/filters for all database searches included, English language and published between 2017-2023. Inclusion criteria for article selection was adult female population, mammograms, and providers. Tables 1 through 3 display the search terms and results of the search. The following PICO question used to guide this search: For health care providers in a FQHC (P) will a breast cancer screening protocol (I) vs. usual screening © increase screening rates during annual wellness exams (O)?

Table 1. Cochrane Library Complete Search Terms and Search Results

Search Terms	Number of hits	Number of title & abstracts reviewed	Number of full-text articles reviewed	Number of articles selected for review without duplicates
Breast Cancer	4,352			
Breast Cancer Screening	3,437			
Breast Cancer Screening AND Internal Medicine	33	22	9	8
Breast Cancer Screening AND Physicians	302	45	21	5
Breast Cancer Rates	302	33	12	5
Breast cancer screening AND Provider Education	231	9	3	0
Breast Cancer Screening AND Mammograms	443	5	3	1
Annual Mammograms	125	0	0	0
Breast Cancer Screening AND Nurse Practitioners	22	0	0	0
Breast Cancer Screening AND Patient Education	381	11	4	2

Table 2. CINAHL Complete Search Terms and Search Results

Search Terms	Number of hits	Number of title & abstracts reviewed	Number of full-text articles reviewed	Number of articles selected for review without duplicates
Breast Cancer	2,923			
Breast Cancer Screening	1,458			
Breast Cancer Screening AND Internal Medicine	22	8	6	4

Breast Cancer Screening AND Physicians	167	38	18	6
Breast Cancer Rates	227	16	2	0
Breast cancer screening AND Provider Education	125	7	6	4
Breast Cancer Screening AND Mammograms	287	9	2	2
Annual Mammograms	86	1	0	0
Breast Cancer Screening AND Nurse Practitioners	0	0	0	0
Breast Cancer Screening AND Patient Education	54	8	5	3

Table 3. PubMed Complete Search Terms and Search Results

Search Terms	Number of hits	Number of title & abstracts reviewed	Number of full-text articles reviewed	Number of articles selected for review without duplicates
Breast Cancer	259,852			
Breast Cancer Screening	127,574			
Breast Cancer Screening AND Internal Medicine	4659	58	128	65
Breast Cancer Screening AND Physicians	6681	59	967	543
Breast Cancer Rates	978	77	47	28
Breast cancer screening AND Provider Education	937	45	44	23
Breast Cancer Screening AND Mammograms	1103	31	37	29
Annual Mammograms	4598	4	12	4
Breast Cancer Screening AND Nurse Practitioners	110	18	8	0
Breast Cancer Screening AND Patient Education	725	22	9	3

Critical Appraisal and Synthesis

Table B1. *Evidence Summary Table*
PICO question: For health care providers in a FQHC (P) will a breast cancer screening protocol (I) vs. usual screening © increase screening rates during annual wellness exams (O)?

Citation	Design/ Method	Sample/Setting	Intervention	Major Variables Studied and Their Definitions	Findings	Level of Evidence/Quality	Quality of Evidence: Critical Worth to Practice
Article 1							
Journal of Community Health , 2016 Community Organization to Promote Breast Cancer Screening Ordering by Primary Care Physicians	Systematic review	Women 50 -75 years of age Primary Care setting Total number of participants not reported	Physician breast cancer screening planning groups. More patient tests were ordered and patient education groups were offered. Physicians were sent reminder system needs-assessment questionnaires.	IV: breast cancer screening interventions DV: screenings ordered by physicians	Patient and physician education on breast cancer screening. Why its appropriate to be consistent with ordering screening. Within the first year of the study, they noticed a 36% increase in mammograms ordered and by the fourth and last year the office reached an 80% increase in mammograms ordered.	Level 2: Randomized control trial	Consistent breast cancer screening has lead to faster findings and better outcomes for patients.
Article 2							
Scholar Commons, 2017	Quality Improvement	Women aged 50 -70	Changing how frequently providers order mammograms	IV: mammogram screening education	Why it is important and appropriate to order breast	Level III Controlled Trial Without Randomization	Ordering mammograms annually
An Evidence Based Process Change to Improve Mammography Screening Adherence		Number of participants is not listed. This project took place in a clinic in South Carolina.		DV: Screenings ordered by providers	cancer screening annually for women 50 years and older. At the end of the 12-week project there was a 31% increase in patients going for annual mammograms,		increases the risk of women in the age group to attend screening annually.
Article 3							
Journal of General Internal Medicine , 2018 Using an Office Based System for Intervention	Randomized Control trial	Women aged 45-75 There were 2,357 participants and this took place in a primary care office.	Creating an office system for providers in order to comply with ordering annual breast cancer screening.	IV creating the office system. DV screenings ordered	Creating an office system and a daily routine will create a habit of providers ordering annual breast cancer screening. By doing so they reached a 22% increase in screenings within the first 4 months of implementation.	Level II Randomized Control Trial	Creating an office system for providers served as a reminder for them to order annual screening.
Article 4							

Effectiveness of Interventions to Enhance Physician Screenings for Breast Cancer, 2019	Randomized control trial	Women 50-75 1827 participants This took place in a community health center.	Physician based interventions such as ordering annual testing results in more women going for annual breast cancer screening	IV providers ordering testing and creating their own interventions DV women going for screenings	Providers creating their own interventions to adhere to annual screening. Reminders significantly increased use of mammography and clinical breast examination by approximately 5% to 20%. In community-based settings, the effects of physician education also had a positive impact on mammography and clinical breast examination rates, which ranged from 6% to 14%.	Level II randomized control trial	This has lead to an increase in physicians ordering breasting cancer screening and women attending their annual breast cancer screenings
Article 5							
Duke Evidence Synthesis Group, 2014 Systemic Review of Cancer Screening Literature for Updating	Systemic Review	Women ages 40 and over with no upper limit who do not have a history of · Known susceptibility gene mutation (e.g., BRCA1/BRCA2);	Plain film mammography Digital mammography Digital direct radiography (DR)	IV: providers ordering mammograms DV: women aged 40 + going for mammograms	Decrease mortality, increased life expectancy, quality of life, overdiagnosis, false positives, reassurance secondary	Level 1 ·systemic review	Decrease in mortality, increase in quality of life and patient reassurance.
American Cancer Society Breast Cancer Screening Guidelines		History of previous breast cancer or DCIS; Family history of breast cancer (define in terms of number, degree of relation), Lobular neoplasia; Previous abnormal pathology (proliferative lesions); Previous chest irradiation. Screening programs setting	Computed radiography (CR)		effects of test results		

Appendix B

Critical Appraisal and Synthesis

Table B2. *Level of Evidence Synthesis Table*

X (copy symbol as needed)	1	2	3	4	5
Level I: Systematic review or meta-analysis					x
Level II: Randomized controlled trial			x	x	
Level III: Controlled trial without randomization	x				
Level IV: Case-control or cohort study					
Level V: Systematic review of qualitative or descriptive studies					
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project		X			
Level VII: Expert opinion					

Appendix C

Critical Appraisal and Synthesis

Table B3. *Outcomes Synthesis Table*

Intervention	1	2	3	4	5
Educating providers on appropriate annual screening ages.	↑	↑	↑	NE	↑
Providers ordering annual screening.	↑	↑	↑	↑	NE
Patients attending annual screenings.	↓	↑	↑	↑	NE

Symbol Key: □ = Increased, = Decreased ↓, **NE** = Not Examined

Appendix D

Estimated Project Timeline

Table C1. *Estimated Project Timeline*

August 2023 • DNP project proposal oral presentation	September 2023 • Prepare provider and patient educational materials.
October 2023 • Begin to implement DNP project. • Educate providers and nursing staff about breast cancer screening.	November 2023 • Implementation of breast cancer screening project • Educate staff and patients about breast cancer screening guidelines.

December 2023 • Complete date collection • Analyze results from project. • Begin to work on remaining part of project.	April 2023 • Present final DNP project

Appendix E

DNP Quality Improvement Checklist

Differentiating Quality Improvement and Research Activities Tool

Question	Yes	No
1. Is the project designed to bring about immediate improvement in patient care?	X	
2. Is the purpose of the project to bring new knowledge to daily practice?	X	
3. Is the project designed to sustain the improvement?	X	
4. Is the purpose to measure the effect of a process change on delivery of care?	X	
5. Are findings specific to this hospital?	X	
6. Are all patients who participate in the project expected to benefit?	X	
7. Is the intervention at least as safe as routine care?	X	
8. Will all participants receive at least usual care?	X	
9. Do you intend to gather just enough data to learn and complete the cycle?	X	
10. Do you intend to limit the time for data collection in order to accelerate the rate of improvement?	X	
11. Is the project intended to test a novel hypothesis or replicate one?		X
12. Does the project involve withholding any usual care?		X
13. Does the project involve testing interventions/practices that are not usual or standard of care?		X
14. Will any of the 18 identifiers according to the HIPAA Privacy Rule be included?		X

Adapted from Foster, J. (2013). Differentiating quality improvement and research activities. Clinical Nurse Specialist, 27(1), 10–3. https://doi.org/10.1097/NUR.0b013e3182776db5

Being that items 1-10 have an answer of yes and 11-14 have an answer of no, reveals that the intended project meets the criteria for a Quality Improvement Project

Appendix F

Executive Summary

The number of mammograms ordered in the federally qualified health center was very low. Evidence and guidelines support the importance of annual breast cancer screening. The aim of this evidence-based quality improvement project was to increase the number of annual mammograms ordered by Internal Medicine and OBGYN providers. The practice change took place at a federally qualified health center, that has multiple locations throughout the health system.

For this project, the Plan-Do-Study-Act method was used to provide nursing and provider education on the current breast cancer screening guidelines as well as how to order them using their current electronic-health-record. In the plan phase providers and nursing staff were provided with two thirty-minute educational sessions. In the do phase, the goal of the nursing staff was to remind providers to order annual mammograms for patients that qualified. Follow-up phone calls were also made to patients by the project leader. During the study phase the results and data were reviewed and presented to the stakeholders at the FQHC.

Pre-implementation data was provided by the data analyst to reflect recent mammogram ordering practices at the FQHC over a period of eleven months, from January 1, 2023, to November 6th, 2023. During this eleven-month period there was a total of 2,704 mammograms ordered. 1, 227 (45.4%) mammograms were ordered by internal medicine providers and 1,477 (54.6%) mammograms were ordered by OBGYN providers. After the initial 12-week implementation period there was a total of 663 mammograms ordered. 289 (43.6%) mammograms were ordered by internal medicine providers and 374 (56.4%) were ordered by OBGYN providers.

This data reflects at an 18% overall decrease in total mammograms ordered, a 21% decrease in mammograms ordered by internal medicine providers and a 13% decrease in mammograms ordered by OBGYN providers.

Follow-up phone calls were made to a total of seventy randomized patients, post-implementation. Out of the seventy patients contacted, seventeen had already attended their mammogram screening. Twelve patients had their mammograms scheduled and the dates were upcoming. Six patients canceled original appointments because they wanted to reschedule in more convenient locations. Two patients never scheduled their mammograms due to financial situations. Two patients planned to attend their mammogram appointment later in the spring and one person missed their appointment due to being ill. I was unable to get in contact with the remaining thirty patients and was able to leave voicemails for twenty-five of them.

Appendix G

DR. SUSAN L. DAVIS, R.N., & RICHARD J. HENLEY COLLEGE OF NURSING
Sacred Heart University

An Evidence Based Project: Increasing Provider Ordered Breast Cancer Screenings

Alexis Manzella, BSN, RN: Project Leader
Advisors: Susan DeNisco, DNP, APRN, FNP-BC, FAANP and Constance Glenn DNP, MSN, APRN, FNP-BC

Rationale

- Breast cancer is the most common cancer in women throughout the United States.
- Specifically, the state of Connecticut has one of the highest rates of breast cancer in the country. Multiple evidence-based organizations have developed specific guidelines for screening in clinical practice. These guidelines specify when a woman should be screened and how frequently.
- A project was put in place at a FQHC in Connecticut to increase the number of breast cancer screenings ordered, based on clinical guidelines.
- The purpose of this project was to increase the number of mammograms ordered by Internal Medicine and OBGYN providers across the health system and deliver education to providers and nursing staff regarding breast cancer screening guidelines.

Background

Internal Data
- The FQHC needed to improve their rate of annual mammogram screening referrals.
- The FQHC had an annual breast cancer screening rate of 46%.
- 46.3% of those referrals came from internal medicine and 53.6% of those referrals came from OBGYN.

External Data
- Connecticut has one of the highest breast cancer rates in the country, affecting 13.5% of women whereas the national rate is 12.5% (Connecticut State Department of Public Health, 2022).
- The Healthy People 2030 goal and objective for breast cancer screening rates is 80.5% (USDHHS).
- The current annual breast cancer screening rates for Connecticut women ages 40 and higher is 78% (Connecticut State Department of Public Health, 2022).

PICO Question

For health care providers in a FQHC (P) will a breast cancer screening protocol (I) vs. usual screening (C) increase screening rates during annual wellness exams (O).

Methods

Information Sources
Cochrane Library, PubMed.

Key Words
Breast cancer screening, providers ordering annual screenings, breast cancer screening rates, breast cancer screening guidelines, barriers to breast cancer screening

Search limits: Published 2011-2021, Adults, Women, English language, Full-text **Article selection:** Breast cancer screening, primary care, breast cancer screening recommendations
Six articles were selected using the John Hopkins Critical Appraisal tool

Results

Article/Study Selection
Six articles were selected. Convincing evidence supported the importance of providers routinely ordering annual breast cancer screenings. One level I, two level II, two level III, and one level IV.)

Synthesis Tables

X (copy symbol as needed)	1	2	3	4	5	6
Level I: Systematic review or meta-analysis					X	X
Level II: Randomized controlled trial			X	X		
Level III: Controlled trial without randomization	X					
Level IV: Case-control or cohort study						
Level V: Systematic review of qualitative or descriptive studies						
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project		X				
Level VII: Expert opinion						

Intervention	1	2	3	4	5	6
Educating providers on appropriate annual screening ages.	↑	↑	↑	NE	↑	NE
Providers ordering annual screenings.	↑	↑	↑	↑	NE	↓
Patients attending annual screenings.	↓	↑	↑	↑	NE	NE

Symbol Key: ↑ = Increased, ↓ = Decreased ↓, **NE** = Not Examined

Recommendation

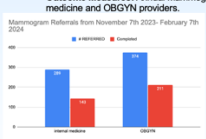
Summary of Evidence
All six articles concluded that attending recommended mammogram screenings increases the chance for early diagnosis and reduces the risk of mortality from breast cancer. Ordering annual mammograms promotes attendance of screenings from patients and early detection.
Two articles proved if you implement a provider reminder protocol in the primary care setting, the number of annual mammograms ordered by providers will increase.
Recommendation(s)
The evidence suggests annual mammogram screenings lead to early detection and a decrease in mortality from breast cancer.

Implementation Plan

Aim: Increase annual mammogram screenings ordered by internal medicine and OBGYN providers through provider education.
Setting: FQHC in Southern Connecticut
Participants: Providers, nursing staff and female patients within the current screening guidelines served at the FQHC
Design: Evidence-Based Quality Improvement project using the Institute for Healthcare Improvement's Model for Improvement Plan-Do-Study-Act (PDSA) framework
Plan: Collaborate with the providers, nursing staff, and QI team at the FQHC and review the annual breast cancer screening policy.
Do: Provide educational sessions to FQHC providers and staff regarding up-to-date evidence-based breast cancer screening guidelines
Study: Evaluate data of ordered annual mammograms from internal medicine and OBGYN providers and analyze the outcomes.
Act: Continue to encourage health care providers to consistently order annual breast cancer screenings based on guidelines. Continue to provide education and review and mend any processes hindering project progression.

Outcomes

Process Measures: Two thirty-minute group educational sessions for providers and staff
Outcome Measures: Annual Mammogram screenings ordered by internal medicine and OBGYN providers.



Sustainability Plan

Creating a site wide policy to ensure both OBGYN and Internal Medicine providers are responsible for ordering mammograms will help sustain this project. Making more frequent follow- up phone calls to patients on a bi-weekly or monthly basis - could lead to project sustainability.

Lessons Learned

The importance of adequate time-management and allotting enough time for each phase. Another key lesson learned is the importance of communication. Multiple providers and nursing staff were involved in the project, and it is important to maintain adequate communication.

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