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Reducing Wait Time of Chemotherapy and Biotherapy Administration to Inpatients by Increasing the Numbers of Chemotherapy Providers

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Clinical Leadership Theme

The CNL competencies that relate to developing my project are System Analyst Risk Anticipator and Educator. As a risk anticipator, we must examine our microsystem to identify potential risks that could threaten the care and safety of our patients. Therefore, we must make appropriate adjustments and actions to prevent and minimize those risks before it occurs (AACN, 2006). After evaluating my microsystem within the Oncology unit, it was noted that the timeliness of chemotherapy delivery to patients is adversely affected by the limited numbers of chemotherapy providers. Therefore, as a CNL and acting in the role of an Educator, I will be facilitating a group of nurses for professional learning and development through the implementation of study sessions to obtain their provider cards in chemotherapy and biotherapy to increase the numbers of chemotherapy providers.

Statement of the Problem

The numbers of certified chemotherapy providers have dropped tremendously since 2014 due to changes in renewal from the Oncology of Nursing Society (ONS). Oncology nurses were able to renew and be chemotherapy certified through “live” classes or simple online courses, however, changes have been made to require all oncology nurses to take the online chemotherapy course that are consisted of four discussions and one final exam since 2014. Many nurses were reluctant to renew their provider cards due to this change and some have tried to pass the course twice without any success. As a result, we currently have 44% nurses on the Oncology unit that are not chemotherapy certified and are unable to provide oncology services to our patients. Due to shortage of chemotherapy providers, often times, there are not enough providers in the hospital to travel to other units to give chemotherapy treatments which resulted

in delay of treatments and lower patient satisfaction. The purpose of this project is to motivate the staff to be certified again or to be certified as chemotherapy providers by offering study sessions and resources during the course of their ONS online class. By increasing the numbers of chemotherapy providers on an Oncology unit will provide better staffing, decrease the wait-time of chemotherapy administrations, and ultimately means better patient satisfaction.

Project overview

The goals of the project are to decrease the wait-time by 25% (from 5 hours to 3.75 hours) of delivering oncology care and treatments to our patients by January 2016, and to increase the numbers of certified chemotherapy and biotherapy providers by 25% (6-8 nurses) by December 2015. As a result of these positive improvements, we are hoping that patient satisfaction and HCAHPS scores are higher. This project will demonstrate to management the positive benefits of providing study groups and study sessions to our colleagues to increase the numbers of chemotherapy providers on the unit, and will motivate the nurses to apply for renewal or be chemotherapy providers. Furthermore, it will provide support to our nurses to help minimize anxiety and stress of taking the course, especially for the nurses new to oncology; and to ultimately in hopes to empower nurses to be Oncology Certified Nurses.

The IOM categories that relate to my project are safe, time, efficient and effective. It is related to safe category because we want to minimize harm and prevent potential harm to patients. Having an “oncology unit” with most staff nurses not chemotherapy and biotherapy certified poses safety risks to the oncology patients at the unit. Patients deserve competent and safe care. Time is affected because if there’s an overflow of oncology patients on the unit and there are not enough certified chemotherapy nurses, how could we provide timely chemotherapy

treatments to our patients! Patients often have to wait hours to get their chemotherapy due to limited chemotherapy providers, especially for those patients not on the Oncology unit. Our hospital's policy requires a chemotherapy-certified nurse to give all chemotherapy, biotherapy, and hazardous agents to our patients, including oral agents. To be compliant with the policy and procedures as mandated by the hospital, a Chemotherapy nurse will have to travel to other units to provide the treatments even for simple oral agents that patients have been taking in the past. As a result some of these patients are not satisfied due to prolonged wait to get their pills. Furthermore, time relates to efficient care as well. The unit will not be efficient because "fragmented healthcare promotes wasted time, effort, materials, and trust" (AHRMM, 2015). As a result, having more chemotherapy providers on the unit will increase efficiency and better staffing; allowing more nurses to care for Oncology patients throughout the hospital. Lastly, it is related to effective because we need clinical expertise to provide competent oncology care across the unit and not just by certain nurses.

The aim is to improve the timeliness of chemotherapy treatments and medication deliveries for our Oncology patients throughout the hospital by increasing the numbers of chemotherapy providers. The aim statement is related to the global aim statement because as an organization, patient satisfaction and medication timeliness are important goals that will affect HCAHPS scores and hospital reimbursement in general. Furthermore, patient safety and patient clinical outcome play roles in the project because not having proper staffing and with limited staff knowledgeable in Oncology; it will affect the level of patient education we could provide to our oncology patients. Therefore, the overall care the patient receives during their stay is adversely affected.

Rationale

Forty-four percent of the nurses on the Oncology unit are not chemotherapy certified as providers since 2014. Due to the low numbers of chemotherapy providers and nurses lack motivation to renew their chemotherapy provider cards, members of the Staff Nurse III/IV Committee had a meeting with me and the manager on the unit to discuss ways to increase the numbers. We have decided to provide study sessions and study groups during the course of online chemotherapy course to provide support and resource to our fellow colleagues. After performing a general survey (Appendix C) with 15 nurses completed the survey, four barriers were identified. They include: the renewal course appears to be difficult; the unit hardly has any oncology patients requiring chemotherapy treatments; I don't feel knowledgeable and/or comfortable with chemotherapy administration; and the cost of the course, if not successfully passed; will not be reimbursed. Furthermore, only 40% of the nurses were comfortable providing chemotherapy, and only 30% of the nurses were comfortable providing patient education as it relates to oncology.

Patient chemotherapy administration cases were audited from April to May 2015. Sixteen chemotherapy administration cases were audited by reviewing the chemotherapy log (Appendix D) for oncology nurses who have to travel to other units, it was noted that the wait-time for administration ranged from within the hour to 15 hours from the order time. With only 5 cases within the hour and 11 cases were all over 4 hours or more wait-time. After meeting with the Manager of Performance Improvement and Patient Experience, HCAHPS scores for our hospital were obtained and reviewed. It was noted that the score was 67.33% in 2013 compared to 65% in 2014, and our goal or benchmark is 82.55%. The hospital pays very close attention to these scores as it relates to reimbursement and patient's satisfaction of the care and services they

receive at the hospital. The hospital still is quite far from the goal at this point. The Manager of Performance Improvement stated that medication education and communication is one of their primary focuses to improve as an organization. Although, there's no specific question on the survey that relates to the timeliness of chemotherapy or medication administration or delivery, but it has an overall impact on the scores as it impacts patient satisfaction. A root cause analysis using fishbone diagram (Appendix A) and SWOT analysis (Appendix B) were done to provide insights on the project.

Increasing the numbers of chemotherapy nurse providers will help minimize the wait-times of chemotherapy delivery within the hospital and maximize staffing on the Oncology unit so more nurses could travel to other units to give chemotherapy treatments, and better patient satisfaction as patients have expressed complains on the wait for the treatments especially on oral agents.

Methodology

The main objective is to improve timeliness of chemotherapy administration for all oncology patients within the hospital by increasing the numbers of chemotherapy providers through study sessions and study groups for the nurses. The goal is set at 25 % reduction in wait-time (3.7 hours or less) from the time the medication is ordered to the time the patient receives the medication. The specific change to be tested is whether or not having more certified nurses on the unit will improve the timeliness of chemotherapy administration by minimizing wait time, hence, patient satisfaction and HCAHPS scores will be improved.

I believe Quinn's Theory will help me with the development of my CNL project. My project focuses on staff's re-certification and certification as providers of chemotherapy and biotherapy

to help improve patient experience and timeliness of chemotherapy delivery in the inpatient setting. The Theory stated that when a hospital "accepts the status quo", it will experience a "slow death" of staff feeling burnout, energy deprived, hopeless or trapped. This Theory could help my CNL project by allowing me to understand and learn what I can do to help make necessary changes to transform my microsystem in order to prevent this "slow death". The Theory stated that we need to empower the staff and make deep changes not just the organizational layers but within the staff members in order to be successful in driving the change (Kaminski, 2000). My project requires changes within the staff members to be motivated to be chemotherapy certified and providers so we could have more nurses to be able to travel to other units to give oral or IV chemotherapy since many of the patients have to wait over 4 hours for their treatment.

I will use this change theory to guide my project by following its concept on the need to take on deep change that promotes understanding of the situation, the need to accept within the microsystem, and what adjustments we need to make in response to the situation. Nurses need to be motivated to be chemotherapy and biotherapy certified, they need to understand and realize that with limited chemotherapy providers, in house, patient care and satisfaction will be adversely affected. In order to prevent this "slow death", we need to increase the number of providers by offering study sessions and study groups as a way to motivate and provide support to our nurses. The Theory allowed me to visualize better on the process and direction for the project. The role of the Educator is related because it involves teaching and using learning principles to help facilitate the learning of a group of nurses by implementing the study groups and sessions.

Following the PDSA model (Appendix G), I need to implement various actions to implement the project. First of all, I need to obtain five education leave days for all the nurses taking the course from staffing and management. Five study sessions will be set up with the nurses taking the course so I could provide support and act as a resource during the sessions starting August 17th until September 24th 2015. Three days in the hospital's computer lab have been reserved for the sessions, and two off-campus (face-time) sessions arranged as well. Prior to August 17th, 4 handouts and highlights of the 4 discussion topics as required by ONS Chemotherapy and Biotherapy course will be created for nurses to review and to be used as discussions during our study sessions. We aimed initially to have at least ten nurses attend the study sessions; however, one is unable to attend. We have 4 nurses attend in August and 5 in November 2015. We aim to have 6-8 nurses successfully pass the ONS course and be certified by December 2015.

Inpatient records of delivery times for chemotherapy treatments will be audited and results will be compared by analyzing the order time with the actual time treatment was given. The pre-project (April and May 2015) results will be compared to the post-project (November and December 2015) results. Nurses are required to login the information (patient, unit, chemotherapy agent, time and date, and staff giving and double-checking the agent) in the chemotherapy log when they have to travel to other units. This log was reviewed and audited for the pre-project results for the months of April and May. Post-project (November and December) will be audited to compare with the pre-project results. The general survey assessing nurses' comfort level of chemotherapy administration and patient education will also be reviewed and pre- and post-project results will be compared. At the end of all the study sessions and study groups, I will have the nurses evaluate the study sessions for feedbacks through a survey

(Appendix F). In addition, the Manager of Performance Improvement and Patient Excellence has given me access to Avatar, a program for hospitals to view their up-to-date HCAHPS scores and patient survey results by departments, for up-to-date HCAHPS scores and our hospital's performance by the department. This has given me insights on our scores and different areas affecting patient satisfaction. To further investigate on other possible reasons or causes of delays in chemotherapy deliveries and administrations, a survey to nursing and pharmacy staff will be created and used.

I will know our team has reached our desired goal when there's a 25% increase in certified nurses on the unit to give chemotherapy treatments and the patient wait-times are less than 3.75 hours for obtaining their treatments as evidenced by comparing the pre- and post-project results from the audits, nurses are motivated to obtain renewal and certification with a better comfort level of delivering chemotherapy by comparing pre- and post-survey results, and hopefully with higher patient satisfaction scores on the HCAHPS for the unit so we could be closer to our hospital's benchmark score of 82.55.

Data Source/Literature Review

The project site is an urban community hospital in Northern California with a diverse population and a high population of Asians and socioeconomically disadvantaged patients. The population of my project is Oncology patients on the Medical/Surgical Oncology unit and patients requiring oncology treatments in the hospital. As mentioned previously in the audits, 11 cases of chemotherapy administration from April to May required a wait-time of 4 hours or more with only 5 cases within the hour. Furthermore, of those 11 cases, 3 of them required more than 8 hours of wait-time to receive their chemotherapy. Often times, other floors have to call the Outpatient Oncology Clinic for the nurses to travel to other non-Oncology units to give

treatments because Inpatient Oncology nurses were unavailable. This delay of treatment could potentially affect our oncology patients' care and outcome, and decrease their satisfaction with our hospital. Forty-four percent of the nurses on the Oncology unit are not active chemotherapy providers since 2014. To understand why the nurses are not renewing or obtaining their chemotherapy cards, pre-project survey was done to assess barriers of these nurses. As mentioned previously, four barriers were identified. Furthermore, only 40% of the nurses were comfortable providing chemotherapy and only 30% of the nurses were comfortable providing patient education as it relates to oncology.

These data showed us it is imperative that our hospital increase the numbers of chemotherapy certified providers so the delay of chemotherapy treatments will be minimized, patient will receive more timely care, staff will be more comfortable and confident in oncology treatments and education after successfully passing the course, and ultimately patient satisfaction could be improved from a 65% on our HCAHPS scores to a closer 82.55%.

According to the American Society of Clinical Oncology (ASCO), we must maintain clinical expertise for our oncology patients. To demonstrate patient safety and clinical expertise, we must have a team of nurses with the knowledge and skills to provide specialized care (ASCO, 2012). My PICO statement states that "To increase the number of chemotherapy and biotherapy certified providers on an Inpatient Oncology unit in order to minimize delay and wait-time of oncology treatments for our oncology patients, hence improve patient satisfaction and HCAHPS score: Does offering study sessions and study groups motivate and increase the number of providers on the unit and will the increase of providers improve the timeliness of chemotherapy administration? As a result, will it have a positive effect on patient satisfaction scores?"

After reviewing the literature, several studies have shown that it is evident that hospitals with higher numbers of nurses with specialty certification have better patient outcomes and lower odds of mortality and failure-to-rescue (McHugh et al., 2013; Kendall-Gallagher, 2011). These findings are related to my PICO statement in that it demonstrates when nurses are specialized in their care with certification, patient benefits with better outcomes. Having more certified providers for our Oncology unit will greatly benefit our oncology patients where our nurses will be at a competent level of giving treatments and providing education. Furthermore, these nurses will be more knowledgeable and more experienced handling oncologic emergencies after successfully passed their provider course and test, and after their clinical rotation at the Infusion Center.

Furthermore, increase certification rate could improve patient care, improve nursing recruitment and retention (Seaman & Bernstein, 2010), which ultimately improve perceptions of overall workplace empowerment as noted by Krapohl, Redman & Zhang (2010). These findings are related to my PICO statement for the same reasons mentioned above. Furthermore, it also provided insight on the importance of nursing recruitment and retention, and better perceptions of workplace empowerment. As noted by the Bureau of Labor Statistics' Employment Projections 2012-2022, we will need about 1.05 million nurses by 2022, and the shortage will continue across the nation from 2009 to 2030 due to the aging baby boomers (AACN, 2014). With the knowledge that there's an ongoing nursing shortage, we must value our staff and continue to motivate them by providing support and educational growth within the hospital so that they will feel empowered to advance in their career. As a result, they will feel valued as an employee by the hospital, and they will be more likely to stay with hospital. Current turnover rates in hospitals is about 17.2% costing hospitals an average of $36,000 to $57,000 per a

bedside nurse that could average out a total turnover capital loss of $4.9 million to $7.6 million (NSI Nursing Solutions, 2015). Financially, it is important to retain our nurses especially those with specialties.

An interesting prospective cohort study by Gupta, Rodeghier & Lis (2015) demonstrated the importance of patient satisfaction and patient outcome in a group of Oncology patients. In the study, they evaluated the overall survival of non-small cell lung cancer patients by looking at their satisfaction with service quality. It was noted that when these oncology patients were "completely satisfied", they have a significantly lower risk of mortality in both the univariate analysis and a controlled multivariate analysis (stage at diagnosis, prior treatment history, age and gender). Therefore, it is crucial for our oncology patients to receive completely satisfactory service and care during their stay since we care about their outcome and would love to see survival benefits simply by providing excellent care.

The study *Improving Wait Time for Chemotherapy in an Outpatient Clinic at a Comprehensive Cancer Center* at MD Anderson had a similar goal in decreasing the wait time of chemotherapy treatments for their oncology patients. The study setting was outpatient instead of inpatient, but this study provided me with insights on other possibilities that could cause delays in the chemotherapy treatments besides the limited number of chemotherapy providers. Therefore, it is essential to evaluate the microsystem as a whole and the importance of doing a root cause analysis. Moreover, having a measurable goal is equally important when doing the project. The result of the study also demonstrated that most of the patients were dissatisfied from the clinic because of the delay in getting the treatment. This study is related to my PICO statement in that it shows the patient satisfaction is directly related to the timeliness of getting

their treatments. As a result, decreasing the wait-time of 25% at my hospital, patient satisfaction could potentially improve.

These findings is connected to my CNL project by providing evidence that having higher number of certified nurses, patient outcomes are positively influenced and improved. Therefore, it is essential that our hospital increases the number of chemotherapy providers and certified nurses so we could better care for our oncology patients and minimize their wait time for chemotherapy treatment! By offering study sessions and study groups during their online course time-frame, our nurses will too feel empowered and supported because they will not be alone and there's team effort to be successful within our microsystem. In turn, we could have a better retention and happier nurses. Furthermore, decreasing wait-time equals to happier patients!

Timeline

The project will consist of different phases and steps. As noted in Appendix E, the outline of the timeline is provided. The project started with communicating with my preceptor and management about different topics I should focus on for the semester at the end of May. Met with Staff Nurse III/IV Committee members in May as we had a meeting regarding the low rates of chemotherapy providers on the unit and how we can motivate the nurses to renew or obtain certification. The topic for my project was finalized during the first week of June at the start of the semester since management and the committee felt this could help improve the numbers of chemotherapy providers on the unit. An email was sent out to all the nurses and the manager on the Oncology Unit during the first week of June regarding the project and the purpose, and a copy was posted to the nursing lounge as well for those without email access. Information on the requirements and future course dates of the ONS online chemotherapy and

biotherapy course was provided to the nurses. A sign-up sheet was posted and emailed to all the nurses asking which course dates they would prefer to sign-up as a group. Staff Nurse III/IV members on the unit from various shifts will communicate the project to the nurses on their shift, and see who may be interested in signing up for the course.

A pre-survey was created and used for nurses to identify barriers of not renewing or obtaining their chemotherapy provider cards was done in June. Literature reviews and finding articles related to the topics were done during Module 4 on June 15th 2015. Ten nurses expressed interest in the study groups and sessions. After reviewing the sign-up sheet, not all the nurses would like to take the course from August to September 2015, so another group will be taking the course from in November. Two study groups will be formed. The project will then be continuously until I have all ten nurses take the course and the exam. Using the chemotherapy log on the unit, I audited 16 cases from April to May of chemotherapy administration, on June 26th 2015, where the nurses have to travel to other units to compare the actual order time and administration time. These data will be used as the pre-project data. Post-project data will be collected from November to December for the first group in January.

I met with the Manager of Patient Performance and Patient Excellence on July 2nd 2015 to go over HCAHPS score and our hospitals performance level. Access to Avatar to monitor these data was provided to me on July 2nd 2015 so I could continuously monitor these data. A survey to assess their feedbacks regarding the study groups and study sessions will be created by August 17th 2015. Post-project survey on the nurses' comfort level and motivation level of renewing or obtaining certification as providers will be done during the last study session. The data will be posted in the nursing lounge by October. The results will be provided to the Unit Manager to be shared in Staff Meetings in October. By July 15th 2015, nurses will choose

educational leave days for our study sessions for the first group, and will communicate that information to management and staffing. By July 20th 2015, I will reserve those dates for the computer lab for us to use during the study sessions. By August 17th 2015, handouts and highlights of 4 discussion topics as required by the ONS Chemotherapy and Biotherapy Course for nurses to review and to discuss during our study sessions will be finished. First round data will be shared with management and staff in January at a staff meeting. HCAHPS scores will be reviewed and compared to see if there are changes prior to and post project. Data after the nurses successfully passed their course and when they are giving chemotherapy on the unit, the wait-time of chemotherapy administration will be compared to pre-project data to see if there's any improvement or if the wait-time has reached a 25% reduction. The projected date of completion for the project is February 2016.

Expected Results

The outcome I presently expect or imagine is after nine nurses successfully completed their provider course, the wait-time for oncology treatments will be reduced and hoping to reach our goal of 25% reduction (3.75 hours or less) as noted in Appendix H. Of the 9 nurses taking the ONS online course, we are expecting a success pass rate of 6 to 8 nurses (67 % to 89 %). From the post-project surveys, I am hoping the nurses will find the study sessions/study groups helpful in guiding their certification. The conclusion that will emerge from this study is that patient satisfaction is positively influenced by a shorter wait-time in receiving their chemotherapy treatments and hence a higher HCAHPS score for the hospital. As a result, the hospital will get better reimbursement. Nurses will be more motivated to take the course when study sessions are offered and resources are provided.

Nursing Relevance

The importance of staff empowerment and constantly strive for educational growth and certification are essential to the nursing profession. With the medical profession, we must continue to educate ourselves to improve patient care and patient outcomes as changes to knowledge and clinical practice are constant. Patient greatly benefits from the care they received from certified nurses and specialty providers as there's more experience and knowledge required to care for them, and as evidenced by research. Furthermore, staff will feel valued and confident in the profession as they obtain more my certifications and knowledge. Therefore, the staff will more likely to strive for changes and updates to find ways to improve and be better as an organization and as a practitioner.

Having more chemotherapy providers on the unit will improve the level of patient education the patients receive during their stay, and there's more flexibility of staff for the hospital. The hospital will not be relying on a limited numbers of chemotherapy nurses to provide competent care to our oncology nurses. Furthermore, similar study sessions could be held for specialty certifications for other units in the hospital if the results are positive.

Summary Report

The purpose of my CNL project is to decrease the chemotherapy administration wait-time for adult oncology patients by increasing the numbers of certified providers. Unfortunately as an oncology unit, about 44% of the providers are not active chemotherapy providers. As a CNL, we must constantly evaluate our microsystems to improve our clinical practice and standards for the benefits of our patients, organization, and our clinical growth. Four barriers for not taking the online course were identified through surveys (course difficulty, low census of oncology

patients, lack of knowledge or uncomfortable giving chemotherapy, and the cost of the course if failed). A RCA fishbone diagram was done along with a SWOT analysis and was noted that the lack of chemo-certified nurses contributed to a prolonged wait-time for chemotherapy administration. Chemotherapy administration records were audited from April to May 2015. It was noted that the average wait-time was over 5 hours.

Fulfilling the role of an Educator, study sessions and study groups will be provided by an Oncology Certified Nurse (OCN) to the nurses to promote taking the ONS online course. Two groups were formed with one in August 2015 and the other November 2015. Total nurses enrolled are nine. Each group will meet 5 days with paid education leave and tuition reimbursement. Surveys will be distributed to the nurses at the end of the course to evaluate the effectiveness of the study sessions. Another audit will be done to compare the administration wait-times by January. Results will be analyzed and shared with unit and management in January 2016. The goals are to increase the numbers of chemotherapy providers by 25% by November 2016, and decrease chemotherapy administration wait-times by 25% by January 2016 (Appendix H).

My project has gone through modifications since the planning stage. However, the goals remain the same in increasing the numbers of certified chemotherapy and biotherapy providers and decreasing wait-times of chemotherapy administration in the inpatient units. I will continue to be the Oncology Nurse Champion for the project and for my work by providing study sessions and act as a resource for my nursing colleagues as they renew or take the ONS online course to be certified providers. As mentioned previously in my discussion, two of our hospital's core values are stewardship and excellence by "cultivating the resources entrusted to us to promote healing and wholeness, and exceeding expectations through teamwork and innovation" to

provide excellent and quality patient care (dignityhealth.org)). Therefore, my project will promote our hospital's mission by increasing the numbers of chemotherapy providers, minimizing wait-time for chemotherapy administration, and improving patient care.

The project allows our nurses to advance in their education and knowledge to promote competent oncology care to fit our hospital's mission of Excellence! Nurses are encouraged to enroll in the course and feel there's support from the unit and the hospital as their tuition are reimbursed and are provided 5 educational-paid days to take the study sessions. Patients will be happier to have a lesser wait-time to get their chemotherapy treatments and ultimately means better patient satisfaction. The hospital and manager have shown support as the project will improve patient care and increase certified providers to provide competent Oncology care.

Reference

AACN (2006). *AACN end-of-program competencies and required clinical experiences for the clinical nurse leader*. Retrieved from http://apps.aacn.nche.edu/CNL/pdf/EndComsgrid.pdf (Links to an external site.)

AACN (2014). *Nursing Shortage*. Retrieved from http://www.aacn.nche.edu/media relations/fact-sheets/nursing-shortage

AHRMM (2015). *Supply chain services professional's role in achieving the Institute of Medicine's six aims for improvement.* Retrieved from http://www.ahrmm.org/ahrmm/news_and_issues/issues_and_initiatives/IOM6/ (Links to an external site.)

Dignity Health (2015*). Mission, Vision, and Values*. Retrieved from http://www.saintfrancismemorial.org/Who_We_Are/Mission_Vision_And_values/index.htm (Links to an external site.)

Gupta, D., Rodeghier, M. & Lis, C.G. (2013). Patient Satisfaction with service quality in an oncology setting implications for prognosis in non-small cell lung cancer. *International Jouranl of Quality Health Care*, 25(6): 696-703

Kallen, M. A., Terrell, J. A., Lewis-Patterson, P. & Hwang, J. P. (2012). Improving wait time for chemotherapy in an outpatient clinic at a comprehensive cancer center. *American Society of Clinical Oncology*. Retrieved from **http://jop.ascopubs.org/content/8/1/e1.full**

Kaminski, J. (2000). *Leadership and change management: Navigating the turbulent frontier*. Retrieved from http://www.nursing-informatics.com/changemant.html

Kendall-Gallagher, D., Aiken, L.H., Sloane, D.M. & Cimiotti, J.P. (2011). Nursing specialty certification, inpatient mortality, and failure to rescue. *Journal of Nursing Scholarship*, 43(2): 188-94. doi: 10.1111/j.1547-5069.2011.01391.x.

Krapohl, G., Manojlovich, M., Redman, R. & Zhang, L.(2010). Nursing specialty certification and nursing-sensitive patient outcomes in the intensive care unit. *American Journal of Critical Care*, 19(6): 490-8.

McHugh, M.D., Kelly, L.A., Smith, H.L., Wu, E.S., Vanak., J.M. & Aiken, L.H. (2013). Lower mortality in magnet hospitals. *Medical Care*, 51(5): 382-8. doi:10.1097/MLR.0b013e3182726cc5.

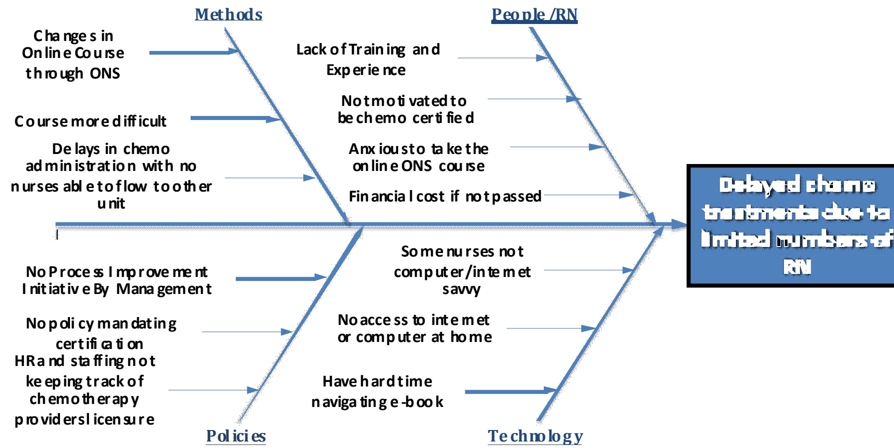
NSI Nursing Solutions (2015). 2015 national healthcare retention & RN staffing report. Retrieved from **http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2015.pdf**

Vera-Llonch, M., Weycher, D., Galss, A., Gao, S., Borker, R., Barber, B. & Oster, G. (2011). Healthcare costs in patients with metastatic lung cancer receiving chemotherapy. *BMC Health Services Research*, 11(305): 1-8.

Appendix A

ROOT CAUSE ANALYSIS

FISHBONE



Appendix B

SWOT ANALYSIS

Strengths

Nurses will feel empower to take the course when they know support is there. Provides onsite study sessions to answer questions they may have regarding the course materials or clinical information. Offers access to the hospital's computer lab during the course of the class for those without access at home. Nurses will be able to learn, discuss and share their clinical expertise with each other. Hosting study sessions could potentially lower anxiety and fear. The project will create a safe environment by one of the essential features as noted by the American Society of Clinical Oncology's (ASCO) Cancer Program Standard (2012): "A nursing staff with the knowledge and skills to provide specialized care". The tuition will be fully reimbursed by the hospital. Nurses will be able to use their education leave hours for the study sessions. Furthermore, we have our manager's support in having more nurses to be chemotherapy providers.

Weaknesses

The major weakness of this project is to motivate the staff to take the course and be present for all the study sessions due to schedule conflict or availabilities since most of them do not have the same shifts or schedule.

Opportunities

An increased numbers of chemotherapy and biotherapy providers will enable the unit to have the capacity to admit more oncology patients. There will be more competent and capable nurses to provide patient education as it relates to chemotherapy and

oncology. To have more nurses be active chemotherapy and biotherapy providers, hence, it will help our hospital obtain Cancer Center Recertification through ASCO. Once the nurses obtain their provider cards, they are more likely to apply for Oncology Certified Nurse (OCN) certification. Per the American Society of Clinical Oncology, it will require 25% of the oncology nurses be certified in the near future in order to be a certified cancer center.

Threats

There's a lack of participation by the nurses or lack of interest in becoming a chemotherapy provider. Therefore, I am hoping to do a survey to assess their readiness of taking the course or barriers that prevent them to proceed with the certification.

Contingency Plan

The project appears to be moving forward with the support of management, and high interest of the nurses as we already have at least 10 nurses wanting to sign up for the study sessions.

Appendix C

SURVEY TO ASSESS POSSIBLE BARRIERS FROM BEING A CHEMO-PROVIDER

Purposes of the survey:

- To identify barriers of not renewing chemotherapy provider cards or obtaining initial certification.
- To assess the nurses' comfort level of handling and administering chemotherapy.

Questions:

1. I feel comfortable handling and administering chemotherapy.
   a. Yes
   b. No

2. I feel competent handling and administering chemotherapy.
   a. Yes
   b. No

3. Name 1-4 barriers that prevent you from renewing your chemotherapy provider cards or initial certification.
   a.
   b.
   c.
   d.

4. Name 1-4 ways how we could help support your chemotherapy renewal process or initial certification.
   a.
   b.
   c.
   d.

Appendix D

CHEMOTHERAPY/BIOTHERAPY ADMINISTRATION LOG

PATIENT'S LABEL	UNIT	DATE AND TIME ORDERED	DATE AND TIME GIVEN	DRUG ADMINISTERED	GIVEN BY	DOUBLE CHEKCED BY

Appendix E

TIMELINE OF THE PROJECT

Date	Person responsible for task	Task
May 27, 2015	CNL student	Met with Preceptor and manager to go over potential CNL project topics
May 21, 2015	Staff Nurse III/IV Committee, Manager and CNL student	Met with Staff Nurse III/IV Committee and manager to discuss the low numbers of chemotherapy providers on the unit; to find ways to increase the numbers
June 2, 2015	Preceptor, Manager, and CNL student	Finalized the project on offering study sessions and groups to motivate staff to renew and obtain their chemo provider cards
June 3, 2015	CNL student	Email send out to all the nurses on the Oncology unit and Manager regarding the project and study sessions; a copy was posted in the nursing lounge
June 5, 2015	CNL student	Information on the requirement and future course dates of the ONS class emailed, printed and posted in the lounge along with a sign up sheet
June 5, 2015	CNL student, Staff Nurse III/IV Committee Members	Staff Nurse III/IV will be communicating on their shift to the nurses regarding the offering of the study sessions and to help motivate the nurses to renew or obtain their provider cards by signing up for the course
June 8, 2015	CNL student; Staff Nurse III/IV Members	A survey is created to identify barriers why the nurses are not obtaining their provider cards; survey was handed to the nurses to be filled out
June 15, 2015	CNL student	Literature review; research

		online using USF library search and google on articles and journals as it relates to the topic
June 5-June 15, 2015	**CNL student**	**10 Nurses expressed interest in the class; dates of interest for the ONS course ranged from August to November**
June 16, 2015	**CNL student and manager**	**Two separate groups will be formed; one review group in August and one review group in November; asked those interested in the August course to sign up on ONS.org; manager agreed to have the costs of the hard copy books reimbursed if we buy it ourselves.**
June 26, 2015	**CNL student**	**Audited 16 chemo administrations from April to May using the chemo log on the unit; compared order and given times**
July 2, 2015	**CNL student, Manager of Patient Performance and Patient Experience**	**Met with the manager of Patient Performance and Patient Experience to go over our hospital's HCAHPS scores and performance level with patient satisfaction; obtained access to Avatar for the scores**
July 15, 2015	**CNL student; Nurses taking the Course in August; Manager**	**Will have chosen 5 education leave dates and turn in their Ed leave request to manager**
July 20, 2015	**CNL student, Director of Education**	**Reserve the computer lab for the chosen 5 education leave dates/study sessions**
August 17, 2015	**CNL student; RN taking the course in August**	**Will have Survey to assess feedbacks regarding the study groups and study session created; handouts and highlights for the 4 discussion topics as required by ONS will be created to be used during our study**

		sessions
By September 24, 2015 or at the end of Study Sessions/Groups	**CNL student; RN taking the course in August**	**Survey to assess nurse's comfort level and motivation level of renewing/obtaining chemo provider cards**
October 2015	**CNL student and unit manager**	**Data of the surveys (pre- and post-) will be posted in the nursing lounge and provided to manager to be discussed during staff meeting in October**
November 2015	**CNL student; RN taking the course in November**	**Second study group start**
January 2015	**CNL student**	**Data for first study group will be presented in a poster format during staff meeting, emailed to the unit, and poster will be left in conference room for review; stating pre and post results; comparing wait-times pre and post; comparing nurse's comfort/motivation level; comparing HCAHPS scores**
June 2015	**CNL student**	**Projected finished date for all 10 nurses to have finished the ONS course and the project**

Appendix F

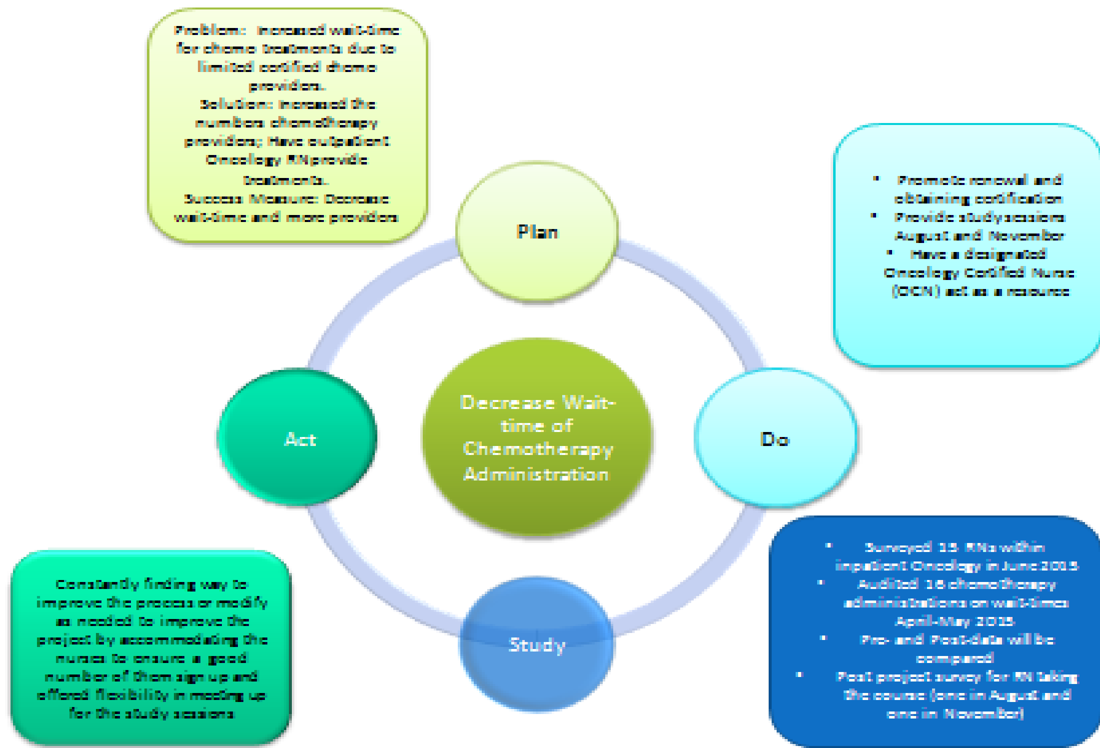
Post Study Sessions Survey

Purpose: To evaluate the effectiveness of having Study Sessions while nurses take the Oncology Nursing Society Online Chemotherapy and Biotherapy Course

Questionnaire: Please rate the following with a score of 0 (not helpful at all), 1 (helped a little), 2 (somewhat helpful), 3 (helpful), 4 (very helpful)

1. Did having study sessions/study groups help you decide to enroll in the ONS online course?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
2. Was the OCN nurse helpful for the discussion topics?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
3. Did you find the study sessions helpful in preparing you to answer the discussion questions?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
4. Did you find the OCN nurse helpful for the course?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
5. Would you take the study sessions/study groups again for your next renewal?
   a. Yes
   b. No
6. Would you recommend the study sessions/study groups to your colleagues?
   a. Yes
   b. No

Appendix G



Appendix H

Pre- and Post-Project (goals are to increase chemo providers by 25% and decrease administration wait-times by 25%)