Improving Rates of Advanced Care Planning Discussion and Documentation in the Primary Care Setting: A DNP Quality Improvement Study

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Abstract

Background: Advance Care Planning (ACP) documents enable patients to receive medical care that aligns with treatment preferences and goals. Discussions regarding ACP in primary care are often inadequate due to patient and provider barriers. The lack of completed ACP documents leads to patient care goals not being addressed and ACP metrics not being met. Major themes in the literature demonstrated that multidisciplinary teams, workflow redesign, staff education, and the use of the Electronic Health Record (EHR) can aid in improving ACP discussion and documentation rates.

Purpose: The purpose of this QI project was to improve the existing ACP processes for patients 50 years and older within our designated family medicine clinic by increasing discussion and documentation rates.

Methods: The project was implemented in a family medicine clinic in an urban area over a 3 month time period. An ACP focused workflow was implemented defining specific roles and responsibilities for the team members. Pre and post intervention data was collected through the EHR dashboard for patients 50 years and older with and without existing ACP documents.

Implementation: During staff meetings, clinic staff and providers were educated about new roles and responsibilities. The Making Choices Michigan Advance Directive form was made available to patients and providers. Staff addressed if a patient had an existing ACP and providers then discussed ACP with the patient. Both were documented in the EHR. The ACP form was given to interested patients to be filled out at home or in the office at a separate appointment with staff.

Results: Project outcome goal of 30% increase in ACP discussion and documentation was not met. There was a slight increase in the percentage of 5.62%. No statistical change ($p=0.16$) was noticed when comparing pre-intervention rates of ACP CPT II code use, 1123F (80) and 1124F (41), with post-intervention CPT II code use, 1123F (66) and 1124F (26) after chi square test.

Improving Rates of Advanced Care Planning Discussion and Documentation in the Primary Care Setting: A DNP Quality Improvement Study

Advanced care planning (ACP) is a process applicable to adults of any age to discuss and plan an individual's future health care goals when the individual is still capable of making those decisions (Sudore et al., 2017). In addressing ACP, the goal is that the patient will receive medical care that aligns with their values, goals, preferences, which can aid in decreasing inappropriate health use and spending (Bond et al., 2018).

Although ACP is a process that should be considered for all adults, in practice much of the focus is placed on the elderly populations. This may be due to the fact that ACP appears to feel like a more pressing issue with this group. About 60% of elderly adults have at least two or more chronic illnesses putting them at an increased risk of morbidity and mortality (Struck et al., 2017). McMahan et al. (2021) finds that one out of three older adults have documented wishes, while only about 10% to 20% have had a discussion with a provider. This leaves room for much improvement, and primary care providers can play an important role in this process. Many elderly patients are regularly seen in the primary care setting for annual and/or chronic care visits. Additionally, the longitudinal nature of the patient-provider relationship in primary care allows time for trust-building and the opportunity to have evolving advanced care planning conversations.

Background

ACP involves making plans for the future regarding medical care, including end-of-life care, and relaying this vital information to family members and the medical team. ACP is a continuum that changes with time, related to changes in patients' values, and

health status. ACP can include a living will, health care power of attorney, health care proxy, or instructive directions (Yadav et al., 2017).

The Patient Self Determination Act (PSDA) of 1991 helped to illuminate the importance of ACP. It required all Medicare funded institutions to make patients aware of their right to state their intentions for medical care should they not be able to make their own decisions (Solis et al., 2018). However, it did not require more to be done to engage or encourage patients in ACP beyond the acknowledgment of their rights and the initial presentation of information. Another significant push for the implementation of ACP was from the Institute of Medicine (IOM), which stressed the importance of ACP as part of a palliative care model (Solis et al., 2018). Bond et al. (2018) found a lack of ACP contributes to increased spending in end-of-life care, while utilization of ACP contributed to a decrease in overall costs by $9,500. Benefits of ACP were found to be improved patient and "surrogate" satisfaction with healthcare communication, as well as a decrease in distress for surrogates and clinicians (McMahon et al., 2021). Therefore, the PSDA highlighted the importance of ACP in healthcare, leading to the Medicare and IOM push to have patients knowledgeable and involved in their own ACP.

Despite the evidence of its benefits, the data continues to indicate that we are not utilizing ACP enough. There are numerous barriers that contribute to the low completion rates of advanced directives. Provider dynamics include discomfort about the topic, lack of healthcare support, poor reimbursement rates, time restrictions for office visits, and waiting for patients to bring up the topic (Blackwood et al., 2019). When looking at patients, barriers can include not wanting to burden family or friends, lack of comfort with the topic, poor health literacy, lack of awareness or interest in the topic, culture or

spiritual traditions, and discrepancies in who initiates the conversation (Poveda-Moral et al., 2021). With barriers recognized and acknowledged, understanding how to overcome the listed barriers becomes pivotal.

In 2016, the Centers for Medicare and Medicaid Services created reimbursements codes for ACP visits, creating an incentive for providers to address ACP. The reimbursement demonstrates ACP's value in providing medical care that respects patients' preferences. Palmer et al. (2021) looked at fee-for-service Medicare claims in the outpatient setting during 2017 and found that 2.86% of a total of 33,704,729 Medicare beneficiaries had an ACP claim with a visit. Rates of ACP reimbursement claims from 2016 to 2018 increased from 1.2% to 3.67% in Medicare beneficiaries (Belanger et al., 2019; Palmer et al., 2021). The significantly low counseling rates on ACP, related to the barriers such as time, indicate that better implementation strategies and workflows to improve ACP rates in the primary care setting are needed. With increased involvement and education from providers, patients can take an active role in ensuring their patient's wishes are known.

Problem Statement

In a family medicine clinical setting, would implementing an ACP workflow utilizing evidence-based practices for those 50 years and older, compared to the usual routine care, encourage increased ACP discussion with patients and subsequent documentation in the electronic medical record.

Organizational Assessment Analysis

A strengths, weakness, opportunities, and threats (SWOT) gap analysis was used to assess the project site for potential strengths and challenges. The SWOT analysis was

introduced in the 1960s by Albert Humphrey to evaluate internal and external elements of organizations (Teoli et al., 2021). The assessment allows for both individual and organizational utility with a focus on organizational utility for this project. Below we will examine each of the four sections of the SWOT for this project (Appendix D).

Strengths

The organization had numerous current strengths to support improved rates of ACP discussion and documentation. It had been an idea driven by our community liaison, who, as of this paper's writing, serves as the quality director for the parent organization. They utilized regular healthcare data reports that allowed providers to see what was needed to meet benchmarks and created an end of the year recap to demonstrate the revenue captured in incentive money.

Improving current clinic practices regarding ACP discussion and documentation rates was designated to be one of the quality goals for the fiscal year. Additionally, the related internal medicine clinic had piloted this work on improving ACP discussion and documentation rates for the last two years. Their EHR system, Athena, could create dashboards to track discussion and documentation rates, with assistance from the IT department.

Another strength included the long-term relationships providers create with patients in family medicine, which could help providers guide patients in deciding to complete planning due to their knowledge of the patient and the trust in the existing relationship. Lastly, some providers that work at the family medicine clinic were also faculty at the MSU College of Nursing and could help with project implementation in a teaching capacity. Those strengths were all thought to be potentially beneficial in

implementing processes to improve ACP discussion and documentation rates.

Weaknesses

Many weaknesses existed that could potentially have impacted rates of ACP discussion and documentation. Their lack of ACP workflow, or a specific way for ACP discussion to be documented was the most significant weakness noted. This lack of clear documentation seemed harmful for the clinic's ability to create potential reimbursement through billing codes. With no existing EHR built-in documentation method, tracking abilities for when patients receive these services were limited.

Opportunities

There were many opportunities present at the project site that related to improvement of ACP discussion and documentation rates. Having an established workflow designating staff responsibilities could be helpful in encouraging increased ACP discussion. In addition, the ACP billing codes could aid in documentation, leading to clinic and provider reimbursement. With increased discussion occurring yearly at annual patient examinations, improved patient knowledge on the topic could occur. Also, with the increased ACP discussions would come improved provider comfortability with the topic. Utilization of the plans highlighted in the methods section could lead to creating these opportunities to exist in the workflow.

Threats

Many threats exist that could have impacted the success of improved rates of ACP documentation and discussion. Threats included the increased visit time required for providers and the increased workload of all clinic staff involved. The increased workload would include assessing existing ACP paperwork, reviewing paperwork, bringing up

questions surrounding ACP, and explaining topics and options. Specific requirements exist when utilizing ACP billing codes, and some insurances do not cover this which could be a financial barrier for patients. Additionally, short staffing could affect the need for additional staff members to aid in project implementation success. Lastly, staff dissatisfaction with new responsibilities and changes in the workflow could affect the likelihood of completing tasks or result in the creation of workarounds.

Purpose of Project

The aim of this project was to implement a DNP student led quality improvement proposal that helped improve the existing ACP process for a population of patients 50 years of age or older within our designated primary care clinic. It involved a review of the current literature regarding ACP in the primary care setting and analyzed this research to determine evidence based practices to be considered for enactment. We then worked with the community liaison from our primary care clinic to review plans for an update to the current workflow in order to increase ACP discussions and the documentation of these discussions within the EHR. The project idea was led by the primary first program the clinic is utilizing to meet quality metrics.

Quality Improvement Model

We chose the Institute for Healthcare Improvement (IHI) Model for improvement for implementation based on our literature review. We attempted to accomplish an increase in ACP measures in a primary care setting and the intervention focused on increasing efficiency in the clinic's ACP workflow in order to obtain the desired increase. We were able to determine if our intervention led to an improvement based on qualitative and quantitative data reports from the EHR. The Plan-Do-Study-Act (PDSA) cycle was

attempted to test changes made for improvement.

Review Of Literature

Search Methods

Mesh searches on PubMed and CINAHL were used. Search terms included advance care planning, end of life planning, advance directive, primary care, family medicine, general practice, electronic medical record, EHR, EMR, and documentation. A total of 179 studies were found, 136 studies were screened after duplicates were removed. Inclusion criteria included articles within the last five years, outpatient setting, English language, patients 50 years or older, full text, and peer reviewed. Exclusion criteria included not related to PICO, wrong indication, wrong intervention, wrong setting, wrong patient population, wrong study design, data outside of desired parameters, low level of evidence, and wrong outcomes. A PRISMA table is present in Appendix A, and a literature table for the eleven extracted studies can be found in appendix B.

There are several study designs with various levels of evidence in this literature review. One systematic review and three randomized controlled trials were assessed for quality using the Cochrane risk of bias tool. The remaining extracted studies are as follows: three non-randomized control trials, one quality improvement study, one pragmatic trial, one pilot study, one longitudinal study, and one quality improvement study.

Use of Multidisciplinary Teams

The use of multidisciplinary teams within practices was present among numerous studies with data to support the use to improve ACP documentation rates. The numerous studies demonstrated the crucial roles for nurses, medical assistants, social workers, and

PCPs in ACP discussion and documentation rates. Utilization of nurse pre-visit was a commonality to ensure basic questions regarding ACP were addressed (Bose-Brill et al., 2018; Gabbard et al., 2021; Henage et al., 2021). The use of the nurse was to bring ACP ideas to initiate conversation discussion before meeting with the PCP. Front desk staff and medical assistants were also utilized to remind patients about care preferences and remind patients that the provider is interested in care preferences (Bose-Brill et al., 2018; Henage et al., 2021; Marino et al., 2021; Wickersham et al., 2022). These further instilled the importance of ACP in the office visit and to ensure addressment at the visit.

In use of all these multidisciplinary teams, the physician or provider is also involved in every study. The provider was there to provide more detailed information on ACP and go off the previous information that was received by the clinical staff.

Workflow Redesign

The use of the multidisciplinary team leads to workflow redesign, with most studies installing pre-visit screenings to ensure care gaps are met at upcoming visits. The workflow redesign eliminated the usual care of ACP only being discussed by the provider within the office visit. Pre-visit screenings, such as telephone calls or questionnaires, were utilized before the patient's visit and typically did not involve the PCP. This creates a more comprehensive process for ACP discussion, allowing the PCP to go more in-depth on specific topics during the actual office visit (Bose-Brill et al., 2018, Gabbard et al., 2021; Henage et al., 2021; Marino et al., 2021; Wickerman et al., 2022). The implementation of the multidisciplinary team leads to workflow redesign with EHR maximization to ensure care preferences and more in-depth conversations can occur when the patient is one on one with the provider (Bose-Brill et al., 2018; Gabbard et al.,

2021; Henage et al., 2021; Lum et al., 2020). In addition, the multidisciplinary teams initiate ACP discussions to improve the rates and outcomes of ACP provider discussions and documentation.

Technology Use with ACP

Most of the studies reviewed focused on utilizing the EHR to promote increased ACP documentation rates. These improved ACP rates were associated with pre-screening information sent via the EHR or improved documentation for clinic staff. Most of the control groups, termed 'usual care,' utilized mailed documents. Bose-Brill et al. (2018) found that ACP documentation rates in the EHR increased by 27.0% compared to 0.7% with mailed documents. Reidy et al. (2017) found that internet-based ACP outcomes for completed ACPs of registered participants increased by 85%. The use of technology improves access to ACP and can result in quicker and more updated care wishes. The downside of this current trend is that using EHR technology such as MyChart messages can be a barrier for patients who lack exposure or experience with technology. However, as the data shows, mailed documents did not impact ACP rates as much as when EHR utilization occurred.

Staff Training

Utilization of staff training among the studies demonstrated an increase in staff confidence and improvement in ACP communication with patients. Small group orientations or education sessions were largely utilized for staff training, but while Marino et al. (2021) utilized a DNP ACP educator, most other studies involved communication training programs utilizing video and/or patient interaction simulation (Reidy et al., 2017; Rose et al., 2019; Volandes et al., 2022). Involvement of both

providers and support staff in education pertaining to roles and responsibilities was consistent across all studies (Marino et al., 2021; Reidy et al., 2017; Rose et al., 2019; Volandes et al., 2022).

Implementation of ACP practices by providers using the most effective method, rather than staff education regarding discussion, was the focus of one study in which multiple providers voiced already being comfortable with the concept of having ACP conversations (Wickersham et al., 2019).

Literature Gaps

Many studies addressed current gaps noticed in the ACP literature. For instance, improved ACP rates were found to be associated with pre-screening information sent via the EHR versus when documents were mailed (Halpert et al., 2022; Lum et al., 2020). This affects the population who lack experience with technology, as mailed documents did not improve rates and the EHR rates greatly improved with intervention.

Several of our studies mentioned the limitations involved with the length of study, with our longest intervention period being 1 year (Gabbard et al., 2021; Volandes et al., 2022). Longer follower up would be important to better understand the full impact of these interventions and see how long their effects on discussion and documentation rates may last (Volandes et al., 2022). Additionally, the lack of information on the existent coordination of ACP documentation and patient preferences being followed in end of life care rates is significant as well (Rose et al, 2019). Some of this ACP research may still be in “infancy.”

Summary of Findings

Our proposed intervention was guided by the common themes found in the

review of ACP literature. ACP conversation initiation and discussion was largely focused on an elderly primary care population aged 50 years and older. Education and training of providers and staff was often considered, and redesigning current workflow practices to involve all members of the team for improved efficiency and impact has been demonstrated to be important. Finally, the implementation of the EHR as a method to document and track these discussions and preferences, with reminder alerts or clinical decision support as an added aid, has also been strongly indicated (Bose-Brill et al., 2018; Lum et al., 2020; Reidy et al., 2017; Volandes et al., 2022).

A fishbone diagram was utilized for gap analysis for ACP discussion and documentation rates, see Appendix C. Six main categories were examined including methods, environment, equipment/technology, materials, providers/staff, and patients for the project site. For methods, lack of written policies, poor familiarity with the EHR and lack of specific location for documentation can be found as barriers to the primary outcome. For the environment, lack of experience surrounding ACP, poor work culture, unsupportive environment, and high stress can contribute to outcomes. Equipment and technology can have a large impact on outcomes as most health systems are now utilizing EHR for data and process improvements; gaps found include need for updated EHR/ a reminder system, places for specific documentation to occur, and tracking abilities to audit data. Access to materials can also contribute to improved ACP rates such as lack of ACP teaching materials, low supply of working computers for staff, easy to read and follow ACP forms/electronic documentation. Barriers to ACP outcomes for providers can include lack of time, low priority in comparison to multi chronic medical conditions, inadequate training, and comfort level with the topic. For patients similar and different

barriers can be found such as lack of knowledge about ACP, stigma that the provider should initiate conversation, or lack of interest, and differing cultural beliefs.

Goals, Objectives and Expected Outcomes

The desired outcome, as outlined by our organizational partners, was an increase in the rate of ACP discussions and documentation within the EHR with patients 50 years of age and older. In order to evaluate this outcome, we used data derived from the EHR as it is processed by the IT team on a monthly basis, so that we could assess progression of the intervention. We considered the following smart goal for further clarification of this outcome, so that our criteria for goal completion could be easily understood**.** Our project goal was to have a 30% compliance rate in ACP discussion documentation for patients 50 years and old in the primary care clinic by the end of implementation period in December of 2022. This would help support the clinic's desired fiscal goal, based on the Centers for Medicare & Medicaid Services' (CMS) primary care first program, of having 70% of the patient population have a CPT II code (1123F/1124F) or CPT code (99497) added to an encounter in the year 2022. Pre-intervention EHR data from the clinic's IT department showed baseline ACP rates to be quite low due to the clinic's current lack of ACP focus (Appendix G) . There was no official procedure for addressing or documenting ACP in the clinic, which prevented achievement of the primary care first program metrics the clinic was striving to reach.

Cost-Benefit Analysis

After discussion with an organizational liaison, a cost-benefit analysis was created for the proposed project. Both implementation and possible maintenance of this intervention is expected to result in minimal additional expense to the practice. Expected direct expenses, such as the cost of the ink and paper needed to print out the Making

Choices Michigan Advance Directive form and training materials, was considered to be easily absorbed within the current office budget. For salaried staff, time spent helping patients complete ACP paperwork was deemed minimal and thought to be covered within their current contracts. For staff members that worked hourly–such as the clinic's medical assistants, registered nurses, and IT technicians–additional time spent for preparation of ACP forms, patient ACP questioning, and/or data report creation was not believed to result in a considerable change in current work time.

In comparison, the opportunities for increased revenue due to this intervention were thought to possibly provide good support for its implementation. Direct benefits from having this updated workflow were determined to include not only the increased billing from improved rates of ACP services, but also a possible eligibility for additional incentives from the CMS Primary Care First program if these metrics are attained. An indirect benefit of the project implementation was thought to be a possible improvement in patient and family satisfaction with the practice due to an increased focus in this area of healthcare.

Methods

This was an evidenced based quality improvement project aimed at improving ACP discussion and documentation rates. We looked at the implementation of an ACP focused workflow within the clinic detailing specific roles and responsibilities for team members and its effect on improving the aforementioned ACP metrics. Pre and post intervention data was collected through the created EHR dashboard for patients 50 years and older with no prior ACP recorded in order to analyze its effect.

Project Site and Population

The project site serves as a primary care facility providing care across the lifespan for members of the tri-county region. The scope of practice of the project site includes diagnosing and treating acute and chronic conditions, preventative care and screening, wellness exams, health risk assessments, immunizations, and counseling on healthy lifestyles for all ages. There are 4,103 patients, 50 years and older, who were seen in the clinic over the last 36 months. The participants in the project implementation include front desk staff, nurses, medical assistants, case manager, nurse practitioners, and physicians. Key stakeholders include patients, clinic staff, health systems, insurance companies, health system policy creators and the government. Participants' education varies from GED, masters, and doctoral degrees with higher degrees having a focus in the medical fields, with participants being the current staff and providers. No recruitment strategies are utilized as participants are the staff and providers in the clinic.

Ethical Considerations/Protection of Human Rights

Michigan State University Internal Review Board (IRB) approval was obtained before the beginning of project implementation. The official IRB Determination Form was submitted and approved August 30, 2022 . No identifiable patient information, physical, social, psychological, legal, or economic information was collected. HIPAA remained protected, with the project team having access to only aggregated data. This data was collected by staff at MSU Healthcare Inc and only aggregate data was shared with the DNP leads. It was determined that the project resulted in minimal to no risk on staff and providers and that it produced the potential to provide a benefit due to improved understanding of advanced care options from ACP discussion.

Setting Facilitators and Barriers

Our community liaison functions as the quality director at the project site. They work alongside IT and communicate with clinic staff as needed. A SWOT analysis discusses resources, constraints, facilitators, and barriers that were thought to influence the implementation of this project, see Appendix D.

In order to overcome the barriers mentioned in our SWOT analysis the authors first discussed a plan with our community liaison to have IT create a user-friendly dashboard for staff to document ACP discussions and documentation rates. Secondly, the plan to best track information (through an ACP dashboard or usage of billing codes) was further clarified. Thirdly, our community liaison noted the ability to use her resources at the internal medicine clinic if unforeseen barriers arose and further guidance was needed. Lastly, every four weeks, we sought to communicate with the nurse manager and or the community liaison to address how the implementation was progressing. Pulled data regarding ACP discussion and documentation rates was used to assess how the monthly success of project implementation was going. We then attempted to alter implementation as needed.

The Intervention and Data Collection Procedure:

The Plan-Do-Study-Act (PDSA) model is central to quality improvement methods and was chosen to guide the implementation of the project. The PDSA model assesses how interventions work and allows adjustments to be made to improve the desired outcome (Reed et al., 2016). It can be done in numerous cycles to assess outcomes. Our aim was to go through the PDSA cycle as needed and see a 30% compliance rate in terms of ACP discussions taking place with patients 50 years and older in the family medicine clinic by the project's termination.

Plan

The change tested with the PDSA cycle was to improve ACP discussion and documentation rates with a more efficient ACP workflow, with the aim to have 30% of the patients 50 years and older having ACP discussion and documentation over the project period. We predicted that ACP discussion and documentation rates would increase with a specific workflow design and specific places and ways to document these discussions. While developing the intervention, the authors met with community liaison, the quality director at the project site, throughout several Zoom meeting sessions to better understand the facility's needs related to their ACP metric goals.

We introduced the plan at the monthly zoom meeting with clinic staff in September, reviewing the workflow changes and QI implementation. Discussion at the meeting focused on the practice's current ACP process and the plan for implementing the update to the current policy. During this meeting, we shared our findings from the literature review. This phase also included identifying clinic and literature barriers to achieving this outcome. The project site utilized ACP facilitator certification through Respecting Choices for their certified staff, previously the Care Manager. There was a job opening for a new social worker, but a candidate had yet to be selected. Once done, however, the goal was for them to complete the office ACP facilitator certification. However, clinic providers were educated regarding the use of Making Choices Michigan ACP form. The medical assistants were provided with basic education about ACP in orientation and documentation procedure at orientation; staff and provider education occurred via a video meeting. Involvement with multidisciplinary teams was a common theme found in the literature review. Thus, utilization with incorporating multiple

disciplines can be integral to improving the outcomes.

Do

We provided staff and provider education about the updates to current ACP workflow practices with a clear delineation of new roles and responsibilities through a video meeting in September. We made multiple attempts to ensure that staff had access to and reviewed the ACP forms available at the clinic. The Making Choices Michigan Advance Directive form was made available to patients and providers at the clinic. The focus was for patients 50 years and older to have the ACP discussion at annual visits. Clinic staff, nurses/medical assistants, were instructed to ask patients if they had an existing ACP document on file or if they had ever had one. From there, the medical assistant was to document whether the patient had or did not have ACP in the chart under social history and leave a comment with the data ACP discussion occurred. During the office visit, the provider would either review the existing form or explain the purpose of ACP, providing the Making Choices Michigan form. Patients could complete the form at home and bring it back to be copied into the EHR or they could schedule an additional appointment with ACP certified staff to complete the form. During the office visit, the clinic staff, medical assistant, would document in the EHR that ACP was discussed and add the coinciding CPT II information, which was used as a quality metric. Documentation changes include documentation of ACP discussion in the social history section in the EHR..

The clinic's EHR has a social history tab where an advanced directive section can be found within which medical assistants and providers can check either yes or no regarding the patient having an advanced directive in place. Next to the yes or no box,

there is a comment box where ACP discussion with date can be inputted. Additionally, providers were responsible for going to the billing tab and documenting the CPT II codes, 1123F or 1124F, which are utilized for quality metric tracking. To examine changes made, a pre-intervention audit of patients 50 years and older with and without ACP discussion or documentation on file occurred to establish a baseline. The pre-intervention data report from June 25, 2022, to September 25, 2022, indicated that with patients 50 years and older, the 1123F CPT II code was used 80 times and the 1124F CPT II code was used 41 times, see appendix H. The 1123F CPT II code indicates advanced care planning discussion, while the 1124F code indicates advanced care planning discussion refusal. During the 12-week implementation phase, chart audits took place every four weeks.

Study

We compared the pre-project data report with subsequent monthly data reports to assess intervention effects. For our goals to be met, the data would need to indicate that the rates of ACP discussion and documentation in the EHR were increasing from the baseline. If the results indicated that our expected outcome threshold, (a rate of 30%) was not being met, we needed to further assess for barriers or failures in our process. During the project we had two opportunities to study the data to gain knowledge as to the effectiveness of our workflow. When unanticipated concerns or more efficient pathways were identified, they attempted to learn about these aspects and create more effective changes to the process. We receive a final data report at the termination of our study.

Act

We sought to make changes to the intervention based on what we learned from

each monthly data report and from the nurse manager. We created a workflow redesign for staff to ease this process (see appendix F). The information from our surveys allowed us to include the staff as key stakeholders in the revising process. We hoped to be able to meet each month with our community liaison to discuss the reports. We also planned to reach out to the clinic's two staff members with extensive experience in workflow creation–their care manager and a nurse working at the internal medicine clinic–if called for. During this phase of the PDSA cycle we would consider the need to adapt, adopt, or abandon our current practices. If the reports indicated that we were meeting our goals, then we would consider adopting the workflow proposed in the intervention. If the reports demonstrated that rates were increasing, but not yet meeting our goals, then we would consider ways to adapt our workflow to encourage improvement in our outcomes. Staff reminders on updated workflow changes, or re-education concerning roles and responsibilities were to be considered as needed. If the reports indicated that our rates were not changing or decreasing, then while we would consider ways to adapt during the study implementation, we would ultimately also need to consider abandoning the intervention upon the study's termination.

Timeline

The proposal timeline began in September 2022 following IRB approval and scheduled to end in April of 2023 with dissemination. Detailed projected plan by month can be found in Appendix E.

Measurement Instrument

EHR data was used in this project. Pre-project data was acquired from IT, from patients 50 years and older with and without ACP discussion and documentation. This

data provided information on where the clinic ACP discussion and documentation rates were at baseline and aided in demonstrating to what effect this quality improvement project may have impacted those rates over the implementation phase. The EHR data was pulled by a member of the IT team, every 4 weeks, for patients 50 years and older to establish the rates for the patients with ACP discussion and documentation in the EHR. The data was shared by the IT member to our community liaison, who then shared the data with us..

Analysis

Results

Our desired outcome of having a 30% compliance rate in ACP discussion documentation for patients 50 years and older in the clinic was not met, as only a slight increase in the compliance rate post-intervention was noted when utilizing a proportion table. The pre intervention data proportion was 0.66 and the post intervention proportion was 0.72, demonstrating a 5.62% increase in ACP discussion documentation during the 12 week implementation stage. The data analysis in appendix H encapsulates aggregated data reports from the clinic's EHR, prior to the start of the intervention. A contingency table chi square test was performed via an online calculator to examine the statistical findings between the data collected during the period before our intervention was enacted and the data following implementation of our intervention (Chi-Square calculator, n.d.). The result of p-value (0.38) > 0.05 indicates that a lack of statistical significance was found. Our intervention, an update to the workflow and staff education on this new process, did not result in a statistically significant difference in use of the CPT II codes chosen to track ACP as a quality measure.

Sustainability Plan

The sustainability plan for this project requires addressing barriers that became present in our last month of the intervention and data collection. In order to ensure the ACP discussion and documentation rates continue to be improved numerous additions would be vital for long term success. The addition of a case manager or social worker to work on assisting patients in completing ACP documents, as well as following up with patients regarding these documents would be crucial in this clinic. As part of the post-intervention reflection, it was communicated the clinic is still looking for a social worker candidate. The hope is to have this social worker available as a resource for the clinic's medical assistants in the ACP process. The clinic is also still in search of a care manager to act as a lead for the new process.

Also, understanding how to decrease the staff resistance would aid in better long term results. More frequent check in with staff and presenting the monthly data could help demonstrate the difference the staff is making. In addition, stressing the importance of these metrics to all staff during training and especially to new staff members during onboarding could help this new intervention thrive and progress. An encounter was also set up in the EHR to automatically populate all necessary ACP information for patients 65 years and up, so that the medical assistants don’t have to fill in any paperwork.

The clinic is very interested in continuing with this intervention, as its ACP goals align the clinic with the requirements for CMS’s Primary Care First program. Going forward, the hiring of a care manager remains a large priority for sustainability. Additionally, it was surmised that ensuring staff accountability for documentation

through the use of chart auditing by the quality director, who also served as a community liaison for this study, could also be an option utilized to help address staff resistance.

Discussion

Although discussing ACP with patients can serve to help providers have a better understanding of their patients' end of life wishes and care goals, the data shows that the rates of ACP counseling remain low. Our study results reflected the current norm and further showed that this can be a complex issue to address. During the evaluation period, a post-intervention reflection with the clinic's community liaison determined several barriers to have played a role in its inability to realize its goal.

It was ascertained that a significant issue had been that the clinic lacked a current social worker and/or care manager to serve as a prominent coordinator for the process. An initial staff meeting with the DNP students introducing the project to providers highlighted a difference in opinion amongst colleagues towards the issue that a primary process head may have been able to help navigate better. Other issues of effective success include staffing shortages, inexperienced staff due to turnover, and the staff's lack of comfort with addressing ACP as a topic. It is likely that the staff resistance and turnover could have resulted from large changes taking place at the clinic such as the nurse practitioners separating into a new clinical space, three different colleges within the university opinions on the intervention, and staff already being overwhelmed with all required documentation. New staff do receive onboarding regarding this intervention with access to the created algorithm, however, the step is still often ignored. The sensitivity of the topic could be further improved with staff training on how to address

this topic. The role of the social worker/case manager could really help with completion of the ACP forms and further education about the form.

Limitations

Primary limitations for this study include the inability for the DNP leads to properly conduct adequate PDSA cycling during the implementation phase due to poor communication with several key stakeholders and limited ability to control the parameters of the aggregate data. It was difficult to maintain the necessary level of communication and involvement with staff leadership as numerous attempts made by the DNP leads were often ignored or forgotten.

The post-intervention reflection revealed that current staff turnover and shortages had placed a strain on the aforementioned leadership. This had made it difficult for them to keep up with certain goals established during initial and ongoing key stakeholder meetings.

Parameters for the aggregate data were discussed via virtual meetings and through email communication, however the DNP leads were not able to communicate directly with the IT team providing the data reports and many requests were needed to get the reports utilized for this paper. Information regarding the number of visits that occurred for the population of interest during the study's implementation in total, as well the number of visits in which ACP was not addressed, could help create more context for the data. Additionally, pre-and post-intervention surveying regarding the staff's perception of the intervention and its effect on the desired study goals could have provided qualitative data to help strengthen understanding of the study's strengths and weaknesses.

Implications for Nursing Practice

The review of the literature surrounding ACP in the primary care setting revealed that increased ACP discussion and documentation rates can be achieved through the use of multi-faceted changes in facility practice (Gabbard et al, 2020; Henage et al, 2021, Marino et al, 2021). Similar to the results of our study, the literature highlights that staff education and organizational support, workflow adoption, and technology advancements in the EHR remain important factors to advancement in this issue (Henage et al.,; Marino et al., 2021). Although our intervention was not found to be statistically significant, subsequent studies may find the limitations detailed in our study helpful if attempting an implementation with comparable goals.

Nurse practitioners and other providers can extrapolate that this is an issue in which there is still much work to be done. It not only entails buy-in from the key stakeholders in the clinic such as providers, staff, and management but also continued efforts to ensure that all players understand their role, feel motivated in their roles, and have continued support and encouragement throughout the change process.

Additionally qualitative data may have better revealed areas of clinical significance by providing increased insight into staff perceptions related to multiple areas such as the newly created workflow, changes in responsibilities, and behavior adjustments that had or had not been made in response to these changes. The pilot nature of this study does serve as a springboard for further improvement for the site in this regard.

Conclusion

One out of three older adults have documented ACP wishes, and only about 10 to 20% have even discussed them with their provider (McMahan et al., 2021). This

demonstrates the need for the topic to be addressed in the primary care setting (McMahan et al., 2021). ACP discussions enable adults of any age to plan future health goals and wishes while the individual is still capable of making those decisions. Having these discussions also equips health care professionals with the knowledge needed to provide treatment consistent with patient wishes and decrease inappropriate healthcare use, thus also decreasing healthcare spending (Bond et al., 2018).

A combination of workflow redesign, use of multidisciplinary teams, staff education regarding team role and responsibility changes, and adaptation of the EHR was used in this study to help improve ACP. However, clinic staff turnover and strong staff resistance to change, along with a lack of continued effective communication with clinic leadership and key stakeholders were all found to be significant barriers to outcome progress. The significance of continued organizational support was found to be key for successful implementation.

There are many potential avenues for further research regarding the issue of ACP. Some interesting areas to explore include improving understanding of the possible cost benefits of ACP in the primary care setting as well as more examination of what effect ACP may have related to populations outside of our elderly patients. Increased exploration into the amount of congruence between ACP documentation and actual end of life care, or care while incapacitated, should also be considered. This would provide more data regarding the significance of what this proposal hoped to achieve–improved ACP discussions and documentation rates. More information demonstrating what possible gaps may currently exist in this coordination could lead to evidence based improvements being made within this area of healthcare.

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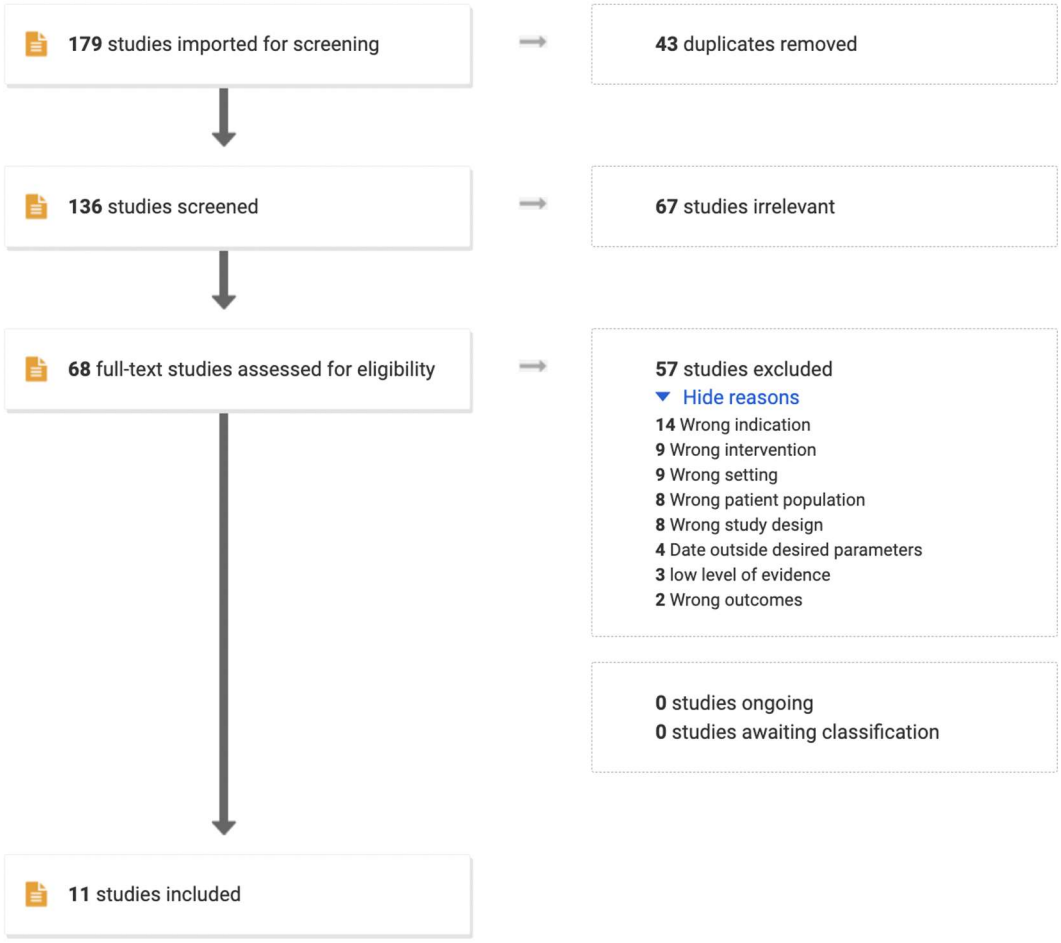
Appendix A

Prisma Table



Appendix B

Literature Table

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Bose-Brill et al (2018)	Pragmatic Trial Level III	Total of 419 patients between 50- 93 years with active portal between 2 clinical sites. Participants received intervention (n=200) or standard care (n=219).	Incorporation of an open-ended ACP framework (with 4 questions), sent through patients MyChart account, in addition to clinical practice algorithm. Nurses, physicians, and other clinical staff used the pre visit algorithm to promote and ACP preference conversations over a 3 month period.	Utilized binomial metrics, such as documentation present/absent, and rigid scoring criteria for quality to counteract the inability to blind the study. Spot checking of reviews occurred to ensure accuracy of the dataset by 2 trained members of the team. ACP quality was measured using Criteria for Scoring Quality of ACP Documentation Fisher Exact test used to assess whether or not the increase in new documentation was significant between the 2 sites. Mann-Whitney test was used to analyze the significance in new ACP quality between the 2 sites. .	Of the 200 patients sent the intervention, 39 responded to at least one question in the framework. Of those who responded 51% added ACP to EHR for the first time and 49% already had some form of ACP in EHR. MyChart usage did not increase d/t intervention at either site. ACP documentation rates in the EHR increased by 27.0% at the intervention site, compared with a 0.7% increase at the control site during 3 month study period. A Fisher exact test indicated that patients exposed to the intervention were more likely to document ACP than those receiving usual care, P<.001. The Mann-Whitney test indicated that ACP documented under our intervention was higher in quality, P<.001. Patients aged 50-60 years old had the greatest increase in ACP completion rates, with an increase in documentation of 37% in the intervention group and 1.8% in the control group.	Strengths: control an intervention group, spot checking during auditing, use ACP quality assessment, binomial metrics to decreased bias, use of fish exact test and mann-whitney test to analyze and interpret data and its significance, and implementation prior to office visit to decrease ACP discussion time, Limitations: Baseline ACP documentation rates differed at each site. Patients had to have an active MyChart account to be included in study. Patients had to be 50 years or old to be included in study. Implications: Intervention focused on use of EHR portal. The intervention did not appear to affect the percentage of patients who had a scanned document in their EHR; both before and after the intervention. Only one patient was in 90s, so a larger sample needed to continue to confer findings.

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Fahner et al (2019)	Systematic Review Level I	Literature search through MEDLINE, Embase, PsycINFO, and CINAHL were searched from January 1, 1998, to February 23, 2018. 82 articles met the inclusion criteria reporting on 34 unique ACP interventions (conversation guide for ACP discussion, english, peer reviewed)	Evaluating effectiveness of using ACP conversation guides to support health care professionals in ACP conversations.	Cochrane Risk of bias tool used for RCTs and non-RCTs- by 2 reviewers and the 2 reviewers performed risk of bias assessment on included quantitative studies. Content of conversation guides thematically analyzed using NVivo 10	4 Themes in phases of ACP conversations were identified: preparation, initiation, exploration, and action. The exploratory phase was the main part of conversation addressing views on illness, living wills, death, dying, well-being, treatment preferences and views on others involved in decision making. Scripted ACP conversations increase dyad congruence and ACP documentation rates. Qualitative research showed that participants appreciate the importance and benefits of ACP conversations, yet perceive them as difficult and emotional.	Strengths: High level of evidence, evaluates characteristics of interventions and content of conversation guides, 2 authors screened articles, extracted data and resolved discrepancies via discussion, risk of bias Limitations: Some studies excluded due to reviewers not able to reach authors regarding more specific conversation guides, no interventions based online/workbooks/patient question-prompt list included Implications: Further high quality research is necessary in answering questions regarding the process and effectiveness of ACP. It remains unknown whether conversation themes are most beneficial in improving ACP rates. Research evaluating the relation between guided ACP conversations and whether preference care was provided needs to be evaluated.

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Gabbard et al (2021)	RCT Level II	Total of 759 randomized participants (mean age 77.7 years, 59.9% women, 17.1% African American) 146 out of the 294 eligible patients randomized to the nurse navigator group consented to participate and 139 completed the intervention. Patients were from 8 different primary care practices in North Carolina, 65 years or older, affiliated with an accountable care organization (ACO), seen primary care professionals in the last 12 months, have evidence of multimorbidity	Aims to see if a nurse-navigator led-pathway combined with healthcare professional- facing EHR interface increase ACP discussion and documentation rates in the EHR compared to usual care. ACPwise program created in EHR. ACPwise telephone program created for nurse navigators	General linear mixed models were used for statistical analysis. Zelen Design- patients randomized prior to informed consent. Nurse navigators trained using Respecting choices to review protocol and the ACP wise telephone program for pre visit planning. ACPwise program created for EHR for health professionals for office visits. Manual review of EHR by 2 independent reviewers blinded to the randomized assignment. Quality of end-of-life communication (QOC)47 survey was used in the Intervention group to assess ACP perspectives. Quantification of data through: ACP billing codes (99497, 99498), documentation of a designated decision maker, completion and upload of new ACP forms) within the EHR.	Nurse navigator–led ACP pathway increased ACP documentation from 3.7% to 42.2%, $P < .001$) as compared with usual care. ACP billing codes rates increased in the intervention group from 1.3% to 25.3%, $P < .001$). Patients randomized to the nurse navigator–led ACP pathway more frequently designated a surrogate decision maker (64% compared to usual care of 35%) and completed ACP legal forms (24.3% compared to 10.1% of usual care, $P < .001$).	Strengths: high level of evidence, patient automated identification in EHR, ACP documentation in EHR to facilitate discussion, and use nurse navigators Limitations: intervention requiring nurse navigator for implementation, depth of survey information by patients, all patients from one healthcare system- impacts generalizability.1 year study. Unable to assess long term effect on care, medical decisions, or cost. Implications: Further research needed to assess if increase ACP documentation leads to improvement following of patients wishes in care

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Halpert et al (2022)	Longitudinal Level IV	426 patients aged 75 years or older (median age 81 years, 64% women, 92% english speaking) over 3 months	Electronic or mailed messaging to both the patient and the provider concerning the absence of documentation of ACP in the medical record before an already scheduled appointment for patients 75 years and older.	Variables include age group, sex, mailed or electronic papers, completion of ACP electronically or scanned in. Descriptive statistics were used to report demographic characteristics, health care utilization, medical history, and provider characteristics for the chart review. Data was cleaned for accuracy and missing values, if discrepancy it would be reviewed again. Student's t-test was used for categorical variables and Chi-square for continuous variables. Statistical significance was set at $p < 0.05$ and data were analyzed using SAS 9.4.	In the 3 months after the reminder had been sent to patients and providers, new ACP documentation or billing was found in 28.8% of the patients. 75.6% new documentation was health care decision maker with new DNR orders placed for 32.3% of these patients. The new Medicare billing code was filled 10 times (7.8%) Reminders sent to both patients and providers can increase documentation of ACP during primary care visits, but rarely triggers a full ACP conversation.	Strengths: inclusion and exclusion criteria, patient population, large teaching setting Limitations: no factors identified to help patients and medical providers that will or will not respond to an ACP prompt, mail reminders may not have been received, lack of tracking if alert sent through the mail or electronically, chart review did not dive into if ACP done at initial visit or subsequent visit, short duration, labor intensive for staff Implications: additional interventions combined with notices are needed to improve complete discussions of ACP.

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Henage et al (2021)	Non-randomized before and after study Level III	9,962 patients 65 years or older with one or more chronic conditions from 13 primary care clinics in North Carolina.	EMR updates, workflow redesign, and multidisciplinary staff education to improve rates of ACP, ACP discussion, documentation of ACP and billing for ACP	Use of descriptive statistics for pre and post intervention Generalized estimating equations (GEE) were used to examine the odds of ACP EMR, discussion and billing, controlling for within-practice clustering. The Chi-square statistic was used to further examine within-practice intervention effects. Analyses were performed using the SAS Statistical Package Practice Support Services (PSS) consultants were utilized at all clinics to assess and improve workflow design. PSS consultants also engaged in interprofessional training.	Smaller clinics with fewer providers had greater intervention rates. Those with < 1,000 visits per year were more than 3 times as likely to have patients engaged in ACP post-intervention. ACP discussions with providers increased post-intervention, to 52.1% with prior being 24.6%. This is statistically significant, with providers more than 2 times as likely to have discussions post intervention (OR ¼ 2.2 (95% CI: 1.1, 4.6), p ¼ 0.03) as compared to pre-intervention. ACP documentation rates in EMR increased from 9.9% pre intervention to 12.6% post intervention. Encounters billed for ACP increased from 3.3% pre intervention to 5.2% post intervention, not statistically significant.	Strengths: inclusion and exclusion criteria, variety in socioeconomic levels, addressing 3 outcomes, variety in clinic location Limitations: Variability among the different independent clinics, copays for ACP billing, did not embed change processes, pre-existing relationships, no mention of bias Implications: Greater evidence and studies is needed to see the widespread effects on each measurement assessed. Increasing staff education and workflow, discussion rates and ease of use in EMR can contribute to increased ACP discussion and documentation rates.

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Lum et al (2020)	RCT Level II	110 participants 60 years or older (mean age of 77 years old, 60% female, and 79% white.	Use of the ENgaging in Advance Care Planning Talks (ENACT) in group visits to improve ACP documentation and readiness. ENACT includes conversation start kit, Colorado DPOA form, group visits with physician and social worker. Control group- received mailed ACP materials	Randomization of eligible patients using computerized random number generator ACP documents in EMR assessed at baseline, 3 months, 6 months, and 12 months after enrollment. ACP 4 item Engagement Survey used to assess ACP readiness at baseline and 6 months. Descriptive statistics calculated for age, sex, race insurance type, relationship status, education, and whether patient was a caregiver. Chi-square tests compared patient characteristics between the intervention and control group	At 6 months, 71% of ENACT participants had an advance directive in the EHR compared with 45% of the control group ($P < .001$). 93% of ENACT participants had decision-maker documentation in the EHR compared with 73% in the control group ($P < .001$). ENACT participants trended toward higher readiness to engage in ACP compared with control at 6 months (4.56 vs 4.13; $P = .16$)	Strengths: high level of evidence, inclusion and exclusion criteria, use of group visits, use of ENACT Limitations: homogeneous study population, 20% of patients randomized to group visit did not attend, possibility for selection bias. Implications: Use of the ENACT program with group and health care professional visits have higher rates of ACP discussion than receiving mailed ACP materials.

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Marino et al (2021)	Descriptive quality improvement study Level V Evaluation of a DNP led quality improvement intervention focused on increasing advanced directive documentation rates in the primary care setting.	Multi-clinic federally qualified health center in Florida with 11 site locations. (n) - not explicitly stated. In 2014 the center's population included 6,000 patients 60 or older. Study population: patients 50 years or older.	DNP led orientation educating staff concerning ACP, AD forms, ACP patient interactions, and detailing a new workflow policy with specific roles. Phase 1 - Nurse manager overseeing proper role and adherence at Site 1. PDSA of process. Procedures standardized and implemented at Site 2. Phase 2 - Procedures/workflow introduced to the 9 other sites with project champions holding separate education meetings for staff and providers.	Data was collected through an integrated EMR. They assessed rates of AD conversation documentation by looking at the number of CPT codes billed that indicated the patient had an AD that was either complete (1157F) or not complete (1158F) and comparing it to the total number of patients 50 years or older seen during the study. They also did interviews with some participants to learn more about how the process was perceived.	Across the healthcare center, conversation documentation rates increased by 26% after the intervention. This is despite a 27% drop post study that was attributed to return to a 15 min visit time and a decrease in ACP commitment.	Strengths - Integrated EMR. Standardization of an ACP process and documentation Limitations - They were not able to look at rates of completion of ADs or assess the completeness of the ADs. Other barriers included limitations on time and cultural differences regarding participant beliefs about ACP. Implications - Future such initiatives can be made in other FQHC's that address ACP for older populations. The study suggests further research for how this can improve patient & family satisfaction and retention.

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Reidy et al (2017)	Pilot Study Level of Evidence - Unknown To assess utilization of an Internet based ACP tool as an aid for facilitator led ACP. Hospital leadership wanted to address patients/community members most at risk for rehospitalization and death	2 subspecialty clinics and a primary care practice having a high number of at-risk Medicare ACO patients within the Umass Memorial Medical Center system. Internet site Intervention: (n=807) Provider education: (n=27) Clinical Intervention:: Multispecialty lung cancer clinic - (n=112) Posthospitalization heart failure clinic - (n=377)	Multifaceted: Internet-based ACP tool that involved EMR integration. Simulation based education and small group training across disciplines focused on ACP, goals of life conversations, and serious illness conversations. ACP inclusion in the healthcare system's employee wellness campaign Clinic workflow analysis and change to include an ACP implementation team. Palliative care specialist to assist providers with ACP conversations	Not extremely clear. Post surveys utilized. Data collection tools were created to measure outcome metrics such as goals of care discussion importance, patient preferences for treatment, health care proxy identification/documentation in EMR, and introduction of the internet-based ACP tool. Assessment tools were used to assess for patient engagement barriers (e.g., language barriers, knowledge readiness, technology issues).	Internet based ACP outcome: 85% of registered participants completed ACPs (patients = 224, 583 =employees and medical/ nursing students) Provider education: participant post surveys (N = 10 at one month, N = 13 at three months) indicated increased provider confidence and early starting of ACP conversations with high risk patients. 90-100% satisfaction with training scenarios. Adoption of program by the internal medicine residency program now support. Employee wellness campaign: 72% of internet based ACP tool registers were employees/students. Clinic: palliative care specialist was able to identify barriers at lung cancer clinic – limited time, access to computers, speaking a language other than english, etc. 92% of patients at the heart failure clinic were introduced to an internet based ACP website. .	Strengths - Leadership designated for system wide model creation/implementation (Division of Palliative Care) Diverse populations considered. Limitations - a significant technology barrier was found for the older patients within the subspecialty clinics and thus the Internet based ACP tool was not really relevant in this area. Medical healthcare setting perhaps not as conducive for an internet tool intervention. Sustainability of ACP lead was not considered early in clinical interventions. Implications - Additional supplemental ACP information and resources needed along with internet based tools to make ACP more realistic for economically and culturally diverse patients. Internet based tool may serve as readiness preparation for families before discussions with healthcare providers.

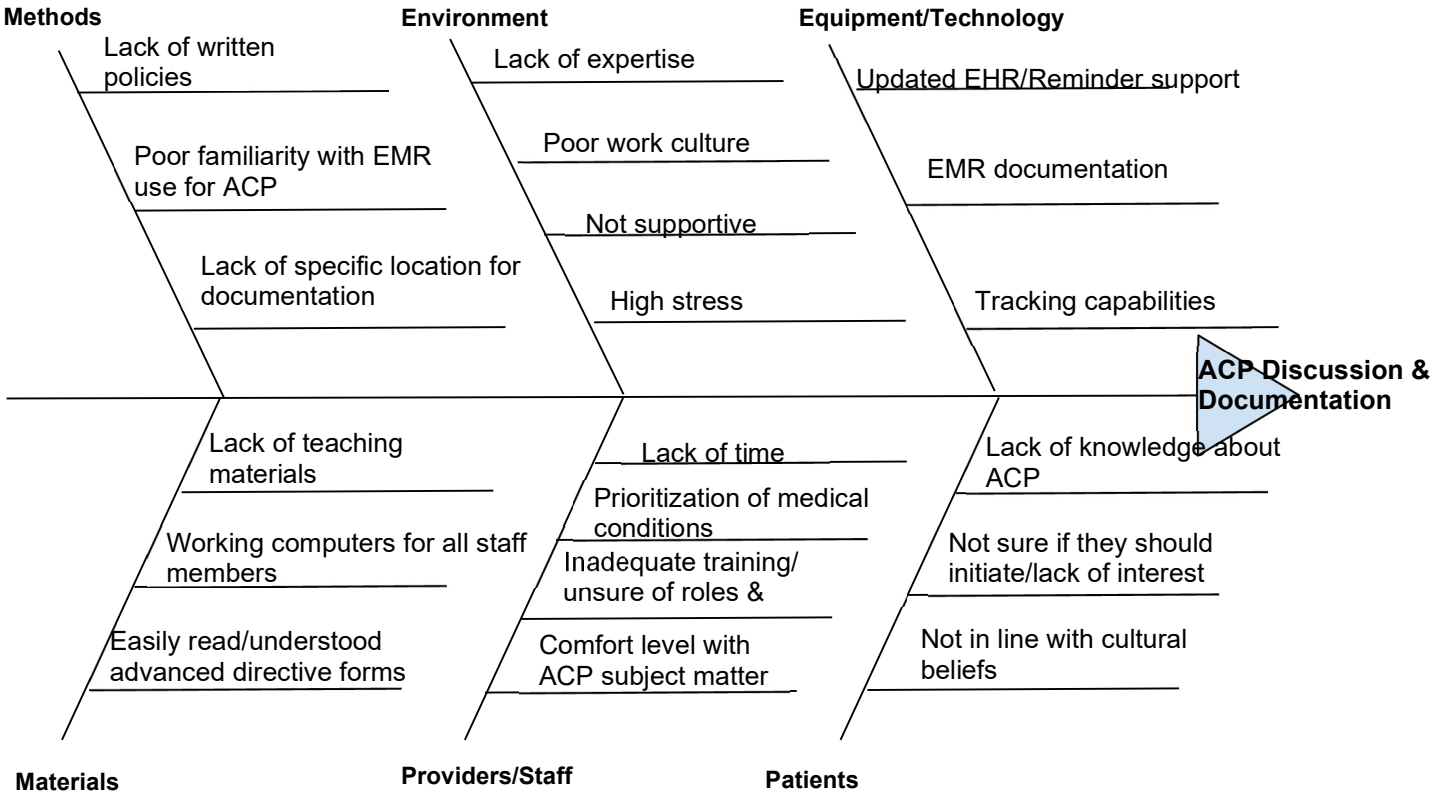
Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Rose et al (2019)	Nonrandomized control study Level III To assess if the Conversations of a Lifetime (COL) intervention would have an effect on the number of patients who had ACP discussed with them by providers and had this documented in the EMR as well as what percent had AD documentation included in the EMR.	Phase 1: 36 primary care practices within a unified health care system. The 19 practices that were part of the Medicare Comprehensive Primary Care Initiative project (CPCI) served as the intervention group and the other 17 practices served as the comparison group. Phase 2: 12 of the original 36 practices chose to use the BPA alert	Initiation of ACP in a primary care setting using COL, a system-wide community outpatient model. Phase 1 - communication coaching for providers (VitalTalk), training support staff as ACP facilitators using The Respecting Choices Last Steps program, ACP nurse liaison support, and EMR updates. Phase 2 - Phase 1 components and the utilization of a BPA alert to help identify patients most appropriate for ACP focus (fully cognitive, 65+ years) Phase 3 - Tracking continued after end of study.	Outcomes were measured through EMR analysis. Phase 1 - Initiated ACP conversations and ACP documentation measured through “yes” checkboxes in practices’ ACP summary. Phase 2 - assessed practices using BPA measures and the percentage of patients with one or more ADs in the chart. Phase 3 - Documented ACP conversations, measured by a “yes” checkbox.	Phase 1 - 7,200 unique patients with ACP conversations and EMR documentation. 5392 of conversations, intervention practices and 1808, comparison practices. Phase 2: Best practice alerts for five intervention practices and seven comparison practices. Average of 29% of initiated ACP conversations resulted in AD completion. Similar AD completion rates for intervention and comparison practices. Phase 3: (After the study period): 7,589 new ACP conversations. 123 billed using ACP CPT codes.	Strengths - Intervention potentially generalizable Limitations - Not a randomized trial. No baseline measurement of ACP intervention creation/implementation. No collection of population demographics or illness data. Difficult to gauge CPCi model impact on intervention. Limited practices decided to use BPA alert, possibly self-selecting for intervention change. Implications - Multifaceted ACP interventions can perhaps be successfully implemented in the primary care setting to help increase ACP conversations and documentation

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Volandes et al (2022)	Pre-post, open-cohort nonrandomized controlled trial Level III Assessed if interventions focused on using video aids and communication training led to increased ACP documentation, particularly during the Covid-19 pandemic.	A New York metropolitan area ambulatory network of 22 clinics. A total of 14,107 patients interacted with clinicians during the pre–COVID-19 period, 12 806 during wave 1, and 15 106 during the intervention period. Patients 65+ years with at least 1 clinic or telehealth visit during any of the 3 study periods. Special focus towards African American and Hispanic patient outcomes	ACP or Covid related video decision aids for patients 65 years or older. communication skills training for clinicians. Videos available 1-2 weeks before visit. Video use was monitored weekly and , and method of dissemination changed based on use. Provider ACP and Covid communication training: 4 hrs, VitalTalk ACP documentation elements: discussions about goals of care and preferences for medical care, palliative care, hospice, and health care proxy	EMR analysis for ACP discussion, documentation. Preferences identified using human-assisted natural language processing (NLP)	This intervention, implemented during the evolving COVID-19 pandemic, was associated with higher rates of ACP documentation, especially for African American and Hispanic patients. Primary outcome: ACP documentation identified in 3587 patients (23.8%) during the intervention period vs. 2525 patients (17.9%) during the pre–COVID-19 period and 1598 (12.5%) during wave 1. Similar results found in sensitivity analysis. Secondary outcome: All ACP documentation areas were greatest during the intervention period. Goals of care - identified for 3506 patients (23.2%) vs. 2383 patients (16.9%) during the pre–COVID-19 period and 1512 (11.8%) during wave 1. Health care proxy - identified for 2670 patients (17.7%) during vs. 1637 patients (11.6%) during the pre–COVID-19 period and 1024 (8.0%) during wave 1. Subgroup analysis: ACP documentation among racial minorities increased during the intervention vs. the other two periods.	Strengths - Health literacy level assessed and two language options available. Real time monitoring of fidelity to the intervention via technology included in study. Limitations - Possible Covid-19 disproportionate effects, death rates (particularly for racial minorities) may have impacted documentation results. Length of study (6 mo.) Not randomized, possible confounders Missing race/ethnicity data: 6.3% of patients in pre-Covid period, 6.9% wave 1, 7.6% intervention period. However, were within recommended guidelines for hospital race/ethnicity data evaluation. Late Spanish language option introduction Implications - Generalizable, larger and longer such study could be beneficial.

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
Wickersham et al (2019)	Pair-matched cluster randomized study Level II To determine which ACP form would serve to be more effective/widely utilized	Six primary care practices (n = 246) 65+ years eligible, those who accepted the form were considered participants. Retrospective chart abstractions used to look at medical records from participants over 5 years (representative and randomly selected). (n=100)	Implementation of the Oklahoma Advance Directive (OKAD) or the Five Wishes form for ACP planning Progress notes, reports, and attachments examined to determine AD form completion in 5 yr. period. Staff kept log detailing offering and acceptance of forms, specific for each clinic's workflow. 2 unique identifiers for each patient	Staff meetings and patient/clinician interviews for intervention assessment. NVivo v11 software used to record, transcribe, and code interviews with independent researchers for qualitative analysis. Quantitative data analysis with SAS v9.4 instrument, direct analysis method Logistic regression utilized to model AD form offering and acceptance. Age and gender controlled for.	The Five Wishes form was considered easier to read, understand, and use. It helped providers have ACP conversations more than the OKAD, and better relayed patients' end of life preferences. Patients were 3.89 times more likely to accept the Five Wishes form when offered versus the OKAD. ACP conversation barriers: time & care process/workflow	Strengths - Focused on implementation of ACP, effectively relaying patient preferences. Limitations - A shortened implementation timeframe and a small number of study sites. Some Five Wishes patients and clinicians had previous OKAD form exposure prior to participation. Implications - Need for various pathways to address implementation barriers. Teamwork b/t providers and staff

Appendix C

Fishbone Diagram



Appendix D

SWOT Analysis

Strengths	Weakness
● Support from clinic staff and community liaison ● Guidance from case manager and RN at internal medicine clinic ● EHR capabilities ● Engaging staff/ team dynamics ● Family medicine clinic-longitudinal relationships ● Providers that also work as faculty members/in a teaching capacity	● Lack of ACP prioritization ● Need for additional staff members ● No current workflow in place for ACP planning ● Need for updated EHR documentation
Opportunities	**Threats**
● Increased documentation for ACP discussion ● Increased billing documentation and monetary kickback ● Improved patient outcomes for current or future needs ● Increased patient knowledge of ACP options ● Increased provider ease with ACP discussion facilitation ● Increased ability to cater to elderly population, particularly those with multiple comorbidities ● Family satisfaction	● Increased visit time ● Increased workload ● Depending on insurance, maybe charged for CPT billing utilization ● Need for additional staff members ● Patients forgetting to return the visit with ACP paperwork ● Staff dissatisfaction with new responsibilities

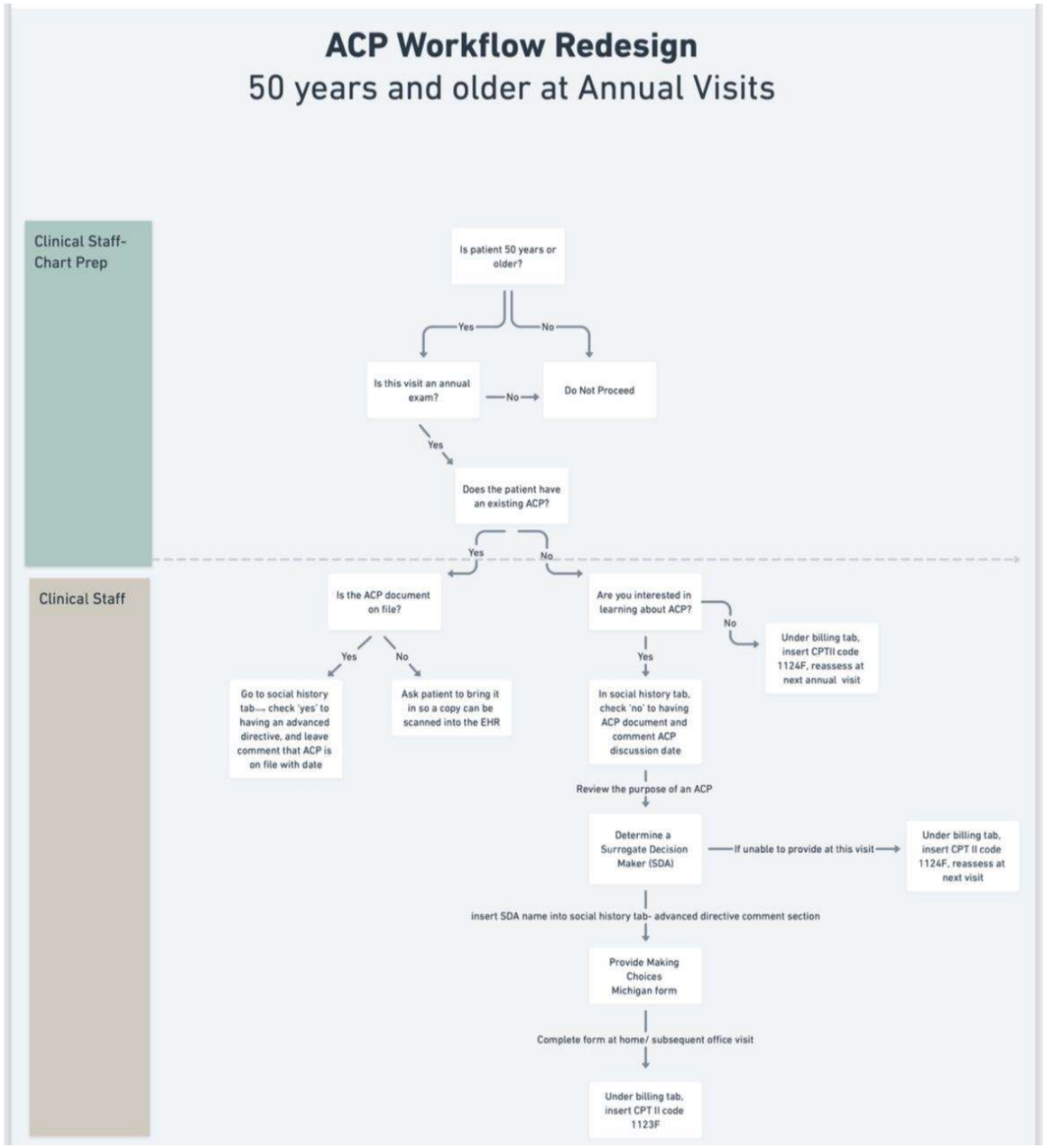
Appendix E

Timeline

Month	Tasks		
September	IRB Approval	Updated ACP documentation in EHR	Check in with the liaison and care manager/social worker. Initial project introduction during staff monthly meeting.
October	Project site implementation begins	Monitor data- pull initial pre-project data, then again every 4 weeks	Check in with staff to assess for strengths/weakness/complications in implementation
November	Project site implementation continues	Monitor data- pulled every 4 weeks	Check in with staff to assess for strengths/weakness/ complications in implementation
December	Project site implementation completes	Monitor and pull final data.	—----------
January	Data analysis begins	Data interpretation begins	Establish working relationship with statistician
February	Data analysis continues	Data interpretation continues	Reach out statistician with any further needs/questions
March	Interpret outcomes	Relay outcomes results to key stakeholders	Complete final paper
April	Dissemination- proposal presentation	—----------	—----------

Appendix F

Workflow Redesign



Appendix G

EHR Data Reports

Table A1: Pre-intervention - Data Period 6/25/22-9/25/22

	50-64 year old	65 and older
1123F	4	76
1124F	17	24

Table A2: Post-Intervention - Initial Data Period 9/26/22-10/24/22

	50-64 year old	65 and older
1123F	1	22
1124F	1	13

Table A3: Post-Intervention - Intermediate Data Period 10/25/22-11/21/22

	50-64 year old	65 and older
1123F	2	28
1124F	0	8

Table A4: Post-Intervention - Final Data Period 11/22/22-12/19/22

	50-64 year old	65 and older
1123F	0	13
1124F	0	4

Appendix H

Workflow Intervention Effect on CPT II Code Use

	Pre-Intervention	**Post- Intervention**	***Marginal Row Totals***
1123F	80 (82.94) [0.1]	66 (63.06) [0.14]	146
1124F	41 (38.06) [0.23]	26 (28.94) [0.3]	67
Marginal Column totals	121	92	213
The chi-square statistic = 0.7665 **P-value = 0.381294, not significant at p<0.05**			