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Technology-Based Advance Care Planning Education for Primary Care Patients

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Doctor of Nurse Practitioner Program

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Abstract

Background

Advance Care Planning (ACP) encompasses a multidisciplinary, collaborative process that allows patients to understand their health and make informed decisions in their treatment plans. Considering the COVID-19 pandemic and recent research, ACP is considered imperative for all patients. Evidence-based approaches include supplemental group sessions, case manager interventions, and provision of at-home resources. Within the pandemic, there has also been a rapid shift to telemedicine, restricting most ACP efforts. Therefore, the utilization of technology-based ACP resources and telemedicine is highly supported.

Purpose

This DNP project serves to assist an internal medicine practice located in Hawaii's metropolitan area. Although the hospital system has previously made significant headway in ACP promotion, the COVID-19 pandemic has made primary providers even more aware of its significance. New workflows are needed to accommodate time restrictions, telehealth restrictions, and ACP reimbursement requirements.

Methods

The medical assistant (MA) provided patients a pre-visit survey during their appointment reminder. The survey included two video decision aids on ACP. During the appointment, the provider discussed the pre-visit survey and videos. After the visit, patients were given a survey to gauge changes in their ACP process and provide appropriate resources based on learning style and ACP needs. ACP discussion was documented and billed according to Centers for Medicare Service guidelines (CMS, 2020).

Results

15 patients were enrolled in the study and completed the pre-visit survey. ACP engagement survey scores ranged from 3.9 to 4.5, indicating readiness for change. 1 patient completed the post-visit survey but showed no change in score. Annual ACP goal was met in 8 of 15 patients. 7 patients had a completed an AD, 2 of which during the project. Staff sited increased ACP awareness, increased time efficiency during visits, and overall satisfaction with project outcomes.

Conclusion

Advanced Care Planning is a relevant quality care measure that is essential to primary care regardless of patient health status. ACP can be promoted without introducing extraneous personnel or drastically altering MA and provider workflows. Patients and staff voice positive feedback to video decision aids and screening tools. However, opposition to technology is prominent in the elder patient population. In this, adequate planning, introduction, and implementation time is required to accommodate barriers to participation. Lastly, culturally sensitive and community-based resources are accessible and complementary to evidence-based methods.

Keywords

Advance care planning, primary care, quality improvement, technology, telehealth, video-decision aids, behavior change, patient portal, older adults, screening, advance directives.

Introduction

Description of Problem

Advanced Care Planning (ACP) is the process of shared decision-making between providers, patients, and their designated healthcare proxies. Patients are educated on their disease process, prognosis, and their options on treatment. Patients in all disease stages are encouraged to participate in ACP to prevent unnecessary and unwanted care. Increased ACP is associated with decreased use of aggressive treatments, greater use of palliative care, and increased quality of life (Institute of Medicine, 2014).

The COVID-19 pandemic initiated a rapid shifting of routine visits to telehealth. At the national level, telehealth visits increased by 154% within one week (Koonin et al., 2020). In addition, older adults experiencing severe COVID-19 infections did not have adequate advance care planning prior to decline in condition (Block et al., 2020). ACP experts have encouraged all outpatient healthcare workers to engage in ACP with patients and utilize contactless resources. This includes the usage of patient portals and automated calls to provide such resources to prime patients for further ACP with their clinicians (Block, Sudore, & Smith, 2020).

Setting

The state of Hawaii homes a unique, isolated population. In 2014, all primary care providers in Hawaii became eligible for ACP reimbursement through HMSA Medicare Advantage and Commercial members. However, studies have shown that only 41% of patients have spoken with their providers about their end-of-life wishes. The most common barrier was education; patients were averse to ACP as they believed it irrelevant to their health conditions (Ward Research Inc., 2017).

Hawaii Pacific Health Straub Internal Medicine Clinic employs approximately ten providers, including Dr. Jason Pirga. Many of his patients have more than one chronic disease diagnosis and are between the ages 50 to 95 years. The clinic is connected to the Straub Medical Center, which serves as the state's renown specialty hospital. Patients travel from all parts of the island as internal medicine providers are rare and specialty practices such as cardiology are located in the same or neighboring building. Currently, primary providers of Hawaii Pacific Health average a 60-70% ACP documentation. However, providers continue to voice their concern for increased ACP awareness due to the pandemic.

Local Efforts

In 2014, Volandes et al. (2016) conducted a controlled cohort study in Hilo, Hawaii, providing multilingual short videos for patients to view during ACP discussions. A significant increase in ACP documentation was noted throughout both outpatient and inpatient settings. In 2019, Klarrisse et la. (2020) implemented a pilot study at an ambulatory clinic in Honolulu under similar circumstances. However, these video decision aids were offered by a nurse case manager overseeing Annual Wellness Visits.

Although both studies yielded positive outcomes, the interventions were not easily reproducible in limited resource settings. Volandes et al. (2016) uses videos that are now available through a paid partnership requiring a 12-month commitment. Klarrisse et al. (2020) proposed a role change of a case manager already available at the facilities, something unfeasible in some outpatient settings. Furthermore, both interventions lacked the provision of patient-centered resources that are locally relevant and unique to patient learning styles.

The most accessible information is available via Kokua Mau, a local organization dedicated to providing locally tailored ACP resources. Kokua Mau has partnered with The Conversation Project from the Institute for Healthcare Improvement to provide advance care planning resources that are uniquely relevant to local Hawaii patients and clinicians. These resources are free to the public. In addition, Kokua Mau also collaborates with employers, churches, and senior homes to lead discussions on ACP.

National Benchmarks

The Centers for Medicare Services (CMS) merit-based incentive program requires an ACP benchmark of over 65%. Medicare also fully reimburses annual ACP visits. According to the Institute for Health Information (IHI), all patients should at least have a designated health care proxy regardless of health status. However, any ACP reimbursement is only approved if the visit takes place via face-to-face contact.

Aim Statement

By May 2021, Straub Clinic will improve advance care planning documentation in patients 65 and older. There will be a positive increase of over 71.5% of ACP documentation, with over 80% of eligible patients screened using the ACP Engagement Survey, over 80% of eligible patients having viewed the video decision aids, and over 50% of participants having a positive change in their ACP engagement score.

Available Knowledge

PICOT Question

Population: Patients or guardians >17 years of age. Intervention: Multimedia patient education on Advance Care Planning (ACP). Comparison: Paper literature or in-person verbal communication. Outcome: Patient knowledge level as indicated by patient-reported or quantitative measures AND/OR increased ACP documentation. Time: Over 6 months to 1 year.

Search Methodology

CINAHL, Scopus, Pubmed, Dynamed were searched using the **Keywords**: patient education, teaching, knowledge, media, telehealth, primary care, family practice, general medicine, telemedicine, multimedia, Advance Care Planning, and end-of-life. The **inclusion criteria** was studies published between 2016-2021, patients or guardians over 17 years, peer-reviewed, used media-based patient education, patient education based on advance care planning (ACP), and outcomes included some type of patient education measure (also includes patient satisfaction with education materials). The **exclusion criteria** removed studies with COVID-19-related patient education, not peer-reviewed, literature-based patient education using paper-copy materials, verbal-based patient education via in-person communication, education not related to ACP, pediatric patient education, studies published before 2016, and studies without patient education-related outcomes.

Integrated Review of Literature

A total of 535 studies were initially yielded. After application of the exclusion and inclusion criteria, eleven studies were chosen for review: four RCTs, two systematic reviews,

one scoping review, one literature review, two quality improvement studies, and one quasi-experimental study.

Summary and Synthesis of Evidence

The complete evaluation table can be found in Appendix A. ACP resources evaluated included video decision aids, web-based ACP decision tools, reviewed computer-based ACP support booklets, and online patient portal-based resource guide. All except one study were based in the United States, with one study set in Canada. Sample sizes ranged from 22 to 2814 participants and 17 to 32 analyzed studies. All studies included adult patients, one of which included healthcare proxies instead of patient participants. All studies except two included outpatient participants. Two systematic reviews were included: one assessed methodological rigor and the other comparing the effects of several ACP studies. The literature and scoping reviews evaluated ACP-focused studies using different evaluation tools.

Patient Portal-Based ACP

Optimizing the patient portal allowed Lum et al. (2019) to provide ACP resources. This included a custom ACP website, ACP online support team, electronic MDPOA (Medical Durable Power of Attorney) form, and external links to the National Institute on Aging website, The Conversation Project, and PREPARE (Lum et al., 2019).

Interactive Websites

Several web-based tools were evaluated. Each of these websites provided interactive experiences that motivated patients to understand their own wishes and communicate them to proxies. Five Wishes, PREPARE, Go Wish, Making Your Wishes Known, Hello (aka My Gift of Grace), Cake (joincake.com), Death Over Dinner, and Engage with Grace were evaluated by

Gazarian et al. (2019). van der Smissen (2020) also evaluated PREPARE, MyDirectives, MyDirectives, My-ICUGuide, NVLivingWill, Plan Your Lifespan, The Letter Project Advance Directive, and Think Ahead.

Web-based ACP Tools

This category includes electronic toolkits, guides, and workbooks. Gazarian et al. (2019) evaluated several resources from the National Institute of Aging, American Bar Association, and National Hospice and Palliative Care Organization, Aging with Dignity, the Institute for Healthcare Improvement, and Center for Practical Bioethics. Cardona-Morrell et al. (2016) also studied self-paced booklet or audio on computer screen, presentation of ACP-related data, and a patient education video.

Video Decision Aids

Several studies reviewed video decision aids in their ACP process. Aslakson et al. (2019) created an ACP video developed by patients, surgeons, palliative care clinicians over a two-year development and revision process. The final video featured stories told by patients, family members, nurses, physicians, and ACP's role in preparation for major surgical procedures. El-Jawahri et al. (2016) created a 6-minute goals of care video exemplifying life-prolonging care, limited care, and comfort care. Visual depictions of a CPR and intensive care unit, a typical medical-surgical ward unit, and a homecare setting where the patient received tablet pain medications. The contents were created and evaluated by the research team. Mitchell et al. (2018) created 12-minute ACP video for proxies and a written communication form. This video was developed by a team of geriatricians and palliative care specialists, showing the typical features of advanced Dementia, 3 levels of care options with similar visuals to El-Jawahri et al.'s

(2016) video. This video, however, was shown to the patient and their proxy. Nair & Kohen (2019) developed a 13-minute video providing full descriptions on ACP, a medical order for scope of treatment (equivalent to an advance directive), a temporary surrogate decision maker (proxy), and the difference in levels of care and who benefits from which. Cruz-Oliver et al. (2020) evaluated several studies that used educational videos to support patients and caregivers in hospice care. However, only seven of these studies specifically addressed advance care planning education (Cruz-Oliver et al., 2020). Lastly, Cardona-Morrell (2016) reviewed two studies that used video decision support tools explaining treatment options and end-of-life (EOL) preferences.

ACP Evaluation Tools

Several evaluation tools were used to understand the effectiveness of the ACP education interventions. Three studies created their own evaluation tools using validated questions. These questions were chosen specifically to measure knowledge (Aslakson et al., 2019; El-Jawahri et al., 2016; Nair & Kohen, 2019). However, two studies used a validated tool used for ACP engagement, called the ACP Engagement Survey. The ACP Engagement Survey measures change behavior, determining the current stage of ACP and the appropriate next steps. It is validated in several versions, the most effective being the 82-question form (Sudore et al., 2017; Zapata et al., 2018).

Other Evaluation Tools

Nair & Kohen (2019) used two validated tools: the CANHELP Lite Questionnaire, which evaluated satisfaction with care for older patients with life-threatening illnesses, and the SURE Test score, which measures decisional confidence. Cardona-Morrel et al. (2016) used the

International Patient Decision Aid Standards, an evidence-based azchecklist of 74 items rating content, development process, and effectiveness (Elwyn et al., 2006). Cruz-Oliver et al. (2020) used a methodological rigor process to assess the robustness of evidence among 31 peer-reviewed studies testing ACP education. Gazarian et al. (2019) used the Patient Education Materials Assessment Tool from Agency for Healthcare Research Quality to determine understandability and actionability of 20 ACP educational resources.

Significant Results

All studies testing technology-based ACP education resources found significant differences when compared to verbal or paper literature. Aslakson et al. (2019), Cardona-Morrel et al. (2016), and El-Jawahri et al. (2016), found that the video decision support tool, self-paced audio and tablet workbook, and mock case scenario videos increased knowledge. In addition, the self-paced audio booklet showed significant change in decisional conflict (Cardona-Morrel et al., 2016). El-Jawahri et al. (2016) concluded that more patients chose comfort care, declined life-prolonging measures, and participated in multiple follow-up ACP conversations post intervention ($p<0.001$). Lum et al. (2019) observed an increase in new Advanced Directives (AD) after integrating ACP into their online patient portal. Mitchell et al. (2018) found no significant change in proxy choice of care after viewing the 12-minute ACP video. However, it is possible that these results were influenced by the fact that the video was viewed by proxies of care home residents and had already received ACP education. Nair & Kohen (2019) found a significant increase in ACP knowledge and ACP decisional confidence after providing their education video to patients. PREPARE was used in several studies and

systematic reviews, yielding significant increases in ACP documentation, AD documentation, and ACP engagement (Sudore et al., 2017; van der Smissen et al., 2020; Zapata et al., 2018).

Other Outcome Results

Gazarian et al. (2019) found that the average understandability of 20 ACP educational tools, including several interactive websites, was 86%. The average actionability, meaning its ability to influence change of behavior, was 90%. Know Your Choices, an interactive website, rated with the lowest actionability score as it served mainly as an informational tool. The most common reason for low usability was a lack of summary section on the website. Only two resources were found to have a reading level of less than grade six (Gazarian et al., 2019).

Appraisal of Evidence

All studies were evaluated using the John Hopkins *Research Evidence Appraisal Tool* (Dearholt & Dang, 2012). This tool provides a standard, reproducible evaluation of the articles. In addition, it addresses aspects such as methods, limitations, and discussion, creating a thorough appraisal of each study's merits. The studies included for review ranged from Level IV, Good Quality to Level I High Quality. The main barrier for high quality research among the RCTs and Systematic Reviews was sample size and lack of meta-analysis. The pilot study, Lum et al. (2019), had the largest sample size of 2814 adult participants. This may indicate that current research is premature in determining best practices for technology-based resources. Regardless, there is still consensus on a positive trend in observed outcomes when utilizing technology-based ACP education in a variety of settings and research methods.

Rationale

Framework

The role of the primary care provider in advance care planning is to begin the process by providing education and awareness on the topic. The Health Belief Model provides the foundation of this project, emphasizing that patients' choices rely on their perceived benefits and barriers to making health changes (Janz & Becker, 1984). In addition, the Transtheoretical Model is referenced throughout the project as the outcome measurement tools and interventions credit its influence. The Transtheoretical Model defines change as a process of six stages: precontemplation, contemplation, preparation, action, maintenance, and termination (Norcross & Goldfried, 2005). These change stages allowed the project to provide resources that are unique to patient preferences.

COVID-19 Influence

Prior to COVID-19 restrictions, in-person advance care planning (ACP) sessions were conducted at Straub. Beginning in March 2020, the rapid shift to telehealth due to COVID-19 precautions hindered ACP efforts. Furthermore, the pandemic elicited an observed increase in panic amongst patients of all backgrounds regarding mortality. This project considers both factors, providing an adaptable solution that providers in all specialties can use while minimizing face-to-face contact.

Methods

Context

The Internal Medicine clinic at Hawaii Pacific Health Straub Medical Center includes approximately ten providers. Each provider sees their independent number of patients and is responsible for their own benchmarks. Michelle Cantillo, a nurse case manager, serves as Hawaii Pacific Health's (HPH) Advance Care Coordinator. There was also a primary care social worker who assisted with ACP referrals. Prior to the COVID-19 pandemic, the ACP Coordinator has led monthly ACP in-person sessions as well as ACP training for HPH staff. In discussion with the providers and staff, it was found that the ACP resources were not being regularly utilized by primary care and internal medicine. As the pandemic continued, in-person ACP efforts were restricted. After further collaboration, the DNP student created a plan to optimize the patient portal and medical assistant (MA) workflow.

This project focused on Dr. Pirga's patients and process improvement, beginning with his medical assistant (MA) and optimizing the pre and after visit components of MyChart. The MA sent the pre and post-visit surveys to the patients. ACP resources were matched to patients based on their preferred learning style and ACP change stage. Patients must have had MyChart activated. Due to COVID-19, this was feasible as at least 50% of patients were seen via telehealth. Patients were sent an automated voice or text message reminder for their appointment. Unfortunately, mentioning the survey could be added to this message due to project time constraints. Therefore, the day before their visit, the MA sent the pre-visit link and called the patient or family to remind them to take the survey. Lastly, the provider reminded patients to complete their post-visit survey.

Stakeholders

The student created, planned, and implemented the project. Dr. Karen Van Leuven served as the DNP project academic advisor. Several organizations had given their support of this project: Kokua Mau, The Conversation Project, and Hawaii Pacific Health. Dr. Jason Pirga, internal medicine physician at Hawaii Pacific Health Straub Clinic, was the site sponsor. John Ventura, medical assistant, was the secondary stakeholder at Straub. Michelle Cantillo, the Advance Care Planning Coordinator, was the third stakeholder at Hawaii Pacific Health. At Kokua Mau, Jeanette Koijane, Executive Director, and Hope Young, Advance Care Planning Coordinator, gave their approval to use materials and video decision aids for the project. Naomi Fedna, project coordinator of The Conversation Project at the Institute for Health Improvement, also approved sharing permissions.

Interventions

Pre-visit and Post-visit Advance Care Planning Engagement Survey

The Advance Care Planning Engagement survey is a validated 4-item survey assessing the patients' Behavior Change Process: Knowledge, Contemplation, Self Efficacy, or Readiness. Each of the questions score Readiness, which is subcategorized into Pre-Contemplation, Contemplation, Preparation, Action, and Maintenance (Sudore et al., 2017).

Pre-visit learning style Survey

The learning style survey is a 3-item multiple choice question where patients indicate their preferred way of learning. The question is not validated, although Learning Style Theory is frequently used in the educational setting (Romanelli, Bird, & Ryan, 2009). This question was requested by the provider in order to better understand his telehealth patient preferences.

Video Decision Aid

The video decision aids were selected based on stakeholder preference to suit local patient needs. The first video is made by Hawaii Pacific Health and shows vignettes from local patients and physicians (Hawaii Pacific Health, 2015). The second video is made by Institute of Health Improvement's (IHI) The Conversation Project. The purpose of the second video is to reinforce the message that every patient over 18 should have a healthcare proxy, how to choose one, and what a healthcare proxy means depending on your wishes (The Conversation Project, 2017). Both decision aids provided evidence-based information in layman's terms.

Post-Visit Resources

The post-visit survey redirected patients to a LinkTree website containing a series of resources that patients may select according to their ACP needs. A separate LinkTrees has been created to provide visual and auditory resources. Patients preferring kinesthetic learning were given information for group ACP sessions offered by Hawaii Pacific Health. These resources were selected after collaborating with the ACP coordinator and Kokua Mau. The algorithm is provided in Appendix H.

Gap Analysis

Best Practice Recommendations. The Centers for Medicare Services (CMS) merit-based incentive program requires an Advance Care Planning (ACP) benchmark of over 65%. Medicare also fully reimburses annual ACP visits. According to the Institute for Healthcare Improvement (IHI), all patients should at least have a designated health care proxy regardless of health status. However, any ACP reimbursement is only approved if the visit takes place via face-to-face contact (CMS, 2020; Sokol-Hessner et al., 2019). During this project, the Centers for Disease Control (CDC) had recommended a restriction of non-essential gatherings and a 6-foot distance between non-household members (CDC, 2021).

Strategies to Implement Best Practice. Typically, ACP is tied to Medicare Wellness visits. Several studies have discussed other strategies to promote ACP such as group discussions, video decision aids, literature, and websites (Cruz-Oliver et al., 2020; Gazarian et al., 2019). However, ACP can only be reimbursed if it is documented in a face-to-face visit. Therefore, any resources or strategies cannot replace the in-person visit but must supplement it (CMS, 2020).

Difference to Facility Practice & Best Practice. Fortunately, most internal medicine patients were allowed to visit providers in person and had received their COVID-19 vaccinations. However, non-essential contact was still restricted. Straub's ACP Coordinator had previously offered in-person sessions to oncology, palliative care, and hospice patients. Some primary care providers were not aware of these sessions prior to the pandemic.

Decision to Implement Best Practice. Collaboration with the facility physician, staff, and ACP coordinator has yielded a plan to implement ACP promotion using video decision aids. Older adult patients were provided a pre-visit survey and video to watch prior to their

scheduled in-person appointment. Further resources were be provided to the patients using the post-visit survey. Patients were able to access the resources at any future time.

Gantt Chart & Project Timeline

A 15-to-16-week timeframe was set on December 23rd with Dr. Jason Pirga, sponsor and primary stakeholder at Hawaii Pacific Health. The project was approved by Dr. Karen Van Leuven, DNP advisor, on December 23rd.

Between December 28th and January 29th, **Project Development Phase** took place, seen in green on the Gantt chart (Appendix B). This corresponds to the *Initiation Phase* on the *Work Breakdown Structure* (Appendix C). During this phase, background research, cost-benefit analysis of options, and collaboration with Kokua Mau and Hawaii Pacific Health took place. On January 13th, a site visit was conducted to determine workflow and discuss project objectives with John Ventura, secondary stakeholder and Medical Assistant (MA) at Hawaii Pacific Health. On January 15th, Kokua Mau agreed to collaboration and sharing permissions for the DNP project. At the end of this phase, the DNP student finished background research and spoke with experts to determine the best selection of video decision aids, patient education assessment, and the HIPAA-compliant platform. These deliverables were shown to the stakeholders for feedback on the week of February 8th. ACP Coordinator Michelle Cantillo also joined the project at this meeting.

The **Implementation Phase** took place on March 1st. The first audit, which was part of the **Evaluation Phase**, occurred on March 9th. By this time, several firewall issues were identified, further explained in the Results and Discussion sections. The issue was resolved on

March 17th. Another audit occurred between March 24th to the 29th. Dr. Pirga saw his eligible patients between the weeks of March 1st to April 23rd. Data collection ended on April 23rd and a closing meeting was held on April 30th with the stakeholders.

The **Completion Phase** started after April 23rd, and included distribution of data to Kokua Mau and Hawaii Pacific Health, collection of stakeholder feedback, and closing of the project.

Work Breakdown Structure

Level 1. Refers to project AIM statement: By May 2021, Straub Clinic will improve its advance care planning compliance in patients 65 years and older. Over 65 percent of patients will have met compliance criteria for ACP recorded via Epic, over 80 percent of patients over 65 years will be screened using a validated patient education tool, over 80 percent of eligible patients will have viewed the technology-based media resource provided via the MyChart, and over 65 percent of these patients will indicate that they would like to discuss further advance care planning.

Level 2. Five phases are identified in this level: Initiation, Planning, Implementation/Execution, Evaluation, and Completion.

Level 3. Is the description of initiatives needed to complete each phase.

The initiation phase included the selection of project site and determination of project goals with stakeholder and sponsor, Dr. Jason Pirga. It also included the design of the project such as identification of patient education screening tools and the video decision aid for advance care planning. Local and national organizations such as Kokua Mau and The

Conversation project were also consulted in this phase. Finally, an online platform that was encrypted and HIPAA-compliant was also chosen in this phase. The milestone for this phase was a pre-implementation meeting where stakeholders approved the project plan.

The Planning phase took place simultaneously with the initiation phase. This phase focused on ground-level organization such as meeting with the medical assistant and discussing current workflow. This also included the creation of the external website link that was integrated into the pre-visit reminder sent to patients via MyChart, which led them to the pre-visit screening survey and the educational video. The milestone was a pre-implementation staff meeting and final approval of the project plan.

The Implementation Phase went live on March 15th due to the MyChart firewall setback. The milestone was >80% compliance with the pre-visit survey and education.

The Evaluation phase began at week 1, where pre-visit results were be audited and after-visit surveys were be sent to patients via MyChart. An evaluation meeting was be done via e-mail with the MA, ACP Coordinator, and Dr. Pirga. After one month, pre-visit survey results were collected and presented to the stakeholders. After-visit surveys were sent to the remaining patients. On April 8th, it was decided amongst stakeholders that the project would continue until April 23rd instead of the previous date, April 9th.

The Completion phase included the presentation of after-visit survey results. In addition, the ACP documentation, and AD completion rates were reassessed to determine any rise in percentage. These results ere be presented at the final meeting with stakeholders.

Communication & Responsibilities

The project manager was DNP student Taryn Achong, who managed contacts and updates between appropriate parties. The project team included Dr. Karen Van Leuven, Academic Advisor and Dr. Jason Pirga, site supervisor/project sponsor. Due to COVID-19 precautions, communication took place via email, phone, and video conference with the project team members. The clinic staff, which included Dr. Pirga's medical assistant, John Ventura, met in-person and by email. Other stakeholders included the Straub Primary Clinic medical director, with whom Dr. Pirga was responsible for communication, and the Hawaii Pacific Health ACP Coordinator, Michelle Cantilo, who offered support to both staff and project manager.

SWOT Analysis

Strengths. The strengths of this project included cost, visit time efficiency, and technology utilization. The intervention developed was free to the facility (see in Budget Plan section). ACP is covered by insurance if there is a documented change or clarification. Positive changes in the ACP benchmark will also qualify for participation in a Merit-based Incentive Payment System (Centers for Medicare & Medicaid Services, 2020). Lastly, this intervention adheres to COVID-19 precautions by reducing face-to-face contact with patients.

Weaknesses. Anticipated weaknesses included implementation time, patient compliance, and a small convenience sample size. Previous ACP interventions and technology-based education are usually implemented over a span of 6 to 12 months. This project spanned 6 weeks, decreasing data collection and patient recruitment. There was also no penalty or

incentive offered for participation, therefore the possibility of low patient participation was also an anticipated weakness.

Opportunities. Because the intervention was based on the pre-visit period, it allowed patients to develop their own perspectives and questions that were addressed during the face-to-face visit. The platform used was technology-based and remained accessible through the MyChart link. The workflow was plotted according to MA schedule, preventing the need for additional staff and overtime hours. The ACP Coordinator was also available to the team for assistance such as providing access to benchmark data, project approval, and other facility resources.

Threats. External threats to this project included education options used by other organizations, online educational modules, and technology aversion from patients. Education options that can be used as an alternative to this intervention are in-person or zoom-based group education sessions (Talk Story by Kokua Mau), case managers obtained through patient insurance carriers, or provider-based introductions with education through Medicare Wellness visits. There are also online educational modules provided to patients through larger health systems such as Kaiser, Hawaii Pacific Health, and the Queen's Health System. Patient aversion to technology was addressed by early introduction of intervention, phone reminders, and survey platform design. Hawaii Pacific Health's module will be compared further in the Cost-Benefit Analysis.

Financial Analysis

The DNP candidate served as the project team leader. All work hours, including meetings, were conducted on practicum time and were unpaid. Cost to facility previously assumed budgeting for the 1-hour staff training and 20 minutes for the initial in-person staff meeting. As the advanced providers were salaried, administrators only needed to budget the hourly wage for mandatory education hours. Average hourly wage for a registered nurse is between $50 to $60. Average hourly wage for a medical assistant or CNA is between $12 to $20. However, the stakeholders had agreed to meet during their working hours and therefore presented no extraneous costs. The time for project duties such as sending the pre and post-visit surveys were reserved during the MA's free hour at the end of the day, preventing overtime hours.

The student provided funding for gas, food and drinks, and presentation materials. There was no cost for soliciting participants. See Appendix G for further detail.

Cost-Benefit Analysis

Evaluation Tools. There a was limited availability of validated ACP education assessment tools. Several studies that measured knowledge created their own surveys using validated questions. However, it was expressed that this restricts the applicability of results as such surveys cannot attest to accuracy or predictive validity of knowledge specific to ACP (Aslakson et al., 2019; El-Jawahri et al., 2016; Nair & Kohen, 2019). The ACP Engagement Survey, however, is free and validated in shortened forms. Although it is developed to measure patients' change behavior, it gauges ACP readiness, allowing researchers to provide appropriate

interventions and resources based on results (Sudore et al., 2017). Thus, this option was most ideal for study outcome measurement as well as data analysis.

Learning Style Assessment. This feature was requested by stakeholders. After a review of evidence, it was concluded that there is also limited availability of validated tools. Furthermore, validated tools are developed for high-school and college-level learners. This is not ideal for patient education and such tools may present the risk of confusing or belittling patients. Therefore, these tools were also excluded from the analysis (Kesänen et al., 2013). In addition, the VARK, Visual-Aural Reading Kinesthetic questionnaire, has been preliminarily validated, and is the most popular learning style assessment tool (Leite, Svinicki, & Yuying, 2010). However, due to its length and complexity, it was not appropriate for this study and therefore was excluded. After discussion with stakeholders, it was decided to use a single multiple-choice question for patients to select their preferred learning method.

Technology-Based ACP Aids. Both PREPARE and ACP Decisions are interactive, patient-centered ACP HIPAA-compliant websites. Both websites use culturally and literacy-appropriate video stories. PREPARE also utilizes modeling of behaviors and a 5-step change process. ACP Decisions allows providers to “prescribe” appropriate videos and resources based on their assessment and discussion with patients. Both resources have been studied in several research trials and systematic reviews. An overview of these studies is provided in the Review of Evidence section in this study. However, the use of both in pilot project studies requires licensure agreement with a 1-year minimum enrollment, therefore excluding them from the project.

Video Decision Aids. The creation of a video decision aid was excluded due to project time resource restrictions. Fortunately, various ACP videos were free for use on YouTube. With collaboration from Kokua Mau and site stakeholders, several objectives were set: video content of less than 10 minutes, must include the definition of ACP, provide patients with the notion that ACP should be for all ages and patients, and provide a brief introduction of ACP concepts. From these objectives, several video aids were identified.

The Hawaii Pacific Health Emmi Patient Education Video is a licensed, interactive patient module detailing ACP concepts. The information is evidence-based and presented in simple terms. However, the video was 24-minutes in length and posed several usability issues. After discussion with stakeholders, this aid was chosen as an after-visit resource for patients to access depending on their learning preference.

Three free video resources were selected for comparison: The Conversation Project - Choosing a Healthcare Proxy, Hawaii Pacific Health Advance Care Planning - The Conversation, and Kokua Mau - The Conversation. Kokua Mau's videos were shorter in length, but focused on patient vignettes and did not include definition of terms. The Conversation Project - Choosing a Healthcare Proxy fulfilled the requirement that ACP should be considered for all patients, but did not provide the description of ACP. Hawaii Pacific Health ACP - The Conversation met all requirements. See Appendix G for further detail on cost-benefit analysis.

Survey Platform. The selection for the survey platform was conducted at the beginning of the study in anticipation for the need to enter a Business Associate Agreement. After comparing the features of several survey platforms, JotForm was selected primarily due to cost and survey capabilities. Upon discussion with the provider and MA, it was determined that a

survey with the ability to route patients directly to resources based on their answers was most desirable. Hawaii Pacific Health historically uses SurveyMonkey, however, as the DNP student was not an employee, the project was not held under obligation to use the website. See Appendix G for further detail on cost-benefit analysis.

Return on Investment

Medicare and commercial insurance reimbursement for initial ACP discussion above 16 minutes with a licensed provider is $86. There is an $75 for additional 30 minutes of discussion thereafter. Providers bill under the CPT code 99497. Providers must conduct these visits face-to-face, therefore telephone visits are not acceptable. Physicians typically bill for the ACP conversation annually during Medicare Wellness Visits (MWV). According to CMS, ACP discussions conducted outside of MWV may be subject to Part B cost sharing. In addition, merit-based incentives exist for providers who document ACP with over 65% of their patients (CMS, 2020).

Currently, Dr. Pirga, who sees patients with existing chronic disease, has met his ACP benchmark goal at 71.5%. As merit-based incentives are also calculated according to percentage, he and other providers identified ACP as a priority.

Other return on investment included increased patient satisfaction, increase in knowledge related to ACP, and chronic disease prognosis.

Measured Outcomes

Advance Care Planning Engagement Survey

The survey was provided before and after the visit to assess for advances in the Behavior Change Process. A random identifier was assigned to patients during their pre-visit survey to enter during the post-visit survey to assist with data comparison. The anticipated outcome was that patients would have moved to a higher behavior change stage (Sudore et al., 2017).

Staff Satisfaction

Staff satisfaction was measured using questions from the Centers for Disease Control Unified Process Lessons Learned post project survey. Questions measure Organizational Change Management, Issue Management, and Project Effectiveness. Each of the staff will be asked to rate each question on a Likert scale (1- Not at all or Poor; 2 - Adequate or Satisfactory; 3 - To a great extent or Excellent) (Centers for Disease Control Unified Process, 2006).

Patient Participation

Patient participation was measured by comparing the number of eligible patients seen during the Implementation Phase (6 weeks) to the number of surveys completed. The anticipated outcome was an 80% participation rate.

Advance Care Planning Benchmark

ACP benchmarking was measured by tracking ICD and CPT code billing. The current benchmark is below 65%. The anticipated outcome was a positive change from Dr. Pirga's current ACP benchmark, which was 71% in 2020.

Data Analysis

Statistical analysis was limited due to a lack of post-visit survey data. In addition, as there are no similar studies using this intervention type and outcome measurement tool, a power analysis was not feasible.

Data was collected and analyzed at the end of week 6, automatically populated into Google Sheets. amd converted to Microsoft Excel. Results were presented to the stakeholders and staff the week of April 26th, 2021.

Non-Clinical Data

Frequencies of gender and age were calculated and shown using pie charts (See appendix M, Table 2). Patient learning preferences did not undergo statistical analysis due to sample size. Responses are compared using a pie chart (Table 1). The staff post satisfaction survey was collected in week 6. Feedback is displayed using bar graphs (table 3) for each question. Statistical and qualitative analysis was not used to compare responses as each staff member had a unique role and therefore presented with more variables and heterogeneity.

ACP Engagement Survey

Descriptive statistics were calculated and compared for each survey question (See Appendix M). Mean scores for each question are compared in Table 3.

Prospective Data Analysis for Future Research.

A random identifier was generated during the pre-visit survey to assist with data analysis. Chi square test can be used to determine any significant correlation between age or sex and change in overall ACP engagement scores. An increase above 0.5 is interpreted as positive change. The ACP engagement pre and post surveys are scored on a 5-point Likert Scale,

where each response phrase corresponds to a Behavioral Change Process Phase. Each stage of change is assigned a numerical value between 1 to 5: Precontemplation (1 & 2), Contemplation (3), Preparation (4), Action (5). A higher average score among responses correlates to a higher stage of change, indicating increased readiness. Individual question values can be compared using paired T-tests, indicating any significant advances or regressions in the change process regarding each component of ACP. A change in overall Behavioral Change Process between the pre and post surveys can be compared using the Mcnemar Test. The Mcnemar Test will determine whether there is a significant impact on patients moving beyond the contemplative stage (i.e., overall score is over 3).

Ethical Considerations

This project was developed as a means for process improvement utilizing the pre-visit reminders to engage patients and increased education using tele-health tools. It was reviewed by Dr. Karen Van Leuven, who deemed it exempt from Institutional Review Board approval. The project was also exempt from the Hawaii Pacific Health Institutional Review Board (See Appendix N). Patient confidentiality was maintained by anonymous submissions of pre-visit and post-visit surveys sent by the medical assistant. The medical assistant was bound by HIPAA compliance per the facility's protocol. Patient identifiers were also not required as a part of entering the advance care planning education resource, therefore the DNP researcher did not receive HIPAA-sensitive information. Lastly, the project manager signed a Business Associates Agreement with JotForm to ensure all surveys' HIPAA compliance.

This project follows ethical values derived from the University of San Francisco's (USF) Vision, Mission, and Values Statement (2017), and the American Nurses Association (ANA) Code of Ethics (2015). USF is a Jesuit institution that encourages scholars to participate in a "culture of service that respects and promotes the dignity of every person" (Vision, Mission, and Values Statement, 2017). The ANA Code of Ethics Provision 2 states that the nurse has a commitment to the patient, be it family, community, or population (ANA Code of Ethics, 2015). This project fulfills these statements by choosing patient needs over time and cost. The implementation of this project will not only teach patients to better understand their health options, but also caregivers to practice care that understands the patient and their needs.

Lastly, the ANA Provision 7 also states that "the nurse…advances the profession through research and…professional standards development…generat[ing] both nursing and health policy" (ANA Code of Ethics, 2015). This project seeks a change of practice that will benefit future provider care and standardization of best practice.

Results

Data Collection Barriers

During the first two weeks of data collection, an internal firewall prevented patients from entering the survey. After collaborating with information technology analysts, the MA was able to successfully distribute both the pre and post visit surveys to patients. It is estimated that approximately ten to fifteen patients were lost from the project.

After week three, it was observed that patients were not completing the post-visit survey. Upon discussion with the provider and MA, it was speculated that patients were not aware of a deadline to complete the post-visit survey. To address this, the post-visit message was modified to inform patients to complete the survey by the end of the week. The provider was also asked to remind patients to complete the post-visit survey.

Both issues were logged and followed regularly throughout the project. Stakeholders were updated as appropriately (See Appendix L).

Medical Assistant Workflow

The Medical Assistant (MA), reported difficulty sending MyChart messages and conducting appointment reminders. The workflow was adjusted to send the survey link via MyChart one week in advance on one weekday. The reminder calls were still conducted the evening before appointments.

Post-Visit Data

One patient completed the survey and rated her ACP experience at 100% satisfaction. However, her pre-visit ACP Engagement average was 5, the Maintenance phase, in all categories and remained unchanged in her post-visit survey results. To accommodate the lack

of post-visit data, staff interviews were held to gauge patient feedback, workflow adjustments, and process improvement. The following are identified themes.

Need for Additional Resources

Staff members sited the need for additional resources to accommodate several of the limitations addressed in earlier paragraphs. Specifically, an additional staff member such as the Patient Service Representative to assist with patient reminders and recruitment. As the MA was tasked with patient reminders and sending messages, there were days where patients did not receive the post-visit survey until the day afterwards.

Barriers to Participation

According to staff, technology itself was a significant barrier to patient participation. The MA identified at least five eligible patients per day, with approximately half refusing participation due to technology aversion. Such patients, however, were able to conduct visits via telehealth. Even when offered assistance, patients refused enrollment. In addition, some patients who were already enrolled but were not adept enough with the portal to access messages.

Patient Feedback

Patients voiced positive feedback to both the physician and MA. One patient mentioned that the videos contained information already known. Patients did not generally ask questions but were ready to talk about ACP in the beginning of their visit.

Physician Discussion

The physician noted ACP discussions were briefer for patients who had viewed the video and completed the surveys. Conversations then focused on acting and defining the patients'

goals of care. This then allowed more time for the visit to address other important topics while also fulfilling the ACP documentation criteria.

Advance Directive Documentation

Patients who had not completed an AD were provided a paper copy at the end of their visits. Patients who had ADs on files had their documentation checked and re-visited during their discussion to ensure goals of care were concurrent. Advance directives were documented in 7 patient charts, 2 of which were newly filed during the project. 3 patients had POLSTS filed from previous years.

ACP Documentation

All patients who completed the ACP pre-visit survey and watched the videos had ACP documented by the physician. Annual ACP compliance was met by 8 patients during the project.

Staff Satisfaction Survey

Staff satisfaction was collected using a 3-point Likert scale survey. Staff rated the overall project outcomes as adequate to excellent. Issue management and project manager effectiveness was rated as Excellent by all staff.

Discussion

Limitations

The limitations of this project include time, sample size, and data collection methods. ACP benchmarking is typically conducted over a 12-month period, therefore the data in this project cannot be compared statistically to state or national benchmark standards as it took place over 6 weeks. Convenience recruitment was used to enroll participants, yielding a small sample size. Due to the small sample size and lack of post-visit response, data was predominantly qualitative. This limited data analysis, significance, and applicability of results.

The largest barrier to patient recruitment was aversion of technology by elderly patients. Furthermore, patients in Hawaii present unique challenges such as lack of internet access, personal cellphones, and computers.

Lessons Learned

Additional resources are necessary to ensure successful future research. A dedicated case manager for ACP in primary care, as mentioned in Klarisse et al. (2020), would be ideal. In a resource-restricted setting, introducing new staff members is not feasible. However, future research may address these issues by allotting time dedicated to patient recruitment and patient portal navigation. Projects may spend 2-4 weeks recruiting and enrolling patients in the online portal while teaching them basic features.

To increase patient acceptance of technology-based education, recent research supports early introduction of technology to older adult patients with consistent encouragement. Patients are more likely to have sustained use of technology and ease of use (Mitzner et al., 2019).

Lastly, ACP resources were not originally made available to patients who did not complete the post-visit survey. The goal of the project was to provide patients appropriate resources based on learning style and ACP needs. The pre-visit survey was quickly modified to include ACP resources to patients after selecting their learning style.

Indications for Future Research

This project has potential for system-wide dispersal. Using the patient portal allows mass access the screening tools. The continuation of telehealth and contact-less research throughout the ongoing pandemic will require technology-based media to promote education of important topics such as ACP.

With larger sample sizes, the longer forms of Advance Care Planning Engagement Survey can be used to capture more in-depth ACP data (Sudore et al., 2017).

Systemic implementation would require greater support of the MA workload. Stakeholder collaboration has supported the use of the automated voice reminder for pre-visit surveys so MAs may be tasked with post-visit survey reminders. As it is within the MA's scope of practice to *reinforce* ACP education, they will have the ability to do so in these `conversations. Michelle Cantillo supported this notion as a brief ACP training can be provided to staff. If this option is supported, it is hopeful that this training can also qualify for continuing education credit.

Conclusion

Advance Care Planning remains as an important aspect of preventative health. With the ongoing pandemic, a shift to contact-less patient care has reinforced the importance of technology-based education.

Video decision aids are an evidence-based alternative to in-person and literature-based resources. Utilizing the patient portal and introducing short, basic video aids helps to prepare patients for their ACP discussions with providers. Incorporating a screening tool that gauges ACP readiness and learning style allows providers to identify appropriate, patient-centered resources. Patients may then become more comfortable with ACP in their homes, families, and shared decision-making with their healthcare team.

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Appendix A:
Review of Evidence Evaluation Table

Purpose of article or review	Design / Method / Conceptual framework	Sample / setting	Major variables studied with definitions	Measurement of major variables	Data analysis	Study findings	Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
Aslakson, R. A., Isenberg, S. R., Crossnohere, N. L., Conca-Cheng, A. M., Moore, M., Bhamidipati, A., . . . Roter, D. L. (2019). *Integrating advance care planning videos into surgical oncologic care: A randomized clinical trial* Mary Ann Liebert Inc. doi:10.1089/jpm.2018.0209							
Comparison of ACP knowledge, documentation, and satisfaction when viewing a unique ACP video (Developed by staff and experts)	RCT	9 surgical oncology clinics, n = 92 patients	ACP content, patient-centeredness, helpfulness of video (3-question survey), Patient satisfaction, surgeon satisfaction, designation	Hospital Anxiety and Depression Scale, Iowa Goals of Care survey	Power analysis based on previous studies for a 0.6 effect size. Summary univariate statistics, two-sample t-tests/Mann	No significant differences in discussion of ACP content. -Patients more likely to discuss ACP (23% vs. 10%, p=0.182) -No difference in patient-centeredness -No difference in HADS scores but	JHREAT: Level II High Quality -Patient population-specific ACP video developed by interdisciplinary team -Randomized control trial comparing efficacy of an

versus verbal patient education.			of a proxy		-Whitney test, Fisher's exact test, descriptive statistics with multilevel modeling analysis. Used STATA and R statistical software.	both arms remained stable throughout post-op period -Significantly more ratings of helpfulness in ACP video than control (p=0.007) -High satisfaction with communication between both arms (p=0.526)	ACP-focused video aid versus a surgical education aid in surgical oncologic patients -No significant differences in outcomes except when rating helpfulness of ACP video -Shows promise in development of ACP videos specific to unique population & disease
Cardona-Morrell, M., Benfatti-Olivato, G., Jansen, J., Turner, R. M., Fajardo-Pulido, D., & Hillman, K. (2016). A systematic review of effectiveness of decision aids to assist older patients at the end of life. *Patient Education and Counseling, 100*(3), 425-435. doi:10.1016/j.pec.2016.10.007							
Evaluation of 17 decision aid interventions in primarily outpatient	Systematic Review without Meta-analysis	N = seventeen decision aid interventions	-Changes in knowledge -Change in decision conflict	-Evaluated using the International Patient Decision Aids Standards: Assesses the content,	No meta-analysis	-Aids that showed significant changes in knowledge: video decision support tool, self-paced booklet/audio on	JHREAT: Level I Good Quality -No meta-analysis to compare statistics -Findings

settings using the International Patient Decision Aids Standards to understand feasibility and effectiveness.			-Decision concordance	development process, and effectiveness of interventions		computer, patient stories/balanced presentation with simple language, & case scenarios shown on a computer -Aids that showed significant change in decision conflict: self-paced audio booklet, patient stories/balanced presentation, & patient-centered ACP interview -Aids with significant change in decision concordance: patient-centered ACP interview & patient stories/balanced presentation	pointed to more ambiguity in research than guidance due to variance of aids and outcome measures. This may be due to the fact that Medicare reimbursement for ACP was not approved until 2016. -Patients were in EOL & were expecting conversation, therefore positively biased to ACP discussion
Cruz-Oliver, D. M., Pacheco Rueda, A., Viera-Ortiz, L., Washington, K. T., & Oliver, D. P. (2020). The evidence supporting educational videos for patients and caregivers receiving hospice and palliative care: A systematic review. *Patient Education and Counseling, 103*(9), 1677-1691. doi:10.1016/j.pec.2020.03.014							

A systematic review evaluating methodology and strength of studies that used video education aids	Systematic Review using PRISMA	31 peer-reviewed, empirically based studies published between 1999-2019	Methodological rigor: assesses the robustness of data gathered by each study by evaluating data analysis, measurement tools, methods of data collection, and research process -Risk of bias: the quantification of bias based on study protocol and assumptions	-Cochrane Collaboration "Risk of Bias" Tool	-No meta-analysis -Calculated mean of rigor scores	-Mean score for quantitative studies was 14.79 (moderate strength of evidence) -Mean score for qualitative studies was 9.6 (high strength of evidence) -Most common theme of video interventions was preferences of care and ACP -ACP completion was not significantly different when compared to control groups -Studies measuring satisfaction reported high levels -48% of video content was stories/documentaries of non-	JHREAT: Level I High Quality -Unable to do meta-analysis due to variability of outcome measurements -General moderate-high quality of evidence supportive of video education -Finds robust evidence that supports video education interventions especially when influencing ACP and care preferences -High variance of measurable outcomes as there is no validated tool to measure outcomes related to

						cancer patients (84%) -68% of videos were delivered in person -Average duration of videos: 37 minutes	multimedia education
El-Jawahri, A., Paasche-Orlow, M. K., Matlock, D., Stevenson, L. W., Lewis, E. F., Stewart, G., . . . Volandes, A. E. (2016). Randomized, controlled trial of an advance care planning video decision support tool for patients with advanced heart failure. *Circulation (New York, N.Y.), 134*(1), 52-60. doi:10.1161/circulationaha.116.021937							
Comparison of ACP knowledge, change in selection of care, and satisfaction between verbal patient education and viewing of a 6-minute goals-of-care video provided via iPad & written ACP checklist to	RCT	-N = 246 inpatient & ambulatory Heart failure patients with an >50% chance of death within 2 years -Setting: 7 teaching hospitals in Colorado, Massachusetts, & Tennessee	-Knowledge of goals of care -Change in code status or care selection -Patient satisfaction & comfort with viewing video -Sustained knowledge	-True/False & multiple choice questionnaire (not validated) -Chart documentation -Follow-up interviews at 1 and 3 months -Likert Scale satisfaction questions	-Descriptive statistics -Compared goals-of-care, CPR, and intubation preferences between both groups with chi square tests -2-sample t test to compare mean knowledge	-91% participants had NYHA Class III disease CHF with a mean age of 80 years -after viewing the video intervention, 7% more patients who selected comfort care as opposed to 15% less patients who had verbal education ($p<0.001$) -24% decrease in patients preferring life-prolonging	JHREAT Level II High Quality -Randomized control trial with 80% power in sample size. Although patients were in end stages of disease, there was a significant difference in outcomes between the video and verbal education groups. -Study-produced video

follow. Patients followed over a course of >6months to assess sustained knowledge.					scores -k statistics to summarize agreement for each study arm -Fisher exact tests to compare goals-of-care discussions -80% power with a sample size of 246 (assuming that 50% of pts in control group would choose comfort care)	measures after viewing the video education & 3% increase in patients after verbal education (p<0.001) -Significantly more patients in the video intervention chose to forgo CPR/intubation (p<0.001) -Higher concordance of CPR/intubation choices between physicians & patients in the video arm -34% more patients in the video arm reported ACP conversations with their provider at follow-up interviews (p<0.001)	was not disease specific -Strong evidence showing support for video education -There was no discussion part of both intervention groups, therefore learning & knowledge was fully influenced by the education platform

						-79% of patients were “very comfortable” viewing the video -82% would recommend the video	
Gazarian, P. K., Cronin, J., Dalto, J. L., Baker, K. M., Friel, B. J., Bruce-Baiden, W., & Rodriguez, L. Y. (2019). A systematic evaluation of advance care planning patient educational resources. *Geriatric Nursing (New York), 40*(2), 174-180. doi:10.1016/j.gerinurse.2018.09.011							

Review of evidence that evaluated and summarized ACP learning resources using two validated assessment tools.	Literature Review following the Transtheoretical Model	20 ACP educational resources	-Usability: quantification of ease of use by general population of average reading & education level -Actionability: ability to produce action -Reading level required to understand resource	-AHRQ Patient Education Materials Assessment Tool -Flesch-Kincaid Readability score	PEMAT usability & actionability averages were calculated -Used Microsoft Excel. No data analysis.	-Average PEMAT understandability was 86. -Average actionability score was 90. -Lowest actionability score was "Know Your Choices" which was an informational tool -Most common reason for low usability was the lack of a summary section in the resource -Nine resources met a reading ease of >60 -Only 2 resources had a reading grade level of <6	JHREAT: Level IV Good Quality. -Provides recommendations on which resources to use for which stage of change the patient is in. -Does not assess for efficacy or power, but information is still useful in research especially when developing a project and selecting appropriate resources. -PEMAT is validated and available for video decision aids should researchers choose to create their own resource.

Lum, H. D., Brungardt, A., Jordan, S. R., Phimphasone-Brady, P., Schilling, L. M., Lin, C., & Kutner, J. S. (2019). Design and implementation of patient Portal–Based advance care planning tools. *Journal of Pain and Symptom Management, 57*(1), 112-117.e2. doi:10.1016/j.jpainsymman.2018.10.500							
-Pilot study providing educational resources using the online patient portal. Resources include an ACP web page, dedicated online support team for patients and providers, and an electronic MDPOA form.	Quality Improvement/ Pilot Study	N = 2814 patients from three healthcare systems in Colorado	Completion of an MDPOA form, verbal or documented indication of proxy, & usability of tools	-Chart documentation -Provider documentation -Identified healthcare proxy in patient chart -Patient satisfaction survey & report on ease of use	Descriptive statistics. No data analysis of outcomes.	-89% of patients completed an MDPOA form -92% of patients that completed an MDPOA form did not have a previously documented form -Average usability ranking was 89%	JHREAT: Level IV Good Quality -Implementation -focused quality improvement study -Approach to ACP not otherwise seen in research -Large sample size for a pilot study -Somewhat feasible in larger, resources rich settings. -Electronic MDPOA form is not valid in most states -Conclusions are anecdotal but helpful: introduce interventions in

							phases, provide frequent opportunity for multi-disciplinary team support/input
Mitchell, S. L., Shaffer, M. L., Cohen, S., Hanson, L. C., Habtemariam, D., & Volandes, A. E. (2018). An advance care planning video decision support tool for nursing home residents with advanced dementia: A cluster randomized clinical trial. *JAMA Internal Medicine, 178*(7), 961-969. doi:10.1001/jamainternmed.2018.1506							
Observes the influence of a 12-minute ACP video decision on healthcare proxy treatment preferences over the course of 12 months.	Cluster RCT	N = 402 residents >65yrs & proxies at 64 Boston nursing homes assessed quarterly for 12 months	-Documented directives -Documented goals-of-care discussions -Proportion of proxies choosing comfort care -Use of intensive treatments	-Chart documentation -ACP billing -Treatment plan -Chart audits at 3, 6, 9, & 12 months	-SAS & Stata used -Intention-to-treat principles -Descriptive statistics -Generalized estimating equations to adjust for variants when using logistic regression models -Logistic regression	-No significant change in proxy choice of level of care post intervention -Cumulative incidence of no tube-feeding order significantly higher after viewing video (AHR, 1.99; 95% GI, 1.08-3.66) -No difference in cumulative incidence of residents with DNH directives between both groups -Rate of	JHREAT Level II High Quality -High quality RCT with thorough data analysis despite significant risk of variance due to the number of different facilities used in sample -Sample size is not diverse & no information on proxy demographics -Indicates some changes in treatment choice based on

					compared proportion of proxies opting for comfort care, proportion of residents with ADs -Incidence of acquiring an AD over f/u periods compared using Cox proportional hazards regression -Burdensome treatments compared using POisson hurdle models -Logistic regression	burdensome treatments did not differ significantly between groups -Proxies who preferred comfort care before watching the video were significantly more likely to find the video UNhelpful (OR, 3.46; 95% CI 1.58-7/62)	education style -One of the few studies where proxies are involved in outcome measurements -Does not provide significant support for video aids when influencing directive documentation or change in preferred level of care

					used to examine association of level of care preferences before watching video -95% power analysis with 25% absolute difference (n >360)		
Nair, R., & Kohen, S. A. (2019). Can a patient-directed video improve inpatient advance care planning? A prospective pre-post cohort study. *BMJ Quality & Safety, 28*(11), 887-893. doi:10.1136/bmjqs-2018-009066							
Admitted patients were shown a 13-minute ACP video showing basic concepts & definitions. Patients were then given the option to	Quasi-experimental Study	N = 252 inpatients in Comox, British Columbia, Canada	-ACP Knowledge -Advance directive documentation withing 48hrs of hospitalization -Rate of concordance between documentati	-ACP Knowledge Quiz: developed by facility nurse, physician, and educator committee, consists of 10 multiple choice questions on ACP concepts	-Mean SD or median and IQRs -T-tests -Wilcoxon tests -Fisher's exact tests used for sparse discrete data -SAS V.9.4	-Significant mean score increase from 70% to 100% in ACP knowledge ($p<0.0001$) -No significant difference in level of care selected -11% increase in AD documentation ($p=0.01$)	JHREAT Level III Good Quality -Quasi-experimental study evaluating inpatient knowledge level before and after video decision aid implementation -Significant increase in

complete an AD (also known as MOST in Canada) and asked to complete several questionnaires.			on and screening scores	& AD concepts - CANHELP Lite Scores: 21-item validated questionnaire evaluates satisfaction with care for older patients with life-threatening illnesses -SURE Test score: 4-item validated tool that measure decisional confidence	used for analysis	-20% increase in congruence between chart-documented and patient-completed AD ($p<0.0001$) -Improvement in satisfaction with decisionmaking ($p=0.001$) -21% increase in patients' ACP decisional confidence ($p<0.0001$)	knowledge, completion and documentation of AD, and decisional confidence -Internally developed video decision aid and outcome measurements can implicate bias but is nonetheless supportive of patient and community-centered care
Sudore, R. L., Boscardin, J., Feuz, M. A., McMahan, R. D., Katen, M. T., & Barnes, D. E. (2017). Effect of the PREPARE website vs an easy-to-read advance directive on advance care planning documentation and engagement among veterans. *JAMA Internal Medicine, 177*(8), 1102. doi:10.1001/jamainternmed.2017.1607							

Measures the influence of PREPARE, an interactive ACP website designed to encourage, educate, and guide patients through the ACP process on AD documentation, ACP behavior change, and patient satisfaction.	RCT	N = 414 patients at the San Francisco VA Medical Center ≥60 years with 2 or more additional clinic, hospital, or ER visits in the last year	-New ACP documentation in the EMR 9 months after study enrollment -ACP engagement survey at 1 week, 3 months, and 6 months -Patient satisfaction	-ACP Engagement Survey: validated change behavior tool specific to ACP	-Baseline participant characteristics compared using unpaired t tests, Chi square, or Fisher exact tests Intention-to-treat analysis using SAS -P values 2-tailed with significance of 0.05 -Mixed-effects logistic and linear regression -Wilcoxon rank test for ease-of-use, satisfaction, depression,	-New overall ACP documentation higher by 10% in the PREPARE group (p=0.04) -Higher documentation for legal forms and orders by 7% in the PREPARE group (p=0.04) -ACP engagement significantly higher in PREPARE group (p<0.001) -No significant differences in reported ease-of-use scale between PREPARE and control group -No significant difference in satisfaction, helpfulness, and likelihood of recommendation	JHREAT Level II High Quality -RCT assesses influence in ACP knowledge when using interactive ACP website. -Overall significant improvements in ACP documentation, ACP knowledge and engagement, and AD documentation. -Specifically targeted population that may not be representative of general population

					and anxiety measures		
van der Smissen, D., Overbeek, A., Dulmen, S., van Gemert-Pijnen, L., Heide, A., Rietjens, J., & Korfage, I. (2020). The feasibility and effectiveness of web-based advance care planning programs: Scoping review. *Journal of Medical Internet Research, 22*(3), e15578. doi:10.2196/15578							

Assessment of web-based ACP aids using methodological framework for scoping reviews: (1) identifying the research question; (2) identifying relevant studies; (3) study selection;(4) charting the data; and (5) collating, summarizing, and reporting the results	Scoping Review	N = 27 articles	-Feasibility of web-based ACP learning tool -Acceptability of burden by facility and patients -Ease of use -Participation rates in studies -Completion rates -Program effectiveness	-European Association for Palliative Care ACP Task Force: white paper recommending 10 key elements of ACP (provides information, addresses readiness/timing, exploration of values/goals, treatment options, treatment preferences, healthcare proxy, documentation of ACP, generates document of wishes, encourages sharing of document, and	Frequencies -No meta analysis as review was not outcome-focused	-Of the 13 qualitative studies, 8 found significant favorable results in ACP knowledge when using web-based ACP tools (P<0.05) -6 reported significant improvement in ACP communication & documentation (P<0.05) -Make Your Wishes Known and PREPARE had the highest frequency of significant increase in ACP knowledge -PREPARE had the highest frequency of significant increase in self efficacy and ACP readiness -Significant	JHREAT: Level III Good Quality -Scoping review of 27 articles assessing qualities of web-based ACP tools -A total of 11 websites were evaluated among 27 studies. -International review that evaluated elements of American ACP tools using the EAPC ACP recommendations -Moderately robust data to support feasibility and effectiveness of some tools while others do not have a lot a

				communicati on of wishes)		increase in ACP documentation with ACP Decision website, Making Your Wishes Known, Plan Your Lifespan, and PREPARE -Making Your WIshes Known had a significant increase in decision concordance in 2 separate studies -Five Wishes, Making Your Wishes Known, MyICUGuide, & PREPARE fulfilled all 10 of the recommended key elements for ACP	research -Overall, research thus far shows promise in web-based ACP tools for improvement of ACP knowledge and actionability
Zapata, C., Lum, H. D., Wistar, E., Horton, C., & Sudore, R. L. (2018). *Feasibility of a video-based advance care planning website to facilitate group visits among diverse adults from a safety-net health system* Mary Ann Liebert Inc. doi:10.1089/jpm.2017.0476							

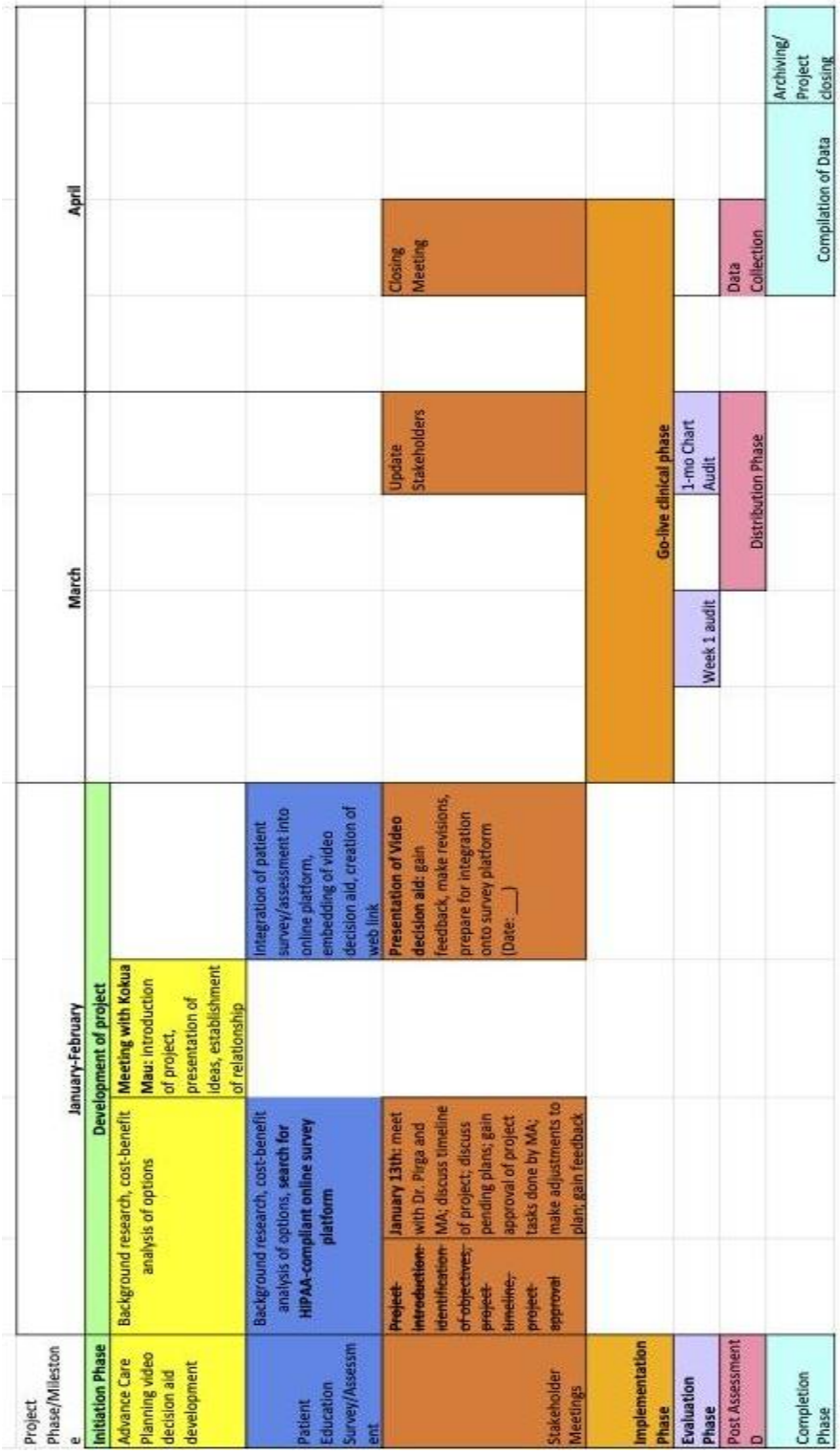
Overviewed the integration of the PREPARE website through group visits and its influence on ACP decision-making and education.	Pilot study	N = 22 participants ≥55 years at 2 primary care clinics in Northern California safety-net setting	-ACP Knowledge -Acceptability / Ease of use -Comfort with product -Helpfulness of intervention -Likelihood of recommending website to peers	-ACP engagement survey (pre and post) -Non-validated multiple choice questions on ACP concepts -validated acceptability surveys that assessed the ease-of-use of on a 10-point scale, -a 5-point Likert scale to measure comfort with and the helpfulness of the PREPARE work-book -5-pt Likert scale rating the likelihood of recommendation	-Pre to post responses calculated as percentages, means, and compared using Fisher's exact tests or t-test -Stata used for analysis	-Participants demonstrated 40% increase in knowledge about surrogate designation (p=0.01) -31% increase in conversations with others about surrogate designation (p=0.01) -Nonsignificant increase in knowledge of optimal time to choose surrogate, inform others of wishes, and identifying the optimal surrogate. -Nonsignificant increase in knowledge of surrogate definition and medical decision-making flexibility -Significant	JHREAT: Level IV Good Quality -Statistically significant improvements in several sectors of knowledge and self-efficacy -Would have been helpful to have some qualitative data regarding patients views of the hybrid-style of learning -Used validated outcome measurement tools to assess ACP knowledge and actionability

						increase in participant reported informativeness (p=0.02) -Increased self-efficacy (p=0.03) -Significant increase in readiness (p<0.01) to choose a surrogate -Significant increase in readiness to sign an AD (p=0.01)	

Definition of abbreviations: ACP [Advance Care Planning], AD [Advance Directive], MOST [Medical Order for Scope of Treatment]

Appendix B:

Gantt Chart



Appendix C:

Work Breakdown Structure

Level 1	**Level 2**	**Level 3**
1.0 Design Advance Care Planning Intervention	1.1: Initiation (December-February)	1.1.1: Meet with stakeholder/sponsor & initiate project 1.1.2: Identification of patient education screening tool 1.1.3: Identify video decision aid for advance care planning 1.1.4: Deliverable: patient education screening tool & selection of video decision aid 1.1.5: Meet with stakeholders & gain approval/signing
	1.2: Planning (January - February)	1.2.1: Meet with medical assistant staff & determine workflow integration process 1.2.2: Obtain medical assistant agreement to pre-visit protocol 1.2.3: Deliverable: creation of external link to website with patient education screening tool & video decision aid 1.2.4: Milestone: Pre-implementation meeting with stakeholders & staff
	1.3: Implementation/Execution (February-April)	1.3.1: Verify patient accessibility through beta-testing 1:3:2: Go-live clinical application with pre-visit protocol 1:3:3: Deliverable: successful accessing of link & video decision aid by patients 1:3:4: Milestone: patient compliance, provider convenience
	1.4: Evaluation	1:4:1: Milestone: 1-week chart audit 1:4:2: Evaluation with medical assistant & stakeholder input 1:4:3: Deliverable: 1-month survey audit 1:4:4: Deliverable: presentation of survey audit results 1:4:5: Send after-visit survey to patients

	1.5: Completion	1:5:1: After-visit survey audit 1:5:2: Deliverable: Presentation of after-visit survey 1:5:3: Send staff post-project survey 1.5.4: ACP Benchmark re-assessment 1:5:5: Closing meeting with Stakeholders 1:5:6: Archiving & closing of project

Appendix D:

SWOT Analysis

	Favorable	Unfavorable
Internal	**Strengths**	**Weaknesses**
	1. Free patient service not associated with extraneous insurance billing a. Does not meet full ACP billing requirements, therefore no out of pocket for patients who have already fulfilled requirement during Medicare Wellness visits 2. Reduces monopolization of patient-physician time by using the pre-visit to provide teaching 3. Utilizes technology-based platform, allowing patients seen by telehealth to access resources	1. Intervention is not face-to-face and patients cannot ask questions or clarify in real-time 2. Previous studies have a dedicated staff member to contact & check ACP documentation 3. Reliant on patient compliance to access and view education as there is no penalty or incentive offered 4. Lack of outcome measurement other than ACP documentation and post-survey results as AD documentation is not required as part of the study interventions due to time constraints
	Opportunities	**Threats**
External	1. Pre-visit education can allow patients to develop their own questions for providers during visit. 2. Technology-based platform allows patients to share education with family and re-visit when needed 3. Medical assistant able to call patients prior to visit to remind them of pre-visit requirement after appointments, preventing overtime work or the need for an extra staff member 4. ACP Coordinator available to assist team with project. Including benchmark surveillance, training, and project approval by facility 5. Local organizations agree to collaborate and develop unique education that resonates with population/community	1. Elderly population may be adverse to or not have access to internet, creating potential barriers to participation 2. In-person or Zoom-based group education options (Kokua Mau) are available. Patients may prefer to attend this instead of participate 3. Online modules accessible through private insurance and larger health systems (Hawaii Pacific Health, Queen's, etc.) that patients may have already completed and therefore may not want to participate in study

Appendix E:

Communication Matrix

Project Name	Technology-Based Advance Care Planning in Primary Care Telehealth Patients
Institutions	University of San Francisco
Project Manager	Taryn Achong
Project Team	Karen Van Leuven (Advisor, Dr. Jason Pirga (Site supervisor/Sponsor), John Ventura (MA), Michelle Cantilo (HPH ACP Coordinator)
Project Description	Introducing elder patients to advance care planning using technology-based education

Communication Vehicle	**Target Audience**	**Description/Purpose**	**Frequency**	**Owner**	**Distribution Vehicle**
USF-Facility	Facility Administration	Project approval, budget approval, closing	Week 1, 2, 3	TA*	Zoom, phone conference, email
Clinic Staff-Team Lead	Dr. Pirga, John, Michelle	Project introduction & Updates	Week 1, 4, 6, 9, 17	TA	In-person, phone, Email
Stakeholder Updates	Staff, Stakeholders	Updates	Week 4, 9, 16	TA	Email

*Taryn Achong

**Medical assistant

Appendix F:

Gap Analysis

Best Practice/ Recommendations	**Strategies to Implement Best Practice**	**Difference to Facility Practice & Best Practice**	**Barriers to Implementation of Best Practice**	**Decision to Implement Best Practice**
● >65% of eligible patients with documented voluntary advance care planning ● At least one annual documentation of ACP for all eligible patients ● Designated health care proxy recommended for patients of all ages regardless of health status ● CDC guidelines	● Provide ACP counselling during Medicare Wellness visits ● Provide pre-visit education introducing ACP to patients ● Designate whole visits to ACP with provider, patient, and selected surrogates if appropriate ● Introduce patients to resources accessible at home to share with surrogates if unable to meet as a group ● Identify an ACP champion at the facility who can be available to patients,	● Limited face to face interaction with patients due to COVID-19 ○ No face to face interaction means no qualifying visits for ACP (CMS) ● TIme constraint due to Medicare Wellness visit which are typically 25-30 minutes, & ACP requires a certain time to qualify for billing ● Benchmarking currently done through billing and not by provider account	● Time: limited number of visits even with chronic care patients. Even during visits, medication & care plan take priority over ACP discussion ● Resources: telehealth limits group interactions and community education, elderly patients typically do not have independent access to technology ● Learning preferences: local patients typically prefer face-to-face or group education, which is not possible with COVID-19, elders do not prefer technology or tele-based interaction and dislike navigating the internet	● Technology-based education will be provided to elders as a pre-visit preparation ● Elder patients will complete a pre-visit education screening to understand learning style preferences ● Patients will be sent after-visit surveys to gauge knowledge base, satisfaction, and willingness to discuss ACP further with providers

recommend all non-essential gatherings adhere to 6-feet apart rule	families, and providers	● No current protocol or policy for ACP in Straub internal medicine & family practice		

Appendix G:

Budget Plan

Budget Proposal

Project Design	Labor Hours	Cost/Hour	Units (AKA Persons)	Miscellaneous Cost	Total Cost to Facility
Manager Project Planning Hours	180	$0	1	$0	$0
Staff Meetings	1	$0	1	$0	$50
Administration Meetings	2	$70**	1-2***	$0	$140
Total	184.5	$0-$140	3	$0	$190

**Calculation is dependent on https://qpp.cms.gov staffing of setting.

*** Hypothetical team members include: medical director, chief medical officer, research coordinator

Return on Investment

	Definition	Population Calculation	Cost Calculation	Total Return on Investment
ACP Reimbursement (Medicare)	-30 minutes -Face to Face -Explanation of ACP, forms, etc.	N = 8	-$86/patient -$75/additional 30 mins	$688
Current Facility	As stated above	71.5% **		N/A

*Example reimbursement estimated from HMSA Quest & other carriers

**Hawaii Pacific Health data for Dr. Pirga's practice in year 2020.

Cost-Benefit Analysis

Patient Education Screening Tools & Advance Care Planning Education Surveys

Product Description	Cost	Advantages of Product	Disadvantages of product

Advance Care Planning Engagement Tool	Free	● 82-item validated questionnaire ● Validated in select item formats (55, 34, 15, 9, an 4 item questionnaires) ● Includes behavior change process and action item analysis ● 5-point Likert scale format	● Either the 4 or 9-item versions would be used, therefore decreasing the tool's ability to make a complete analysis of change ● Smaller formats are not validated for large group analysis ● Does not analyze patient learning preference
ACP Knowledge Assessment developed by researcher	Free	● Assessment tool created using validated patient education assessment questions ● Length of questionnaire can be tailored for the needs of study ● Questions can be hand-picked as appropriate for ACP knowledge assessment	● No validity in measurements ● Results would be difficult to compare to other study results ● Questions used from previous patient education assessment tools are not all validated and have different levels of reliability and predictability ● Questions used were not created specifically for ACP knowledge
VARK (Visual, Aural, Read/write, and Kinesthetic)	$35.45	● 16-item questionnaire and algorithm that calculates a learning style preference for the user ● Discusses strategies in education, teamwork, and business that may be used with each learning style ● Includes the initial offer of 30 participants who can use the web address above to fill in the VARK questionnaire. ● Blocks of additional participants can be	● Patients must access tool through website ● Cannot be integrated into survey-based websites, although website does not require client personal information prior to using tool ● Tool is designed to teach students to act on their learning modality, therefore simply using the screening tool is not an appropriate ● Is designed for students & learners, not patients

		added for an additional cost from $0.36 USD to $0.72 USD per participant (depending on how many are purchased). ● Validity tested among 15,1316 participants	
Learning Style Questionnaire developed by researcher	Free	● Multiple-choice question asking patients to choose their preferred method of learning ● Due limited evidence supporting validated learning style assessments, current tools are >10 questions long & inappropriate for this study ● Assessment does not require valid questions as result will not be part of data collection or post-study measured outcomes	● Not validated, therefore any interventions based on the question's results would not be evidence-based ● Relies on patients' understanding of their learning preferences ● Can be used in data analysis but will not be statistically signficant

Advance Care Planning Video Decision Aids

Product Description	**Cost**	**Advantages of Product**	**Disadvantages of product**
ACP Decisions	Pricing scale based on organizational needs	● Evidence-based advance care planning video library containing multilingual videos <10 minutes ● Video library accessible to public for free ● Videos in multiple languages in layman's terms ● Physicians can "prescribe" videos to patients to view based on their assessed needs ● Videos are available on the ACP Decisions App for offline access ● No extraneous costs to patients	● Organizations must partner with company to use video library in studies ● Pricing is based on organizational needs ● Advised to commit to 12-month partnership to best utilize resources ● Not locally relevant to Hawaii residents ● Do not replace provider-patient ACP discussions

PREPARE research & Quality Improvement Package	$500/year	● Entire website dedicated to guiding patients step-by-step through the ACP process ● Provides downloadable written materials for patients to share with providers ● May include PREPARE URL in research/QI materials ● Print Materials for specific, time-limited use ● Organization may simply opt to include URL as a resource without obtaining license agreement	● Unable to use PREPARE materials or provide to patients enrolled in pilot study ● Patients view videos not unique to their lifestyles ● Organization must commit to one year of use and report results on compliance, satisfaction, and patient feedback to PREPARE ● Patients can access the same materials for free ● Organization will have to pay to use URL used for QI or research purpose ● Includes patient engagement measurement tool ● Guide branding is billed through a separate agreement
Kokua Mau Video Decision Aids	Free	● Made by Hawaii-based ACP organization ● Materials are <10 minutes each ● Further assistance is offered for free to patients and providers ● Talk Story program (on defer due to COVID19) can be integrated into practice	● Information is limited to introductory information only ● Patients will need to direct questions to their providers following the resource ● No evidence-based tools for patient engagement measurement ● Videos are in English only without multi-language subtitles
The Conversation Project (IHI)	Free	● Offers a variety of downloadable materials patients can access ● Organized by patient preference, depending on what type of “conversation” they would like to have	● Example videos are not uniquely relevant to local patients ● Website is mildly overwhelming and may not be appropriate for

		● Guides are customizable and brand-able for free ● *Provides free and affordable video aids for clinicians & their teams to use to increase staff education on ACP conversations ($99) ● Range of language availability	very elderly or chronically ill patients with poor eyesight or cognitive impairment ● *Conversation Ready Toolkit for clinical organizations requires IHI membership ($189/year)
Hawaii Pacific Health Emmi Patient Educatio n Video	Free for HPH patients	● Interactive module created by HPH for local patients ● 24-minutes in length, detailing ACP from introduction to examples of care levels ● Briefly describes how to choose a healthcare proxy and fill out an AD ● Patients can write notes during presentation ● Closed captioning ● Printable summary and notes to bring to visit	● Accessible only through HPH website, requiring patients to click through several links ● Frequent sound issues with website, requiring patients to read on-screen information or troubleshoot ● Lengthy video that does not allow patients to skip ahead to different sections ● Patients must navigate HPH website to find ACP page OR google ACP-Hawaii Pacific Health in order to find resource
Hawaii Pacific Health Advance Care Planning - The Conversa tion	Free	● 4-minute Youtube video showing vignettes introducing patients to ACP ● Encouraging patients to start the ACP conversation with providers and families ● Made in Hawaii with local patient and provider stories ● Used as an introductory video to ACP on HPH website	● Does not mention definitions or explanation of care terms ● Does not provide information on who and how to appoint a healthcare proxy ● Patients must navigate HPH website to find ACP page OR google ACP-Hawaii Pacific Health in order to find video and resource

ACP Video created be researchers	$300 - <$1500	● Created in collaboration with stakeholders ● Can be used as a prototype & be further developed for official use ● ACP education would be provided in a relatable manner using local patient vignettes ● Would incorporate elements specifically requested by site's stakeholders ● Video length would be shorter and created specifically to complement and introduce patients to their ACP visit	● Expensive & time-consuming ● Redundant in resource allocation as HPH already has an ACP video

Survey Platform

Product Description	**Cost**	**Advantages of Product**	**Disadvantages of product**
SurveyMonkey	>$25/user/month	● HIPAA-compliant feature ● Exportable data compatible with multiple software ● Unlimited respondent bandwidth ● Easy video and multimedia integration ● Question format variety	● All features and sharing capabilities must be negotiated with business agreement ● HIPAA feature only available with Enterprise plan ● Subscription price increases with additional collaborators ● Limited theme options & may not be able to personalize surveys
JotForm	Free	● HIPAA-compliant feature ● Exportable data compatible with multiple software ● Unlimited respondent bandwidth ● Easy video and multimedia integration ● Question format variety ● May alter survey completion page based on	● Newer site not known to patients/providers ● Requires Business Associate Agreement to unlock all features, BAA is offered to frontline COVID-19 workers for free

		responses	
Qualtrics	$1,500/year	● Sensitive data feature ● Data analysis feature within website ● Data exportable to multiple softwares ● Free to use for USF students ● Multimedia capability through hyperlink (opens new window)	● USF Business Associate Agreement does not include sensitive data feature & student would need to pay for separate membership ● Sensitive Data feature is not “HIPAA” but follows similar policies/capabilities
Google Forms	Free*	● HIPAA-compliant feature ● Data analysis possible through google sheets ● Data can be exported to Excel ● Video embedding capability	● Requires BAA to enable HIPAA compliance, BAA must be entered with administrators of facility not student ● Cannot alter survey completion page based on responses

Appendix H:

Post-Visit Resource Algorithm

Preferred Learning Style	**Does the patient want more information or education on Advance Directives and POLSTs?**	**Is the patient ready to speak to proxies about Advance Directives?**	**Is the patient ready to fill out an advance directive?**
Literature/Reading	Details on treatment options in end of life, checklist on advance directives, and information on how to choose a proxy: https://kokuamau.org/wp-content/uploads/CtrOnAging-Booklet-1-REV_6-1-11.pdf POLST information: https://www.hawaiipacifichealth.org/media/6536/a-consumer-guide-to-provider-order-for-life-sustaining-treatment-polst.pdf	The Conversation Starter Kit (includes details and example conversations): https://kokuamau.org/wp-content/uploads/TCP_StarterKit_KM_Writeable.pdf	Hawaii Advance Directive form: https://kokuamau.org/wp-content/uploads/Hawaii_Advance_Directive.pdf Terms, definitions, and checklist for filling out form: https://kokuamau.org/wp-content/uploads/Advance-Directive-Info-Kokua-Mau.pdf
Visual/Auditory	The importance of Advance Directives: https://www.youtube.com/watch?v=3x1MtGiVVtQ The difference between filling out an Advance Directive vs. a POLST:	Choosing a healthcare proxy: https://www.youtube.com/watch?v=0TFyfwWziPM	Free educational module on Advance Directives through Hawaii Pacific Health: https://www.my-emmi.com/SelfReg/HPH

	https://www.youtube.com/watch?v=QuRMTUZ76C0		
Kinesthetic/Hands-on	Advance Care Planning Class Registration: https://www.hawaiipacifichealth.org/health-wellness/events/advance-care-planning-registration/ (Monthly class: next dates are February 2nd, March 4th, and April 7th)	Interactive game to match patients with their "Very Important" wishes in Advance Care Planning. http://gowish.org (Click "Play the online Interactive Version for FREE" banner in purple)	Advance Care Planning Class Registration: https://www.hawaiipacifichealth.org/health-wellness/events/advance-care-planning-registration/

Appendix H:

Medical Assistant Script & Resources

Pre-visit MyChart Message
Aloha,

In preparation for your appointment with Dr. Pirga tomorrow, we would appreciate your participation in this short activity focused on Advance Care Planning. You will be asked to complete a survey and watch two short videos. This activity should take no longer than twenty minutes and can be done with a family member if you wish. Please bring your questions to Dr. Pirga tomorrow! To enter the activity, click the link below! Please remember to write down your *random identifier* at the end of the survey.
https://hipaa.jotform.com/210168484588163

Mahalo nui,
Hawaii Pacific Health
DISCLAIMER: This activity is HIPAA encrypted and requires no private information.

Pre-visit Phone Call Script:

Hello,

This is John, Dr. Pirga's medical assistant, calling from Straub about your appointment tomorrow at ___. We are implementing a new protocol on Advance Care Planning, which is a conversation about your wishes for treatment in the event of an emergency. Dr. Pirga is prepared to discuss this further with you tomorrow, but we have a short activity that he would like you to complete before coming in. I have sent you a survey link through MyChart that will take you to a short survey and two videos. This should take no longer than 20 minutes to complete.
Mahalo for your time.

FAQ:

Why are you doing this new activity now?

Due to COVID19, we are now required to see more patients through televisit, which shortens our ability to answer all of your questions and provide anticipatory guidance. Hawaii Pacific Health is dedicated to your health and quality of life, which also includes planning ahead for hard decisions and challenges in your health. We are now moving to having at least one conversation a year without a requirement for action (AKA, there is no need to complete an AD or POLST).

What if I already have had this conversation with my (or another) provider?

Even if you have already discussed this with Dr. Pirga, it is good practice to revisit the conversation at least once a year to ensure that nothing has changed. You may also want to discuss any new treatments or changes in your health which may affect your wishes.

What if I already have an Advance Directive?
We would like to ensure that your documentation is up to date. If you have already completed your AD, is it in our system? If you are not sure, please bring it any time for us to make a copy for our records.
What is the activity about?

It is a 6-question survey followed by two videos that are several minutes long. You do not need to fully watch each video all the way through, but they contain great information on Advance Care Planning. We will also be providing you with resources after your visit that suit your unique needs and interests.

Is this happening throughout the entire hospital or HPH?

No, you are the first patients to participate in this activity. If it is beneficial, HPH may implement some elements system-wide! Your feedback will be welcome in our after-visit survey!

What if I do not have time to complete this activity?

If you do not have time to complete the entire activity, that is okay. We only ask that you take five minutes to complete the survey portion. Dr. Pirga will also want to discuss ACP with you tomorrow, so the activity will help get you prepared. You may have questions you have not yet thought about or have been meaning to ask!

I have specific questions about Advance Directives and/or POLST.

Both of those documents are very important elements of ACP. Unfortunately, I will not be able to answer your questions to the fullest extent today. Dr. Pirga will be happy to provide you with more information tomorrow. Please view our activity and write down your questions for him!

What if I do not have access to mychart but would like to participate?

I can help you enroll right now through text or email.

Post-Visit MyChart Message:

Aloha,

Thank you for visiting with Dr. Pirga today. We would appreciate your participation in our post-visit survey on Advance Care Planning. This activity should take no more than 10 minutes. Please have your *random identifier* from your pre-visit survey ready.
We would appreciate you completing the survey by the end of this week. To enter, please click the link below!
https://hipaa.jotform.com/210217085490147

Mahalo nui,
Hawaii Pacific Health
DISCLAIMER: This activity is HIPAA encrypted and requires no private information.

Appendix I:
Advance Care Planning Pre-Visit Survey

Please select your gender. *

Please select one.

Please enter your age.

Age in years.

Please select your response according to which option best describes you:

1- I have never thought about it.

2 - I have thought about it, but I am not ready to do it.

3 - I am thinking about doing it in the next 6 months.

4 - I am definitely planning to do it in the next 30 days.

5 - I have already done it.

After completing the survey, please watch the brief videos about Advance Care Planning. Mahalo!

1. How ready are you to SIGN OFFICIAL PAPERS naming a person or group of people to make medical decisions for you? *

	1	2	3	4	5	
I have never thought about it.	○	○	○	○	○	I have already done it.

2. How ready are you to talk to your DECISION MAKER about the kind of medical care you would want if you were very sick or near the end of life? *

	1	2	3	4	5	
I have never thought about it.	○	○	○	○	○	I have already done it.

3. How ready are you to talk to your HEALTHCARE PROVIDER (doctor, nurse practitioner) about the kind of medical care you would want if you were very sick or near the end of life? *

	1	2	3	4	5	
I have never thought about it.	○	○	○	○	○	I have already done it.

4. How ready are you to SIGN OFFICIAL PAPERS stating your wishes about the kind of medical care you would want if you were very sick or near the end of life? *

	1	2	3	4	5	
I have never thought about it.	○	○	○	○	○	I have already done it.

If you have answered "I have already done it" to any of the above questions, please indicate when.

Please include exact month and year to each answer. If you do not know, please indicate the approximate year.

Which would you describe as your preferred way of learning? *

- ☐ Visual: I like to read, see pictures, videos, and infographics.
- ☐ Kinesthetic: I like to use my hands, act out, or participate physically in my learning.
- ☐ Auditory: I like to listen to and discuss what I am learning.

Appendix J:
Advance Care Planning Post-Visit Survey

Please enter your 5-digit identifier from your previous survey.

If you cannot recall either, please leave this section blank.

Please select your response according to which option best describes you:

1- I have never thought about it.

2 - I have thought about it, but I am not ready to do it.

3 - I am thinking about doing it in the next 6 months.

4 - I am definitely planning to do it in the next 30 days.

5 - I have already done it.

Mahalo!

1. How ready are you to SIGN OFFICIAL PAPERS naming a person or group of people to make medical decisions for you? *

1 2 3 4 5

I have never thought about it. ○ ○ ○ ○ ○ I have already done it.

2. How ready are you to talk to your DECISION MAKER about the kind of medical care you would want if you were very sick or near the end of life? *

1 2 3 4 5

I have never thought about it. ○ ○ ○ ○ ○ I have already done it.

3. How ready are you to talk to your DOCTOR about the kind of medical care you would want if you were very sick or near the end of life? *

1 2 3 4 5

I have never thought about it. ○ ○ ○ ○ ○ I have already done it.

4. How ready are you to SIGN OFFICIAL PAPERS putting your wishes about the kind of medical care you would want if you were very sick or near the end of life? *

1 2 3 4 5

If you have answered "I have already done it" to any of the above questions, please indicate when.

Please include exact month and year to each answer. If you do not know, please indicate the approximate year.

How would you rate your Advance Care Planning experience after this visit?

	1	2	3	4	5	
Very Dissatisfied	○	○	○	○	○	Very Satisfied

If you could add anything to this experience, what would you like to see provided?

Please select your preferred learning method.

- ☐ Visual: I like to read, see pictures, videos, and infographics.
- ☐ Kinesthetic: I like to use my hands, act out, or participate physically in my learning.
- ☐ Auditory: I like to listen to and discuss what I am learning.

Appendix K:
Post Project Staff Survey

Saturday, April 3, 2021

Post Project Survey

How well did the project produced meet the defined project objectives?

What is your overall assessment of the outcome of this project?

How actively and meaningfully were stakeholders (you) involved in the project?

How well were your expectations met regarding the frequency and content of information that was conveyed to you by the Project Manager?

How effectively and timely was the organizational change impact identified and planned for?

How effectively were issues managed on the project?

How effective was the support you received during implementation of the project?

How well were the data & outcome measurements presented at the end of the project?

Overall, how effective was the performance of the Project Manager?

What were the most significant issues on this project?

In hac habitasse platea dictumst. Morbi vestibulum, velit id pretium iaculis, diam erat fermentum justo, nec condimentum neque sapien placerat ante. Nulla justo.

What on the project worked well and was effective in the implementation of the project?

In hac habitasse platea dictumst. Morbi vestibulum, velit id pretium iaculis, diam erat fermentum justo, nec condimentum neque sapien placerat ante. Nulla justo.

Please add any other comments you have regarding the project & project manager performance.

In hac habitasse platea dictumst. Morbi vestibulum, velit id pretium iaculis, diam erat fermentum justo,

Appendix L:
Project Issue Management Logs

ISSUE MANAGEMENT LOG											
Project Name:	Advance Care Planning using Technology-based Media										
Facility Title	Hawaii Pacific Health - Straub										
Project Manager Name:	Taryn Achong										
Project Description:	Advance Care Planning using Technology-based Media										
ID	**Current Status**	**Priority**	**Issue Description**	**Assigned To Owner**	**Escalation Required (Y/N)?**	**Impact Summary**	**Action Steps**	**Issue Type**	**Date Identified**	**Actual Resolution Date**	**Final Resolution & Rationale**
1	Closed	Critical	Patients not able to access pre-visit survey through MyChart	MA, TA	Yes	Potential project failure. Inability to obtain data.	Required consultation with IT department for guidance	System	03/02/21	03/12/21	MA was taught to hyperlink survey through MyChart. Beta tested through IT department.
2	Closed (Unresolved)	Critical	Post Visit Surveys incomplete	TA	Yes	Lack of data to compare statistically at close of project	Consult with stakeholders on revising post-visit protocol vs. continuing	Other	03/02/21	None	Project revision: post-visit resources provided to patients after pre-visit survey, MD collected verbal data on patient feedback, ACP documentation, AD

							with current project.				documentation, and ACP benchmark added to measured outcomes.

Appendix M:
Results

Table 1.

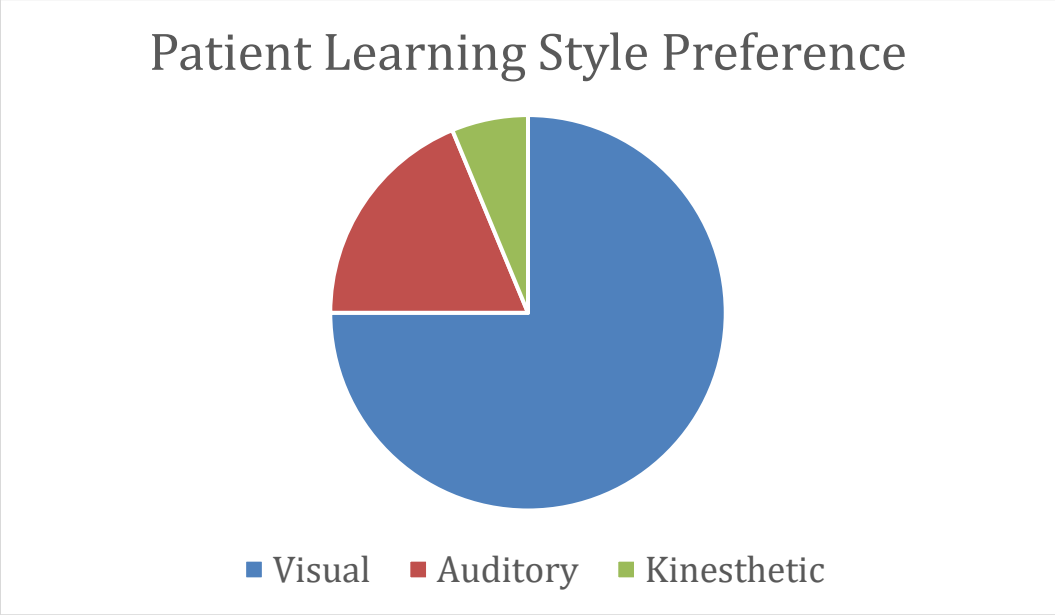


Table 2.

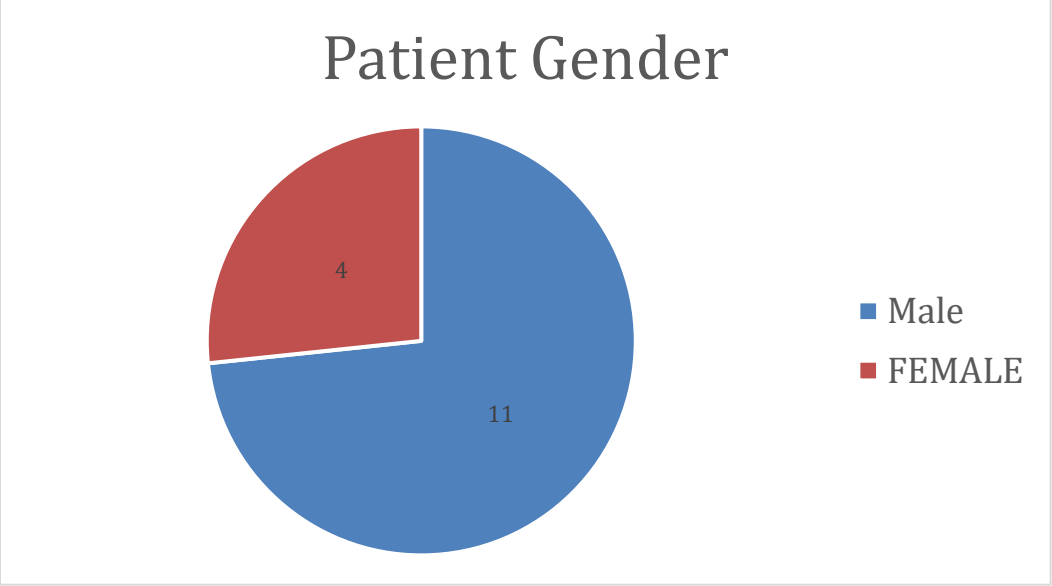


Table 3.

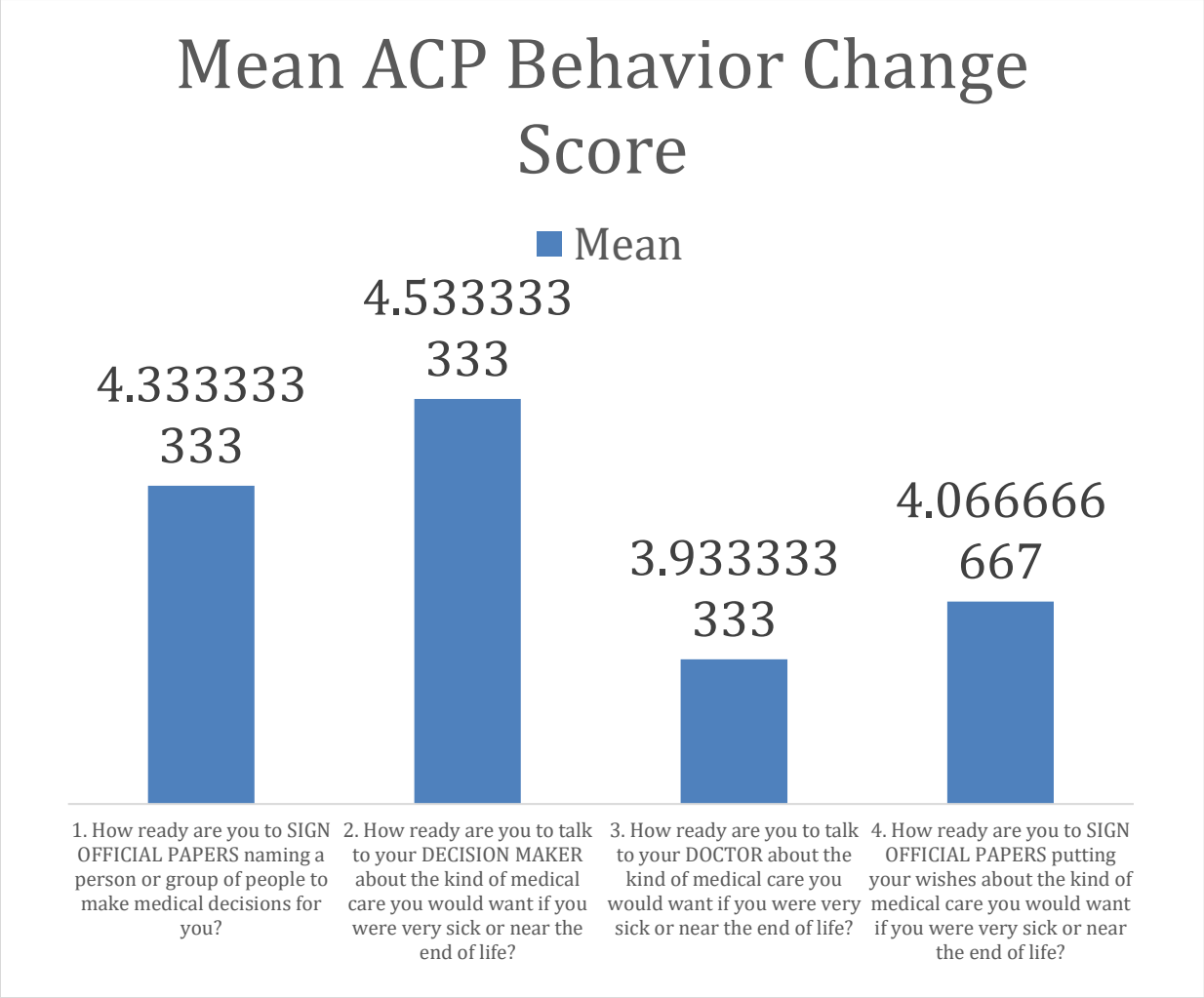


Table 4.

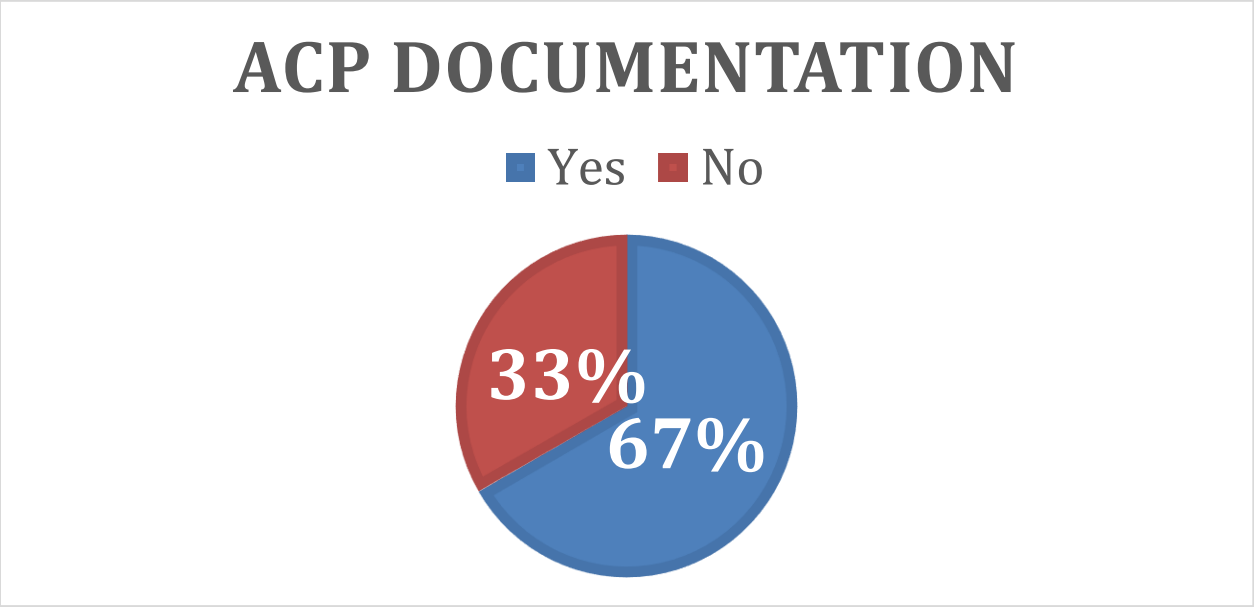
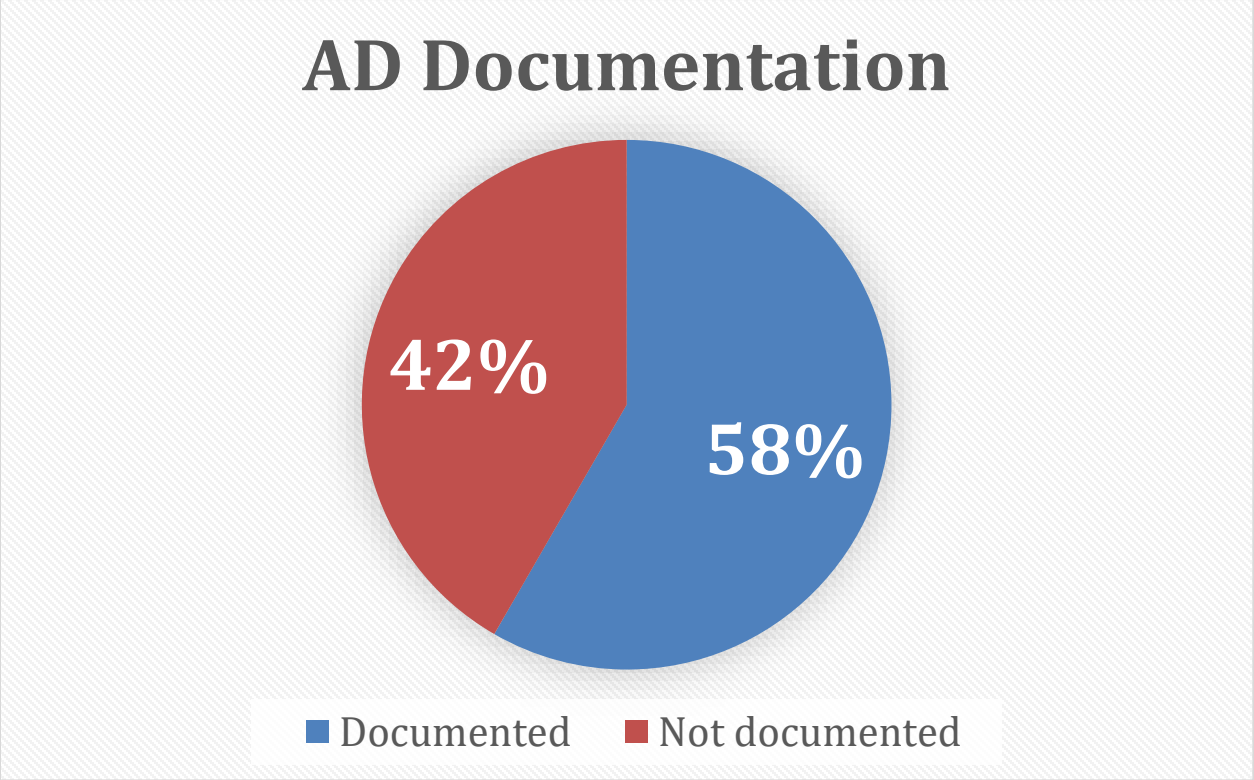


Table 5.



Appendix N: Miscellaneous Documents

HAWAIʻI PACIFIC HEALTH | KAPIʻOLANI PALI MOMI STRAUB WILCOX

February 10, 2021

Jason Pirga, MD
Straub Medical Center
888 S. King Street
Honolulu, HI 96813

Dear Dr. Pirga:

SUBJECT: EXEMPT FROM IRB REVIEW
Project Leader: Jason Pirga, MD
Project Title: Advance Care Planning Education in Telehealth: Optimizing the Pre-Visit & After-Visit Summary
HPHRI Study Number: 2021-008

On February 10, 2021 a designee of the Institutional Official of Hawai'i Pacific Health determined the above referenced project is not research (as defined in 45 CFR 46.102(l)) subject to review by an Institutional Review Board. The project was reviewed and determined to be a Quality Improvement activity and part of hospital operations as it seeks to improve patient care.

Any report on the results of this study is to include only de-identified data in an aggregated format.

Hawai'i Pacific Health Research Institute will maintain files on all studies determined to be exempt from regulations.

Sincerely,

Wade Kyono, MD
Hawai'i Pacific Health Institutional Official Designee

WK/as

JOTFORM HIPAA BUSINESS ASSOCIATE AGREEMENT

This HIPAA Business Associate Agreement (“HIPAA BAA”) is made between **JotForm, Inc.**, (“JotForm”) and **Straub, Hawaii Pacific Health** (“Covered Entity” or “Customer”) as an agreement to the JotForm Terms of Use (the “Terms of Use”). This HIPAA BAA is effective as of **January 15, 2021** (“Effective Date”), which is the date Customer indicated its acceptance of this HIPAA BAA electronically. This HIPAA BAA was electronically signed by **Taryn Achong**, **DNP Student** on behalf of Customer on the Effective Date.

In accordance with this HIPAA BAA, Customer may disclose to JotForm certain "Protected Health Information" subject to the Health Insurance Portability and Accountability Act of 1996, as codified at 42 U.S.C. Section 1320d-6 and 1320d-9 (“HIPAA”) and any current and future regulations promulgated thereunder, including, without limitation, the federal privacy regulations contained in 45 C.F.R. Parts 160 and 164 Subparts A and E (“Privacy Rules”), the federal security standards contained in 45 C.F.R. Part 160 and 164 Subparts A and C (“Security Rules”), and the Health Information Technology for Economic and Clinical Health Act (“HITECH Act”) contained in Section 13402 of Title XIII of the American Recovery and Reinvestment Act of 2009 (“ARRA”) (all are collectively referred to herein as the “The Regulations”).

JotForm and Customer hereby agree to the terms and conditions of this HIPAA BAA in compliance with the The Regulations.

1. Definitions

1.1. The terms of this HIPAA BAA are incorporated herein by reference as part of the Terms of Use to comply with the The Regulations.

1.2. Required by law shall have the same meaning as in the term “required by law” in 45 CFR § 164.103.

1.3. “Security Rule” shall mean the Security Standards for the protection of Electronic Protected Health Information, located at 45 CFR Part 160 and Subparts A and C of Part 164