

**The Standardization of Anti-Cancer Regimen Patient Education and Its Impact on Patient  
Satisfaction**

Kathleen Bennett Pugh

The University of Alabama

Capstone College of Nursing

Dr. Staci Simmons, Faculty Advisor

Dr. Jawaunna Blackmon, Clinical Advisor

June 25, 2024

## Table of Contents

Abstract .....	4
Introduction .....	6
Background .....	7
Problem Statement .....	8
Organizational “Gap” Analysis of Project Site .....	8
Review of Literature .....	9
Evidence-based Practice: Verification of Chosen Option .....	12
PICOT .....	12
Theoretical Framework/Evidence-based Practice Model .....	12
Goals & Objectives .....	13
Setting Facilitators and Barriers .....	14
Methods .....	14
Project Design .....	15
Project Site and Population .....	15
Measurement Instrument .....	16
Data Collection Procedure .....	17
Data Analysis .....	17
Cost-Benefit Analysis .....	18
Timeline .....	18
Ethical Considerations/Protection of Human Subjects .....	18
Results.....	19
Discussion.....	19

Conclusion .....	21
References .....	22
Table and Appendices.....	25

## Abstract

### Introduction/Purpose

Educating patients is a critical nursing skill. Patient education is particularly important when initiating a new anti-cancer medication regimen. The standardization of anti-cancer medication patient education is imperative to ensure that all patients receive sufficient and consistent education. Standardizing this process creates a more cohesive clinic environment and satisfying experience for the patients. Despite the benefits of standardized education for this population, many clinics are lacking in this process. This process improvement project aimed to improve patient satisfaction through a standardized anti-cancer medication patient education process at a freestanding hematology and oncology clinic in the southeastern United States.

### Methods

A standardized anti-cancer medication patient education plan was created and implemented for all new oncology patients who were willing to participate. Patients were asked to complete an established Likert-style patient satisfaction survey prior to and after the standardized education process for comparison.

### Results

A mixed ANOVA was conducted to examine satisfaction ratings pre- and post-education. The analysis revealed a statistically significant, large main effect of satisfaction,  $F(1, 8) = 17.79$ ,  $p = .003$ ,  $\eta^2 = .69$ , such that satisfaction ratings were higher post-education ( $M = 3.16$ ) compared to pre-education ( $M = 1.10$ ). There was not a significant main effect of gender,  $F(1, 8) = 1.37$ ,  $p = .275$ ,  $\eta^2 = .15$ , and no significant interaction between satisfaction ratings and gender,  $F(1, 8) = 1.22$ ,  $p = .301$ ,  $\eta^2 = .13$ .

### Discussion

Providing standardized patient education for oncology patients who are initiating a new anti-cancer medication regimen is critical for enhancing adherence, safety, and satisfaction with the overall clinical experience. The results of this project show improved patient satisfaction scores following a standardized education process.

**Keywords:** oncology, standardized patient education, chemotherapy, immunotherapy, targeted therapy, and patient satisfaction.

## **The Standardization of Anti-Cancer Regimen Patient Education and Its Impact on Patient Satisfaction**

Patient education is a fundamental component of nursing. Providing exceptional patient education is one of the most impactful and important services that healthcare providers can provide to their patients (Biedrzycki, 2003). Patient education is especially important for patients who are starting anti-cancer treatment plans for new cancer diagnoses due to the complexity of treatment and anticipated side effects. The absence of a standardized anti-cancer regimen education process can result in inconsistency in the information shared by providers, which in turn, may lead to patient dissatisfaction and adverse events. There are various educational resources available to healthcare providers regarding anti-cancer medication education, such as printed materials, videos, and medication package inserts. The variety of educational tools coupled with the lack of a standardized process leads to inconsistent education and the potential omission of valuable information. Inconsistency in anti-cancer regimen education can also lead to unnecessary emergency room visits for benign side effects, and a lack of attention to harmful side effects poses a risk to patients and can lead to increased usage of emergency medical services. Furthermore, proper anticipatory guidance through standardized education can decrease patient anxiety, foster adaptive coping skills, and prepare patients for anticipated side effects (Gallegos et al., 2019). Implementation of a standardized anti-cancer regimen education process can improve the quality of care provided, improve consistency of education provided by healthcare providers, and improve patient satisfaction.

### **Background**

According to the National Cancer Institute, in 2023 about two million people in the United States were diagnosed with cancer (National Cancer Institute, 2023). Of that number, half

received pharmacologic anti-cancer treatment and thus warranting medication education prior to treatment (Centers for Disease Control and Prevention, 2023). The clinic in which this project was conducted sees 1,500 new oncology patients each year, and 1,200 receive treatment for a new cancer diagnosis utilizing chemotherapy, immunotherapy, or targeted therapy. This creates 1,200 opportunities for providers to deliver anti-cancer regimen education each year.

This project took place in a freestanding hematology and oncology clinic in the southeastern United States as part of a Doctor of Nursing Practice (DNP) project. The clinic employs three physicians, who each collaborate with two to three nurse practitioners, 12 chemotherapy-certified registered nurses, and a pharmacist. Individual patient care teams consist of a physician, two nurse practitioners, and a registered nurse. Because each team practices independently with no crossover of patient care, there is an overall lack of consistent care within the clinic. Currently, the clinic does not utilize standardized treatment education prior to initiating anti-cancer therapy.

Inconsistent patient education is visible throughout the clinic, both from patient-to-patient and between providers. Individuals use various techniques and strategies when providing treatment education. Some providers supply printed materials, while others rely exclusively on verbal instruction. The provider's approach is dependent on several factors: patient diagnosis, treatment plan, and the amount of time allotted for the encounter. Deficits in education can leave patients feeling scared, confused, and dissatisfied. Adoption of a standardized, anti-cancer regimen education process stands to significantly improve patient satisfaction and safety (Zhitomirsky & Aharony, 2023).

## **Problem Statement**

This project sought to determine if the implementation of a standardized anti-cancer regimen patient education process could improve patient satisfaction scores and decrease patient anxiety.

### **Organizational Gap Analysis of Project Site**

Identifying an organizational assessment tool is a critical step in creating and implementing a DNP project as it allows for evaluation of organizational gaps (Moran et al., 2019). The Seven-S Model of Organizational Alignment assessment tool is the most beneficial to the chosen organization for this project because the clinic is small and possesses few external factors that are essential to the functionality of the clinic (Reflect & Learn, n.d.).

The Seven-S model is composed of seven topics of focus that include structure, strategy, skills, style, staff, shared values, and systems (Reflect & Learn, n.d.). This model has concrete components like structure and systems but also more adaptable and malleable components like strategy, style, staff, and shared values. The combination of concrete ideas and adaptable concepts creates a synergistic relationship tool to assess an organization. The goal of the model is to ensure that all seven of the key components are working in a holistic and synchronous fashion. This process can help identify inconsistencies within the organization that require attention to improve performance.

When applying this model, critical organizational gaps can be seen. The lack of a patient education protocol creates inconsistency within the clinic's structure and the patient care system. This project sought to improve providers' teaching skills while standardizing patient education. Creating and implementing a standardized patient anti-cancer regimen education plan closes multiple organizational gaps, improving the clinic's functionality while improving patient satisfaction. Integrating a standardized, consistent, and sufficient patient education process can



lead to increased knowledge acquisition, improved self-efficacy, and increased patient satisfaction (Zhitomirsky & Aharony, 2023).

### **Review of Literature**

A literature review was conducted through Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed. The keywords used in this literature search included patient education, treatment education, oncology, anti-cancer medications, and chemotherapy. The search initially identified 1,069 articles. The research types selected for this literature review were qualitative, quantitative, systematic, and mixed qualitative and quantitative.

Inclusion criteria included the topics of patient education in oncology and anti-cancer medication education. Only articles published in English and within the last five years with full text available were included in the study selection, except for the benchmark study performed by Dalby et al. (2013). After applying these criteria, 779 articles resulted. These articles were further reviewed to include only those that discussed patient education specific to anti-cancer therapies, yielding 218 articles. Of the 218 articles, six proved to be relevant to the project and were included in this literature review. Of note, only two articles described creating and implementing a standardized anti-cancer regimen patient education plan, while the other four articles focused solely on the creation of the anti-cancer regimen patient education plan. Preferred Reporting Items for Systematic Review and Meta Analyses (PRISMA) guidelines were applied to this data extraction process. The data was extracted and organized into the following categories: year of study, study design, purpose, study findings, and limitations.

The benchmark study that inspired this project by Gallegos et al. sought to investigate how a standardized patient education process could improve nurse and patient satisfaction (2018). The authors formed a multidisciplinary team to determine what items to include in the

standardized patient education process. Self-administered surveys were collected from participants before and after the intervention. Nurses' satisfaction scores improved from low to high following the intervention. Patient satisfaction scores were high at baseline, and remained high after the intervention (Gallegos et al., 2018). This study provides important data that can be extrapolated to the quality improvement project at hand.

Of the limited number of studies focusing on the standardization of anti-cancer regimen education, a predominant theme emerges: standardized education is beneficial to patients (Dalby et al., 2013; Gallegos et al., 2018). The studies selected for this literature review fall into two categories. The first category focuses on the implementation of a standardized anti-cancer regimen education protocol and its impact on patients. The second category focuses on gathering data to determine what is important within an anti-cancer regimen education protocol and how to develop it.

Two studies focus on justification for implementing anti-cancer regimen education. Utilizing satisfaction scores, both revealed improved scores following implementation of a standardized education protocol (Dalby et al., 2013; Gallegos et al., 2018). In the study by Gallegos et al., researchers formulated and implemented a standardized chemotherapy education protocol. Nurse and patient satisfaction scores were measured, and results showed a stable to improved reported satisfaction rating after the implementation of the education plan by both groups. Participation included 30 nurses in the pre-implementation period and 25 in the post-implementation period. Likewise, participation by patients was noted to be 80 and 84, respectively. Another important aspect of this project was the creation of a standardized chemotherapy education protocol. According to Belcher et al., a panel of healthcare providers and patient representatives agreed that implementation of a structured oral anti-cancer regimen

education plan is beneficial to both providers and patients, based on findings from interviews conducted with patients starting new chemotherapy regimens (2022). Garcia et al. evaluated elements that patients deemed worthy of inclusion in their anti-cancer regimen education plans, such as foods to avoid while taking chemotherapy, hygiene recommendations, and activity limitations (2020). Researchers compared patient-reported education needs and concerns from 2009 and 2014 and synthesized them to create a new and improved education plan from a participant sample size of 87 (Garcia et al., 2020). Hasyim et al. emphasized the importance of incorporating supportive tools such as handouts and telephone counseling in the standardized education process (2018).

Furthermore, an important study by Rogers et al. found that healthcare providers reported not using a standardized education process when providing anti-cancer regimen education to patients (2021). This study had the largest sample size of the literature reviewed with 1,243 participants. Providers based treatment education on what they had been trained to include by other nurses, resulting in high variability of topics covered. This variability led to omission of important topics and inconsistency from case to case.

There are several limitations to the literature reviewed. The most significant limitation is the small number of studies regarding standardization of anti-cancer regimen education and how this impacts patients. Furthermore, the chosen benchmark study was performed over 10 years ago (Dalby et al., 2013). It was included to highlight a longstanding problem within oncology. Finally, some studies possessed limited sample sizes. Most studies were performed in small oncology clinics or within a few small oncology clinics, limiting the population sizes. Despite these limitations, the findings of this literature review are significant and applicable to the project's purpose, design, and implementation.

### **Evidence-based Practice: Verification of Chosen Option**

Based on the evidence discussed within the literature review, the creation and implementation of an anti-cancer regimen patient education plan stands to benefit patients. Empowering patients through education improves their satisfaction and knowledge levels and increases their participation in care and treatment. Healthcare providers must deliver accurate and complete anti-cancer regimen education to each patient encountered.

### **PICOT**

Among adult cancer patients receiving anti-cancer regimen education prior to the initiation of a treatment plan, what is the relationship of patient satisfaction scores before and after the delivery of standardized patient anti-cancer regimen education over a 6-week period?

### **Theoretical Framework or Evidence-based Practice Model**

Evidence-based practice models are helpful in strengthening the ideas and core values when creating a project. The evidence-based practice model that most closely aligns with this project is the Quality-Caring Model (Appendix A). This model aids in defining the clinical need for this project. This model is applicable because the project is a quality improvement-based project, and this theory was created with quality improvement in mind. This theory was created by Joanne R. Duffy in the late 1980s. The theory was brought to life when Duffy noticed, in an acute care hospital, there was an inconsistency between the art of nursing and the act of nursing. She noted that nurses were distracted by the task-oriented nature of nursing and were neglecting to also focus on the fundamental patient-nurse caring relationship. This inconsistency caused dissatisfaction among nurses and patients alike (Butts & Rich, 2018). The monotony of nursing practice and the associated workload can force a nurse to become task-oriented to ensure adequate clinical care; however, nurses must also remember to slow down and nurture the

patient-nurse relationship. This can be a challenging task with large patient loads and overbooked schedules. The Quality-Caring model is crucial to this project as it requires the provider to slow down and take time to speak to the patient, educate the patient, and address the patient's questions and concerns after the education has taken place. This project forced providers to be intentional about fostering the nurse-patient relationship throughout the education process.

Kurt Lewin's Change theory was also utilized to guide the process for improvement throughout this project (Appendix B). Lewin created a model for change in the 1940s as a behavioral scientist. His model of change includes the steps of unfreezing, moving, and refreezing. The theory addresses the push back that often occurs in organizational process change. The first step is unfreezing. Unfreezing refers to the act of disrupting and destabilizing old behaviors that require change (Butts & Rich, 2018). Lewin notes that this is a key point in the process so that the old behaviors and processes can be unlearned and rejected. At this point, the manager is advised to formulate a plan that will create the least resistance by the organization. The next step in the process is moving. Moving is the portion of the plan where the change is implemented, and the organization moves to the new process of action being implemented. Lastly, refreezing occurs. Refreezing is the process of returning to a new state of balance and stability with new processes in place (Butts & Rich, 2018). This model was utilized during the educational process changes within the clinic.

### **Goals, Objectives, and Expected Outcomes**

The project's goal was to improve patient satisfaction scores through standardized anti-cancer regimen patient education. The objective was to implement a standardized anti-cancer regimen patient education for all new patients encountered over a 6-week period. The expected

outcome was an improvement in patient satisfaction scores following standardized anti-cancer regimen patient education when compared to scores measured prior to the intervention.

### **Setting Facilitators and Barriers**

A recognizable facilitator was the readily available access of the principal investigator (PI) and clinical advisor to potential participants due to their roles as direct patient care providers. Organizational support was a key facilitator for this project. The clinic management team provided full support for this project, including supplying necessary resources. All staff participating in the project were educated and versed in the treatment plans discussed with the patients at baseline. No additional education was necessary for the PI or the clinical advisor. Another key facilitator was the clinic's full access to the ChemoCare website, which provides treatment-specific, printable, evidence-based patient education.

Early identification of barriers is essential to ensuring a quality improvement project's success. A potential barrier to this project was lack of time. Providers have limited time for patient education during a busy clinic day. Implementing a standardized anti-cancer regimen patient education plan potentially increases the amount of time required for the education process. There was a possibility of resistance to change from other providers within the practice. Many providers have worked in the clinic for over 10 years and asking them to change their clinical practice and workflow posed a risk for pushback. Another potential barrier was the inability to administer surveys within the electronic medical record (EMR); utilizing paper surveys poses a potential risk of confidentiality breach. Lastly, because the project was associated with the PI's DNP program of study and did not originate from the clinic leadership, there was a risk of suboptimal buy-in from stakeholders and providers.

### **Methods (Plan)**

Each new oncology patient encountered by the designated care team over a six-week period was invited to participate in the project. Participants were asked to complete a Likert-style survey with responses ranging from 1 to 5, with 1 being most satisfied and 5 being the least satisfied. Participants rated satisfaction scores prior to the anti-cancer regimen education process. Following baseline survey completion, the intervention was implemented.

The standardized anti-cancer regimen education included the following materials: a clinic folder, printed education materials from Chemocare.com specific to each patient's treatment regimen, paper for notetaking, and a list of frequently asked questions regarding treatment. Each patient's anti-cancer regimen was thoroughly reviewed prior to education delivery to ensure that treatment category, duration, frequency, common side effects, and serious adverse effects were included. After all education materials were reviewed, participants were invited to ask questions. Following delivery of standardized education, participants were invited to complete the Likert-style survey again.

### **Project Design**

This quality improvement/process improvement project sought to improve patient satisfaction scores with the implementation of a standardized anti-cancer patient education plan. Quantitative data was collected using the Likert-style survey previously developed by Gallegos et al., 2019.

### **Project Site and Population**

The project site is a freestanding, community-based hematology clinic in the southern United States. The clinic does not have direct institutional review board (IRB) oversight. A letter of support from the clinic can be found in Appendix B, Image 2. The PI, a nurse practitioner employed within the clinic, met with all new oncology patients assigned to her collaborating

physician's team and invited them to participate in the project. Several factors impact how patients are assigned to physician teams. When patients require immediate care, they are assigned to the team with the next available appointment. Patients who request a particular team are assigned accordingly. When patients transition from inpatient to outpatient, they are assigned to the first team encountered in the hospital. All other patients are evenly distributed to teams on a rotating basis.

The population was comprised of individuals with a new cancer diagnosis assigned to the designated physician's team, scheduled for an anti-cancer regimen, and who consented to participate in the study. The project took place in Houston County in south Alabama. According to the US (United States) Census Bureau (2022), Houston County's population consists of approximately 68.1% Caucasian, 27.7% African American, and 3.9% Hispanic or Latino (US Census Bureau, 2022). The stakeholders affiliated with this project include administrators, physicians, advanced practice providers, clinic staff, and patients.

All patients starting a new anti-cancer medication regimen within the six-week study period who were assigned to the designated physician's team were eligible for participation. The single exclusion criterion was assignment to another physician's team. The PI, along with the designated physician, the PI's clinical advisor, performed the intervention and collected data. Resources required for this project included folders, printed education and survey materials, and business cards for the office and pharmacy.

### **Measurement Instruments**

Quantitative data was obtained using a validated and reliable measurement tool designed by Gallegos et al., 2019 (Appendix E). The author provided written permission to use the tool (Appendix F). The tool measures various aspects of patient education including knowledge of the



treatment plan, who to contact if they have problems, overall feeling of preparedness, level of anxiety related to the treatment plan, and access to resources and information for managing expected side effects. High degrees of patient satisfaction correlate to low numeric scores, with 1 being the highest level of satisfaction; the lowest level of satisfaction correlates to a score is 5, indicating the minimum level of satisfaction.

### **Data Collection Procedures**

Potential participants were introduced to the study, informed that participation was optional, provided a written copy of informed consent to review, and invited to ask questions. They were informed that by completing survey materials, their consent to participate was implied. No written consent was obtained. Patient satisfaction surveys were administered at two time points: before and after the delivery of standardized education. Additionally, on the post-intervention survey, participants were asked to provide age, type of cancer diagnosis, and gender. No personal identifiers were collected. To provide confidentiality, each participant was randomly assigned a numerical identification number so that pre- and post-intervention surveys could be matched; these numbers were handwritten on the surveys by the PI before each encounter. No list of identification numbers was kept by the PI. Surveys were administered on paper and stored in a locked filing cabinet. At the end of each clinic day, hardcopy data was entered into a spreadsheet in Box, a password protected, two-factor authenticated cloud-based content-management system. Paper surveys were then destroyed.

### **Data Analysis**

Quantitative data was collected and analyzed by the PI. The data has been organized into a table to show the statistically significant findings in the pre- and post-intervention surveys

completed by the participants (Appendix G). The data was evaluated for statistical significance using the ANOVA test. Other participant data analyzed included diagnosis, gender, and age.

### **Cost-Benefit Analysis**

This project used supplies provided by the clinical site for the implementation of the intervention. The items needed for this project were available within the clinic as standard office supplies; therefore, no additional costs were generated for this project. Table 1 shows a breakdown of the total cost of the project.

### **Timeline**

Following proposal development, University of Alabama IRB approval was requested and granted. Recruitment of participants occurred on a rolling basis over the next 6 weeks, along with implementation and data collection. At the conclusion of the implementation period, one month was devoted to data analysis. Findings were shared with stakeholders, and the final manuscript was completed. Dissemination of findings through publication is projected to occur within six months of project completion. The total time required for this project from inception to publication is approximately eight months (Appendix D).

### **Ethical Considerations/Protection of Human Subjects**

The University of Alabama IRB approval was obtained prior to initiating the project. Patients were protected by the Standards of Care for practice in the specialty clinic. Furthermore, participants were protected by the Health Insurance Portability and Accountability Act (HIPAA), which protects patient privacy and health information (Federal Register, 2013). Patient confidentiality was maintained throughout the project. Confidentiality was discussed with each participant during the consenting process. Participants were advised that no identifying information would be collected.

## Results

Ten individuals participated in the study (50% female, 50% male). Cancer diagnoses included tonsillar, neuroendocrine, pancreatic, colorectal, breast, prostate, bladder, chronic myeloid leukemia, and ovarian. Participants ranged in age from 49 to 82 years of age. A mixed ANOVA was conducted to examine satisfaction ratings pre- and post-education. The analysis revealed a significant, large main effect of satisfaction,  $F(1, 8) = 17.79$ ,  $p = 0.003$ ,  $\eta^2 = 0.69$ , such that satisfaction ratings were higher post-education ( $M = 3.16$ ) compared to pre-education ( $M = 1.10$ ). There was not a significant main effect of gender,  $F(1, 8) = 1.37$ ,  $p = 0.275$ ,  $\eta^2 = 0.15$ , and there was no significant interaction between satisfaction ratings and gender,  $F(1, 8) = 1.22$ ,  $p = 0.301$ ,  $\eta^2 = 0.13$ . Patient satisfaction scores are summarized in a table showing the average pre- and post-intervention satisfaction scores for each participant (Appendix G).

## Discussion

The results show a notable improvement in patient satisfaction and a decrease in patient anxiety across all participants. Of the ten participants, seven reported some degree of anxiety related to their treatment plan in the pre-intervention survey. All seven of those participants reported that the intervention alleviated some of their anxiety related to their treatment plan, with only two participants reporting any treatment related anxiety in the post-intervention survey. Despite the variability in age and diagnosis among participants, the small sample size may limit the findings' generalizability. However, combined results from this and previous small-scale studies support the argument that patient education significantly improves patient satisfaction. Further expansion of this project could include a larger sample size to further strengthen the argument for clinic-wide adoption of standardized patient education.

By limiting the intervention to only two educators, the investigator ensured that the education process was consistent and compliant with the project plan. In fact, to ensure that the project was carried out exactly as planned, the PI was present during every patient encounter, whether she was providing the education.

Responses to surveys may have been impacted by participants' lack of experience and/or understanding of Likert-style surveys as indicated by some participants. Future enhancements could include a more thorough explanation of the survey along with requiring a verbal indication of understanding from participants prior to proceeding.

The results of this project continue to show the importance and impact of patient education, which is particularly important at the onset of a new medication regimen. As anticipated, the standardized patient education protocol improved patient satisfaction. Additionally, the intervention resulted in decreased patient anxiety levels, demonstrating that education and anticipatory guidance are significant contributors to patients' wellbeing. While an improvement in patient satisfaction is important, the benefit of decreasing patient anxiety is perhaps even more significant for individuals who are facing the most challenging times of their lives.

Providers are taught to prioritize patient education, but once in practice, time constraints and incorrect assumptions of patient understanding often compromise the delivery of critical, timely education. The data shows the positive impact that a standardized patient education protocol can have on patient satisfaction. Statistically significant result further the argument for clinic-wide adoption of this patient education process. This project shows that patients who receive standardized anti-cancer regimen patient education not only experience higher patient

satisfaction scores, but also report increased knowledge regarding treatment, anticipated side effects, and how and when to appropriately respond to side effects or problems.

Future studies could explore how implementing standardized education protocols affects the frequency of after-hours patient calls and unnecessary emergency department visits. By systematically educating patients, researchers can assess whether providing consistent anticipatory guidance improves patient understanding and reduces confusion, potentially decreasing the need for patients to seek additional help outside regular clinic hours. Additionally, these studies could examine if better-informed patients are less likely to visit emergency departments for treatment-related concerns, improving overall healthcare efficiency and patient outcomes.

### **Conclusion**

Through a simple standardized approach to anti-cancer education, this project resulted in improvement in the quality of care provided, improved consistency of education provided by healthcare providers, and improved patient satisfaction scores. Furthermore, it was associated with an improvement in patient anxiety. This process improvement project opens the door for future studies of a larger scale with the potential to examine the effects of standardized patient education beyond the clinic setting. With minimal risk to patients and little cost to the clinical site, this project is easily replicable and cost-efficient.

## References

- Belcher, S. M., Mackler, E., Muluneh, B., Ginex, P. K., Anderson, M. K., Bettencourt, E., DasGupta, R. K., Elliott, J., Hall, E., Karlin, M., Kostoff, D., Marshall, V. K., Millisor, V. E., Molnar, M., Schneider, S. M., Tipton, J., Yackzan, S., LeFebvre, K. B., Sivakumaran, K., & Waseem, H. (2022). ONS guidelines to support patient adherence to oral anticancer medications. *Oncology Nursing Forum*, 49(4), 279-295. <https://doi-org.libdata.lib.ua.edu/10.1188/22.ONF.279-295>
- Biedrzycki, B. A. (2003). Oncology nurses know the importance of patient education. *ONS News*, 18(6) 1.
- Butts, J. B. & Rich, K. L. (2018). *Philosophies and theories for advanced nursing practice* (3<sup>rd</sup> ed.). Jones & Bartlett Learning, LLC.
- Centers for Disease Control and Prevention. (2023, July 24). *Information for Health Care Providers on Infections During Chemotherapy*. <https://www.cdc.gov/cancer/preventinfections/providers.html#:~:text=Each%20year%2C%20more%20than%201.chemotherapy%20schedules%2C%20and%20even%20death>.
- Dalby, C. K., Nesbitt, M., Frechette, C. A., Kennerley, K., Lacoursiere, L. H., & Buswell, L. (2013). Standardization of initial chemotherapy teaching to improve care. *Clinical Journal of Oncology Nursing*, 17(5), 472-475. <https://doi-org.libdata.lib.ua.edu/10.1188/13.CJON.472-475>
- Federal Register. (2013, January 25). *Modifications to the HIPAA Privacy, Security, Enforcement, and Breach Notification Rules Under the Health Information Technology for Economic and Clinical Health Act and the Genetic Information Nondiscrimination Act; Other Modifications to the HIPAA Rules*.

<https://www.federalregister.gov/documents/2013/01/25/2013-01073/modifications-to-the-hipaa-privacy-security-enforcement-and-breach-notification-rules-under-the>

Gallegos, R., Kogelman, A., Wagner, M., Cloud, A., Olson, M., Robideau, K., Patrick, L., Comfort, J., & Hirko, K. (2019). Chemotherapy education: An interprofessional approach to standardizing processes and improving nurse and patient satisfaction. *Clinical Journal of Oncology Nursing*, 23(3), 309-314. <https://doi-org.libdata.lib.ua.edu/10.1188/19.CJON.309-314>

Garcia, M. A., Kalecinski, J., Oriol, M., Bonne, A., Lofti, M., Espenel, S., Tinquaut, F., Fournel, P., Collard, O., Vassal, C., Rivoirard, R., Regnier, V., Chauvin, F., & Bourmaud, A. (2020). Cancer patients treated with intravenous chemotherapy for the first time. What are their needs? What do they lack? A qualitative quantitative mixed approach. *Patient Preference and Adherence*, 1853b. <https://doi-org.libdata.lib.ua.edu/10.2147/PPA.S169810>

Hasyim, M. A. R. & Junadi, P. (2018). Analyzing patient education methods to improve patient care in hospital: A systematic review. *KnE Life Sciences*, 244-264. <https://doi-org.libdata.lib.ua.edu/10.18502/kls.v4i9.3576>

Moran, K.J., Burson, R., & Conrad, D. (2019). *The Doctor of Nursing practice project: A framework for success* (3<sup>rd</sup> ed.). Jones & Bartlett Learning.

National Cancer Institute. (2023). *Cancer Stat Facts*.

<https://seer.cancer.gov/statfacts/html/common.html>

Reflect & Learn. (n.d.). *The seven-s model*. Retrieved September 2, 2023, from

<http://www.reflectlearn.org/discover/the-seven-s-model>

Rogers, B., Pesata, B., Lee, J. H., Zhao, J., Krieger, J., & Daily, K. (2021). Chemotherapy education: Current practices of oncology nurses counseling patients. *Supportive Care in Cancer*, 29(12), 7323. <https://doi-org.libdata.lib.ua.edu/10.1007/s00520-021-06308-4>

United States Census Bureau (2022). QuickFacts: Houston County, Alabama. United States Census Bureau QuickFacts. <https://www.census.gov/quickfacts/fact/table/houstoncountyalabama#>

Zhitomirsky, Y., & Aharony, N. (2023). The effect of a patient education multimodal digital platform on knowledge acquisition, self-efficacy, and patient satisfaction. *Computers, Informatics, Nursing*, 41(5), 356-364.



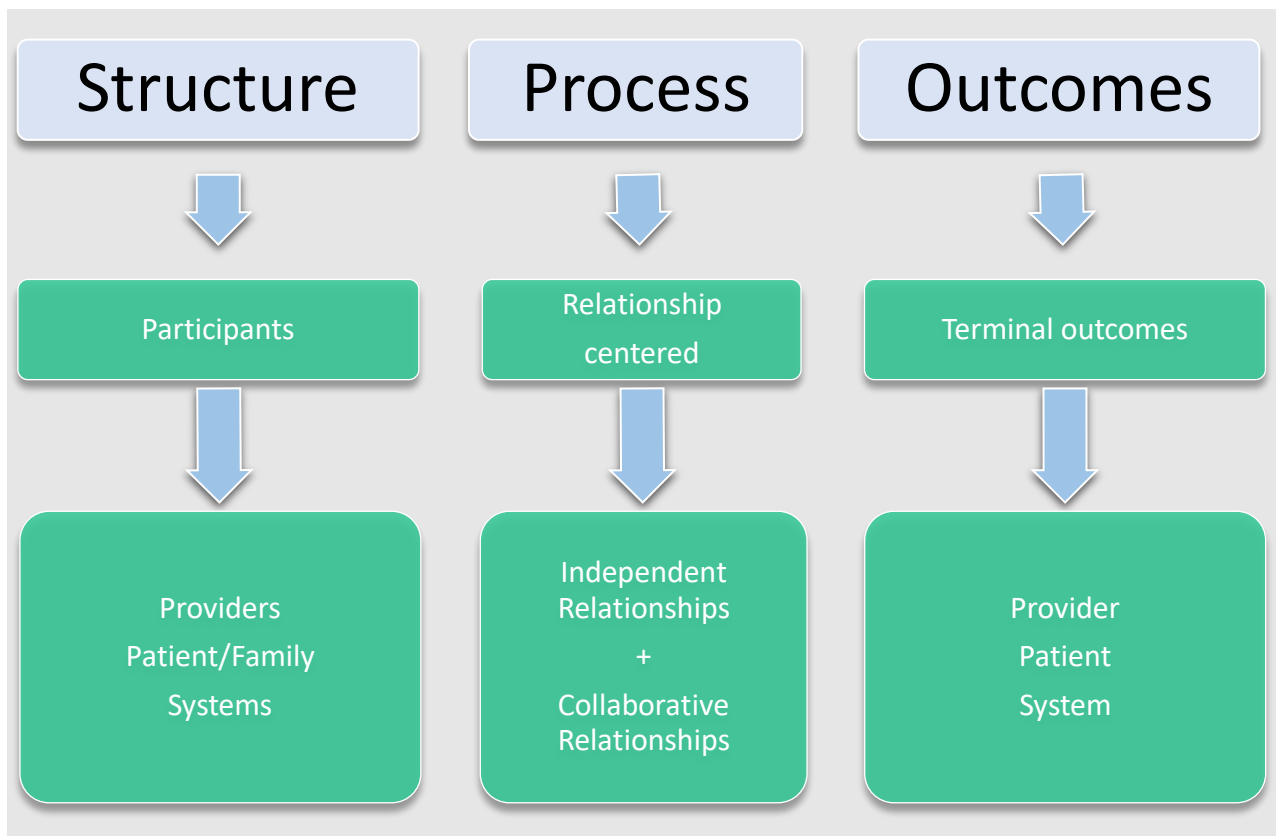
**Table 1**

## Cost-Benefit Analysis

<b>Project Need</b>	<b>Cost</b>	<b>Benefit</b>
Printer paper	\$19.49 for 3 reams of paper 6 reams needed = \$38.98 total	Patients will be provided with more educational materials which will enhance and improve their anti-cancer medication education process.
Business Cards	\$0	Patients will be provided with contact numbers to reach the office and pharmacy for any questions or concerns.
Dothan Hematology & Oncology folders	\$0	Folders will not only keep the patients' education materials organized but will be advertising for the office with the Dothan Hematology & Oncology logo on the outside of the folder.
Project Director's Time	\$0	The project director will be devoting time to improving patient care and patient satisfaction.

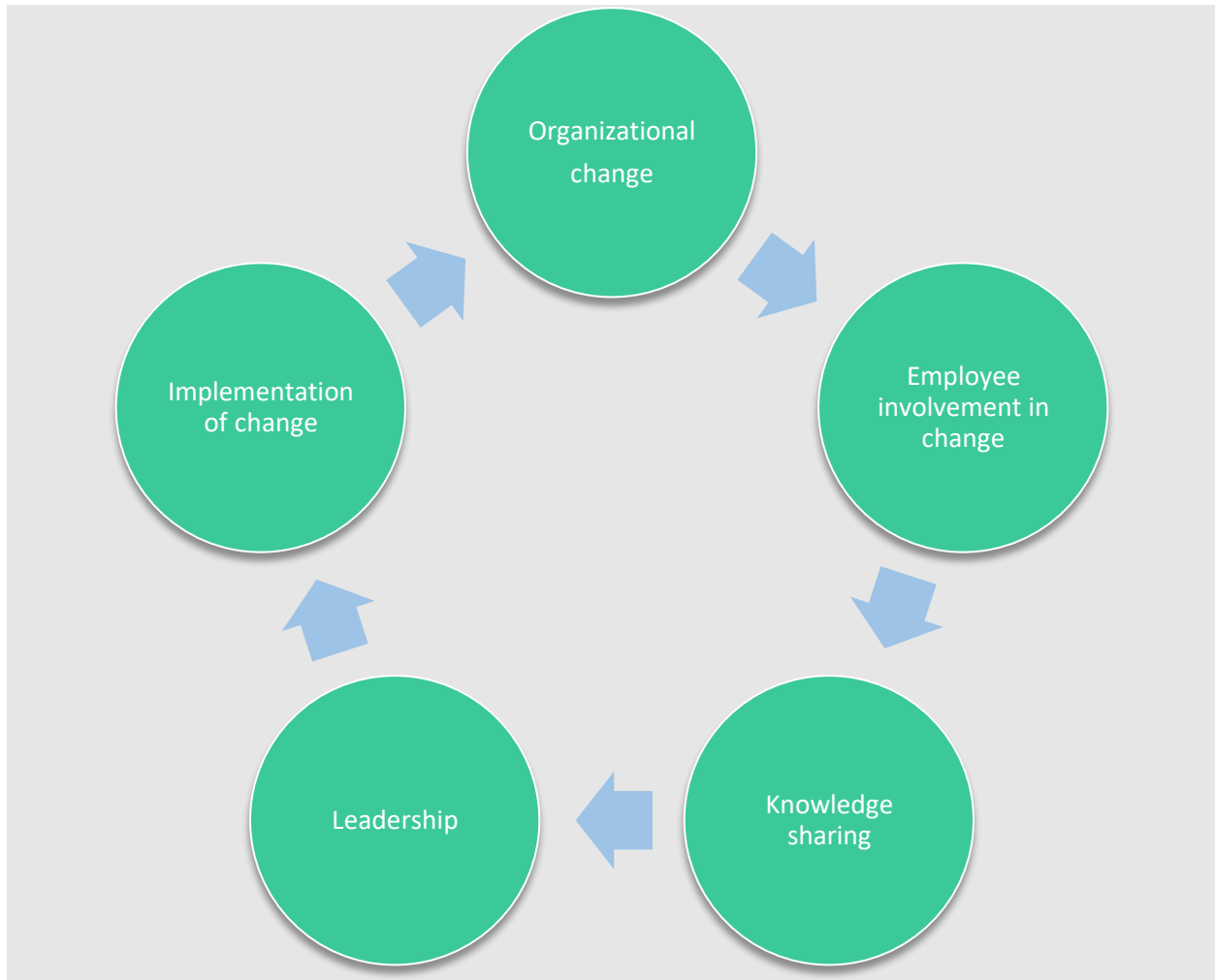
**Appendix A**

## Quality-Caring Model



## Appendix B

### Lewin Change Theory



## Appendix C

### Letter of Support



Dear University of Alabama Institutional Review Board,

I am writing to you as the Chief Operational Officer of [redacted] Hematology and Oncology on behalf of Kathleen Pugh, DNP student at the University of Alabama Capstone College of Nursing. The project, The Standardization of Anti-Cancer Regimen Patient Education and The Impact on Patient Satisfaction, is scheduled to be completed at our facility. We grant site approval for this project, but we do not have an IRB in place. We would like to defer the IRB approval process for the protection of human subjects to the University of Alabama.

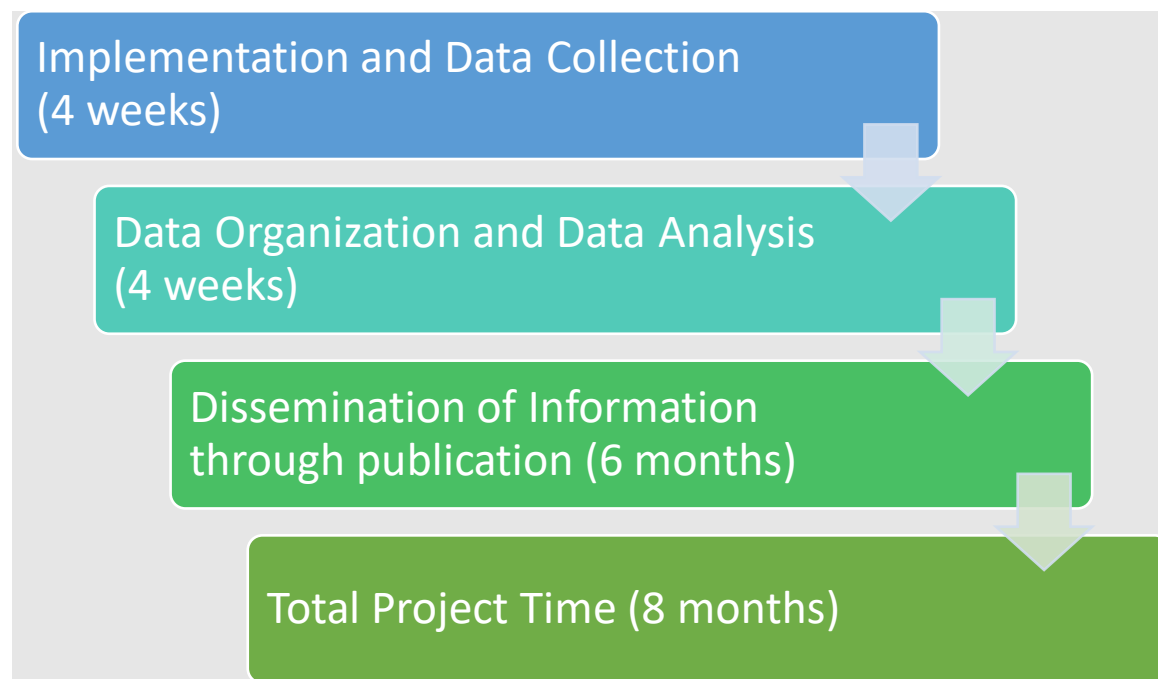
Please do not hesitate to contact me at [redacted] for any additional information.

Sincerely,

Chief Operation Officer  
[redacted] Hematology & Oncology

## Appendix D

### Project Timeline



## Appendix E

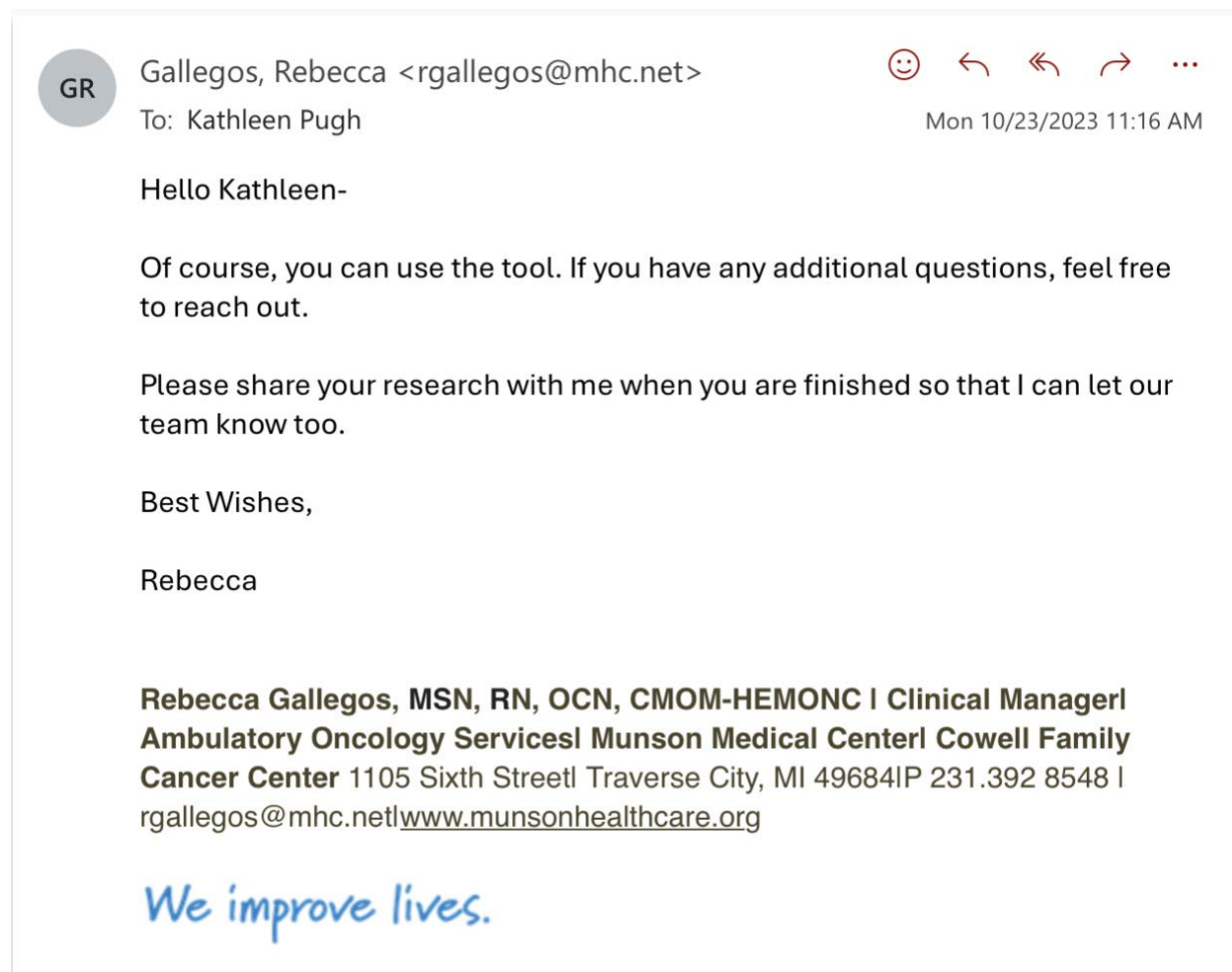
### Measurement Tool

Statement	Preintervention Score	Postintervention Score
I feel knowledgeable about what to expect regarding my anti-cancer treatment and side effects.		
I have the information and resources I need to manage side effects that may occur with my chemotherapy.		
I know who to contact if I have a question about my anti-cancer treatment, side effects, or concerns during business hours and after hours in case of emergency.		
Overall, I feel my chemotherapy education session and materials prepared me for anti-cancer treatment.		
My anti-cancer education and materials alleviated some anxiety I felt regarding my overall anti-cancer treatment.		
Average across all constructs.		

- Scores range from 1 (strongly disagree) to 5 (strongly agree).

**Appendix F**

## Permission to Use Measurement Tool by Author



## Appendix G

### Average Patient Satisfaction Scores

