# Quality Improvement Project

# to Implement Prostate Cancer Survivorship Care Plans

Brittany R. Shirley

Arizona State University

## Abstract

There is an increasing number of cancer patients outliving their diagnosis and treatment and requiring more support as they transition to cancer survivors. To bridge this gap, survivorship care plans should be provided to all cancer survivors to provide post treatment plans of care, recommendations, and resources (Commission on Cancer, 2016). A quality improvement project was implemented in the urology practice of a National Cancer Institute-designated, academic hospital in Phoenix, Arizona to provide survivorship care plans to prostate cancer patients with surgical intervention as their cancer treatment. Through interprofessional collaboration, the process change was designed and implemented with the residents and Physician Assistants of the urology practice. There was a 93% adherence rate in delivering the survivorship care plans during the project. The "Confidence in Survivorship Information" questionnaire was used to measure the patients' confidence in survivorship information prior to and after receiving a survivorship care plan. A paired t-test showed statistical significance in improvement in confidence in the knowledge of long-term physical effects of cancer treatment, strategies for preventing and treating long-term physical effects, and resources available for family members who may be at risk. Delivery of survivorship care plans will continue within the urology practice, along with further implementation into other practices, to meet requirements for cancer programs established by the Commission on Cancer (Commission on Cancer, 2016).


*Keywords: prostate cancer, prostate cancer survivorship, survivorship care plans, confidence and satisfaction in survivorship care*

Quality Improvement Project to Implement Prostate Cancer Survivorship Care Plans

In 2017, there were an estimated 14 million cancer survivors in the United States. "By combining the growth in the United States' aging population with an increased risk of cancer as individuals age, the number of cancer survivors is projected to increase to 18 million by 2022" (Hebdon, Abrahamson, McComb, & Sands, 2014, p. 615). Of the current 14 million survivors, 2.9 million are prostate cancer survivors (American Cancer Society, 2017). With the 5-year survival rate of prostate cancer at almost 100% for those diagnosed with local or regional prostate cancer, this group makes up a large portion of cancer survivors (American Society of Clinical Oncology [ASCO], 2018). "An individual is considered a cancer survivor from the time of cancer diagnosis through the balance of his or her life" (Institute of Medicine [IOM], 2005b, p. 2). Cancer patients are living past their diagnosis and treatment, and they encounter a variety of treatment-related health issues, in addition to psychological, emotional, financial, and social challenges (National Coalition for Cancer Survivorship [NCCS], 2014). In order to describe these issues and challenges faced by these patients, the National Coalition for Cancer Survivorship defined the term "cancer survivorship" as "living with, through, and beyond a cancer diagnosis" and recommends utilizing survivorship care plans to support their needs (NCCS, 2014). There will be a great burden on the healthcare system with the increasing number of cancer survivors, so efforts have begun to address survivorship care (Hebdon et al., 2014).

## Background and Significance

The Institute of Medicine's *From Cancer Patient to Cancer Survivor: Lost in Transition* was the first to highlight as cancer patients complete their cancer treatment, they are not provided with the essential information or support as they transition to being a cancer survivor (IOM, 2005a). The recommendations from the IOM report included an overview of the need for these

patients to receive survivorship care plans, inclusive of their diagnosis, treatment, surveillance schedule, recommendations and resources (IOM, 2005a, p.1). A survivorship care plan would "allow for a comprehensive review of treatment with ongoing goals" (Rasper & Terlecki, 2016). Other organizations, including the Centers for Disease Control and Prevention (CDC), Lance Armstrong Foundation (Livestrong), Commission on Cancer (CoC), and National Comprehensive Cancer Network (NCCN), have also addressed the need for survivorship care and care coordination through post-treatment summaries or survivorship care plans (Hebdon et al., 2014).

In 2016, the CoC released new standards for CoC-accredited cancer programs. Specifically, Standard 3.3 requires all patients who have completed their cancer treatment be provided with a survivorship care plan (Commission on Cancer, 2016). To meet this requirement, the survivorship care plan must detail the treatment summary and follow-up care plan for the patient (Commission on Cancer, 2016). It must also be delivered to patients within one year of diagnosis and no later than six months after completion of treatment (Commission on Cancer, 2016). Additionally, a verbal discussion about the survivorship care plan between the patient and healthcare provider is required to meet the standard. By 2018, 75% of all eligible cancer survivors who have completed treatment should receive a survivorship care plan (Commission on Cancer, 2016).

Rasper and Terlecki (2016) reported prostate cancer as the most common malignancy among male cancer survivors in the United States. This population makes up 44% of the 7 million male survivors, and therefore, survivorship care plans for these patients should be a priority for both cancer centers and urology practices (Rasper & Terlecki, 2016). Although patients with treatment for localized prostate cancer experience favorable outcomes, they can

endure both functional and quality-of-life impairments (Gilbert et al., 2014). “For example, men treated surgically (prostatectomy) face a 10%-15% risk of problematic urinary incontinence and greater than 50% risk of erectile dysfunction” (Gilbert et al., 2014, p. 1484). These survivorship care plans set the framework for important conversations between patients and their healthcare providers and can facilitate efficient and effective communication about post-treatment care (Rasper & Terlecki, 2016).

**Internal Evidence**

In 2017, the need for survivorship care plans for cancer patients was identified at a National Cancer Institute-designated, academic hospital in Phoenix, Arizona. In previous years, the hospital was able to meet the CoC requirement because it was evaluated as part of the hospital system as a whole instead of as an individual site. The CoC evaluators recommended that each site be evaluated on an individual basis moving forward; therefore, the hospital in Phoenix, Arizona would no longer meet the requirements simply by falling under the enterprise umbrella and would need to implement survivorship care plans into their practice. It was determined the target areas for implementation of survivorship care plans would be the organization’s three largest cancer patient populations. This included prostate, breast, and colon cancer patients. In 2015, the urology practice of the organization provided first course treatment to 415 patients diagnosed with prostate cancer (Mayo Clinic Cancer Registry Database, personal communication, September 2017). There were 215 patients whose cancer was treated with surgical intervention only, while the remaining patients were treated with various combination therapies (Mayo Clinic Cancer Registry Database, personal communication, September 2017). These patients with surgical intervention as their treatment course for cancer encompass a large

portion of the organization's cancer patients and survivors, so were identified as the initial group for survivorship care plan implementation.

## Problem Statement

The organization identified the need to meet CoC requirements by providing survivorship care plans to patients completing cancer treatments. For the purposes of this DNP project, the urology prostate cancer population was identified. This inquiry has led to the clinically relevant PICO(T) question, "In adult male patients who have completed their treatment for prostate cancer with surgical intervention (P), how does providing a Survivorship Care Plan (I) compared to standard practice (C) affect their confidence and satisfaction in survivorship information and health promotion (O)?

## Search Strategy

To address this clinical question, an exhaustive search of the literature was completed. The search was completed in three databases, Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, and Academic Search Premier. The search terms that were used included: *prostate cancer, prostate cancer survivorship, survivorship care plan, prostate cancer survivorship care plans, cancer survivorship care, confidence in survivorship care, satisfaction in survivorship care,* and *confidence and satisfaction in cancer survivors.* The searches were restricted to peer-reviewed journals, English language, and published between 2010 and 2017. The Boolean connector "AND" was also used to combine some of the search terms in order to further specify the search results. In addition to the search of the databases, the reference lists of the literature found were reviewed to help identify further useful studies.

The search of CINAHL (Appendix A, Figure A1) with the limits applied and searching the general term "prostate cancer" yielded 3,574 article results. The search of the term "prostate

cancer survivorship" yielded 22 results. The term "survivorship care plan" yielded 87 results, while the specific term "prostate cancer survivorship care plans" yielded two results. A search was also completed using the Boolean connector "AND" to combine the terms "prostate cancer" and "survivorship care plan" which yielded two results. During a subsequent search (Appendix A, Figure A2) the terms "confidence in survivorship care" yielded seven results, "satisfaction in survivorship care" yielded nine results, and "confidence and satisfaction in cancer survivors" yielded two results.

The search of PubMed (Appendix B, Figure B1) with the limits applied for the term "prostate cancer" yielded 63,685 article results. The term "prostate cancer survivorship" yielded 295 results, and the term "survivorship care plan" yielded 238 results. Again, the Boolean connector "AND" was utilized for the terms "prostate cancer" and "survivorship care plan" for which 11 results were yielded. The search of the term "cancer survivorship care" yielded 2,178 results, and the term "prostate cancer survivorship care plan" yielded 11. Search results for the terms "confidence in survivorship care", "satisfaction in survivorship care", and "confidence and satisfaction in cancer survivors" yielded 179, 172, and 30 articles, respectively (Appendix B, Figure B2).

A search was conducted in Academic Search Premier (Appendix C, Figure C1) with the limits applied and for the same terms, "prostate cancer", "prostate cancer survivorship", "survivorship care plan", and "cancer survivorship care", which yielded 11,202, 26, 78, and 293 results respectively. Using the Boolean connecter, "prostate cancer" AND "survivorship care plan" yielded five results, and "prostate cancer survivorship care plan" yielded four results. Again, a subsequent search of Academic Search Premier (Appendix C, Figure C2) was

completed for the terms “confidence in survivorship care”, “satisfaction in survivorship care”, and “confidence and satisfaction in cancer survivors” yielding five, nine, and two articles.

The articles yielded from the searches were a combination of both qualitative and quantitative. After extensive review of the literature, ten articles were selected for their examination of prostate cancer survivorship, survivorship care plans, and cancer survivorship care.

## Evidence Synthesis

Both qualitative and quantitative articles were found regarding implementation of survivorship care plans into practice. A majority of the articles found were systematic reviews of qualitative studies, Level V evidence (Melnyk & Fineout-Overholt, 2011). The articles reviewed examined: implementing survivorship care plans into practice; effectiveness in post-treatment care; and the effect of the model of care delivery used. No model of care delivery was more beneficial than another, for example, which healthcare provider delivers the survivorship care plan (i.e. physician or nurse) or in what setting (i.e. primary care clinic or survivorship care clinic) (Hebdon et al., 2014). A Level IV evidence cohort study was reviewed that looked at the prevalence and barriers of survivorship care plans in practice, which showed most organizations had adopted survivorship care plans, however less than a quarter of the providers had reported using them (Birken, Mayer, & Weiner, 2013). Some of the contributing factors for why the providers did not use the care plans were lack of organizational resources such as time, funding, staff, training, and lack of a referral system to a survivorship nurse (Birken, Mayer, & Weiner, 2013). Another study found the time it took to develop and deliver the care plan, an average of 49 minutes and 16 minutes respectively, was a barrier for the care team members and contributed to the compliance of delivery (Mayer, Gerstel, Walton, Triglianos, Sadiq,…Davies, 2014).

Additionally, a Level I evidence Randomized Controlled Trial supported an increase in confidence in survivorship information following the implementation of survivorship care plans (Mayer et al., 2016).

The evidence confirmed inconsistencies in the delivery of survivorship care plans to patients due to time and available organizational resources. Further studies are needed to examine and support a specific model of care delivery for survivorship care, either through physicians, Physician Assistants (PAs), Nurse Practitioners (NPs), or nurses. Additionally, a majority of the literature came to the same conclusion that further studies are needed to support the effects of survivorship care plans on cancer survivors' quality of life.

## Purpose and Rationale

The purpose of providing survivorship care recommendations and resources to cancer survivors is to improve their quality of life following treatment. By increasing communication and collaboration between the care team and the patient, and increasing the patient's awareness of the surveillance plan, follow-up care, cancer survivor resources and wellness promotion, it is hoped patients will become active and knowledgeable participants in their own care. The aim of the project is to give prostate cancer survivors confidence to navigate their care after completing their cancer treatment.

## Contribution of Theory and Models

### Watson's Theory of Human Caring

Jean Watson's Theory of Human Caring was the theoretical framework used to guide the implementation of survivorship care plans for prostate cancer survivors to increase their knowledge and self-care following their cancer treatment. The core concepts of this theory are understanding the patient's health needs, caring that is inclusive and circular, care for the patients

and their families, and focusing on health promotion (Watson Caring Science Institute, 2010). Watson's "10 Caritas Processes" are the guidelines for putting the theory into action, and six of these specifically were utilized to guide the project (Watson Caring Science Institute, 2010, p.2): Be sensitive to self and others by nurturing individual beliefs, personal growth, and practices; Develop helping-trusting caring relationships; Promote and accept positive and negative feelings by authentically listening to another's story; Share teaching and learning that addresses the individual needs, readiness, and learning styles; Create a healing environment for the physical and spiritual self that respects human dignity; Assist with basic physical, emotional, and spiritual human needs. This theory supports the principal objectives of survivorship care plans, which are to provide essential information to cancer patients as they transition to cancer survivors, to educate them on health promotion, and to provide support for their physical, psychological, and emotional well-being following their treatment.

**Interprofessional Collaborative Practice Model**

**"**Interprofessional collaborative practice has been defined as a process which includes communication and decision-making, enabling a synergistic influence of grouped knowledge and skills" (Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011, p.1). Due to the complex health needs of patients and the complexity of healthcare organizations, more than one discipline is required to address issues (Bridges et al., 2011). Through collaboration, coordination, and communication, these interprofessional teams bring their individual professional cultures and knowledge together to work on common goals to improve the quality of patient care (Mangold, Denke, Gorombei, Ostroski, & Root, 2014). Time, distance, lack of respect, and poor communication can create challenges in interprofessional collaboration (Mangold et al., 2014). To promote strong relationships and provide quality outputs, it is vital to anticipate these

challenges and work to prevent or minimize them. These groups also require strong leadership to ensure productivity, and communication that is both timely and meaningful.

### Evidence-Based Practice Model

The Mayo Clinic Nursing Evidence-Based Practice Model was chosen to guide the survivorship care plan implementation for prostate cancer survivors. The Mayo Clinic Nursing Evidence-Based Practice Model (Appendix D) is a cyclical model that drives the evidence-based process through seven steps (Mayo Clinic, personal communication, September 2017): Formulate a question; Search the evidence; Appraise the evidence; Compare and contrast the evidence; Decision options; Evaluate; Disseminate. Decision options include confirming the current practice reflects the best available evidence, identifying if there is a discrepancy between the current practice and evidence that supports a practice change, or validating the evidence is inconclusive. Decision options and practice strategies are based on the best available evidence including clinical expertise, patient values, and literature review (Mayo Clinic, personal communication, 2017). Through the use of this evidence-based practice model, the implementation of survivorship care plans into practice can be evaluated with meaningful outcomes, and these outcomes can be disseminated.

## Project Methods

A team was assembled to design and implement the Prostate Cancer Survivorship Care Plan Quality Improvement Project. This interprofessional team collaboration included the DNP student leader, a Project Manager from the organization, the Manager of Nursing Research, a Clinical Informatics nurse, and a physician recognized as the physician sponsor for the project.

To move forward with the project, the DNP student leader submitted for approval from the Institutional Review Board of the organization. The project was deemed exempt from further

IRB review (Appendix E). The DNP student leader also submitted the project description, questionnaire, and phone script for the follow-up calls to the Arizona State University (ASU) Institutional Review Board (Appendix F). No consents were submitted as the project was regarded as a quality improvement project through the organization. The project was approved by the ASU Institutional Review Board as Study #00007269 (Appendix F).

**Participants**

The participants identified for the project were patients diagnosed with prostate cancer who had surgical intervention as their primary cancer treatment. Based on CoC requirements, the inclusion criteria included: Adult males with a diagnosis of prostate cancer stages I, II, and III, ages 18 and older that were treated with curative intent for an initial cancer occurrence, who have completed their active therapy at the identified National Cancer Institute-designated, academic hospital in Phoenix, Arizona (Commission on Cancer, 2016). Patients with stage 0, IV, or with metastatic disease and that have been treated without curative intent, patients who are pathologically staged but never treated or seen for follow up, and patients receiving radiation, chemotherapy, or hormone therapy were excluded from the project. Participants were not required to consent as this was a quality improvement project for the organization.

**Instrumentation**

With permission from the University of Pennsylvania, the "Confidence in Survivorship Information" Questionnaire (Appendix G) was identified as the tool for the project to measure the patients' confidence in their survivorship care prior to and after receiving a care plan. The reported reliability of the tool was "two subscales: 1) confidence in knowledge of past cancer diagnostic and treatment details (3 items; Cronbach's alpha = 0.77) and 2) confidence in knowledge about prevention and treatment of long-term and late-effects of disease and treatment,

prevention of future disease, access to resources, and familial risk of cancer (10 items; Cronbach's alpha = 0.95)" (Palmer, Jacobs, Mao, & Stricker, 2012, p.1). Three additional organization-specific questions on satisfaction were also added to the questionnaire. The first 13 questions measured confidence and utilized a three-point Likert scale. One being "not at all confident" and three being "very confident". The three organizational-specific demographic questions regarding satisfaction utilized a five-point Likert scale. One being "very dissatisfied" and five being "very satisfied".

Patients were provided the questionnaire upon check-in to their follow-up appointment and asked to complete it prior to meeting with their provider. One to three months following this appointment, the patients who completed the pre-intervention questionnaire were called to complete a post-intervention questionnaire.

**Implementation Strategy**

The interprofessional team was concerned about the amount of time it would take to develop and deliver a survivorship care plan. A technology-enabled care plan tool was identified to reduce this time. The tool enables a care plan to be created using patient specific data entered by the provider. The care plan is also populated with health promotion recommendations based on the standard NCCN guidelines (NCCN, 2018). There is an option for the practice to customize the tool with practice preferences. The DNP student leader and the Clinical Informatics nurse reviewed and tested the prostate cancer compendium with the organization's practice preferences to ensure the correct information was generated into the care plans when a trigger was met with the patient-specific data.

Initially, the team met with the Nurse Manager and Nurse Administrator of the outpatient urology practice to determine if the nurses could provide the survivorship care plans to the

patients. In the outpatient urology practice, the nurses perform more procedural roles than clinical support roles therefore it was agreed this was not the best option for this practice. The DNP student leader and the physician sponsor met with the attending physicians of the urology practice to gain key stakeholder buy-in, and to collaborate and determine responsibility to create and deliver the survivorship care plans to the patients. During this meeting, the urology residents and PAs were identified as the care providers who would be trained to implement the care plans into practice.

An overview of survivorship care plans was communicated to the residents and PAs to gain buy-in and develop a process for the delivery of the survivorship care plans (Appendix H). Through team discussion and collaboration, it was determined that the 1-week follow-up visit after surgery would be the best time to deliver the survivorship care plans as pathology would have been reviewed with the patients. Another potential issue considered was patients not returning for their follow-up visits at the 3-month mark. To facilitate recognition of the need to provide the care plan during the appointment, the providers were encouraged to enter a comment stating “Survivorship Care Plan Visit” into the Post-Operative Visit (POV) order. This triggered action by the scheduling department to place a reminder on the providers’ calendar. This also functioned as a reminder prompt for the front desk staff to be aware that the patient should be given the survivorship questionnaire.

The DNP student leader led 1:1 education sessions with the residents and PAs prior to the scheduled start date. During the education sessions, the use of the technology-enabled care plan tool was demonstrated. The subsequent steps to be completed to meet the CoC requirements (Appendix H) were reviewed and return demonstration by the provider was completed.

The implementation start date was December 11, 2017. During the first week, the patients were manually identified from the surgical schedule. A more sustainable and less manual process was needed for patient identification; therefore, a report was developed. By searching the surgery dates, the report identified the patients and their POV appointment dates. Subsequent parts were added to the report, such as links to the dictated note and the care plan in the patient's electronic health record (EHR), to use it as an auditing tool for process measures.

## Outcomes/Project Results/Impact

Prior to the implementation of the project, survivorship care plans were not developed and given to prostate cancer patients. During the implementation period, 71 eligible patients were identified. Of these 71 patients, 66 of these patients received a survivorship care plan resulting in a 93% adherence rate to the implemented process change. The correct version of the survivorship care plan was sent to the patient's EHR 74% of the time (Appendix I). A dictated note detailing the delivery and review of the survivorship care plan was completed 80% of the time (Appendix I).

Of these 66 patients who received a survivorship care plan, 16 completed the pre-intervention questionnaire, a 26% response rate. The patient sample had a mean age of 64.31 years (SD 7.068), ranging from 52 to 74 years old. Follow-up phone calls were made to the patients who completed the pre-intervention questionnaire at one to three months following their POV appointment. Six patients provided responses for the post-intervention questionnaire.

A paired samples t-test was conducted for each question to compare the confidence and satisfaction in survivorship information prior to and then after receiving a survivorship care plan. There were four questions that showed statistical significance when the paired t-test was performed ($p<0.05$), while there was no statistical significance in the other 12 questions

(Appendix J). There was a significant difference in the scores for Question 5 pre-intervention (M=2.00, SD=0.62) and Question 5 post-intervention (M=2.83, SD=0.41); t(5)=-5.00, p=.004. This result suggests there was an increase in confidence in knowledge about the long-term physical effects of cancer treatment associated to the survivorship care plan. Next, there was a significant difference in the scores for Question 6 pre-intervention (M=2.00, SD=0.632) and Question 6 post-intervention (M=3.00, SD=.000); t(5)= -3.87, p=0.012. This result suggests there was an increase in confidence in knowledge about strategies for preventing long-term physical effects of cancer treatment due to the survivorship care plan. There was also a significant difference in the scores for Question 7 pre-intervention (M= 2.00, SD= 0.632) and Question 7 post-intervention (M= 2.67, SD= 0.516); t(5)=-3.162, p=0.025. This result suggests there was an increase in confidence in knowledge about strategies for treating long-term physical effects of cancer treatment related to the survivorship care plan. Finally, there was a significant difference in the scores for Question 13 pre-intervention (M=2.00, SD= .632) and Question 13 post-intervention (M= 2.67, SD= .516); t(5)=-3.162, p=0.025. This result suggests there was an increase in confidence in knowledge about how to get information for family members and their risk for cancer related to the survivorship care plan. A Wilcoxon Sign-Ranked test was further completed on the four questions that showed statistical significance in the paired t-test. These same four questions, Questions 5, 6, 7, and 13, were again statistically significant.

Although there was not statistical significance on all questions for confidence and satisfaction in survivorship information, all questions showed an increase in mean scores in confidence from the pre-intervention questionnaire to post-intervention questionnaire with the exception of Question 4 (Appendix K). There was no increase in mean scores for any of the three satisfaction questions (Appendix K). Survivors confidence in their knowledge of the potential

long-term physical effects from their cancer treatment, strategies for preventing and treating long-term effects, resources for their family's risk for cancer, and available community resources were the areas most improved following the delivery of the survivorship care plan.

## Discussion

With the small sample size (n=6) of patients completing both the pre-intervention and post-intervention questionnaires, it is difficult to know the overall effectiveness of survivorship care plans on cancer survivors' confidence and satisfaction. However, the results of this quality improvement project show a positive trend in the effects of the survivorship care plan. By collecting data of a larger sample size, this could help to confirm the results found in this smaller sample size.

Although the process change was created through collaboration with the urology practice, greater adherence to the process change might have occurred with greater buy-in and deeper knowledge of the importance of survivorship care plans, their purpose, and the positive effect on communication between healthcare providers and patients. The specific requirements to meet the CoC standard should be reviewed again with the providers to improve their practice and further adherence to the process. Also, an initial meeting should occur with the key stakeholders as it did; however, it would be more beneficial to include all stakeholders when a process change is planned. This would encourage open communication and consensus by those who will deliver the care plans. With this buy-in and acknowledgement of roles and responsibilities, the successful transition of the project to the practice and its continued sustainability would be more likely.

### Strengths

There were a few strengths noted throughout the project and during the evaluation.

The first strength was the interprofessional collaboration noted throughout the entire process. This was truly necessary to develop the project design and for successful implementation of survivorship care plans into the urology practice. Another asset to the project was the use of the technology-enabled care plan tool. Through the literature review, the interprofessional team identified the potential barrier the time it takes for providers to create care plans. To proactively address this issue, the team leveraged the technology-enabled care plan tool to help decrease the time it would take for the providers to produce the care plans. Another strength of the project was the 94% adherence rate for providers delivering survivorship care plans to the patients. This was a great start towards the CoC requirement of percentage of patients to receive a care plan by the end of 2018.

**Barriers**

Questionnaire responses from patients was a challenge for the project. Only 16 out of 71 patients completed a pre-intervention questionnaire. Although a workflow was identified to create reminder prompts, this was dependent on the providers placing a comment in the POV order. This comment was not consistently added to the POV orders as noted in audits completed. Post-intervention responses were also difficult to obtain. Patients were called at home, and either did not answer or asked to be called back at another time. During call reattempts, the patients did not answer. In the future, response rates might improve if the questionnaire could be sent electronically through the patient portal both pre- and post-intervention.

The flow and pace of the outpatient urology clinic was also determined to be a barrier in successfully delivering the care plans to all eligible patients. Since the clinic is so busy, the providers do not have adequate time to discuss in depth the survivorship care plans. This

demanding clinic schedule also affects the ability for the providers to send the correct version of the care plans to the patients' EHR and timely dictate a note to meet the CoC standard.

Another obstacle to the project and its sustainability in the urology group is the residents' perception of their responsibility to create and deliver the survivorship care plans. Due to the more procedural role the nurses have in the outpatient urology clinic, the residents and PAs were identified to be the best group to create and deliver the care plans to the patients. This differs from the process design in other practices within the organization that have implemented survivorship care plans. Other specialties have Nurse Practitioners or Nurse Navigators to create and deliver the survivorship care plans. The residents were aware that other departments were utilizing non-physician team members to complete and deliver the survivorship care plans. This might have affected their willingness to complete the survivorship care plans. It also creates a barrier to the value of the survivorship care plan and the interaction between the patient and the provider. The residents may not have realized the importance of the survivorship care plans and the additional opportunity to understand and address concerns affecting the patient's post-treatment quality of life.

**Sustainment Plan**

Since survivorship care plans are a requirement from the CoC to retain cancer program accreditation, the survivorship care plans will continue to be given to the prostate cancer patients. Feedback regarding the technology-enabled care plan tool was received, and it was examined by the team whether or not to renew the contract for the product or to build care plans another way. A new EHR will be implemented into the organization in the fall of 2018. The new EHR product does not have a survivorship care plan solution developed yet. Therefore, the team agreed to renew the current contract for the technology-enabled care plan tool for another year while a

solution for survivorship care plans within the new EHR is created and released. The new EHR could potentially create other challenges in the current process regarding documentation, and when a new solution is created, the process design will need to be reexamined.

The Physician Assistant Team Lead of the urology practice was identified as the lead for the continuation of the project within the practice. The DNP student leader met with this PA to review the requirements and the auditing tool. Questions were answered about the frequency and need for audits moving forward. After receiving the feedback from the residents, the team has scheduled another meeting with the urology practice to determine further needs for the sustainment of the project in the practice.

## Conclusion

Although a requirement set forth by the CoC, survivorship care plans have yet to be implemented consistently throughout many organizations including this National Cancer Institute-designated, academic hospital in Phoenix, Arizona. Survivorship care plans will continue to be delivered to prostate cancer survivors within the organization. This quality improvement project provided valued results to support sustaining delivery of survivorship care plans within the practice. Additionally, it highlighted the importance of interprofessional collaboration during process change and further sustainment of the change. There are many more opportunities for further development of evidence to support the use of survivorship care plans, the best process for implementation, and the effect of their use on cancer survivors' confidence in their post treatment care.

# References

American Cancer Society (2017). *Key statistics for prostate cancer.* Retrieved from https://www.cancer.org/cancer/prostate-cancer/about/key-statistics.html

American Society of Clinical Oncology (ASCO) (2018). *Prostate cancer: Statistics*. Retrieved from https://www.cancer.net/cancer-types/prostate-cancer/statistics

Birken, S.A., Mayer, D.K., Weiner, B.J. (2013). Survivorship care plans: Prevalence and barriers to use. *Journal of Cancer Education*, *28,* 290-296.

Bridges, D.R, Davidson, R.A., Odegard, P.S., Maki, I.V., & Tomkowiak, J. (2011). Interprofessional collaboration: Three best practice models of interprofessional education. *Medical Education Online, 15*. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3081249/pdf/MEO-16-6035.pdf

Commission on Cancer (2016). Cancer program standards: Ensuring patient-centered care. Retrieved from https://www.facs.org/~/media/files/quality%20programs/cancer/coc/2016%20coc%20standards%20manual_interactive%20pdf.ashx

Gilbert, S.M., Dunn, R.L., Wittmann, D., Montgomery, J.S., Hollingsworth, J.M., Miller, D.C.,… Montie, J.E. (2014). Quality of life and satisfaction among prostate cancer patients followed in a dedicated survivorship clinic. *Cancer*, 1484-1491.

Hebdon, M., Abrahamson, K., McComb, S., & Sands, L. (2014). Transitioning patients to survivorship care: A systematic review. *Oncology Nursing Forum*, *41*(6), 615-625.

Institute of Medicine of the National Academies (IOM) (2005a). Cancer Survivorship Care Planning. *Fact Sheet*, 1-2. Retrieved from

http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2005/From-Cancer-Patient-to-Cancer-Survivor-Lost-in-Transition/factsheetcareplanning.pdf

Institute of Medicine of the National Academies (IOM) (2005b). Glossary of common cancer terms. *Fact Sheet*, 1-2. Retrieved from http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2005/From-Cancer-Patient-to-Cancer-Survivor-Lost-in-Transition/factsheetglossary.pdf

Mangold, K., Denke, N.J., Gorombei, D., Ostroski, T.L., & Root, L. (2014). Principles of successful partnerships. *Nursing Administration Quarterly, 38*(4), 340-347.

Mayer, D.K., Deal, A.M., Crane, J.M., Chen, R.C., Asher, G.N.,…Rosenstein, D.L. (2016). Using survivorship care plans to enhance communication and cancer care coordination. *Oncology Nursing Forum, 43*(5), 636-645.

Mayer, D.K., Gerstel, A., Walton, A.L., Triglianos, T., Sadiq, T.E.,…Davies, J.M. (2014). Implementing survivorship care plans for colon cancer patients. *Oncology Nursing Forum, 41*(3), 266-273.

Melnyk, B. & Fineout-Overholt, E. (2011). *Evidence-based practice in nursing and healthcare* (2nd ed.). Philadelphia, PA: Wolter Kluwer Health.

National Coalition for Cancer Survivorship (NCCS) (2014). Defining cancer survivorship [web log post]. Retrieved from https://www.canceradvocacy.org/news/defining-cancer-survivorship/

National Comprehensive Care Network (NCCN) (2018). *NCCN content in health information technologies*. Retrieved from https://www.nccn.org/healthinfotech/default.aspx

Palmer, S.C., Jacobs, L.A., Mao, J.J., & Stricker, C.T. (2012). *Confidence in survivorship information*. Retrieved from

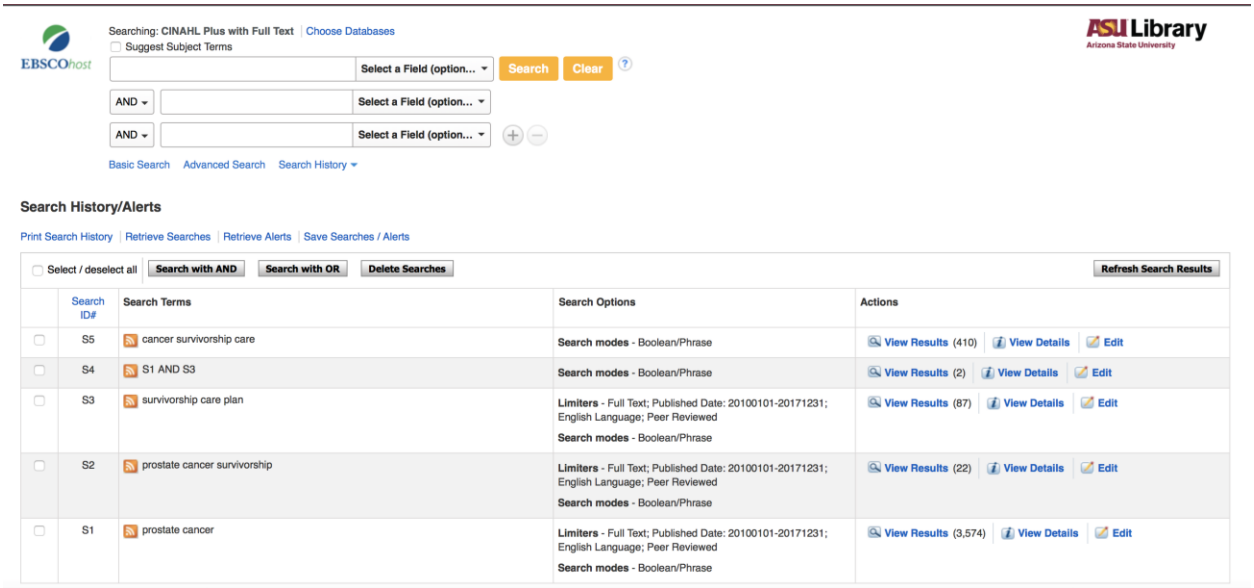
https://smhs.gwu.edu/cancercontroltap/sites/cancercontroltap/files/CSI%20description.pdf?src=TAPResource

Rasper, A.M. & Terlecki, R.P. (2016). Prostate cancer survivorship: Implementation of survivorship care plans to meet the mandate and enhance urologic practice through collaborative care. *Reviews in Urology, 18*(4), 214-220.

Watson Caring Science Institute (2010). *Core concepts of Jean Watson's theory of human caring/caring science*. Retrieved from https://www.watsoncaringscience.org/files/Cohort%206/watsons-theory-of-human-caring-core-concepts-and-evolution-to-caritas-processes-handout.pdf

# Appendix A

## Figure A1: CINAHL Search Strategy



EBSCOhost — Searching: CINAHL Plus with Full Text | Choose Databases

Suggest Subject Terms

Select a Field (option...) | Search | Clear

AND | Select a Field (option...)

AND | Select a Field (option...)

Basic Search | Advanced Search | Search History

ASU Library — Arizona State University

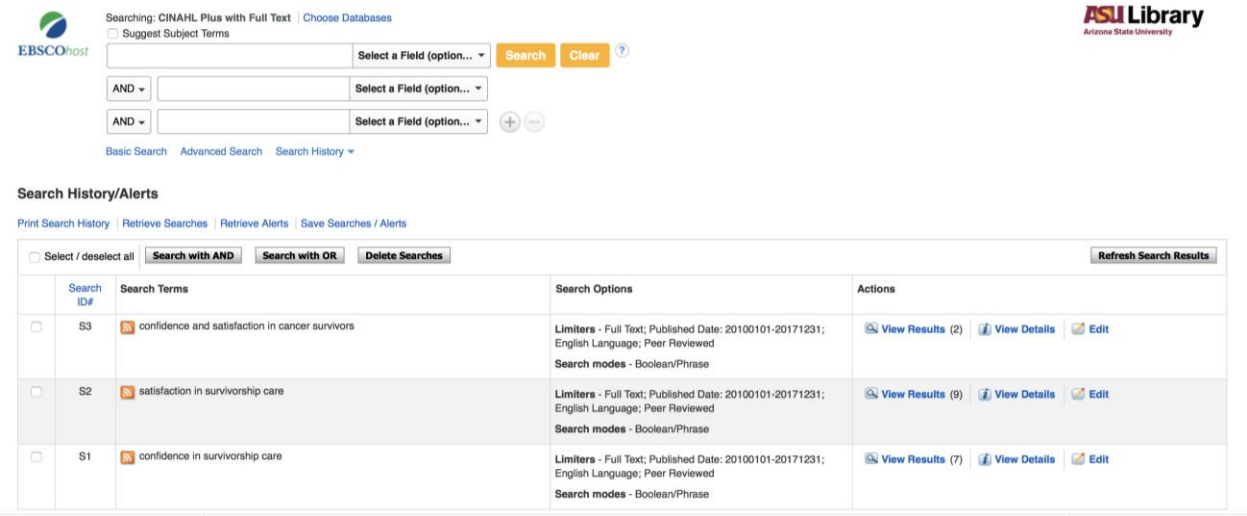
**Search History/Alerts**

Print Search History | Retrieve Searches | Retrieve Alerts | Save Searches / Alerts

Select / deselect all | Search with AND | Search with OR | Delete Searches | Refresh Search Results

| Search ID# | Search Terms | Search Options | Actions |
|---|---|---|---|
| S5 | cancer survivorship care | **Search modes** - Boolean/Phrase | View Results (410) \| View Details \| Edit |
| S4 | S1 AND S3 | **Search modes** - Boolean/Phrase | View Results (2) \| View Details \| Edit |
| S3 | survivorship care plan | **Limiters** - Full Text; Published Date: 20100101-20171231; English Language; Peer Reviewed<br>**Search modes** - Boolean/Phrase | View Results (87) \| View Details \| Edit |
| S2 | prostate cancer survivorship | **Limiters** - Full Text; Published Date: 20100101-20171231; English Language; Peer Reviewed<br>**Search modes** - Boolean/Phrase | View Results (22) \| View Details \| Edit |
| S1 | prostate cancer | **Limiters** - Full Text; Published Date: 20100101-20171231; English Language; Peer Reviewed<br>**Search modes** - Boolean/Phrase | View Results (3,574) \| View Details \| Edit |

## Figure A2: CINAHL Search Strategy



EBSCOhost — Searching: CINAHL Plus with Full Text | Choose Databases

Suggest Subject Terms

Select a Field (option...) | Search | Clear

AND | Select a Field (option...)

AND | Select a Field (option...)

Basic Search | Advanced Search | Search History

ASU Library — Arizona State University

**Search History/Alerts**

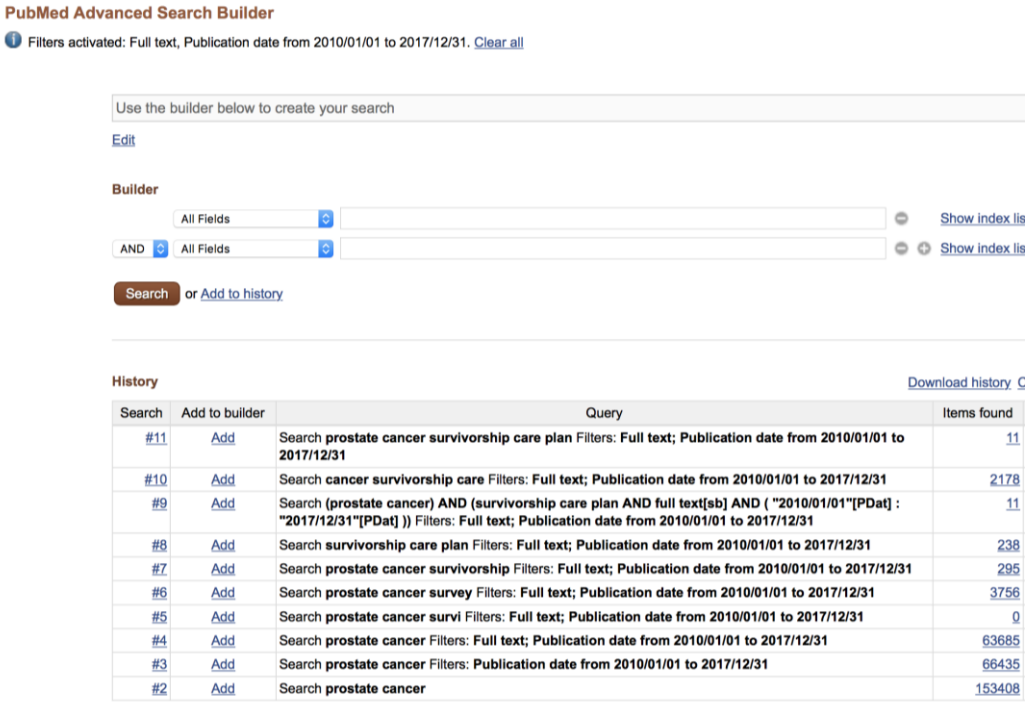
Print Search History | Retrieve Searches | Retrieve Alerts | Save Searches / Alerts

Select / deselect all | Search with AND | Search with OR | Delete Searches | Refresh Search Results

| Search ID# | Search Terms | Search Options | Actions |
|---|---|---|---|
| S3 | confidence and satisfaction in cancer survivors | **Limiters** - Full Text; Published Date: 20100101-20171231; English Language; Peer Reviewed<br>**Search modes** - Boolean/Phrase | View Results (2) \| View Details \| Edit |
| S2 | satisfaction in survivorship care | **Limiters** - Full Text; Published Date: 20100101-20171231; English Language; Peer Reviewed<br>**Search modes** - Boolean/Phrase | View Results (9) \| View Details \| Edit |
| S1 | confidence in survivorship care | **Limiters** - Full Text; Published Date: 20100101-20171231; English Language; Peer Reviewed<br>**Search modes** - Boolean/Phrase | View Results (7) \| View Details \| Edit |

# Appendix B

## Figure B1: PubMed Search Strategy



**PubMed Advanced Search Builder**

Filters activated: Full text, Publication date from 2010/01/01 to 2017/12/31. Clear all

Use the builder below to create your search

Edit

**Builder**

All Fields — Show index lis

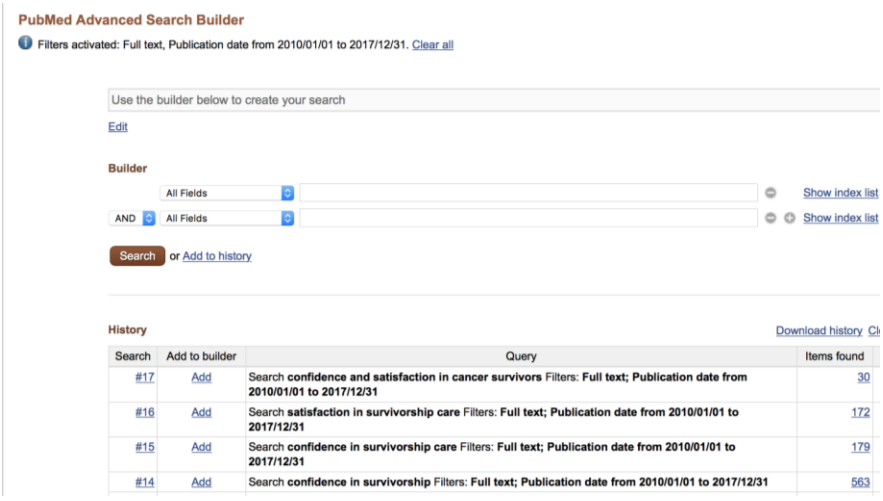
AND — All Fields — Show index lis

Search or Add to history

**History** Download history C

| Search | Add to builder | Query | Items found |
|---|---|---|---|
| #11 | Add | Search **prostate cancer survivorship care plan** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 11 |
| #10 | Add | Search **cancer survivorship care** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 2178 |
| #9 | Add | Search **(prostate cancer) AND (survivorship care plan AND full text[sb] AND ( "2010/01/01"[PDat] : "2017/12/31"[PDat] ))** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 11 |
| #8 | Add | Search **survivorship care plan** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 238 |
| #7 | Add | Search **prostate cancer survivorship** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 295 |
| #6 | Add | Search **prostate cancer survey** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 3756 |
| #5 | Add | Search **prostate cancer survi** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 0 |
| #4 | Add | Search **prostate cancer** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 63685 |
| #3 | Add | Search **prostate cancer** Filters: **Publication date from 2010/01/01 to 2017/12/31** | 66435 |
| #2 | Add | Search **prostate cancer** | 153408 |

## Figure B2: PubMed Search Strategy



**PubMed Advanced Search Builder**

Filters activated: Full text, Publication date from 2010/01/01 to 2017/12/31. Clear all

Use the builder below to create your search

Edit

**Builder**

All Fields — Show index list

AND — All Fields — Show index list

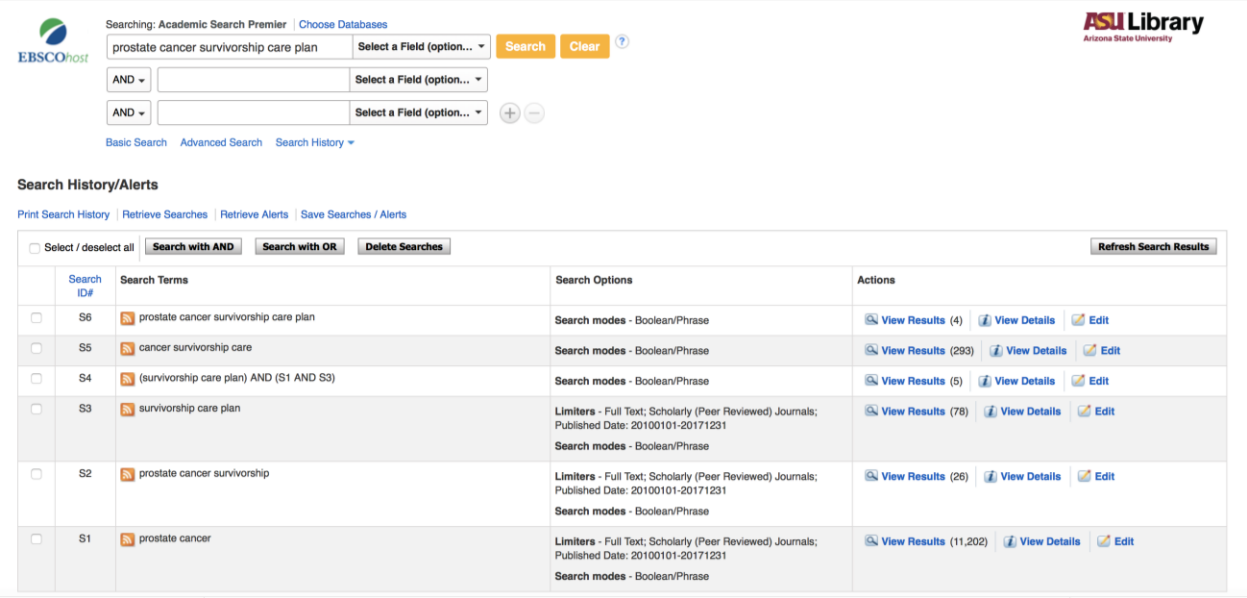
Search or Add to history

**History** Download history Cl

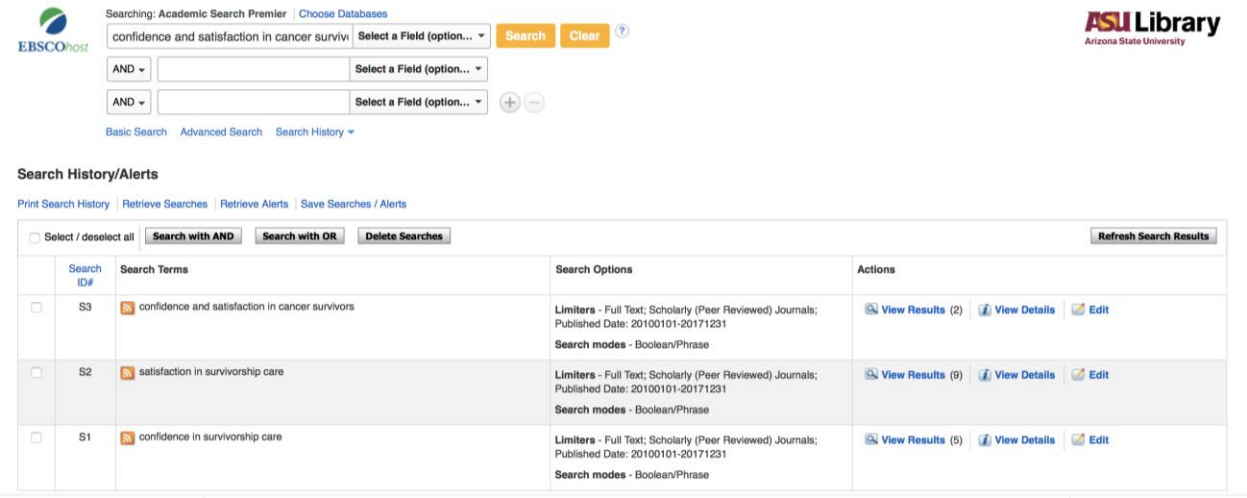
| Search | Add to builder | Query | Items found |
|---|---|---|---|
| #17 | Add | Search **confidence and satisfaction in cancer survivors** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 30 |
| #16 | Add | Search **satisfaction in survivorship care** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 172 |
| #15 | Add | Search **confidence in survivorship care** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 179 |
| #14 | Add | Search **confidence in survivorship** Filters: **Full text; Publication date from 2010/01/01 to 2017/12/31** | 563 |

# Appendix C

## Figure C1: Academic Search Premier Search Strategy




## Figure C2: Academic Search Premier Search Strategy



# Appendix D

## The Mayo Clinic Nursing Evidence-Based Practice Model

IMAGE REMOVED PER MAYO'S REQUEST

# Appendix E

## Mayo IRB Letter

MAYO CLINIC

*Memo*

**Date:** Thursday, October 26, 2017

**From:** Mayo Clinic Institutional Review Board

**Re:** Quality Improvement Project to Implement Prostate Cancer Survivorship Care Plans*)*

**To:** Noël Arring, DNP, RN, OCN and Brittany Shirley, MSN, RN*)*

The Mayo Clinic Institutional Review Board (IRB) acknowledges that based on the responses submitted for this new activity through the Mayo Clinic IRBe Human Subjects Research Wizard tool, and in accordance with the Code of Federal Regulations, 45 CFR 46.102, the above noted activity does not require IRB review.

Other Federal, State and local laws and/or regulations may apply to the activity. This study must be reconsidered for submission to the IRB if any changes are made.

The Principal Investigator is responsible for the accuracy and reliability of the information submitted through the Human Subjects Research Wizard tool, for following all applicable Federal, State and local laws and/or regulations, and is also responsible for submitting research studies to the IRB when required.

# Appendix F

## Arizona State University IRB Approval Letter

ASU Knowledge Enterprise Development

APPROVAL: EXPEDITED REVIEW

Lynda Root
CONHI - DNP
602/496-0810
Lynda.Root@asu.edu

Dear Lynda Root:

On 10/28/2017 the ASU IRB reviewed the following protocol:

| | |
|---|---|
| Type of Review: | Initial Study |
| Title: | Quality Improvement Project to Implement Prostate Cancer Survivorship Care Plans |
| Investigator: | Lynda Root |
| IRB ID: | STUDY00007269 |
| Category of review: | (5) Data, documents, records, or specimens |
| Funding: | None |
| Grant Title: | None |
| Grant ID: | None |
| Documents Reviewed: | • Shirley Approval Letter.pdf, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc);<br>• MayoIRBApprovalLetter.pdf, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc);<br>• FollowupCallPhoneScript1.pdf, Category: Recruitment materials/advertisements /verbal scripts/phone scripts;<br>• SCP Patient Survey 10.25.17.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);<br>• Shirley_IRBProposal (Lynda Root).docx, Category: IRB Protocol; |



The IRB approved the protocol from 10/28/2017 to 10/27/2018 inclusive. Three weeks before 10/27/2018 you are to submit a completed Continuing Review application and required attachments to request continuing approval or closure.

If continuing review approval is not granted before the expiration date of 10/27/2018 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

# Appendix G

## Confidence in Survivorship Information Questionnaire

MAYO CLINIC

Add Patient Label Here

**Confidence in Survivorship Information Questionnaire***

How confident are you about your knowledge of each of the following aspects of your cancer and cancer-related follow up care?

**Please select only one box per question.**

| | Not at all Confident | Somewhat Confident | Very Confident |
|---|---|---|---|
| The type of cancer you have/ had? | ☐ | ☐ | ☐ |
| The stage of cancer you have/ had? | ☐ | ☐ | ☐ |
| The treatments you received/are receiving for cancer? | ☐ | ☐ | ☐ |
| Things you can do to help prevent your cancer from recurring? | ☐ | ☐ | ☐ |
| The long-term physical effects you may experience from cancer and its treatment? | ☐ | ☐ | ☐ |
| Strategies for *preventing* long-term physical effects of cancer treatment? | ☐ | ☐ | ☐ |
| Strategies for *treating* long-term physical effects of cancer treatment? | ☐ | ☐ | ☐ |
| The long-term emotional effects you may experience from cancer and its treatments? | ☐ | ☐ | ☐ |
| Strategies for *preventing* long-term emotional effects of cancer treatment? | ☐ | ☐ | ☐ |
| Strategies for *treating* long-term emotional effects of cancer treatment? | ☐ | ☐ | ☐ |
| Community resources available to help you deal with long-term effects of cancer and its treatments? | ☐ | ☐ | ☐ |
| Whether your family members are at increased risk for cancer? | ☐ | ☐ | ☐ |
| How your family members can get information on their risk for cancer? | ☐ | ☐ | ☐ |

| How satisfied are you with the survivorship care you received at Mayo Clinic? | | | | |
|---|---|---|---|---|
| Very Satisfied | Satisfied | Neutral | Dissatisfied | Very Dissatisfied |
| How your healthcare provider addressed ways to improve wellness? | | | | |
| Very Satisfied | Satisfied | Neutral | Dissatisfied | Very Dissatisfied |
| How your healthcare provider addressed ways to promote your health? | | | | |
| Very Satisfied | Satisfied | Neutral | Dissatisfied | Very Dissatisfied |

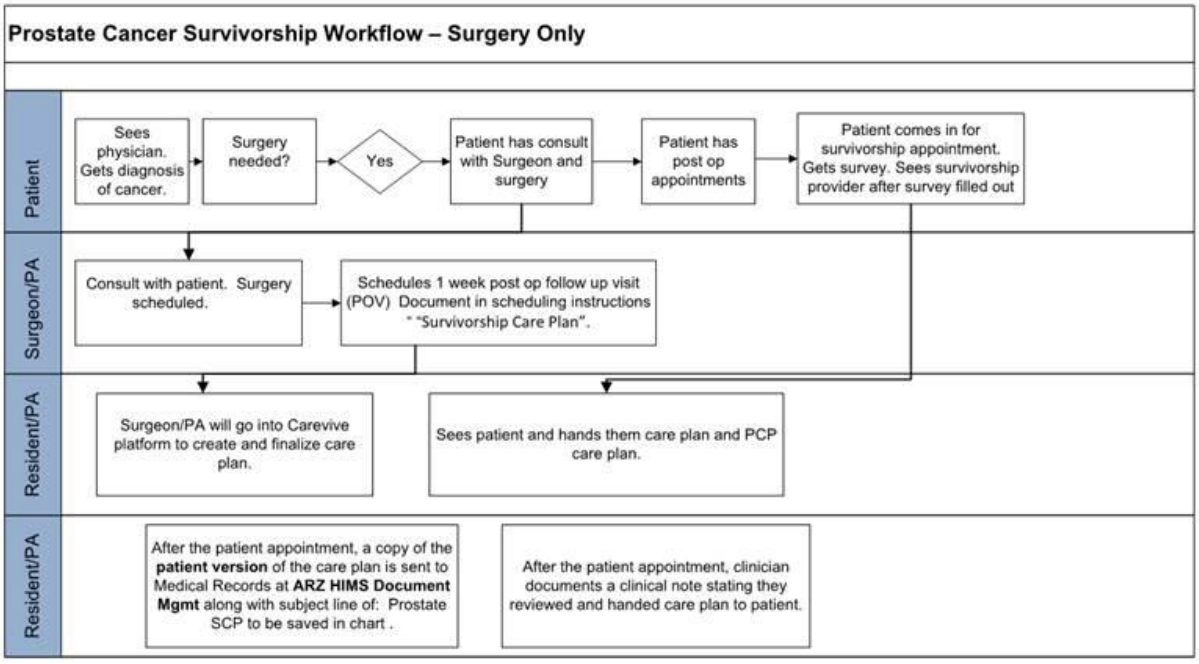
*Used with permission from University of Pennsylvania.

**Please return to your provider upon completion.**

**Send to Noel Arring PX SS 01 AHED** **Do Not Scan**

# Appendix H

## Prostate Cancer Survivorship Workflow-Surgery Only



Appendix I

**December 2017- March 2018 Prostate SCP Dashboard**

| Provider | #SCP Identified | # SCP Delivered | SCP %* | Correct SCP Sent to HIMS† | Note Completed†† |
|---|---|---|---|---|---|
| **1** | 22 | 19 | 86% | 47% | 52% |
| **2** | 11 | 11 | 100% | 100% | 73% |
| **3** | 7 | 6 | 86% | 100% | 83% |
| **4** | 11 | 10 | 91% | 80% | 90% |
| **5** | 16 | 16 | 100% | 44% | 81% |
| **6** | 4 | 4 | 100% | 75% | 100% |
| **Total** | **71** | **66** | **94%** | **74%** | **80%** |

*Number of patients given an SCP/Number of patients identified needing an SCP
†Number of correct SCP sent to HIMS/Number of delivered SCPs
††Number of dictated notes/Number of delivered SCPs

# Appendix J

## Table 1

*Paired Samples Test*

| | | *Paired Differences* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | *95% Confidence Interval of the Difference* | | | | |
| | | *Mean* | *Std. Deviation* | *Std. Error Mean* | *Lower* | *Upper* | *t* | *df* | *Sig. (2-tailed)* |
| Pair 1 | Pretest Q1 - Posttest Q1 | -.167 | .408 | .167 | -.595 | .262 | -1.000 | 5 | .363 |
| Pair 2 | Pretest Q2 - Posttest Q2 | -.167 | .408 | .167 | -.595 | .262 | -1.000 | 5 | .363 |
| Pair 3 | Pretest Q3 - Posttest Q3 | -.167 | .408 | .167 | -.595 | .262 | -1.000 | 5 | .363 |
| Pair 4 | Pretest Q4 - Posttest Q4 | .167 | .983 | .401 | -.865 | 1.198 | .415 | 5 | .695 |
| Pair 5 | Pretest Q5 - Posttest Q5 | -.833 | .408 | .167 | -1.262 | -.405 | -5.000 | 5 | .004 |
| Pair 6 | Pretest Q6 - Posttest Q6 | -1.000 | .632 | .258 | -1.664 | -.336 | -3.873 | 5 | .012 |
| Pair 7 | Pretest Q7 - Posttest Q7 | -.667 | .516 | .211 | -1.209 | -.125 | -3.162 | 5 | .025 |
| Pair 8 | Pretest Q8 - Posttest Q8 | -.333 | .516 | .211 | -.875 | .209 | -1.581 | 5 | .175 |
| Pair 9 | Pretest Q9 - Posttest Q9 | -.167 | .408 | .167 | -.595 | .262 | -1.000 | 5 | .363 |
| Pair 10 | Pretest Q10 - Posttest Q10 | -.333 | .516 | .211 | -.875 | .209 | -1.581 | 5 | .175 |
| Pair 11 | Pretest Q11 - Posttest Q11 | -.600 | .894 | .400 | -1.711 | .511 | -1.500 | 4 | .208 |
| Pair 12 | Pretest Q12 - Posttest Q12 | -.500 | .548 | .224 | -1.075 | .075 | -2.236 | 5 | .076 |
| Pair 13 | Pretest Q13 - Posttest Q13 | -.667 | .516 | .211 | -1.209 | -.125 | -3.162 | 5 | .025 |
| Pair 14 | Pretest Q14 - Posttest Q14 | .167 | .408 | .167 | -.262 | .595 | 1.000 | 5 | .363 |
| Pair 15 | Pretest Q15 - Posttest Q15 | .000 | .632 | .258 | -.664 | .664 | .000 | 5 | 1.000 |
| Pair 16 | Pretest Q16 - Posttest Q16 | .000 | .632 | .258 | -.664 | .664 | .000 | 5 | 1.000 |

# Appendix K

## Table 1

*Paired Samples Statistics*

| | | *Mean* | *N* | *Std. Deviation* | *Std. Error Mean* |
|---|---|---|---|---|---|
| Pair 1 | Pretest Q1 | 2.67 | 6 | .816 | .333 |
| | Posttest Q1 | 2.83 | 6 | .408 | .167 |
| Pair 2 | Pretest Q2 | 2.50 | 6 | .837 | .342 |
| | Posttest Q2 | 2.67 | 6 | .516 | .211 |
| Pair 3 | Pretest Q3 | 2.83 | 6 | .408 | .167 |
| | Posttest Q3 | 3.00 | 6 | .000 | .000 |
| Pair 4 | Pretest Q4 | 2.33 | 6 | .816 | .333 |
| | Posttest Q4 | 2.17 | 6 | .753 | .307 |
| Pair 5 | Pretest Q5 | 2.00 | 6 | .632 | .258 |
| | Posttest Q5 | 2.83 | 6 | .408 | .167 |
| Pair 6 | Pretest Q6 | 2.00 | 6 | .632 | .258 |
| | Posttest Q6 | 3.00 | 6 | .000 | .000 |
| Pair 7 | Pretest Q7 | 2.00 | 6 | .632 | .258 |
| | Posttest Q7 | 2.67 | 6 | .516 | .211 |
| Pair 8 | Pretest Q8 | 2.33 | 6 | .816 | .333 |
| | Posttest Q8 | 2.67 | 6 | .516 | .211 |
| Pair 9 | Pretest Q9 | 2.50 | 6 | .837 | .342 |
| | Posttest Q9 | 2.67 | 6 | .816 | .333 |
| Pair 10 | Pretest Q10 | 2.33 | 6 | .816 | .333 |
| | Posttest Q10 | 2.67 | 6 | .816 | .333 |
| Pair 11 | Pretest Q11 | 1.40 | 5 | .548 | .245 |
| | Posttest Q11 | 2.00 | 5 | .707 | .316 |
| Pair 12 | Pretest Q12 | 2.17 | 6 | .753 | .307 |
| | Posttest Q12 | 2.67 | 6 | .516 | .211 |
| Pair 13 | Pretest Q13 | 2.00 | 6 | .632 | .258 |
| | Posttest Q13 | 2.67 | 6 | .516 | .211 |
| Pair 14 | Pretest Q14 | 4.67 | 6 | .516 | .211 |
| | Posttest Q14 | 4.50 | 6 | .837 | .342 |
| Pair 15 | Pretest Q15 | 4.67 | 6 | .516 | .211 |
| | Posttest Q15 | 4.67 | 6 | .816 | .333 |
| Pair 16 | Pretest Q16 | 4.67 | 6 | .516 | .211 |
| | Posttest Q16 | 4.67 | 6 | .816 | .333 |