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Maria Watson
watsonma@ah.org

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Improving Breast Health Care Through The Implementation of a Nurse Navigator

Maria Watson

University of San Francisco

Improving Breast Health Care Through the Implementation of a Nurse Navigator

Breast cancer is well known as a common problem for women in the U.S., and its incidence is expected to continue rising in correlation with the aging baby boomer population (Balducci, 2016). Early detection and timely treatment are important factors in reducing both mortality and cost of treatment for breast cancer patients (Blumen & Fitch, 2016; Depke, Boreen, & Adedayo, 2015). Often, however, multiple barriers confront patients, preventing them from obtaining timely and appropriate care, causing delays in diagnosis and treatment, as well as causing distress (McMullen, 2013). Introduction of the role of the Nurse Navigator (NN) can be pivotal in overcoming barriers to care, allowing greater access to timely care with concomitant improved outcomes (Blackley et al. 2016; McMullen, 2013).

Global Aim Statement and Clinical Leadership Theme

The global aim of this project is to improve care for newly diagnosed breast cancer patients by increasing access to care, decreasing barriers, and improving timeliness of care. The designated NN will accomplish the aim through care coordination, thereby improving patient outcomes, decreasing outmigration of care, and increasing the financial viability of the breast health program. The ultimate goal of the breast health team is to obtain accreditation as a Breast Center of Excellence (BCoE) by the National Accreditation Program for Breast Centers (NAPBC); this accreditation helps ensure quality of care beyond what written guidelines were able to do (Kaufman, 2018). The initial focus of the Clinical Nurse Leader (CNL) as a navigator will be early on in the patient trajectory, with the expectation of eventually expanding improvements to the entire patient journey.

The Clinical Nurse Leadership theme most applicable to this project is care environment management with emphasis on the subdomains of interprofessional communication and

collaboration skills, team coordination, and quality improvement, although other subdomains also apply (Commission on Nurse Certification, 2016). Care of the breast cancer patient (BCP) requires a great deal of coordination between many disciplines over the trajectory of care. Even during the initial diagnosis phase, multiple professionals are involved, including the technologists, the Radiologist, the Pathologist, and the Surgeon along with schedulers and other ancillary staff. As a CNL in the NN role, coordination of care with the entire team- including the patient- is paramount. Quality assurance and improvement is also a key role. As will be expounded on, specific quality metrics will be identified and followed in caring for the BCP. In looking to improve quality metrics, the NN is also cognizant of the potential to enhance the economics of breast health care.

Problem Statement

In a rural Northern California region, increasing demand for services around breast health has been growing at a near constant rate. Before implementation of the project, no oversight to coordination of care existed, resulting in inconsistent care, as well as slow adoption of the most recent industry standards, as recommended by the National Comprehensive Cancer Network (NCCN, 2017). These problems were suspect influencing factors in outmigration of care to other facilities due to evidence that *improved* care coordination decreases outmigration (Inzetta, 2017). Administrative and physician leaders wanted to take action in bringing consistency and quality of care to the region. By collaborating with leaders in a nearby region, who are part of the same network organization, a steering committee was formed. This multidisciplinary committee decided reaching for the goal of accreditation by the NAPBC as a BCoE would help guide their energies and actions. A key component in attaining this goal included hiring a Nurse Navigator to help oversee the program.

Project Overview

While the CNL as NN can employ many methods at varied points along the patient care trajectory, improvement needs to start somewhere. In keeping with the stakeholders' most pressing priority, the NN chose the decrease in outmigration of care near the beginning of the breast health patient trajectory as the aim. That being said, the realization that outmigration could be occurring *before* initial screening even occurs, leaves the door open for a future project.

During the screening and diagnosis process, patients can decide whether or not to return to the facility to continue care. This decision can be influenced by their prior experience of care, ease of scheduling, and barriers to continuation of care, such as financial or anxiety/fear (McMullen, 2013). By implementing the CNL as NN, barriers can be identified and mitigated. Personal follow up by the NN to address barriers will help ensure greater patient satisfaction, confidence in the center, and empowerment for the patient, thus decreasing outmigration of care. The NN also monitors and looks for ways to improve key quality measures that can both affect patient satisfaction, as well as patient outcomes- again, ultimately influencing whether patients decide to stay for care or move on. Some of the key measures identified as top priority by the steering committee include: Time from screening mammogram (mammo) to diagnostic mammo; time from diagnostic mammo to biopsy; and time from biopsy to surgery, as well as needle biopsy rate. There are 12 measures identified as high priority by the committee all together, however the four mentioned will be the starting point and the focus of this project, along with monitoring outmigration. The specific goal of this project is to decrease outmigration of care for patients with abnormal mammos found on screening from 8% to 2% within one year of instituting the NN role. Additional goals with intent toward the overarching goal of mitigating outmigration include: Decrease average time from abnormal screening mammo to diagnostic

mammo from 14.3 days to 6.5 days; decrease average time from diagnostic mammo to biopsy from 17.3 days to 6 days; decrease average time from biopsy to surgery from 15.5 days to 14 days; and increase needle biopsy rate from an average of 79% to 90%. Benchmark goals are derived from the Oncology Roundtable Cancer Quality Metric Selection Tool (As cited by Adventist Health, 2017).

Because timeliness of care results in better outcomes, due to catching cancers at an earlier stage (American Cancer Society, 2018), the above benchmarks were chosen to observe for changes. By periodically monitoring the data through the Mammography Reporting System (MRS), and comparing to prior data and benchmarks, improvement in care can be tracked. As previously alluded to, the NN as advocate and collaborator is essential in overseeing the screening and diagnosis process, vigilantly looking for areas in need of change or improvement. The NN, in collaboration with the breast health team, helps identify what changes can be made that will result in improvement.

After observing and engaging in the microsystem for several weeks, the purpose, patients, people, processes, patterns, and metrics that matter were noted. Strengths and weaknesses were identified, along with opportunities for growth, as well as threats to the project. Possible places for improvement began to appear.

Methodology

The Mammography Reporting System (MRS) is a program used for recording and tracking data related to screening and diagnosing breast health issues. As patients are screened, return for diagnostics, and biopsied, data is entered into the system that then allows for both aggregate, and individual reports to be run. Also built-in to the program are risk-assessment models that aid in identifying patients at various levels of risk for breast cancer, guiding their

screening intervals. The MRS is set up to automatically send reminder and callback letters as well. Baseline MRS data was used to help define the target areas for this project, and will be used to assess its success.

The Advisory Board (as cited by Adventist Health, 2018) has developed a tool utilizing a compendium of quality metrics for five major tumor sites, including breast. This tool includes a customizable dashboard that encompasses definitions and benchmarks that are approved by national quality organizations and supported by clinical literature. The dashboard metric benchmarks for the author's organization are used for this project.

The Institute for Healthcare Improvement (IHI) has a very useful Model for Improvement (MFI) that is employed for this project (IHI, 2018). The MFI has two major parts. The first part asks three questions, "What are we trying to accomplish? How will we know a change is an improvement? What changes can we make that will result in improvement?" The second part of the MFI is the Plan-Do-Study-Act (PDSA) cycle. More than one PDSA can be tested at the same time. There are five steps required in applying the MFI: Set an aim, establish measures, identify changes, test changes, implement changes (IHI, 2018). All of these steps require observation of, and interaction with the clinical microsystem.

Rationale

Before any improvement can take place, one must first identify a problem, in order to determine what needs to be accomplished. In our Northern California Rural Health facility, breast cancer patients outmigrating for care or lost to follow-up after abnormal mammography were numbered at 31/356 (8%) for 2017 according to the MRS, possibly reflecting dissatisfaction towards timeliness and access to care, as well as a lag in modern equipment and biopsy methods. Data available for 2017 (January through October) via the Mammography

Reporting System (MRS) showed average time from abnormal screening mammography to diagnostic mammography was 225% above recommended benchmarks, while diagnostic mammography to needle biopsy, and biopsy to surgery was 228%, and 110% above recommended benchmarks respectively. Unfortunately, data for time from biopsy to reporting of pathology was inaccurate and unusable for that same time period. Another important quality measure is needle/core biopsy rate of patients with suspicious diagnostic mammography or ultrasound; for the same time period in 2017, the rate ranged from 62 – 90% and averaged about 79%, or 11% below benchmark. Direct evidence that these factors were the cause of outmigration is difficult to impossible to gather, short of sending out a huge survey in the region. However, this data points to a multifaceted problem providing the care needed for the breast health patient population, which the literature supports as being contributory to lost follow-ups and outmigration of care (Inzetta, 2016). By employing Root Cause Analysis, specific challenges were identified in the microsystem related to four main categories: Physical environment, Process, People, and Patients (see Appendix A). Within the physical environment category, small space and limited equipment create a shortage of time and space to perform screens and procedures in the mammography area. Limited OR time and space also restricted available appointments for surgery, decreasing timeliness of care. Having only one 3D Tomosynthesis Tomo) used for Tomo biopsies, as well as for testing specimens and providing regular screenings, definitely had an effect on scheduling patients. Such limitations, of course, have an effect on process as well, complicating scheduling and eventually limiting access to care. Other process limits include: Ineffective centralized scheduling by the organization to save money, patient preferences, and lack of oversight to care prior to the NN.

Although there is a great breast care team at the facility, having two Radiologists available to perform breast biopsies is inadequate for the patient volume. Attempts have been made to recruit an additional Radiologist, but the rural setting makes that difficult. Additionally, recruitment may not be a top priority for the organization in light of many competing needs. There is also the limitation of only one breast surgeon, slowing down the points between pathology results and surgery.

Patients themselves were found to have a huge influence on outmigration or loss to follow-up. When the NN started calling patients on the MRS “problem case list,” reason for not scheduling was often, “I’ve been busy,” revealing a lack of prioritization rooted in knowledge deficit. Other patients had financial barriers while some had difficulty transporting for follow up care, or lacked physical or social support. Some patients had indeed opted to go South to Santa Rosa, or further South to San Francisco. Causes in all four categories, physical environment, process, people, and patients, led to either patient outmigration or loss to follow up.

SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was also employed in this project (see Appendix B). This method proved to be somewhat redundant to the RCA in the Weaknesses category, but in the Strengths and Opportunities category, it revealed a greater weight to positivity, especially in that physicians and leadership, as well as the community, support the goal of the project. The ultimate goal of accreditation as a BCoE seems attainable in the not-to-distant future. Two threats were also identified: competing services are as close as an hour away, albeit many people in the rural area prefer not to travel to high population areas. Another potential threat could occur if the organization is unable to deliver on promises of care, resulting in damage to the credibility and reputation of the organization.

Cost Analysis

In this present age of increased demand for every healthcare dollar, program accountability for return on investment is crucial in the sustainability of the navigation program, requiring cost analysis (Strusowski et al., 2017). Since the main implementation of the project anchors on the CNL as NN, the calculated cost associated with the improvement is focused on the salary, health benefits, and training of the NN. Expense for the first year would be higher, as the most training is required for the NN at that time. Continuing education and, of course, salary would be required in subsequent years. The starting salary plus health benefits including full medical, dental, and vision coverage for the NN and spouse is approximately \$147,150/year for this full time position in a rural Northern California medical center.

No prior model for a Breast Health NN exists at this institution, requiring initial training at an established BCoE. Four days in Bozeman, Montana, including travel expense is estimated to be \$2,450.00 as a one-time expense. Furthermore, the three-day Annual Breast Center Conference in Las Vegas, Nevada provides excellent education on current practice as well as invaluable networking opportunities. The total cost for this conference is approximately \$2,060. This leaves a grand total of \$151,660 for the first year, but closer to \$149,210 for the subsequent year (see Appendix C).

The many benefits of introducing the NN outweigh the costs. Outmigration of patients after an abnormal screening or biopsy was estimated at 8% in 2017 by comparing number of screening callbacks to unresolved cases via the MRS. In an analysis by the medical center's Financial Analyst Consultant, the loss of one breast cancer (BC) patient to outmigration is estimated at \$632 per encounter, with an average of 25 encounters per patient, bringing the average total loss per BC patient to \$15,800 in a year. Inzetta (2016) showed a reduction in

outmigration from 4% to 1% after the institution of a medical imaging breast nurse navigator after one year. This represents a 75% reduction in outmigration of BC patients. If similar results are obtained at the project's medical center, with an average estimated loss of 31 patients per year, a 75% reduction in lost patients translates to 7.75 patients lost, representing a gain of 23.25 patients per year. Multiplied by \$15,800 per patient, the center stands to recapture \$367,350, bringing the net gain in hiring a NN to \$215,690 the first year and approximately \$218,149 for the subsequent year.

Making possible the attainment of certification as a breast center of excellence by the Commission on Cancer (CoC) is another benefit of the NN. Standard 2.2 of the NAPBC Standards Manual (American College of Surgeons, 2014) requires "a patient navigation process is in place to guide the patient with a breast abnormality through provided and referred services (p. 35)." While the standard does not dictate the exact actions of the navigator, leaving room for adaption in each setting, a navigator is nonetheless required. Certification by the CoC, a desired goal of the health center, is expected to increase the trust of the community and attract even more patients to receive screening and care at the facility (American College of Surgeons, 2014).

Elevation in patient satisfaction, improved patient outcomes, and decreased overall costs as patients are cared for in a more timely manner are all expected benefits of assigning a NN for breast health (American College of Surgeons, 2014; Depke et al., 2015). As previously mentioned, early detection and treatment translates to less costly treatment and better outcomes (Blumen & Fitch, 2016; Depke, et al., 2015). The NN is pivotal in advocating for timely treatment and increased overall quality of care.

Change Theory

Scharmer's (2016) Theory U is the change theory utilized for this project. The U in Theory U represents the deep dive that occurs in the change process that eventually comes up and out on the other end of the U, although Scharmer is quick to add that the stages are not linear and could be occurring simultaneously in different aspects of the change process. This theory was chosen because the NN, being new to the role, is in a sense, going through the change process as well. The seven stages of the theory include: Downloading past patterns/suspending; seeing with fresh eyes/redirecting; sensing from the field/letting go; presencing (at the bottom of the U); crystalizing vision and intention/letting come; prototyping the new by linking head, heart, and hand/enacting; performing by operating from the whole/embodying. This process requires first an open mind, then an open heart, and finally an open will in enacting changes to the system or organization (see Appendix D).

The IHI MFI (IHI, 2018) integrates well with Theory U. The question was already asked by the leaders of the facility, "What are we trying to accomplish?" in regards to providing excellent breast health care. They set their aim high and started putting processes into place, including hiring an NN. As the new NN began her role on February 12, 2018, she immersed herself in the day-to-day patterns and structures of operations, step one of Theory U (Scharmer, 2016) (downloading past patterns). Perhaps because she was new to the microsystem, and new to the role, she was able to see things with fresh eyes, discerning gaps in care, keeping in mind the MFI questions, "what changes can be made that will result in improvement?" and, "how will we know a change is an improvement?" But Theory U prods a deeper dive, encouraging redirection of attention from mere objects or habits to mental processes. "Sensing from the field" is an important part of this dive, letting go of preconceived ideas of how one thinks it should be done,

until reaching the bottom of the U. At this deepest area, the theory posits the person or organization allows this wealth of knowledge, experience, observation, and sensing to combine in “presencing.” This practice allows blind spots to be overcome. The NN had such an experience, going from sensing to presencing, realizing in a eureka moment, a blind spot in herself. For years she had worked nearly alone, the sole RN in a small practice, carrying out the orders of one Medical Oncologist to treat patients by mixing and administering chemotherapy. But for the past two years she had been learning in her master’s program about the importance of collaboration, and had started to practice it to some degree. However, this knowledge needed to move from open mind, to open heart in collaborating with a multidisciplinary team to bring improvement. This could not be a solo project! According to Schramer, “the success of an intervention depends on the ‘interior condition’ of the intervener” (ch. 2, n.p.). The interior condition of the NN needed to be one of overcoming the tendency to work alone, and of an open heart to engage with others to bring improvement. This new inner vision cleared the way for the open will to enact exterior action. This coincides roughly with the second part of the MFI, the PDSA, referred to by Schramer as a rapid-cycle prototype on the way back up the U.

The NN reached out to the Radiologists, schedulers, technologists, and primary referring providers to collaborate on ideas for attaining best practices. As previously mentioned, key metrics can be used to monitor this progress. But more than best practices, a vision for a Breast Center of Excellence was crystalized, caught and carried by the team, led by the CNL as NN. The hope is, this will be not just be a change in practice, but rather will rise to the top of the U, bringing about the embodiment of the vision to be a Center of Excellence as everyone works together.

Data Source and Literature Review

A common method used in literature research for an evidence-based project is the PICO strategy (Polit & Beck, 2014). PICO is an acronym for population, intervention, comparison, and outcome. In this project the PICO was as follows:

P-- women with breast health issues, including cancer.

I--- coordination of care through nurse navigation services

C—no designated coordinator of care

O—improved quality, timeliness, and appropriateness of care ultimately decreasing outmigration of care and improving return on investment.

The PICO statement was: in women with new breast health issues, including cancer, what is the effect of care coordination through nurse navigation services compared with no navigation services on care outmigration, quality, timeliness, and appropriateness of care, as well as return on investment? CINAHL database was utilized, restricting the search to peer-reviewed, evidence-based articles published between January of 2013 and January of 2018. Initial key words utilized were “breast cancer and nurse navig* OR care coordination, and care quality.” This turned up several articles, but none including the financial advantage for the institution of nurse navigation services. “Return on investment” was added to the third field, successfully yielding articles providing evidence for net financial advantage with nurse navigation. This was after adding “financial advantage” did not prove fruitful.

Information was also provided by the executive steering committee, including an article examining the needs of rural women with breast cancer (Depke, Boreen, & Ontilo, 2015), and data from the organization’s Breast Health Physician Summit held in Healdsburg, California that included quality metrics (Adventist Health, June 8th, 2017). Additional input was gained through

attendance of the NCoBC, as well as information obtained from the Oncology Nursing Society (ONS, n.d.).

Although the evidence garnered is not all specific to breast cancer patients, care coordination through an NN has been shown to bring marked improvement in patient care. Three main themes arose through review of the literature (not necessarily listed in order of importance):

1. Nurse navigation improves access to, and timeliness of care, leading to better patient outcomes and more favorable return on investment (Blumen et al., 2016; Inzetta, 2016; Kaufmen, 2018; McMullen, 2013).
2. Metrics that matter and benchmarks are crucial in gauging the effectiveness of nurse navigation programs (Adventist Health, 2017; IHI, 2017; Strusowski et al., 2017).
3. The Nurse Navigator's role needs to be defined and agreed upon within her community in collaboration with a multidisciplinary team (American College of Surgeons, 2014; Blackley et al., 2016; Lubejko et al., 2016; ONS, n.d.).

Theme One: Nurse Navigators Key in Timeliness of Care

Next to prevention, early detection of cancer is the best way to ensure better outcomes for patients, while decreasing cost to the healthcare system (Blumen, Fitch, & Polkus, 2016; Kaufmen, 2018). In reference to theme number one, the literature supports the use of coordination of care through nurse navigation as a way of improving access to care, as well as timeliness along the patient care trajectory. Inzetta (2017) reported success one year after implementing a breast imaging NN in removing barriers to care for breast health patients. The dedicated imaging NN met with, and tracked patients from the time of initial abnormal screening results to initiation of care, coordinating appointments and referrals among care providers.

Patient-centered care by the NN in overcoming barriers to care decreased outmigration of care from five percent to one percent, and significantly increased patient volume, eventually impacting volume across the breast specialty care community.

McMullen's (2013) extensive article on Oncology NN's uses multiple empirical research and critical analysis data. Although not specific to breast health NN's, this paper also emphasizes the patient-centered care provided by the NN as key to timeliness of care, serving both the patient and the organization in a win-win situation. According to McMullen, the ONN can be described as the "glue" that holds patients' lives together during a stressful and difficult time (p. 21). Assistance in coordination of diagnostic appointments, referrals, and continuation of care contribute to patient satisfaction, decreasing outmigration of care (McMullen, 2013).

Theme Two: Metrics

In reference to theme number two, to evaluate the effectiveness of a breast health program and the utilization of an NN, metrics to measure must be determined. These metrics must be gauged over time as well as compared to benchmarks. Noted as the "Hawthorne effect," even the awareness of being measured can cause clinicians to improve care (Kaufman, 2018). As taught by IHI (2017), part of the MFI is setting an aim that specifically indicates: how good, by when, and for whom changes are being accomplished. Quality metrics using national standards as benchmarks help accomplish goal setting and gauging of accomplishment. In an important paper by Strusowski, et al. (2017), a highly qualified panel draws upon extensive literature review, benchmarks, and expertise to develop a standardized oncology metrics tool for evaluating navigation programs. There are 35 metrics focused in three main areas: patient experience, clinical outcomes, and business performance or return on investment. Although

Strusowski et al's project was not specific to breast NN's, it is still helpful and informative to the current project by providing key areas that measure success of an NN program.

The information from the Breast Health Physician Summit also provides a valuable source for metrics that matter for the breast health program (Adventist Health, 2017). Listed are six main types of quality measures: risk assessment, appropriateness and timeliness of care, patient-centered care, documentation completeness, and outcomes. Within those six types, 32 total measures are listed. Out of those 32 measures, the steering committee has chosen 12 on which to focus initially. This project narrows down to four measures (as previously mentioned): Time from abnormal screening mammo to diagnostic mammo, time from diagnostic mammo to biopsy, time from biopsy to surgery, and needle/core biopsy rate, plus rate of outmigration of care. The last measure entails comparing number of call backs for abnormal mammos to number of diagnostic mammos, the difference representing outmigration of care.

Theme Three: Role Delineation

The third theme in the gathered literature to support the project is the importance of defining the navigator's role. The NAPBC Standards Manual (American College of Surgeons, 2014) Standard 2.2 states that the role of the NN will differ in different settings, depending on the needs of that particular community and healthcare system; but there needs to be an agreement on how the navigator's role will be, "defined and operationalized" (p.35). Some examples of NN duties provided in the manual include provision of education, support, and assistance in attaining necessary appointments. Also mentioned is promotion of communication between patients and health care providers, as well as reinforcement of physician-patient relationships.

Blackley et al. (2016) emphasize the importance of implementing a standardized NN role to ensure that patients receive quality, consistent care. With a clear-cut role and specifically

designed electronic tools allowing them to track patients in real time, the NN's in their system were able to demonstrate significantly decreased numbers of 30-day readmissions, as well as improved 12-month survival in navigated patients compared with non-navigated patients.

The study by Lubejko et al. (2016) also proves helpful to the project at hand as it helps delineate specific tasks of the NN, including ensuring timeliness of care by assisting with care access, identifying and helping overcome barriers to care, and facilitating communication between patients and providers. For this study, a rigorously designed survey was sent to 5,397 individuals from the Oncology Nursing Society (ONS) database who identified themselves as navigators. Nine percent (N=498) completed the on-line survey that covered 62 tasks and spread over four key concepts: access, barriers to care, coordination of care, and communication (p. 47). Lubejko et al.'s study is an update of an NN role delineation study done in 2011, reflecting the growth and expansion of the NN role during that time span.

Oncology Nursing Society (n.d.) provides valuable information in the form of a "toolkit" for Oncology NN's. This document lists many practical tasks and skills that should be part of the NN's responsibilities. Some examples included are: Interpersonal collaboration skills, data collection and analysis, identifying and overcoming barriers to care. The "toolkit" is beneficial to the current project in provision of guidance for the new NN.

Timeline

A timeline for rolling out improvements is helpful for keeping a project from losing momentum. The timeline of this improvement project actually started before the arrival of the CNL as NN during the brainstorming of the executives and physicians who formed the Northern California Region Breast Health Steering Committee. This paper will document the timeline going forward after the hire of the NN in February of 2018 (see Appendix E).

After hiring the CNL as NN, an assessment of the microsystem for existing process was in order. Next, an opportunity for comparison of the microsystem to an established, successful breast center of excellence was provided for the new navigator. The NN was then sent to the National Consortium of Breast Centers' (NCoBC) annual conference for a crash course on current practice. After both events, the NN sought out training on the Mammo Reporting System (MRS), realizing it was vital to her job in tracking patients as well as tracking quality metrics. The NN then used the "Unresolved case list" in MRS to determine patients who were overdue for diagnostic screening or testing. The first test of utilizing these reports to contact patients and decrease outmigration, as well as the number of patients lost to follow-up, was started.

During the March Steering Committee meeting, the NN's role was further clarified as one intended to be the point person for patients and providers. As such, she met with community providers to introduce herself, establish her role, and work out a plan for optimal communication. Such connections are planned for other key area physicians, as well as providers in outlying areas of the region in subsequent months. The Steering Committee decided a kick-off event introducing the Breast Center and the NN to the area physicians needed to happen within the next 45 days, followed by an event for the staff. Public awareness of the improvement effort and available services is needed to draw patients to the center, potentially increasing the number of women screened.

Early on the NN began a trial of optimum time to have first contact with patients. Right before biopsy procedures, the NN introduces herself and her role. She then contacts the patient 24 to 48 hours after the procedure to check on tolerance of the procedure; additionally she probes for any barriers to care such as finances or transportation. The next trial is for an earlier initial patient contact, occurring after an abnormal screening. This allows time for education on why

further testing is needed, as well as what that will entail. If time allows, presence at biopsies would still continue. The trial of this next PDSA is planned to occur when patient education material is finalized and when a space for conducting the education is worked out.

Expected Results

The expected outcome as the result of instituting a NN in this improvement project is increased quality of care to the breast health population of the Northern California region, ultimately bearing fruit in an increased number of patients utilizing local care. Timeliness and appropriateness of care will improve, affecting overall patient outcomes positively. Specific measures reflecting improved care are: decrease in outmigration/loss to follow up to less than 2%; decrease average time between abnormal screening and diagnostic mammo to 6.5 or less days; decrease average time between diagnostic mammo and biopsy to six or less days; decrease average time between biopsy and surgery to 14 days or less; and increase average needle biopsy rate to 90%.

Nursing Relevance

A Clinical Nurse Leader in the role of Nurse Navigator is an imperative key to the success of this improvement project. While all members of the breast healthcare team are critically important, the NN acts as the thread, binding the parts together, allowing seamless care of the patient to take place. This project helps exemplify how a nursing role can make a difference in patient outcomes through lateral leadership, and multidisciplinary collaboration.

Summary Report

The role of NN was introduced to the Breast Health microsystem to help improve timeliness, quality, and appropriateness of care, thereby decreasing the number of patients lost to follow-up and outmigration. The ultimate aim of the organization is to attain accreditation as a

BCoE. After examining quality metrics available through the MRS, analyzing for RCA, and performing a SWOT analysis, many interventions were trialed by the NN. While preliminary feedback from patients and providers has been very positive, the MRS data is too young to fully evaluate at this time. Periodic MRS report runs (every two to three months) will be useful in determining the success of the program.

In performing the RCA, the NN looked at which aspects of the physical environment, process, people, and patients could be positively influenced through improvement implementation. Previously cited literature was also utilized for evidence-based interventions to apply.

Interventions

The physical environment could not initially be changed by the NN, but changes could be made to make better use of the space and equipment available. In noting the time it took during Tomo biopsies for the Radiologists to first xray the tissue on the Tomo, then separate out tissue between calcs and non-calcs, the NN researched a device to do this automatically during the biopsy procedure, while giving feed back in real time when calcs are successfully removed. This piece of equipment would decrease overall time in biopsy procedure, as well as increase confidence the appropriate tissue had been taken. A time study revealed 16-46% of time spent in Tomo biopsy procedures was used in preparing specimens (see Appendix F). However, when weighed against the cost of the machine (approximately \$90,000), the time and trouble saved did not bear out the cost of the equipment, although time for an extra screening per day might be possible with its use. Purchase and use of this equipment can and should be revisited in the future as the number of biopsies increases, especially if the desired equipment trends toward becoming the standard of care.

Another tactic to improve better utilization of limited space and time included speaking to the breast surgeon about notifying the center when she would not be needing an allotted time block (one hour) for wire localizations (locs) of an area needing surgical removal. One to two blocks per week are held for the surgeon without predetermined patients. When the block is not needed for wire locs, the tomo sits idle during that hour. The surgeon was receptive to this and did release one block, so far, as a result of that conversation. This enables the center to schedule two to three more patients either for screening, or diagnostic mammos in the released blocks. Of course a major improvement in equipment is planned soon with the addition of a second Tomo machine, initially strictly for screening purposes.

Process is the second area the NN sought to improve. In the RCA, scheduling issues were uncovered as a major aspect limiting access to care. Schedulers did not have time to make more than one to three attempts in reaching patients to schedule an appointment. In turn, informal feedback from providers and community members showed it was difficult and often frustrating for patients to get through to the centralized scheduling center to make appointments. As an evidence-based intervention, the NN began contacting patients and assisting them with scheduling (Inzetta, 2017; McMullen, 2013). Using the “unresolved case list” report via the MRS, the NN calls patients to discover why they have not returned for recommended care. When barriers are presented, the NN works to overcome them in getting the patient scheduled. One example was a patient overdue for diagnostic studies who was in the process of switching insurance. She was concerned about what her copay might be, unsure of her next step, and thought she would have to go out of the area for care. The NN was able to connect the patient with the Benefits Advisor to find out what her copay would be (\$75.00). This was a relief to the

patient, and she was scheduled at that point, decreasing her time from screening mammo to diagnostics.

The NN also educated the off-site lead scheduler in regards to who is present during biopsies. The lead stated scheduling was made more complicated by requests for the female Radiologist (M. Chiaretta, personal communication, March 21, 2018). When told there would always be two female technicians plus the NN present for biopsies, the lead stated this information was very helpful and patients would be reassured of this fact, potentially decreasing time from diagnostics to biopsy due to patient preference.

Pertaining to both process and patients, prior to the NN, follow-up phone calls by RN's after breast biopsies were brief, formulaic, and focused on the biopsy site only. The Radiologists have a heavy load of cases to read. Their biopsy follow-up goes as far as monitoring for return of pathology results, making sure the provider has results, and informing patients. After initiation of the project, the NN is able to be present for biopsies, providing emotional support and back up nursing care, as occasional episodes of syncope occur during biopsy procedures. After this initial contact with patients, the NN makes the follow-up phone calls to check on the patient post procedure. The Navigator also watches for biopsy results, assuring patients receive timely care for any positive results. At this time, opportunity is taken to assess for and help overcome any barriers to care, such as financial woes, lack of support, transportation difficulties, knowledge deficit, or fear/anxiety related to treatment. This intervention potentially will decrease time from biopsy to surgery. One example occurred when a patient with a positive biopsy was followed-up by the NN. The patient expressed difficulty with transportation, as she lives in an outlying area about an hour and one-half away over a winding, mountainous pass. She has to drive herself otherwise she suffers motion sickness. The NN was able to assist the patient in working out a

plan, including staying overnight with a friend, and secure a surgery date. The patient expressed gratitude for the assistance as well as confidence in the plan.

While the NN does not have direct influence on solving the problem with too few Radiologists, as the breast center improves in quality, and hopefully ultimately becomes certified, the chances of attracting an additional Radiologist increases. Adding a Radiologist would enable a larger caseload, thereby decreasing delays to result readings and diagnostics.

Another intervention still in progress is provision of education for patients and family members by the NN prior to diagnostic testing. The NN is working with the lead Radiologist and the Administrative Marketing Director to finalize an educational brochure (see Appendix G). One barrier that still stands at the time of this writing is the lack of a place to meet privately with patients to provide support, discuss barriers, and educate them about the journey ahead.

As previously mentioned in the literature review section, role delineation within the community is important for the NN (American Colleges of surgeons, 2014; Blackley et al., 2016; Lubejko et al., 2016). To this end, the NN discussed the specifics of the role with the Steering Committee, including the lead Radiologist. The NN also met with community providers to discuss the role as point person for all breast health patients, and work out how to best communicate with them in caring for their patients. Part of this discussion included designing an order form solely for breast health patients that contains reflex orders. This is currently a work in progress. The aim of this change is to eliminate time in contacting the primary care provider for orders when a screening mammo is abnormal. The NN would make sure the provider is kept in the loop immediately when further testing is required.

Challenges and Sustainability

One of the challenges for the NN is documentation and tracking of patient care in a manner that can be followed by other team members. A solution is currently being sought through collaboration with the Informatics department, the lead Radiologist, and the sister facility. This solution will be important in the sustainability of the project, especially if the current navigator goes on vacation, vacates the position, or an additional navigator is added.

The main challenge for the NN remains the understanding and acceptance of her role by the team and the community. Change is almost always difficult. The CNL as NN strives to help the team and the community catch the vision of what is possible in elevating care for the breast health population. Inspiring others towards this vision can both propel the project past barriers, as well as ensure sustainability.

Evaluation

Unfortunately, implementations by the NN are too new to be reflected in the data. It is fully anticipated that the impact of care coordination by the NN will be clear within six months to a year. Personal feedback from patients and providers has already been positive thus far. Eventually, improvements in timeliness and appropriateness of care will decrease outmigration of care, as well as patients lost to follow up. In turn, the financial viability of the center will be strengthened, as will the possibility of attaining accreditation as a BCoE.

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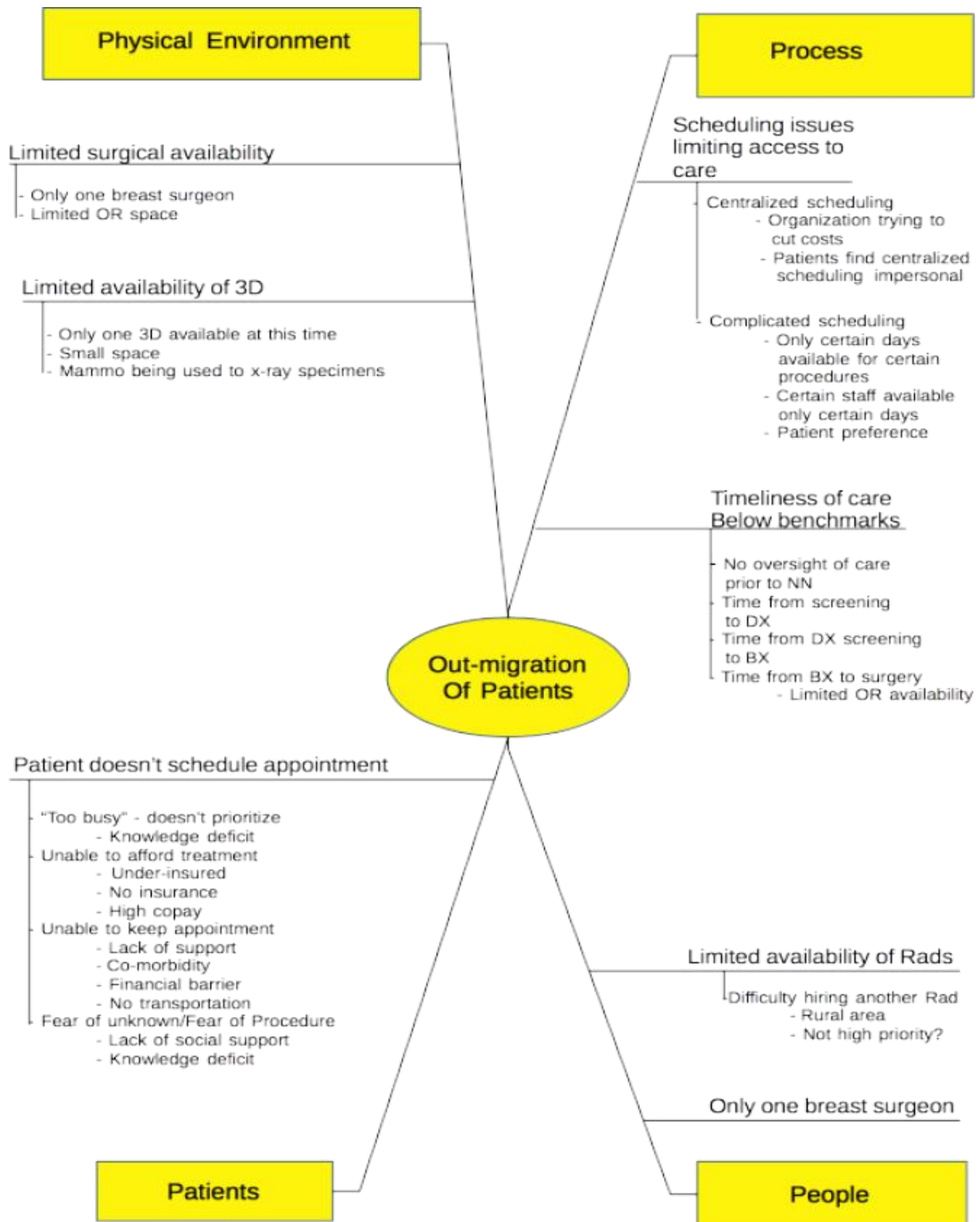
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Appendix A
RCA Diagram



Appendix B

SWOT Analysis For Breast Health Microsystem

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Strong interest & support from executive leadership & physicians for improving breast health care • Strong community support in the form of fundraising • Ability to collaborate with other hospitals in the region, who are part of the same organization, to offer broader & more comprehensive services • Dedicated & compassionate team of technicians & Radiologists 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Space constraints both for procedures & for private place to counsel/educate patients • Time constraints for scheduling • Centralized scheduling process is inefficient & viewed as impersonal by patients • Manager of the department recently left • Only 2 Radiologists to perform biopsies • Prior to hiring NN, unresolved pt. cases have inadequate f/u
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Newly hired Nurse Navigator is a CNL intern focused on improvement • BCOE accreditation is possible • With improved services more people will stay & come for services, increasing revenue • Number of population requiring screening is increasing • Time is ripe for improvement • MRS is already in place & can be utilized for tracking quality metrics & following pts 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Competition offering similar services are only an hour away • Making promises & not delivering can threaten the credibility of the organization

Appendix C

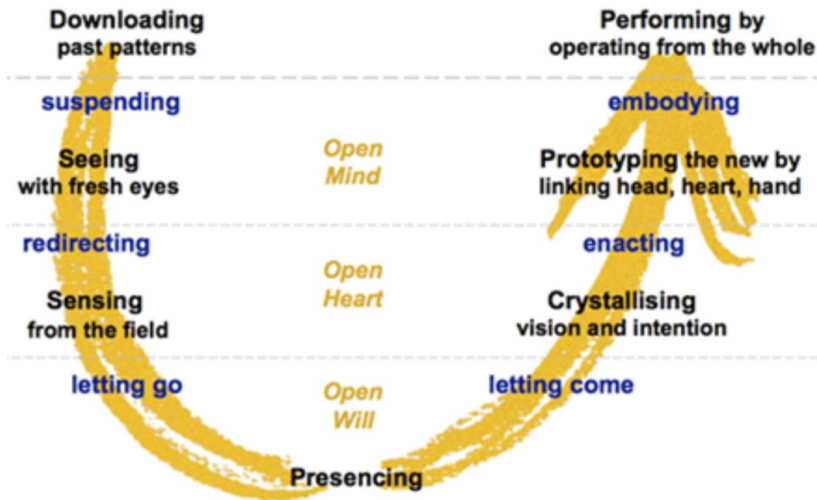
Cost Analysis

Calculated Costs for First Year	
Salary plus benefits for CNL as NN 1.0 FTE	\$147,150.00
Travel expense initial training Bozeman, MT	\$2,450.00
Annual breast cancer conference Las Vegas, NV	\$875.00
Hotel & Travel for conference	\$1,284.00
Grand Total Expense	\$151,759
Estimated Benefits	
Estimated gain 23+ patients/yr Through mitigation of outmigration X \$15,800 gain per patient	\$367,350 Recaptured gain
Estimated Net Financial Gain	\$215,591
Other Benefits	<ul style="list-style-type: none"> • Increased quality of care • Increased patient satisfaction • Improved patient outcomes • Decreased overall treatment costs due to earlier cancer detection

Appendix D

Theory U: Illustration of Change Theory Used for Improving Breast Health Care

Theory U – Otto Scharmer



Appendix E

Timeline

	January	February	March	April	May	June
Hire Nurse Navigator (NN)	Jan 15					
Start microsystem assess: NN		Feb 12	March 12			
Train MT: NN		Feb 26-29				
Steering Committee: proof promotional material: NN & Mrkt Exec			March 12-	April 9		
Metrics: research which & how: NN & Med Onc			March 12-	April 9		
MRS Trng:NN			March 22			
Start using MRS to track pts			March 23	-----	May 23	
PDSA 1: 1 st pt contact @ BX			March 1	-----	May 4	
Plan Kickoff				April 9	May 21	
Mtg w/Prvdrs: NN role				April 11		
Plan MRS trng for Docs & staff:input for metrics				April 23- April 26		
Grant meeting				April 27		
PDSA 2:NN 1 st pt contact after abnormal screen					May 2-	June 6
Meet w/providers in nearby town:NN					May 15	
Meet w/prvdrs in coastal clinic in region:NN						June 15

Appendix F

Tomo Biopsy Time Study

Date/Time Procedure Started	Bx extraction	Time to extract and spread material in petri	XRay Speciman	Separate Calcs/Non-Calcs	Total Time
03/13 1354 Dr. L	1400-1405 5 minutes	1406-1412 6 minutes	1412-1414 2 minutes	1414-1421 7 minutes	67 min 15 prep spec (22%)
03/13 1502 Dr.L	1511-1514 3 minutes	1516-1519 3 minutes	1519 > 1 minute	1519-1524 5 minutes	22 min 8 prep spec (36%)
3/20 1332 Dr. L	1347-1355 8 minutes	1355-1356 1 minute	1356-1400 4 minutes (includes waiting for cleaning of machine)	1400-1405 5 min	73 min 10 prep spec (14%)
3/20 1515 Dr. L	1522-1525 4 minutes +clip plcmt	1528-1530 2 minutes	1525-1528 3 minutes	1528-1530 2 minutes	15 min 7 prep spec (46%)
4/3 ? Dr. W	1349-1351 2 minutes +clip plcmt	1353-1358 5 minutes	1358-1359 1 minute	1359-1403 4 minutes	? 10 prep spec
4/10 1313 Dr.?	1321-1324 3 minutes +clip plcmt	1326-1328 2 minutes	1328-1330 2 minutes	1330-1332 2 minutes	19 min 6 prep spec (31%)
4/10 1435 Dr. ?	1442-1444 2 minutes	1448-1450 2 minutes	1451-1452 2 minutes	1452-1453 1minute	18 min 5 prep spec (27%)
4/24 1336 Dr. W	1358-1351 +clip plcmt	1350-1357 7 minutes	1357 <1 minute	1357-1400 3 minutes	64 minutes 10 prep spec (16%)

*Note: Some data was missing/incomplete for this time study.

Appendix G

Link for Breast Health Brochure

file:///Users/mariawatson/Downloads/ASH322%20Breast%20Health%20Bro%20April18_1.pdf

Improving Breast Health Care Through The Implementation of a Nurse Navigator

Abstract

In a rural Northern California setting, a Clinical Nurse Leader intern was implemented as a designated Nurse Navigator (NN) for a regional breast health population. The global aim of this project is to improve care for potential and actual newly diagnosed breast cancer patients by increasing access to care, decreasing barriers, and improving timeliness of care. Using evidence based on an extensive scholarly literature review, the designated NN will accomplish the aim through care coordination, thereby improving patient outcomes, decreasing outmigration of care, and increasing the financial viability of the breast health program. The ultimate goal of the breast health team is to obtain accreditation as a Breast Center of Excellence (BCoE) by the National Accreditation Program for Breast Centers (NAPBC). The NN first observed the microsystem and performed an RCA and SWOT analysis. Theory U and the IHI MFI are used to guide the implementation of the project. An existing software program, the Mammography Reporting System (MRS) was utilized to collect specific quality metrics for baseline data, and will be used to evaluate expected improvements. In comparison to the Oncology Roundtable Cancer Quality Metric Selection Tool, targeted metrics to improve include: Time from screening to diagnostics, diagnostics to biopsy, biopsy to surgery, as well as needle core biopsy rate, and outmigration of care. More time is needed for viable data evaluation for this project, although preliminary feedback is positive from patients and providers.