

4-2019

# Developing an Evidence-Based Supportive Services Program for Cancer Survivors in a Private Oncology Practice

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Developing an Evidence-Based Supportive Services Program for  
Cancer Survivors in a Private Oncology Practice

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### Abstract

Improvements in cancer treatment have led to a rapidly increasing survivor population. In response, multiple side effects of cancer and cancer treatment as well as the various wellness needs of survivors have been recognized. Survivorship programs have been developed to care for survivors with residual effects of cancer and the side effects of treatment; however, additional support is needed. The purpose of the project was to highlight the need for a comprehensive supportive services program for the cancer survivor population and describe the steps that were required to successfully develop the program. The clinical question addressed by the project was: What is an evidence-based, efficient, cost-effective, and sustainable program that delivers supportive services to cancer survivors in a private oncology practice? The objective of the project was to develop a supportive services program toolkit and gain implementation approval from the organization's manager and director of multispecialty services. The objective was completed using an organizational assessment of a private oncology practice, the application of the Health Promotion Model, Kotter's Eight-Step Process for Leading Change, and the implementation of evidence-based practice into the program toolkit. The project outcome was an evidence-based, supportive services program toolkit, composed of multiple wellness initiatives, which was accepted and implemented into practice by the organization. After implementation, sustainability of the program will be ensured through well-developed, evidence-based evaluation and sustainability plans. Practice implications include increasing revenue through performance-based payments, recognizing the practice as a leader in oncology care, and improving the quality of life of cancer survivors.

Keywords: Cancer, Supportive Services, Evidence-Based, Survivor, Program Development, Quality of Life

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## Developing an Evidence-Based Supportive Services Program for Cancer Survivors in a Private Oncology Practice

Advances in cancer treatment have led to a rapidly increasing population of cancer survivors. In 2016, there were 15.5 million cancer survivors living within the United States, and by 2026 it is predicted this number will increase to 20.3 million (American Cancer Society [ACS], 2016). With such a focus on curative treatment, the healthcare system has overlooked the multiple short and long-term effects of cancer and cancer treatment, leaving organizations unprepared to care for oncology patients with various wellness needs. For survivors of cancer, quality of life is impaired by the many continuous physical, mental, and social effects of treatment (Mayer, Nasso, & Earp, 2017). In return, cancer survivors are living longer after diagnosis, but much of this time is spent in suboptimal overall quality of life and well-being.

National organizations and healthcare systems have recognized this problem and have developed specific programs aimed at caring for these various side effects of cancer treatment. Organizations such as the National Academy of Medicine (NAM) identified this issue and health systems have responded through the development of survivorship programs focusing on the needs of cancer survivors (Deitrich et al., 2016). Despite the increasing numbers of survivorship programs, oncology practices continue not to meet the many needs of cancer survivors (Spears, Craft, & White, 2017). Oncology practices need to provide additional support in caring for this population.

The context for the project was a private oncology practice with an established survivorship program. Despite this established program, practice leadership identified an additional need for a comprehensive wellness program due to the high volume of needs within the organization related to wellness or supportive services. This organizational need led to the

completion of a literature review of evidence-based methods to support the implementation of a supportive services program. The terms survivorship wellness and supportive services will be used interchangeably in reference to the program, as both terms were used throughout the project.

The purpose of the project was to develop an evidence-based, practice improvement program in a private oncology practice. The paper includes a summary of the organizational assessment and literature review as well as an outline of implementation steps and strategies used throughout program development. Also included are the results and analysis of provider surveys and meetings that led to the final supportive services toolkit, implications of the project, and the DNP student's reflection on the Doctor of Nursing Practice Essentials gained from the project work.

### **Assessment of the Organization**

Content redacted

### **Clinical Practice Question**

Program development needs for three supportive services programs of bone health, smoking cessation, and fatigue management were selected based on current research and the organizational assessment. These methods and the ability to focus on three selected supportive services led to the development of the clinical practice question: What is an evidence-based, efficient, cost-effective, and sustainable program that delivers supportive services to cancer survivors in a private oncology practice? For the three initiatives of smoking cessation, bone health, and fatigue management, the question was answered by analyzing current research,

developing operational processes, completing business plans, which included cost analyses, and developing evaluation and sustainability plans.

During program development, key stakeholders identified the need for a women's health program to be incorporated into the overall supportive services program and toolkit, which will be explained later in this paper. A fatigue management clinic was not developed and incorporated into the program as more research is needed to ensure sustainability of a separate fatigue management clinic. Research identified during the literature review pertaining to fatigue management supported the development of the overall supportive services program toolkit as explained below.

### **Evidence-Based Practice**

The development of a supportive services toolkit used for program formation was based on the most current available research. Limited evidence existed regarding supportive services programs for cancer survivors due to the growth and innovation of comprehensive programs. A literature review was completed by researching survivorship programs, general wellness programs, and effective delivery methods of three wellness initiatives, including smoking cessation, bone health, and fatigue management. Each review included searches of PubMed, CINAHL Complete, ProQuest Medical Database, and the Cochrane Library databases and used the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009) (see Appendix E). Specific keywords, mesh terms, Boolean operators (AND, OR), levels of evidence, and date ranges were used to specify or broaden the search due to limited research available on survivorship wellness programs. The most significant inclusion criteria for selected articles included adult cancer

survivors and delivery methods for the three selected initiatives. Significant exclusion criteria included children younger than 18, survivors of childhood cancers, and treatments.

### **Results of Literature Review**

Multiple research articles were identified and analyzed to support the implementation of this project. Appendix F contains the complete list of articles included in the literature review, along with a summary of each article and relevant statistics. The effectiveness of survivorship programs, general wellness programs, and delivery methods of smoking cessation treatment, bone health, and fatigue management are summarized below.

**Survivorship programs.** Although survivorship programs are relatively new, and the search provided less articles than anticipated, significant evidence did exist regarding these programs. Survivorship programs were found to increase overall quality of life, compliance with NCCN recommendations, and knowledge of healthy behaviors (Cheng, Lim, Koh, & Tam, 2017; Dietrich et al., 2016; Greenlee et al., 2016). The studies did supply evidence supporting the use of survivorship programs; however, results focused on short-term effects of treatment and did not address specific wellness recommendations or programs to implement for cancer survivors.

**Wellness programs.** The literature search regarding wellness programs was expanded to include the general population due to the limited available literature related to survivorship wellness programs. Multiple research studies identified the effective use of wellness programs and the ability of participants to achieve weight loss goals and decrease blood pressure as well as other cardiac risk factors (Eng, Moy, & Bulgiba, 2016; Hinderliter et al., 2014; Jamal, Moy, Mohamed, & Mukhtar, 2016; Razavi et al., 2014). In addition to effective survivorship programs, these results provide further support of a survivorship wellness program within this private oncology practice.

**Smoking cessation.** After the literature reviews of survivorship programs and wellness programs were completed, effective delivery methods of specific wellness initiatives were researched, starting with smoking cessation. A review of current literature identified brief advice, active referrals, and active connection to tobacco dependence services as effective delivery methods for the initiation and adherence to smoking cessation (Fu et al., 2014; Stead et al., 2013; Vidrine et al., 2013; Wang et al., 2017). Throughout project development, these methods were further researched and analyzed for inclusion within the supportive services toolkit.

**Bone health.** The initiative of bone health was selected because of the identified need within this wellness initiative in the organization due to the prevalent use of aromatase inhibitors in breast cancer survivors and androgen deprivation therapy in prostate cancer survivors. Use of aromatase inhibitors by post-menopausal, female breast cancer survivors is significantly correlated with a reduction in bone mineral density (Hong et al., 2017). Research studies suggest that the use of androgen deprivation therapy is linked to decreases in bone mineral density (Nguyen et al., 2015). A multimodal approach which includes education, is the most effective delivery method to improve treatment initiation and lifestyle modifications regarding bone health (Kastner et al., 2018; Kessous et al., 2014). Therefore, this specific wellness program was designed by adding a formalized, multimodal, educational approach to improving bone health among the survivorship population.

**Fatigue management.** The final initiative included in the review was fatigue management and was selected due to the high rates of fatigue within the general survivor population. Researchers have identified a 30 to 60 percent prevalence rate of moderate to severe fatigue in patients during active treatment and rates as high as 40 percent among survivors 12 months after completing treatment (Bower, 2014; Carlson, Waller, Groff, Giese-Davis, & Bultz, 2013).

Positive results were identified regarding physical activity and decreased levels of fatigue and therefore this initiative was researched to identify the most effective delivery methods for improving physical activity rates (Speck, Courneya, Masse, Duval, & Schmitz, 2010). Results showed that effective delivery methods for increasing physical activity include active and continuous encouragement, education, and follow-up (Baumann et al., 2017; Pinto & Papandonatos, 2013).

### **Health Promotion Model**

Because of its emphasis on personal motivation and behavior, the health promotion model was chosen as the theoretical framework through which to view the phenomenon of survivorship wellness (see appendix G). The health promotion model is a framework used to interpret the motivational causes of individuals to engage in certain health-promoting behaviors (Pender, Murdaugh, & Parsons, 2011). Each concept of the model attempts to explain cause for committing to or refraining from certain health-promoting behaviors. Applicable concepts of this model were applied to the phenomenon of survivorship wellness to help predict whether survivors will engage in health-promoting lifestyle modifications.

The concept of personal factors relates to the cancer survivor, as multiple physical and cognitive factors can affect the ability to make healthy changes (McCullagh, 2013). Perceived benefits of action also influence behavior modification of the cancer survivor as this concept explains that actions with greater perceived benefit will more likely be initiated (McCullagh, 2013). In contrast, yet applicable to the cancer survivor, the theory also explains that behaviors with significant amounts of perceived barriers are much less likely to be completed (McCullagh, 2013). Immediate competing demands is another concept of the theory and was relevant to this phenomenon, because the cancer experience can affect survivors' values and perceptions of health

(McCullagh, 2013). The concept of self-efficacy indicates that even when individuals are equipped with all the necessary resources, low levels of self-confidence in completing a specific task can still manage to inhibit the commitment to health promoting behaviors (McCullagh, 2013). Finally, interpersonal factors, such as social support, have a significant influence on the cancer survivor's motivation for completing healthy behaviors (McCullagh, 2013). By applying this theory and all relevant concepts to this phenomenon, applicable interventions were identified, which were important factors in the toolkit development as well as the evaluation and sustainability plans of a supportive services program.

## **Project Plan**

### **Purpose of Project and Objectives**

The purpose of the project was to develop a survivorship wellness or supportive services program that answered the following question: What is an evidence-based, efficient, cost-effective, and sustainable program that delivers wellness services to cancer survivors in a private oncology practice? Major objectives of the project included developing a formalized, evidence-based, supportive services program toolkit, which including program proposals, patient education materials, clinic processes, business plans, and evaluation and sustainability plans. The final objective of the project was to achieve approval and implementation of the toolkit by the manager and director of multispecialty services.

### **Setting**

The site for project implementation was a private oncology practice which includes multiple clinical sites serving multiple regional areas (obtained from organizational website, 2018). All main clinical sites are located within urban areas with three of these sites located within highly dense populations. Referrals for patients requiring specialized oncology care are

often made by surgeons or primary care physicians practicing in regional areas. The practice provides additional patient services such as advanced care planning, an advanced stage cancer program, a survivorship program, social work services, and behavioral health oncology services (obtained from organizational website, 2018). Expansion and renovations of one of the clinical sites was completed in February of 2019 and on March 4, 2019, the bone health and women's health programs began operations at this site. Therefore, program implementation also began on this date as both clinics began to utilize certain finalized and approved aspects of the program toolkit that were developed by the project director. This site is also occupied by another organization within the surrounding area which provides additional supportive services such as physical therapy, occupational therapy, cognitive dysfunction, lymphedema assessments, pelvic floor rehabilitation, and other cancer rehabilitation services. Patients of the practice will be referred by providers or care coordinators to the supportive services provided at this location.

### **Stakeholders**

Within this private oncology practice, multiple stakeholders were identified that significantly influenced the development and implementation of this project. A supportive services program for survivors would be categorized as a multidisciplinary or specialty service and would therefore make the director of multispecialty services one of the most significant stakeholders. In addition, during project development, a new position of manager of multispecialty services was created and filled. The outcome of the project was to obtain implementation approval by the director and manager of multispecialty services. Providers, such as the lead breast oncologist and the certified women's health nurse practitioner, were also identified as key stakeholders and their input and contributions to this project were highly valued. Finally, the oncology patients were significant stakeholders because this program development

project will have a lasting influence on their health and quality of life.

### **Participants**

The participants of this program development project included the manager and director of multispecialty services, and providers within this practice. Surveys were completed by providers within the organization, and responses provided significant input regarding barriers and logistics of the program, as well as what areas needed to be addressed during the marketing and educational sessions. The manager and director of multispecialty services were identified as key participants and stakeholders due to their impact on the approval of this toolkit into implementation.

### **Kotter's Eight Step Process for Leading Change**

The design for this project was program development by integrating evidence-based practice into a supportive services program for cancer survivors. Kotter's Eight Step Process for Leading Change (see Appendix H) was used as the implementation model for the project design (Kotter, 2018). Applicable concepts of this framework were used to successfully implement a supportive services program into this private oncology practice. Implementation steps or strategies of this project were integrated into the concepts of this framework explained below.

### **Creating a Sense of Urgency**

A sense of urgency had already been established through the high volume of current cancer survivors with multiple wellness needs and due to the desire of this organization to incorporate a supportive services program within the practice. In addition, this was an opportunity for this organization to become a leader in initiating an innovative and comprehensive supportive services program. Implementation strategies for the project created a further sense of urgency within the organization for the supportive services program to be initiated. Provider surveys and

meetings with the stakeholders of the organization highlighted the need for a supportive services program. Additional purposes of these surveys were to obtain significant input regarding the logistics of the program and to obtain a preliminary number of referrals to this program to aid in cost analysis. This cost analysis was an additional implementation strategy and the calculated return on investment served to significantly increase the sense of urgency of this organization to implement the program. The completion of renovations at one of the organization's locations was an additional point of urgency for the practice, as directors hoped to make use of the space quickly. The new space offers the additional benefit of being able to bill for a separate service because the visit is not attached to another provider appointment.

### **Build a Guiding Coalition**

A coalition which included the manager and director of multispecialty services, and providers within the practice, was necessary for the program to be successfully implemented. As the program developed, support for the project included a broader reach to establish as much support as possible. Implementation strategies that were used to build and strengthen this guiding coalition were the use of surveys with providers and meetings with the director and manager, as well as educational and marketing information sent to providers. Completion of these surveys early within the development stages served to build a coalition of supporting providers and health care professionals. Marketing and educational information for providers was developed and sent through electronic mail post-implementation and served to strengthen this coalition through the provision of additional information regarding survivorship wellness and the necessity of the practice to adopt such a program. It was important that providers felt that their autonomy and ability to care for these wellness needs were not threatened. Education and marketing information educated providers of the ability of the program to improve the quality of life of their patients,

allow more time for the providers to focus on other important aspects of oncology care, and therefore improve efficiency of their appointments.

### **Enable Action by Removing Barriers**

Important barriers addressed when implementing the project included how this program would affect current procedures and the ability of the program to be sustainable by providing a positive return on investment. The organizational assessment identified possible barriers to program implementation; however, certain strategies served to identify and remove additional barriers. Implementation strategies to address this issue again included provider surveys and the development of sustainability and evaluation plans. Surveys obtained providers' perceptions of possible barriers to the implementation of the program. Identifying these barriers early in the development phase was advantageous as some barriers needed additional commitment and time to address. The development of an effective sustainability and evaluation plan further helped to address any possible performance and economic barriers and concerns of the providers, director, and manager.

### **Form a Strategic Vision and Initiatives**

This program has the potential to improve the overall well-being of cancer survivors, shifting the vision of curative treatment to a focus on living not only longer lives, but higher quality lives. This vision had the possibility to be both meaningful and appealing to all members of the coalition as well as the organization and therefore lead to successful project implementation. Because of the importance of a strategic vision, multiple implementation strategies were incorporated within this concept and included developing an evidence-based toolkit, organizing educational and marketing sessions, creating sustainability and evaluation plans, and presenting the implementation plan to key stakeholders. The creation of an evidence-

based toolkit created a more structured and appealing approach to caring for wellness needs. The toolkit included evidence-based proposals, patient education materials, clinic operation processes, business plans, and evaluation and sustainability plans. The development of educational and marketing information helped to inform providers and advocate for the program. Sustainability and evaluation plans created a vision for the future of the project as well as plans for program growth. Finally, the presentation of this thoroughly developed, evidence-based, survivorship wellness program to key stakeholders defined the implementation of the program.

A plan was formed which emphasized the ability of the program to improve quality of care through the Oncology Care Model (OCM), and the ability of the program to enhance the reputation of the practice (Centers for Medicare and Medicaid Services [CMS], 2019). As identified through the organizational assessment, this practice focuses heavily on the Oncology Care Model, and the wellness program has the potential to improve quality of care offered by this organization (CMS, 2019). In addition, offering a supportive services program, which focuses on the many wellness needs of cancer survivors, can enhance this organization's reputation and strengthen the vision and mission of this practice shared by every employee.

### **Implementation Steps**

The implementation strategies and steps are listed in chronological order here and in appendix I. The steps used to complete the DNP project and to develop an evidence-based supportive services program toolkit for cancer survivors included:

- Completing provider surveys by January 18, 2019 to obtain input regarding program logistics, barriers, and potential numbers of monthly referrals to the program.
- Completing an analysis of provider surveys by January 22, 2019.

- Completing elements of the evidence-based supportive services program toolkit from February 28, 2019 to March 29, 2019.
- Acceptance of toolkit parts by key stakeholders within the organization from February 28, 2019 to March 29, 2019.
- Incorporating the toolkit into the electronic health record beginning March 1, 2019.
- Incorporating the toolkit within the bone health and women's health clinics which were implemented on March 4, 2019.
- Marketing the program and educating referring providers, directors, managers, and staff by March 29, 2019.
- Defending the project April 5, 2019.

### **Ethics and Protection of Human Subjects**

The organization where this project was completed did not have an acting Institutional Review Board (IRB) and therefore the organization accepted the decision of the university pertaining to the protection of human subjects. The DNP student obtained a consent letter from the organization for project approval. An application for review and approval or exemption of the project was submitted to the university's IRB and it was determined by the Office of Research Compliance and Integrity that the project did not meet the definition of research according to current federal regulations (see Appendix J). Participants of the project were the providers who participated in surveys developed by the DNP student. Since the project type was program development, it was anticipated that no identifiers needed to be collected for the project. Because the manager and director of multispecialty services are the only persons within the organization with these titles, information obtained from them through meetings was identifiable. The project

posed very little to no risk to human subjects. Every member of the project team completed human subject's protection training.

### **Changes to the Project**

During project development and after the proposal, multiple parts of the project were altered. The manager and director of multispecialty services believed it would be beneficial to change the name of the program from survivorship wellness to supportive services program for cancer survivors. This name would be more recognizable by patients and providers alike. Survivorship is a new term and it was essential that providers were completely aware of the purpose of the program prior to survey completion. Therefore, the terms survivorship wellness and supportive services were used interchangeably throughout this paper.

The original proposal focused on the three supportive services of bone health, smoking cessation, and fatigue management. After meetings with key stakeholders, it was determined that a fatigue management clinic would be difficult to sustain. Cancer-related fatigue is best managed through physical activity, which would involve education and referrals during provider appointments (Speck et al., 2010). Further research is required to ensure sustainability of a separate fatigue management clinic.

According to stakeholders, the completed gap analysis, and literature review, women's health is another supportive service this organization and the cancer population require. In certain cancer populations, the prevalence of sexual health concerns is as high as 90% and cause higher levels of depression and lower overall quality of life (Bae & Park, 2016; Usta & Gokcol, 2017). Therefore, a women's health program was added to the supportive services program and toolkit.

## **Evaluation and Measures**

### **Data Collection**

Provider surveys were distributed on December 17, 2018 and results were collected by the manager of multispecialty services and project director on January 18, 2019. Data was gathered through electronic surveys using Survey Monkey software. The purpose of these surveys was to obtain further information regarding current use of wellness services, logistics of the program, the referral process, possible barriers to implementation, and estimated number of monthly referrals made to the program by providers within the practice. The provider surveys were developed in a multiple-choice format with essay-type questions as well to obtain more qualitative information regarding providers' current use of supportive services and the most prevalent wellness needs that patients within the practice require (see Appendix K). The Survey Monkey software was able to process the responses to provide for simple and efficient data analysis by the project director and manager.

### **Data Management**

The project director and manager of specialty services were responsible for data management. The Survey Monkey software collected data in a way that maintained complete anonymity of responses. The project director, manager, or anyone else were not able to identify responses to the survey questions because of software safeguards. Data obtained was stored on the organization's Survey Monkey password protected account. Qualitative data was transferred to a word document and quantitative data was transferred to an excel spreadsheet and stored onto the project director's personal password protected computer.

**Analysis**

Referral reports and responses to the survey questions by providers obtained estimated referral numbers, logistics of the program, and possible barriers to the development of the program. A cost analysis of the bone health program was previously completed and because of the ability of the organization to perform dual energy x-ray absorptiometry (DXA) scans and infusion therapies, and bill for medications and bloodwork, the monthly net revenue of the bone health program was estimated to be \$42,559.69 (see Appendix L). Monthly break-even analyses and maximum profit analyses were completed for the women's health and smoking cessation clinics (see Appendix L) and survey results were used to determine whether estimated number of referrals would meet the number obtained in the break-even analysis. Expenses of the supportive service programs included salaries of staff members, rent, office support, technology, internet, and the DXA scanner, while revenue included nurse practitioner visit reimbursement and revenue from DXA scans, infusions/injections, and bloodwork. Responses from the survey regarding logistics and possible barriers were analyzed and used to further develop the overall program as well as the evidence-based toolkit. Qualitative data obtained from the surveys were used to identify common themes and further develop the program.

**Budget**

An implementation budget was completed for this project to account for time and services provided by the DNP student, cost of functional space, and cost of productivity loss of providers and directors (see appendix M).

**Results**

Toolkit development was directed by the provider surveys and multiple meetings with the manager and director of multispecialty services. Provider survey results identified provider

knowledge, estimated number of referrals, potential referral processes, possible barriers, and additional thoughts regarding provider education and smoking cessation. Monthly meetings with the director and manager further developed the supportive services program and highlighted the important aspects of the toolkit, such as clinic processes, business plans, and evaluation and sustainability plans.

### **Provider Survey Results**

Provider surveys were an important part of toolkit development. Surveys were developed using questions that the program director believed would best inform the toolkit. Surveys were distributed on December 17th, 2018, and results were collected January 18th, 2019. Surveys were distributed to a total of 35 providers (11 advanced practice providers and 24 physicians) and a total of 10 surveys were completed, resulting in a 29% response rate. Each provider that completed the survey completed all 10 questions and therefore for all results “n” is equal to 10. Many of the questions gave providers the ability to select multiple options in order to obtain more information. For this reason, total options selected were often more than the number of providers that completed the survey. The survey is provided in Appendix L, and a brief summary of the results are described below. For full details of the results refer to Appendix N.

Provider knowledge of available supportive services was moderate with 50% of respondents rating their knowledge of such services as a 4 or 5 out of 5. Most providers, or 90%, believed referrals should be made by nurses or care coordinators, and 60% believed referrals should also be made by providers themselves. As many as 80% of providers believed that patients would be likely to comply with referrals to these services. Twenty percent of providers estimated making 16 to 20 referrals per month and 20% projected 6 to 10 referrals per month. The greatest barriers currently faced by providers regarding the use of supportive services included financial

issues and limited availability which obtained 70% and 60% of responses respectively. Seventy percent of providers thought patient motivation was a significant barrier to this program and 60% believed limited resources, transportation, and financial concerns were barriers as well. Regarding how providers would like to receive information about a supportive services program, 70% believed both fact-to-face meetings and information provided through email would be effective. Finally, 80% of providers thought that a smoking cessation program would be beneficial to the organization.

The qualitative portion of the survey identified specific themes regarding current supportive needs of patients and the supportive services to which providers within the practice were referring. Providers believed there was a need for supportive services focused on pain management, nutrition, bone health, sexual health, cognitive dysfunction, and physical therapy. The survey also identified that providers within the practice were referring to palliative care, physical therapy, pain management, smoking cessation, mental health, sexual health, and cognitive dysfunction services. This survey was helpful to the development of the toolkit and informed multiple parts, including the marketing and education information for providers, the business plans, and the evaluation and sustainability plans.

### **Supportive Services Toolkit Elements**

Monthly meetings were held with the manager and director of multispecialty services to develop the evidence-based toolkit. An exemplar of this toolkit, which includes the bone health program toolkit, is provided in appendix O. Meetings produced elements of the toolkit which included a program proposal, patient education materials, clinic processes, business plans, and evaluation and sustainability plans. Many parts of the toolkit, especially the clinic processes, were incorporated into the organization's electronic health record. The toolkit was accepted by key

stakeholders, and since the implementation of the bone health and women's health programs on March 4, 2019, the organization has already utilized multiple documents contained within the toolkit, such as the intake forms and patient education materials. Additional elements of the toolkit were implemented and utilized after additional revisions were made. These revisions included additional cost-analyses and modifications to the evaluation and sustainability plans.

### **Discussion**

The purpose of the project was to develop an evidence-based, efficient, cost-effective, and sustainable supportive services program for cancer survivors with a main objective of developing a formalized, evidence-based toolkit to gain approval by stakeholders within the organization. The provider surveys and stakeholder meetings provided data and significant input necessary to develop the evidence-based toolkit and overall program. The provider survey results were beneficial in understanding provider perspectives and with influencing program development. Meetings with the stakeholders formed the final pieces of the supportive services toolkit. The development of this toolkit was readily accepted by organizational leadership because of the ability of the toolkit to improve efficiency of these clinics, make use of evidence-based practice, and provide further support for these programs through the program proposal and cost-analyses.

### **Provider Survey**

The provider surveys obtained valuable input necessary to the development of the toolkit. Provider knowledge of supportive services was higher than anticipated, however, some had very limited knowledge of available services. This highlighted the importance of marketing and educational sessions and ongoing provider education. Estimated number of monthly referrals to the program was attainable after survey result analysis, and this data was used with the cost analysis and break-even analysis. Providers believed that referrals to these programs would be

associated with moderate to high compliance, further illustrating the need for such services. Providers believed that it would be best for registered nurses, care coordinators, or providers themselves to schedule appointments to the supportive services, information which was incorporated into the clinic processes. The surveys identified current barriers to utilizing supportive service programs, such as financial issues, limited availability of services, communication, and patient motivation, and possible future barriers which included patient motivation and limited resources. This emphasized the need to incorporate evidence-based treatment delivery methods, marketing and educational information, theory guided strategies, and the possibility of program expansion to make these services more available. Providers recommended receiving education regarding these supportive services either in a face-to-face setting or through electronic mail. Due to difficulty with provider availability, and the recommendation of stakeholders, marketing and educational information was completed in an outline format and sent to providers within the practice through electronic mail. High percentages of providers believed a smoking cessation clinic would be beneficial to the organization, however, due to questions of sustainability, available space, and the lack of a consistent management protocol, the program will not be implemented at the same time as the other two services. For these reasons, the smoking cessation toolkit was much more abbreviated compared to the other services and included a program proposal, business plan, and evaluation and sustainability plan, to further help the organization when developing the service in the future.

### **Supportive Services Toolkit**

Multiple meetings with the director and manager informed the toolkit pieces and several revisions led to the final evidence-based supportive services toolkit. Each part of the toolkit was based on the most current evidence, especially within the program proposals which included

evidence-based treatment delivery methods. The most important parts of the toolkit to complete first were patient education materials and clinical processes which included intake forms and clinic note templates. Intake forms were developed to obtain the most important information such as demographic history, medical history, social history, medication and supplementation use, and the most common symptoms or side effects the patient was experiencing. Patient education materials were developed for patients to understand the importance of treating these unmet wellness needs and bringing awareness to the many treatments and sources available to them. Business plans were developed based on evidence and included a cost analysis or break-even analysis and a maximum profit analysis of each program.

**Program proposal.** Each proposal was developed using the most current evidence needed to support the program. Program proposals included prevalence of side effects or unmet wellness needs, the effects of not treating these needs, the most effective treatment delivery methods, and the possible benefits for patients and the organization when these unmet wellness needs are treated effectively.

**Patient education.** Education is an important aspect of each evidence-based treatment delivery method. Patient education material included prevalence of side effects of cancer and cancer treatment, the risk of untreated side effects, evidence-based treatments, recommendations, and community resources. These materials were developed after researching patient education material formats as well as recommendations from national organizations such as the National Osteoporosis Foundation. The materials were created at the fifth to eighth grade reading level by limiting the use of three or more syllable words, refraining from abstract language, and maintaining consistent word usage.

**Clinic process.** The clinical process element of the toolkit was comprehensive and composed of multiple parts including standard operation procedures, intake forms, and progress note templates. Standard operating procedures included the referral or scheduling process and visit procedures. All aspects of the clinic processes included in the supportive services program toolkit were incorporated into the electronic health record so the practice would have access to every document that was created.

**Business plans.** Business plans for each individual program were developed through incorporation of evidence-based materials and monthly meetings with key personnel. Business plans are composed of a cost or break-even analysis of each program (see appendix L). The bone health program is likely to see a profit through DXA scanning and medication infusion revenue, while the sexual health and smoking cessation clinics are less likely to see a profit and therefore a break-even analysis was completed. A current cost analysis of the bone health program indicates that the clinic would realize an approximate net monthly profit of \$42,559.69 with a maximum net monthly profit of \$44,276.41. These figures were obtained using 136 patient appointments per month. The clinic operates 2 days per week and the schedule is built for 17 patient appointments per day. The revenue generated from DXA scans was calculated based on the number of scans ordered by the organization per year divided by 12. Break-even analyses for NP visits with DXA scans and NP visits only were completed to further support the development of the bone health program, and identified to break-even, 39 and 58 patients would need to be seen per month respectively. A completed break-even analysis of the sexual health and smoking cessation clinics indicated 28 patients per month were needed to generate a profit. This number was identified as quite attainable after analysis of the provider surveys and clinic schedules. A maximum monthly net profit analysis of these two clinics was completed as well and indicated that if operating with

a full clinical schedule, each clinic would realize a net monthly profit of \$4,335.44. In addition to these analyses, business plans included an overview, market analysis, plans of operation, available services, marketing, and a competitive analysis.

### **Evaluation and Sustainability Plan**

To increase the likelihood of success of a supportive services program, the most important part of the toolkit and the project was a well-developed evaluation and sustainability plan. The evaluation plan focused on patient and provider satisfaction surveys, patient volume assessments, scheduled wait times, and ongoing cost analyses. The sustainability plan focused on the use of Kotter's Eight Process for Leading Change (2007) and the ability of the program to influence measures of the Oncology Care Model (OCM) and the Quality Oncology Practice Initiative (QOPI).

#### **Evaluation Plan**

For effective program evaluation, provider and patient satisfaction, patient volume, scheduled wait times, and costs analyses should continuously be evaluated. Patient satisfaction surveys will identify patient knowledge and experience, and provider surveys will focus on the ease of referrals and likelihood to reuse such services. Patient volume, or clinic efficiency, will be measured by the number of patients that are actually served in the clinic each day compared to the maximum number of patients that could be seen based on the daily schedule. Scheduled wait times will be evaluated based on the average number of days between referrals and the first available appointment date. Finally, an ongoing cost analysis will need to be completed, especially when considering program growth, in order to measure a break-even analysis and increase the probability to see a net profit.

### **Sustainability Plan**

Using the findings from the multiple meetings and research, the sustainability plans will be based on multiple concepts of Kotter's Eight Step Process for Leading Change (2007) and the ability of the program to meet certain measures of the OCM and QOPI. Concepts of Kotter's Eight Step Process (2007) that will need to be utilized by key stakeholders include building a guiding coalition, enabling action by removing barriers, generating short-term wins, identifying those wins, and communicating short-term wins or goals to the rest of the organization. In addition, it is important for these programs to meet certain standards of the OCM and QOPI in order to generate higher performance-based payments and maintain certification (American Society of Clinical Oncology [ASCO], 2018; CMS, 2019). Each program is associated with certain measures of each model, especially patient-reported experience of care. The ability of these programs to help the organization reach these desired measures will need to be evaluated, and if effective, disseminated to stakeholders and to the rest of the organization.

**Build a guiding coalition.** A guiding coalition has already been established throughout project development and implementation; however, this guiding coalition will need to be maintained to sustain the program. The manager and director of multispecialty services will play a key role in maintaining this coalition. Providers within the organization will need to continuously be educated about the growth of the specialty services the organization offers. In addition, dissemination of results, especially positive, will serve to guide this coalition and increase provider buy-in to the supportive services program.

**Enable action by removing barriers.** The project addressed certain barriers of the program identified through the organizational assessment and the provider surveys; however, other barriers will need to be addressed with this program going forward. The incorporation of

evidence-based research, theory guided strategies, and formalized clinic processes to the toolkit addressed certain identified barriers. Two important barriers that were identified from the provider surveys are financial concerns and the ability to expand the supportive services to the other organizational locations. The practice has a large group of billing and insurance professionals that can be continuously consulted to possibly provide patients with financial assistance to make use of these supportive service programs. After these supportive services have been established and proven to be sustainable at the current location, it will be necessary to make these services available at the other locations.

**Generate short-term wins.** It is crucial to the sustainability of a program that short-term goals are identified, and results are disseminated frequently to the guiding coalition and the rest of the organization (Kotter, 2007). The project director and key stakeholders have identified several short-term goals of the project which include increasing number of referrals, patient volume, satisfaction scores of patients and providers, efficiency of each supportive service, and Oncology Care Model and Quality Oncology Practice Initiative scores (ASCO, 2018; CMS, 2016). With each goal that is achieved, it will be important for the director and manager to recognize and communicate the successes of the program in order to strengthen the coalition and make the organization aware of the benefits of such a program.

**Oncology Care Model.** The ability of the program to influence measures of the Oncology Care Model and help the organization to receive higher performance-based payments is crucial to the sustainability of the program (CMS, 2019). Measure OCM-6 pertains to the patient-reported experience of care and is the measure this supportive service program has the greatest potential to influence (CMS, 2019). The program also has the potential to influence measure OCM-1 and OCM-2 pertaining to all-cause hospital admissions and all-cause hospital ED visits (CMS, 2019).

If scores in these measures are improved after implementation of the supportive services program, it will be important to the program's sustainability that the ability of the program to improve these quality measures is communicated to the organization.

**Quality Oncology Practice Initiative.** Maintaining QOPI certification will help to market the practice as a leader in oncology care, and the program has the capability to help the organization maintain this certification. The supportive services offered through the program have the potential to influence many measures of the QOPI, including assessing emotional well-being, acting to address emotional well-being concerns, documenting smoking status, offering smoking cessation counseling, and administering smoking cessation counseling (ASCO, 2018). When recertification is achieved, it will be important for the director and manager to communicate with the organization how the supportive services program helped to meet these measures and helped the organization maintain certification.

### **Limitations**

Like all projects, the project had certain limitations, which included provider response and evaluation methods. Provider survey response rates were higher than anticipated at 29%, with 10 out of a possible 35 responding to the survey. Providers who did respond helped to develop the project, but the lack of input from 71% of possible respondents was considered a limitation.

Another limitation of the project is the evaluation plan. This was a program development project and evaluation of the program implementation was beyond the scope and will need to be addressed in the future; however, an evaluation plan was developed and included in the toolkit for the practice. One important part of the evaluation and sustainability plans included in the toolkit is the ability of the program to influence Oncology Care Model and Quality Oncology Practice Initiative measures. The ability to influence these measures is a needed aspect of the toolkit, but it

will be difficult to evaluate whether the program impacted these measures directly or if other indirect variables affected these measures.

### **Implications for Practice**

Due to the high volume of cancer survivors with wellness needs in the general population and within the practice, the project has the potential to impact survivors and this organization. Despite the potential revenue generated from the bone health clinic, other supportive service programs are unlikely to be as profitable through referral numbers and reimbursement alone, therefore, the ability of the survivorship wellness program to help the organization meet quality performance indicators of the Oncology Care Model must be acknowledged. The program can help the organization improve scores in certain measures of the Oncology Care Model and potentially increase performance-based payments (CMS, 2019). The program can also help the organization maintain Quality Oncology Practice Initiative certification, sustaining their status as a leader in oncology care (ASCO, 2018). Finally, the program can impact survivors through improved quality of life and could therefore impact the organization through improved patient satisfaction scores.

### **Plans for Dissemination**

The project was disseminated first through a presentation to key stakeholders within the organization to achieve program and toolkit approval. The toolkit was then disseminated to providers within the organization through the creation of educational and marketing information. The project was defended to the advisory team during the formal project defense. The project will be submitted to ScholarWorks with a possible submission to relevant scholarly journals with the hope that other organizations will be able to use these results and develop their own supportive

services program. Finally, the project was accepted for poster presentation at the 2019 National DNP Conference in Washington, DC.

### **Reflection on Doctorate of Practice Essentials**

In this growing and complex health care system, the American Association of Colleges of Nursing (AACN) (2006) developed criteria that guides competency attainment and ensures that nurses can practice at the highest level. It is necessary for DNP graduates to become competent in all eight Essentials, regardless of specialty (AACN, 2006). Each essential competency was addressed through the project or through other activities completed by the DNP student.

#### **Essential I: Scientific Underpinnings for Practice**

This first essential focuses on the ability of the doctorate prepared nurses to influence current and future health care concerns through a strong scientific foundation rooted in nursing theory (AACN, 2006). The literature review, organizational assessment, and development of the supportive services toolkit relied heavily on the DNP student to thoroughly evaluate research and apply nursing theory to guide the project.

#### **Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking**

This essential focuses on the ability of the DNP nurse to develop and evaluate policy and health care delivery methods at the systems level to meet the needs of current and future health care populations (AACN, 2006). Competency in this essential was achieved through the development of an evidence-based, supportive services program focusing on the areas of bone health, women's health, and smoking cessation. The toolkit included the most effective treatment delivery approaches, cost analyses, and evaluation plans, all of which influenced current organizational policy and health delivery methods.

**Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice**

The supportive services program toolkit was developed using evidence-based research. The research was integrated into each aspect of the supportive services program toolkit, especially through the integration of the most effective treatment and delivery methods, as well as the development of the evaluation and sustainability plans.

**Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care**

This essential focuses on ability of the DNP graduate to remain current with and use information technology to manage and evaluate the health care of specific populations (AACN, 2006). The DNP student met this essential through integrating certain aspects of the toolkit into the organization's electronic health record. To further achieve competency, the DNP student attended the 2018 Avasure Symposium, which focused on the use of advancing technology within the health care setting to improve safety and efficiency of health services.

**Essential V: Health Care Policy for Advocacy in Health Care**

Beyond the development of organizational policy focusing on the population of the cancer survivor, it was difficult to achieve competency in this essential through the project alone. For this reason, the DNP student became a member of the Michigan Nursing Action Coalition. Through this coalition, the student is currently working with a group of nursing professionals to influence policy associated with interprofessional care. In addition, the DNP student also attended Advocacy Day on October 10, 2018. During this event, the student collaborated with other nurse practitioner students and spoke with legislators to inform them of nurse practitioners' education and scope of practice, and obtain their support for policy issues that have the ability to affect community health.

### **Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes**

Through the project, it was essential that the DNP student became a team leader and worked effectively with interprofessional teams. Multiple meetings with the project team and the manager and director within the organization were organized to obtain input from multiple specialties to inform toolkit development. In addition, collaboration with providers was completed throughout program development through meetings, provider surveys, and educational and marketing information.

### **Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health**

This essential focuses on the ability of the DNP professional to use data assessment skills and evaluation methods to prevent disease and promote health in populations (AACN, 2006). Competency in this essential was achieved through the evaluation of health promotion methods pertaining to the oncology population. Multiple physical, mental, and situational conditions are unique to cancer survivors. Research was thoroughly evaluated that focused on the many needs of the oncology population, and findings of such research was incorporated into the toolkit.

### **Essential VIII: Advanced Nursing Practice**

This essential was achieved by taking on the role of the nurse practitioner and utilizing the skills obtained through DNP education. This program development project relied on the student to make use of advanced practice assessment, clinical judgement, and critical thinking skills that can only be obtained through DNP education. The development of intake forms within the clinic processes relied heavily on specific nurse practitioner skills to create a focused health history form that would correctly inform the physical assessment. Patient education materials were created with a focus on nursing theory and patient motivation only learned through DNP

education. Finally, the development of the evaluation and sustainability plans required the DNP student to incorporate a systems level approach, a skill continuously communicated throughout the curriculum. Partnerships were established with stakeholders within the organization through multiple meetings as well as assisting the organization with a supportive patient event.

### **Conclusion**

Through the DNP project, an evidence-based, supportive services program toolkit focused on the needs of bone health, women's health, and smoking cessation within a private oncology practice was successfully developed. A completed organizational assessment, including a gap analysis, identified the need for this practice to implement a program focused on certain wellness needs of cancer survivors. A literature review focusing on delivery methods of specific wellness initiatives identified available research supporting the implementation of each aspect of the program development plan. Provider surveys identified provider knowledge, estimated referrals, and possible barriers to the project. Meetings with the manager and director of multispecialty services led to the development of the supportive services program toolkit. After multiple revisions, the final toolkit focused on the areas of bone health, women's health, and smoking cessation, and consisted of a program proposal, patient education materials, clinic processes, business plans, and evaluation and sustainability plans. When the bone health and women's health clinics were implemented on March 4, 2019, finalized elements of this toolkit had already been incorporated into the clinic operations. The development of an evidence-based sustainability plan has provided this program with additional possibilities of success and longevity. After these programs have been established and proven sustainable at the current location, they have the potential to be adapted to the other sites of this organization. Overall, the program has the potential to substantially influence the organization as well as the general oncology population.

Other oncology practices can utilize the evidence-based approach to wellness for cancer survivors to focus on helping patients to live longer, higher-quality lives.

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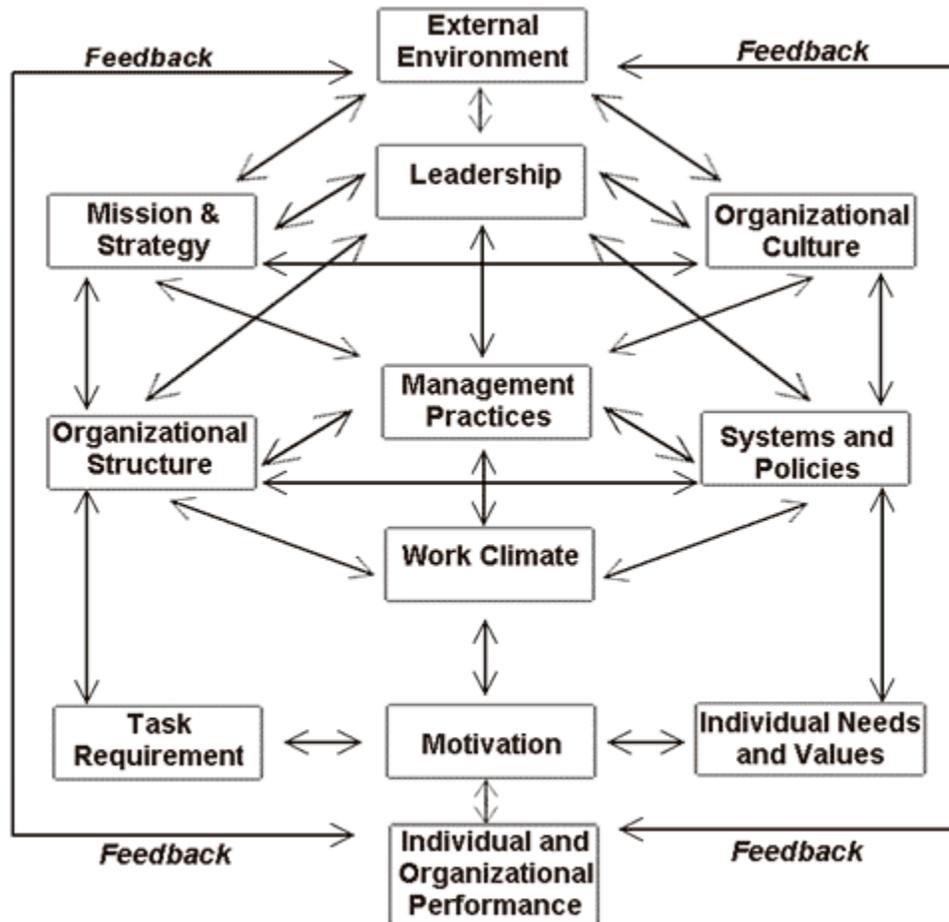
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## Appendix A

Burke-Litwin Model of Organizational Performance and Change



*Figure A1.* A model of organizational performance and change. “A Causal Model of Organizational Performance and Change,” by W. W. Burke and G. H. Litwin, 1992, *Journal of Management*, 18, 528. Reprinted with permission from SAGE Publications. Copyright 1992 by SAGE Publications

Appendix B

Organizational Flow Chart of Operational and Executive Officers

Content redacted

Appendix C

SWOT Analysis of Private Midwest Oncology Practice

Content redacted

Appendix D

Gap Analysis of Survivorship Wellness Program within a Private Midwest Oncology Practice

Content redacted

## Appendix E

## PRISMA / Literature Search Selection Process

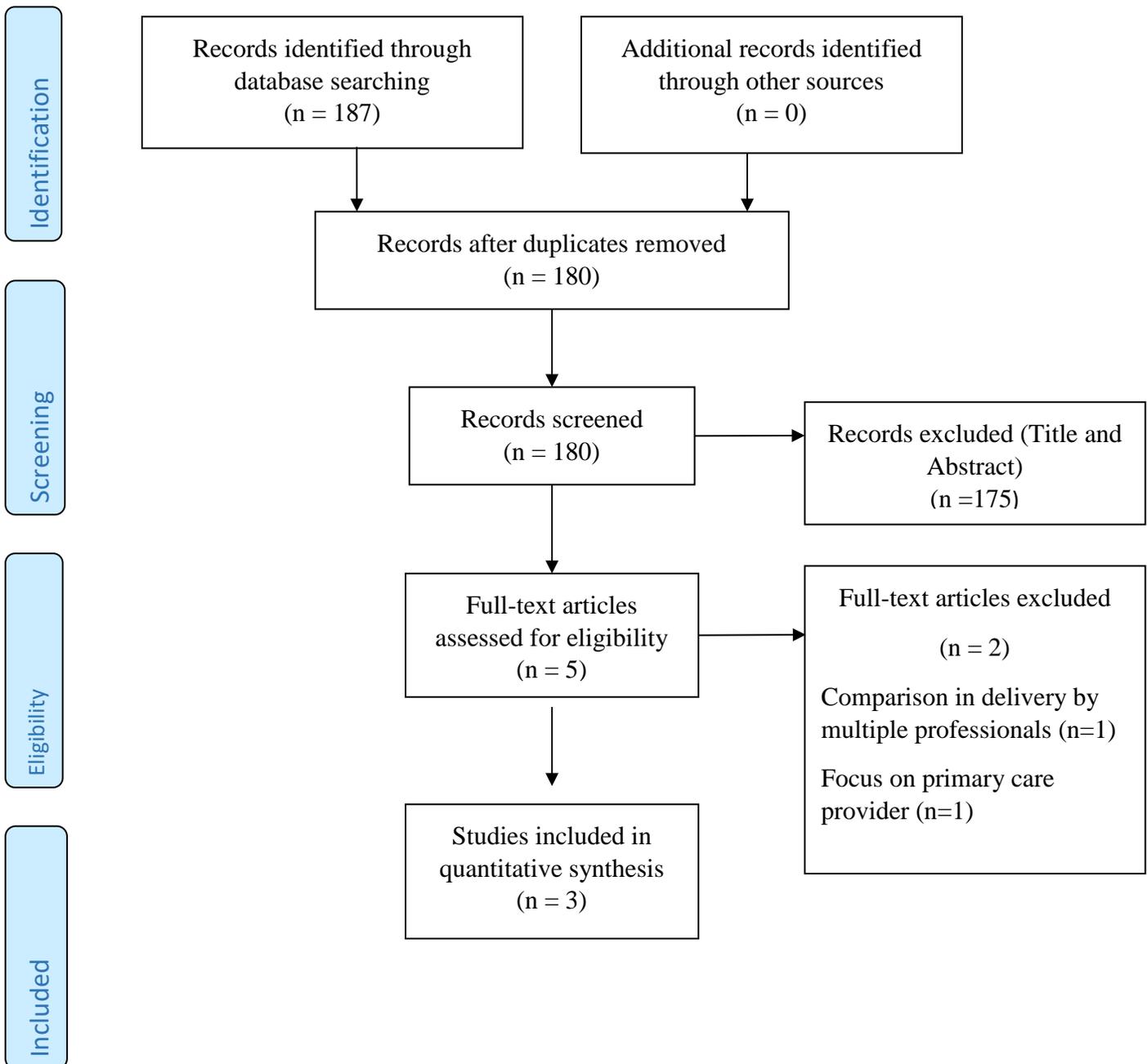


Figure 1E. Flow diagram of survivorship program search selection process

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *PLoS Med* 6(7): e1000097. doi:10.1371/journal.pmed1000097

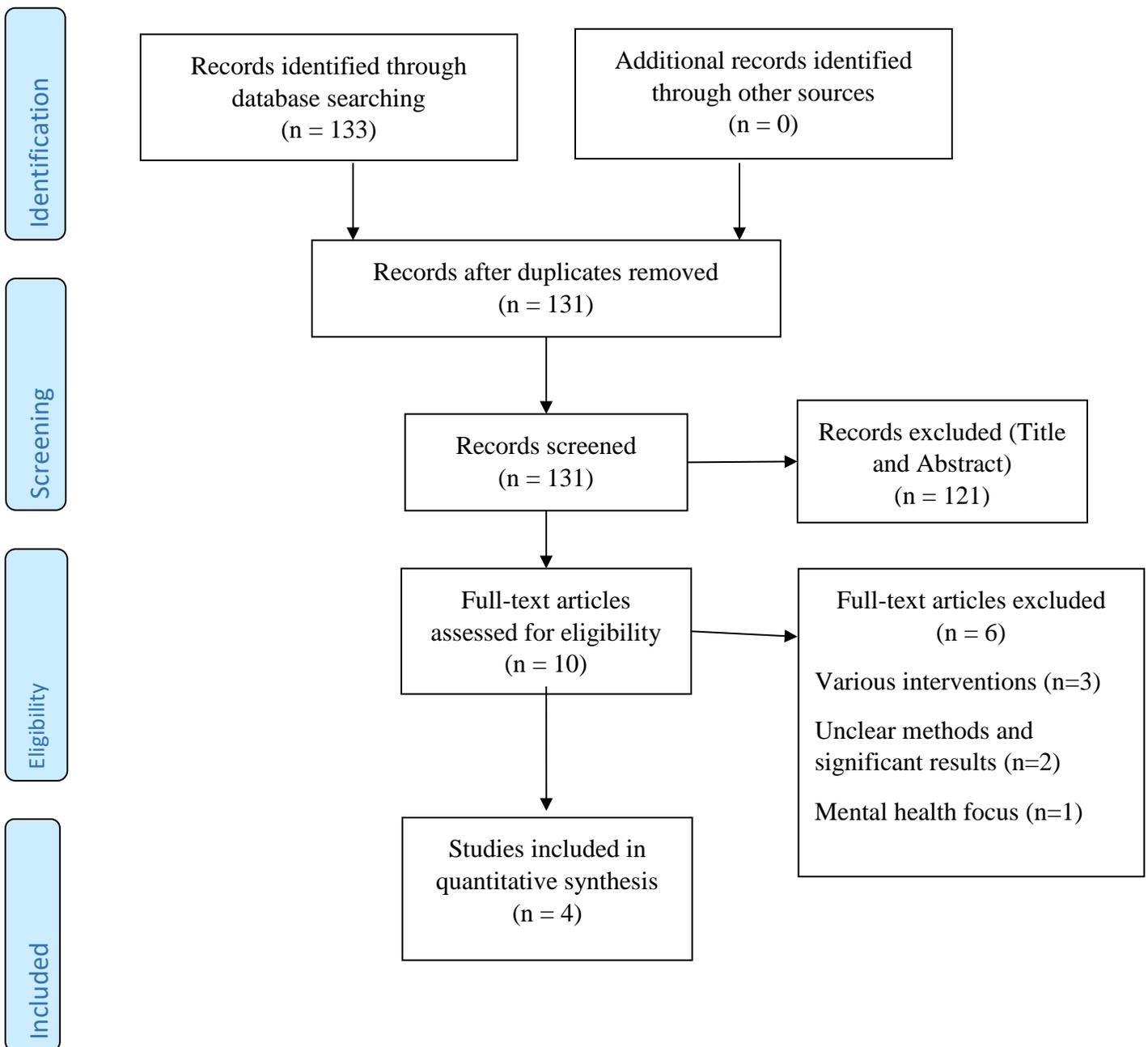


Figure 2E. Flow diagram of wellness program search selection process

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *PLoS Med* 6(7): e1000097. doi:10.1371/journal.pmed1000097

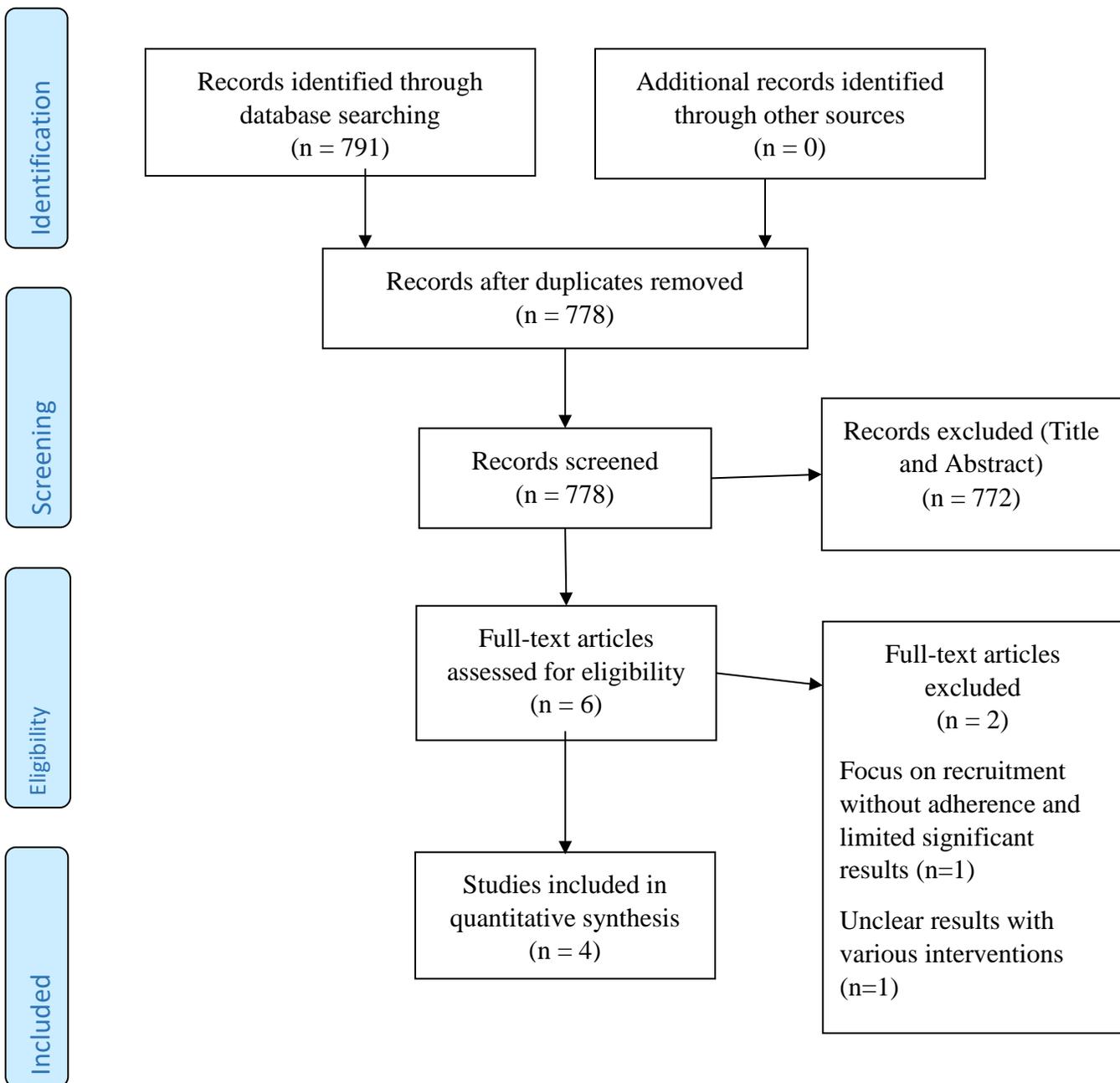


Figure 3E. Flow diagram of smoking cessation search selection process

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(7): e1000097. doi:10.1371/journal.pmed1000097

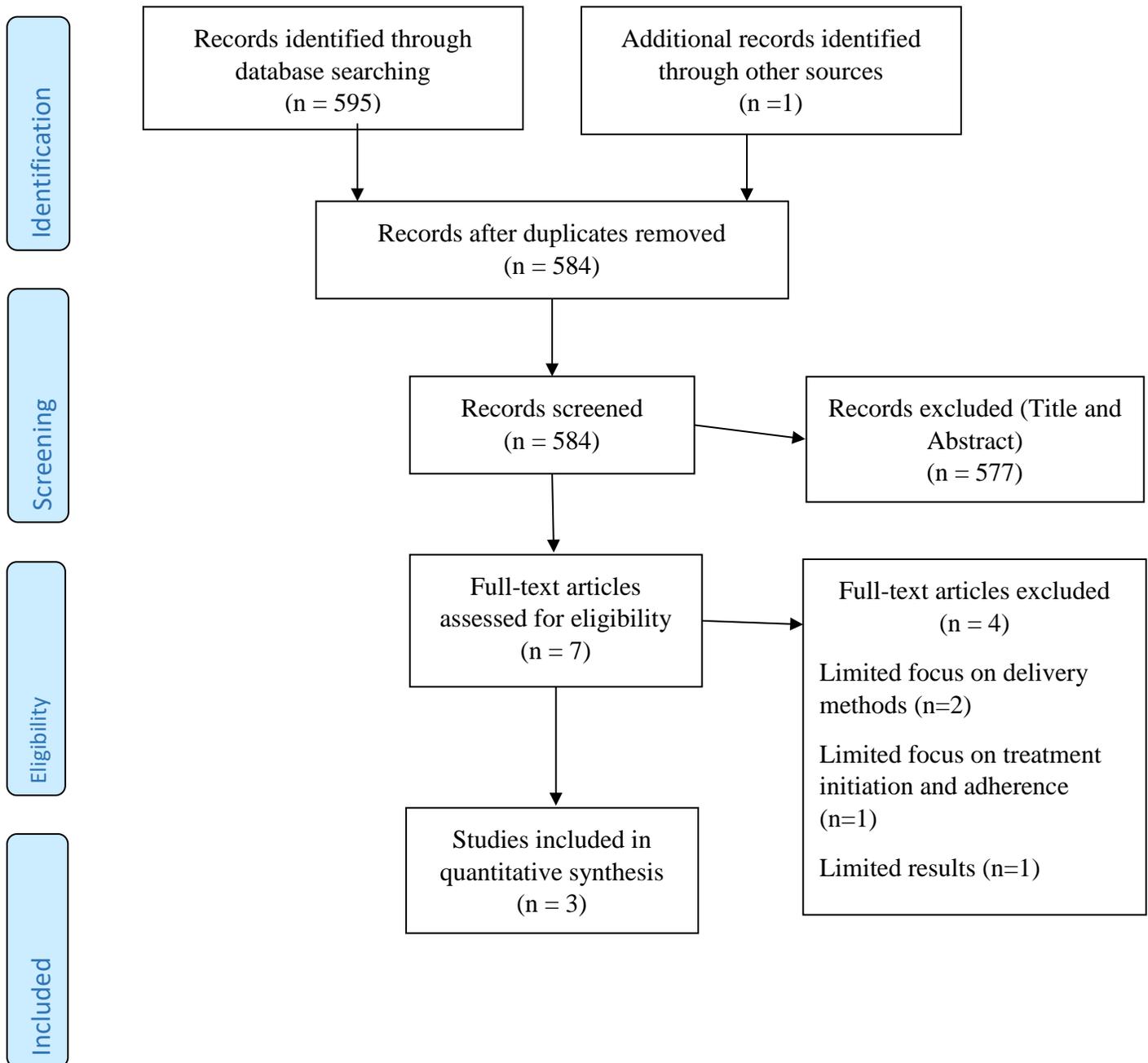


Figure 4E. Flow diagram of bone health search selection process

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(7): e1000097. doi:10.1371/journal.pmed1000097

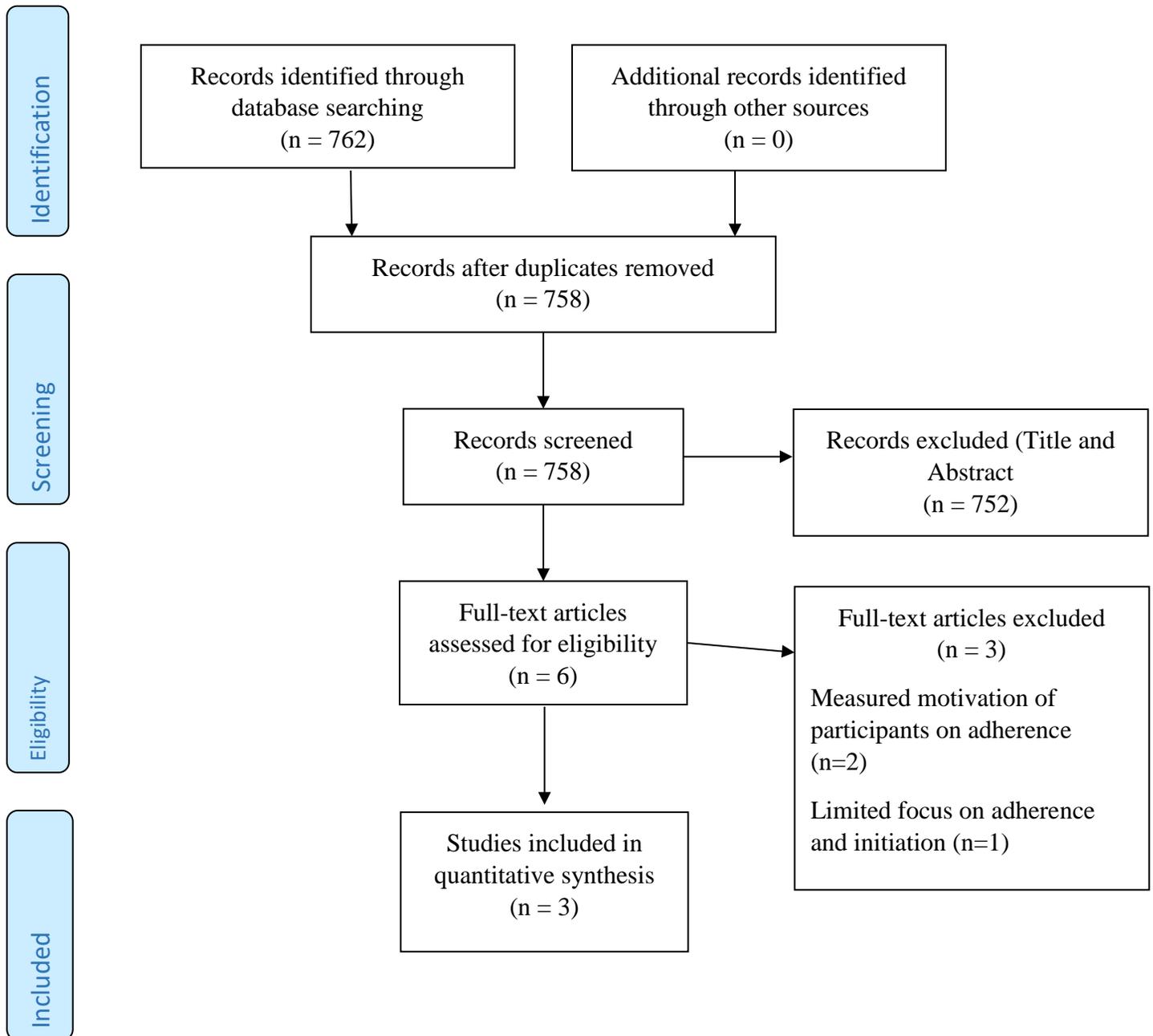


Figure 5E. Flow diagram of fatigue management search selection

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(7): e1000097. doi:10.1371/journal.pmed1000097

## Appendix F

## Included Articles of Literature Review

Table 1F. *Articles Included in Survivorship Program Review*

Author (Year) Purpose	Design (N)	Inclusion Criteria	Intervention vs Comparison	Results	Conclusion
Cheng (2017) To evaluate the effects of home-based, multidimensional survivorship programs (HBMS) on quality of life in breast cancer survivors	Randomized controlled-trials (N=22) and Quasi-experimental randomized controlled-trials (N=4)	<ul style="list-style-type: none"> <li>Women with stage 0 to 3 breast cancer who completed primary cancer treatment within 10 years.</li> <li>Interventions completed at home setting.</li> </ul>	Multidimensional program including more than one intervention of information provision, self-management advice, exercise training, resistance training, counseling, or cognitive therapies to routine medical follow-up services	<ul style="list-style-type: none"> <li>HBMS programs increase both quality of life specific to breast cancer and global quality of life directly after treatment. (7 studies, N=764) (FACT-B: mean difference 4.55, 95% CI: 2.33-6.78), (6 studies, N=299) (EORTC: MD: 4.38, 95% CI: 0.11-8.64)</li> <li>HBMS programs increase both quality of life specific to breast cancer and global quality of life one to three months after treatment. (2 studies, N=426) (FACT-B mean difference 6.10, 95% CI 2.48 to 9.72), (2 studies, N=172) (EORTC-C30 mean difference 6.32, 95% CI 0.61 to 12.04), (1 study, N=61) (QoL-Breast Cancer mean difference 0.45, 95% CI -0.19 to 1.09)</li> </ul>	Home based, multidimensional survivorship programs have a short-term benefit to improving quality of life in breast cancer survivors.

<p>Dietrich (2016) To assess the effect of a breast cancer survivorship program on compliance, patient satisfaction, and overall quality of life</p>	<p>Case-control study including surveys and retrospective EMR analysis (N=117).</p>	<ul style="list-style-type: none"> <li>Patients with early stage breast cancer who completed all their care at specific health system</li> </ul>	<p>Those who attended survivorship program (N=65) to those who did not attend survivorship program (N=52)</p>	<ul style="list-style-type: none"> <li>Survivorship program attendees felt their concerns were addressed more adequately in the areas of practical concerns (p=0.03) and long-term adverse effects (p=0.03).</li> <li>Survivorship program attendees were significantly more likely to be compliant with NCCN recommendation of H&amp;P every 3 to 6 months (p=&lt;.001), obtaining annual mammograms (p=0.02), and completing annual gynecologic exam while taking tamoxifen (p=0.001).</li> </ul>	<p>Patient who attend survivorship programs are more likely to have their concerns addressed and be compliant with NCCN recommendations.</p>
<p>Greenlee (2016) To assess the effect of a survivorship session with a nurse and nutritionist on changing diet and lifestyle habits</p>	<p>Randomized controlled trial (N=126)</p>	<ul style="list-style-type: none"> <li>English and Spanish speaking women with a history of stage 0 to 3 breast cancer within 6 weeks of completing treatment.</li> </ul>	<p>Patients who attended 2-hour survivorship session with a nurse and nutritionist to printed materials on healthy diet and lifestyle habits.</p>	<ul style="list-style-type: none"> <li>At three-month follow-up, the intervention group reported significantly higher knowledge pertaining to healthy diet (p=0.047), physical activity (p=0.03) and dietary supplements (p=0.006).</li> <li>At six-month follow-up, the intervention group reported greater knowledge of healthy diet (p=0.01).</li> </ul>	<p>Survivorship programs which include at least an initial consultation with a nurse and nutritionist can increase knowledge of the importance of healthy diet and lifestyle changes in the breast cancer survivor population.</p>

Table 2F. *Articles Included in Wellness Program Review*

Author (Year) Purpose	Design (N)	Inclusion Criteria	Intervention vs Comparison	Results	Conclusion
Eng (2016) To assess the effect of a 6-year wellness program on blood pressure	Prospective cohort study (N=1365)	<ul style="list-style-type: none"> <li>Age 35 years and older, full-time employees at specific university</li> <li>Completed at least one follow up measurement with no change in antihypertensive medications.</li> </ul>	Multimodal intervention including health screenings, physical exams, health exhibitions, and health education seminars focused on healthy diet, physical activity, smoking cessation, and managing stress.	<ul style="list-style-type: none"> <li>Of participants in the hypertension group, systolic blood pressure decreased an average of 2.36 mmHg per year (<math>p&lt;0,001</math>).</li> <li>Systolic blood pressure in the group at-risk for hypertension decreased 0.75mmHg per year (<math>p&lt;0.001</math>).</li> <li>Diastolic blood pressure in the hypertensive group decreased 1.76mmHg per year (<math>p&lt;0.001</math>).</li> <li>Diastolic blood pressure in the at-risk group decreased 0.56mmHg per year (<math>p&lt;0.001</math>).</li> </ul>	Work place health promotion initiative can sustainably decrease blood pressure in hypertensive and at-risk groups
Hinderliter (2014) To assess the effect of the ENCORE (Exercise and Nutrition Interventions for Cardiovascular Health) study	Randomized controlled study (N=144)	<ul style="list-style-type: none"> <li>Sedentary adults age 35 years and older, with BMI between 25-39.9kg/m<sup>2</sup>, BP of 130-160/80-99, and who were not treated with an antihypertensive</li> </ul>	DASH diet alone, DASH diet plus behavioral weight intervention (DASH-WM), to usual care, in which patients maintained their same diet and	<ul style="list-style-type: none"> <li>At the 16-week follow-up, those participants randomized to the DASH-WM group lost an average of 8.7kg, compared to 0.3kg in the DASH group (<math>p&lt;0.001</math>), and a gain of 0.9kg in the usual care group (<math>p&lt;0.001</math>).</li> <li>Blood pressure in the DASH-WM group decreased by an</li> </ul>	Diet and diet plus behavioral weight management programs decrease weight and hypertension in overall healthy overweight and hypertensive adults.

on improving health habits and blood pressure in overweight, hypertensive individuals.		medication.	physical activity habits	<p>average of 16.1mmHg (CI = 13.0-19.2)/9.9 (95% CI = 8.1-11.6), compared to 11.2 in the DASH (95%CI = 8.1-14.3/7.5 (95%CI = 5.8-9.3) and 3.4mmHg in the usual care group (95% CI = 0.4-6.4)/3.8 (95% CI = 2.2-5.5).</p> <ul style="list-style-type: none"> <li>• Systolic and diastolic blood pressure declined significantly in both treatment groups compared to usual care (p&lt;0.01).</li> <li>• Systolic blood pressure remained significantly lower in active treatment groups compared to usual care 1-year post-treatment (p&lt;0.001)</li> </ul>	
Jamal (2016) To assess the effectiveness of a group-based lifestyle modification program (GSLiM) on biochemical and clinical measures, psychological	Randomized controlled trail (N=194)	<ul style="list-style-type: none"> <li>• Employees of a public university with a BMI of 27.5kg/m or greater and the ability to walk briskly for 10 minutes without assistance</li> </ul>	Group Support Lifestyle Modification Program compared to individual education session with dietician every 12 weeks.	<ul style="list-style-type: none"> <li>• At the 24-week measurement point, 19.6% of participants in the intervention group reached 6% targeted weight loss compared to 4.1% in the comparison group (RR: 4.75, 95% CI: 1.68, 13.45)</li> <li>• At the 24-week measurement point, WEL scores relating to negative emotions in the intervention group improved significant compared to the</li> </ul>	A group support program is effective in achieving weight loss goals and improving certain aspects of quality of life.

measures, and quality of life.				control group ( $p=0.049$ ) and scores relating to physical discomfort improved significantly in the intervention group ( $p=0.041$ ).	
Razavi (2014) To assess the effectiveness of intense lifestyle modification programs on cardiac risk factors	Prospective cohort study (N=580)	<ul style="list-style-type: none"> <li>Participants age 65 and older with a history of an AMI, CABG, or PCI in the previous 12 months, or a history of stable angina pectoris with cardiac ischemia</li> </ul>	Two programs, the Dr. Dean Ornish program for Reversing Heart Disease (Ornish) and the Cardiac Wellness Program of Benson-Henry Mind Body Institute (MBMI), included physical activity, diet education, stress management, and group support. The only difference between the two programs was that the Ornish program included a 12-week intense phase.	<ul style="list-style-type: none"> <li>For both programs, cardiac risk factors were measured at 3, 12, and 24 months. These risk factors included BMI, SBP, DBP, Total Cholesterol, LDL, HDL, Triglycerides, and Cardiac Functional Capacity.</li> <li>Significant results were found in every risk factor at every measurement time for the MBMI program (<math>p&lt;0.05</math>).</li> <li>Significant results were found in the Ornish program for most measurement times (<math>p&lt;0.05</math>) except for SBP at 24 months, DBP at 3 and 24 months, HDL at 12 and 24 months, and triglycerides at 3, 12, and 24 months.</li> </ul>	Lifestyle modification programs decrease cardiac risk factors in patients with a history of symptomatic coronary artery disease.

Table 3F. *Articles Included in Smoking Cessation Review*

Author (Year) Purpose	Design (N)	Inclusion Criteria	Intervention vs Comparison	Results	Conclusion
Fu (2014) To assess the effect of a proactive, population-based smoking cessation program on use of treatment and smoking cessation rates	Pragmatic randomized clinical trial (N=5123)	<ul style="list-style-type: none"> <li>• Veterans between the ages of 18 and 80</li> <li>• Identified as current smokers through a primary care visit within the previous 3 months</li> </ul>	Proactive outreach, which included mailed invitations and follow-up telephone outreach and choice of smoking cessation services by phone or in person compared to usual care which included access to smoking cessation treatments through the VA hospital	<ul style="list-style-type: none"> <li>• At the 6-month follow-up, the proactive care group used behavioral counseling at significantly higher rates compared to the usual care group (12.8% to 5.1%, <math>p &lt; 0.001</math>).</li> <li>• At the 6-month follow-up, a significantly higher number of participants in the proactive care group received smoking cessation medications (33.5% to 28.5%, <math>p &lt; 0.01</math>).</li> </ul>	A proactive, population-based approach to smoking cessation increase rates of smoking cessation services and use of evidence-based smoking cessation medications.
Stead (2013)	Randomized controlled trials and quasi-randomized controlled trials. (N=42)	<ul style="list-style-type: none"> <li>• Studies which included current smokers, smoking cessation advice given by</li> </ul>	Minimal advice compared to no regular advice (N=17) Intensive intervention to control (N=11) Intensive intervention with	<ul style="list-style-type: none"> <li>• 17 studies found brief advice significantly increase quit rates compared to no advice (RR: 1.66, 95% CI: 1.42 to 1.94).</li> <li>• 11 studies found more intensive interventions to significantly increase quit rates compared to no</li> </ul>	Simple advice and brief advice intervention have a significant effect on quit rates in the smoking population.

		<p>medical provider, and abstinence assessment at least 6 months after intervention was given.</p>	<p>minimal intervention (N=14) Intervention using 2 different methods of the Ask, Advise, Arrange follow-up (N=1) Advice compared to computer tailored letters (N=2)</p>	<p>advice (RR: 1.86, 95% CI: 1.60 to 2.15)</p> <ul style="list-style-type: none"> <li>• 1 study comparing intensive vs minimal advice found a slight significant benefit of intensive advice (RR: 1.37, 95% CI: 1.20 to 1.56).</li> <li>• 1 study found addition follow-up to improve quit rates compared to minimal intervention (RR: 1.52, 95% CI: 1.08 to 2.14).</li> </ul>	
<p>Vidrine (2013) To assess the effect of using the Ask-Advise-Connect (AAC) approach on participants enrolling in treatment</p>	<p>Group Randomized Trial (N=17,959)</p>	<ul style="list-style-type: none"> <li>• Current smokers 18 years of age and older seen at clinics involved in trial</li> </ul>	<p>Ask Advise Connect (AAC) intervention in which participant information was sent directly to a quitline so the participant would be contacted compared to the Ask Advise Refer Intervention</p>	<ul style="list-style-type: none"> <li>• 3 outcomes of reach, efficacy, and impact were measured in this study. Reach is the number of smokers that talked with the quitline out of the total number of identified smokers. Efficacy is the number of participants that enrolled in the quitline treatment out of the total number of identified smokers. Impact is calculated by multiplying reach by efficacy.</li> <li>• Outcome of reach was significantly greater in the AAC group at 23.6% compared to the AAR group at 0.5% (p=0.00005)</li> <li>• Outcome of efficacy was</li> </ul>	<p>The Ask Advise Connect approach to smoking cessation does cause a significant number of participants who smoke to enroll in a smoking cessation program.</p>

				<p>significantly greater in the AAC group compared to the AAR group (AAC group 1060 of 1070) (AAR group 53 of 56) (<math>p &lt; 0.001</math>)</p> <ul style="list-style-type: none"> <li>• Outcome of impact significantly greater in the AAC group compared to the AAR group (AAC group 14.7%) (AAR group 14.61%) (<math>p &lt; 0.0001</math>)</li> </ul>	
<p>Wang (2017) To assess the effects of smoking cessation advice and active referral on smoking cessation.</p>	<p>Pragmatic cluster randomized clinical trial (N=1226)</p>	<ul style="list-style-type: none"> <li>• Adults age 18 years and older, who smoked 1 cigarette a day over the last 3 months, exhaled 4ppm of carbon monoxide, and had a willingness to quit or reduce smoking.</li> </ul>	<p>Brief model-guided advice plus active referral compared to brief model-guided advice only and general advice only.</p>	<ul style="list-style-type: none"> <li>• Past 7-day point prevalence of abstinence rates were significantly higher in the active referral group compared to the brief advice group at 3 months (18.9% to 8.9%, <math>p &lt; 0.001</math>) and compared to the control group at 6 months (17.2% to 11.5%, <math>p = 0.001</math>)</li> <li>• Validated abstinence rates were significantly higher in the active referral group at 3 (10.2%) and 6 (9.0%) months compared to the brief advice (3.8% and 5.0%) and the control group (4.2% and 5.1%) (<math>p &lt; 0.05</math>)</li> <li>• The active referral group used smoking cessation services more frequently than both the brief advice (<math>p &lt; 0.001</math>) and control groups (<math>p &lt; 0.001</math>).</li> </ul>	<p>Brief advice and active referral are effective strategies to increase smoking cessation rates.</p>

Table 4F. *Articles Included in Bone Health Review*

Author (Year) Purpose	Design (N)	Inclusion Criteria	Intervention vs Comparison	Results	Conclusion
Kastner (2017) To assess the effects of osteoporosis interventions on osteoporosis investigations, treatment, and fragility fractures.	Randomized Controlled Trials (N=55) Companion Report (N=1)	<ul style="list-style-type: none"> <li>Studies involving controlled trials of participants at risk of fragility fracture, in which an intervention took place, and used a reminder tool or risk assessment strategy.</li> </ul>	95% of the intervention in the studies were considered complex and included two or more components. The most frequently used interventions were education, feedback, follow-up, screening, reminders, and risk assessment. The studies which included 3-5 components involved patients, physicians, nurse, health educators, clinic staff, and pharmacists. Common combination of 2-component	<ul style="list-style-type: none"> <li>35 RCTs found significantly increased rates of osteoporosis medication initiation (RB: 1.52, 95% CI: 1.33 to 1.72, <math>p &lt; 0.0001</math>). Of these studies, the majority included education plus either intervention targeting patients (N=18), providers (N=7), or both (N=10)</li> <li>The 5-component intervention involving education, follow-up, feedback, reminder, and screening significantly increased medication use (RB: 1.75, 95% CI 1.48 to 2.07, <math>p &lt; 0.0001</math>)</li> <li>The 4-component intervention including reminders (3 RCTs, N=791), screening (2 RCTs, N=6315), added to education, feedback, and follow ups significantly increased initiation of osteoporosis medications (RB: 1.61, 95% CI 1.33 to 1.94, <math>p &lt; 0.0001</math> and RB: 1.44, 95% CI 1.06 to 1.97, <math>p = 0.02</math>).</li> </ul>	Complex intervention that include at least education can improve initiation rates of osteoporosis medication as well as rates of osteoporosis investigations.

			<p>interventions included education plus follow-up (N=5), and education plus reminder (N=3). The most common 5-component interventions included education + feedback + follow-up + screening with risk assessment (N=3) or reminder (N=3).</p>	<ul style="list-style-type: none"> <li>• Intervention of education, feedback, and risk assessment found significant results as well (RB: 1.47, 95% CI: 1.09 to 1.6, p=0.01)</li> <li>• 29 RCTs (N=59,633) found significant results on implementing BMD testing (95% CI: 1.67 to 2.45, p&lt;0.0001). Of these studies, the majority included education plus interventions involving patients (N=16), providers (N=5), or both (N=9). The 5-component intervention increased osteoporosis investigations significantly (RB of 2.23, 95% CI 1.86 to 2.66, p&lt;0.0001).</li> <li>• 2-component intervention found significant results in improving osteoporosis investigations which included education + follow-up (RB of 1.21, 95% CI: 1.02 to 1.42, p = 0.03)</li> </ul>	
<p>Kessous (2014) To assess the effect of further</p>	<p>Randomized controlled study (N=70)</p>	<ul style="list-style-type: none"> <li>• Female patients between the ages of 48 to 70 years of age and who were</li> </ul>	<p>Telephone follow-up post DRF which included a survey</p>	<ul style="list-style-type: none"> <li>• A significantly higher percentage of patient in the intervention group visited their primary care doctor compared to the control group (69% to</li> </ul>	<p>Proactive outreach in the form of further education and PCP notification</p>

<p>information and notification to the PCP on rates of follow-up with PCP and osteoporosis workup after a distal radius fracture</p>		<p>diagnosed with a distal radius fracture between the years 2005 and 2007.</p>	<p>education regarding DRF and osteoporosis in addition to an explanatory pamphlet and a letter sent to the primary care physician compared to a telephone survey and education alone.</p>	<p>23%, p=0.001)</p> <ul style="list-style-type: none"> <li>• A significantly higher percentage of participants in the intervention group completed osteoporosis workup compared to the control group (40% to 14%, p=0.001)</li> <li>• A significantly higher percentage of participants in the intervention group were diagnosed with osteoporosis compared to the control group (17% to 6%, p=0.001)</li> </ul>	<p>improve rates of osteoporosis workup and diagnosis.</p>
<p>Morfeld (2017) To assess the effect of education on osteoporosis prevention and treatment results</p>	<p>Randomized-controlled trials (N=15)</p>	<ul style="list-style-type: none"> <li>• Mixed or Caucasian men or women age 50 or older with osteoporosis or mixed fragility fracture</li> <li>• Randomized controlled trials with an education intervention and assessment of initiation and adherence to pharmacological treatment, physical</li> </ul>	<p>Individual or group education sessions, delivered mostly by medical personnel such as doctors, nurse practitioners, dieticians, nutritionists, or educators compared to no intervention or educational materials in the form of</p>	<ul style="list-style-type: none"> <li>• 1 study found increased rates of BMD test with DXA in the intervention group compared to the control group (p=0.01, 95% CI 3 to 21%).</li> <li>• 2 studies found statistical differences in 4 of 9 pharmacological outcomes between the intervention and control groups (p&lt;0.05).</li> <li>• 1 study found significant results in medication adherence in the intervention group compared to the control group (p=0.01).</li> </ul>	<p>4 of the studies reviewed found education to significantly affect BMD scan completion, medication initiation, or medication adherence. Although there is significant data in support of education, more research needs to be completed.</p>

		activity, calcium and vitamin D use, smoking behavior changes, fractures, and quality of life.	handouts or brochures.		
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Table 5F. *Articles Included in Fatigue Management Review*

Author (Year) Purpose	Design (N)	Inclusion Criteria	Intervention vs Comparison	Results	Conclusion
Bauman (2017) To assess the effect of an individual-supervised exercise program on sustainability of physical activity, fatigue, and health-related quality of life.	Quasi-randomized, intervention-controlled trial (N=194)	<ul style="list-style-type: none"> <li>Adults between the ages of 18 and 75, with a history of non-metastatic breast cancer diagnosed with the previous 5 years.</li> </ul>	3-week rehabilitation program with an individual, home-based exercise program, 1-week inpatient clinic stay, and follow-up phone calls compared to 3-week rehabilitation program alone.	<ul style="list-style-type: none"> <li>After 2 years, physical activity in the intervention group increased significantly (4169.71+/- 3492.27 MET-min/week) compared to the control group (2875.72+/-2590.15 MET-min/week) at 4 of 5 different time points (p&lt;0.05).</li> </ul>	Individualized, resource-adapted exercise programs have sustainable impact compared to usual care.
Hawkes (2013) To assess the effect on telephone-based health behavior change intervention on health and lifestyle outcomes within colorectal cancer survivors.	Randomized controlled trial (N=410)	<ul style="list-style-type: none"> <li>Adults 18 years of age and older with a history of colorectal cancer in the previous 12 months, with no condition limiting physical</li> </ul>	Telephone delivered health behavior change sessions given biweekly for 5 months which included self-management techniques, a handbook, motivational prompts, a pedometer and a newsletter, compared to usual care, which	<ul style="list-style-type: none"> <li>At 12 months, 1 primary outcome of moderate physical activity time increased significantly in the intervention group compared to the control (28.5 minutes per week to 16.5 minutes per week, p=0.003).</li> <li>The intervention group was more likely to meet Australian physical activity recommendations (16.4% to 9.2%, p=0.047)</li> </ul>	Providing telephone support focused on health behavior outcomes is effective for increasing physical activity in colorectal cancer survivors.

		activity, and who own a telephone.	included brochures on lifestyle changes to reduce cancer risk, and improved diet and physical activity.		
Pinto (2013) To study the effect of health care provider advice plus telephone counseling on amount of physical activity.	Randomized controlled trial (N=12)	<ul style="list-style-type: none"> <li>Females age 18 and older who had completed treatment for breast cancer within 5 years, able to read and speak English, able to walk unassisted, relatively inactive, and had access to a telephone.</li> </ul>	Physical activity advice plus telephone counseling over 12 weeks which included individualized, detailed exercise instruction, hour logs, goal setting, and encouragement compared to physical activity advice alone.	<ul style="list-style-type: none"> <li>Participants in the intervention group performed about 30min/week more physical activity compared to the control group at 3 months (p=0.048) and 6 months (p=0.032)</li> <li>Participants in the intervention group were more likely to report reaching physical fitness guidelines at 3 months (OR: 2.43, 95% CI: 1.18 to 4.98) and 6 months (OR: 2.11, 95% CI: 1.00 to 4.48)</li> <li>Motivational readiness for physical activity at follow-up was significantly higher in the intervention group compared to the control group at 3 months (OR: 4.45, p&lt;0.001) and 6 months (OR: 3.93, p = 0.003)</li> </ul>	Physical activity advice followed by telephone counseling significantly improves physical activity time and motivational readiness in breast cancer survivors.

Appendix G

Health Promotion Model

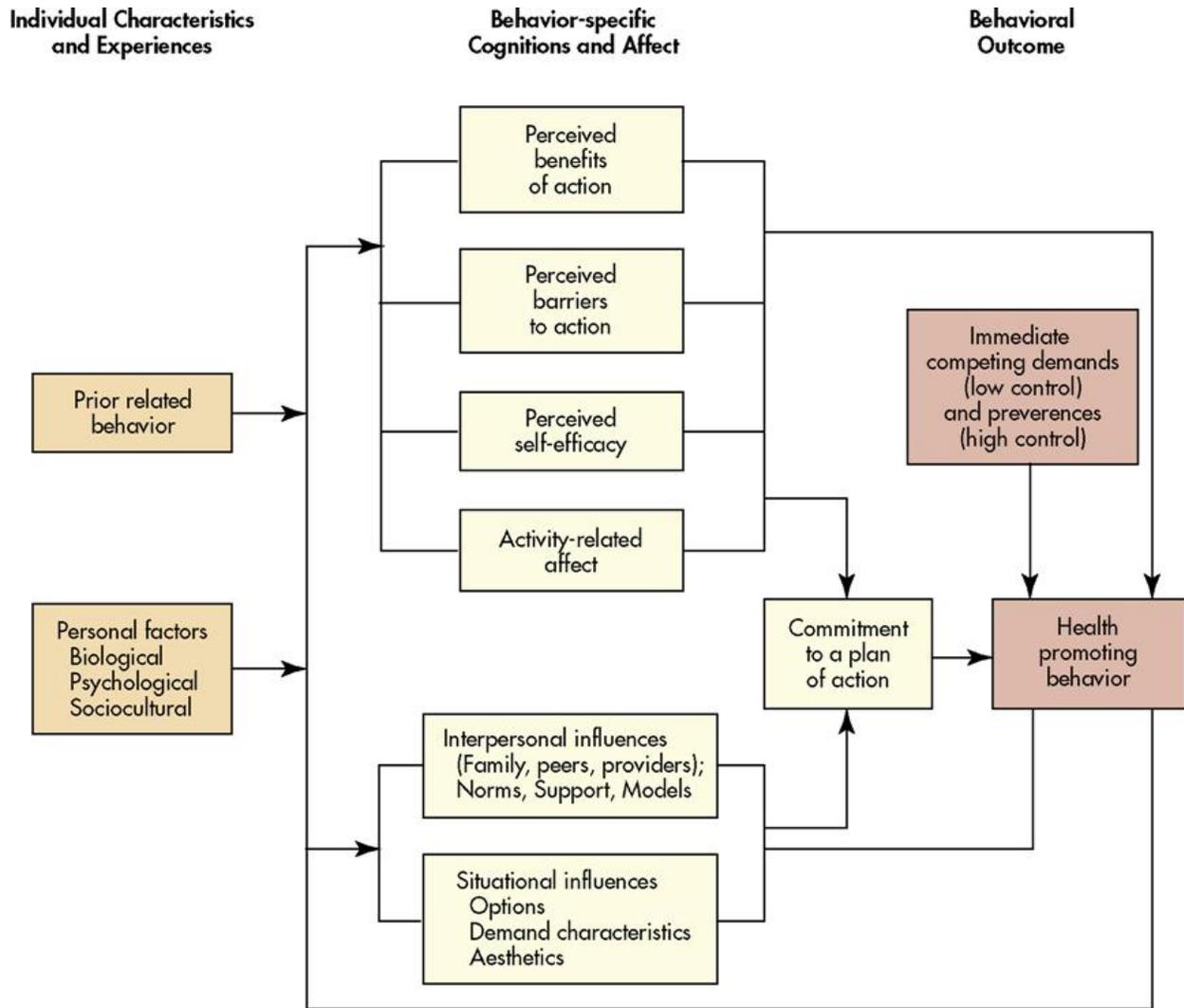


Figure 1G. Health promotion model (Adapted from Pender, N.J., Murdaugh, C.L., & Parsons, M.A. (2011). Health promotion in nursing practice (6<sup>th</sup> ed.). Reprinted with permission from Pearson Education. Copyright 2011, Pearson Education Inc.

## Appendix H

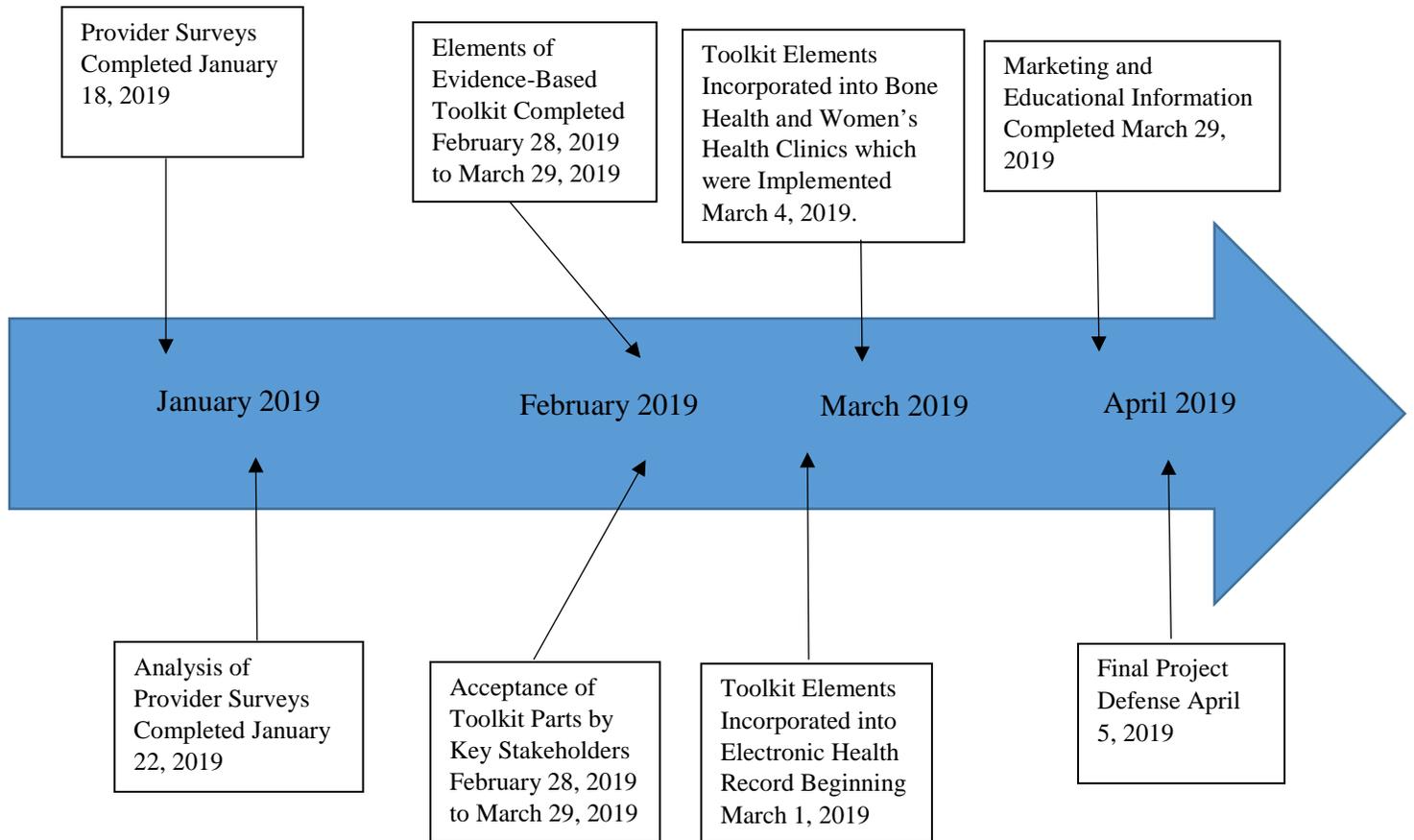
## Kotter's Eight Step Process for Leading Change



*Figure 1H.* Kotter's Eight Step Process for Leading Change. Adapted from Kotter International. (2018). *The 8-step process for accelerating change*. Retrieved from <https://www.kotterinc.com/wp-content/uploads/2018/05/8-Steps-eBook-Kotter-2018.pdf>. Reprinted with permission from Kotter International. Copyright 2018 by Kotter Inc

Appendix I

Timeline for Implementation Steps



## Appendix J

## IRB Determination Letter

DATE: November 09, 2018

TO: [REDACTED], DNP FROM: HRRC STUDY TITLE: Development of a Survivorship Wellness Program in a Private [REDACTED] Oncology Practice REFERENCE #: 19-136-H  
SUBMISSION TYPE: HRRC Research Determination Submission

ACTION: Not Research EFFECTIVE DATE:  
November 09, 2018 REVIEW TYPE:  
Administrative Review

Thank you for your submission of materials for your planned scholarly activity. It has been determined that this project does not meet the definition of research\* according to current federal regulations. The project, therefore, does not require further review and approval by the Human Research Review Committee (HRRC).

A summary of the reviewed project and determination is as follows:

The purpose of this quality improvement project is to develop a survivorship wellness program in a private [REDACTED] oncology practice composed of multiple wellness initiatives. While this is a systematic investigation, it is not designed to contribute to generalizable knowledge. Therefore, it does not meet the federal definition of research and IRB oversight is not required.

An archived record of this determination form can be found in IRBManager from the Dashboard by clicking the “\_ xForms” link under the “My Documents & Forms” menu.

If you have any questions, please contact the Office of Research Compliance and Integrity at [REDACTED] [REDACTED] Please include your study title and study number in all correspondence with our office.

Sincerely, Office of Research Compliance  
and Integrity

\*Research is a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

*Human subject* means a living individual about whom an investigator (whether professional or student) conducting research obtains: data through intervention or interaction with the individual, or identifiable private information (45 CFR 46.102 (f)).

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as *research* in materials to participants, sponsors or in dissemination of findings.

[REDACTED]



f. Other: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. What do you believe is the most effective referral process to these supportive services?  
 Select all that apply.

- a. Referrals are made by providers
- b. Referrals are made by registered nurses and/or care coordinators
- c. Other

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

6. With 5 being very likely, what is the likelihood that patients will comply with a referral to the supportive and wellness services that will be offered at East?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5

7. What is the estimated number of monthly referrals that you would make to the supportive and wellness services offered at East?

- a. 0-5
- b. 6-10
- c. 11-15
- d. 16-25
- e. More than 25

8. What do you believe are some of the barriers oncology patients face for not making lifestyle modifications to improve their overall health or engage in specific supportive services? Select all that apply.

- a. Patient motivation
- b. Lack of patient education
- c. Limited available resources
- d. Transportation issues
- e. Financial concerns
- f. Limited available time
- g. Other:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

9. Do you believe that it would be beneficial to develop a smoking cessation program for oncology patients at the East location?
- Yes
  - No

10. What is the best method for you to obtain information regarding the supportive services provided at East. Select all that apply.

- Face to face communication (meetings or educational sessions)
- Email
- Paper (informational handouts or pamphlets)
- Other\_\_\_\_\_

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## Appendix L

## Cost / Break-Even / Maximum Profit Analyses

**Monthly Bone Health Program Cost Analysis****Revenue**

Nurse Practitioner Visits with Scans	21,504.96
Reimbursement from Scans	5,962.66
Reimbursement from Infusions/Injections	15,600.00
Bloodwork (Vitamin D Levels)	5,546.67

<b>Total Revenue</b>	<b>48,614.29</b>
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**Expenses**

Nurse Practitioner Salary	3,900.00
Medical Assistant Salary	1,300.00
Rent	250.00
Office Support	100.00
Technology	56.00
Internet	150.00
DXA Scan Machine	298.60

<b>Total Expenses</b>	<b>6,054.60</b>
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<b>Net Income</b>	<b>42,559.69</b>
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Figure 1L. Monthly cost analysis of bone health program

<b>Bone Health Monthly Break-Even Analysis (NP Visits with Scans)</b>	
<b>Revenue</b>	
Nurse Practitioner Visits with Scans (39)	6,166.68
<b>Total Revenue</b>	<b>6,166.68</b>
<b>Expenses</b>	
Nurse Practitioner Salary	3,900.00
Medical Assistant Salary	1,300.00
Rent	250.00
Office Support	100.00
Technology	56.00
Internet	150.00
DXA Scan Machine	298.60
<b>Total Expenses</b>	<b>6,054.60</b>
<b>Net Income</b>	<b>112.08</b>

Figure 2L. Monthly break-even analysis of bone health program (NP visits with scans)

<b>Bone Health Monthly Break-Even Analysis (NP Visits Only)</b>	
<b>Revenue</b>	
Nurse Practitioner Visits with Scans (58)	6,152.64
<b>Total Revenue</b>	<b>6,152.64</b>
<b>Expenses</b>	
Nurse Practitioner Salary	3,900.00
Medical Assistant Salary	1,300.00
Rent	250.00
Office Support	100.00
Technology	56.00
Internet	150.00
DXA Scan Machine	298.60
<b>Total Expenses</b>	<b>6,054.60</b>
<b>Net Income</b>	<b>98.04</b>

Figure 3L. Monthly break-even analysis of bone health program (NP visits only)

### Monthly Bone Health Program Cost Analysis (Maximum Profit Based on 17 Visits Per day)

#### Revenue

Nurse Practitioner Visits with Scans	22,849.04
Reimbursement from Scans	6,335.30
Reimbursement from Infusions/Injections	15,600.00
Bloodwork (Vitamin D Levels)	5,546.67

**Total Revenue 50,331.01**

#### Expenses

Nurse Practitioner Salary	3,900.00
Medical Assistant Salary	1,300.00
Rent	250.00
Office Support	100.00
Technology	56.00
Internet	150.00
DXA Scan Machine	298.60

**Total Expenses 6,054.60**

**Net Income 44,276.41**

Figure 4L. Maximum monthly profit cost analysis of bone health program

<b>Monthly Women's Health Program Break-Even Analysis</b>	
<b>Revenue</b>	
Nurse Practitioner Visits (28)	2,970.24
<b>Total Revenue</b>	<b>2,970.24</b>
<b>Expenses</b>	
Nurse Practitioner Salary	1,950.00
Medical Assistant Salary	650.00
Rent	125.00
Office Support	50.00
Technology	28.00
Internet	75.00
<b>Total Expenses</b>	<b>2,878.00</b>
<b>Net Income</b>	<b>92.24</b>

Figure 5L. Monthly break-even analysis of women's health program

<b>Monthly Women's Health Program Cost Analysis (Maximum Profit Based on 17 Visits Per day)</b>	
<b>Revenue</b>	
Nurse Practitioner Visits	7,213.44
<b>Total Revenue</b>	<b>7,213.44</b>
<b>Expenses</b>	
Nurse Practitioner Salary	1,950.00
Medical Assistant Salary	650.00
Rent	125.00
Office Support	50.00
Technology	28.00
Internet	75.00
<b>Total Expenses</b>	<b>2,878.00</b>
<b>Net Income</b>	<b>4,335.44</b>

Figure 6L. Maximum monthly profit cost analysis of women's health program

<b>Monthly Smoking Cessation Program Break-Even Analysis</b>	
<b>Revenue</b>	
Nurse Practitioner Visits (28)	2,970.24
<b>Total Revenue</b>	<b>2,970.24</b>
<b>Expenses</b>	
Nurse Practitioner Salary	1,950.00
Medical Assistant Salary	650.00
Rent	125.00
Office Support	50.00
Technology	28.00
Internet	75.00
<b>Total Expenses</b>	<b>2,878.00</b>
<b>Net Income</b>	<b>92.24</b>

Figure 7L. Monthly break-even analysis of smoking cessation program

<b>Monthly Smoking Cessation Program Cost Analysis (Maximum Profit Based on 17 Visits Per Day)</b>	
<b>Revenue</b>	
Nurse Practitioner Visits	7,213.44
<b>Total Revenue</b>	<b>7,213.44</b>
<b>Expenses</b>	
Nurse Practitioner Salary	1,950.00
Medical Assistant Salary	650.00
Rent	125.00
Office Support	50.00
Technology	28.00
Internet	75.00
<b>Total Expenses</b>	<b>2,878.00</b>
<b>Net Income</b>	<b>4,335.44</b>

Figure 8L. Maximum monthly profit cost analysis of smoking cessation program

## Appendix M

## Project Budget

Personal / Item	Hourly Wage x Estimated Time / Lost Productivity Time	Cost of Item
DNP Student (Project Director)  (in-kind donation)	\$5981	
Project Materials (in-kind donation)		\$200
Referring Provider Interviews / Meetings	\$690	
Referring Provider Education / Marketing Sessions	\$690	
Manager and Director of Multispecialty Services Participation	\$656	
Organizational Materials and Functional Space Use		\$250
Total	\$3945	\$50
Net	\$3895	

Appendix N

Provider Survey Results

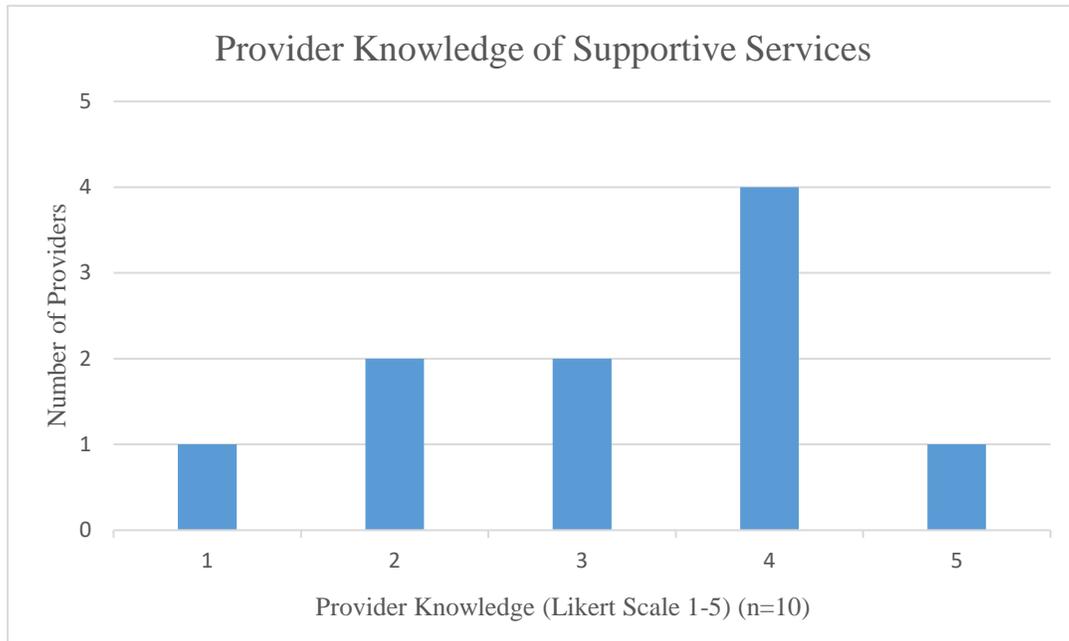


Figure 1N. Provider knowledge of current supportive services

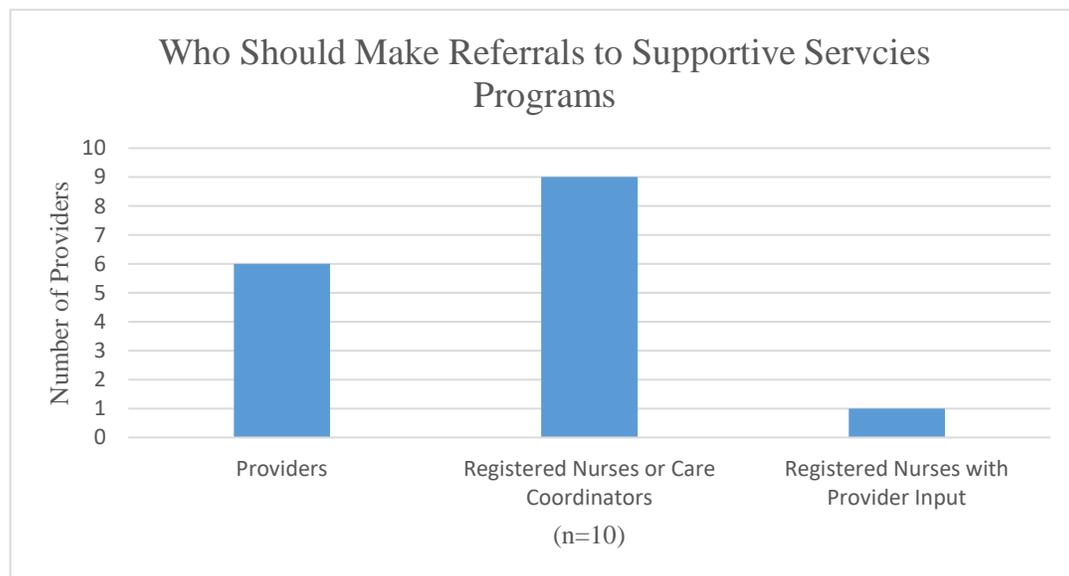


Figure 2N. Provider input on referral process

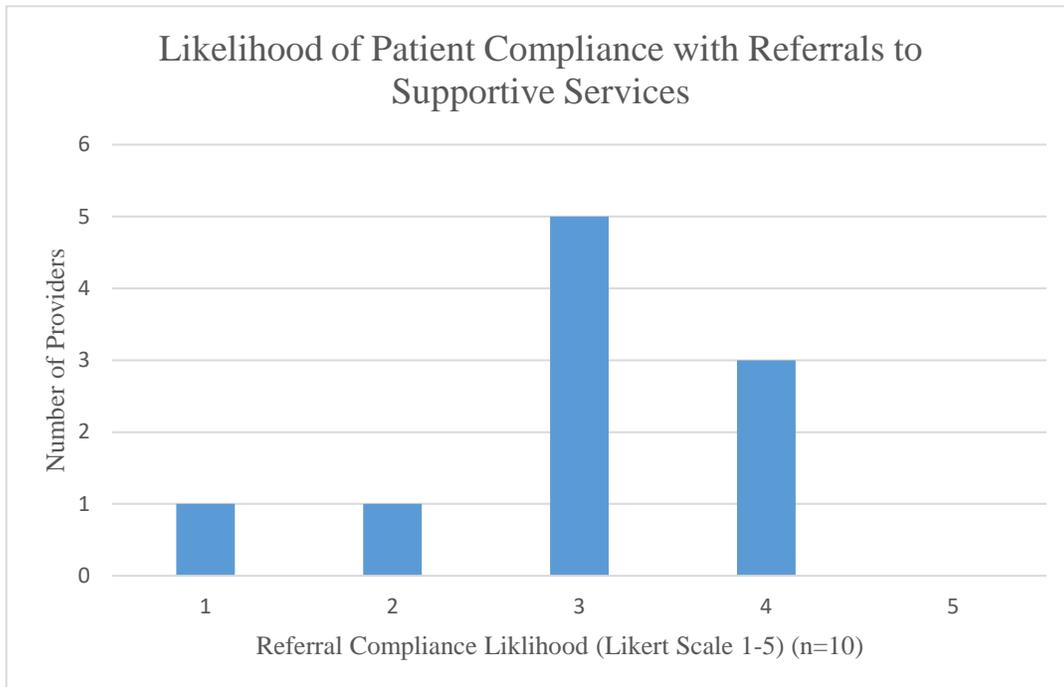


Figure 3N. Likelihood of patient compliance with referrals to supportive services

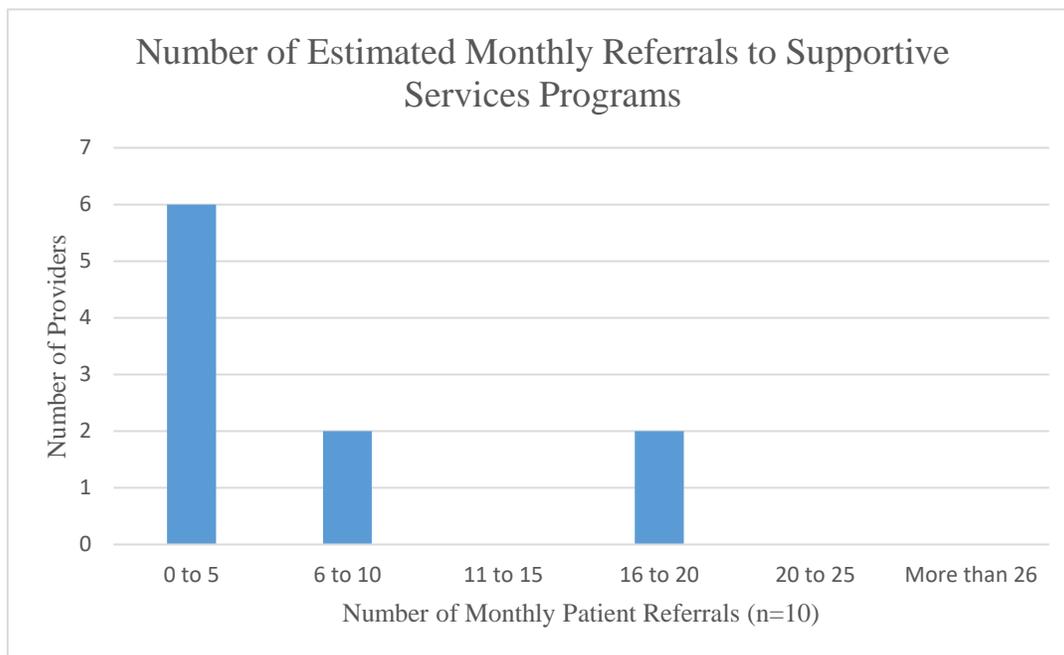


Figure 4N. Number of estimated monthly referrals to supportive services programs

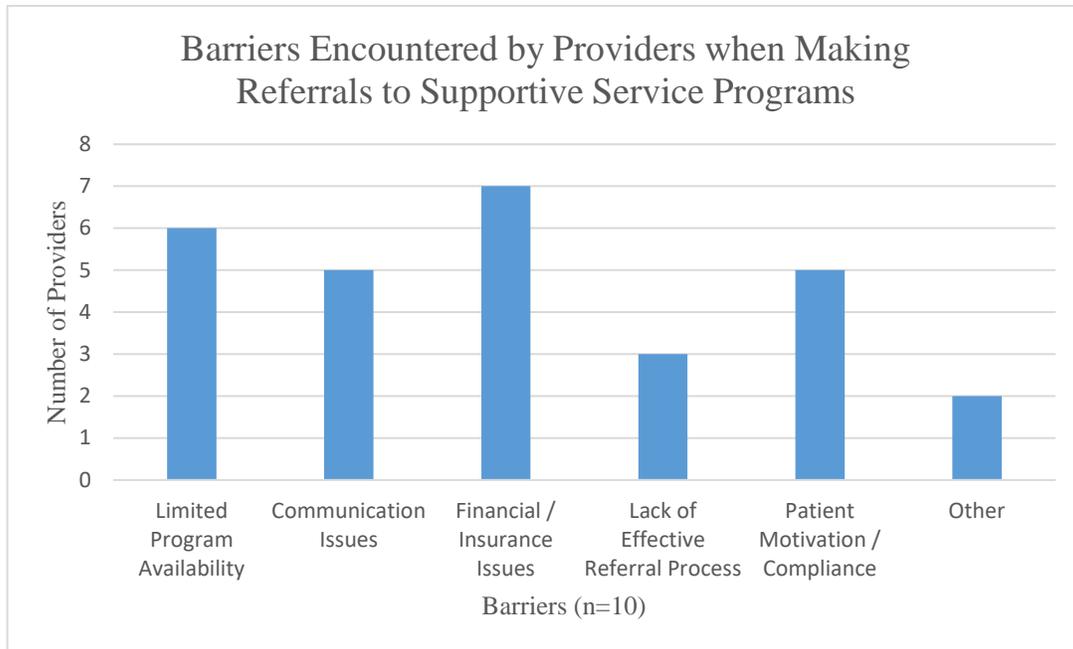


Figure 5N. Barriers encountered by providers when making referrals to supportive service programs

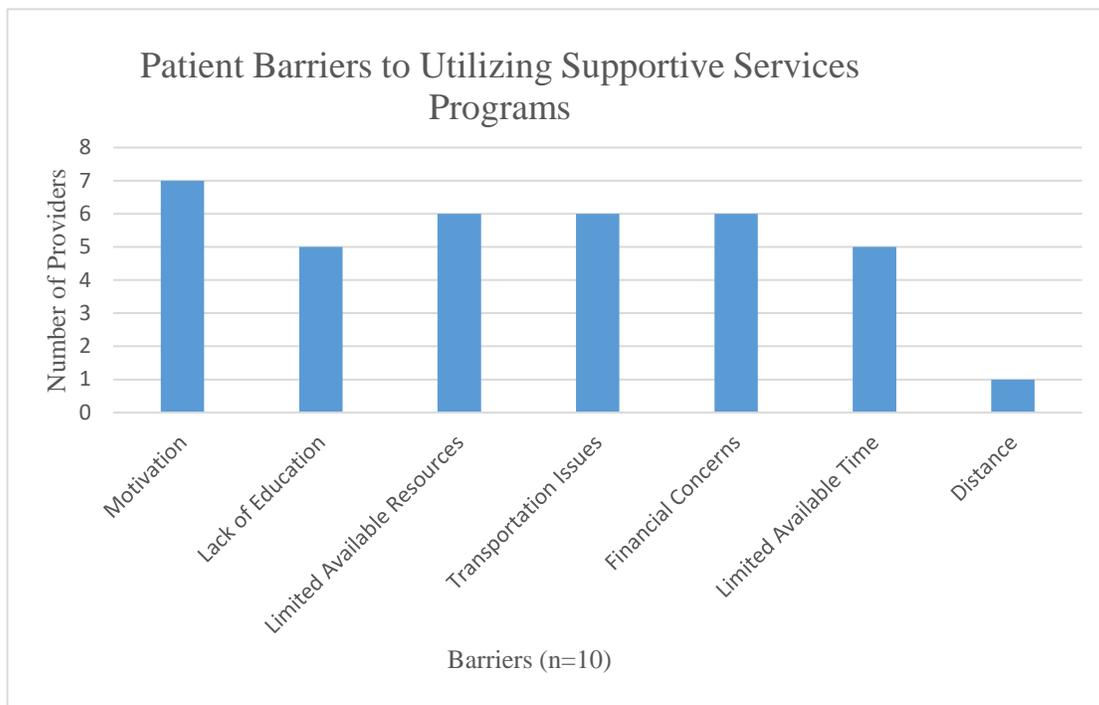


Figure 6N. Patient barriers to utilizing supportive services programs

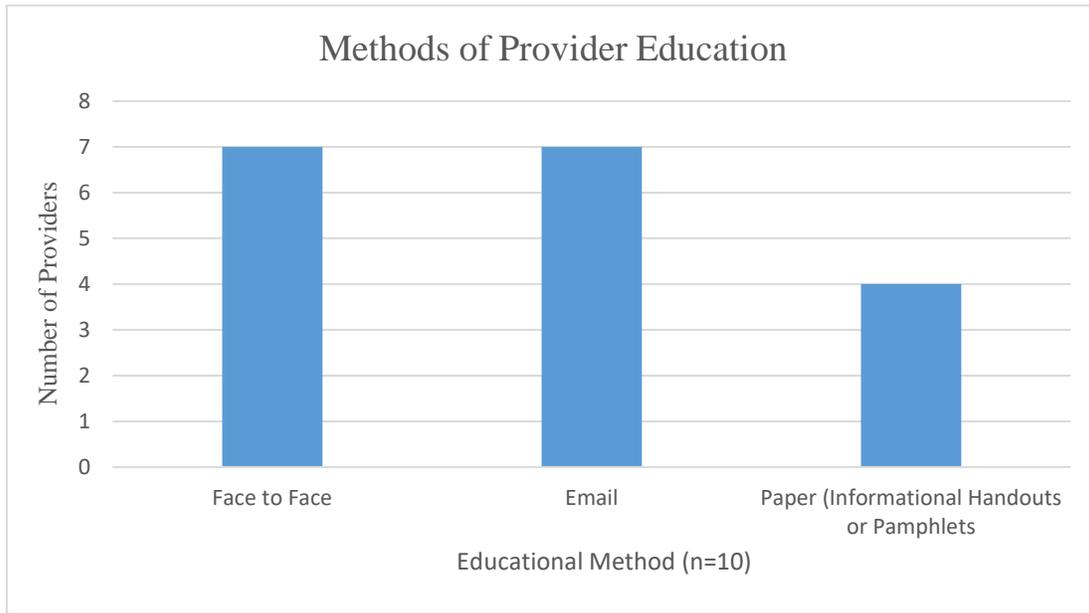


Figure 7N. Methods of provider education

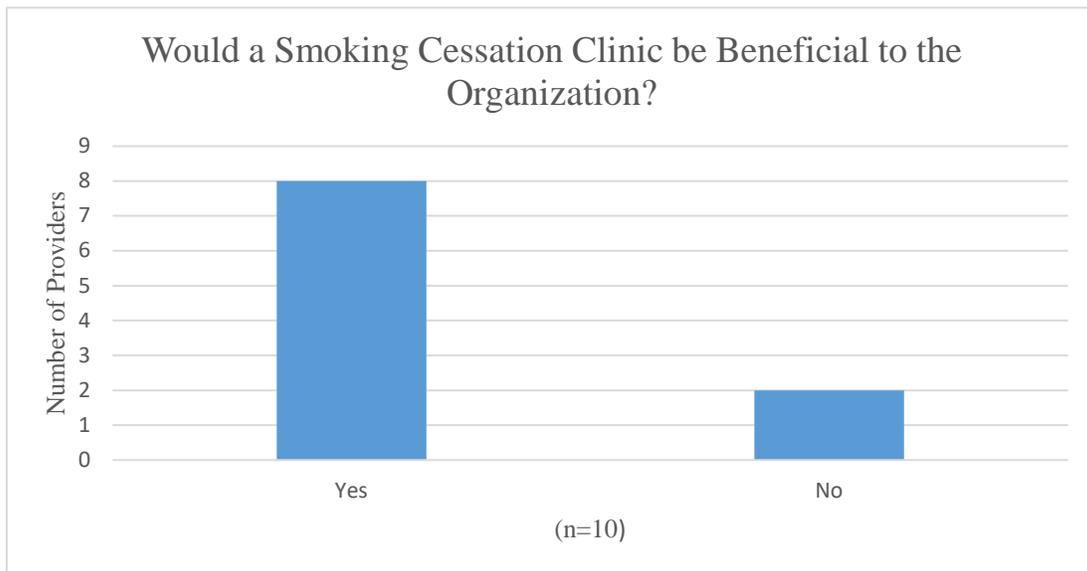


Figure 8N. Provider opinion whether the organization would benefit for a smoking cessation program.

<b>Question</b>	<b>Identified Themes</b>
What are some of the most prevalent supportive services or wellness needs that your patients require?	Providers within the organization stressed a need for supportive services focused on pain management, nutrition, bone health, sexual health, cognitive dysfunction, and physical therapy.
For which supportive services or wellness needs are you currently referring your patients?	The most common supportive service referrals providers within the organization are making include palliative care, physical therapy, and pain management. Providers also mentioned making referrals to smoking cessation, mental health, sexual health, and cognitive dysfunction programs.

*Table 1N.* Qualitative Data Obtained from Provider Surveys

## Appendix O

## Supportive Services Program Toolkit

## BONE HEALTH PROGRAM

BACKGROUND

- Hip fractures are a serious health concern in the elderly and are related to increased morbidity and mortality within this population (Dhanwal, Dennison, Harvey, & Cooper, 2011; Haleem, Lutchman, Mayahi, Grice, & Parker, 2008).
- By 2025 it is estimated that osteoporotic-related fractures will cost the US economy \$25.3 billion in both direct and indirect costs (Burge et al., 2007; Wu et al., 2018).

ONCOLOGY POPULATION / RISK

- The oncology population is especially susceptible to osteoporosis development due to high rates of estrogen and androgen-deprivation therapy.
- The use of aromatase inhibitors in the breast cancer population causes reduction in bone mineral density (Hong et al., 2017).
- Androgen-deprivation therapy used in the prostate cancer population is also linked to decreases in bone mineral density (Nguyen et al., 2015)
- Americans continue to consume a deficient amount of dietary calcium, further risking osteoporosis development and fracture related to osteoporosis (Institute of Medicine, 2011).
- Vitamin D deficiency also continues to be serious global health problem with as many as 1 billion people who are vitamin D deficient or insufficient (Hollick & Chen, 2008).

EVIDENCE-BASED TREATMENTS

- Risk of fracture can be reduced through the adequate supplementation of both calcium and vitamin D (Larsen, Mosekilde, & Foldspang, 2004).
- Weight-bearing exercises help to strengthen muscles and reduce fall and fracture risk (Choi & Hector, 2011; Gillespie et al., 2012; Granacher, Gollhofer, Hortobagyi, Kressig, & Muehlbauer, 2013; Sherrington et al., 2008).
- Evidence suggests that the use of weight-bearing exercises may help to increase bone mineral density (Bouvard et al., 2013).
- For individuals currently on aromatase inhibitor therapy, research indicates that bisphosphonate therapy does help to maintain bone mineral density (Bouvard et al., 2013).

- Evidence also suggests that screening measures and the use of antiresorptive therapy for women currently taking aromatase inhibitors are cost-effective methods of treatment (Sowa, Downes, & Gordon, 2017).

#### EVIDENCE-BASED DELIVERY METHODS

- Research indicates that a multimodal approach which includes education, is the most effective delivery method to improve treatment initiation and lifestyle modifications regarding bone health and therefore reduce fall and fracture risk (Kastner et al., 2018; Kessous et al., 2014).

#### BENEFITS OF A BONE HEALTH CLINIC

- Overall, the screening, prevention, and treatment of osteoporosis should all be encouraged, especially for those individuals currently on estrogen and androgen deprivation therapy.
- The cost-effectiveness of treatment and the evidence-based research supporting osteoporosis detection and treatment are all reasons to continuously educate patients and even develop a bone-health clinic to further improve treatment initiation and adherence.
- When accounting for costs due to osteoporotic related fractures and osteoporosis treatment costs, screening using dual-energy x-ray absorptiometry (DXA) is a cost-effective screening method (Nayak, Roberts, & Greenspan, 2011).
- The Fracture Risk Assessment Tool (FRAX) is also a useful screening tool prior to completing DXA screening or when DXA screening is unavailable (Ito & Leslie, 2015). Evidence suggests that treatment initiated based on the FRAX results has the potential to improve quality of life and be cost-effective (Ito & Leslie, 2015).
- A completed cost analysis of a NP-led bone health clinic, operating twice a week with DXA scanner access, predicted the clinic would generate a net annual profit of \$510,716.28.

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## BONE HEALTH PATIENT EDUCATION

### OVERVIEW

- Osteoporosis is a disease of having weak bones. It is the most common bone disease in the world and as many as 9.9 million people in the United States have the disease (National Osteoporosis Foundation [NOF], 2014; Wright et al., 2014).
- There is a 9% chance that a woman will fracture her hip at some point in her life (Hopkins et al., 2012).
- Fractures caused by osteoporosis are very harmful, can make you less mobile, and worsen your health (Dhanwal, Dennison, Harvey, & Cooper, 2011; Haleem, Lutchman, Mayahi, Grice, & Parker, 2008).
- Knowing about healthy foods to eat, what causes weak bones, and how to test for weak bones are helpful first steps you can make.
- Also, there are many exercises you can do and medications you can take to keep your bones strong and reduce your risk for falling and breaking your bones.

### RISK FACTORS

- There are many things that can cause weak bones and fractures. It helps to know what things you can't change and what you can do to keep your bones strong.
- It is also good to know what medications used to treat cancer can cause weak bones.

<b>What You Can't Change</b>	<b>What You Can Do</b>	<b>Medications That Cause Weak Bones</b>
Your Sex	Include more calcium in your diet and/or take calcium pills	Medications that lower the amount of female hormones in the body
Your Age	Include more vitamin D in your diet and/or take vitamin D pills	Medications that lower the amount of male hormones in the body
Having been through menopause	Exercise more	Steroids

What You Can't Change	What You Can Do	Medications that Cause Weak Bones
Having family members with weak bones	Quit smoking	Most medications used to treat cancer
	Men: If you drink 15 or more alcoholic drinks per week, try to drink less. Females: If you drink 8 or more alcoholic drinks per week, try to drink less (Centers for Disease Control and Prevention, 2018)	

(NOF, 2014; National Osteoporosis Foundation, 2019a)

### TESTING FOR WEAK BONES

- If you are a woman, you should start testing for weak bones at the age of 65 or if you have already been through menopause and are at high risk (United States Preventative Services Task Force [USPSTF], 2018)
- If you are a man, you should have your bones tested if you are older than 70, have a low body weight, have had a broken bone in the past, or have taken medications that can cause weak bones (Armstrong, 2008; USPSTF, 2018).
- If you need to be tested, a machine called a DXA scanner is used to measure the strength of your bones.
- Also, your provider may complete the FRAX survey with you. To complete this survey, your provider will ask you questions about your health and your bones. This will help the provider to know your chances of breaking a hip or other bone in the next ten years (World Health Organization, 2007).
- Bone strength is measured using both T-scores and Z-scores. T-Scores compare your bone strength to people who are 18 to 35 years old (NOF, 2014). Z-scores are used when testing the bone strength of women before menopause and of men under the age of 50 (American Bone Health, 2019). The score tells the provider how strong your bones are compared to normal.

	Normal Bone Strength	Slightly Weak Bones (Osteopenia)	Very Weak Bones (Osteoporosis)
T-Score	-1.0 and above	-1.0 to -2.5	-2.5 or less

	Normal Bone Strength for Age	Weak Bones for Age
Z-Score	Above -2.0	-2.0 and below

STEPS YOU CAN TAKE TO KEEP YOUR BONES STRONG

- Whether you have normal bone strength, slightly weak bones (osteopenia), or very weak bones (osteoporosis), there are ways to keep your bones strong.
- Ways to keep your bones strong include eating foods high in calcium and vitamin D, taking supplements, exercising with weights or using your own body weight, and taking medications that your provider offers you.

TRY TO TAKE IN A NORMAL AMOUNT OF CALCIUM AND VITAMIN D EVERY DAY

<b>Amount of Calcium Women Should Take in Every Day</b>	
Age 50 and Younger	1,000mg
Age 51 and Older	1,200mg

<b>Amount of Calcium Men Should Take in Every Day</b>	
Age 70 and Younger	1,000mg
Age 71 and Older	1,200mg

<b>Amount of Vitamin D Women and Men Should Take in Every Day</b>	
Younger than Age 50	400-800 International Units (IU)
Age 50 and Older	800-1,000 IU

\* These amounts include those obtained from both food and supplements.

(NOF, 2019b)

<b>Foods High in Calcium</b>
Dairy Products (Milk, Yogurt, and Cheese)
Collard Greens
Broccoli
Kale
Sardines
Salmon
Foods and Juices with Added Calcium

<b>Foods High in Vitamin D</b>
Fortified Milk, Foods, and Juices
Fatty Fish (Salmon, Tuna, Mackerel)

(NOF, 2019b; NOF, 2014; Ross, Taylor, Yaktine, & Del Valle, 2011).

TAKE SUPPLEMENTS WHEN NEEDED

- When you can't get enough calcium and vitamin D in your diet, you may need to take a supplement to help you reach those amounts.
- Most calcium supplements should be taken with food to help absorb the calcium (NOF, 2019b).
- Calcium is best absorbed in amounts between 500-600mg. Try to avoid taking your calcium supplements all at once, instead spread them throughout the day (NOF, 2019b).
- For more information regarding foods high in calcium and vitamin D and taking supplements, please talk to your provider.

PERFORM EXERCISES USING WEIGHTS OR YOUR OWN BODY WEIGHT TO KEEP YOUR BONES STRONG

- Weight lifting and exercises that use your own body weight can help you to increase your muscle strength, improve your balance, reduce your chance of falling, and keep your bones strong (NOF, 2014).
- Exercise using your body weight is when you move against gravity while staying mostly upright. There are both high-impact and low-impact exercises like this.
  - High impact exercises include weight training, jumping rope, jogging, running, climbing stairs, or high-impact aerobics.
  - Low-impact exercises include low-impact aerobics, the use of elliptical and stair-step machines, walking (either on a treadmill or outdoors), and Tai-Chi (NOF, 2019c).

WHAT YOU CAN DO TO PREVENT YOUR CHANCES OF FALLING

- There are many ways to decrease your risk for falling. These include making changes inside and outside your home and doing exercises (as listed above) to improve your balance.
- It is also helpful to know risk factors that make you more likely to fall:

<b>Risk Factors Around Your Home</b>	<b>Other Risk Factors</b>
Slippery floors	Old age
Loose rugs	Poor vision
Dark rooms with very little light	Poor diet
Objects in your normal walking paths	Taking medications that make you drowsy
	Having to go to the bathroom often or not being able to make it to the bathroom on time
	Poor balance
	Weak muscles

(NOF, 2003)

- Changes you can make outside your home
  - Use a walker or cane when needed
  - Wear low-heeled rubber-soled shoes for solid footing
  - Walk on grass instead of sidewalks when they are slippery
  - Keep your porch, deck, and walkways free of clutter
  - Keep porch lights on in the dark
  - Check the height of curbs before stepping up or down
- Changes you can make inside your home
  - Keep floors clear of loose rugs or wires
  - Place items you use often close to you
  - Place non-skid rubber mats in the shower or tub
  - Keep stairwells well lit
  - Place light switches close to you
  - Make sure to get up slowly from a seated or lying position (NOF, 2019d)
- These are just some of the many ways to help reduce your risk for falls. For more information please go to the National Osteoporosis Foundation Website at: <https://www.nof.org/patients/fracturesfall-prevention/>

#### TAKE MEDICATIONS WHEN NEEDED

- At some point you may need to take medications (called Bisphosphonates or RANK Ligands) to help keep your bones strong.
- Medications are started when:
  - A scan of your bones tells us your bones are very weak (osteoporosis) (T-score of -2.5 and below)
  - Your bones are slightly weak (osteopenia) (T-score between -1.0 and -2.5) and in the next 10 years you have a 3% or greater chance of breaking your hip or a 20% or greater chance of having a major broken bone.
  - You have had broken a bone in the past without falling or without a cause (Fitzgerald, 2018).
- Most Common Medications Ordered
  - Bisphosphonates
    - Alendronate (Fosamax)
      - Taken as a pill, by mouth, once per week
      - This medication has to be taken on an empty stomach and with 8oz of water.
      - Avoid eating and lying down 30 to 60 minutes after taking this medication (Uphold, 2013).
    - Zoledronate (Zometa, Reclast)
      - This medication is given through an IV once every 6 to 12 months (Uphold, 2013)

- RANK Ligand
  - Denosumab (Prolia)
    - This medication is given as a shot under your skin every 6 months.
      - If you stop this medication after you have started, your bones may get weak very quickly, and you may increase the risk of breaking the bones of your spine (Uphold, 2013).

#### KNOW YOUR RESOURCES

- There are many resources with helpful information about your bones, ways to keep your bone strong, and ways to prevent falls. These are just a few.
    - **Area Agency on Aging – [www.eldercare.gov](http://www.eldercare.gov)**
      - This website gives you exercises you can do to help you prevent falls.
    - **National Council on Aging – [www.ncoa.org](http://www.ncoa.org)**
      - This website also gives you exercises you can do to help prevent falls.
    - **National Osteoporosis Foundation – [www.nof.org](http://www.nof.org)**
      - This is a great resource for bone health and gives you information about:
        - Testing the strength of your bones
        - Calcium and Vitamin D information
        - Supplement information
        - Exercises to keep bones strong
        - Information on preventing falls
- \*Please talk to your provider if you have any questions about your bones or if you are having any side effects of medication.\****

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## BONE HEALTH PROGRAM OPERATING PROCEDURES

- BONE DENSITY (DXA) – ORDER AND SCHEDULING PROCESS
  1. Bone density order is placed by provider
    - a. Home location where patient was seen will automatically be filled in the order. Schedulers from home location should change location to [REDACTED]
    - b. If “Bone Density” order is entered, change order to “Bone Density - [REDACTED]”
  2. This order will then show up in Group Inbox
  3. Scheduler to contact the patient to schedule scan
    - a. When scheduling, the radio button will default to outside location. Change this to inside location. Do not change until scheduling the scan or the order will come off the group inbox list.
    - b. Add and schedule MD Bone Health visit order for [REDACTED] (visits available Tuesdays and Thursdays)
      - i. Bone density (DXA) scan is to be scheduled prior to and along with MD Bone Health visit. DXA scan is 30 minutes and MD Bone Health visit is 30 minutes (i.e. if patient is scheduled for a 10:00am DXA scan he/she would be scheduled for a 10:30am MD Bone Health visit).
  4. Scheduler to send patient:
    - a. *DXA Scan Information Form*
    - b. *DXA Scan Intake Form*
- DXA SCAN VISIT PROCEDURE
  1. Patient will check in at front desk
  2. Medical Assistant that is performing DXA scans that day to:
    - a. Change status in Electronic Health Record to “radiology”
    - b. Obtain vital signs (including height and weight)
    - c. Complete DXA scan
    - d. Room patient and change status in Electronic Health Record to room number where patient is located
    - e. Review DXA scan with certified nurse practitioner (NP)
    - f. Save DXA scan to Electronic Health Record
      - 1) Print to CutePDF Writer
      - 2) Save in *Batch* folder
      - 3) Upload into *Radiology* section of Electronic Health Record
  3. NP to meet with patient to review results and provide recommendations as indicated
  4. Follow-up:
    - a. If patient starts or changes medication, follow-up in 1 year with repeat DXA scan
    - b. If patient has been on medication, follow-up in 1 year and repeat DXA scan in 2 years
    - c. If normal bone density, repeat DXA scan in 2 years

- BONE HEALTH FOLLOW-UP VISIT PROCEDURE
  1. Patient will check in at front desk and be given *Bone Health Intake Form* found in Electronic Health Record
  2. Medical Assistant to:
    - a. Change status in Electronic Health Record to “rooming in progress”
    - b. Obtain vital signs (including height and weight) and room patient
    - c. Change status in Electronic Health Record to room number where patient is located
  3. Certified nurse practitioner will meet with patient
  4. Follow-up:
    - a. If patient starts or changes medication, follow-up in 1 year with repeat DXA scan
    - b. If patient has been on medication, follow-up in 1 year and repeat DXA scan in 2 years

**DXA SCAN INTAKE FORM**

Patient Name: \_\_\_\_\_ Date: \_\_\_\_\_

Is there a chance that you are pregnant? YES NO

Have you had a barium X-ray in the last 2 weeks? YES NO

Have you had a nuclear medicine scan or injected dye in the last week? YES NO

**\* If you answered yes to any of the above, call our office to reschedule your appointment\***

Have you ever had a bone density test? YES NO

If YES, when and where? \_\_\_\_\_

**DEMOGRAPHICS**

1. Age: \_\_\_\_ Sex (circle one): Male Female Transgender

2. Ethnicity (check one):

\_\_\_\_Caucasian (White) \_\_\_\_Black \_\_\_\_Aboriginal \_\_\_\_Asian \_\_\_\_Hispanic \_\_\_\_Other

**SOCIAL HISTORY**

3. Do you smoke? YES NO Number of Packs Per Day \_\_\_\_

4. What is the number of alcoholic drinks you consume per day? \_\_\_\_ per week? \_\_\_\_

**BONE HEALTH HISTORY**

5. Have you had a change in height? YES NO

If YES, how much height loss? \_\_\_\_\_

6. Your tallest height (late teens or young adult): \_\_\_\_\_

7. Have you ever broken a bone in your adult life? YES NO

Bone broken	From a simple fall?	If not a simple fall, please describe the circumstances	Age when this occurred

8. Has a parent or sibling had a broken hip from a simple fall or bump? YES NO

OR any other type of broken bone from a simple fall or bump? YES NO

9. How many times have you fallen in past 6 months? \_\_\_\_\_

10. Have you ever had surgery of the spine, hips, legs or arms? YES NO



If YES, describe what type of surgery you had

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### MEDICAL HISTORY

11. Have you been diagnosed with hyperparathyroidism? YES NO

Elevated calcium levels? YES NO

12. List any chronic medical conditions you have:

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13. Are you currently receiving or have you previously received prednisone pills (cortisone)? YES, currently \_\_\_\_ YES, previously \_\_\_\_ NO

If YES, how long? \_\_\_\_ What is your dose? \_\_\_\_mg or \_\_\_\_ pills each day

14. Are you currently receiving or have you previously received any of the following medications?

	No	Yes	For how long?
Medication for seizures or epilepsy			
Chemotherapy			
Aromatase Inhibitors for breast cancer (Anastrozole, Letrozole, Exemestane)			
Medication for prostate cancer			
Medication to prevent organ transplant rejection			
Narcotic Analgesics (Pain Medications)			

15. Have you been treated with any of the following medications?

Medication	Ever?	Currently?	How long?
Hormone replacement therapy (Estrogen)			
Tamoxifen			
Raloxifene (Evista)			
Testosterone			
Etidronate (Didronel/Didrocal)			
Alendronate (Fosamax)			
Risedronate (Actonel)			
Intravenous pamidronate (Aredia)			
Clodronate (Bonefos, Ostac)			
Calcitonin (Miacalcin nasal spray)			
PTH (Forteo)			
Zoledronic acid (Zometa)			
Sodium fluoride (Fluotic)			
Denosumab (Prolia)			

**WOMEN’S HEALTH HISTORY (WOMEN ONLY)**

16. Are you still having menstrual periods? YES NO
17. Before menopause, have you ever missed your periods for 6 months or more, besides during pregnancy? YES NO
18. Have you gone through menopause? YES, at what age? \_\_\_\_\_ NO
19. Have you had a hysterectomy? YES, at what age? \_\_\_\_\_ NO
- Have you had both of your ovaries removed? YES, at what age? \_\_\_\_\_ NO

**CALCIUM AND VITAMIN D INTAKE**

20. How many servings of the following do you eat/drink per day (on average)?

	Milk (full cup)	Orange juice fortified with calcium (full cup)	Yogurt (small container or ½ cup)	Cheese
# of servings				

21. Do you take any calcium supplements (including TUMS)? YES NO
22. Do you take any vitamin D supplements (including multivitamins)? YES NO
23. What, if any side effects, have you experienced with your supplements?  
 \_\_\_ Gas \_\_\_ Bloating \_\_\_ Constipation \_\_\_ Other: \_\_\_\_\_

**FALL RISK AND PREVENTION**

24. How many falls have you had in the past 6 months? \_\_\_\_\_
25. Is any of the following present in your current living space?  
 \_\_\_ Loose throw rugs \_\_\_ Slippery conditions \_\_\_ Low level lighting  
 \_\_\_ Obstacles in walkways \_\_\_ Assistive devices in bathrooms
26. Do have any of the following fall risk conditions?  
 \_\_\_ Anxiety \_\_\_ Depression \_\_\_ Orthostatic hypotension  
 \_\_\_ Urinary urgency or incontinence \_\_\_ Poor vision \_\_\_ Poor Balance  
 \_\_\_ Malnutrition \_\_\_ Deconditioning



## BONE DENSITY (DXA) SCAN INFORMATION

Location: 

Enclosed is a map with directions and parking information

APPOINTMENT:

Date: \_\_\_\_\_ Time: \_\_\_\_\_

WHAT IS A DUAL-ENERGY X-RAY ABSORPTIOMETRY (DXA) SCAN?

A DXA scan uses two X-ray beams with differing energy levels to determine an individual's bone density. A DXA scan analyzes the bone density of the spine, hips, or 1/3 radius of the forearm.

WHAT SHOULD I EXPECT WITH THIS APPOINTMENT?

At this appointment, you will have a DXA scan completed. This can take approximately 15-30 minutes. You will then meet with a nurse practitioner who is a certified clinical densitometrist to review the DXA scan results and discuss recommendations to maintain or improve bone health.

INSTRUCTIONS:

- Wear clothing that does not contain metal or plastic accessories such as zippers and buttons
- Do not take calcium supplementation the morning of the bone density scan
- Must not receive contrast 14 days prior to bone density scan

**\*\*Please complete the enclosed *DXA Scan Intake Form* and bring with you to your DXA scan appointment.\*\***

**BONE HEALTH INTAKE FORM**

Patient Name: \_\_\_\_\_ Date: \_\_\_\_\_

**CALCIUM AND VITAMIN D INTAKE**

1. How many servings of the following do you eat/drink per day (on average)?

	Milk (full cup)	Orange juice fortified with calcium (full cup)	Yogurt (small container or ½ cup)	Cheese
# of servings				

2. Do you take any calcium supplements (including TUMS)? YES NO

3. Do you take any vitamin D supplements (including multivitamins)? YES NO

4. What, if any side effects, have you experienced with your supplements?

\_\_\_ Gas \_\_\_ Bloating \_\_\_ Constipation \_\_\_ Other: \_\_\_\_\_

**SOCIAL HISTORY**

5. Do you smoke? YES NO Number of Packs Per Day \_\_\_\_

6. What is the number of alcoholic drinks you consume per week? \_\_\_\_

**SINCE YOUR LAST BONE HEALTH VISIT:**

7. Have there been any changes to your medications? YES NO

If yes, what changes were made? \_\_\_\_\_

8. Have you been diagnosed with any new medical conditions? YES NO

If yes, what new conditions \_\_\_\_\_

9. Have you had a bone fracture? YES NO

10. Has there been any changes in your height? YES NO

If YES, how much height  
loss? \_\_\_\_\_

**BONE HEALTH MEDICATIONS**

11. Are you currently taking any prescription medications, including IV or subcutaneous medications, for your bones? YES NO

What medication? \_\_\_\_\_

12. What, if any, side effects have you experienced since starting your medication?

\_\_\_ None \_\_\_ Upset Stomach \_\_\_ Nausea \_\_\_ Joint Pain \_\_\_ Muscle Pain/Cramps

\_\_\_ Headache \_\_\_ Fever \_\_\_ Other: \_\_\_\_\_



**FALL RISK AND PREVENTION**

13. How many falls have you had in the past 6 months? \_\_\_\_\_
14. Is any of the following present in your current living space?  
\_\_\_Loose throw rugs \_\_\_Slippery conditions \_\_\_Low level lighting  
\_\_\_Obstacles in walkways \_\_\_Assistive devices in bathrooms
15. Do have any of the following fall risk conditions?  
\_\_\_Anxiety \_\_\_Depression \_\_\_Orthostatic hypotension  
\_\_\_Urinary urgency or incontinence \_\_\_Poor vision \_\_\_Poor Balance  
\_\_\_Malnutrition \_\_\_Deconditioning

## BONE HEALTH PROGRAM BUSINESS PLAN

- EXECUTIVE PROPOSAL
  - Please see separate executive proposal / white paper
- OVERVIEW
  - Location
    - [REDACTED]
  - Means of doing business
    - Referral-based within organization
- MARKET ANALYSIS
  - Target Market
    - Breast cancer population
    - Prostate cancer population
    - Patient with history of long-term corticosteroid use
  - Outside Market
    - Additional patients within the organization that meet screening criteria
- PLANS OF OPERATION
  - Hours of Operation
    - Clinic will operate two days per week (Tuesdays and Thursdays from 8am to 5:30pm)
  - Staff
    - 2 certified clinical densitometrist nurse practitioners
    - 2 medical assistants
  - Nurse Practitioner Responsibilities
    - DXA scan interpretation
    - Bone health education
    - Care plan development
    - Ordering prescription medication
  - Medical Assistant Responsibilities
    - Rooming patient and obtaining vital signs
    - Gather intake form
    - Performing DXA scan
- SERVICES AVAILABLE
  - DXA scan
  - Appointment with NP for DXA scan result interpretation
  - NP provided bone health education, recommendations, and medications to maintain bone health
  - Follow-up appointments with certified NP densitometrist

- MARKETING
  - Promotion
    - Website
    - Brochure
    - Provider Education
- COMPETITIVE ANALYSIS
  - Organizations in the surrounding area that have such a program
    - Orthopaedic Associates of Michigan
- MONTHLY COST ANALYSIS

	Debits	Credits
<b>Revenue</b>		
NP Visits with DXA Scans	\$ 21,504.96	
Reimbursement from Scans	\$ 5,962.66	
Reimbursement for Infusions/Injections	\$ 15,600.00	
Bloodwork (Vitamin D Levels)	\$ 5,546.67	
<b>Total Revenue</b>	<b>\$ 48,614.29</b>	
<b>Expenses</b>		
Nurse practitioner		\$3,900.00
Medical assistant		\$1,300.00
Rent		\$250.00
Office Support		\$100.00
Technology		\$56.00
Internet		\$150.00
Machine over 10 years		\$298.60
<b>Total Expenses</b>		<b>\$6054.60</b>
<b>Net Income</b>	<b>\$42,559.69</b>	
<b>Annual Income</b>	<b>\$510,716.28</b>	

- MONTHLY BREAK-EVEN ANALYSIS (VISITS WITH SCANS)
  - 39 Visits per month are needed to break even

	Debits	Credits
<b>Revenue</b>		
NP Visits with DXA Scans (39)	\$6,166.68	
<b>Total Revenue</b>	<b>\$6,166.68</b>	
<b>Expenses</b>		
Nurse practitioner		\$3,900.00
Medical assistant		\$1,300.00
Rent		\$250.00
Office Support		\$100.00
Technology		\$56.00
Internet		\$150.00
Machine over 10 years		\$298.60
<b>Total Expenses</b>		<b>\$6054.60</b>
<b>Net Income</b>	<b>112.08</b>	

- MONTHLY BREAK-EVEN ANALYSIS (NP VISITS ONLY)
  - 58 Visits per month are needed to break even

	Debits	Credits
<b>Revenue</b>		
NP Visits (58)	\$6,152.64	
<b>Total Revenue</b>	<b>\$6,152.64</b>	
<b>Expenses</b>		
Nurse practitioner		\$3,900.00
Medical assistant		\$1,300.00
Rent		\$250.00
Office Support		\$100.00
Technology		\$56.00
Internet		\$150.00
Machine over 10 years		\$298.60
<b>Total Expenses</b>		<b>\$6054.60</b>
<b>Net Income</b>	<b>\$98.04</b>	

- MONTHLY MAXIMUM PROFIT ANALYSIS (BASED ON 17 APPOINTMENTS PER DAY)

	<b>Debits</b>	<b>Credits</b>
<b>Revenue</b>		
NP Visits with DXA Scans	\$ 22,849.04	
Reimbursement from Scans	\$ 6,335.30	
Reimbursement for Infusions/Injections	\$ 15,600.00	
Bloodwork (Vitamin D Levels)	\$ 5,546.67	
<b>Total Revenue</b>	<b>\$ 50,331.01</b>	
<b>Expenses</b>		
Nurse practitioner		\$ 3,900.00
Medical Assistant		\$ 1,300.00
Rent		\$ 250.00
Office Support		\$ 100.00
Technology		\$ 56.00
Internet		\$ 150.00
Machine Monthly over 10 years		\$ 298.60
<b>Total Expenses</b>		<b>\$ 6,054.60</b>
<b>Net Income</b>	<b>\$44,276.41</b>	
<b>Annual Income</b>	<b>\$531,316.92</b>	

## BONE HEALTH PROGRAM EVALUATION AND SUSTAINABILITY PLAN

- EVALUATION PLANS
  - Surveys
    - Patient satisfaction surveys
      - Overall experience
      - Improvement in bone health knowledge
    - Provider satisfaction surveys
      - Ease of referral / scheduling appointment
      - Ability to obtain clinic progress note
      - Likelihood to refer patients in the future
  - Efficiency / Patient Volume
    - Number of patients seen per day compared to maximum number for which the schedule is built
  - Scheduled-Wait Time
    - First available appointment
  - OCM and QOPI Measurements
    - Difference in OCM-1, OCM-2, and OCM-6 after bone health clinic implementation.
  - Ongoing Cost-Analysis
- SUSTAINABILITY PLANS
  - Kotter's Eight Step Process for Accelerating Change (2018)
    - Build A Guiding Coalition
      - [REDACTED]
      - Providers within the practice
        - Marketing and educational information
        - Dissemination of results
    - Enable Action by Removing Barriers
      - Barriers identified through provider surveys
        - Financial / insurance concerns
        - Program availability / location
    - Generate Short-Term Wins
      - Identify program goals
        - Overall
          - Number of patients seen per clinic day
          - Provider satisfaction
          - Patient satisfaction
          - Increasing revenue from infusion services
        - Bone Health
          - Increase in screening percentage
          - Increase in adequate calcium and vitamin D supplementation percentages
          - Increase in percentage of patients on treatment in which treatment is recommended
      - Identify wins / goals achieved

- Communicate short-term wins / goals to the organization
- Ability to influence OCM and QOPI Measures
  - Oncology Care Model
    - OCM-1: Risk-adjusted proportion of patients with all-cause hospital admissions
    - OCM-2: Risk-adjusted proportion of patients with all-cause hospital ED visits that did not result in a hospital admission
    - OCM-6: Patient-reported experience of care
      - Addressing additional resources
      - Addressing health maintenance
- Overall Growth / Market Growth
  - Ability to expand bone health services population
  - Increasing staff
  - Expanding hours and/or days of operation
  - Provide bone health services to other locations
  - Change in flow – Educational video – Shorter appointment times
  - DXA full body composition scans
    - Possible added revenue

## References

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