

Summer 8-14-2017

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Gishizky, Tiffany, "The Role of the Clinical Nurse Leader in Reintroducing and Sustaining a Successful Cancer Risk Assessment Program in a Community Hospital Setting" (2017). *Master's Projects and Capstones*. 619.
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Prospectus: The Role of the Clinical Nurse Leader in Reintroducing and Sustaining a
Successful Cancer Risk Assessment Program in a Community Hospital Setting

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N653 – Clinical Nurse Leader Internship

Summer 2017

The Role of the Clinical Nurse Leader in Reintroducing and Sustaining a Successful Cancer Risk Assessment Program in a Community Hospital Setting

With the advancements in cancer genetics and risk identification of both familial and genetically predisposed individuals, the importance of integrating risk stratification into practice is more important than ever. While some patients may not be able to avoid an inevitable cancer diagnosis, understanding risk can enhance adherence to lifestyle changes, screening practices, and even prophylactic prevention strategies.

The American Cancer Society (ACS) has amended current guidelines concerning the screening and treatment of women at average risk for breast cancer to begin yearly screening mammograms at age 45 (as cited in Oeffinger et al., 2015). The opportunity to screen beginning at age 40–44 is optional based on self-determination and consult with a physician, at which point the recommendation of annual mammography is based on the level of cancer risk for the individual. However, evidence demonstrates that of 90% of women who qualified as “high risk” for consideration of BRCA testing [as defined by the United States Preventative Services Task Force (USPSTF)] that shared this information with their primary care provider, only 20% were referred for genetic counseling (Cragun & Pal, 2013). This indicates that significant portions of the population that may be at increased risk are unidentified, and many clinicians in primary care are unaware of the familial characteristics that denote an individual as high risk. A 2012 study states that women as young as 25 who are known to have a BRCA mutation are recommended to begin screening mammography annually (Pal & Vadaparampil, 2012), an age far outside of the parameters recommended by the ACS. For individuals who may not be aware of

their risk and are following recommendations based on ACS guidelines, screening may be commencing later than it should.

Second to age, a strong family history of cancer diagnoses is the most significant indicator of determining an individual's risk for development of the disease (Amir, Freedman, Seruga, & Evans, 2010) and hereditary conditions account for roughly five to 10% of all cancers, increasing an affected individual's risk of developing cancer in their lifetime over the general population ("Integrating Genetic", 2008). Amir et al. (2010) go on to state that even without an identified genetic mutation, those individuals who present with an increased 5-year risk of developing breast cancer, based on family history algorithmic risk assessment models, benefit from enhanced screening, lifestyle changes, and preventative pharmacological and/or surgical interventions. The incentive, then, is to pursue prevention as well as curable detection; earlier diagnosis and staging that increases treatment options and improves prognosis (Caplan, 2014). Since individuals that may be susceptible to the development of cancer due to hereditary factors do not present with phenotypic clues, the importance of obtaining a comprehensive family history is the first step in identifying high-risk patients. Therefore, reinstating a comprehensive cancer risk assessment (CRA) program within the community-based breast center will potentially increase the rate of identification of moderate to high-risk patients leading to improved outcomes.

Clinical Leadership Theme

The most appropriate theme for the Clinical Nurse Leader (CNL) role in the development of this project is Care Environment Management. Embedded within this curricular element is the CNL role of Team Manager, which the CNL will demonstrate

by identifying both clinical and financial outcomes that improve patient safety, timeliness and quality of care, as well as improving efficiency and appropriateness of care delivery thereby increasing downstream revenue for the organization.

Statement of the Problem

In light of primary care provider lack of knowledge in adequately identifying moderate to high-risk cancer patients, a comprehensive CRA program would serve to identify such patients as well as provide clinician education on cancer syndrome characteristics. A previously grant funded CRA program within the microsystem was able to provide this service, but has subsequently been terminated due to institutional factors. This has led to a sharp decline in the number of patients identified and appropriately referred for services to manage their individual risk.

Project Overview

The project goal of reinstating the CRA program, with the intent to analyze and overcome barriers that led to the elimination of the previous program, will be to close the gap in at-risk patient identification and ensure proper implementation and sustainability. This will demonstrate benefit both to the community as well as the institution by potentially decreasing the impact of late stage cancer incidence while simultaneously setting the institution apart as a unique provider of such services and increasing downstream revenue. The project deliverable will be a comprehensive analysis of the program, which will be presented to both clinical and administrative stakeholders in August 2017. This analysis will include the presentation of current evidence to demonstrate the validity and need of CRA within the setting, a cost-benefit analysis of a new CRA program, and multiple staff infrastructure alternatives at each stage (initial

staffing needs with additional staff added in accordance with program growth), as well as recommendations for implementation. The specific aim at this stage of project development is to demonstrate evidence that incentivizes each stakeholder to approve the program implementation. This is a critical element required to achieve the global aim of increasing identification, stratification, and appropriate referral pathways for patients within the community that are at moderate to high-risk for genetic or familial cancer syndromes.

Rationale

Within the microsystem evaluated for this project, a community-based breast cancer clinic, a previously grant-funded cancer risk assessment and genetic evaluation (CRA/GE) program led by a Nurse Practitioner-Genetic Counselor (NP-GC) was analyzed. A review of historical data from the program indicates that the NP-GC was able to identify and consult with 2,679 patients (an average of 446.5 each year) over the program's six-year run (Mott & Coleman, 2015). Of this population, 230 patients underwent genetic counseling and 12 patients presented with genetic mutations from subsequent testing. With the conclusion of grant funding in 2014, the program was unsustainable due to lack of resources; human, financial, and time and the current program is primarily a referral-based genetic evaluation clinic. In 2015, the program received 340 referrals resulting in 221 consultations, indicating a 50% decrease in high-risk consultations. This represents the gap in care that was previously provided and the evidence of the need for the project.

Additional data analysis includes a current microsystem assessment using the Dartmouth Institute Clinical Microsystem workbooks, assessing the 5 Ps (purpose,

patients, professionals, processes, and patterns), a SWOT analysis (Appendix A), and stakeholder interviews, all of which were evaluated to conduct a root-cause analysis to identify causes for previous lack of sustainability and potential barriers to future implementation (Appendix B).

Cost Analysis

The projected costs associated with the program are primarily related to staffing. Several possibilities will be presented, with the best option for the institution to be determined by the stakeholders. The first cost decision will be to determine if an RN or an NP should direct the program. The average salary for an RN in the organization is \$50.00 per hour with an annual salary of \$104,000 plus benefits [add the industry average of 30% of salary (\$31,200) + \$104,000 = \$135,200]. The average salary for an NP is \$63.00 per hour with an annual salary of \$131,040 plus benefits for a total of \$170,352.00 (P. Olson, personal communication, June 20, 2017). An important fact to remember during the decision making process is that an NP has the ability to bill for their services, thereby offsetting the cost of salary.

Since the program will not necessarily require a 1.0 FTE at the outset, based on historical patient volume data from the previous CRA program, the program would only require a 0.4 FTE. This translates to the part-time reimbursement rate (not including benefits) of \$41,600 and \$52,416 for the RN or NP, respectively. This may be the most cost-effective way to implement the program with the intent to add additional hours and/or support staff as the program grows. However, anticipating that it may be difficult to recruit a quality candidate for a part-time position that is complex in nature, two possible solutions justify the hiring of 1.0 FTE. If an RN fills the position, the additional

time outside of what is required for the CRA program could be used in the role as nurse navigator for patients that have been referred for breast biopsy within the breast-imaging center. This would involve patient outreach at time of scheduling, pre- and post- biopsy education, delivery of test results, and hand off to the appropriate clinician. Currently, this is a role that is not fulfilled within the breast-imaging department and therefore is not meeting the standard of practice (American College of Surgeons: Commission on Cancer, 2016).

If an NP directs the CRA program, this clinician could fulfill the navigator position within breast imaging as well as assist within the cancer survivorship program by working alongside the MD in navigating treatment for all patients stratified as high-risk not appropriate for genetic counseling. As previously mentioned, the NP would also have the ability to bill for consult and navigation services, increasing the potential for increased revenue. Each of these options is outlined in further detail in the cost-benefit analysis (Appendix C). Additional costs consist of education and training expenses, genetics and survivorship provider time, office supplies, software upgrades, and a computer.

Methodology

Recommendations will be made to the stakeholders for program implementation, regardless of the staffing choice that is made. Identification of the appropriate change theory as well as anticipatory cycles of the Plan, Do, Study, Act (PDSA) model will be addressed here.

This model chosen to guide the stages of this project has been based on Rogers' diffusion of innovation. The five-step process Rogers outlined by which change occurs

recognizes the reversible nature and evolution of the change, as opposed to Lippitt's theory, which emphasizes the actions of the change agent rather than the change (as cited by Sullivan, 2013). The five steps described in Rogers change theory, as cited by Kaminski (2011), begin with the knowledge or awareness of the individual or group to the potential new innovation. From there, the second step is where interest is generated and information gathering begins in order to inform and encourage participation of stakeholders in the change being considered. Based on evaluation of the data, the third step is then to make the decision of whether or not to implement the change by envisioning the impact in the particular setting. It is at this stage that the CNL will present findings to the stakeholders. The fourth step is the actual implementation of the innovation followed by the fifth step of confirming the effectiveness of and adoption of the change. The fourth and fifth steps will be outlined below.

The CRA program will be physically situated near the breast-imaging center, which is one floor down from the breast cancer center. This is also the site of the previous CRA program. The nurse director of the program will initially undergo facility and program-specific orientation as well as guided training from the genetics and survivorship programs. Upon completion of training, implementation will begin with the nurse director soliciting patient involvement, with the defined goal of 5 new patients, in risk assessment from the patient population within breast imaging. The goal of this initial phase, defined as the first week of the program, is to establish the nurse director's competency in risk stratification and subsequent appropriateness of referral. Additionally, this time will be trialed to establish workflows to facilitate patient tracking and follow-up, as well as ensure smooth implementation of system software. This will be the data

evaluated (either success or failure) to move into the next PDSA cycle. The next one-week cycle, assuming data points indicated success in the first cycle, will be for the nurse director to intake 5-10 new patients from within breast imaging. In each of these phases the director will establish contact with each patient and initiate further risk assessment and patient/family history utilizing the software currently in use by the genetics program. The goal of this cycle will be for the director to successfully triage each referral to either the primary care provider for enhanced screening recommendations, genetics, or survivorship. The data evaluated will be the accuracy for which each recommendation is made.

After this initial implementation phase, the director will be announced to the medical group, as well as external referral sources, as the point of contact for all future risk assessment. In addition to this patient source, the director will continue to solicit interest from the patient population within breast imaging for additional program participation. Successful growth has been demonstrated through this method by the previous CRA program. Long-term data that will be evaluated to determine sustainability of the program is the percentage increase in; identification of moderate to high risk patients; the use of screening, diagnostic, and surgical procedural interventions; as well as the tracking of individual patient data that signifies follow up and continuity of care. This data is valuable as it demonstrates increased downstream revenue generation from the program and increased retention of patients within the medical group. Each of these metrics will be documented at the program start date as well as at the 3, 6, and 12 month post-implementation dates for comparison and program growth rate.

Data Sources

Microsystem Assessment

The microsystem assessment was conducted using a modified workbook as provided by the Dartmouth Institute Clinical Microsystems Assessment tools. This initial evaluation is critical in understanding the 5Ps of the breast cancer center; purpose, patients, professionals, processes, and patterns in order to plan and design a CRA program that fits into existing clinical patterns and workflows. This is particularly appropriate for this project due to the fact that a previous, similar program has existed in this setting and as such, the current stakeholders may be subject to experiential bias as to how the program should be designed or, in some cases, if it should be implemented at all. This stakeholder bias may also inhibit understanding of current processes and their evolution since the ending of the previous program.

Institutional Data

In order to accomplish the goal of demonstrating downstream revenue, the CNL student compiled a list of screening, diagnostic, surgical, and consultative services that pertain to cancer risk assessment with the assistance of the NP-GC preceptor. This list was then submitted to the coding department of the medical group to obtain the net reimbursement rates for each CPT coded procedure. This data will be compared against the historical data from the previous CRA program, specifically the volume of patients that would have been appropriately referred for each procedure. This will demonstrate the potential increase in volume and revenue, thereby offsetting the cost of the program.

Informational Interviews

Initial informational interviews were conducted a year ago during the first microsystem assessment. Additional interviews are being conducted as several changes have occurred within the organization such as a merger with Providence Health. This was deemed necessary to ascertain any shift in position from the stakeholders over the passage of time or change in organizational priorities.

Literature Review

According to the Community Health Needs Assessment for Sonoma County 2013-2016, cancer is the leading cause of death for years 2008-2010 and is significantly higher than the California rate as well as the Healthy People 2020 target (Sonoma County, 2016). The report also indicates that not only does Sonoma County have a higher incidence rate than that of the state in all cancers, the specific cancers with the highest incidence rates are breast and prostate. This highlights the need, very specifically for this community, for enhanced assessment and screening of genetic and epigenetic cancers.

While the education and active involvement of primary care providers in identifying characteristics of familial cancer risk is an important and long-term goal, the evidence is also clear in indicating the need for the integration of a comprehensive CRA program to be managed by a professional and clinically competent practitioner. Providers oftentimes are not aware of the risk indicators within a patient history that warrant further assessment, ultimately resulting in the delay of appropriate patient risk stratification and intervention. Conversely, with the increasing availability and decreasing costs of large panel genetic tests, some providers take it upon themselves to order genetic testing

without conducting pre-and post-test counseling as well as not having a full understanding of the results. This leads to more confusion, anxiety, and mistrust from the patient.

Two studies included in this review address the impact of delays in detection, diagnosis, and treatment of cancers and the outcomes of tumor staging and survivability. Two articles address the overuse of genetic testing, factors that affect benefits and harms of CRA, and provide evidence to promote the use of qualified risk assessment/genetics providers. A fifth article outlines a model of incorporating genetic cancer risk assessment in regions that do not have access to a genetic counselor by partnering the community-based medial group with City of Hope's Cancer Screening and Prevention Program Network (CSPPN). The final item in this review is a PowerPoint presentation given by the NP-GC and the CNL student's USF advisor which outlines the data pertaining to the initial CRA/GC program and is included based on it's relevance to actual evidence as it applies to the microsystem setting.

Delays in Care

In the first article, Cragun & Pal (2013) identify a delay as the lack of the primary care provider's ability to properly identify high risk patients and provide timely referral to risk assessment and counseling. The authors highlight the need for OB/GYN providers to become proficient in identifying the risk indicators present within patient personal and family histories in order to increase timely referral to enhanced risk assessment and screenings. The second article, a literature review, Caplan (2014) describes delays in diagnosis and treatment as attributable to either patient delays (seeking care) or system delays (providing care). The focus of the review is to determine the difference in tumor

staging and prognosis in the event of either cause of delay. The findings are mixed and an important factor is discussed for the heterogeneity of results: the biological characteristics of the tumor, whether it is large and palpable or slow-growing, may have more to do with outcomes as this presents both the patient and clinician with an identifiable cancer symptom. This underscores the importance of weighing personal and family history in the event that a patient could be at risk and possibly just asymptomatic.

Evidence for the Use of CRA and Genetics Specialists

Nelson et al. (2014) conduct a systematic review of current literature published from 2004 to 2013 to update the 2005 United States Preventative Services Task Force (USPSTF) recommendations for women at high risk for BRCA1 and/or BRCA2 mutations and referral for genetic counseling. The authors analyzed the benefits and harms of risk assessment, genetic counseling and subsequent testing, and preventative therapies as they pertain to patient perceptions of risk, anxiety, and depression. The benefits and harms varied relative to risk and the authors go on to state that due to the complexity of the process at every stage, the service of risk assessment and referral must be highly individualized to minimize adverse outcomes such as inappropriate over screening, false positives or negatives, and unnecessary worry or anxiety based on inconclusive genetic test results or interpretation.

In a similar study, Walker, Licqurish, Chiang, Pirotta, and Emery (2015) conducted a review of 11 randomized control trials of CRA tools to determine the impact they have on clinical utility, screening behaviors, and patient perceptions. Results of the review indicated that the use of risk assessment tools did show a benefit in improving patient perception of risk; intentions to undergo cancer screenings, and lifestyle changes,

the actual evidence of behavioral changes were not present. This study indicates the need for dedicated clinician interventions to conduct follow up surveillance on high-risk populations to promote enhanced cancer screening behaviors. Both of these studies highlight the importance of utilizing a trained clinician in risk assessment and genetics when attempting to incorporate a comprehensive CRA program.

Overcoming Lack of Access

The microsystem that is the focus of this project is fortunate to have a certified genetic counselor already in place as a resource. This is not always the case, particularly in the rural community setting. However, location does not negate the need for specialized clinicians, nor does it prohibit the establishment of a program without this resource on site. MacDonald, Blazer, and Weitzel (2010), members of Clinical Cancer Genetics Division at the City of Hope Comprehensive Cancer Center, give detailed approaches toward implementing genetic cancer risk assessment programs into the community-based setting. By detailing a delivery model based on partnering a community-based medical center with an academic institution for technical and professional support, the authors provide recommendations for expanding the knowledge of City of Hope into more rural environments.

Microsystem Site-Specific Evidence

Evaluation of the data from the previous CRA/GE program (Mott & Coleman, 2015) demonstrates the impact of the program through a community outreach model of patient participation and risk identification. Over the 5 year period of active risk assessment, the program director was able assess 10,522 patients and provide follow up consultation with 2,679 individuals. This illustrates the volume of patient capture that is

generated from active patient engagement, not taking into account the potential percentage increase through a long-term program goal of primary care provider outreach and education.

Timeline

The project, with its newly defined deliverable, will come to fruition over the months of June, July, and early August 2017 (Appendix D). Due to institutional constraints in implementing the actual CRA program, the project focus has shifted to one in which the business case for the program will be presented as this is more in line with the CNL program deadlines. The success of the deliverable will be measured by the decision of the stakeholders to move forward with the recommended next steps of program adoption.

The evaluation of the original microsystem assessment will be conducted to determine if any significant changes have occurred in the setting from the time of the first assessment. Informational interviews will then be conducted as a data source. Next, the CNL student will construct a procedural list with corresponding CPT codes and reimbursement rates which will then be compared against patient data from the previous CRA program to establish potential downstream revenue. A cost-benefit analysis will be generated using staffing data from the organization's human resources department and the projected revenue stream previously mentioned. This will then culminate in the creation of a business plan and PowerPoint presentation to be presented to the multidisciplinary stakeholders during the first week of August.

Expected Results

This program has been one that the clinicians within the breast center have wanted to reimplement since it was originally phased out in 2013. The level of buy-in from this group, therefore, was assumed at the outset of planning stages and taken into consideration when deciding how best to design and implement a new CRA program. During the first round of informational interviews that were conducted in the summer of 2016, the enthusiasm and almost impatience of the clinical stakeholders was evident. Based on perspectives from this group, it was hard to understand why this had been met with such institutional inertia. In that same time period, informational interviews were also conducted with two administrative stakeholders; the director of imaging, and the area director of operations for the medical group. Both of these meetings shed a significant amount of light on the source of resistance to a new CRA program.

The director of imaging oversees the radiology department within the hospital as well as the outpatient breast-imaging center located in the same building as the breast center. During its first incarnation, the CRA program was housed within breast imaging and conducted by the NP-GC. The program was launched with the design to solicit patient participation through the mammography clinic by having the patient fill out a tablet-based questionnaire, given by the mammography staff. The program itself was successful, however, due to lack of clarity of assigned roles and responsibilities, the imaging staff felt burdened by the additional work. Add to this personality conflicts and assumptions of willing participation and the environment became toxic. This was all explained to the CNL student by the imaging director only after the student had assured him that his frank honesty would help in the evaluation of potential impacts of the

program and how best to laterally integrate in the future. In a subsequent meeting with this same individual conducted on June 20th, 2017, a revised proposal was made of the integration of a new role, that of the RN or NP CRA director, within his department to oversee the CRA program as well as fill the gap in current patient-centered care by acting as the nurse navigator for breast biopsy patients.

The second administrative stakeholder interview involved the area director of operations (ADO) whose oversight is of the medical group service line. It was clear during this meeting that the ADO was very aware of the breast clinicians' desires to bring back the CRA program, however, the structure of any communication had been siloed between vested parties. Clinical stakeholders did not effectively communicate their ideas for methods of implementation nor offer any insights into overcoming conflicts that led to the erosion of the previous program. With the responsibility to the financial health of the medical group, the ADO could not see the benefit of resurrecting a program that does not increase the bottom line. In addition to this, the ADO feels that the NP-GC should be able to see more patients during the day and argues that the CRA program will only serve as a feeder for the genetics program, which he believes is already overwhelmed.

The outcomes of these two interviews have had the most impact on the direction and planning of this project. By taking what the director of imaging shared and offering him solutions to the conflicts he had to mitigate from the first program, the second meeting was very productive. By proposing the solution of a shared FTE with the design of the infrastructure to grow along with the program and presenting a cogent plan, the director expressed optimism for the program moving forward. The director gained additional confidence when the program design was explained to be a stand-alone CRA

clinic, which would not place his staff in direct contact with the individuals with whom original conflict had arisen. After the interview with the ADO, insight was gained as to how best to offset expense in the beginning stages of the program and provided inspiration to delve deeper into potential revenue sources for the program as well.

As the evidence to the benefits of a CRA program on clinical outcomes is abundant, there can be no argument against the implementation based on its virtues of patient-focused care. However, good intentions and clinical improvements can be derailed if not properly introduced and managed. By acting as the liaison between the vested parties, the CNL was able to listen to concerns and priorities and integrate the shared and individual values in the design and focus of the project. It is for these reasons that the expected outcome is to be one of adoption and forward momentum of the program implementation.

Nursing Relevance

The tools required to effectively evaluate a quality improvement project in the clinical setting are numerous. The nurse must have the clinical knowledge to assess where a gap in care exists, as well as to determine the interventions that will potentially improve outcomes. Secondly, the nurse must be able to objectively evaluate the environment including setting, culture, habits, and external influences, to determine if the project will be feasible in that location at that time. In other words, even with the best intentions not all projects are a good fit in every microsystem.

The elements of this project are two-fold. The first is the element of increasing the knowledge base within the contexts of hereditary and family history as it pertains to cancer risk. Improving the understanding in all nurses, regardless of specialty, of the

hallmark characteristics within a patient's personal or family history that indicate potential increased risk facilitates the earlier assessment, identification, and appropriate intervention for each individual. As nurses are oftentimes the frontline clinicians that conduct extensive histories, this increased level of awareness could help to mitigate disease incidence as well as increase curable detection, which often leads to greater treatment options and more favorable prognoses.

The second element is that of objective auditing. This role is critical in expanding the credibility of the nurse, as it requires the objective evaluation of the feasibility of an improvement being considered and removing bias based on emotion or passion. It is one thing to see where there is a gap in care and have the evidence-based solution ready to roll out, but if the nurse lacks the ability to identify all the stakeholders at each level of involvement, recognize the financial impacts, or assess the climate of the environment and its readiness for change even the best quality improvement initiative will hit a proverbial wall. The advancement of nursing involves the ability to expand the scope of thinking to beyond that of just a front line clinician. The nurse must think in the best interest of all vested parties; patients, families, staff, organization, and community.

Project Summary

Over the course of a year, the CNL student has revised the original project aim of the actual reintroduction of a CRA program to a focus of creating a value proposition with the intent to garner administrative and clinical stakeholder support. The clinical setting of this evaluation is a midsize community hospital with an accredited cancer program and breast center and affiliated medical group/provider network. Since 2016, the CNL student conducted a microsystem assessment and developed an action plan to

reintroduce a CRA program in a clinically complex and politically challenging work environment.

After completion of initial microsystem and previous CRA program assessments, the methods for the future program valuation include several diverse data sources. A literature review of similar program establishment was conducted to determine the infrastructure needs and develop a proposal which addresses and overcomes the personnel and logistical issues related to the first CRA program. A patient pathway flowchart was created to differentiate between the future CRA program, the current Genetic Evaluation and Management practice, and the Survivorship program (see Appendix E).

A comparison of historical CRA volume to the current patient volume within the Genetic Evaluation and Management program revealed a roughly 50% decrease in potential high-risk patient capture. The CNL student compiled a list of relevant screening and diagnostic procedural codes and associated Medicare net reimbursement rates, which were then applied to the potential patient volumes to determine estimated downstream revenue. Organization market share (30%) was applied to population data related to high-risk indicators to demonstrate additional sources of potential revenue. Personal communication with the organization human resource department was conducted to determine future program clinician and clerical staffing reimbursement rates. This data was applied to the standard benefits rate of 30% to calculate staffing infrastructure costs which, along with orientation and training expenditures, were then added to capital expenditures to create estimated program expenses. Information from both data sets was used to create an Initial Financial Impact Analysis (see Appendix F).

Conclusion

The reintroduction of a comprehensive CRA program within this clinical setting will add value to the community hospital and the medical group/provider network as well as enhance the level of patient/family centered care. The recommendation to the organization, based on data evaluation, is to conduct a complete financial analysis and business plan within a shared partnership, funded equally by the medical group and the hospital.

To restate, the clinical value on quality outcomes of a program such as this is not the subject of debate. Rather, due to lack of interdepartmental communication, biases, and shifting clinical and organizational priorities the benefits of a future CRA program became undermined by the siloed nature of conflicting values. The requirement became to inject into the setting an advocate of the program and its outcomes with the intent to objectively assess the environment and its readiness for change; culturally, logistically, and financially. The role of the CNL student in this capacity has resulted in the demonstration of a valuable resource. The CNL student has been able to perform as patient advocate, systems and risk analyst, and outcomes manager, as well as a facilitator of communication to understand and verbalize common goals.

In spite of the evolution of this project from a tangible program implementation to that of a value proposition, the shifting focus of this project highlights the dynamic nature of the health care environment. The skills learned by the CNL student have been in a real world context, with far reaching application toward future endeavors.

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Appendix A

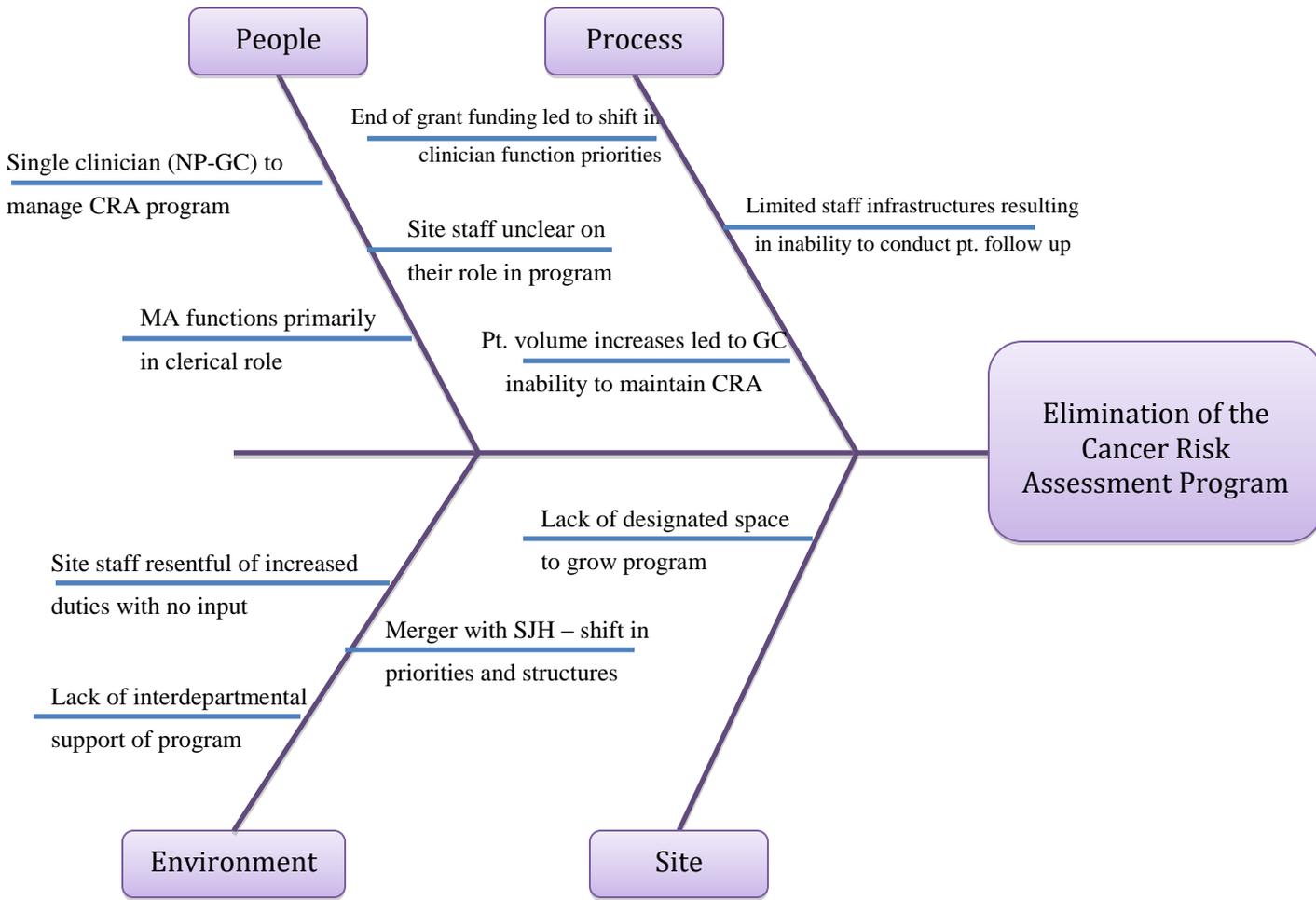
SWOT Analysis

<p>S</p> <p>Strengths</p> <ul style="list-style-type: none"> • Genetic counselor currently on staff • Established multi-disciplinary breast oncology team with weekly tumor board meetings • Program support from clinicians • Blueprint of pre-existing program to evaluate, build upon, or redesign to ensure sustainability 	<p>W</p> <p>Weaknesses</p> <ul style="list-style-type: none"> • Fractured EHR system leading to redundancy of data collection or inability to access pertinent patient records • Lack of human resources (i.e. IT, support staff) • Lack of prioritization of program during institutional mergers • Lack of follow up in previous program to track outcomes (patient and financial) • Modest institutional support
<p>O</p> <p>Opportunities</p> <ul style="list-style-type: none"> • Opportunity for a stand-alone Cancer Risk Assessment program that does not currently exist in the market • Current literature and media reporting of the benefits of genetic evaluation and prevention/curable detection methods for at-risk patients could lead to high interest in the community • Expand the number of patients seen through referral and direct marketing sources • Increase the identification of moderate to high risk patients to begin custom screening and treatment 	<p>T</p> <p>Threats</p> <ul style="list-style-type: none"> • Unknown source of funding for program implementation • Existing Cancer Risk Assessment programs embedded within competing facilities (Sutter, Kaiser)

Appendix B

Root Cause Analysis

Fishbone Diagram



Appendix C

Cost-Benefit Analysis

Cost Item	Part-Time 0.4 FTE		Full-Time (Incorporates Nurse Navigator Role) 1.0 FTE	
	RN	NP	RN	NP
Staffing				
Salary	\$41,000.00	\$52,416.00	\$104,000.00	\$131,040.00
Benefits	N/A	N/A	\$31,200.00	\$39,312.00
Training	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00
Staffing Subtotal	\$42,000.00	\$53,416.00	\$136,200.00	\$171,352.00
Survivorship/GC provider time	\$3,000.00		\$3,000.00	
Office Supplies	\$1,000.00		\$1,000.00	
Software	\$1,500.00		\$1,500.00	
Hardware	\$4,000.00		\$4,000.00	
Startup Subtotal	\$9,500.00		\$9,500.00	
Total	\$51,500.00	\$62,916.00	\$145,700.00	\$180,852.00
Benefit Item				
Increased early detection and diagnosis in patients of first or second cancers				
Increased identification and stratification of patients at risk for hereditary or sporadic cancer				
Increased treatment options in identified patients resulting in prevention and/or curable detection				
Increased patient volume into the organization by offering a comprehensive cancer risk assessment program				
*Increased downstream revenue related to enhanced screening/diagnostic/surgical procedures				
Increased patient satisfaction and retention related to concurrent implementation of the nurse navigator role in breast biopsy				
*Cost offset through the use of a Nurse Practitioner in the new role through clinician billable time				

*Indicates benefit items quantified within the Initial Financial Impact Analysis (see Appendix F)

Appendix D

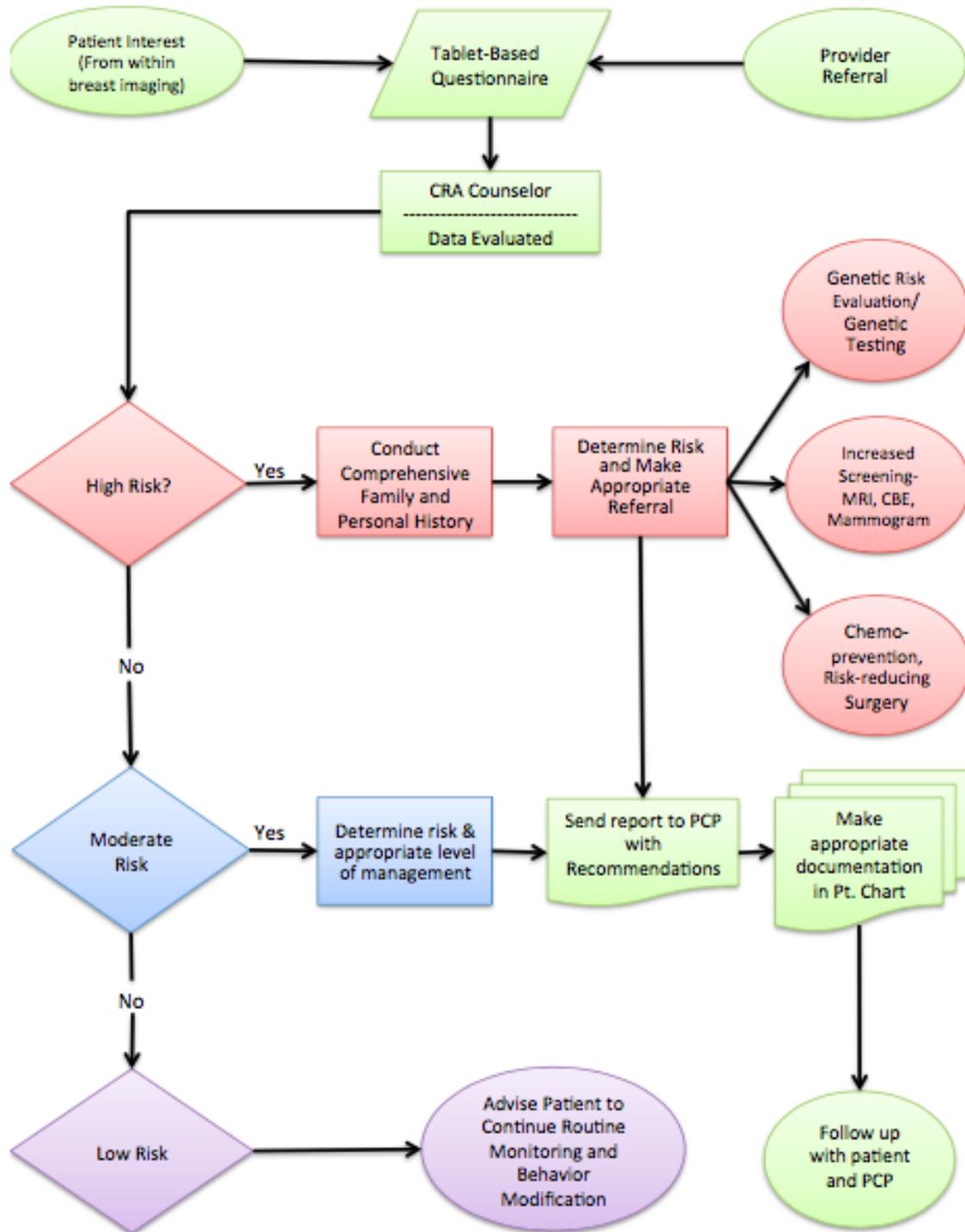
Gantt Chart Timeline

May 29 – August 12, 2017

Tasks	May	June				July				August	
Microsystem assessment											
Determine additional data sources											
Conduct informational interviews											
Synthesize data from literature, inf. Int., financial reports											
Creaste cost-benefit analysis											
Create business plan											
Create PowerPoint presentation											
Review presentation materials with Preceptor											
Present to multidisc. stakeholders and determine outcome											

Appendix E

Recommended Patient Flowchart – Future CRA Program



Appendix F

Initial Financial Impact Analysis

Operating Expense	Pilot Program (0.4 FTE)	Ongoing Program (1.0 FTE)
Nurse Practitioner Salary (1.0 FTE includes benefits)	\$52,416.00	\$170,352.00
NP Training	\$4,000.00	\$1000.00
Medical/Administrative Assistant (incl. benefits)		\$58,136.00
Total Operating Expenses	\$56,416.00	\$229,488.00
Capital Expense	\$6,500.00	\$2,500.00
Total Program Expense	\$62,916.00	\$231,988.00

Revenue Source	# of Patients/Year	CPT code Net Medicare Reimbursement Rate	Total
Screening MRI	119	\$589.73	\$70,177.87
Whole Breast Ultrasound (Automated)	1,145	\$116.97	\$133,930.65
Colonoscopy	14	\$321.92	\$4,506.88
NP Risk Consult	437	\$59.04	\$74,980.80
Total Annual Revenue			\$283,596.20