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# An Evaluation of Mammography Rates for Women, 50-74 Years Old, at the San Francisco Department of Public Health

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An Evaluation of Mammography Services for Women, 50-74 Years Old, at the  
San Francisco Department of Public Health

Kimberly Litts

University of San Francisco

### **Executive Summary**

San Francisco Department of Public Health (SFDPH) and San Francisco General Hospital (SFGH) have partnered together to increase their overall mammogram screening rate to 76.7% by June 2015 in order to receive funding from the federal government. By analyzing the current mammogram rates, there were apparent disparities which varied by ethnicity, insurance type, and socioeconomic status. The literature also supports this finding with the National Cancer Institute (2014) stating that lower screening rates are associated with lower education levels and incomes, the uninsured, and women of color.

A pilot study will be conducted at SFGH Avon Breast Center, which includes extending their evening hours and opening a Saturday clinic to increase mammogram appointment accessibility. Patient surveys, staff surveys, show rates, and the overall mammogram rate will be analyzed by the author to determine if the pilot study is serving its purpose of increasing mammography rates of women, 50-74 years old and overdue for their mammogram. If the pilot study is deemed successful and has increased the mammogram rate, the extended hours and Saturday clinic may be maintained in the future to create better appointment availability for patients.

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### **Introduction**

San Francisco Department of Public Health (SFDPH) and San Francisco General Hospital (SFGH) have joined forces to increase the overall mammogram screening rate in order to become eligible to receive federal government incentives. SFDPH has made it a priority to improve the breast cancer screening rates among the nine primary care clinics in the Community Oriented Primary Care (COPC) Program. Throughout California, Public Health Departments have agreed to meet the goals set forth in the Delivery System Reform Incentive Program (DSRIP) in order to receive \$3.3 billion if all milestones are met. The DSRIP report has three primary objectives: Improve care for individuals; Improve health for populations; and lower growth expenditures. Achievement of these objectives will support DPH's efforts in making significant improvements in the quality of their care and the health of their patients. A preventative health goal in the DSRIP Report is to increase the mammogram rate among women, ages 50-74 years old, who are due for a mammogram. The Departments of Public Health throughout California must reach an overall screening rate of 76.7% in order to achieve this goal.

### **Problem Statement**

#### **Breast Cancer**

Approximately 40,000 women will die from breast cancer in the year 2014, and 1 in 8 women will develop invasive breast cancer in their entire lifetime. Breast cancer is the second most common cancer in women in the United States, following skin cancers, and the second leading cause of cancer death in women (American Cancer Society, 2014a). In 2014, it is estimated that 232,670 women in the United States will be diagnosed with breast cancer, and

26,130 of them will be from California. Women from California have the highest rates of breast cancer, followed by Texas with 16,080 women diagnosed with breast cancer. Approximately 40,430 women will die from this disease in 2014, and again, California has the highest rate with 1,590 deaths followed by Texas with 950 deaths (American Cancer Society, 2014b). In California, breast cancer is the most commonly diagnosed cancer, for women of all ethnicities, and the second leading cause of cancer death in women (California Department of Public Health, 2012).

### **Screening**

In clinical trials, the National Cancer Institute (2014) found that biennial mammography reduced the number of deaths from breast cancer in women of 40 to 74 years of age. This evidence supports SFDPH's efforts to increase the overall screening rate of women within their primary care clinics. While organizations and societies vary on the appropriate age to start mammography, and at what interval, SFDPH is following the U.S. Preventative Services Task Force (USPSTF) recommendations to screen women, ages 50-74 years old, for breast cancer using a mammogram every 2 years. Some organizations like the American Cancer Society suggest mammograms should start at 40 years old, but the USPSTF notes there is not sufficient evidence to support this recommendation.

The goal of breast cancer screenings, or mammograms, is to discover the cancer before the disease develops and spreads throughout the body. Breast cancer does not typically produce any noticeable symptoms in its early stages when the tumor is small and treatable (American Cancer Society, 2014b). The National Cancer Institute (2014) notes that mammograms are able to identify breast cancer in its initial stages and facilitate early treatment that is more successful and less costly for the patient and hospital system. Some women may not be motivated to receive

a mammogram and can be nervous to find out the results; however, if they have breast cancer and it is detected in the earlier versus later stages, these women have many more treatment options available to them. In the study performed by Lantz Mujahid, Schwartz, Janz, Fagerlin, Salem, Liu, Deapen, and Katz (2006), they found that participants with early stage breast cancer, stages 0 or I, were significantly more likely to have had their breast cancer detected by a screening mammography method. It is important for women to receive biennial mammograms, even if they are not experiencing breast cancer symptoms, because they are more likely to have access to effective treatment options and have healthier outcomes if cancer is detected early.

### **Health Disparities**

The literature suggests that there are apparent health disparities among women who receive mammograms and how breast cancer affects them, such as women of color, low income, and low education have decreased mammogram rates and fare worse if they develop breast cancer. The National Cancer Institute (2014) states that lower screening rates are associated with lower education levels and incomes, the uninsured, and women of color. Many of SFDPH's patients fall under these categories. The majority of patients have low education attainment, are uninsured or underinsured, and identify as a minority. At certain SFDPH clinics, the patient population has a 40% literacy rate, which greatly impacts the methods of outreach or health education materials that can be useful or practical (SFDPH, 2014). Because there is a low literacy rate, it is important to include educational material that would be considered easy to understand and readable by the majority of patients.

**Race/ ethnicity.** The population within SFDPH clinics is heterogeneous and representative of the diverse population of San Francisco. There is variation among the ethnicities of women who are receiving their biennial mammogram. Hispanic women have the

highest screening rate of 77.2%, followed by Asian women with 73.6%, White women at 64.1%, and African American women at 60.8% (SFDPH, 2014). There is an obvious disparity between the groups and while it is not definitive as to why one group has a higher or lower screening rate compared to the others, efforts are being made to reduce barriers such as transportation and appointment availability.

Racial background is a major contributing factor to the health outcomes for patients with breast cancer. The National Cancer Institute (2014) reports that White women are slightly more likely than African American women to develop breast cancer, however, African American women have higher mortality rates than women from any other racial group, in the United States, in any age category. Women of color are also more likely to be diagnosed at a later stage of breast cancer than White women (National Cancer Institute, 2014). Lantz et al. (2006) note, in their study of 1,700 women, that 64.3% of White women were diagnosed in stages 0 and I, early-stage breast cancer, compared with 53.1% of Black women and 44.8% of Hispanic women. These results support the fact that women of color are less likely to receive a mammogram and also less likely to have breast cancer detected in an early stage when there are numerous treatment options.

The primary purpose of receiving annual mammograms is to detect abnormal lumps which may be cancerous, but if there are health disparities occurring between different groups of women, then this issue must be handled in a way that specifically addresses a particular group's needs. SFDPH is working to reduce disparities by specifically targeting health centers with minority populations and reaching out to communities of color in an attempt to encourage them to receive a mammogram. At some COPC clinics, minority groups make up over 70% of the

patient population (SFDPH, 2014); therefore it is even more imperative for public health officials to direct their efforts towards certain groups of women and address their specific needs.

Even though there are advancements in technology in healthcare practices and breast cancer is detectable at very early stages, survival rates are highly affected by race and socioeconomic status. Tannenbaum, Koru-Sengul, Miao, and Byrne (2013) performed a study with a sample size of 127,754 female patients diagnosed with breast cancer in the state of Florida. Their study found significant disparities in African American women in that they were most likely to live in communities with the lowest socioeconomic statuses, they had the greatest number of comorbidities, and least likely to be diagnosed with localized cancer than other races.

Localized cancer is one of the earlier stages of cancer, stage 0 or 1, where the cancer cells are still restricted to the original site and has not spread to the adjacent tissues or organs (National Breast Cancer Foundation, Inc., 2012). At these stages, breast cancer is very treatable and is associated with a high survival rate; when the breast cancer is detected and treated by stage 1, the 5-year survival rates are estimated to be at 98% (National Breast Cancer Foundation, Inc., 2012). A significant disparity exists among cancer survival rates in women, particularly among White and African American women. White women have a higher 5-year survival rate (90%) compared to African American women (79%) (American Cancer Society, 2014b). This disparity demonstrates the need to increase outreach efforts to populations of color and discover ways of further decreasing barriers to access.

Yaghjian, Wolin, Chang, and Colditz (2014) examined racial disparities among 2.5 million women identifying as breast cancer survivors and 57 million women without cancer. When comparing healthy behaviors with cancer survivors from all ethnic backgrounds, it was observed that African American and Hispanic women were less likely to adhere to all healthy



behaviors, which includes maintaining a healthy weight, not engaging in tobacco or alcohol use, engaging in physical activity, using sunscreen, and receiving mammograms and pap smears, as compared to their Caucasian counterparts. Most African American women exhibited a lack of physical activity and did not obtain their annual breast and cervical cancer screenings. Hispanic women had a high incidence of engaging in heavy alcohol consumption as compared to Caucasian and African American women. These findings suggest that community outreach and educational materials on breast cancer and healthy lifestyle choices should be tailored to address the specific needs of a population. Although having patient education tools available is helpful in educating women on their health, it would be more beneficial to offer information that was relevant to their cultural background and lifestyle. Various culturally appropriate healthy behaviors should be emphasized when offering health education material to people from various backgrounds, and screening tools could be customized to address pertinent issues observed in different racial groups.

**Language.** Language barriers are a factor that can prevent women from obtaining mammograms. Many of the patients within SFDPH are from diverse cultural backgrounds, including African American, Chinese, Vietnamese, Korean, Hmong, Mien, Russian, Mexican, Salvadorian, and Portuguese (SFDPH, 2014). There are not always translators available to interpret what the health providers are discussing, and the patient may feel more reluctant to go to the doctor if they cannot understand the language. Garcia, Carvajal, Wilkinson, Thompson, Nodora, Komenaka, Brewster, Cruz, Wertheim, Bondy, and Martínez (2012) found that immigrants were less likely to report receiving mammograms, were more likely to be uninsured, and more likely to report self-detected breast cancers than women who were born in the United States. When a patient has detected signs of breast cancer, this usually means their condition is

much more severe and life-threatening. The American Cancer Society (2014) declares that by the time women can detect a lump in their breast through the self-breast exam, the tumor is much larger and the disease is more likely to have spread out. It is important for the healthcare system to provide a proper means of communication for the patients they serve. If people feel uncomfortable or disregarded because they do not understand the conversations with their health providers, they will not be inclined or motivated to make an appointment to see the doctor, even if it is a procedure that could prevent negative outcomes.

Language issues also prevent women from being able to correctly interpret the result of their mammogram. Marcus, Koru-Sengul, Miao, Yepes, and Sanders (2014) note in their study, involving 206 breast imaging centers across the United States, an average of only 4 out of 10 reported offering callers the option to hear information or speak to someone in a language other than English. More than 2 out every 3 centers stated they sent patients the results of their mammograms via notification letters in English only. This presents a major problem for patients who speak limited English or no English at all. Having the results sent in a language the patients do not understand is not beneficial and hinders the ability of patients to become aware of their health status and become proactive in receiving timely care for abnormal findings. In breast centers with a substantial, 25% or higher, proportion of limited English-speaking patients, almost half of them did not send result letters in languages other than English (Marcus et al., 2014). This again highlights the need for health systems to improve on providing appropriate services to patients under their care.

### **Costs**

It is imperative for the healthcare system and providers to motivate women, from all socioeconomic levels and backgrounds, to receive a mammogram and outreach to those that are

doubtful or unaware of preventative actions. Many women might postpone this procedure due to associated costs, but it is actually free for most women in SFDPH clinics. Garcia et al. (2012) state that nearly one-third of women may wait to receive care for breast cancer-related symptoms, citing associated costs or lack of health insurance as the main reason for their delay in seeking medical help. The U.S. Department of Health and Human Services (HHS) (2013) states that with the implementation of the Affordable Care Act in 2010, women's preventative services, such as mammograms, became covered in most health plans and eliminated cost sharing, which includes copayments and deductibles. Before, this cost sharing method deterred many women from receiving mammograms because for some, even the copays were too expensive and reduced their likelihood in engaging in preventative services all together.

### **Appointment Reminders**

It is important to find out how women prefer to be reminded of mammogram appointments and information regarding breast cancer prevention. Kratzke, Wilson, and Vilchis (2013) questioned a sample of 157 participants to discover what their preferences were regarding the use of the internet, cell phone use, and text messaging regarding breast cancer information. They found that of the 73 people who engaged in text messaging, 37% wanted to receive a mammogram reminder text and 36% were interested in texts with a breast cancer prevention message (Kratzke, Wilson, & Vilchis, 2013). Owning a cell phone and using text messaging was much more prevalent in the younger population and having an interest in receiving text reminders and prevention information was more common among women with lower incomes. Besides cell phone and internet use, Kratzke, Wilson, and Vilchis (2013) found the most common interpersonal source for women was health professionals, family, and friends. This fact highlights the need for providers to be knowledgeable in breast cancer symptoms and screenings,

have the ability to encourage hesitant patients to receive a mammogram, and emphasize the long-term benefits of having one.

### **Target Population**

The San Francisco Department of Public Health is directing their efforts towards women, 50-74 years old, who are due or overdue for their mammogram. The focus on this age bracket was determined based upon the U.S. Preventative Services Task Force (USPSTF) recommendations on breast cancer screenings for women. The general target population is women, within the target age group, who underutilize the mammogram services, and are patients within any of the COPC primary care clinics of SFDPH.

Upon performing an extensive data analysis, consisting of over 13,000 eligible patients, (see Appendix A), it was discovered that African American women have the lowest screening rate (60.8%), compared to White women (64.1%), Asian women (73.6%), and Hispanic women (77.2%) (SFDPH, 2014). Outreach efforts have been performed to increase awareness and encourage women from the African American community to receive their biennial mammogram, especially due to the fact that they have the lowest screening rates of any ethnicity group within SFDPH. Specific health centers with a high proportion of African American patients have also been offered appointments for the pilot study hours before other health centers are allowed to add their appointments in an attempt to increase the rate among this group of women.

### **Aim Statement**

In order to increase the mammogram rate, SFDPH and SFGH will work together to increase mammogram appointment accessibility at the Avon Breast Center. A pilot study will be performed from February until June of 2014, which includes extending the hours of the Avon Breast Center on Tuesday and Wednesday to 7 PM and opening a Saturday clinic from 8 AM to

1 PM. By implementing this study, they hope to increase the overall mammogram screening rate to 76.7% and maintain it until June 2015.

### **Relevance of Evaluation Project**

This is the first time the SFGH Avon Breast Center will be conducting a pilot study to increase their appointment availability for mammograms. It required many months of planning, collaborating, and negotiating to come to a mutual decision between SFDPH and SFGH employees involved in the project. The evaluation being performed by the author is a valuable resource to the organization because it will provide evidence as to whether or not the pilot study has significantly increased the mammogram rates over a 5 month period. The patient surveys will allow the organizations to discover the patient's view on appointment availability, staff friendliness, overall satisfaction of services rendered, and other suggestions. The staff surveys will provide feedback regarding if staff feel supported by their peers and supervisor, need additional training on breast cancer, have confidence in their skills, and their thoughts on the patient's approval of the pilot study hours. Patient surveys, staff surveys, show rates and the mammogram rate will be analyzed to determine if the pilot study is successful and should be maintained in the future.

### **SWOT Analysis**

The SWOT analysis (see Appendix H) enhanced the author's ability to understand the advantages and shortcomings faced by the evaluation project. It also helped to organize the future opportunities available with the data collected throughout the project and how the evaluation results can be compared with other pilot studies.

### **Goals and Objectives**

Goal 1: Increase the number of women, 50-74 years old, who receive their biennial

mammogram.

Objective 1: 76.7% of women, 50-74 years old and a SFDPH patient, will have received a mammogram by July 2015.

Goal 2: The Avon Comprehensive Cancer Center will increase their appointment availability to allow more women to receive a mammogram.

Objective 1: The Avon Center will extend their Tuesday and Thursday hours from 4:30 PM to 7:00 PM and will hold a Saturday clinic from 8 AM to 1 PM, from February to June 2014, in order to increase the mammogram rate.

Objective 2: The appointment show rate will decrease to less than 23%, the current rate.

### **Evaluation**

The mammogram rate for a third of the health clinics is at least 10% lower than the goal rate (SFDPH, 2014); SFDPH and SFGH hope to gradually increase the rate each month by making mammograms more accessible and increasing outreach. Because many clinics are significantly lower than 76.7%, SFDPH must utilize various methods to increase awareness and improve motivation of women to receive a mammogram. Many of the women who are not able to attend their mammogram appointment have informed the Radiology staff that they do not have transportation to the Avon Breast Center or they cannot attend the appointment due to the limited hours the center is open. The Avon Breast Center, in consultation with SFDPH, has agreed to perform a pilot study consisting of extending their hours on Tuesday and Thursday to 7 PM and opening a Saturday clinic from 8 AM to 1 PM.

### **Evaluation Instruments**

**Goal 1.** SFDPH does not need to achieve a 76.7% mammogram rate until July 2015, but the author will establish the initial mammogram rate in February 2014 and again in July 2014 to

use for the Master of Science in Behavioral Health (MSBH) Capstone Project. The rate is obtained by running a report in the SFDPH patient database, i2iTracks, with the following search fields: female, 50-74 years old, mammogram received within last 24 months, COPC health centers, ethnicity, language, insurance type, and primary SFDPH health center. This report distinguishes the percentage of women who have received a mammogram by ethnicity, language, insurance type, and health center and will be used to determine the mammogram rates.

**Goal 2.** To obtain feedback from the women receiving mammograms, the author will create a patient survey (see Appendix C) that will cover topics like if patients are experiencing a reasonable wait time, if the after-hours and Saturday clinics work with their schedule, staff friendliness, and their overall experience. A survey will also be created for staff members (see Appendix D) to determine if they are satisfied with their training of breast cancer risks and symptoms, able to work the pilot study hours, prepared to answer patient questions, and feel supported by their peers and supervisor. There will be a section on both surveys that allow for other feedback and suggestions to be offered in order to obtain qualitative data regarding the mammograms and pilot study at the Avon Breast Center. The surveys will be entered into Microsoft Excel in order to obtain the averages of the answers and find common themes among the comments.

The author will evaluate the pilot study's show rate and compare it to the show rate during the Avon Center's regular appointment slots; this information will be obtained from the SFDPH patient database, i2iTracks.

### **Data Collection Process**

**Mammogram rates.** The author will obtain data from SFDPH regarding the mammogram rates. The reports will be saved in Microsoft Excel for future reference. Pivot

tables and charts will be utilized to separate the information according to ethnicity and overall rates.

**Patient surveys.** The author will create the patient survey (see Appendix C), which will first be reviewed and revised by SFDPH and SFGH staff, and deliver them to the Avon Breast Center, who will then distribute the surveys to patients during their mammogram appointment. Only patients having a mammogram during pilot study hours, evening and Saturdays, will receive a survey in order to determine if they prefer the after-hours appointments and to find out what barriers they faced with scheduling an appointment during regular hours. The patients will also be asked about the wait time inside the clinic and their opinions on the attitude and treatment by the staff. Once the pilot study is over, all patient surveys will be picked up from the Avon Breast Center by the author. The author will enter the patient answers into Excel in a chart like format, so it can be recorded for later use. Various functions will be applied in Excel to determine the average rating for questions that utilized a number scale and percentages will be calculated to determine a most frequent answer for questions that did not use a scale. For questions that had a fill in the blank option, answers will be typed into Excel exactly as they are written, and the author will go back and determine any major themes found throughout the answers.

**Staff surveys.** The author will create a staff survey that will be distributed to employees working at the Avon Breast Center during the pilot study hours; only staff working evening and Saturday hours may fill out a survey and only one survey per staff member, even if an employee works several times during the pilot study. Once the pilot study is completed, the author will collect the surveys and record the answers into Excel in the same fashion as the patient survey.



Averages will be determined for questions that used a number scale and opinions or suggestions will be typed into Excel and common themes will be determined.

**Show rate.** The author will retrieve information from the SFDPH database regarding the patient show rates from the pilot study and regular hours appointments. The reports will be saved in Microsoft Excel for further analysis.

### **Data Analysis**

**Mammogram rate.** A chi-square test will be performed, using Microsoft Excel, to determine if the increase or decrease in mammograms is significant.

**Patient/ staff surveys.** The quantitative data will be analyzed by calculating the averages and most frequent answers in Microsoft Excel. Qualitative data from the surveys will be analyzed by finding major themes present throughout the answers and the author will then report this to SFDPH and SFGH for further consideration.

**Show rate.** A chi-square test will be performed, using Microsoft Excel, to determine if the increase or decrease in show rates is significant.

### **Summary of Results**

**Mammogram rate.** There was an increase in mammograms from February to June 2014 for every ethnicity group. The highest increase was 2.7% for African-American women, followed by 2.6% for White women, 1.5% for Asian women, and 0.6% for Hispanic women; the overall mammogram rate increased by 4.1% (see Appendix A). Using a chi-square test, the increase of the overall rate was found to be statistically significant with a p value of less than 0.001 (see Appendix G).

**Patient/ staff surveys.** Seventy-eight patient surveys were collected after the pilot study ended. It was found (see Appendix E) that patients felt they would be better able to attend an

appointment during the pilot study than regular hours; found staff respectful and helpful, would recommend a friend Avon Breast Center, and had a very good overall experience. Eleven staff surveys were collected, it was noted (see Appendix F) that most employees were interested in receiving further trainings and skill-refresher courses, were able to work evenings and Saturdays, felt comfortable going to the supervisor for help, felt supported by their peers and supervisor, and found patients highly enjoyed the pilot study hours.

**Show rate.** The show rate for the pilot study increased to 83% from the regular hours show rate of 67%, for a total increase of 16% (see Appendix B). Using a chi-square test, the increase was found to be statistically significant with a p value of less than 0.01 (see Appendix G).

**Significance of results.** The previous findings are highly meaningful to SFDPH, because they provide evidence that a significant increase in mammograms occurred in the 5 months the pilot study was conducted. The key players responsible for initiating the pilot study have reviewed the evaluation performed by the author and concluded the pilot study was a success; they are currently maintaining the Saturday clinic for mammogram appointments.

## **Recommendations**

### **Appointment Reminders**

It is critical to remember that many of the SFDPH patients are of lower income and sometimes homeless, so they may not always possess a cell phone. In this case a letter may serve as the best method to receive a notification for upcoming appointments. There are, however, low income or homeless patients who do have a cell phone they regularly have access to and frequently use. There are programs in California that offer people, who make less than \$14,700 a year, the ability to obtain a free cell phone with monthly minutes and text messages (Associated

Press, 2013). Offering appointment reminders by phone, text, or email may be more beneficial to certain patients because a letter in the mail would not be very helpful for someone who does not have stable housing or tends to move around. In order to help patients attend their appointments and arrive on time, it would be ideal to provide reminders that best suit their preference and lifestyle.

### **Mammogram Results**

Women noted they wanted their mammogram results sent to their home address, otherwise, it is difficult to obtain the results, and they have to make another appointment to come in or struggle in navigating the phone system at SFGH to talk to a representative. My recommendation would be for SFDPH to establish a process for results being sent to the patient, much like reminder cards are sent out on a monthly basis. It would also be helpful to have the results available in the patient's preferred language as well.

### **Staffing**

In the patient surveys, many women noted they had a difficult time communicating with the staff or brought a family member to interpret for them. It would be a beneficial service for patients if SFDPH and supervisors are hiring employees that are representative of their patient population and bilingual in the preferred languages of the patients.

### **Outreach Efforts**

I would propose for SFDPH to increase outreach efforts targeted towards specific groups of women. This would include groups of women that speak other languages, going out into the community for women who don't have transportation, seeking out women who consistently don't show up to appointments, and holding a session in the community with a breast cancer survivor to share her experience and story.

The Mayors' Campaign Against Breast Cancer (1999) notes that it is extremely important to deliver the message of how important mammogram screenings are, especially to specific subpopulations that do not receive healthcare services on a regular basis. They note holding breast cancer workshops and campaign events during a designated breast cancer awareness month helps to increase understanding and familiarity of breast cancer risks and symptoms among the community. They also collaborated with the primary hospital in their area to develop activities involving breast cancer survivors, self-examination workshops, and education lectures. SFGH is the primary hospital in San Francisco and SFDPH could collaborate with the Radiology team to organize community events and activities to involve women and their families and engage them in learning about the issues surrounding breast cancer.

### **Survivor Coaching**

In an effort to encourage women to receive a mammogram, I strongly recommend that SFDPH use survivor coaches as a way for women to connect with others going through a similar experience and discuss any fears or reservations they have about the procedure. In one study, survivor coaches used a patient guidebook and discussion model to facilitate intervention sessions specifically with African American women (Sheppard, Wallington, Willey, Hampton, Lucas, Jennings, Horton, Muzeck, Cocilovo, & Isaacs, 2013). They tailored their conversations to each woman's specific needs or questions and the core learning focused on addressing myths surrounding breast cancer, terminology, and the benefits of screenings and treatments. After a 30-120 minute in-person session, 87% of participants appreciated working with the coach and 89% would refer other women to participate. 87% of women said the guidebook, handed out during the meeting, improved their communication with their provider, and 98% felt more informed about breast cancer issues.

African American women have the lowest screening rate among all ethnicity groups at SFDPH, so using methods that are customized to meet their needs is highly recommended. Employing survivor coaches from the community to meet and have face-to-face conversations with not only African American, but all women, can allow them to feel more comfortable in expressing health concerns and feeling supported by the SFDPH system.

### **Patient Navigation**

One way to reduce barriers to care and engage specific communities of color to participate in mammograms is to use patient navigators. Patient navigation is a concept that is becoming more frequently used in the healthcare system for patients requiring extra guidance and support in their care needs. Patient navigators are familiar with the various barriers to care and are present to help the patients overcome these obstacles. They are able to offer further explanations about any procedures or tests and work to ensure the patient attends their appointments. The patient navigator can also provide support by making sure the patient is obtaining a timely diagnosis, receiving the proper treatment, and aware of other resources and services available to them (Dana-Farber Cancer Institute, 2014).

My recommendation is for SFDPH to devote resources and efforts into creating a more effective patient navigator system in order to connect with patients who have abnormal breast findings, are at a higher risk for breast cancer, and those who already have breast cancer. This idea may be similar to utilizing survivor coaches, but they play somewhat different roles with the navigators specifically focusing on overcoming barriers and providing support with navigating through the healthcare system. Phillips, Rothstein, Beaver, Sherman, Freund, and Battaglia (2011) found that patients assigned to a navigation program group had increased adherence to receiving a mammogram across all ages, insurance groups, and education levels in their study.

The study contained almost 4,000 women who were between the ages of 51 and 70 and due for their mammogram. Half of the women received an intervention that consisted of a combination of telephone calls and reminder letters from patient navigators trained to specifically identify barriers with access to care (Phillips et al., 2011). This would be a highly beneficial service to provide women extra support and motivation in their health needs, decrease barriers faced throughout the community, and develop a better understanding of positive health behaviors.

### **Conclusion**

Increasing the mammography rate is an important priority for SFDPH and SFGH. By receiving a biennial mammogram, it is easier to detect breast cancer in the early stages where more treatment options are available, and it is less costly for both the patient and the healthcare system. Health disparities currently exist in the patient population with a great difference observed in mammography rates among ethnic groups. This is a free preventative service for people with Medi-Cal insurance, which a majority of patients have at SFDPH, so other barriers may exist that are preventing women from receiving a mammogram.

The evaluation project was able to provide evidence that there is a need to improve appointment accessibility for patients. Only having the Avon Breast Center operate Monday through Friday from 8 AM to 5 PM is neither ideal nor beneficial for the patient population. By offering evening and Saturday hours, the mammogram and show rates experienced a significant increase, and the patients awarded high satisfaction scores for their experience during the pilot study. SFDPH and SFGH are collaborating together to address this issue in addition to discovering other methods to educate women on the importance of getting screened for breast cancer and to make mammograms more accessible to women from diverse backgrounds.

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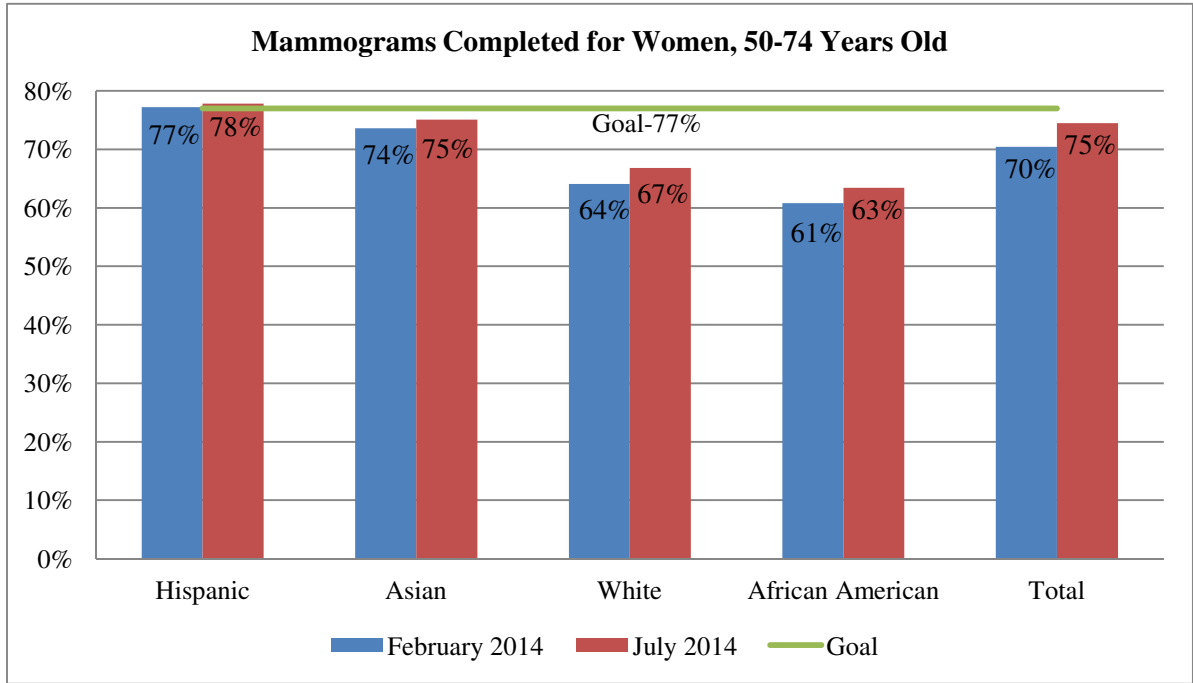
## Appendix A

Data obtained from SFDPH patient database, i2i, using women, 50-74 years old, who have completed a mammogram within the last 24 months and separated into categories by ethnicity.

<b><u>February 2014</u></b>	<b>Mammogram received (Women, 50-74 years)</b>	<b>Total eligible women</b>	<b>% Screened</b>
Hispanic	2222	2879	77.20%
Asian	4758	6463	73.60%
White	1163	1815	64.10%
African American	1026	1688	60.80%
Total	9169	13025	70.40%

<b><u>July 2014</u></b>	<b>Mammogram received (Women, 50-74 years)</b>	<b>Total eligible women</b>	<b>% Screened</b>
Hispanic	2286	2939	77.80%
Asian	4843	6446	75.10%
White	1206	1806	66.80%
African American	1068	1684	63.40%
Total	9936	13326	74.50%

<b>Ethnicity</b>	<b>% Increase</b>
Hispanic	0.6%
Asian	1.5%
White	2.7%
African American	2.6%
Total	0.0%

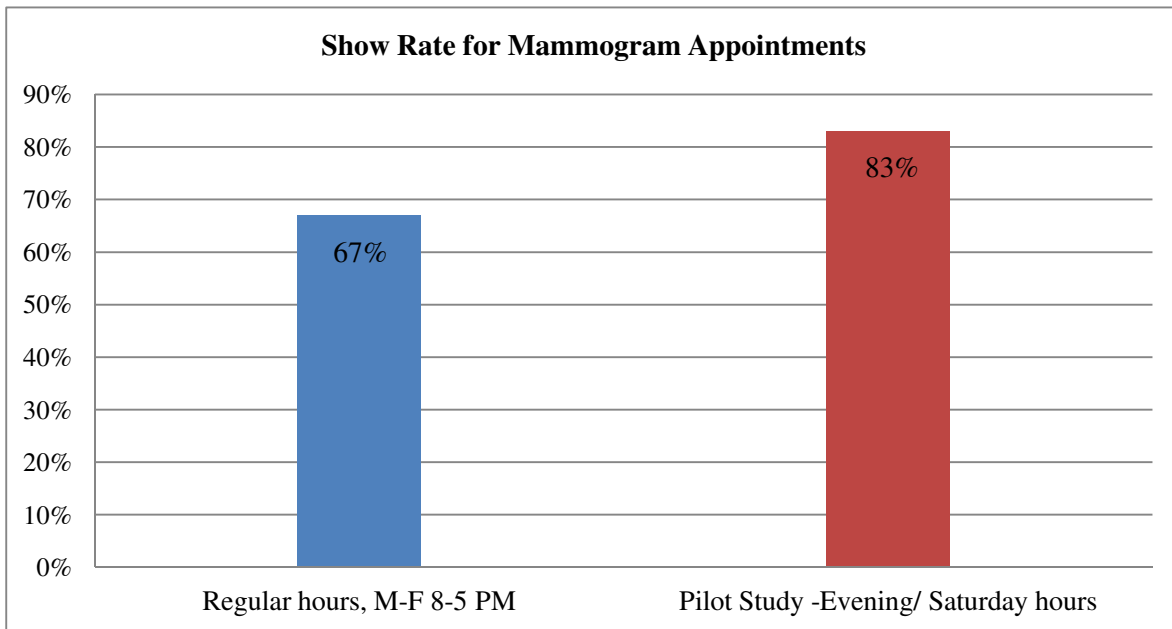


Appendix B

Data obtained from SFDPH patient database, i2i, using women, 50-74 years old, who attended a mammogram appointment during the Avon Breast Center’s regular hours and pilot study hours.

	<b>Patients who attended appt.</b>	<b>Total appts.</b>	<b>Show Rate</b>
Regular hours	67	100	67%
Pilot Study -Evening/ Saturday hours	83	100	83%

<b>Total % Increase</b>	16%
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Appendix C

Patient survey created for SFGH to distribute to patients attending a mammogram appointment within the pilot study timeframe.

**Patient Survey on Breast Cancer Screening (Pilot Study)**

1. What’s the best way to remind you of upcoming appointments?

**Letter in the mail**       **Phone call**       **Text message**       **Email**

2. The Radiology staff who assisted me today:

	<b>1</b> (Strongly disagree)	<b>2</b> (Disagree)	<b>3</b> (Neither agree nor disagree)	<b>4</b> (Agree)	<b>5</b> (Strongly agree)
Helped me through the visit					
Were able to explain everything clearly					
Were friendly, courteous, and respectful					

3. Did this appointment that work well with your schedule?    **Yes**       **No**

4. Would you be able to attend the appointment between 8-5 PM and Monday-Friday?    **Yes**     **No**

5. Would you recommend a family member or friend to come here?    **Yes**     **No**     **Maybe**

6. When you arrived at the clinic, how long did you have to wait to be seen?  
**Less than 5 min**       **5-20 min**       **More than 20 min**

7. What is your overall rating of your mammogram experience? (Circle one answer).

**(Bad) 1    2    3    4    5 (Okay)    6    7    8    9    10 (Great)**

8. What helped you feel more comfortable in coming to your mammogram appointment?

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9. Suggestions to improve the breast cancer screening process.

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Appendix D

Staff survey created for SFGH to be distributed to employees who worked during the hours of the pilot study timeframe.

**Staff Survey on Breast Cancer Screening (Pilot Study)**

1.

	<b>1</b> (Strongly disagree)	<b>2</b> (Disagree)	<b>3</b> (Neither agree nor disagree)	<b>4</b> (Agree)	<b>5</b> (Strongly agree)
I am able to work extended hours.					
I am able to work Saturdays.					
I am able to work both extended hours/Saturday					
I feel supported by my peers/supervisors.					
I am comfortable going to my supervisor for help.					
I feel well prepared to address the patient's needs.					
I am confident in my training and skills.					
I would like more training on mammograms and breast cancer risk/symptoms.					
I feel my supervisors work as hard as I do.					
I think patients enjoy the extra hours during the pilot.					

2. Suggestions to improve the mammogram/ pilot study processes.

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## Appendix E

Results from patient survey (n=78).

	<b>Letter in the mail</b>	<b>Phone call</b>	<b>Email</b>	<b>Text Message</b>
1. What's the best way to remind you of upcoming appointments?	55.8%	33.8%	3.9%	5.2%
	<b>Average (1-5)</b>			
2. The Radiology staff who assisted me today:				
Helped me through the visit	4.6			
Were able to explain everything clearly	4.5			
Were friendly, courteous, and respectful	4.8			
3. What is your overall rating of your mammogram experience?	4.3			
	<b>Yes</b>	<b>Maybe</b>		
4. Did this appointment work well with your schedule?	100%	N/A		
5. Would you be able to attend the appointment between 8-5 PM and Monday-Friday?	34%	19%		
6. Would you recommend a family member or friend to come here?	91%	9%		
	<b>&lt; 5 min</b>	<b>5-20 min</b>	<b>&gt; 20 min</b>	
7. When you arrived at the clinic, how long did you have to wait to be seen?	32%	47%	21%	

<b>Suggestions/ Comments:</b>
Interpreter language assistance
Shorter wait time.
Chinese speaking staff.
Give patients breaks between mammograms.
Hospital gown was too large.
To have test results sent to address.
Have the appointment sooner.
Good experience.
Everything was handled great.
Quick with little to no wait.
Very nice service.
Everything was great.

## Appendix F

Results from staff surveys (n=11).

	<b>Average (1-5)</b>
I am able to work extended hours.	3.4
I am able to work Saturdays.	3.8
I am able to work both extended hours/Saturday	3.2
I feel supported by my supervisors.	4.2
I am comfortable going to my supervisor for help.	4.1
I feel well prepared to address the patient's needs.	3.9
I am confident in my training and skills.	3.1
I would like more training on mammograms and breast cancer risk/symptoms.	3.5
I feel my supervisors work as hard as I do.	3.3
I think patients enjoy the extra hours during the pilot.	5

<b>Suggestions/ Comments:</b>
Refresher course on breast cancer before pilot study.
More staffing.
Need more employees.
Supervisor to provide better support during stressful times.
Supervisor to be more present during clinic.
Opportunity to ask questions when needed.
Better front desk staff.
Patient check ins should go more smoothly.
Hard to ask for help when in hectic atmosphere.
Incorporate an end of the day huddle.

## Appendix G

A chi-square test performed for mammogram and show rates.

**Mammogram Rate**

Observed	February 2014	July 2014	Total
Received mammogram	9169	9936	19105
Didn't receive mammogram	3856	3390	7246
Total	13025	13326	26351

Expected	February 2014	July 2014	Total
Received mammogram	9443.38	9661.62	19105
Didn't receive mammogram	3581.62	3664.38	7246
Total	13025	13326	26351

$X^2 = 57.3307$
df=1

df	0.5	0.1	0.05	0.02	0.01	0.001
1	0.455	2.706	3.841	5.412	6.635	10.827

**p < 0.001**

The number of mammograms completed by July 2014 is significantly higher than mammograms completed by February 2014.



**Show Rates**

Observed	Patients attended appt.	Didn't attend appt.	Total
Regular hours, 8-5 PM	67	33	100
Pilot Study - Evening/ Saturday hours	83	17	100
Total	150	50	200

Expected	Patients attended appt.	Didn't attend appt.	Total
Regular hours, 8-5 PM	75	25	100
Pilot Study - Evening/ Saturday hours	75	25	100
Total	150	50	200

$X^2 = 6.2867$
df=1

df	0.5	0.1	0.05	0.02	0.01	0.001
1	0.455	2.706	3.841	5.412	6.635	10.827

**p < 0.01**

The attendance of the pilot study appointments is significantly higher than the attendance of regular hours appointments.

## Appendix H

SWOT Analysis created for the evaluation project of mammography services at SFDPH.

### **Strengths**

- Patient surveys: high overall scores, acceptable appt. times, and friendly staff
- Staff surveys: able to work odd hours, felt well prepared, and supported by supervisor
- Evaluation showed significant increases in patient show rate and overall mammogram rate
- Evaluation provided documentation of a successful pilot study

### **Opportunities**

- Patient surveys revealed patients were asking for other services to be offered on Saturdays
- Staff surveys had suggestions of more trainings and skill-refresher courses to be offered
- Mammogram increases by ethnicity can be tested for significance
- Mammo-van data can also be evaluated and compared to pilot study statistics

### **Weaknesses**

- More surveys are needed to obtain data representative of patient population
- Difficult to determine if increase is result of offering extra appointments or other factors
- Patients are continuously added and removed from SF DPH system, so population is not constant

### **Threats**

- Staff may not want to work odd hours
- Other health priorities may need to be addressed and extra hours will no longer be offered for mammograms