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Increasing Early Patient-Centered Advance Care Planning in an Outpatient Oncology Clinic through a Nurse-Driven Workflow: A Quality Improvement Project

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Abstract

Background

Current practice for advance care planning (ACP) in oncology patients does not align with best practice, which is early, repeated, and interdisciplinary.

Objective

The purpose of this quality improvement project was to evaluate the process, feasibility, acceptability, and appropriateness of a nurse-driven ACP workflow in an outpatient breast cancer clinic. The project team further sought to evaluate the impact of the workflow on advance directives and ACP notes.

Methodology

This project followed the Plan-Do-Study-Act quality improvement framework. Breast cancer patients seen by two outpatient physicians received an email to assess interest in completing the Our Care Wishes (OCW) advance directive. Interested patients met with trained nurses to discuss OCW. Completed advance directives were scanned into the medical record. Physicians and nurses participating in the project completed surveys including the Acceptability of Intervention Measure, Feasibility of Intervention Measure, and Intervention Appropriateness Measure. Process and outcome measures were tracked via chart review and control charts.

Results

Advance directives increased from 9.88% at baseline to 12.8% post-project. ACP notes increased from 17.85% at baseline to 20.43% post-project. Special cause was found at three time points post-implementation for advance directives. Of the 416 screening emails distributed, 85.8% of patients read the emails and 8.4% responded as interested. Of interested patients, 48.6% met with

the nurses. The average score on surveys sent to clinic staff on the AIM, FIM, and IAM was 20 post-project.

Conclusion and Implications for Practice

In an outpatient breast cancer clinic, a nurse-driven workflow was feasible, acceptable, and appropriate. The workflow was associated with increased advance directives and ACP notes. Future cycles should expand the program, document interactions with patients bringing the advance directive from home, automate patient emails, increase patient education, and instruct patients to upload their advance directives into the medical record.

Increasing Early Patient-Centered Advance Care Planning in an Outpatient Oncology Clinic through a Nurse-Driven Workflow: A Quality Improvement Project

Advance care planning (ACP) is a process of discussing values, goals, and medical care preferences throughout the life span, but it is typically discussed in reference to end-of-life (Agarwal & Epstein, 2018; Sudore et al., 2017). ACP is important in oncology patients as cancer is the second most common cause of mortality in the United States (American Cancer Society, 2022). Early, repeated, and interdisciplinary ACP for oncology patients is best practice to identify patient wishes before a crisis and to document wishes as they evolve through the disease process (Agarwal & Epstein, 2018; Bernacki et al., 2014; Gilligan et al., 2017; Institute of Medicine, 2013; Levy et al., 2016; Peppercorn et al., 2011; Starr et al., 2019). Early ACP occurs more than 30 days prior to death (Starr et al., 2019), ideally more than 3 months before death and in the outpatient setting (Agarwal & Epstein, 2018).

An advance directive is an outcome that documents ACP. In an advance directive, patients identify a healthcare proxy and complete a living will to outline their wishes for end-of-life care (Agarwal & Epstein, 2018). Several different types of advance directives exist. Patients can complete a Physician Orders for Life-Sustaining Treatment (POLST) form, which captures cardiopulmonary resuscitation wishes and other medical interventions (Agarwal & Epstein, 2018). Five Wishes or Respecting Choices ® are other well-known options for advance directives (Aging with Dignity, 2021; MacKenzie et al., 2018). Our Care Wishes (OCW) is the standardized advance directive designed at the practice institution (Practice Site, 2023) (see Appendix A). The first several pages of the document provide education for patients. Patient can also identify a healthcare power of attorney and outline care wishes in a living will (Mea et al., 2022).

The disease process can help guide ACP timing. Oncologists and patients agree that ACP should occur at three time points: initial, intermediate, and late. Initial ACP should address patient autonomy and occurs when patients feel well. Intermediate conversations occur when there is a change in the treatment plan. Final ACP occurs when the focus shifts to comfort and hospice (Peppercorn et al., 2011; Schulman-Green et al., 2018). While changes in treatment approach are within the provider scope-of-practice, initial ACP by nurses is feasible, acceptable, and effective at increasing advance directive documentation (Bakitas et al., 2017; Desai et al., 2018; Epstein et al., 2019; Feaster et al., 2023; Gilligan et al., 2017; Lucas & Dimmer, 2021; Nguyen et al., 2018; Obel et al., 2014; Ólafsdóttir et al., 2018; Rabow et al., 2019; Schenker et al., 2015; Sinclair et al., 2017; Walczak et al., 2017). Further, patients may be more likely to initiate intermediate and late conversations with their providers after being exposed to initial nurse-driven ACP (Sinclair et al., 2017; Walczak et al., 2017). The proposed DNP project sought to initiate early, repeated, and interdisciplinary ACP through a nurse-driven OCW workflow in an outpatient clinic (Lucas & Dimmer, 2021; Obel et al., 2014; Walczak et al., 2017).

Background and Significance

Current ACP practices do not align with best practice. Most patients have their first ACP discussion while inpatient within 3 months of death (Agarwal & Epstein, 2018; Bernacki et al., 2014; Brazee et al., 2021; Obel et al., 2014). ACP is inconsistent among physicians (Bernacki et al., 2014; Brazee et al., 2021; Obel et al., 2014; Raskin et al., 2016). In some oncology settings, 55% of patients have documented ACP, but, in others, only 1% of patients have documented ACP (Lucas & Dimmer, 2021; McDonald et al., 2017; Obel et al., 2014; Patel et al., 2018; Raskin et al., 2016).

Late ACP in the inpatient setting has negative impacts on patients. Inpatient discussions closer to death are rushed, associated with more aggressive care, and led by inpatient providers who may not have a strong relationship with the patient (Agarwal & Epstein, 2018). Oncology patients who discuss ACP inpatient are twenty times more likely to die in the hospital compared to outpatient conversations (Starr et al., 2019; Zakhour et al., 2015). Dying inpatient is not goal-concordant care. Seventy percent of Americans want to die at home (Hamel et al., 2017) while only 30% of Americans die at home (Cross & Warraich, 2019). Patients with documented ACP are more likely to receive goal-concordant care at end-of-life (Silveira et al., 2010). Outpatient ACP is associated with more advance directives, greater hospice utilization, fewer inpatient hospitalizations at end-of-life, and decreased costs by over $20,000 at the end-of-life (Patel et al., 2018). Patients also report higher satisfaction with care after early ACP (Patel et al., 2018).

Repeated ACP is best practice because patient wishes can change over time (Committee on Approaching Death: Addressing Key End of Life Issues & Institute of Medicine, 2015; Schulman-Green et al., 2018; Starr et al., 2019). Iterative conversations can be time consuming (Agarwal & Epstein, 2018; Bernacki et al., 2014). This burden must be shared amongst interdisciplinary team members. Nurses, social workers, and lay health educators can all effectively lead ACP conversations (Agarwal & Epstein, 2018; Boucher, 2021; Committee on Approaching Death: Addressing Key End of Life Issues & Institute of Medicine, 2015; Epstein et al., 2019; Patel et al., 2018).

Patient, provider, and system barriers prevent best practice ACP. Patient barriers include lack of knowledge, stigmatization, procrastination, emotional burden, patient expectations that the provider initiate the conversation, limited health literacy, and fear of upsetting family members (Agarwal & Epstein, 2018; Bernacki et al., 2014; Gilligan et al., 2017; McDonald et al., 2017; Ólafsdóttir et al., 2018). Provider barriers include prognostic uncertainty, communication difficulties, emotions, lack of training, lack of ownership, and uncertain ideal timing (Agarwal & Epstein, 2018; Bernacki et al., 2014; Gilligan et al., 2017; Institute of Medicine, 2013). System barriers include the absence of standardized workflows, lack of standardized documentation, and life-sustaining treatment as the default (Bernacki et al., 2014; Obel et al., 2014; Raskin et al., 2016). Racial differences limit ACP's impact as racial minorities are less likely to have early ACP (Brazee et al., 2021). These barriers must be addressed to improve patient health outcomes at end-of-life. A driver diagram is available in Appendix B, Figure B1 to outline approaches to these barriers.

Targeting barriers to early ACP is essential because early ACP addresses the six components of health care quality (Institute of Medicine, 2001). ACP has been shown to decrease aggressive inpatient interventions at end-of-life (Patel et al., 2018), thereby keeping patients safe from the unnecessary harms of interventions (Institute of Medicine, 2001). Patients are more likely to receive effective and efficient treatment at end-of-life aligned with their wishes after discussing goals and values (Agarwal & Epstein, 2018; Institute of Medicine, 2001). ACP is patient-centered; the goal of ACP is to enhance patient autonomy (Agarwal & Epstein, 2018; Institute of Medicine, 2001). Having ACP discussions outpatient is a timely intervention as experts agree that early ACP is best practice (Agarwal & Epstein, 2018; Bernacki et al., 2014; Institute of Medicine, 2001; Institute of Medicine, 2013; Levy et al., 2016; Peppercorn et al., 2011; Starr et al., 2019). ACP is currently inequitable; minority populations are less likely to have documented early ACP than white patients (Brazee et al., 2021; Committee on Approaching Death: Addressing Key End of Life Issues & Institute of Medicine, 2015; Institute of Medicine, 2001). Standardizing ACP to reach all patients could address this inequity. A systematic, early, and interdisciplinary approach to ACP could improve healthcare quality related to end-of-life.

Needs Assessment

Baseline practices at the practice institution did not align with best practices leading to poor patient outcomes at end-of-life. In 2016, 32.7% of Medicare oncology patients at the institution were admitted to the ICU in the last 30 days of life and only 8.76% of Medicare oncology patients were enrolled in hospice for more than 30 days (Dartmouth Atlas Project, 2023). In 2016, only 6% of Medicare enrollees with cancer seen at the institution had ACP coded (Dartmouth Atlas Project, 2023). A needs assessment of the organization was conducted through review of strategic plans, ACP data, shadowing in the target clinic, and interviews with nurses, nurse practitioners, and a physician. The resulting Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis identified facilitators and barriers to the proposed project (Appendix B, Figure B2).

The organization offered an environment of nursing empowerment and patient-centeredness. At the organizational level, the hematology/oncology service prioritized ACP to enhance patient-centered care in the 2018-2023 Strategic Plan (Practice Site, 2018). Further, the organization empowered nurses to complete ACP. The nursing department worked to increase nursing engagement in evidence-based practice and interdisciplinary collaboration through programs like nurse residency and a Center for Nursing Excellence (Practice Site, 2020). The Oncology Nursing Society's commitment to empowering nurses as competent professionals capable of leading ACP offered external validation that nurses could and should complete ACP (Oncology Nursing Society, 2015). While ACP was within the nursing scope of practice, 48% of surveyed oncology nurses at the institution felt uncomfortable with ACP (Danford et al., 2019).

By training nurses in ACP, the project addressed the organizational weakness of nursing discomfort.

An existing inpatient program showed nurses were confident, engaged, and empowered by completing ACP conversations. The program included 28 nursing champions who collaborated with social workers to offer patients the OCW advance directive. From January 2021 to March 2023, the program had 456 referrals with 369 patient interactions, and 91 new advance directives (E. Lightheart, personal communication, March 15, 2023). The completion of advance directives nearly doubled since the beginning of the project (Mea et al., 2022). This established workflow with proven effectiveness guided implementation of the outpatient program. The inpatient program offered pre-existing documentation templates in the shared electronic health record (EHR) for outpatient use. All providers could access the standardized ACP tab in the EHR, thus facilitating collaboration. However, implementing changes to the EHR, such as clinical decision support for ACP screening, provided a challenge as the institution required proof of concept before implementing changes. The EHR offered direct messaging to patients through a portal, which was used in this project to demonstrate proof of concept.

The specific practice site offered further barriers and facilitators to change. Staffing presented the biggest barrier to change. Nurses and providers shared that clinics were short-staffed with limited time to implement new projects. Many staff members left during the COVID19 pandemic. Despite this major barrier, the clinic was an excellent place to trial nurse-driven ACP. The practice site had a high volume of patients who could benefit from ACP; each provider saw 10-45 patients per week. One nurse champion brought years of experience in hospice nursing. Providers at the clinic were trained in serious illness conversations. Palliative care clinicians were embedded in the clinic. Even with the staff’s expertise in ACP, interviews revealed ACP at the institution was inconsistent and provider-driven. Late inpatient ACP was normalized within an environment of unstructured ACP processes.

ACP within the clinic was affected by national and cultural factors. The cultural stigmatization of discussing death and the expectation for life-prolonging treatment in the United States prevented early ACP (Bernacki et al., 2014). Despite the cultural barrier, patients expected their providers to initiate ACP (Bernacki et al., 2014), which revealed an opportunity for change. The project existed within a supportive economic and policy environment. External evidence demonstrated that early outpatient ACP decreased healthcare costs, which aligned with the Triple Aim (Bond et al., 2018; Institute for Healthcare Improvement, 2023; Patel et al., 2018). Numerous bipartisan bills proposed in Congress to expand ACP reimbursement and training demonstrated political support for ACP (Baldwin & Capito, n.d.; Warner et al., 2022). The proposed project sought to address barriers to best practice ACP by capitalizing on strengths and opportunities internal and external to an organization that championed patient-centered care and nurse autonomy.

Problem Statement

ACP was unstructured, inconsistently accessible to patients, addressed too late on the inpatient side, and impeded by many barriers. Baseline ACP practices led to care that was inequitable, inefficient, ineffective, unsafe, untimely, and not patient-centered (Agarwal & Epstein, 2018; Bernacki et al., 2014; Brazee et al., 2021; Gilligan et al., 2017; Lucas & Dimmer, 2021; McDonald et al., 2017; Obel et al., 2014; Ólafsdóttir et al., 2018; Patel et al., 2018; Raskin et al., 2016; Starr et al., 2019; Zakhour et al., 2015). With a national shortage of specialized palliative care providers, the primary oncology team should lead ACP (Agarwal & Epstein, 2018; Institute of Medicine, 2013). Instead of relying on physicians to initiate ACP, the responsibility for ACP should shift to an interdisciplinary endeavor (Gilligan et al., 2017; Institute of Medicine, 2013; Peppercorn et al., 2011). Nurses establish close relationships with patients. Discussing ACP with nurses removes the pressure of prognostication and allows for an open discussion of patients' goals and values (Agarwal & Epstein, 2018; Epstein et al., 2019) While prognostication and later ACP should still be led by physicians, it is within the nursing scope of practice to initiate ACP (Epstein et al., 2019).

This project sought to evaluate the effects of a process change related to a new nurse-driven ACP workflow in an outpatient breast cancer clinic while monitoring the feasibility, acceptability, and appropriateness of the workflow. The project team further evaluated the impact of a nurse-driven workflow on advance directive completion and ACP notes. The following PICOT question guided the project: For adult patients (>18 years old) with cancer seen in an outpatient oncology clinic (P), do trained nurses implementing an ACP workflow (I) affect the number of advance directives and ACP notes feasibly, acceptably, and appropriately (O) compared to standard ACP practice (C) within 3 months of implementation (T)?

Aims and Objectives

Aim #1

To determine which process factors impact the number of advance directives and ACP notes following implementation of the project.

Objectives

- To demonstrate special cause from process change through control charts tracking weekly advance directives and ACP notes in the EHR from July 16, 2023 through December 31, 2023.

- To document 75% of screening emails were read by patients in a population of breast cancer patients served by two physicians by December 31, 2023.
- To document patient interest in nurse-led ACP meetings with at least 25% of all patients responding as interested in meeting with a nurse after receiving a screening email in a population of breast cancer patients served by two physicians by December 31, 2023.
- To complete in-person nurse-led ACP meetings with at least 75% of all patients who responded to the screening email with interest in a population of breast cancer patients served by two physicians by December 31, 2023.
- To document advance directives in the EHR with at least 25% of all patients meeting in-person with nurse champions in a population of breast cancer patients served by two physicians by December 31, 2023.
- To document advance directives in the EHR with 100% of all patients who completed an advance directive with nurse champions in a population of breast cancer patients served by two physicians by December 31, 2023.
- To document ACP notes by providers with at least 25% of all patients meeting with nurse champions having an ACP note by providers in a population of breast cancer patients served by two physicians by December 31, 2023.

Aim # 2

To demonstrate feasibility, intervention appropriateness, and acceptability of a nurse-driven ACP workflow in the outpatient setting.

Objectives

- Nurse champions and physicians will find the project acceptable, appropriate, and feasible as measured by the Acceptability of Intervention Measure (AIM), Intervention

Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM) at baseline in September 2023 and at the end of the project in January 2024 with a mean score of 15 on all three measures (Weiner et al., 2017). These measures will remain stable or increase throughout the study period.

Aim # 3

To increase the number of advance directives and ACP notes following implementation of the project compared to baseline numbers.

Objectives

- To increase advance directive documentation in the EHR by 20% to 11.856% of patients in a population of breast cancer patients served by two physicians by December 31, 2023.
- To increase ACP notes in the EHR by 20% to 21.42% of breast cancer patients served by two physicians by December 31, 2023.

Review of the Literature

A literature review was completed from January to April 2023. Studies were extracted from PubMed, CINAHL, and Scopus to summarize existing evidence about the process of nurse-driven workflows. The studies also evaluated the feasibility, acceptability, and effectiveness of nurse-driven workflows in oncology. Appropriateness was specific to the institution and was not included in the literature search. MeSH headings were not utilized after consulting with the research librarian regarding their limited applicability in this specific search. The following search strategy was applied: (oncology OR cancer* OR malignancy) AND nurs* AND ("advance care planning" OR "advanced care planning" OR "advance directive" OR "advanced directive" OR "medical power of attorney" OR "healthcare power of attorney" OR "living will" OR "POLST" OR "serious illness conversation" OR "goals of care" OR "goals-of-care" OR "end of life" OR "end-of-life"). Reference mining was also completed. Studies completed in the outpatient setting within the last 10 years were included.

Of the resulting articles, a total of 14 articles were appraised using the Johns Hopkins Nursing Evidence-Based Practice model and guidelines (Dang et al., 2022). The evidence included one level I good quality study, one level II good quality study, one level III high quality study, one level III good quality study, one level IV high quality study, and five level V high quality studies. The review also included three level I low quality studies and one level II low quality study. These studies were limited by their inability to meet power, a recognized challenge in a population with high death rates (Walczak et al., 2017). Methodologies included four randomized controlled trials, three quasi-experimental research studies, one phenomenological qualitative study, one consensus statement, and five quality improvement projects.

The literature contained many examples of components of process changes with nurse-driven interventions. In many of the studies, the first component of a successful ACP program was training the nurses in communication skills and ACP (Bakitas et al., 2017; Desai et al., 2018; Epstein et al., 2019; Feaster et al., 2023; Gilligan et al., 2017; Lucas & Dimmer, 2021; Obel et al., 2014; Ólafsdóttir et al., 2018; Schenker et al., 2015; Sinclair et al., 2017; Walczak et al., 2017). Patient education via handouts or booklets were essential components of many interventions (Bakitas et al., 2017; Epstein et al., 2019; Nguyen et al., 2018; Obel et al., 2014; Ólafsdóttir et al., 2018; Rabow et al., 2019; Sulmasy et al., 2017). Projects included interdisciplinary collaboration workflows so that oncologists were aware of nursing ACP meetings and could follow-up with patients (Desai et al., 2018; Epstein et al., 2019; Gilligan et al., 2017; Obel et al., 2014; Schenker et al., 2015). Other components of the workflows included screening patients for interest in ACP and templated documentation (Desai et al., 2018; Lucas &

Dimmer, 2021; Obel et al., 2014; Rabow et al., 2019). In the literature, 94-97% of patients found nurse-driven ACP to be acceptable with qualitative evidence supporting this finding (Epstein et al., 2019; Ólafsdóttir et al., 2018; Rabow et al., 2019; Schenker et al., 2015).

Nurse-driven ACP was feasible with intervention fidelity of 95-100% (Schenker et al., 2015). Nurses reported ACP took 5-15 minutes on average, further supporting feasibility (Desai et al., 2018; Epstein et al., 2019). Qualitative findings further confirmed feasibility (Rabow et al., 2019). Nurse-driven ACP interventions were effective at increasing advance directive documentation. In all studies that measured advance directives, the number of advance directives increased from baseline. Baseline advance directives ranged from 0-65% with post-intervention advance directives ranging from 55%-90% (Desai et al., 2018; Feaster et al., 2023; Lucas & Dimmer, 2021; Obel et al., 2014). Patients were also more likely to address ACP with their providers following meetings with nurses (Sinclair et al., 2017; Walczak et al., 2017). Patients not only preferred to have ACP discussions early (Ólafsdóttir et al., 2018) but early nurse-driven ACP was also associated with decreased acute care utilization at end-of-life (Bakitas et al., 2017). Based on the literature review, nurse-driven ACP workflows were acceptable, feasible, and effective at increasing ACP documentation in the outpatient setting. An evidence table is available in Appendix C.

The evidence from this literature review was good with consistent results, though the level of evidence was low. The review was limited by few randomized controlled trials related to the PICOT question, limited generalizability, and small sample sizes. Most of the evidence came from level V studies. Because ACP supports patient autonomy, randomized controlled trials where patients in the control group had limited access to ACP was ethically challenging (Lucas & Dimmer, 2021; Starr et al., 2019). Systematic reviews were also limited because there were no consistent practices in ACP, which limited comparisons (Starr et al., 2019). Outcome measures varied as well, which also prevented comparisons (Starr et al., 2019). Thus, based on the strength and quality of the evidence, a quality improvement project was appropriate (Dang et al., 2022).

Evidence Based Practice Translation Model

The Knowledge to Action (KTA) model guided implementation of the proposed EBP project (Graham et al., 2006; Graham et al., 2007). This model was selected because it was used at the practice site for EBP projects. Further, while KTA focused on research to gain knowledge, the model also included non-research evidence (Graham et al., 2006). With low quality randomized controlled trial evidence, evidence from quality improvement projects supported implementation of the EBP project.

The KTA model included two components. The first was knowledge creation through inquiry, synthesis, and tools/products (Graham et al., 2006). During the process of knowledge inquiry, the project lead evaluated internal and external evidence. The evidence was appraised and summarized in the literature review and needs assessment. The synthesis of the evidence supported implementation of a structured, nurse-driven workflow in the outpatient oncology setting. Workflows from the literature were adapted as tools for use in practice, which was the final step of knowledge creation (Graham et al., 2006). The adapted workflow was designed to address barriers to ACP identified both in the literature and in practice. Lack of healthcare professional training was addressed by training nurses in ACP communication. Uncertain timing and ownership was addressed by implementing a standardized workflow offered to all patients by nurses. This workflow included standardized documentation in the EHR. By proactively contacting patients, the expectation that the provider would initiate ACP was addressed.

The second step of the KTA model was an action cycle (Graham et al., 2006). The first step was to identify a problem or gap through literature review and practice site evaluation. For the proposed project, a practice question was developed through review of the literature and meetings with team members. The remaining steps included identifying and selecting knowledge, adapting to the local context, examining barriers, implementing interventions, examining knowledge use, evaluating outcomes, and sustaining knowledge use (Graham et al., 2007). The knowledge from the creation phase was selected for use in this project. The value of the project was confirmed by healthcare professionals at the practice, who helped adapt the knowledge to local context. Through interviews and discussions with stakeholders, which were summarized in the needs assessment, barriers and facilitators to knowledge use were analyzed. In preparation, the project lead shadowed nurses at the clinic to assess feasibility, acceptability, and appropriateness of the intervention. In collaboration with the practice site, an action plan was developed with methods for implementation and plans for outcome evaluation. During and after implementation, the project team monitored knowledge use through process measures. After implementation, the project lead evaluated measures, including advance directive, ACP documentation, feasibility, acceptability, and appropriateness. Based on these findings, discussions about sustainability of the project occurred amongst the project team (Graham et al., 2006; Graham et al., 2007).

Methods

The DNP project was a quality improvement project completing the first cycle of the Plan-Do-Study-Act (PDSA) design. Quality improvement is defined as a systematic process that affects the health outcomes of a group by addressing the underlying processes of care (Moran et al., 2020). As the project aimed to improve patient outcomes by adjusting the process of care, it was a quality improvement project. During the planning phase, key stakeholders identified the problem, discussed methods, and developed a plan that fit within clinic practices (Institute for Healthcare Improvement, n.d.). During the do phase, the project team implemented the workflow. During the study phase, measures were tracked in several different ways. For the outcome measures of advance directives and ACP notes and related process measures, a non-experimental pre-post design was used (Schmidt & Brown, 2022). As a QI project, all established English-speaking patients of the enrolled providers were offered participation. It was difficult to compare the group before and after the intervention via inferential statistics; the sample grew with new patients and decreased with patient deaths. Given the unpredictability of the sample size, the non-experimental design was utilized to examine the workflow process and outcome measures (Schmidt & Brown, 2022). Balancing measures of feasibility, accessibility, and acceptability were measured using a one group pretest-posttest design (Schmidt & Brown, 2022). This design was selected as the same group of healthcare professionals were surveyed before and after the project.

Setting

The setting for this project was an outpatient breast cancer clinic in the mid-Atlantic United States. Two providers in this clinic saw an average of 30 patients/week. Visits occurred in-person at the clinic. Patient rooms were available for meeting with patients in addition to an off-stage conference room.

Population

Intervention participants were breast cancer patients seen by two physicians in the outpatient clinic. Inclusion criteria included: age > 18 years, diagnosis of breast cancer of any stage, English speaking, and established patients being seen in-person at the clinic between

September 25, 2023 and December 31, 2023. Exclusion criteria include: age < 18 years, telehealth appointments, no breast cancer diagnosis, non-English speaking, and patients meeting with the provider for the first time. New patients were excluded due to concern from clinic staff that receiving a screening email about ACP prior to initially meeting the physician could damage the patient-provider relationship. Because this was a quality improvement study, power was not calculated as all established patients seen by the providers were included. For the balancing measures, the two physicians and their two affiliated nurses who implemented the project were surveyed about feasibility, acceptability, and appropriateness of the project.

Participant Recruitment

A convenience sample of patients from the breast cancer clinic was included in this quality improvement project. The week prior to their scheduled appointment, patients received a screening email to gauge their interest in completing an advance directive. Patients who responded to the email met with the nurse champion during their clinic appointment. If participants expressed interest during the appointment with their provider, the provider notified the nurse of the patient's interest. The sample of providers and nurses were identified through participation in the project.

Consent Procedure

Prior to receiving healthcare services from the institution, all patients signed an annual General Consent Form. This document specifically outlined that personal health information may be used to inform healthcare operations, including evaluation of treatment and services provided to patients (Practice Site, 2021). As this project was a quality improvement study of healthcare operations, no further consent from patients was sought. Nurses and providers were consented electronically in RedCap (Harris et al., 2009; Harris et al., 2019) via a standard IRB form prior to collecting their data about feasibility, acceptability, and accountability (see Appendix D).

Risks/Harms

Prior to project implementation, the practice site's IRB designated the project as quality improvement and not human subjects' research. There were minimal expected risks for patients and professionals participating in ACP conversations. The most likely harm to patients was psychological distress related to discussing end-of-life wishes. However, participation in these conversations was optional. Researchers have found that patients report decreased anxiety and depression after having an ACP discussion (Bernacki et al., 2019). Conversations were more distressing when providers are untrained (Bernacki et al., 2014), thus careful attention was given to training nurses in ACP communication. Any emotional distress was promptly reported to the physician. The clinic also had social workers and counselors available. Providers and nurses could have found ACP to be emotionally distressing. The project lead was available for debriefing and checked in with nurses weekly.

Costs and Compensation

Participants were not compensated for their participation in the workflow. OCW was available to all patients free-of-cost (Practice Site, 2023). Printing costs were approximately $16 for 14 copies of the OCW document. Healthcare professionals were paid according to their pre-existing employment with the institution without any extra payment for participation. Meetings with patients were completed in-person during regular clinic hours with no overtime or extra building costs. Cost-savings were a potential long-term outcome that were not captured during this first PDSA cycle (Bond et al., 2018; Patel et al., 2018).

Project Interventions

Inpatient OCW Workflow

The outpatient workflow was an adaptation of a pre-existing inpatient OCW workflow at the practice site. In 2020, a nurse and social worker-driven workflow was implemented on inpatient oncology units. Patients were screened for advance directives at admission. If they were interested in an advance directive, patients were referred to trained nurse and social worker champions who used the document to educate patients on ACP. Patients had the option to designate healthcare powers of attorney and complete a living will (Appendix A). Unit secretaries were available to witness the document and scan it into the EHR. The champion completed a standardized note and texted the interdisciplinary team. For the adaptation of the inpatient workflow to the outpatient setting, the designers of OCW granted written approval for its use within this project (M. Van Der Tuyn, personal communication, April 13, 2023).

Outpatient OCW Workflow

See Figure D1 Appendix D for a process map of the workflow.

Step 1: In September 2023, the project lead conducted a 90-minute training session for two nurse champions on ACP communication and the OCW document. This training was developed by the project lead after attending a workshop from City of Hope called the Interprofessional Communication Curriculum (ICC) Project, funded by the National Cancer Institute (NCI) (City of Hope & National Cancer Institute, 2021). The training included discussion, videos, and active role play. Written approval was granted by the City of Hope for application of their training materials (H. Buller, personal communication, April 14, 2023). The training is available in Appendix D.

Step 2: The DNP project lead and nurse champions trained administrative assistants in scanning the advance directive into the chart.

Step 3: The DNP project lead sent standardized screening emails to patients the week prior to their appointment via the patient portal. The OCW document was linked in the email so that patients could view the document prior to their appointment. To prevent overwhelming the patients, each patient was contacted once during the project period. See Appendix D for the screening email approved by content experts at the practice site (H. Knollman, personal communication, March 29, 2023; K. McCann, personal communication, March 29, 2023).

Step 4: The project lead notified the nurse champions if patients were interested each week. Patients who responded to the email met with the nurse champion during their clinic appointment, time permitting. Champions used the OCW booklet to educate patients about advance directives and ACP. If participants expressed interest during the appointment with their provider, the provider notified the nurse of the patient's interest or discussed the OCW document with the patient themselves. If patients completed the document, they were encouraged to take the document home to review with family and obtain witnesses to the document. Due to staffing shortages, witnesses were not available in the clinic to make OCW a legal document. Medical staff could not serve as witnesses per state law (PA General Assembly, 2006; State of New Jersey Department of Health, 2023). Thus, witnesses from home were identified as a resource to complete the OCW document.

Step 5: The project lead emailed patients who took the document home prior to their next appointment to remind them to bring the OCW document back to the appointment. When patients returned the document, administrative assistants scanned the advance directive into the EHR.

Step 6: The nurse champion completed a standardized dot phrase (.OCWACPTEMP) in the EHR to document the interaction, regardless of completion of the document. The standardized note is available in Appendix D.

Step 6: The RN champion notified the physician about meeting outcomes through the EHR. All concerns, particularly psychosocial concerns, were discussed with the physician.

Outcomes Measured

Process, outcome, and balancing measures were collected during this project aligned with project aims (see Appendix E). For Aim #1, the study team monitored process measures to identify what factors influenced the workflow. Process measures were essential components of this quality improvement project as they elucidate if the correct actions were implemented, if the actions were timely, and if the actions were proficiently completed (Jaffe et al., 2019). As identified in Aim 1, the percentage of screening emails read by patients measured the effectiveness of screening emails in reaching this patient population. The percentage of patients who responded to the screening email with interest reflected the ability of the email to capture patient interest. The ability of nurse champions to meet with patients and document their interactions was reflected by the percentage of patients who responded as interested and had a nursing ACP note. The number of advance directives in the EHR captured the effectiveness of the training of nurse champions by demonstrating the ability to complete an advance directive with patients. It also measured the effectiveness of having patients witness the document at home and bring it back to be scanned into the medical record in the clinic by administrative assistants. To isolate the effectiveness of administrative assistants scanning the document into the chart, the project team tracked the percentage of patients with an advance directive in their chart who completed the document with nurse champions. Finally, the number of ACP notes by providers for patients who met with the nurse champions reflected the effectiveness of interdisciplinary collaboration.

Each week, the project lead completed chart reviews of patients who received screening emails to evaluate if patients read the email, if patients responded as interested, if the RN wrote a note documenting the interaction, if the patient had an ACP note, and if the patient had an advance directive in the chart. These data were stored in RedCap (Harris et al., 2009; Harris et al., 2019) and analyzed using descriptive statistics in SPSS Version 29.0 (IBM Corp, 2022).

For aim 1, weekly run charts were transformed into control charts to track the impact of the process change on advance directives and ACP notes. As this was a QI project, the analysis was process-oriented (Balestracci, 2019). The process was impacted by inputs such as the environment, people, and actions (Balestracci, 2019). In general, inputs caused normal variation in the outcomes, termed common cause variation (Balestracci, 2019). A control chart captured common cause variation over a time period and applied statistical theory to identify special cause. When a process remained within the expected upper and lower boundaries of common cause variation, it was a stable process (Balestracci, 2019). Control charts set upper and lower limits three standard deviations from the mean (Balestracci, 2019). If a team intervened with changes to the common process, variation in the process leads to special cause (Balestracci, 2019). Special cause in control charts were defined as: one point outside the upper or lower limits, at least eight consecutive points above or below the average, at least six consecutive points increasing or decreasing, fifteen successive points within one standard deviation of the mean, and two out of three consecutive data points outside of two standard deviations of the mean (NHS Institute for Innovation and Improvement, 2009). Different control charts existed based on data type. For this project a p-chart was selected to analyze attribute data without equal subgroups (NHS Institute for Innovation and Improvement, 2009). In a p-chart, the control limits were calculated based on each data point dependent on the number of patients in the weekly subgroup (NHS Institute for Innovation and Improvement, 2009).

For this project, the study team evaluated the percentage of patients with an advance directive and an ACP note starting 10 weeks prior to project implementation to establish common cause variation. The control charts were evaluated for special cause after the process for ACP and advance directives changed in the clinic with implementation of the nurse-driven workflow. Data for control charts were stored in RedCap weekly (Harris et al., 2009; Harris et al., 2019) and exported for analysis in Excel (Microsoft Corporation, 2018).

For aim 2, balancing measures of acceptability, appropriateness, and feasibility were measured through the AIM, IAM, and FIM. These instruments were selected as reliable (test-retest reliability coefficients 0.73 to 0.88) and valid (Cronbach-alpha 0.85 to 0.91) measures of acceptability, feasibility, and appropriateness that align with Aim 2 (Weiner et al., 2017). These measures were included to determine if the workflow fit well within the clinic without burdening clinic staff. In September 2023, the DNP project lead sent baseline surveys with AIM, IAM, and FIM to the two nurse champions and two involved physicians via RedCap (Harris et al., 2009; Harris et al., 2019). The survey was also sent to the same sample of nurses and physicians in January 2024 after the project. Survey results were analyzed in SPSS Version 29.0 (IBM Corp, 2022).

Outcome measures were analyzed for aim 3. Advance directives were widely identified in the literature as outcome measures of ACP (Agarwal & Epstein, 2018; Patel et al., 2018; Starr et al., 2019). The nurse champions in this project actively sought to introduce ACP to patients through advance directives. ACP notes were selected as an outcome measure because nurses wrote ACP notes for patients they met. Further, patients are more likely to address ACP with their providers following meetings with nurses (Sinclair et al., 2017; Walczak et al., 2017). In September and October 2023, the DNP project lead collected baseline data from the EHR on the number of advance directives and ACP notes signed by nurses and providers for all patients seen by the two participating physicians from May 1, 2023 to August 31, 2023. These data established benchmark goals. At the end of the project, the project lead extracted the number of advance directives and ACP notes from the EHR for patients seen by the same two physicians from September 25, 2023 through December 31, 2023. Demographics including age, race, and cancer stage were collected in both datasets. As outcome measures, baseline and post-intervention demographics, advance directives, and ACP notes were compared using descriptive statistics. These data were collected by the project lead through chart review of the EHR, stored in RedCap (Harris et al., 2009; Harris et al., 2019), and analyzed in SPSS Version 29.0 (IBM Corp, 2022).

Project Timeline

The project started with the development of a practice question. A needs assessment was completed through interviews with physicians, nurses, and nurse practitioners to gather internal evidence about the gap in practice. Following a literature review of external evidence, the intervention was adapted from the pre-existing inpatient program for OCW. Following IRB designation as quality improvement, the project began in September 2023. Nurses were trained in ACP communication in early September. Following training, the project lead sent screening emails to patients the week prior to appointment until late December 2023. Surveys to evaluate feasibility, acceptability, and appropriateness of the project were sent to participating nurses and physicians in September 2023 and January 2024. Evaluation of all measures occurred in January and February 2024. The study team discussed sustainability through future PDSA cycles. In

April 2024, findings were internally disseminated through presentation. External dissemination occurred via podium presentation at the 2024 Oncology Nursing Society Congress in April 2024. A GANTT chart for the project is available in Appendix F.

Resources Needed

The human resources needed for this project within the clinic included two nurse champions, two physicians, and two administrative assistants. Outside of the clinic, the performance improvement team extracted data from the EHR. Structural resources included clinic space to meet with patients and copies of the OCW form. A printer, printer paper, and ink were required to print the OCW document, which was available in the clinic. The project lead possessed licenses for use of Statistical Package for Social Sciences Version 29.0 and Excel (IBM Corp, 2022; Microsoft Corporation, 2018). RedCap was available via the practice institution (Harris et al., 2009; Harris et al., 2019).

Evaluation Plan

Data was evaluated in phases. As a quality improvement project, a run chart was completed weekly to track the number of documented advance directives and ACP notes for patients by the two study providers. The run charts started ten weeks prior to intervention to establish common cause variation (Balestracci, 2019). At the end of the project, the run charts were transformed into a p-charts to analyze attribute data with unequal subgroups (NHS Institute for Innovation and Improvement, 2009).

The study team evaluated process measures as identified in Aim 1. Process measures were compared to baseline goals established in Aim 1 and determined to be successful if they met these goals. For Aim 2, balancing measures of feasibility, acceptability, and appropriateness for nurses and physicians were analyzed to inform the fit of the workflow within the clinic.

Given the small sample size, descriptive statistics were analyzed. For Aim 3, at the end of the project, descriptive statistics were generated to present the number and percentage of patients with advance directives and ACP notes at baseline and post-project (Polit, 2010).

Data Accuracy, Maintenance & Security

For the outcome measures collected via chart review, a two-step method was used to assure accurate data entry. First, the data were pulled from the medical record via a query from the performance improvement team. Secondly, the pulled data were confirmed via chart review from the study lead including extraction of cancer stage, advance directives, and ACP notes which were not easily captured via data query. For the process measures, the project lead completed weekly chart reviews and corroborated findings via email with the nurse champions. The project lead used SPSS Version 29.0 to identify missing data, which was remedied by chart review (IBM Corp, 2022).

Members of the study team with access to de-identified data included the project lead, primary advisor, and secondary advisor who completed human subjects training. To collect baseline data, the performance improvement team pulled a list of patients seen by the two study providers from May 1, 2023 to August 31, 2023 with provider name, age, race, and ethnicity. The data was shared via Excel file (Microsoft Corporation, 2018), which was promptly uploaded to a secure, password protected RedCap database (Harris et al., 2009; Harris et al., 2019). The Excel file was promptly destroyed (Microsoft Corporation, 2018). The project lead completed chart reviews to extract cancer stage, ACP notes, and advance directives. Once outcome measures were recorded, the data was de-identified within the secure, password protected RedCap database (Harris et al., 2009; Harris et al., 2019). The same process was followed at the end of the study to collect post-project outcome measures from September 25, 2023 through December 31, 2023.

Each week during the study, the project lead entered de-identified data about the number of screening emails sent, the number of emails sent and read, the number of interested patients, the number of meetings with the nurse champions identified by ACP note, the number of advance directives, and the number of ACP notes by providers. During the project, it became apparent that patients had advance directives that were not scanned into the chart. These patients were encouraged to bring their advance directives into the clinic. The number of patients with an advance directive not scanned in the chart was tracked. If these patients brought in an advance directive, this event was recorded. For the balancing measures, a survey designed in RedCap (Harris et al., 2009; Harris et al., 2019) with the AIM, IAM, and FIM assessments was distributed to providers and nurse champions at the beginning and end of the study. No personally identifying information was collected. Data were stored within the secure, password protected RedCap database (Harris et al., 2009; Harris et al., 2019)**.**

Results

Demographics

The study team completed 1140 chart reviews. The pre-project chart reviews included 577 charts and the post-project review included 563 charts. The population identified as a majority white (n=723, 63.3%), did not identify as Hispanic (n=1095, 96.1%) and were female (n=1135, 99.5%). The mean patient age was 58.5 years. The most common diagnosis was stage 1 breast cancer (n=435, 38.2%). Reference Appendix G, Table G1 for complete demographics delineated by time point. Of patients with advance directives, a majority were white (n=92, 71.3%) and the largest age group was 65-74 (n=48, 37.2%). Among those with an advance directive, the most common diagnosis was stage 1 cancer (n=45, 34.9%). Of patients with an ACP note, a majority were white (n=129, 59.2%). Further, for patients with an ACP note, the largest age group was 65-74 (n=83, 38.0%) and a majority had stage 4 cancer (n=129, 59.2%). When examined by proportion, percentage of advance directive by race were similar, while Black patients had more ACP notes. Asian and Hispanic patients had fewer advance directives. See Appendix G, Figures G1-G8 for visual representations of descriptive statistics by time point.

Aim #1

For aim 1, the project team analyzed the process through control charts of weekly advance directives and ACP notes for special cause (See Appendix G, Figures G9 and G10). For advance directives, special cause was found at three time points above the upper control limit after project implementation. Special cause was also evident for ACP notes at three time points with two out of three successive points exceeding two standard deviations from the mean. For ACP notes, special cause appeared once prior to project initiation and twice after-project implementation.

Throughout the project, the team tracked process measures. The project lead distributed 416 screening emails from 9/21/23-12/21/23 for patients being seen 9/25/23-12/31/23. Of the patient population seen by two physicians, 23 did not receive a screening email as they did not have the patient portal established and 10 did not receive a screening email as their designated language in the medical record was not English. For objective 1, 85.8% of patients read the screening emails in the portal (n=357). This met the goal of 75%. Of patients who received a screening email, 8.4% responded as interested in meeting with a nurse (n=35). This did not meet the goal of 25%. Of note, patients responded to emails to notify the project lead that they already had an advance directive, but it was not scanned into the chart. Figure G11 in Appendix G captured this phenomenon. Among patients who were interested in meeting with the nurse champion, 40% (n=14) had a documented note demonstrating an in-person nurse-led ACP meeting, which did not meet the goal of 75%. However, the nursing notes did not capture the interested patients who brought an advance directive from home. When those patients were included as meeting with nurses, the percentage of interested patients who met with nurse champions increased to 48.6%. Of the 17 patients who met with the nurse champions, including three patients who brought their advance directive from home without a documented note, 29.4% had a documented advance directive by the end of the project (n=5). This met the goal of 25%. One additional patient completed an advance directive while meeting with their provider during the project. Among patients who had an advance directive after meeting with the nurse champions or with project physicians, 100% were scanned into the EHR (n=6), which met the established goal of 100%. For 17 patients who met with nurse champions, including the three patients who brought their advance directive from home, 35.3% had an ACP note documented with their provider, which met the goal of 25%. See Appendix G, Figure G12 for visual representation of this process flow.

Aim # 2

The secondary aim of this project was to investigate the feasibility, acceptability, and appropriateness of a nurse-driven ACP workflow. Before implementation of the project (n=2), the mean AIM score was 20. The mean FIM score was 20. The mean IAM score was 19.5. After implementation of the project (n=3), the mean AIM score was 20, the mean FIM score was 20, and the mean IAM score was 20.

Aim #3

The final aim of this project was to increase the number of advance directives and ACP notes following implementation of the project compared to baseline numbers. The outcome measures were evaluated by percentage increase from baseline.

The project team anticipated that advance directive documentation in the EHR would increase by 20% to 11.856% of patients in a population of breast cancer patients served by two physicians by December 31, 2023. At baseline, 57 patients had advance directives in the EHR, which was 9.88% of charts reviewed. After project implementation, 72 patients had advance directives in the EHR, which was 12.8% of charts reviewed. This outcome met project aims. Of the 72 advance directives, 6 were new advance directives scanned into the medical record related to the project.

The project team anticipated that ACP notes would increase by 20% to 21.42% of breast cancer patients served by two physicians by December 31, 2023. At baseline 103 patients had ACP notes by providers or nurses, which represented 17.85% of all charts reviewed. Of the baseline ACP notes, 100% were completed by providers. After the project, 115 patients had an ACP by providers or nurses, which was 20.43% of all chart reviews. This did not meet project objectives. Of the post-project ACP notes, 87.8% (n=101) were completed solely by providers, 8.7% (n=10) were completed solely by nurses, and 3.5% (n=4) had notes from both nurses and providers.

Discussion

An outpatient nurse-driven ACP workflow was associated with increased advance directives and ACP notes. While ACP notes did not quite meet project objectives, the impact of the workflow on this outcome may become more evident over a longer period of time. With the repetitive nature of ACP, provider notes may be delayed by months to years (Agarwal & Epstein, 2018; Bernacki et al., 2014; Gilligan et al., 2017; Institute of Medicine, 2013; Levy et al., 2016; Peppercorn et al., 2011; Starr et al., 2019). The workflow was feasible, appropriate, and acceptable to clinic staff. The control chart for advance directives demonstrated evidence of process change following workflow implementation. Near the end of the project period, the new process began to stabilize at a higher mean. With more time, the advance directive process may continue to stabilize (Benneyan et al., 2003; NHS Institute for Innovation and Improvement, 2009). In weeks where advance directive numbers fell, possible influences included one provider absent from clinic, holidays, and limited time for nurses. Special cause was also noted for ACP notes. However, special cause was evident both before and after the intervention. The control chart for ACP notes was more chaotic than for advance directives. Because ACP is a repetitive process with numerous touchpoints by members of the interdisciplinary team, stabilization of this process may take more time than for advance directives (Agarwal & Epstein, 2018; Bernacki et al., 2014; Gilligan et al., 2017; Institute of Medicine, 2013; Levy et al., 2016; Peppercorn et al., 2011; Starr et al., 2019).

Implications for Practice

Evaluation of the workflow process revealed several components that should be maintained in future iterations. Screening emails through the patient portal were an effective means to reach patients, which aligned with pre-existing literature (Brungardt et al., 2019; Halpert et al., 2022). However, manually sending weekly emails to every patient was not sustainable. Future iterations could examine automated emails to patients triggered yearly.

As evidenced by the increased ACP notes and advance directives for patients who met with nurses, trained nurse champions were effective members of the interdisciplinary ACP team. This finding confirmed pre-existing knowledge in the literature (Bakitas et al., 2017; Desai et al., 2018; Epstein et al., 2019; Feaster et al., 2023; Gilligan et al., 2017; Lucas & Dimmer, 2021; Obel et al., 2014; Ólafsdóttir et al., 2018; Schenker et al., 2015; Sinclair et al., 2017; Walczak et al., 2017). Nurses should be empowered to lead ACP conversations with patients as members of the interdisciplinary team. Having nurses initiate the conversation removes the stigmatization associated with ACP as nurses do not prognosticate in these meetings. Patients may feel more comfortable discussing ACP with nurses (Epstein et al., 2019; Lucas & Dimmer, 2021; Ólafsdóttir et al., 2018). When patients require further ACP, the initial conversation with nurses builds the foundation for future ACP with other members of the interdisciplinary team (Epstein et al., 2019; Schulman-Green et al., 2018; Sinclair et al., 2017; Walczak et al., 2017). ACP conversations must occur in collaboration with other members of the interdisciplinary team to spread the workload and enable repeated conversations (Gilligan et al., 2017; Institute of Medicine, 2013; Peppercorn et al., 2011). Further, the interdisciplinary team is not limited to nurses, physicians, and social workers. Administrative assistants were essential members of the team in this project. The inclusion of administrative assistants in the workflow ensured advance directives were appropriately scanned into the chart.

The project uncovered several areas for clinical improvement. Patients have advance directives, but they are not scanned into the chart. Clinics must establish protocols to capture pre-existing advance directives. When advance directives were scanned in the chart outside of this project, they were labeled inconsistently and difficult to find. Without standardization, healthcare professionals cannot efficiently reference an advance directive during later ACP discussions (Dillon et al., 2017; Huber et al., 2018; Lucas & Dimmer, 2021; Myers et al., 2018). The health system does have a means for patients to upload their advance directives into the medical record through the patient portal. In discussions with staff, patients generally do not use this resource. A systematic process for patients independently uploading their advance directives could supplement the interdisciplinary workflow where administrative assistants upload advance directives into the chart. Instructions for uploading could be included in screening emails.

Further, in future iterations, the standardized nursing note should include a means to document meeting with patients who bring their advance directive from home to ensure accurate process measures. Addressing this phenomenon presents an exciting avenue for future QI work.

Patient interest in ACP was low. Low patient interest may be related to stigmatization of ACP and limited patient knowledge about ACP (Agarwal & Epstein, 2018; Bernacki et al., 2014; McDonald et al., 2017). Other projects have educated patients via different methods, such as the videos, handouts, presentations, group classes, and tailored in-person educational discussions. (Bakitas et al., 2017; Epstein et al., 2019; Nguyen et al., 2018; Obel et al., 2014; Ólafsdóttir et al., 2018; Rabow et al., 2019; Sulmasy et al., 2017). These methods may be utilized in future cycles.

Implications for Healthcare Policy

This project reinforced the importance of interdisciplinary collaboration with ACP as evidenced by increased ACP notes by physicians and nurses following project implementation. Under current Medicare policy, only physicians or advance practice providers can bill for ACP (Centers for Medicare & Medicaid Services, 2023). Proposed legislation expands ACP billing to social workers and waives the co-insurance and deductible for these visits (Collins & Warner, 2022). Politicians should expand the proposed legislation to include nursing interactions in the coding for reimbursement for ACP.

Implications for Executive Leadership

Inadequate and inconsistent healthcare provider communication training is widely recognized as a barrier to ACP (Agarwal & Epstein, 2018; Bernacki et al., 2014; Buss et al., 2011; Committee on Approaching Death: Addressing Key End of Life Issues & Institute of Medicine, 2015; Granek et al., 2013; Lesperance et al., 2014; Parajuli & Hupcey, 2021). This project reinforced that training nurses in ACP communication facilitated ACP. Nurses effectively guided patients through the OCW document as evidenced by the percentage of patients with an advance directive after meeting with nurses. The practice site does offer communication classes on end-of-life and serious illness, but these are not required. Executive leadership should consider partnering with the collaborating nursing and medical schools to introduce universal ACP education (Agarwal & Epstein, 2018; Bernacki et al., 2014; Committee on Approaching Death: Addressing Key End of Life Issues & Institute of Medicine, 2015).

In discussions with the nurse champions, the nursing role in clinic was relatively new. Nursing responsibilities varied based on physician collaborator. Some nurses were present every day in clinic while others spent more time triaging patients. This inconsistency may explain the low rate of interested patients meeting with nurses. For example, if one nurse was out sick, differing roles prevented cross coverage. Executive leaders should consider a more standardized role for nursing in future iterations to ensure nurses are available in clinic to meet with patients.

Executive leadership should consider the potential cost-savings from early ACP. In the long-term, revenue may be generated by increased coding for ACP (Tsai & Taylor, 2018). In other studies, cost savings with early ACP ranged from $9500 to $20000 with decreased acute care utilization at end-of-life affiliated (Bond et al., 2018; Patel et al., 2018). While this project did not complete a cost-benefit analysis, future cycles could complete a cost-benefit analysis.

Implications for Quality/Safety

ACP can improve healthcare quality related to end-of-life. While it was not within the scope of this project to track quality outcomes, future projects could evaluate the six pillars of healthcare quality (Institute of Medicine, 2001). Anecdotally, patients did report to nurse champions that they appreciated completing the document in clinic, which made the intervention timely and patient-centered. The project was effective as it was associated with increased advance directives and ACP notes. Safety and efficiency could be studied in future projects by evaluating care utilization at end-of-life and goal-concordant care. Further research must identify means to make ACP equitable. Based on the data from this project, Asian and Hispanic patients had lower percentages of advance directives than other racial and ethnic groups. Black patients had a higher percentage of ACP notes than white patients, which could reflect more advanced disease (Brazee et al., 2021) (Appendix G, Tables G5-G8). Cancer care inequities are recognized in the literature from diagnosis to death (Brazee et al., 2021; Elmore & Fayanju, 2023; National Cancer Institute, 2024). Future research should address cancer care inequities and identify means to ensure workflows are acceptable and appropriate to a diverse patient population.

Plans for Sustainability and Future Scholarship

This project was the first iteration of a PDSA cycle. The next PDSA cycle should maintain many aspects of the project and adopt changes based on the findings of this project. Nurse training, interdisciplinary conversations, and scanning of advance directives should be maintained. Standardized notes should include a means to document the delivery of pre-existing advance directives. In future PDSA cycles, automated emails through the patient portal would be ideal. The screening email should also include information for patients to independently upload their advance directives. Discussions with IT and the Innovation Center are ongoing to establish ways to send automated emails. Before they will establish automated emails, IT and the Innovation Center require further proof of concept. To establish further proof of concept, discussions with other oncology clinics are ongoing about adopting the nurse-driven workflow.

The project was limited by the lack of witnesses to complete the advance directive in clinic. Healthcare professionals cannot serve as witnesses (PA General Assembly, 2006; State of

New Jersey Department of Health, 2023). Due to short-staffing, front-desk staff could not assist in the project. Most patients wanted to take the OCW document home to discuss with families before completing, which demonstrated the iterative nature of ACP. Having the patient witness and sign the document at home was a feasible adaptation of the workflow to address this limitation.

As a quality improvement project, the project had limited external validity. The project population was a majority female and white breast cancer patients. Future iterations should expand to a wider variety of clinics with more racial diversity and different diagnoses. Internal validity was limited by project design as a QI project. Since nearly all patients were included in the project without a control group, lack of control and confounders could have influenced outcomes of the project. The outcomes were not solely attributable to the intervention. Future research studies could more rigorously track outcomes, including the impact of the workflow on cost, hospice utilization, and inpatient hospitalization at end-of-life.

Conclusion

The outpatient nurse-driven workflow was found to be feasible, appropriate, and acceptable. The workflow empowered nurses to practice within their scope to complete advance directives with patients. These interactions were associated with an increase in both advance directives and ACP notes. Future iterations should maintain screening emails, trained nurse champions, and interdisciplinary collaboration. In the next PDSA cycle, patient education must be expanded. Patients should have an opportunity to scan their advance directive into their chart, particularly if patients are taking the advance directive home to be witnessed by friends and family. Nurses will need to document patients bringing their advance directive from home in the standard nursing note. Discussions are ongoing to expand the project into other clinics with the final goal of screening all patients within the health system for an advance directive through an automated email. As evidenced by this DNP project, a nurse-driven workflow effectively offers patients early, repeated, and interdisciplinary ACP.

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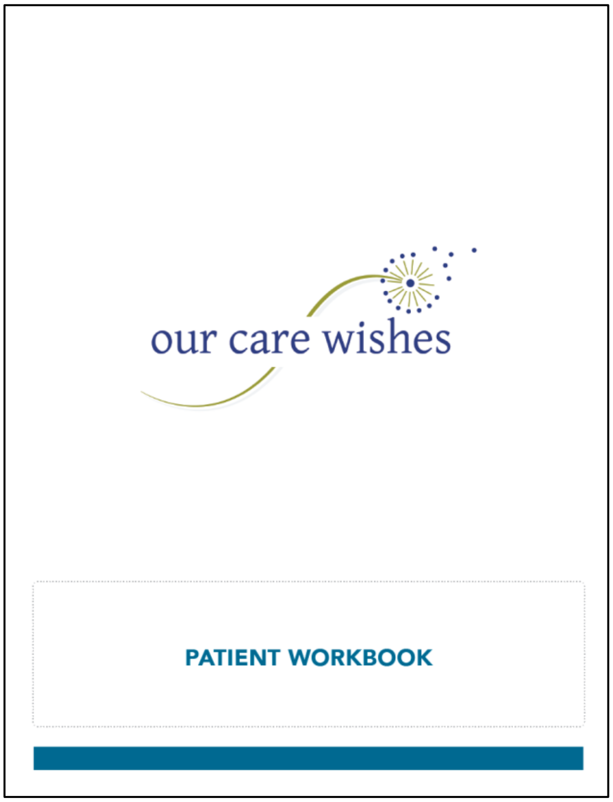
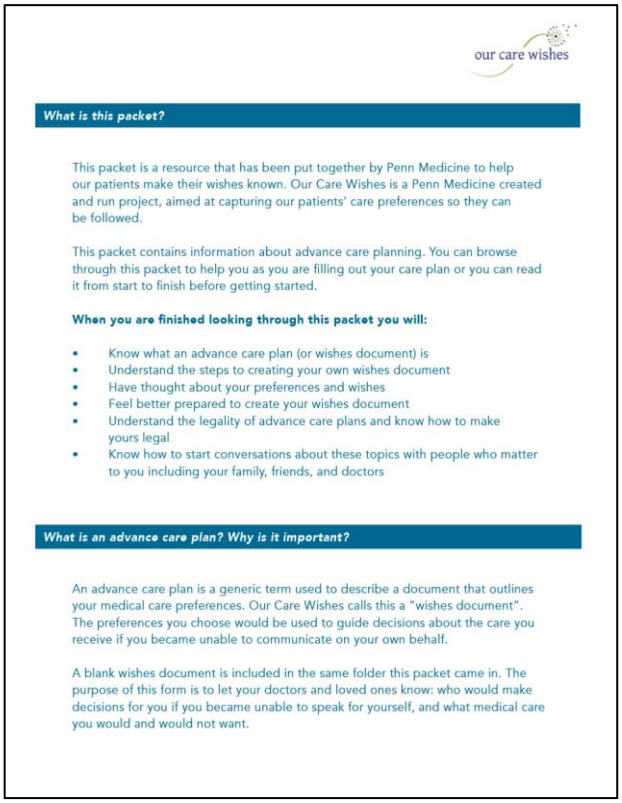
Appendix A

Our Care Wishes Document



our care wishes

PATIENT WORKBOOK



our care wishes

What is this packet?

This packet is a resource that has been put together by Penn Medicine to help our patients make their wishes known. Our Care Wishes is a Penn Medicine created and run project, aimed at capturing our patients' care preferences so they can be followed.

This packet contains information about advance care planning. You can browse through this packet to help you as you are filling out your care plan or you can read it from start to finish before getting started.

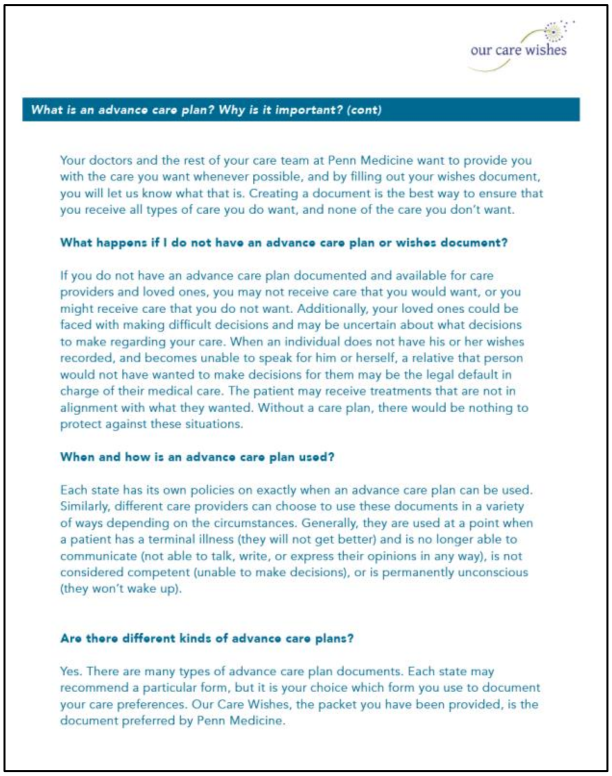
When you are finished looking through this packet you will:

- Know what an advance care plan (or wishes document) is
- Understand the steps to creating your own wishes document
- Have thought about your preferences and wishes
- Feel better prepared to create your wishes document
- Understand the legality of advance care plans and know how to make yours legal
- Know how to start conversations about these topics with people who matter to you including your family, friends, and doctors

What is an advance care plan? Why is it important?

An advance care plan is a generic term used to describe a document that outlines your medical care preferences. Our Care Wishes calls this a "wishes document". The preferences you choose would be used to guide decisions about the care you receive if you became unable to communicate on your own behalf.

A blank wishes document is included in the same folder this packet came in. The purpose of this form is to let your doctors and loved ones know: who would make decisions for you if you became unable to speak for yourself, and what medical care you would and would not want.



our care wishes

What is an advance care plan? Why is it important? (cont)

Your doctors and the rest of your care team at Penn Medicine want to provide you with the care you want whenever possible, and by filling out your wishes document, you will let us know what that is. Creating a document is the best way to ensure that you receive all types of care you do want, and none of the care you don't want.

What happens if I do not have an advance care plan or wishes document?

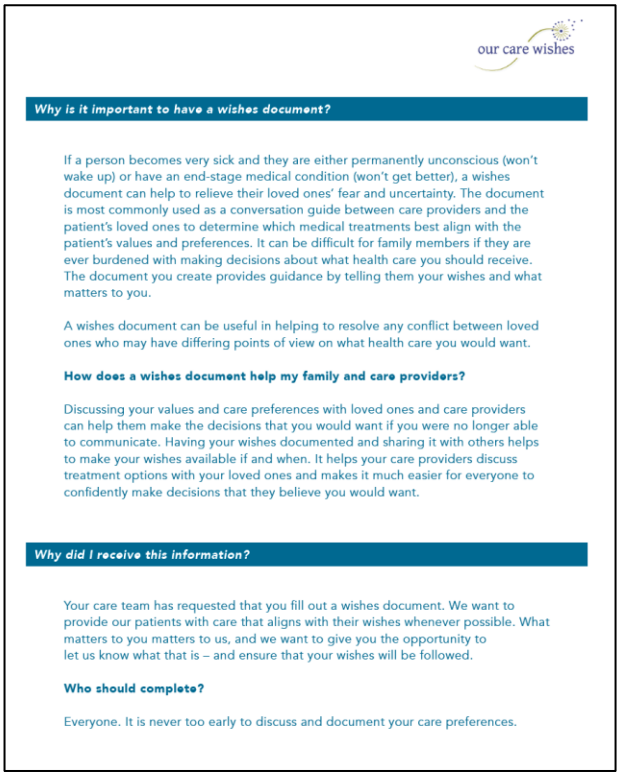
If you do not have an advance care plan documented and available for care providers and loved ones, you may not receive care that you would want, or you might receive care that you do not want. Additionally, your loved ones could be faced with making difficult decisions and may be uncertain about what decisions to make regarding your care. When an individual does not have his or her wishes recorded, and becomes unable to speak for him or herself, a relative that person would not have wanted to make decisions for them may be the legal default in charge of their medical care. The patient may receive treatments that are not in alignment with what they wanted. Without a care plan, there would be nothing to protect against these situations.

When and how is an advance care plan used?

Each state has its own policies on exactly when an advance care plan can be used. Similarly, different care providers can choose to use these documents in a variety of ways depending on the circumstances. Generally, they are used at a point when a patient has a terminal illness (they will not get better) and is no longer able to communicate (not able to talk, write, or express their opinions in any way), is not considered competent (unable to make decisions), or is permanently unconscious (they won't wake up).

Are there different kinds of advance care plans?

Yes. There are many types of advance care plan documents. Each state may recommend a particular form, but it is your choice which form you use to document your care preferences. Our Care Wishes, the packet you have been provided, is the document preferred by Penn Medicine.



our care wishes

Why is it important to have a wishes document?

If a person becomes very sick and they are either permanently unconscious (won't wake up) or have an end-stage medical condition (won't get better), a wishes document can help to relieve their loved ones' fear and uncertainty. The document is most commonly used as a conversation guide between care providers and the patient's loved ones to determine which medical treatments best align with the patient's values and preferences. It can be difficult for family members if they are ever burdened with making decisions about what health care you should receive. The document you create provides guidance by telling them your wishes and what matters to you.

A wishes document can be useful in helping to resolve any conflict between loved ones who may have differing points of view on what health care you would want.

How does a wishes document help my family and care providers?

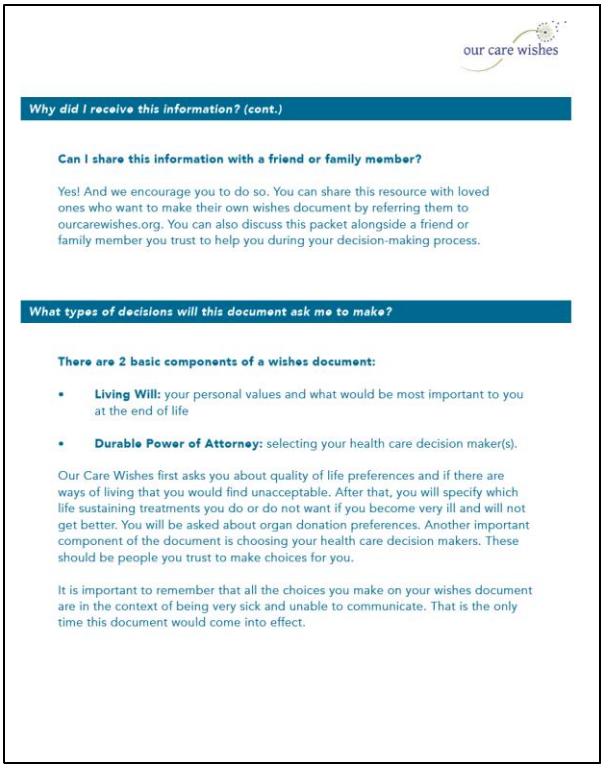
Discussing your values and care preferences with loved ones and care providers can help them make the decisions that you would want if you were no longer able to communicate. Having your wishes documented and sharing it with others helps to make your wishes available if and when. It helps your care providers discuss treatment options with your loved ones and makes it much easier for everyone to confidently make decisions that they believe you would want.

Why did I receive this information?

Your care team has requested that you fill out a wishes document. We want to provide our patients with care that aligns with their wishes whenever possible. What matters to you matters to us, and we want to give you the opportunity to let us know what that is – and ensure that your wishes will be followed.

Who should complete?

Everyone. It is never too early to discuss and document your care preferences.



our care wishes

Why did I receive this information? (cont.)

Can I share this information with a friend or family member?

Yes! And we encourage you to do so. You can share this resource with loved ones who want to make their own wishes document by referring them to ourcarewishes.org. You can also discuss this packet alongside a friend or family member you trust to help you during your decision-making process.

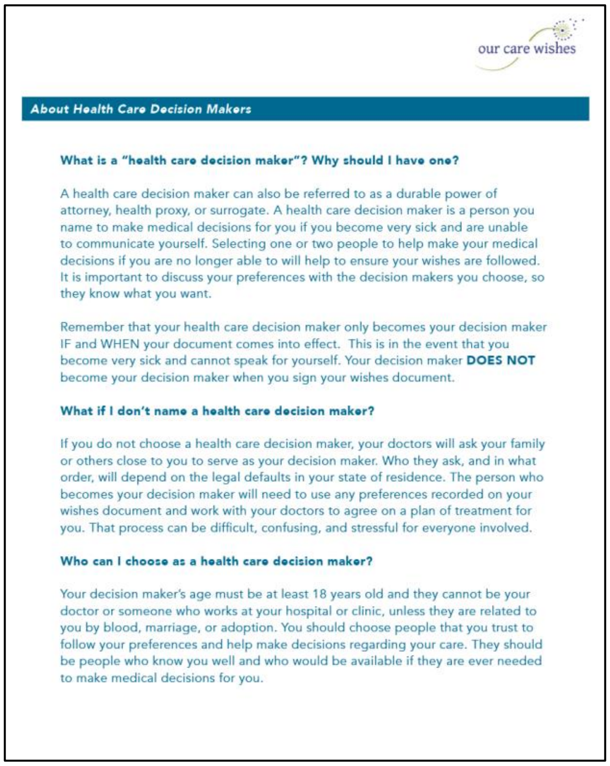
What types of decisions will this document ask me to make?

There are 2 basic components of a wishes document:

- **Living Will:** your personal values and what would be most important to you at the end of life
- **Durable Power of Attorney:** selecting your health care decision maker(s).

Our Care Wishes first asks you about quality of life preferences and if there are ways of living that you would find unacceptable. After that, you will specify which life sustaining treatments you do or do not want if you become very ill and will not get better. You will be asked about organ donation preferences. Another important component of the document is choosing your health care decision makers. These should be people you trust to make choices for you.

It is important to remember that all the choices you make on your wishes document are in the context of being very sick and unable to communicate. That is the only time this document would come into effect.



our care wishes

About Health Care Decision Makers

What is a "health care decision maker"? Why should I have one?

A health care decision maker can also be referred to as a durable power of attorney, health proxy, or surrogate. A health care decision maker is a person you name to make medical decisions for you if you become very sick and are unable to communicate yourself. Selecting one or two people to help make your medical decisions if you are no longer able to will help to ensure your wishes are followed. It is important to discuss your preferences with the decision makers you choose, so they know what you want.

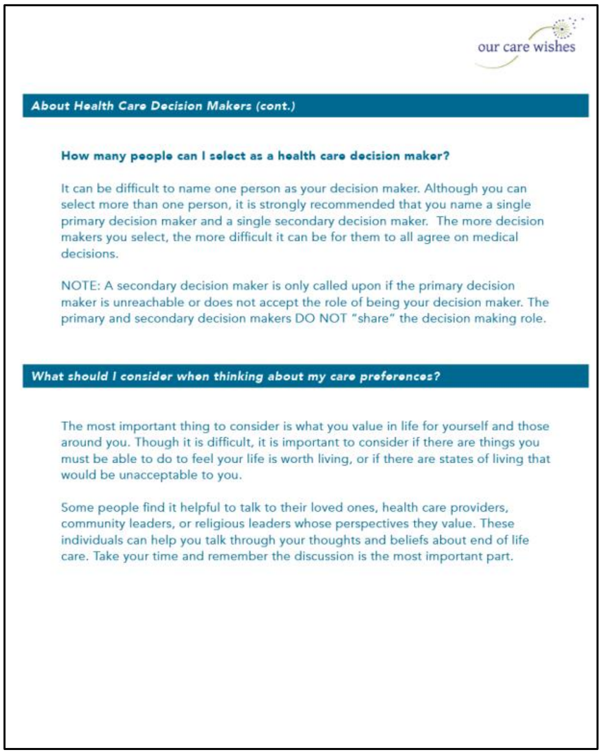
Remember that your health care decision maker only becomes your decision maker IF and WHEN your document comes into effect. This is in the event that you become very sick and cannot speak for yourself. Your decision maker **DOES NOT** become your decision maker when you sign your wishes document.

What if I don't name a health care decision maker?

If you do not choose a health care decision maker, your doctors will ask your family or others close to you to serve as your decision maker. Who they ask, and in what order, will depend on the legal defaults in your state of residence. The person who becomes your decision maker will need to use any preferences recorded on your wishes document and work with your doctors to agree on a plan of treatment for you. That process can be difficult, confusing, and stressful for everyone involved.

Who can I choose as a health care decision maker?

Your decision maker's age must be at least 18 years old and they cannot be your doctor or someone who works at your hospital or clinic, unless they are related to you by blood, marriage, or adoption. You should choose people that you trust to follow your preferences and help make decisions regarding your care. They should be people who know you well and who would be available if they are ever needed to make medical decisions for you.



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About Health Care Decision Makers (cont.)

How many people can I select as a health care decision maker?

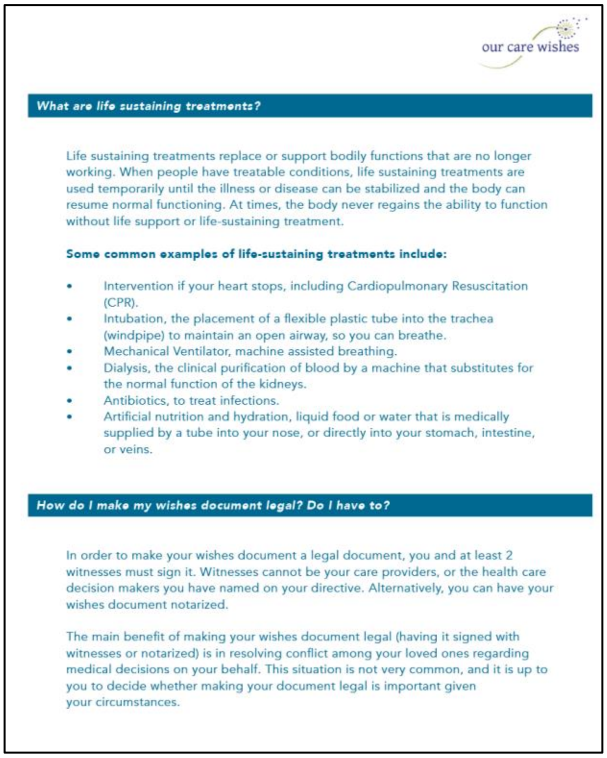
It can be difficult to name one person as your decision maker. Although you can select more than one person, it is strongly recommended that you name a single primary decision maker and a single secondary decision maker. The more decision makers you select, the more difficult it can be for them to all agree on medical decisions.

NOTE: A secondary decision maker is only called upon if the primary decision maker is unreachable or does not accept the role of being your decision maker. The primary and secondary decision makers DO NOT "share" the decision making role.

What should I consider when thinking about my care preferences?

The most important thing to consider is what you value in life for yourself and those around you. Though it is difficult, it is important to consider if there are things you must be able to do to feel your life is worth living, or if there are states of living that would be unacceptable to you.

Some people find it helpful to talk to their loved ones, health care providers, community leaders, or religious leaders whose perspectives they value. These individuals can help you talk through your thoughts and beliefs about end of life care. Take your time and remember the discussion is the most important part.



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What are life sustaining treatments?

Life sustaining treatments replace or support bodily functions that are no longer working. When people have treatable conditions, life sustaining treatments are used temporarily until the illness or disease can be stabilized and the body can resume normal functioning. At times, the body never regains the ability to function without life support or life-sustaining treatment.

Some common examples of life-sustaining treatments include:

- Intervention if your heart stops, including Cardiopulmonary Resuscitation (CPR).
- Intubation, the placement of a flexible plastic tube into the trachea (windpipe) to maintain an open airway, so you can breathe.
- Mechanical Ventilator, machine assisted breathing.
- Dialysis, the clinical purification of blood by a machine that substitutes for the normal function of the kidneys.
- Antibiotics, to treat infections.
- Artificial nutrition and hydration, liquid food or water that is medically supplied by a tube into your nose, or directly into your stomach, intestine, or veins.

How do I make my wishes document legal? Do I have to?

In order to make your wishes document a legal document, you and at least 2 witnesses must sign it. Witnesses cannot be your care providers, or the health care decision makers you have named on your directive. Alternatively, you can have your wishes document notarized.

The main benefit of making your wishes document legal (having it signed with witnesses or notarized) is in resolving conflict among your loved ones regarding medical decisions on your behalf. This situation is not very common, and it is up to you to decide whether making your document legal is important given your circumstances.

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How do I make my wishes document legal? Do I have to? (cont.)

Is my wishes document valid in any state, at any health care facility?

While each state usually has a specific advance care plan form and guidelines on how they are followed, the differences from state to state are minimal. While specifics may be slightly different from state to state, it is important to remember that any documentation of your preferences is better than none. Your document will be extremely useful in helping to guide decision making at any health care facility in any state.

How do I make sure my advance directive is available?

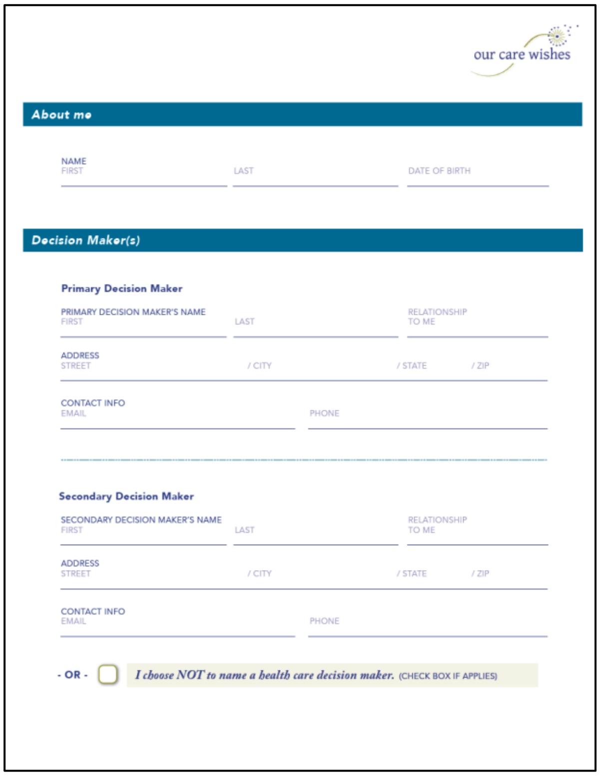
The most current, and available, document is the one that will be used by your care providers. Your nurse or provider will help get your document into your medical record so it is accessible to your care team. If you want to update your preferences, you can ask your provider to bring you another Our Care Wishes document. When you sign a document, it invalidates and overrides all past documents, including those made through any other service or platform.

How do I start a conversation about my preferences?

Any type of conversation that involves thinking about end of life can be difficult. It is important to remember that this is not a conversation about death but about how you want to live. It is an opportunity to discuss what is important to you with the people you care about. Talking about your preferences can greatly reduce the burden on your loved ones if they ever have to make health care decisions for you.

Who should I share my wishes document with?

You should share your document with your health care decision maker(s), loved ones who would want to make sure your wishes were followed, and care providers who can also help answer any questions you may have. Remember to follow up with a conversation with the people you share your document with. A little conversation goes a long way in terms of clarifying any questions they may have about the preferences you have recorded.



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About me

NAME FIRST ______ LAST ______ DATE OF BIRTH ______

Decision Maker(s)

Primary Decision Maker

PRIMARY DECISION MAKER'S NAME FIRST ______ LAST ______ RELATIONSHIP TO ME ______

ADDRESS STREET ______ / CITY ______ / STATE ______ / ZIP ______

CONTACT INFO EMAIL ______ PHONE ______

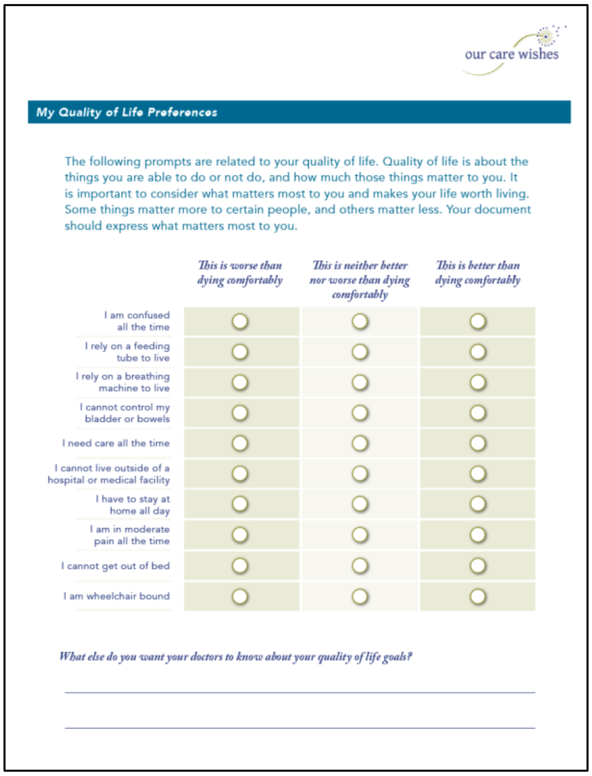
Secondary Decision Maker

SECONDARY DECISION MAKER'S NAME FIRST ______ LAST ______ RELATIONSHIP TO ME ______

ADDRESS STREET ______ / CITY ______ / STATE ______ / ZIP ______

CONTACT INFO EMAIL ______ PHONE ______

- OR - ☐ *I choose NOT to name a health care decision maker.* (CHECK BOX IF APPLIES)



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My Quality of Life Preferences

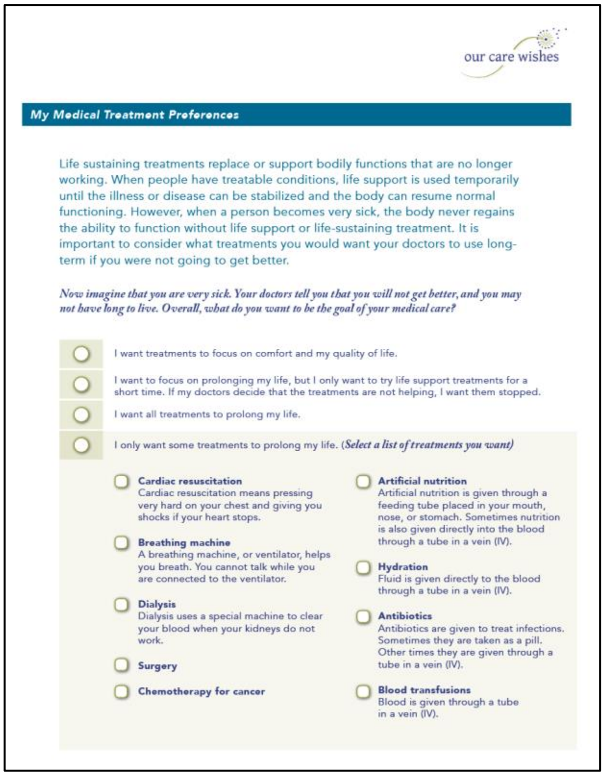
The following prompts are related to your quality of life. Quality of life is about the things you are able to do or not do, and how much those things matter to you. It is important to consider what matters most to you and makes your life worth living. Some things matter more to certain people, and others matter less. Your document should express what matters most to you.

	This is worse than dying comfortably	*This is neither better nor worse than dying comfortably*	*This is better than dying comfortably*
I am confused all the time	○	○	○
I rely on a feeding tube to live	○	○	○
I rely on a breathing machine to live	○	○	○
I cannot control my bladder or bowels	○	○	○
I need care all the time	○	○	○
I cannot live outside of a hospital or medical facility	○	○	○
I have to stay at home all day	○	○	○
I am in moderate pain all the time	○	○	○
I cannot get out of bed	○	○	○
I am wheelchair bound	○	○	○

What else do you want your doctors to know about your quality of life goals?

______

______



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My Medical Treatment Preferences

Life sustaining treatments replace or support bodily functions that are no longer working. When people have treatable conditions, life support is used temporarily until the illness or disease can be stabilized and the body can resume normal functioning. However, when a person becomes very sick, the body never regains the ability to function without life support or life-sustaining treatment. It is important to consider what treatments you would want your doctors to use long-term if you were not going to get better.

Now imagine that you are very sick. Your doctors tell you that you will not get better, and you may not have long to live. Overall, what do you want to be the goal of your medical care?

○ I want treatments to focus on comfort and my quality of life.

○ I want to focus on prolonging my life, but I only want to try life support treatments for a short time. If my doctors decide that the treatments are not helping, I want them stopped.

○ I want all treatments to prolong my life.

○ I only want some treatments to prolong my life. (*Select a list of treatments you want)*

☐ **Cardiac resuscitation**
Cardiac resuscitation means pressing very hard on your chest and giving you shocks if your heart stops.

☐ **Breathing machine**
A breathing machine, or ventilator, helps you breath. You cannot talk while you are connected to the ventilator.

☐ **Dialysis**
Dialysis uses a special machine to clear your blood when your kidneys do not work.

☐ **Surgery**

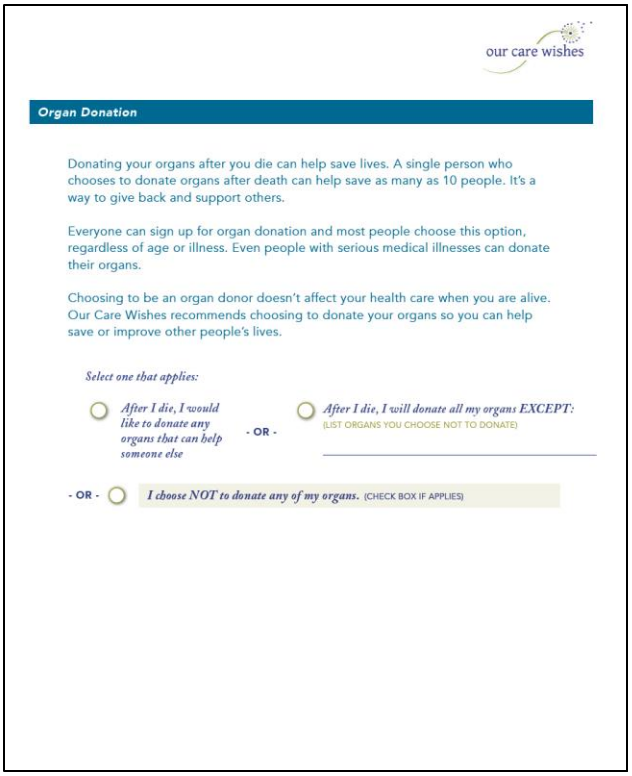
☐ **Chemotherapy for cancer**

☐ **Artificial nutrition**
Artificial nutrition is given through a feeding tube placed in your mouth, nose, or stomach. Sometimes nutrition is also given directly into the blood through a tube in a vein (IV).

☐ **Hydration**
Fluid is given directly to the blood through a tube in a vein (IV).

☐ **Antibiotics**
Antibiotics are given to treat infections. Sometimes they are taken as a pill. Other times they are given through a tube in a vein (IV).

☐ **Blood transfusions**
Blood is given through a tube in a vein (IV).



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Organ Donation

Donating your organs after you die can help save lives. A single person who chooses to donate organs after death can help save as many as 10 people. It's a way to give back and support others.

Everyone can sign up for organ donation and most people choose this option, regardless of age or illness. Even people with serious medical illnesses can donate their organs.

Choosing to be an organ donor doesn't affect your health care when you are alive. Our Care Wishes recommends choosing to donate your organs so you can help save or improve other people's lives.

Select one that applies:

○ *After I die, I would like to donate any organs that can help someone else* - OR - ○ *After I die, I will donate all my organs EXCEPT:* (LIST ORGANS YOU CHOOSE NOT TO DONATE) ____________

- OR - ○ *I choose NOT to donate any of my organs.* (CHECK BOX IF APPLIES)

On behalf of myself, my executors and heirs, I hold my health care decision maker and my health care providers harmless and indemnify them against any claim for their good faith actions in recognizing my health care decision maker's authority or in following my treatment instructions.

I, having carefully read this document, have signed it this ________ (DAY) *day of* ____________________ (MONTH AND YEAR), *revoking all previous health care powers of attorney and health care treatment instructions.*

YOUR SIGNATURE
(SIGN HERE) ____________________

YOUR NAME
(PRINT HERE) ____________________

WITNESSES
WITNESSES MUST BE AT LEAST 18 YEARS OF AGE, KNOW YOU, AND SEE YOU SIGN THIS FORM. WITNESSES CANNOT BE YOUR HEALTH CARE DECISION MAKER OR HEALTH CARE PROVIDER.

By signing, I promise that ____________________ (APPLICANT'S FULL NAME) *signed this form while I watched. He/she was thinking clearly and was not forced to sign it.*

WITNESS #1
SIGNATURE ____________________

FIRST NAME: ____________ LAST NAME ____________

CITY ____________ STATE ________ ZIP CODE ________

WITNESS #2
SIGNATURE ____________________

FIRST NAME: ____________ LAST NAME ____________

CITY ____________ STATE ________ ZIP CODE ________

Note: Permission for use granted by designer (M. Van Der Tuyn, personal communication, April 13, 2023). Citations: Practice Site, 2023; Mea et al., 2022

Appendix B

External and Internal Evaluations

Figure B1

Driver Diagram

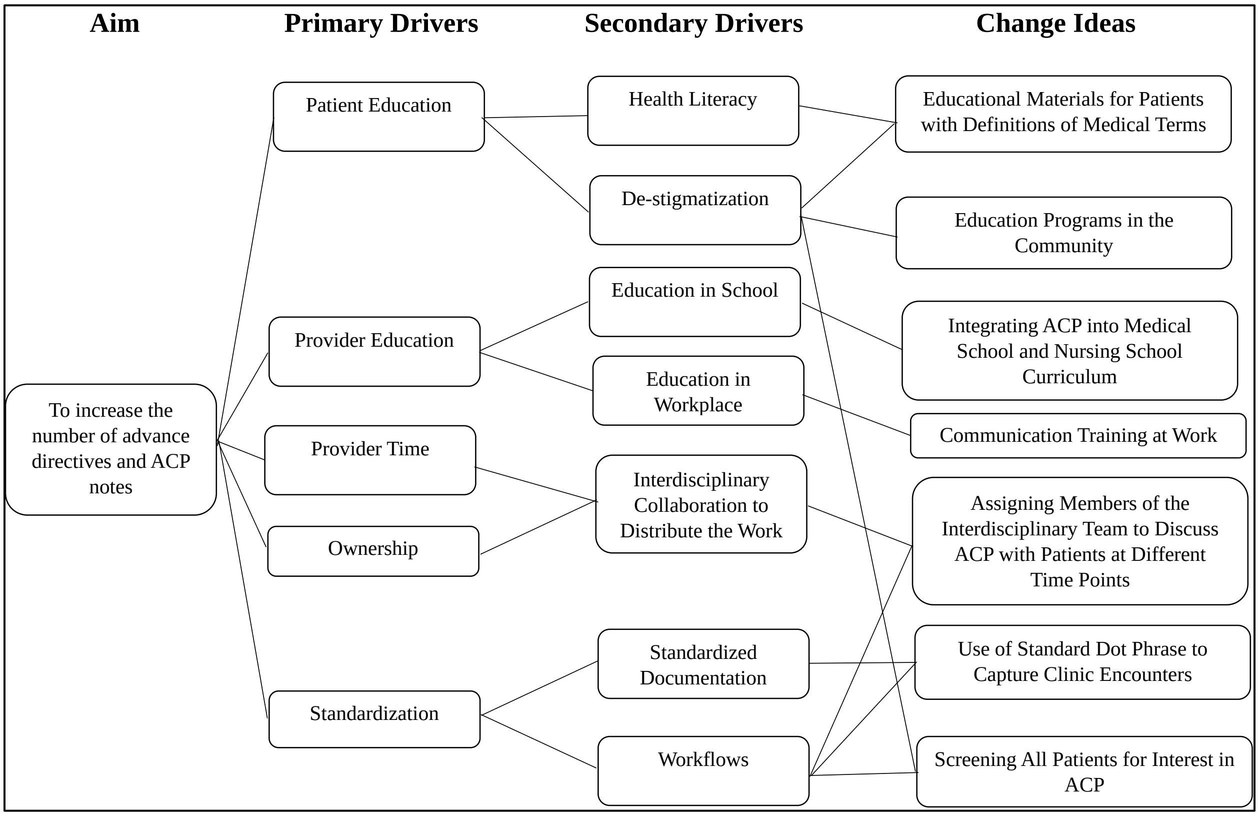


Figure B2

SWOT Analysis

	Helpful To achieving the objective	**Harmful** To achieving the objective
Internal Origin {Attributes of the organization}	**Strengths** • Leadership support for nursing autonomy • Pre-existing ACP program inpatient • High patient volume • Physician experience in serious illness conversations • Train the trainer City of Hope Communication training • Integrated palliative care teams • Organizational focus on patient-centeredness and ACP • Standardized documentation in EHR • Existing telehealth capabilities	**Weaknesses** • Staffing • Limited time for new projects • Inconsistent practices for ACP dependent on physician • Medical assistants not consistently assigned to clinic • IT needs proof of concept before implementing changes • Staff burnout and turnover • Discomfort with ACP
External Origin {Attributes of the organization}	**Opportunities** • Establishing ACP as a nurse competency within the full scope of practice of an RN • Political support • Patient expectations for provider-initiated ACP • Reimbursement codes for ACP • Proven decreased costs with early ACP provides evidence for institutional support of the program.	**Threats** • Avoidance of death conversations in society • Expectation of life-prolonging care the norm • Physician identity • Normalization of late ACP • Economic impacts of COVID

Appendix C

Evidence Table

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
1	Bakitas, M.A., et al. (2015). Early versus delayed initiation of concurrent palliative oncology care: Patient outcomes in the ENABLE III randomized controlled trial	Randomized controlled trial, single blind	n=207 oncology patients seen at 4 outpatient clinics, Early group seen within 60 days of diagnosis, n=104, late group seen over 12 weeks after diagnosis, n= 103.	ENABLE III where trained nurses had six weekly phone calls with patients guided by a manual. These sessions discussed advance care planning, life review, and symptom management.	No statistically significant difference in quality of life or length of life. Early ACP was associated with lower levels of hospitalization, ICU admissions, and ED visits at end-of-life, but did not reach statistical significance.	Baseline, 6 weeks, 12 weeks, 24 weeks, and every 12 weeks after until patient death or through study end. Quality of life (FACIT-Pal and QUAL-E) Depression (CES-D) One year survival Resource use and location of death	Small sample size that does not meet power increases the likelihood of type II error. The study may not have been long enough to detect significant changes. External generalizability may be limited because it was only studied in the New England area. Patients in the late group could have been referred to palliative care as standard care, which could dilute treatment impact.	Level I Low Quality	Main reason it is low quality is the sample size not meeting power.
2	Desai, A.V., et al. (2018). 1-2-3 project: A quality	Quality improvement	n=58, outpatient GI and MDS oncology	PDSA. Interdisciplinary intervention with later visits driven by nurses. Visit 1:	Discussions were determined to be feasible as they took 5-15 minutes to complete.	Feasibility measured via time for completion, completion of assessment, impact	As a quality improvement study, this study has limited contributions to	Level V High Quality	

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
	improvement initiative to normalize and systematize palliative care for all patients with cancer in the outpatient clinic setting		patients seen at 2 clinics.	Discuss palliative care and identify healthcare proxy with physician and nurse. Visit 2: Discuss understanding of treatment and illness with physician. Visit 3 and 4: Nurse-led discussion of patient values with a written summary of the ACP in the EHR. Nurses had targeting training and coaching from palliative care specialists.	Health care proxy designation increased from 40% at baseline to 86% post-intervention.	on clinic volume, patient commitment to the protocol, and referrals to palliative care.' Healthcare proxy designated	generalized knowledge.		
3	Feaster, A., et al. (2023). Educational intervention to enhance nursing comfort with advance care planning and	Quality improvement.	n=8, nurses at an outpatient hematology practice. Patient chart review seen at the	PDSA. Nurses watched a training video, reviewed policies, and procedures, and watched a narrated presentation about ACP. They also participated in a small group	Advance directive documentation increased from 0 pre-intervention to 63 post-intervention. Nurses reported higher levels of comfort with ACP post-intervention	2 weeks prior to intervention and 6 weeks post intervention. Kolcaba Advance Directive Comfort Questionnaire	Small sample size with limited generalizability as limited to one practice.	Level V High Quality	

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
	documentation		practice, pre-intervention (n=103), post-intervention (n=114).	meeting to discuss ACP.	with a large effect size.	Documented advance directive in the EHR.			
4	Epstein, A.S., et al. (2019). Giving voice to patient values throughout cancer: A novel nurse-led intervention	Quality Improvement	n=73 adult patients seen in the myelodysplastic disorder outpatient clinic or two GI cancer outpatient clinics	PDSA. Oncology nurses received training from a palliative nurse practitioner focused on communication strategies and values discussions. Patients received an initial handout about ACP followed by two meetings with the nurse to develop a values summary and end-of-life planning. The summary was sent to the patient’s oncologist to guide future ACP.	97% of patients found the nurse-driven approach acceptable. Nurses and doctors reported the program was efficient, feasible, and effective.	Three item acceptability questionnaire. Interviews with clinicians and patients about the feasibility and effectiveness.	The study has limited generalizability as it was limited to two types of cancer. Because the study is quality improvement, confounders were not controlled, which could have affected results.	Level V High Quality	Focus of this study was on normalizing the ACP discussion.
5	Gilligan, T., et al. (2017). Patient-clinician communication:	Consensus statement	n=47 studies in literature review of adult oncology	Systematic review of randomized controlled trials, systematic reviews, guidelines, and meta-analyses in	Recommendations: Clinicians should initiate end-of-life care discussions early during the illness course using a	Studies were included that examined communication between oncology	Much of the evidence on this topic is from quality improvement, so it was difficult to find	Level IV High Quality	N/A

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
	American Society of Clinical Oncology consensus guideline		patients. 23 experts participated in the first vote on the consensus with 19 participating in the final vote.	PubMed and the Cochrane Library. Modified Delphi consensus panel.	structured framework and include nurses in these discussions (recommendation strong). Clinicians should be trained in communication skills (strong).	patients and their providers.	extensive studies on ACP. Evidence had to be supplemented by expert opinion.		
6	Nguyen, H.Q., et al. (2018). Translation and evaluation of a lung cancer palliative care intervention for community practice.	Non-randomized two-group prospective sequential quasi-experimental design with tandem enrollment.	n=202, patients with lung cancer seen in 3 outpatient sites and their associated caregivers: intervention group n=84; control group n=118. Caregiver n=122; intervention group n=60; control group n=62.	After developing a care plan in consultation with an interdisciplinary team, nurses provided two tailored education sessions to patients and family caregivers including ACP and symptom management. Family caregivers received one extra session alone with the nurse. The nurse completed the intervention with a follow-up call for both patient and caregiver.	Advance directive documentation increased from 65% when exposed to general palliative care to 90% when exposed to the nurse-driven intervention. High rating of effectiveness of education by nurses. Improved quality of life scale scores for the intervention group at 1-month and 3-months as compared to the control group ($p<0.01$).	*Baseline, one month post, and three months post:* Quality of life measured by the FACT-L Spirituality distress as measured by FACT-SS. Distress measured by the distress thermometer. Healthcare utilization measured from medical records. Caregiver quality of life (City of Hope-QoL-Family Instrument),	Comparison group had already been exposed to palliative care, so levels of ACP documentation were already high before the intervention; this could diminish the difference between groups. This limits internal validity. Due to attrition, they were unable to meet power.	Level II Low Quality	Largely limited by sample size and attrition. Barely missed power.

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
						Preparedness Scale, Caregiver Burden Scale, Distress Thermometer.			
7	Lucas, A.H., & Dimmer, A. (2021). Palliative integration into ambulatory oncology: An advance care planning quality improvement project.	Quality Improvement	n=90 adult patients with advanced cancers seen in at clinics of 3 oncologists in an ambulatory oncology center	DMAIC. A clinical workflow of screening for interest in ACP through the supportive care and communication questionnaire, offering of an advance directive to patients by nurses during a clinical appointment, and follow-up with a clinical nurse specialist trained in palliative care. The workflow also included templated documentation in the electronic health record.	Evidence for nurse-driven approach. Also provides baseline numbers for evidence of current practice. At the start of the project, 17% of patients had an advance directive and 11% had a POLST. By the end of the study 58% of the patients had an advance directive (41% increase) and 40% had a POLST documented (29% increase). 88% of the patients had a documented surrogate decision maker at the end of the study (an increase by 45%). Decisional conflict decreased after meeting with the CNS with statistical significance ($p<.05$).	EHR review of advance directives, POLSTs, and documented preferred decision makers. SURE tool to assess decisional conflict before and after meeting with the CNS.	Confounders may be significant because the study was not controlled. Generalizability was limited because the participants were 91% white.	Level V High Quality	

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
8	Obel, J., et al. (2014). Outpatient advance care planning for patients with metastatic cancer: A pilot quality improvement study.	Quality improvement.	n=48 adult oncology patients with stage IV GI or thoracic cancers seen by two outpatient oncologists across 4 affiliated hospitals	PDSA. Oncology nurses, social workers, and providers were trained in ACP. On a patient’s first visit, oncology nurses screened patients for interest in ACP and then shared findings with the oncologist who followed up with the patient and provided an ACP booklet. At the second visit, the nurse discussed the ACP guidebook with the patient. Documentation with standardized notes.	69% of patients completed an advance directive and 46% documented their code status. In a comparison group of historical controls, only 1% of patients had an advance directive or code status recorded outpatient. 40% of historical controls patients had an advance directive recorded during an inpatient stay and 65% had their code status documented on the inpatient stay. The study also includes information about current practices. At baseline, 2% of outpatients had an advance directive with 29% completed while inpatient. Baseline notes were not standardized and difficult to find.	EHR review of advance directives and code status orders.	While it was interesting that they compared the study findings to historical controls, the study was not really controlled because they do not compare the characteristic of the control group to the study group. This is expected in a quality improvement study but does increase the risk of selection bias and confounders. They did not assess the feasibility of the study by speaking with staff.	Level V High Quality	
9	Olafsdottir, K.L. et al. (2018).	Phenomenological	n=7 patients with	ACP was integrated into the existing palliative	Patients reported the discussion should be completed early in	Semi-structured interviews with 6 phases of coding	While this study had excellent credibility,	Level III High Quality	

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
	Integrating nurse-facilitated advance care planning for patients newly diagnosed with advanced lung cancer.	Qualitative Study	advanced lung cancer seen in the outpatient setting	nurse duties through a structured booklet. Patients had three sessions with the nurse to discuss ACP.	diagnosis. Using a structured booklet to guide the conversation was helpful and helped patients discuss ACP with their loved ones. Patients might avoid doing ACP because it is uncomfortable, and they want to protect their families.	based on thematic analysis.	confirmability, dependability, and transferability, the main limitation was the small sample size. The researchers never confirmed that data saturation was reached.		
10	Rabow, M.W. et al. (2019). Advance care planning in community: An evaluation of a pilot 2-session nurse-led workshop.	Quasi-experimental single group pre-post design. Mixed methods.	n=35 outpatient oncology patients	In the first workshop, nurses educated patients on ACP with a packet of information. At the second session, patients and nurses discussed quality of life, life support, and the Five Wishes form. If the Five Wishes form was completed, it was notarized and scanned into the medical record.	Nurse-led workshop was feasible and acceptable per qualitative analysis. Patients' ACP engagement was higher post-intervention (p<.001). 65.4% of participants signed a new advance directive. Evidence of a workflow with education of nurses, notarization, and scanning the advance directive into the EHR.	Before and after workshops completion: ACP engagement survey After workshop: Semi-structured interviews with patients. Number of advance directives	The small sample size limits increases the likelihood of a type II error. Confounders may be present due to lack of control.	Level III Good Quality	
11	Sinclair, C., et al. (2017). Advance	Randomized controlled	n=149 patients with severe	Nurses trained in communication met with patients to	Advance directive documentation was 51% in the	Presence of an advance directive	The study did not meet power due to	Level I Low Quality	

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
	care planning uptake among patients with severe lung disease: A randomised patient preference trial of a nurse-led facilitated advance care planning intervention.	trial with preferential randomization, not blinded.	lung disease seen in the outpatient setting, including lung cancer (n=41). Intervention n = 106, control =43	discuss goals and values, set a healthcare proxy, and complete an advance directive.	intervention group and 14% in the control group post-intervention (p<.001). Patients in the intervention group (72%) had more discussions about ACP with their doctors than the control group (47%).	Documentation of a decision maker Discussion of end-of-life with family members Discussion of end-of-life with doctors. Chart audits for ACP notes.	recruitment challenges. Allowing patient preference in randomization limits internal validity but could increase external validity. Data collection was not blinded and could lead to bias.		
12	Schenker, Y., et al. (2015). Care management by oncology nurses to address palliative care needs: A pilot trial to assess feasibility, acceptability, and perceived effectiveness of the CONNECT intervention	Quasi-experimental single group pretest, posttest design	n=23 adult oncology patients with solid metastatic tumors seen in the outpatient setting.	Nurses were trained in palliative care, including ACP. Nurses met monthly with patients to discuss their shared care plan and then follow up with oncologists.	Acceptability was high as no patients withdrew from the study. 94% of patients were satisfied with the intervention. Further, these patients perceived it was effective. 100% of oncologists found the program to support symptom management, encourage ACP, provide emotional support, and coordinate care. Feasibility was high	Feasibility: Intervention fidelity as assessed by checklist completion. Acceptability: Percent of patients who dropped out of the program. Patient satisfaction with the program. Effectiveness: Patient report of helpfulness of the intervention. Oncologist reports of symptom	The study did have risks to internal validity as it was a pilot study without randomization, blinding, and had limited control. External validity was limited because the study population was 96% white. Feasibility may have been more effectively measured by surveying nurses or measuring the amount of time	Level II Good Quality	

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
					as intervention fidelity was 95-100%.	management, ACP, emotional support, and care coordination.	taken to complete the intervention.		
13	Sulmasy, D.P. (2017). The trial of ascertaining individual preferences for loved ones' role in end-of-life decisions (TAILORED) study: A randomized controlled trial to improve surrogate decision making.	Randomized controlled trial, not blinded	n=163, Outpatient GI oncology patients (n=97) and ALS (n=66) patients with a caregiver dyad	Nurse-driven meeting with patient and designated decision-maker to discuss patient values and assess congruence between the surrogate and patient. Control group received a handout on ACP and nutrition counseling.	Intervention group participants were more likely to endorse collaborative decision-making with their surrogate post-intervention when compared to the control group (p=.03).	At baseline and 8 weeks post-intervention: DCP scale to assess patient preferences for surrogate participation in decision making. Surrogate stress Surrogate self-efficacy Caregiver burden Surrogate satisfaction	This includes some data from non-cancer patients, but, per the study team, the outcomes did not vary between groups. Attrition bias from patient deaths. Short-term follow-up may have limited capture of differences.	Level I Good Quality	This study focuses on the surrogate more than the patient, but it does demonstrate that a nurse-driven intervention can affect ACP.
14	Walczak et al. (2017). Encouraging early discussion of life expectancy and end-of-life care: A randomised controlled trial of a	Single blind parallel group randomized controlled trial	n=110; intervention group = 61; control group = 49. Adult patients with advanced cancer seen in the outpatient	Two trained nurses offered one 45-minute communication support meeting focused on end-of-life in-person and one 15-minute telephone follow-up. These meetings included advance care planning.	Evidence for nurse-driven. Statistically significant difference in number of questions patients asked their providers about end-of-life care (p<0.05). No statistically significant difference found in patient report of meeting	*Baseline and 1 month post:* Number of questions asked about end-of-life and goals of care in subsequent physician visits (based on analysis of audio recording).	Because the study did not reach the recommender sample size based on power (n=140), the risk of Type 2 error is increased. The study had high attrition rates, particularly in the intervention group. This threatens	Level I Low Quality	While this is a low-quality study because power was not met, there are very few studies that meet power in this population given the high death rate.

Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes
	nurse-led communication support program for patients and caregivers.		setting affiliated with 6 cancer treatment centers.	Patients also received DVDs with information about advance care planning.	preferences, communication self-efficacy, or health-related quality of life (p>.05).	Patient report of meeting preferences for care (e.g., goal-concordant care). Communication self-efficacy (PEPPI). Quality of life (FACiT-Pal).	internal validity as those leaving the study or dying may have different characteristics than those remaining in the study. Contamination may have occurred between the intervention and control groups because oncologists saw patients in both groups and could have changed their approach to ACP based on the study.		

Appendix D

Methods Materials

Consent Form – Adapted from Practice Site Human Research Protections Program (n.d.)

Protocol Title:	Increasing Early Patient-Centered Advance Care Planning in an Outpatient Oncology Clinic through a Nurse-Driven Workflow: A Quality Improvement Project
Principal Investigator:	Ellen LeGrand Address Phone Number

You are being invited to participate in a quality improvement study. Your participation is voluntary, and you should only participate if you completely understand what the study requires and what the risks of participation are. You should ask the study team any questions you have related to participating before agreeing to join the study. If you have any questions about your rights as a participant at any time before, during or after participation, please contact the Institutional Review Board (IRB) at (XXX) XXX-XXXX for assistance.

The quality improvement study is being conducted to investigate the feasibility, appropriateness, and acceptability of a nurse-driven workflow in an outpatient breast cancer clinic.

You are being asked to take part in a quality improvement study because you are participating in the nurse-driven workflow. Your participation is voluntary which means you can choose whether or not to participate.

If you agree to join the study, you will be asked to complete the following procedures: respond to two online surveys about the acceptability, feasibility, and appropriateness of the nurse-driven workflow.

Your participation will last for 4 months. The project lead may follow-up with you for recommendations for change in future iterations of the project.

You may not personally benefit from participation, but the project may help support patient outcomes related to advance care planning. The most common risks of participation are distress from considering end-of-life in patients and time commitment.

The alternative to participation is not completing the surveys. Participation or not participating in the study will not affect your employment. Please note that there are other factors to consider before agreeing to participate such as additional procedures, use of your personal information, costs, and other possible risks not discussed here. If you are interested in participating, a member of the study team will review the full information with you. You are free to decline or stop participation at any time during or after the initial consenting process. If you decide to participate, you are free to leave the study at any time. You may do this by contacting the investigator noted at the beginning of this form. Withdrawal will not interfere with your employment.

There will be no compensation for participating in the survey. The survey will not cost you any money to participate.

Your information will be de-identified and stored on a secure, password protected server. Your information could be used to inform future iterations of the nurse workflow.

This study is expected to end after all participants have completed all the surveys, and all information has been collected. This study may also be stopped at any time because:

- The Primary Investigator feels it is necessary for the welfare, rights, or safety of participants. Such an action would not require your consent, but you will be informed if such a decision is made and the reason for this decision.
- The Sponsor or the study Principal Investigator has decided to stop the study.

If you have questions, concerns, or complaints regarding your participation in this quality improvement study or if you have any questions about your rights as a participant, you should speak with the Principal Investigator listed at the beginning of this form. If a member of the team cannot be reached or you want to talk to someone other than those working on the study, you may contact the IRB at the number at the beginning of this form.

If you decide to participate, you will be asked to complete the survey as evidence of consent to participation. A copy of the form will be given to you so that you can find contact information and answers to questions about the study.

Figure D1

Process Map for Nurse-Driven Workflow

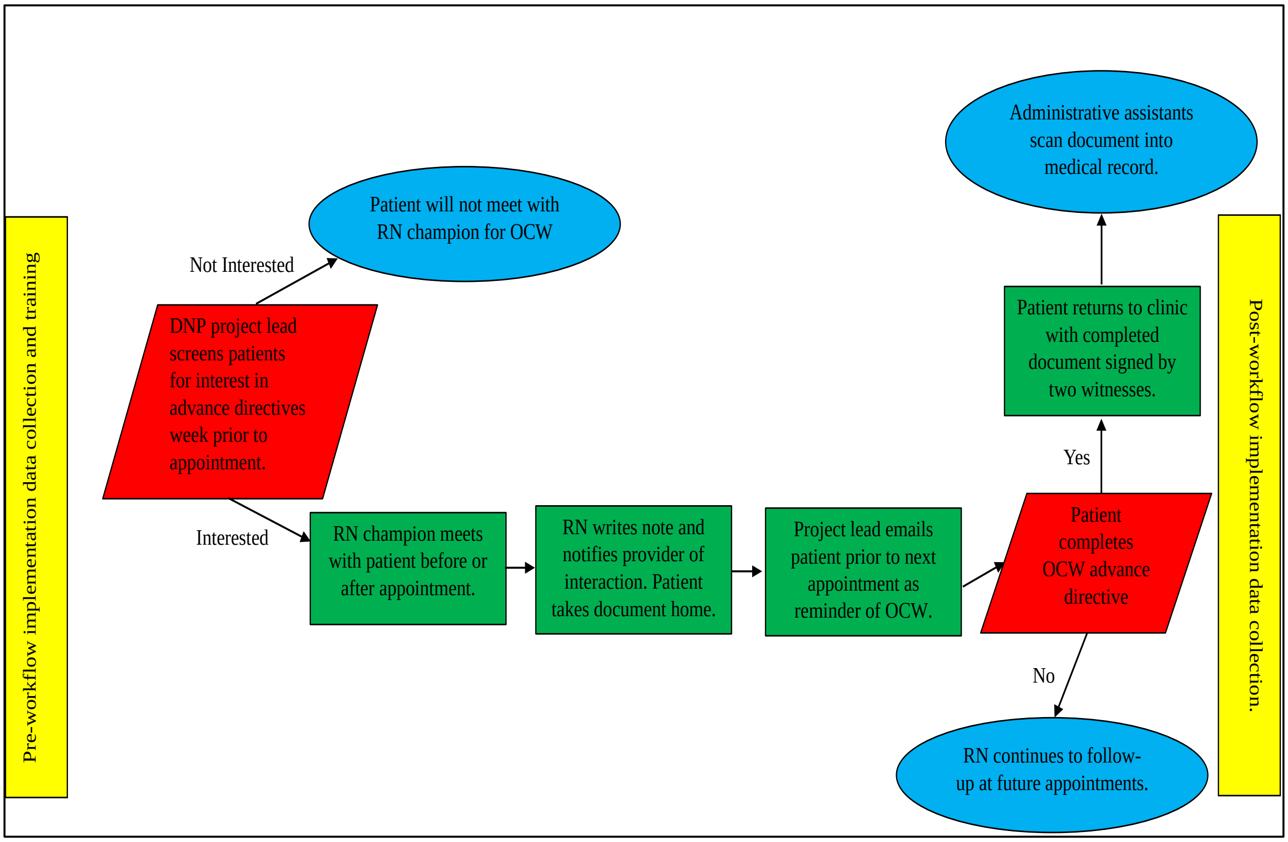
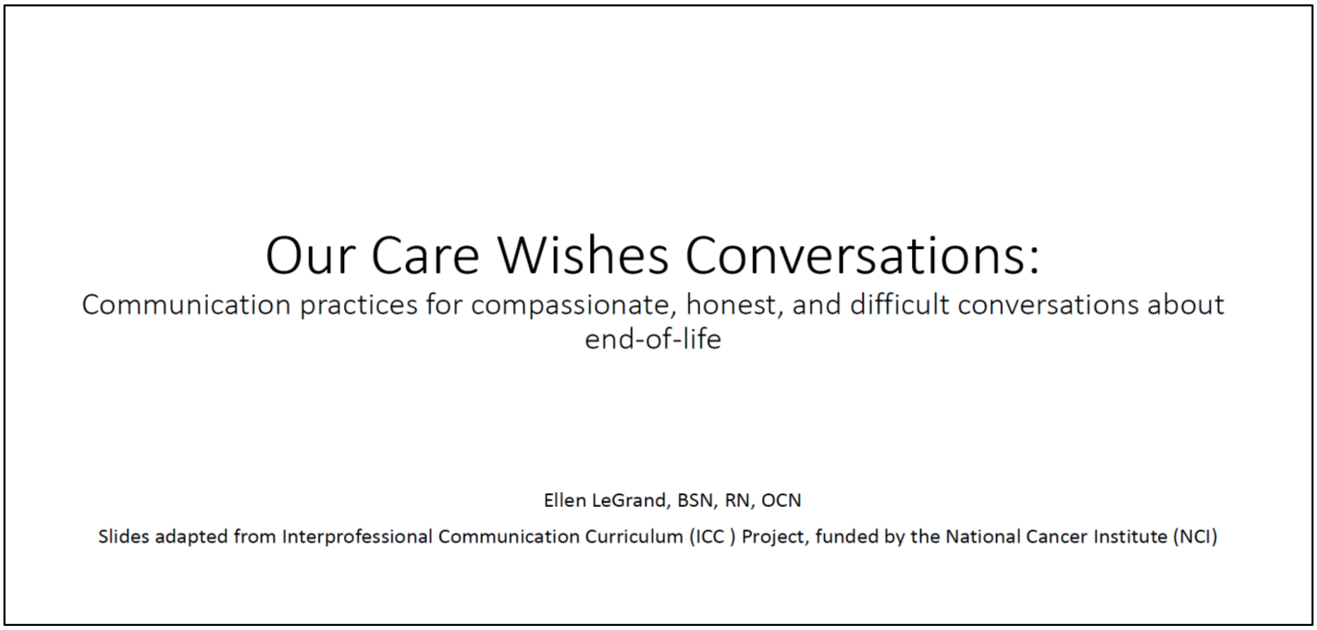


Figure D2

Training Slides

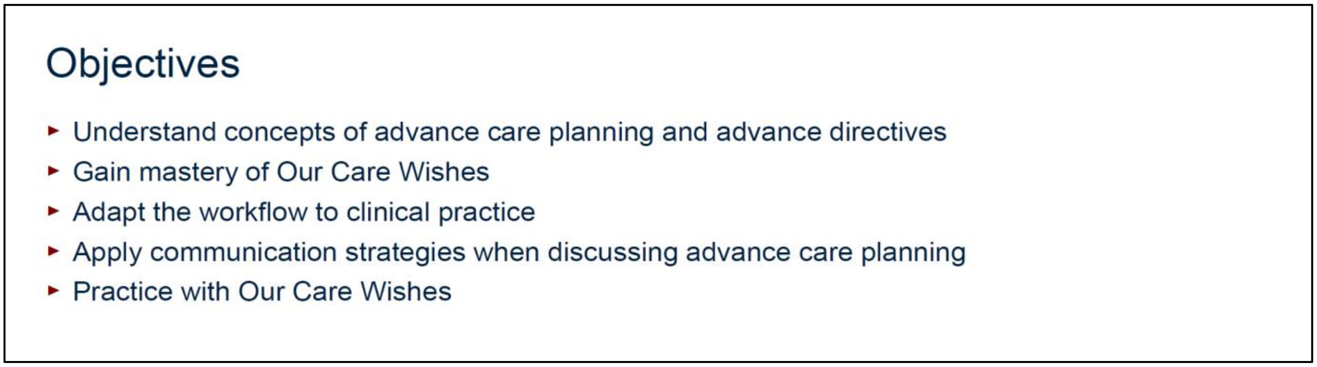


Our Care Wishes Conversations:

Communication practices for compassionate, honest, and difficult conversations about end-of-life

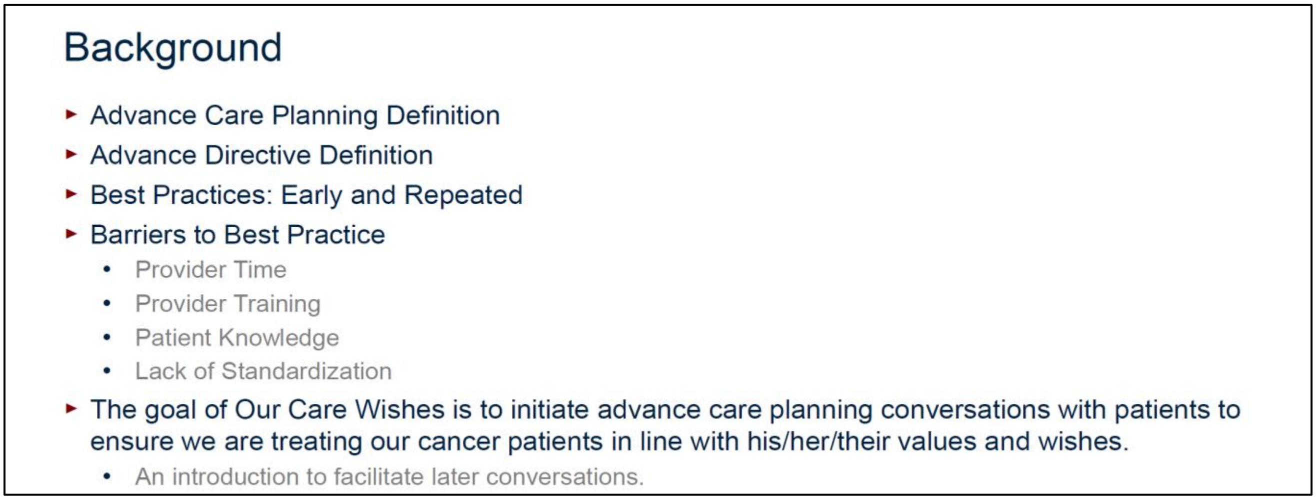
Ellen LeGrand, BSN, RN, OCN

Slides adapted from Interprofessional Communication Curriculum (ICC) Project, funded by the National Cancer Institute (NCI)



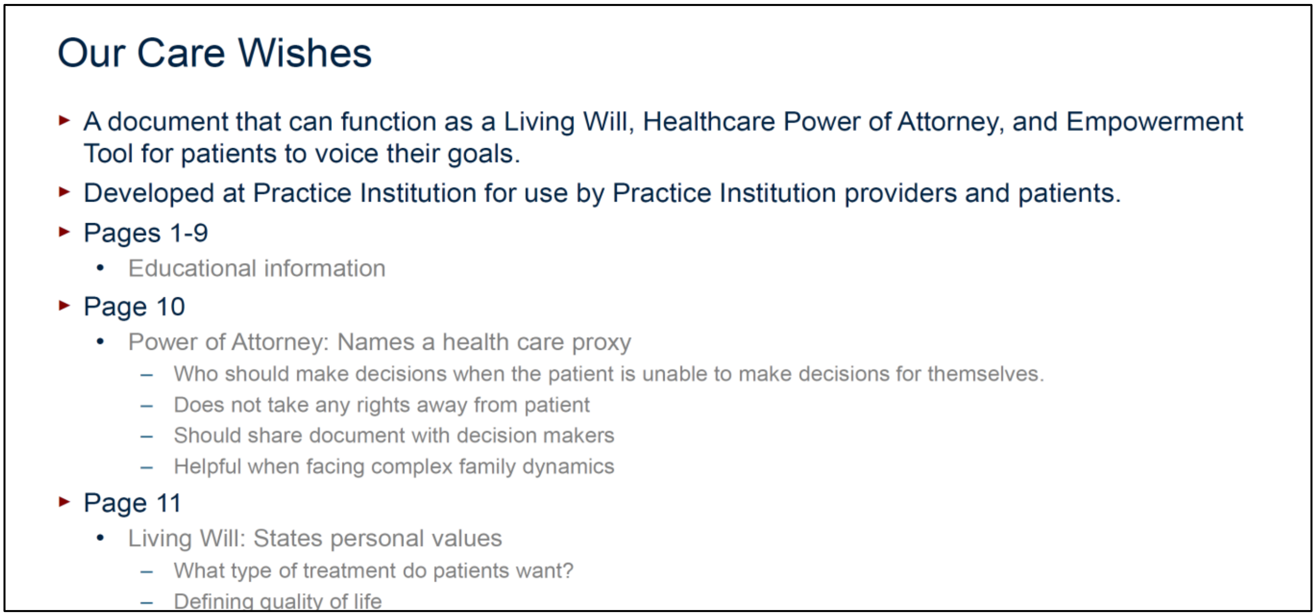
Objectives

- Understand concepts of advance care planning and advance directives
- Gain mastery of Our Care Wishes
- Adapt the workflow to clinical practice
- Apply communication strategies when discussing advance care planning
- Practice with Our Care Wishes



Background

- Advance Care Planning Definition
- Advance Directive Definition
- Best Practices: Early and Repeated
- Barriers to Best Practice
  - Provider Time
  - Provider Training
  - Patient Knowledge
  - Lack of Standardization
- The goal of Our Care Wishes is to initiate advance care planning conversations with patients to ensure we are treating our cancer patients in line with his/her/their values and wishes.
  - An introduction to facilitate later conversations.

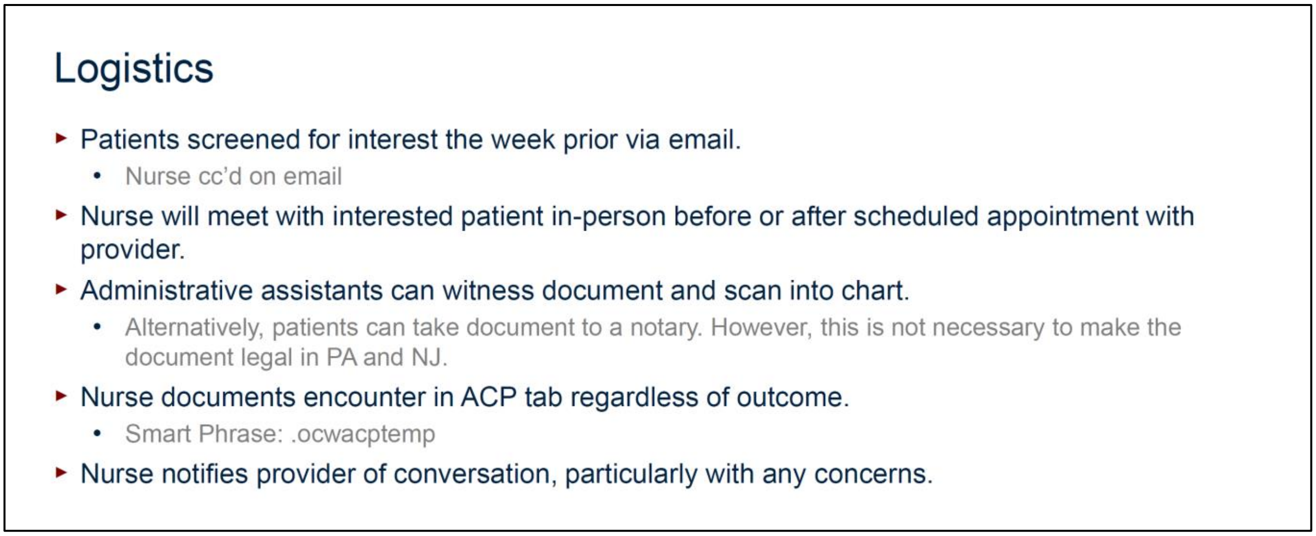


Our Care Wishes

- A document that can function as a Living Will, Healthcare Power of Attorney, and Empowerment Tool for patients to voice their goals.
- Developed at Practice Institution for use by Practice Institution providers and patients.
- Pages 1-9
  - Educational information
- Page 10
  - Power of Attorney: Names a health care proxy
    - Who should make decisions when the patient is unable to make decisions for themselves.
    - Does not take any rights away from patient
    - Should share document with decision makers
    - Helpful when facing complex family dynamics
- Page 11
  - Living Will: States personal values
    - What type of treatment do patients want?
    - Defining quality of life

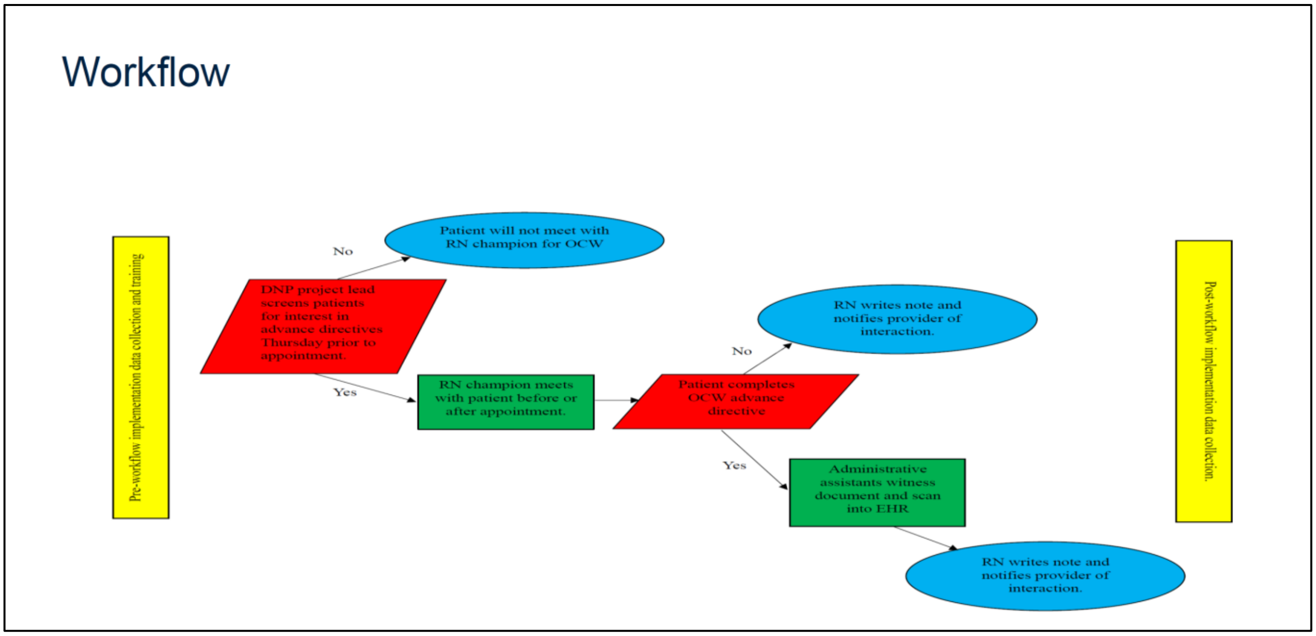
Our Care Wishes, cont’d

- Page 12
  - Continued living will
  - Code status
- Page 13
  - Organ donation
- Page 14
  - Signatures
  - Two witnesses create a legal document in PA and NJ.
  - Witnesses cannot be someone who could potential provider healthcare services to be patient.
- Free tool available in print: https://www.practiceinstitute.org/-/media/documents%20and%20audio/patient%20forms/health%20system/ocw_print_workbook_2022.ashx?la=en.



Logistics

- Patients screened for interest the week prior via email.
  - Nurse cc’d on email
- Nurse will meet with interested patient in-person before or after scheduled appointment with provider.
- Administrative assistants can witness document and scan into chart.
  - Alternatively, patients can take document to a notary. However, this is not necessary to make the document legal in PA and NJ.
- Nurse documents encounter in ACP tab regardless of outcome.
  - Smart Phrase: .ocwacptemp
- Nurse notifies provider of conversation, particularly with any concerns.



Workflow

Pre-workflow implementation data collection and training

DNP project lead screens patients for interest in advance directives Thursday prior to appointment.

No

Patient will not meet with RN champion for OCW

Yes

RN champion meets with patient before or after appointment.

Patient completes OCW advance directive

No

RN writes note and notifies provider of interaction.

Yes

Administrative assistants witness document and scan into EHR

RN writes note and notifies provider of interaction.

Post-workflow implementation data collection.

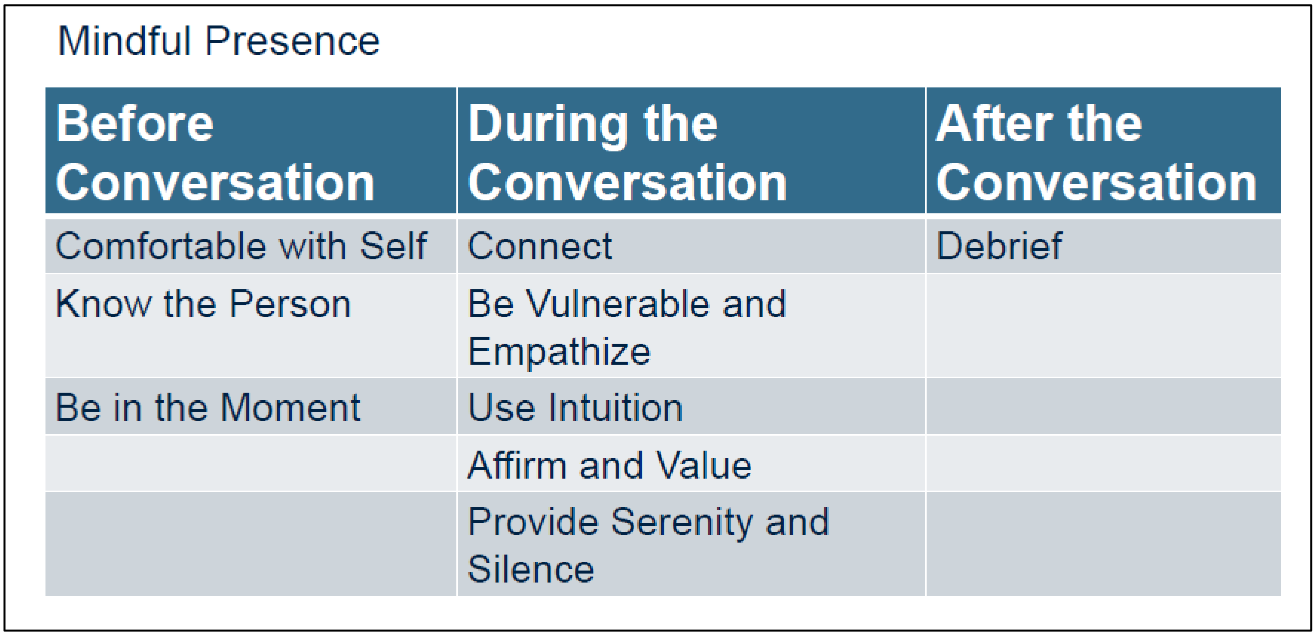
Documentation Example

- **Our Care Wishes Advance Care Planning**
- This writer facilitated a conversation with patient and family utilizing the Our Care Wishes document.
- The interaction included: providing information, answering questions, following up on prior conversations, documenting the patient's wishes.
- Outcome(s) of the conversation: the patient identified a health care agent / surrogate decision-maker, the patient completed the document, the Our Care Wishes document was witnessed, and the completed document was uploaded to the Media tab/other
- The patient designated FAMILY MEMBER NAME as their health care agent.
- Follow up needs: None
- This writer informed the inpatient provider: Yes
- If the patient completed the Our Care Wishes document, this writer informed the outpatient provider as needed: Yes
- Narrative/Notes: This writer provided education about Our Care Wishes. Patient agreeable to completing document. Patient was tearful throughout conversation. Nurse provided support and validated feelings. Patient expressed that dying at home was important. Document was signed by two witnesses. Medical team updated.
- Sources
- Our Care Wishes document
- Policy 1-12-65 Advance Directives

Questions???

Practicing with the Document

- Opportunity for active role play.
  - Select one participant as patient.
  - Select one participant as the nurse.
- DEBRIEF



Mindful Presence

Before Conversation	During the Conversation	After the Conversation
Comfortable with Self	Connect	Debrief
Know the Person	Be Vulnerable and Empathize	
Be in the Moment	Use Intuition	
	Affirm and Value	
	Provide Serenity and Silence	

Effective Communication: Communication Needs of our Patients

- Sense of control
- Disclosure of feelings
- Verbalization of fears
- Discussion about meaning of life
- Loss of self

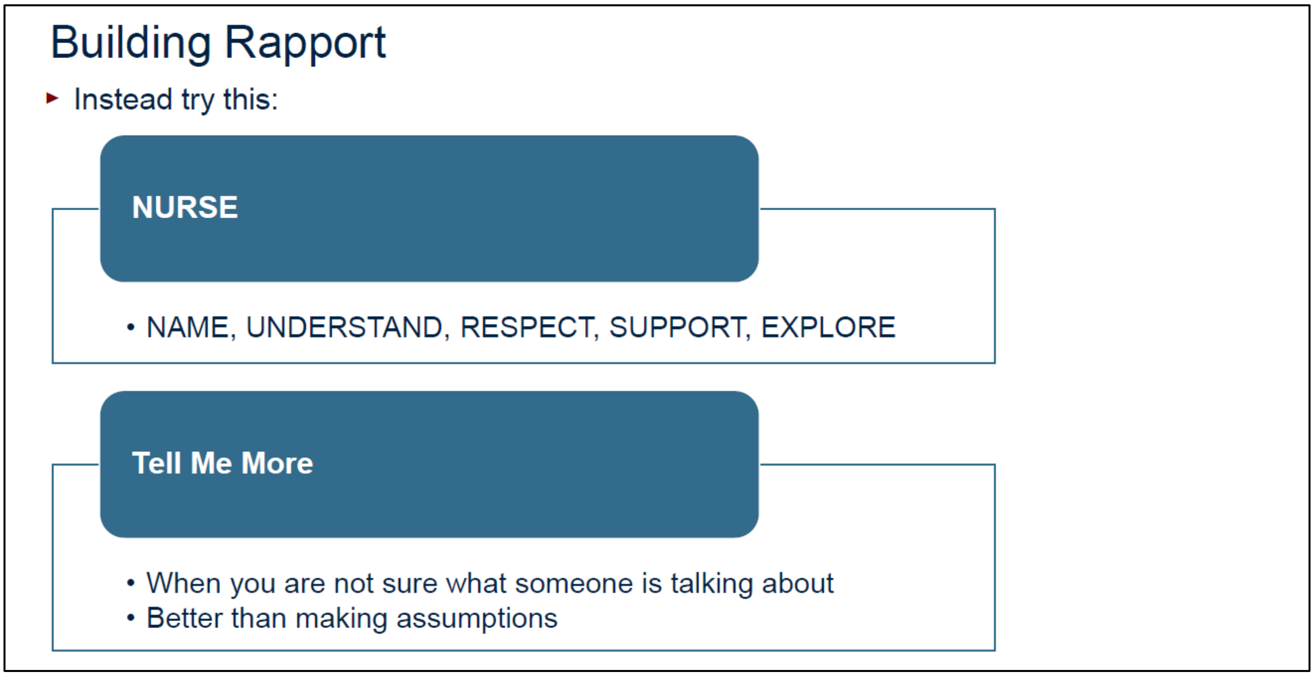
Izumi, 2017; Seccareccia et al., 2015; Stajduhar & Dionne-Odom, 2019

Starting the Conversation: Ask-Tell-Ask

https://player.vimeo.com/video/434022634

Building Rapport

- What Numbing/Avoiding Feelings Can Look Like:
  - Turning to avoidance when feeling uncomfortable
    - “I wanted you to have this document called “Our Care Wishes. Here it is. Let me know if you have any questions.” *Exits room*
    - It’s not a big deal to fill this out.
  - Standing Instead of Sitting
    - Sitting shows patients you are willing to stay. You communicate you are willing to tolerate this discomfort and will not flee.
  - Racing through the document.
  - Using euphemisms for the word death.
  - Asking “yes” or “no” questions when there is an opportunity to ask an open-ended question.



Building Rapport

- Instead try this:

NURSE

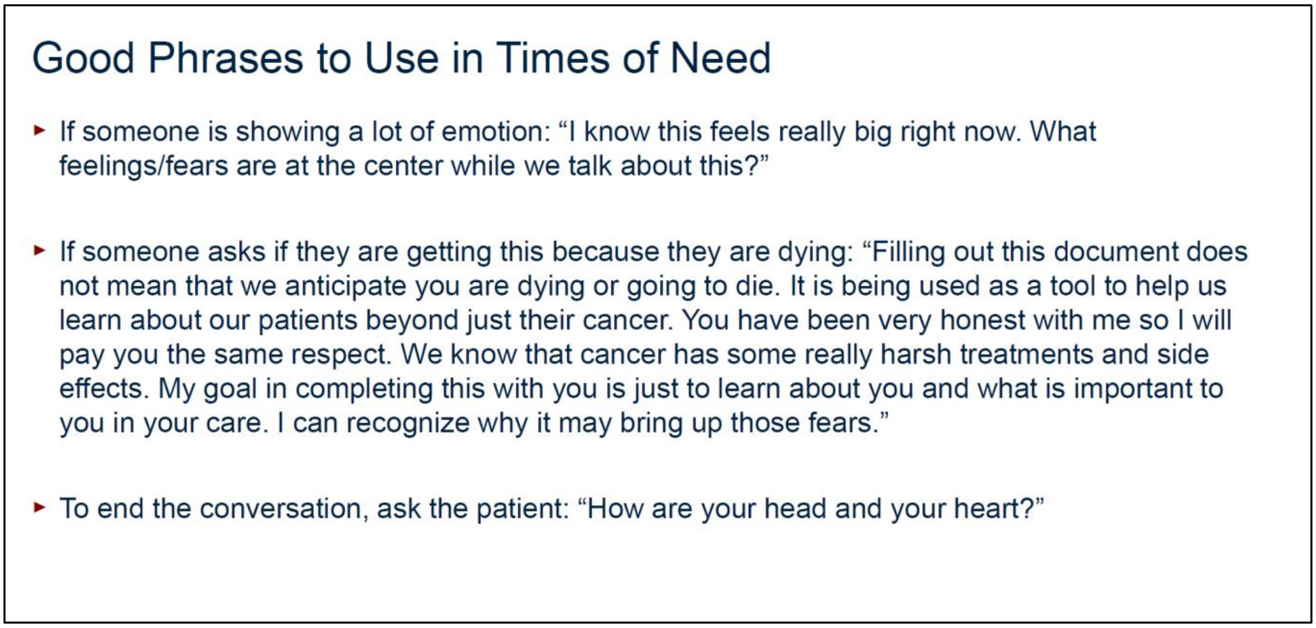
- NAME, UNDERSTAND, RESPECT, SUPPORT, EXPLORE

Tell Me More

- When you are not sure what someone is talking about
- Better than making assumptions

NURSE

https://player.vimeo.com/video/433985726



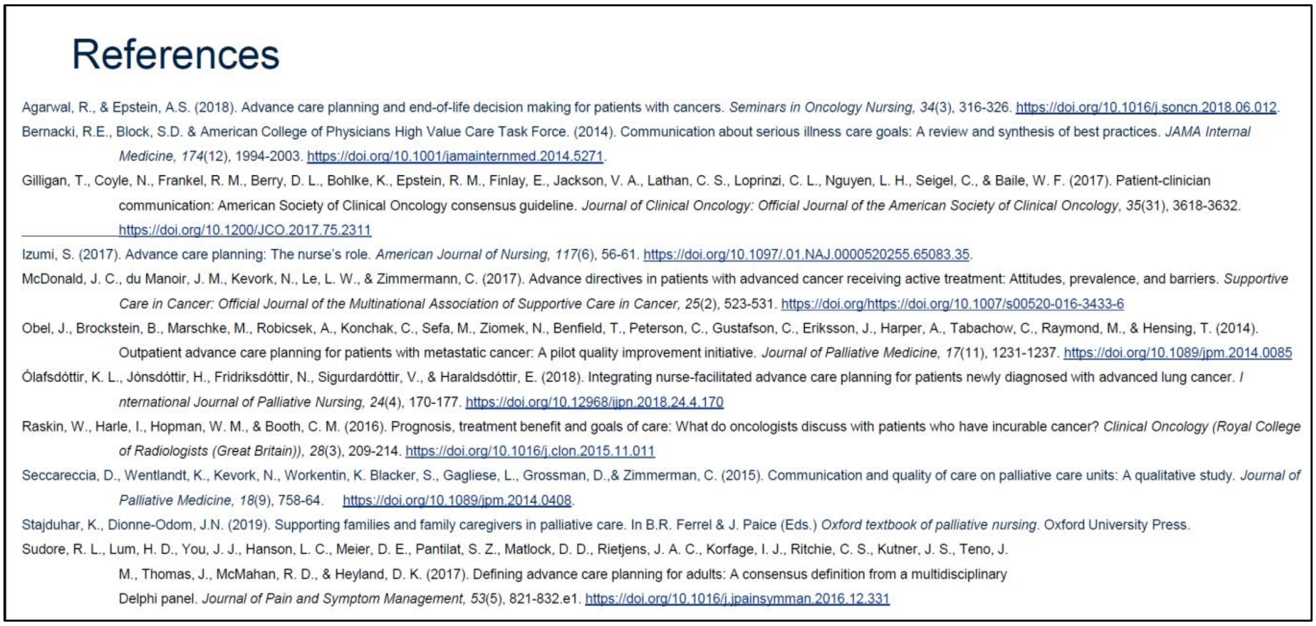
Good Phrases to Use in Times of Need

- If someone is showing a lot of emotion: “I know this feels really big right now. What feelings/fears are at the center while we talk about this?”
- If someone asks if they are getting this because they are dying: “Filling out this document does not mean that we anticipate you are dying or going to die. It is being used as a tool to help us learn about our patients beyond just their cancer. You have been very honest with me so I will pay you the same respect. We know that cancer has some really harsh treatments and side effects. My goal in completing this with you is just to learn about you and what is important to you in your care. I can recognize why it may bring up those fears.”
- To end the conversation, ask the patient: “How are your head and your heart?”

Practicing with the Document Again!

- Switch roles.
- Try using some of the tools we addressed in the second half of the presentation.

▸ *Questions?*



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Note: "The Interprofessional Communication Curriculum (ICC) Project is a national communication training program for interprofessional oncology clinicians by City of Hope (COH) designed to enhance communicaiton skills in oncology. The ICC Project is funded by the National Cancer Institute (NCI). Further information about the ICC Project can be found at www.cityofhope.org/ICC" (City of Hope & National Cancer Institute, 2021, pg. 1). Written approval of use obtained (H. Buller, personal communication, April 14, 2023; B. Simons, personal communication, April 14, 2023).

Workflow in presentation differs from final workflow: updates occurred based on team feedback.

Screening Email

Dear {Patient Name},

As your healthcare team, we strive to provide patient-centered care. One of the ways patients can direct their own care is through advance care planning. Advance care planning involves discussing how to align your goals and values with future medical care. An advance directive is one way to identify a healthcare power of attorney and document your goals and values. A sample advance directive called Our Care Wishes is available at this link from Practice Institution: https://www.practiceinstitute.org/for-patients-and-visitors/patient-information/patient-rights-and-safety/advance-directives.

In order to normalize these conversations, we are offering all patients seen by Dr. {Last Name} an opportunity to discuss an advance directive with a nurse at your upcoming visit. If you are interested in meeting with the nurse, please respond to this message or notify your provider at your upcoming appointment.

Standardized Dot Phrase

This writer facilitated a conversation with patient {and family} utilizing the Our Care Wishes document.

The interaction included: {providing information, answering questions, following up on prior conversations, documenting the patient's wishes}.

Outcome(s) of the conversation: {the patient identified a health care agent / surrogate decision-maker, the patient completed the document, the Our Care Wishes document was witnessed, and the completed document was uploaded to the Media tab/other}.

The patient designated {NAME} as their health care agent.

Follow up needs:

If the patient completed the Our Care Wishes document, this writer informed the outpatient provider as needed: {Yes/No}

Narrative/Notes:

Appendix E

Data Collection Materials

Table E1

Advance Directives Measure

Measure	Measure Type*	Data Source	Sampling Method	Timing/Frequency
Number of advance directives in the EHR.	Outcome	Electronic health record	Epic query/Manual extraction	Baseline, Weekly, End of Project
Standard Measure?**	*No*			
Numerator	Number of advance directives scanned in the EHR.			
Denominator or Population***	Number of patients seen by the two providers			
Exclusions	None			
Calculation/Statistic(s)	Percent, Control Chart			
Goal/Benchmark	At least 20% above baseline (goal: 11.856%) Evidence of special cause.			

Table E2

Number of ACP Notes by Physicians and Nurses

Measure	Measure Type*	Data Source	Sampling Method	Timing/Frequency
Number of ACP notes by physicians and nurses	Outcome	Electronic health record	Epic query/Manual extraction	Baseline, Weekly, End of Project
Standard Measure?**	*No*			
Numerator	Number of ACP notes signed by physicians and nurses.			
Denominator or Population***	Number of patients seen by two participating physicians			
Exclusions	None			
Calculation/Statistic(s)	Percent, Control Chart			
Goal/Benchmark	At least 20% above baseline (goal: 21.42%), Evidence of special cause.			

Table E3

Screening Emails Leading to In-Person Interactions

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Number of screening emails read	Process	Electronic health record	Epic query/Manual extraction	Weekly, End of Project
Standard Measure?**	*No*			
Numerator	Number of emails read.			
Denominator or Population***	Number of screening emails sent.			
Exclusions	None			
Calculation/Statistic(s)	Percent			
Goal/Benchmark	75%			

Table E4

Patient Interest

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Number of patients interested per screening emails	Process	Electronic health record	Epic query/Manual extraction	Weekly, End of Project
Standard Measure?**	*No*			
Numerator	Number of patients responding interested			
Denominator or Population***	Number of screening emails sent			
Exclusions	None			
Calculation/Statistic(s)	Percent			
Goal/Benchmark	25%			

Table E5

Number of Interested Patients Seen by Nurse Champions

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Number of In-Person Interactions per Interested Patients	Process	Electronic health record	Epic query/Manual extraction	Weekly, End of Project
Standard Measure?**	*No*			
Numerator	Number of nursing ACP notes supplemented by patients bringing advance directive from home			
Denominator or Population***	Number of interested patients			
Exclusions	None			
Calculation/Statistic(s)	Percent			
Goal/Benchmark	75%			

Table E6

Number of In-Person Interactions Leading to an Advance Directive

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Number of in-person interactions that led to an advance directive	Process	Electronic health record	Epic query/Manual extraction	Weekly, End of Project
Standard Measure?**	*No*			
Numerator	Number of advance directives.			
Denominator or Population***	Number of nursing ACP notes supplemented by patients bringing advance directive from home			
Exclusions	None			
Calculation/Statistic(s)	Percent			
Goal/Benchmark	25%			

Table E7

Scanned Advance Directives

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Number of Scanned Advance Directives per Completed Advance Directives	Process	Electronic health record	Epic query/Manual extraction	Weekly, End of Project

Standard Measure?**	*No*
Numerator	Number of advance directives completed
Denominator or Population***	Number of advance directives scanned into the chart
Exclusions	None
Calculation/Statistic(s)	Percent
Goal/Benchmark	100%

Table E8

Interdisciplinary Collaboration

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Physician ACP notes per nursing ACP notes	Process	Electronic health record	Epic query/Manual extraction	Weekly, End of Project

Standard Measure?**	*No*
Numerator	Number of physician ACP notes
Denominator or Population***	Number of nursing ACP notes supplemented by patients bringing advance directive from home
Exclusions	None
Calculation/Statistic(s)	Percent
Goal/Benchmark	25%

Table E9

Project Feasibility

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Feasibility of Intervention Measure	Balancing	Physician and nurse Self-report	Survey	Beginning, End of Project
Standard Measure?**	*Yes*			
Numerator	Physician and nursing rating of feasibility			
Denominator or Population***	Involved physicians and nurses			
Exclusions	None			
Calculation/Statistic(s)	Raw Score			
Goal/Benchmark	Mean score >15, Intervention does not become less feasible over time.			

Table E10

Project Acceptability

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Acceptability of Intervention Measure	Balancing	Physician and nurse self-report	Survey	Beginning, End of project
Standard Measure?**	*Yes*			
Numerator	Physician and nursing rating of acceptability of the intervention			
Denominator or Population***	Involved physicians and nurses			
Exclusions	None			
Calculation/Statistic(s)	Raw Score			
Goal/Benchmark	Mean score > 15, Intervention does not lose acceptability over time.			

Table E11

Project Appropriateness

Measure	**Measure Type***	**Data Source**	**Sampling Method**	**Timing/Frequency**
Intervention Appropriateness Measure	Balancing	Physician and nurse self-report	Survey	Beginning, End of Project
Standard Measure?**	*Yes*			
Numerator	Physician and nursing rating of appropriateness of the intervention.			
Denominator or Population***	Involved physicians and nurses			
Exclusions	None			
Calculation/Statistic(s)	Raw Score			
Goal/Benchmark	Means score >15, Intervention does not lose acceptability over time.			

Table E12

Data Dictionary

Data Element	**Data Label**	**Data Type**	**Definition/Purpose**	**Data Values & Coding**
De-identified ID	id	Alpha-numeric	Each patient assigned a unique identification code.	N/A
Time of Data collection	Time	Categorical	To compare baseline to post-intervention.	1, baseline 2, post-project
Age of patient	Age	Continuous	To identify patient's age to allow comparison of advance directives and ACP notes based on age.	N/A
Age group of patient	Agroup	Categorical	Transformation of age from continuous variable to categorical to assist with descriptive statistics.	1, 18-24 2, 25-34 3, 35-44 4, 45-54 5, 55-64 6, 65-74 7, >75
Race of patient	Race	Categorical	To identify patient's race to allow	1, White 2, Black

			comparison of advance directives and ACP notes based on race.	3, American Indian or Alaska Native 4, Asian 5, Native Hawaiian or Other Pacific Islander 6, Other 7, Not Identified
If other race, identify	Other	Text	To identify if patient's describe different race.	N/A
Ethnicity of patient	Ethn	Categorical	To identify patient's ethnicity to allow comparison of advance directives and ACP notes based on ethnicity.	1, Hispanic or Latino 2, Not Hispanic or Latino 99, Not Identified
Cancer stage of patient	Stage	Categorical	To identify patient's cancer stage to allow comparison of advance directives and ACP notes based on cancer stage.	1, Pre-Cancerous (e.g., DCIS) 2, Stage 1 3, Stage 2 4, Stage 3 5, Stage 4 99, Not Identified
Does the patient have an advance directive scanned into the medical record?	Ademr	Categorical	To identify which patients have an advance directive in the medical record to compare baseline and post-project. To track the number of advance directives weekly. Outcome and Process Measures.	1, Yes 0, No
Does the patient have a nursing ACP note in the medical record?	N_acp	Categorical	To identify which patients have a nursing ACP note in the medical record to compare baseline and post-project. To	1, Yes 0, No

			track the number of nursing ACP notes weekly. Outcome and Process Measures	
Does the patient have a physician ACP note in the medical record?	P_acp	Categorical	To identify which patients have physician ACP note in the medical record to compare baseline and post-project. To track the number physician ACP notes weekly. Outcome Measure	1, Yes 0, No
Did the ACP note occur before or after the project start?	Acpaft	Categorical	To identify if ACP occurred after patients received a screening email.	1, Before 0, After
Total number of screening emails sent per week	Screen	Continuous	To track the number of screening emails sent.	N/A
Patient response	Interest	Categorical	Did the patient respond as interested?	1, Yes 0, No
Total number of advance directives either in chart or per patient report weekly	Adyn	Categorical	Does the patient have an advance directive either by their report or scanned into the chart?	1, Yes 0, No
Total number of patients bringing advance directive from home without nursing note	Nonote	Categorical	Did the patient meet with the nurse to bring their advance directive from home without a nursing note?	1, Yes 0, No
Total number of advance directives scanned in the chart weekly	Chart	Categorical	Does the patient have an advance directive scanned in the chart?	1, Yes 0, No
Total number of physician ACP notes weekly	Pacp	Categorical	Does the patient have an ACP note with the physician?	1, Yes 0, No

Total number of no-shows per week	Noshow	Continuous	To track the number of no-shows per week to demonstrate patient engagement. Process Measures.	N/A
Did the patient read the email in the portal?	read	Continuous	To track the number of unread emails per week to demonstrate patient engagement with patient portal. Process Measures	1, Yes 0, No
Nurse and Physician AIM, FIM, IAM	Role	Categorical	To identify if survey respondents are a nurse or physician. Balancing Measure.	1, Nurse 2, Physician
Acceptability question 1	Aim1	Categorical	The nurse-driven workflow meets my approval.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Acceptability question 2	Aim2	Categorical	The nurse-driven workflow is appealing to me.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Acceptability question 3	Aim3	Categorical	I like the nurse-driven workflow.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Acceptability question 4	Aim4	Categorical	I welcome the nurse-driven workflow.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree

				5, Completely agree
Appropriateness question 1	Iam1	Categorical	The nurse-driven workflow seems fitting.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Appropriateness question 2	Iam2	Categorical	The nurse-driven workflow seems suitable.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Appropriateness question 3	Iam3	Categorical	The nurse-driven workflow seems applicable.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Appropriateness question 4	Iam4	Categorical	The nurse-driven workflow seems like a good match.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Feasibility question 1	Fim1	Categorical	The nurse-driven workflow seems implementable.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Feasibility question 2	Fim2	Categorical	The nurse-driven workflow seems possible.	1, Completely disagree 2, Disagree

				3, Neither agree nor disagree 4, Agree 5, Completely agree
Feasibility question 3	Fim3	Categorical	The nurse-driven workflow seems doable.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Feasibility question 4	Fim4	Categorical	The nurse-driven workflow seems easy to use.	1, Completely disagree 2, Disagree 3, Neither agree nor disagree 4, Agree 5, Completely agree
Open ended comments	Com	Text	Please enter any comments or suggestions for the workflow, if any.	N/A

Note: AIM, FIM, and IAM received written approval for use in this project (B. Weiner, personal communication, April 18, 2023; Weiner et al., 2017).

Appendix F

GANTT Chart

Task	Assigned To	Progress	Start	End	Summer 2023	Fall 2023			Spring 2024	
Pre-Implementation										
IRB Approval	Project Lead	100%	6/1/23	8/1/23	🟪					
Baseline Data Collection	Project Lead	100%	8/1/23	9/1/23		🟪				
Implementation										
Train Nurse Champions	Project Lead, Nurse Champions	100%	9/1/23	9/8/23		🟪				
Train Administrative Assistants	Project Lead, Nurse Champions	100%	9/1/23	9/8/23		🟪				
Send Standardized Emails	Project Lead	100%	9/14/23	12/7/23			🟪	🟪		
Nurse Champions Meet with Patients	Nurse Champions	100%	9/18/23	12/15/23			🟪	🟪		
Monthly Team Check-ins	Project Lead, Nurse Champions, Physicians	100%	9/18/23	12/15/23			🟪	🟪		
Data Analysis										
Collect post-intervention data	Project Lead	100%	12/16/23	1/25/24				🟪	🟪	
Data Analysis	Project Lead	100%	1/25/24	2/28/24					🟪	
Dissemination and Sustainability										
Completion of Final Report	Project Lead	100%	1/6/24	4/20/24					🟪	🟪
Present Findings	Project Lead	100%	4/1/24	4/28/24						🟪
Discuss next stages of PDSA	Project Lead, Nurse Champions, Physicians	100%	4/1/24	4/28/24						🟪

Appendix G

Results

Table G1

Patient Demographics by Time Point and Total

	Pre-Project (n=577)	**Post-Project (n=563)**	**Total (n=1140)**
Age Group			
18-24	1 (0.2%)	2 (0.4%)	3 (0.3%)
25-34	18 (3.1%)	22 (3.9%)	40 (3.5%)
35-44	74 (12.8%)	66 (11.7%)	140 (12.3%)
45-54	138 (23.9%)	128 (22.7%)	266 (23.3%)
55-64	137 (23.7%)	155 (27.5%)	292 (25.6%)
65-74	146 (25.3%)	132 (23.4%)	278 (24.4%)
>75	63 (10.9%)	58 (10.3%)	121 (10.6%)
Race			
White	365 (63.3%)	358 (63.6%)	723 (63.4%)
Black	147 (25.5%)	140 (24.9%)	287 (25.2%)
American Indian or Alaska Native	0 (0%)	0 (0%)	0 (0%)
Asian	30 (5.2%)	22 (3.9%)	52 (4.6%)
Native Hawaiian or Pacific Islander	0 (0%)	1 (0.2%)	1 (0.1%)
Other	15 (2.6%)	19 (3.4%)	34 (3.0%)
Not Identified	20 (3.5%)	23 (4.1%)	43 (3.8%)
Ethnicity			
Hispanic or Latino	12 (2.1%)	12 (2.2%)	24 (2.1%)
Not Hispanic or Latino	553 (95.8%)	542 (96.3%)	1095 (96.1%)
Not Identified	12 (2.1%)	9 (1.6%)	21 (1.8%)
Cancer Stage			
Precancerous (e.g., DCIS)	32 (5.5%)	33 (5.9%)	65 (5.7%)
Stage 1	223 (38.6%)	212 (37.7%)	435 (38.2%)
Stage 2	115 (19.9%)	104 (18.5%)	219 (19.2%)
Stage 3	66 (11.4%)	78 (13.9%)	144 (12.6%)
Stage 4	141 (24.4%)	136 (24.2)	277 (24.3%)
Sex			
Female	574 (99.5%)	561 (99.7%)	1035 (99.5%)
Male	3 (0.5%)	2 (0.3%)	5 (0.5%)

Figure G1

Percentage of Advance Directive by Age Group Pre-Project and Post-Project

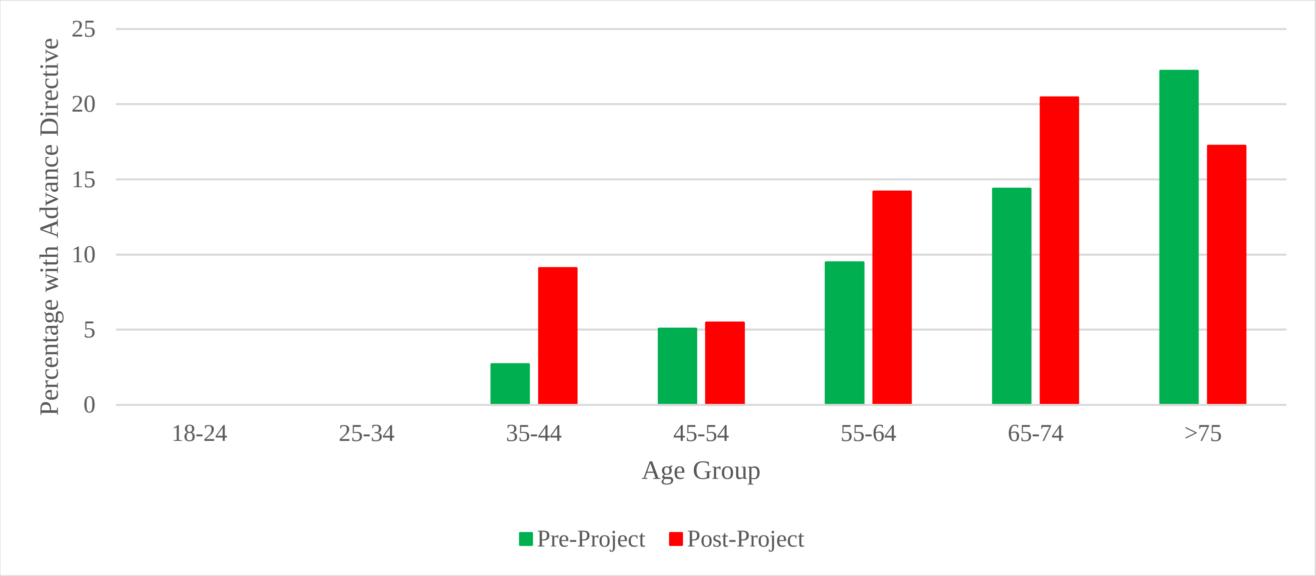


Figure G2

Percentage of ACP Notes by Age Group Pre-Project and Post-Project

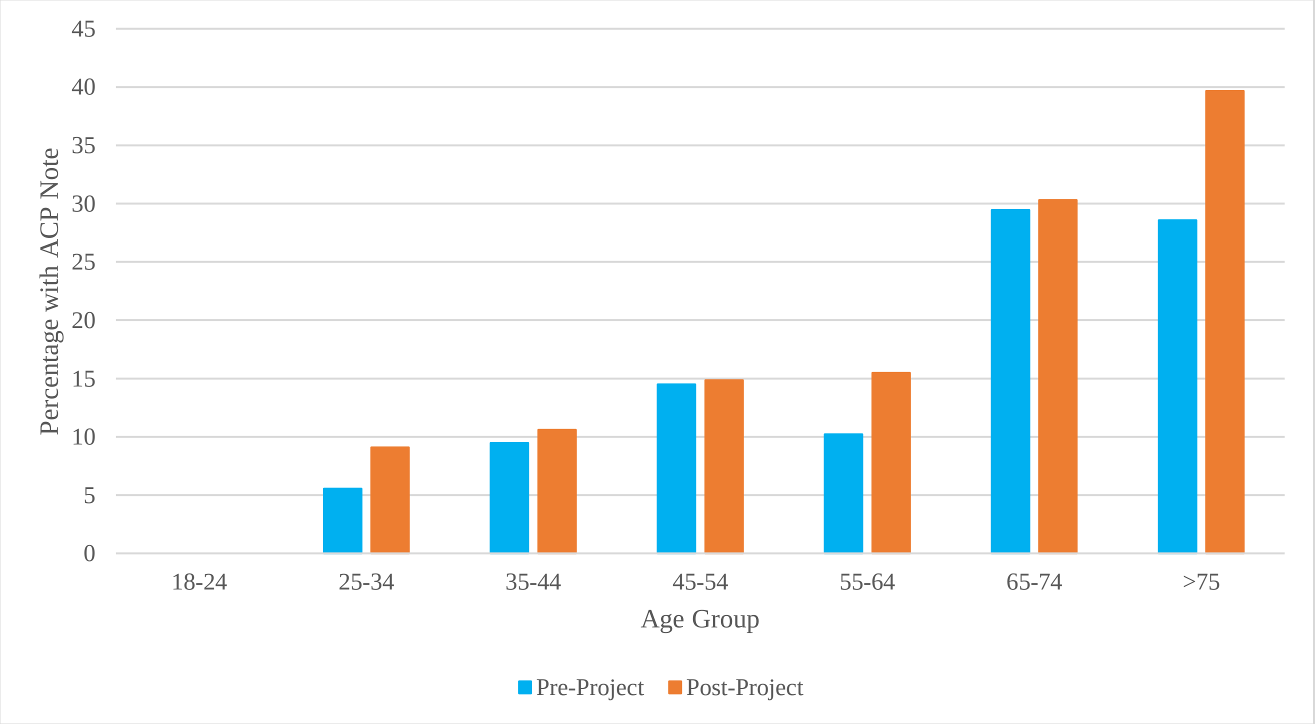


Figure G3

Percentage of Advance Directives by Cancer Stage Pre-Project and Post-Project

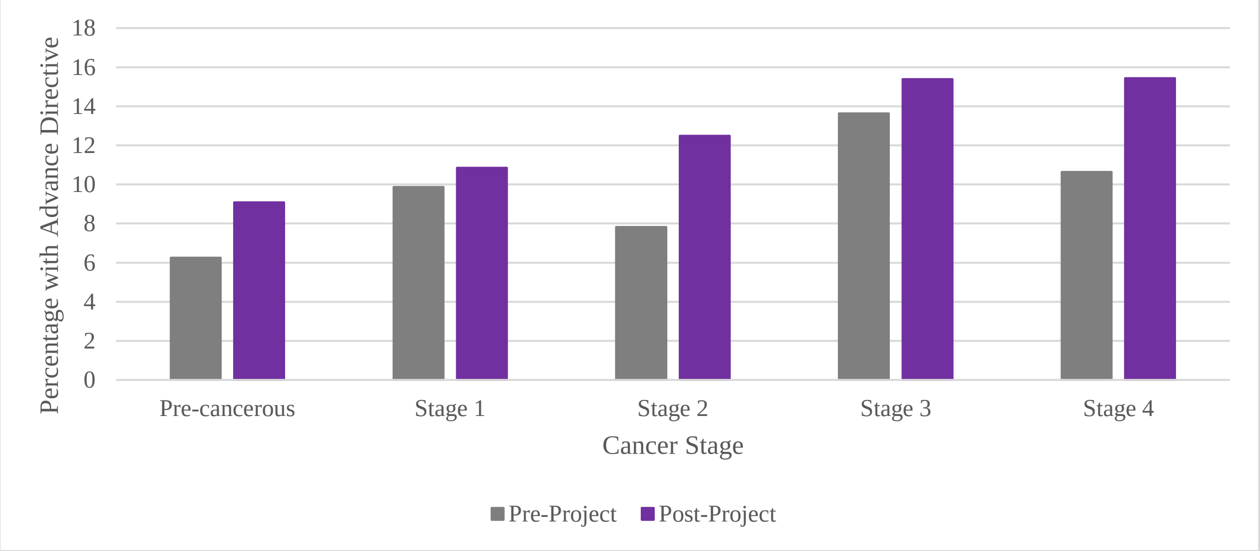


Figure G4

Percentage of ACP Notes by Cancer Stage Pre-Project and Post-Project

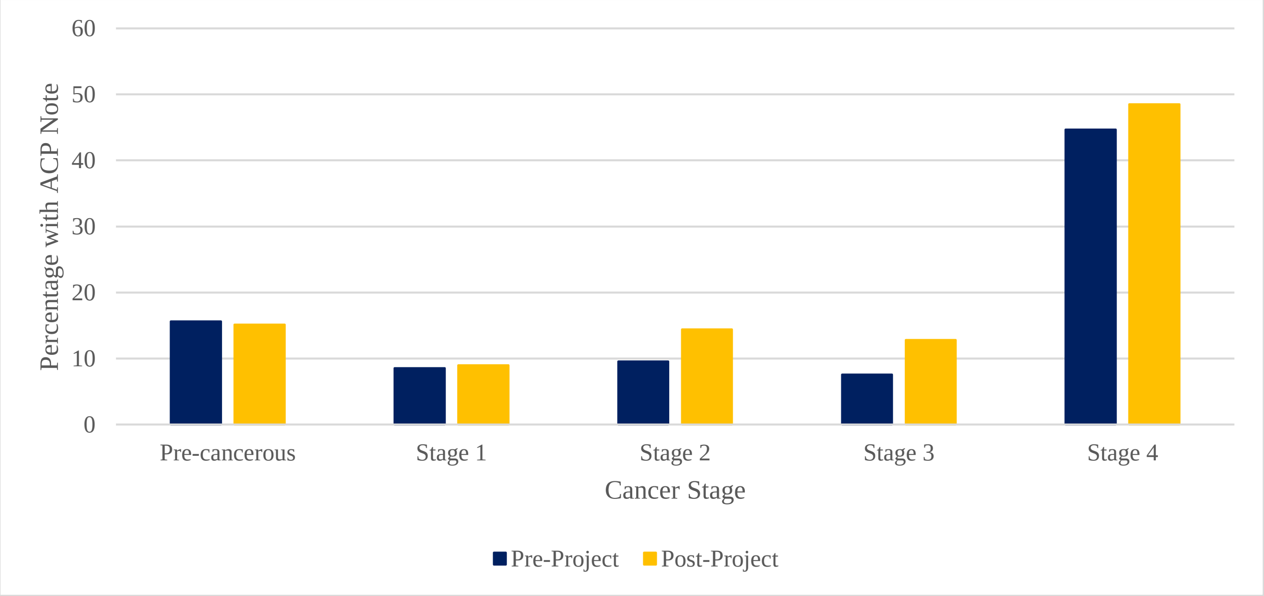
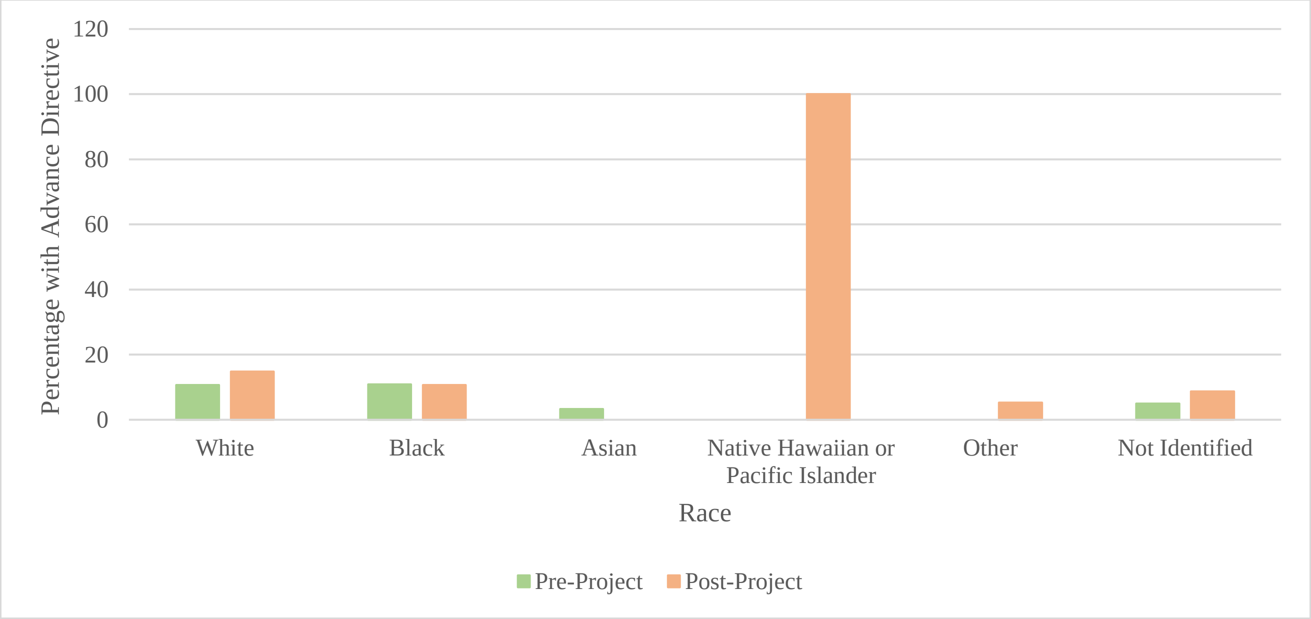


Figure G5

Percentage of Advance Directives by Race Pre-Project and Post-Project



Note: Outlier for Native Hawaiian or Pacific Islander due to small group with advance directives

Figure G6

Percentage of ACP Notes by Race Pre-Project and Post-Project

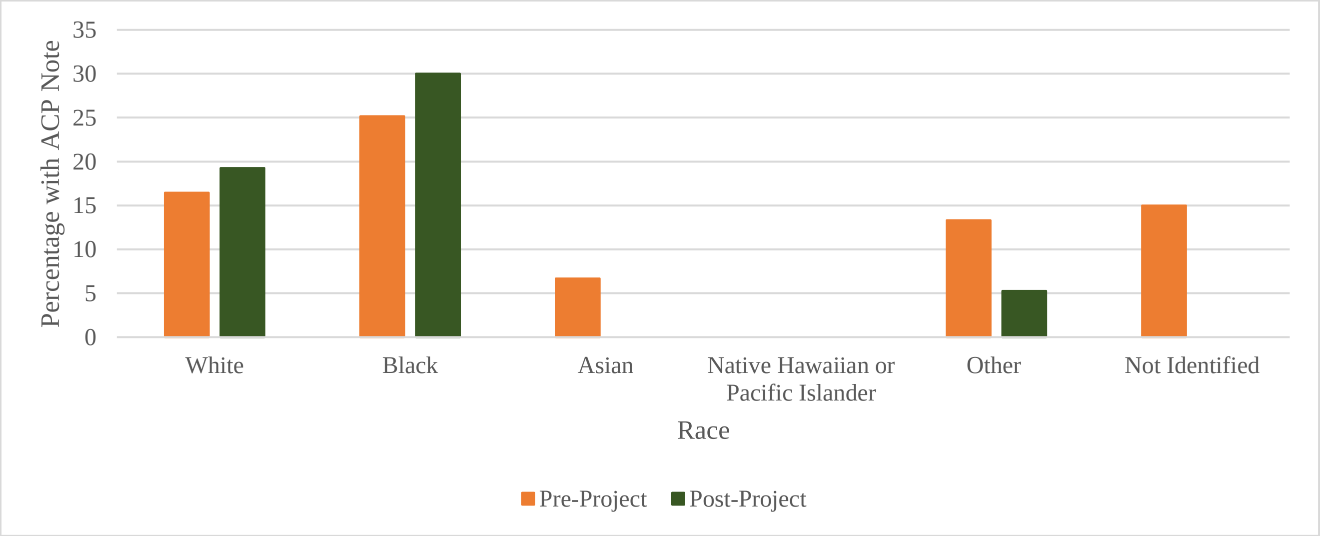


Figure G7

Percentage of Advance Directives by Ethnicity Pre-Project and Post-Project

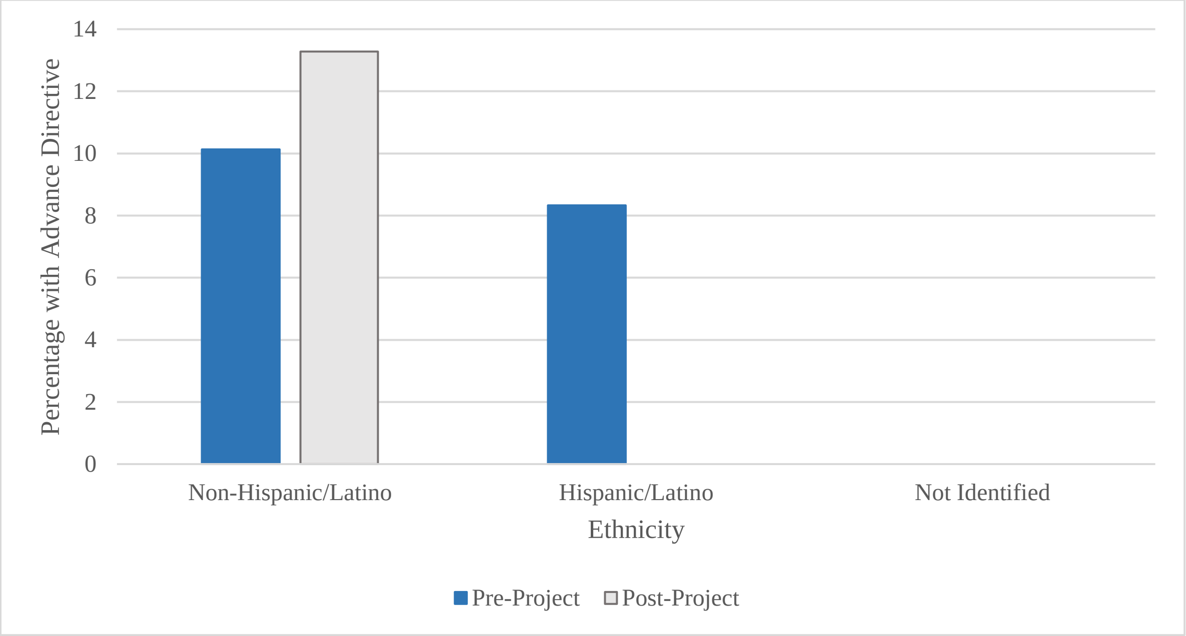


Figure G8

Percentage of ACP Notes by Ethnicity Pre-Project and Post-Project

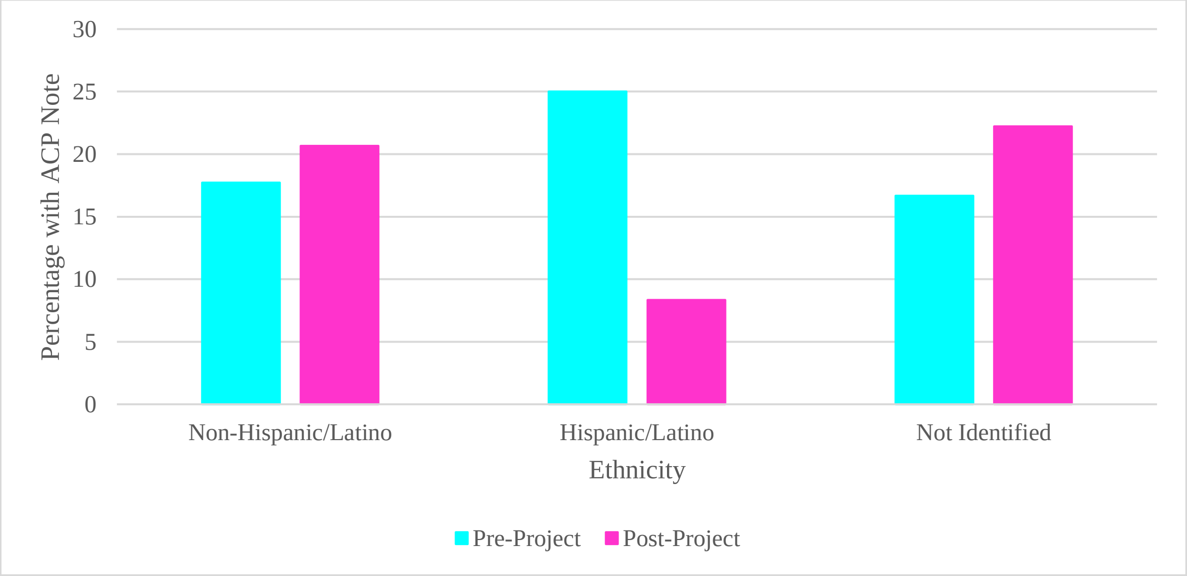
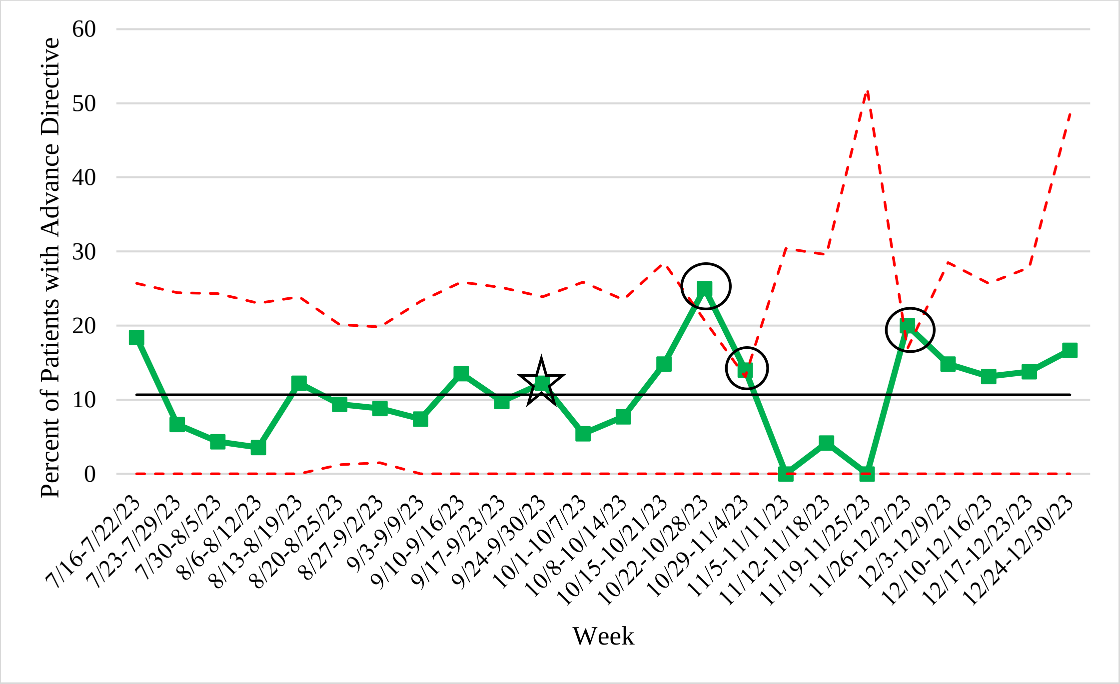


Figure G9

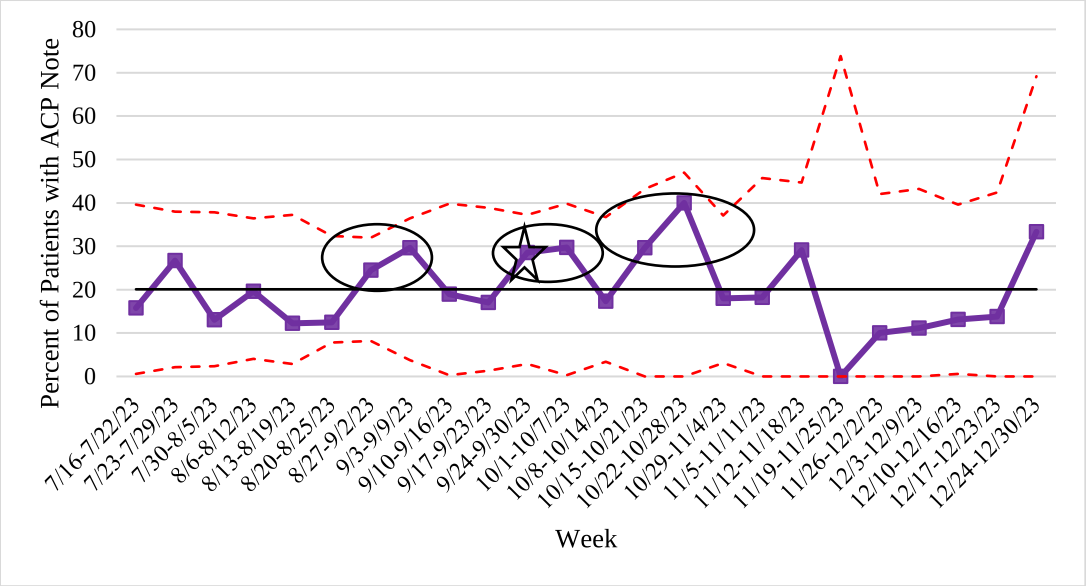
Control Chart: Percentage of Patients with Advance Directive in Chart per Week



Note: Special cause circled. Project start date identified via star.

Figure G10

Control Chart: Percentage of Patients with an ACP per Week



Note: Special cause circled. Project start date identified via star.

Figure G11

Reported Advance Directives Compared to Advance Directives in Chart per Week

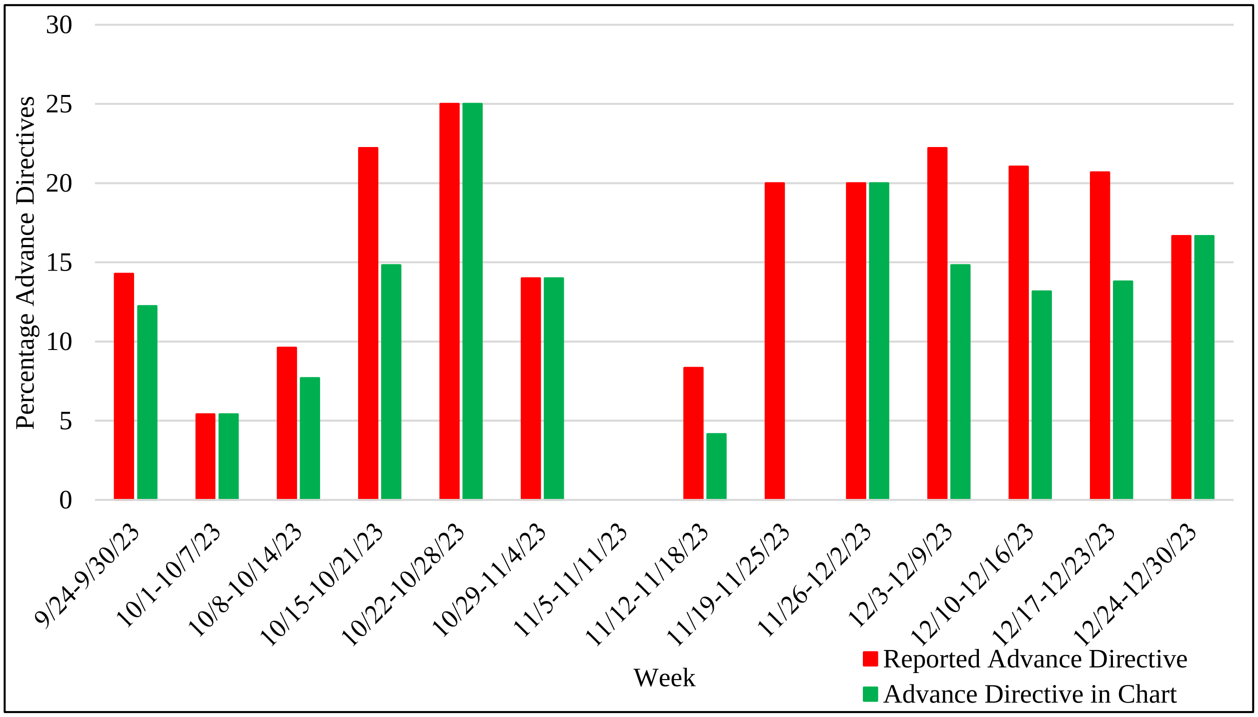


Figure G12

Process Measure Flow Chart