

Education and Implementation of POLST Protocols in Northern Arizona

Dawn M. Rivas

Submitted in Partial Fulfillment of the Requirements

for the

Northern Arizona University

School of Nursing

Doctor of Nursing Practice Program

July 31, 2017

ACKNOWLEDGEMENTS

I would like to thank the following people for their continued support and encouragement throughout the entirety of this DNP project: my committee chairperson, Mary Anne Hales Reynolds, RN, PhD, ACNS-BC, Associate Professor School of Nursing at Northern Arizona University, committee member, Emmalee Kennedy, MD, Medical Director; Northern Arizona Healthcare Palliative Care and the entire palliative care team at Flagstaff Medical Center, without whom this project would not have come to fruition.

I would also like to thank my peers in the DNP program, Sharon, Jean, Heidi, and Emma for all of our late night and weekend Skype sessions and group project successes as well as the pep talks during the times I felt overwhelmed.

Finally, I would like to thank my husband, Andrew for his continued support over the last two years. I appreciate all of the dinners, dog walks and household chores you took on while I completed my work. My heartfelt thanks.

This DNP project is dedicated to Jason Kurtz who throughout his illness and until his death touched many lives through his grace and humor. Jason always ensured his needs, and care preferences were known, and because of this, a passion for end-of-life care and advocacy was ignited in my spirit.

Jason Kurtz

March 1, 1974-November 12, 2007

Abstract

Provider orders for life-sustaining treatment (POLST) is a medical order set that is signed by a physician, nurse practitioner, or a physician assistant and describes how patients wish to be cared for regarding their medical treatment (or refusal of) during times of serious illness and frailty. POLST provides continuity of care across settings of care, increased quality of life and, improved patient satisfaction. POLST is not readily available in all of the United States, and Flagstaff currently has the only POLST program in the state of Arizona. The purpose of this multi-step doctor of nursing practice (DNP) project was to affect a practice change initiative that increased the awareness and utilization of POLST in Northern Arizona by implementing a POLST protocol at Flagstaff Medical Center (FMC). This included assessing the educational needs of the nursing and medical staff, educating the staff, implementing and evaluating a referral system and supporting patients and their families as well as healthcare providers to continue to use POLST after discharge. As the nursing and medical staff became more comfortable with advance care planning discussions, more POLST appropriate patients were identified and more POLST referrals were brought to the attention of the POLST team.

Key words: POLST, end-of-life, quality of life, advance care planning

POLST EDUCATION AND IMPLEMENTATION

POLST Education and Implementation

In 2015, The Institute of Medicine (IOM) published a study; *Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life*, in which one of the guiding principles focused on the belief that all people at End of Life (EoL) are entitled to care which honors an individual's preferences and promotes quality of life (QOL). The process which allows for EoL planning and adherence to patient wishes and, encourages continuity across settings of care is known as advance care planning [ACP] (Garrido, et al., 2015). Advance care planning documents allow patients to make their treatment wishes known in the event they can no longer speak for themselves (POLST, 2017), and this process should include communication between an individual and their loved ones as well as their healthcare provider. Included in ACP are *advance directives* such as a healthcare proxy or power of attorney (POA) and a living will, as well as Provider Orders for Life-Sustaining Treatment [POLST] (NHPCO, 2016). POLST is different from an advanced directive in that advanced directives plan future care and are often completed by healthy patients, while POLST directives are suited for patients with serious and potentially life-limiting illnesses and plan for the patient's wishes here-and-now (POLST, 2017). POLST is not intended to replace an advance directive, in fact, they are meant to work together (POLST, 2017).

The first POLST task force was created in Oregon in 1990 in response to three issues: (a) many patients with serious illness' lacked advance directives, (b) problems often occurred when a patient transferred between healthcare settings and, (c) patients at EoL were receiving treatments that were not congruent with their wishes because as patient conditions change, so do ACP needs (Oregon POLST, 2017). The implementation of POLST on a national platform began

in September 2004 when the National POLST Paradigm Task Force (NPPTF) was created (POLST, 2017).

In the United States, there are currently 25 states that have programs where healthcare providers are fully utilizing the POLST order set (POLST, 2017) and Arizona is not one of those states. Consequently, Arizona is currently working towards implementing the POLST paradigm and Flagstaff has developed the only POLST pilot program in the state (S. Severson, personal communication, August 3, 2016). The implementation and utilization of POLST in Northern Arizona will facilitate conversations between the healthcare provider and patient (or proxy) leading to informed, shared decision making, ensure continuity of care across settings of care, and improve QOL as well as satisfaction for patients and their families. As a result, the clinical question directing this DNP scholarly project is: “Will implementing a POLST protocol at Flagstaff Medical Center (FMC) increase the awareness and utilization of POLST in Northern Arizona?”

Project Purpose

The purpose of this DNP scholarly project was to increase awareness and utilization of POLST in Northern Arizona. The multi-step process by which this goal was accomplished consisted of (a) implementing and evaluating a POLST referral system whereby staff: RNs and providers, could initiate a POLST referral (b) assessing the educational needs and knowledge of the nursing and medical staff at FMC and providing POLST education to them and, (c) increasing the acceptance, understanding, and use of POLST by patients, thus increasing POLST use in Northern Arizona. As a consequence, this project and its results in conjunction with the evidence provided from the literature can also help the state of Arizona to move forward with the POLST initiative.

Review of Literature

In order to fully understand the importance of POLST in Northern Arizona, it is important to explore advance care planning (ACP) with a focus on POLST, the importance of education of staff and healthcare providers at Flagstaff Medical Center, and the role of patients and family in the implementation and sustainability of the POLST initiative. This review of the literature will provide a better understanding of ACP, and factors that impact its success, including advance directives and POLST. In addition, a description of the Clinical Practice Model and how it directs this practice project and the education of staff, healthcare providers and family will be discussed.

Advance Care Planning

Advanced Care Planning is the process which allows for EoL planning and adherence to patient wishes and supports continuity across settings of care (Garrido, et al., 2015). Included in ACP are advance directives (AD) such as a healthcare proxy or healthcare power of attorney (POA) and a living will, as well as Provider Orders for Life-Sustaining Treatment [POLST] (NHPCO, 2016). Advance care planning is an approach that encourages the patient to decide what care they will or will not allow at EoL and leads to better health outcomes by way of increased patient self-efficacy (Coulter et al., 2015). Some advantages of engaging in ACP, as stated by patients, include (a) managing affairs while still able, (b) ensuring that wishes are met, (c) peace of mind, (d) decreasing burden on loved ones and (e) keeping peace within the family (Fried, Bullock, Iannone and O'Leary, 2010).

The process of ACP, including advance directives and POLST, is more of a step-by-step progression rather than a single event (Emanuel, von Gunten & Ferris, 2000). This stepwise approach includes the introduction of the topic, structured discussions, documentation of patient

preferences, periodic review with updates of the directive and finally, applying the directives during actual circumstances (Emanuel et al., 2000). The National POLST Paradigm describes advance care planning as the process of sharing one's goals of care and treatment preferences with healthcare providers and family so that the individual's wishes are known in the event they are no longer able to speak for themselves either due to an unexpected medical event or a known serious illness (POLST, 2017). Conversations lead to informed decision-making, avoiding confusion by providing clear direction. According to the American Nurses Association (ANA), nurses have a duty to promote informed decision-making in various circumstances, including patient EoL preferences (Dahlin & Wittenberg, 2015). The stepwise approach for successful ACP should allow time for the patient to absorb the information presented, ask relevant questions and reflect upon the information with loved ones (Dahlin & Wittenberg, 2015).

When healthcare providers are knowledgeable about ACP and POLST, they could have important conversations with their patients (Wenger et al., 2013) and transform ACP information into actual patient care.

Nurse and healthcare provider education. Studies have shown that many nurses and healthcare providers are uncomfortable having End-of-Life (EoL) conversations with patients (Corcoran, 2016). This discomfort may stem from lack of EoL education, inexperience, or fear of poor timing for the EoL conversation, all of which may lead to patient and family mistrust of the healthcare provider, thus leading to increased distress for all involved (Brooks, Manias & Nicholson, 2017; Corcoran, 2016). Furthermore, undergraduate nursing students are often not educated regarding care of patients and families at EoL (Corcoran, 2016) and this may shape their feelings about this patient population when they become registered nurses. There are many different opportunities for structured education of nurses and providers regarding EoL, beginning

with unit-based inservices and culminating with nationally recognized programs such as End-of-Life Nursing Education Consortium [ELNEC] (Corcoran, 2016). When healthcare professionals are provided with structured education about EoL choices and how to have these important conversations with patients and families, “comfort in delivering EoL care improves” as does patient and family satisfaction (Corcoran, 2016 p. 104).

Patient role. In 1990, the Patient Self-Determination Act was passed in the United States to encourage adults to make decisions in advance regarding the type and the level of medical care they would accept or refuse in the event they became too ill to speak for themselves (ACS, 2015). Patients are encouraged to take an active role in advance care planning regarding goals of care and treatment preferences, especially for EoL care, but many patients and families verbalize feelings of discomfort relating to making these high-stakes decisions on their own (Schaller, & Malhotra, 2015). The Robert Wood Johnson Foundation funded; *SUPPORT* study concluded that when given the opportunity to make their own treatment choices, many patients at EoL do not elect aggressive care to prolong their lives (Giovanni, 2012).

Patient outcome. When a patient makes the choice to change his or her code status to do-not-resuscitate (DNR), it may lead to better QOL in the time remaining before their death because their wishes for non-aggressive treatment are being observed, thus empowering the patient (Garrido, Balboni, Maciejewski, Bao & Prigerson, 2015). Numerous studies related to ACP describe improved patient satisfaction and improved QOL when patient wishes are adhered to (Table I). In a systematic review of the literature by Coulter et al. (2015), it was concluded that when patients are involved in personalized care planning, the results are often positive per patient self-reports. This does not necessarily mean longer life but reported improved quality during the EoL process when the patient’s wishes are valued, and they are allowed to live (and

die) on their own terms. Improved patient satisfaction and QOL can be measured when patient's wishes for aggressive treatment, or comfort care only, are adhered to during serious illness or EoL (Coulter et al., 2015; Garrido et al., 2015). Understanding ACP provides the foundation to further explain in detail, advance directives and POLST.

Advance Directives

Advance directives (AD) are legal documents that include living wills, health care POA and a prehospital medical care directive (DNR) in the state of Arizona (Brnovich, 2016). Guidelines for the completion of advance directives include the following criteria: they are for all adults, they describe future care, they are completed by the patient and not by the health care agent or surrogate, and portability and periodic review and update of this document is left to the responsibility of the patient and family (POLST, 2017). All fifty states and the District of Columbia have specific laws regarding advance directives (Cavallaro, 2015). In Arizona, advance directive and life care planning documents may be conveniently accessed on the website for the attorney general, and the documents may also be stored in the Arizona advance directive registry for easy access by healthcare providers (Brnovich, 2016).

In a study by Emanuel, Barry, Stoeckle, Ettelson and Emanuel (1991), 405 outpatients and 102 members of the general public in the Boston, Massachusetts area were asked to complete a medical directive questionnaire as part of a survey related to hypothetical health related scenarios such as coma with little chance of full recovery, dementia with terminal illness and other life-limiting illness'. The surveys queried the participants as to whether they would want certain medical treatments related to the hypothetical scenario. Of the outpatient population, 93% expressed a desire for one of three forms of advance directives, (a) living will, (b) healthcare POA or, (c) further conversation with their provider, and 89% of the general

population also desired advance directives after reading the scenarios. This study demonstrated the public's willingness to accept the use of advance directives in certain medical situations.

In the U.S., only about 20-30 percent of adults have an advance directive, and in many cases, these documents are not followed in times of emergency (Dunn, Tolle, Moss & Black, 2007). Dunn et al., (2007) describe that an ongoing problem with residents at nursing homes who have living wills or other advance directives is that in an emergency when the ambulance is called, the living will or general physician orders from the facility are not followed, as these orders have no authority in the ambulance during transport.

Emanuel et al. (2000) describe the importance of anticipating and avoiding some common issues associated with advance directives. These issues may be on the part of the physician, patient or healthcare proxy. Failure to plan for medical preferences is a common problem, and in the event of an emergency, decisions are often made with no knowledge of patient wishes (Emanuel et al., 2000). The two most common reasons that patients state for not completing advance directives are their expectation that the physician should initiate the conversation or that the patients believed this process is only for those who are in worse health or elderly (Emanuel et al., 1991). Other barriers described by Emanuel et al. (2000), include the absence of the proxy during ACP discussions, unclear patient preferences, discussions being too narrowly focused or, advanced directives not being read thoroughly by the healthcare provider. Engaging more physicians, as well as other healthcare providers, in this process and the outlining of potential drawbacks is one step that may be improved upon by providing education and subsequently, improving patient satisfaction and QOL.

Some barriers to engaging in advance directives as described by patients include, (a) lack of knowledge related to what advance directives encompasses, (b) the inability to plan for the

future, (c) planning not necessary because family knows what to do, (d) future is in God's hands, or suffering is necessary, (e) physician will make decisions, (f) no one is available to be surrogate decision-maker, (g) putting things down in writing might result in treatment being withdrawn too soon, (h) loved ones unable or unwilling to discuss ACP or, (i) the patients feel it is too difficult to think about dying (Fried et al., 2010). Individuals may change their wishes at any time thus rendering these AD documents revocable and, every state has specific provisions regarding recognition and implementation of out-of-state documents (Cavallaro, 2015). It has been suggested Congress should pass legislation to create uniform forms and processes that would be adhered to and legally enforceable in every state (Cavallaro, 2015).

In a study by Hickman et al. (2011), the authors describe that frequently when a patient chooses a DNR status, many providers assume that means comfort care only and that the patient would prefer less aggressive treatment but that is not always what the patient may wish. Due to the vagueness of instructions in a living will or DNR form, many times during an emergent situation, these forms are not adhered to (Hickman et al., 2011). The authors conducted a multistate, retrospective observational cohort study to compare the use of traditional advance directives such as a living will or DNR to POLST use in nursing homes. Data was collected from three states with POLST programs (Oregon, West Virginia and Wisconsin), and 1,711 residents of 90 Medicaid-eligible nursing facilities were included. Two of the goals of this study included: proving that residents with POLST orders are more likely to have their life-sustaining preferences documented than residents using traditional advance directives, and to compare the actual use of life-sustaining treatments for those residents with POLST vs. those without POLST orders. The study concluded that residents with POLST orders were more likely to have preferences about more than just cardio-pulmonary resuscitation (CPR), thus demonstrating the

potential for ambiguity in the advance directive. Finally, those residents with POLST orders were more likely to have their wishes for comfort measures and less medical intervention followed than those with traditional DNR orders (Hickman et al. 2011). The study showcased some of the barriers regarding the use of advanced directives and determined that use of POLST orders presented substantial advantages and clarity of patient treatment preferences because patients who are healthy and complete an advance directive may have a different thought process regarding their treatment preferences than those patients with a frailty or life-limiting illness.

POLST

A specific type of ACP that is gaining recognition in the United States is known as provider orders for life-sustaining treatment [POLST] (Giovanni, 2012). POLST is not an advance directive but a medical order set that is signed by a physician, nurse practitioner, or a physician assistant and describes how patients wish to be cared for regarding their medical treatment (or refusal of) during times of serious illness and frailty (POLST, 2017). POLST is “a physician’s order *about* life-sustaining interventions, not an order simply to *forgo* them” (Tuohey & Hodges, 2011, p. 63). While some people believe that the only way to respect human life is to prolong it by any means, there are times when that respect means ceasing interventions that interfere with the dying process (ethical currents, 2010) and POLST addresses this issue by documenting patient goals of care and treatment preferences. POLST specifically acknowledges a patient’s wishes in the following four areas: cardiopulmonary resuscitation (CPR), medical interventions (e.g. intubation), use of antibiotics and, artificial nutrition (Hickman et al., 2011).

POLST is also different from an advance directive in that, patients who qualify for POLST are limited to those who, in the normal course of their illness, have a life expectancy of one year or less (POLST, 2017). To identify a patient who qualifies for POLST, providers should

ask themselves, “Would I be surprised if this patient died in the next 12 months?” The “surprise” question has been recognized as a valid tool for the identification of patients with a poor prognosis who are appropriate for a POLST referral (Pang, et al. 2013). Guidelines for the completion of POLST orders include the following criteria: (a) POLST is for the seriously ill and describes patient wishes for *current* care, (b) POLST orders are completed by health care professionals, (c) a healthcare surrogate or health care agent may engage in the discussion if the patient is incapacitated or unable, and (d) portability and periodic review is the responsibility of the healthcare provider (POLST, 2017). Legislation is currently being sought in many states to ensure the POLST paradigm is consistent and recognized across treatment settings (POLST.org). Arizona is consistent with the rest of the nation in recognizing ACP documents, with the exception of POLST.

POLST is typically used as a guide for care of older adults near EoL (Hickman, Keevern & Hammes, 2015) and although these orders require the signature of a physician, a nurse practitioner, or a physician assistant to be valid, it is typically the registered nurse (RN) or social worker who initially presents and explains this form to the patient. Education of nursing staff and healthcare providers at FMC ensured that all were able to identify qualifying POLST patients, educate them regarding treatment choices and have important EoL conversations with patients and families.

Advantages. The advantage of POLST for this fragile patient population is continuity of care between settings and caregivers (Tolle et al, 1998). In a prospective cohort study conducted by Tolle et al. (1998), it was determined that nursing home residents in Oregon who had a signed POLST order on file were more likely to receive higher levels of comfort care per their wishes. The POLST orders were, in most instances respected and there were low levels of transfers to

acute care facilities for aggressive life-sustaining treatments. In another study, Hickman et al. (2011) determined that POLST orders to provide or withhold life-sustaining interventions were consistently adhered to regarding intubation and CPR but at times, antibiotics or feeding tubes were initiated even when POLST orders were clearly against these treatments.

Through the conducting of patient interviews on average of 3.5 months prior to a patient's death, and through post-mortem interviews with caregivers when they were available, Garrido et al. (2015) determined that QOL was usually reported as better when fewer interventions were implemented during EoL treatment. Thus, a direct correlation showed lower EoL costs equaled reports of better patient and family QOL (Garrido et al., 2015). Palliative care consultations often lead to goals discussions where patients and families choose a less aggressive plan of care and therefore are associated with decreased 30-day readmission rates (O'Connor, Moyer, Behta & Casarett, 2015) and lower costs. When advance care planning that includes POLST, is implemented, the following outcomes are seen: increase in QOL, increase in patient and family/caregiver satisfaction and decrease hospital readmissions thereby decreasing hospital costs (Temel et al., 2010).

Barriers. Currently, POLST is not consistently recognized throughout the state of Arizona, and only 25 states have fully developed POLST programs (POLST, 2017). POLST is sometimes confused with assisted suicide, also called the *death with dignity* (DWD) movement and the state of Arizona does not approve or authorize suicide or assisted suicide in any manner (Brnovich, 2016). "POLST is about how people want to live and be cared for with their serious illness or fragility, and DWD is about deliberately ending life" (POLST, 2017). It is important that healthcare providers familiarize themselves with POLST and what is covered in the document if they are to utilize it correctly.

Although ACP, including POLST, makes a positive impact on the quality of EoL care (Brinkman-Stoppelenburg, Rietjens & van der Heide, 2014), POLST is not always adhered to in the pre-hospital setting (Richardson, Fromme, Zive, Fu & Newgard, 2014). This demonstrates the importance of ACP discussions with a patient's primary care provider (PCP) and family member as well as education of pre-hospital providers. While POLST is an important tool used to guide emergency care by pre-hospital providers, it is also a way for the patient to begin a dialog with the PCP and to inform other health care professionals what is important to them in the area of what they want *now*, for their current state of health (POLST, 2017).

A study conducted by Mirarachi, Doshi, Zerkle, and Cooney (2015) explained that significant confusion exists among emergency physicians regarding POLST guidelines that may lead to poor patient outcomes. It is possible for POLST orders to be lost, revoked, or occasionally deliberately overridden by family members (Tolle, Tilden, Nelson, & Dunn, 1998), and it is imperative that these orders be utilized correctly if they are to improve a patient's sense of well-being, thus improving their QOL. Since these non-adherence issues can undermine a patient's wishes, it is important that patients have ACP conversations with their healthcare provider and family because healthcare providers and facilities will often err on the side of caution and implement aggressive treatment measures when in doubt (Hickman et al., 2011).

A similar conclusion was established in a study of nursing home residents, where it was noted that one-third of long-term care facilities using POLST identified difficulty engaging physicians in the process; therefore, better provider education is necessary to improve patient outcomes (Wenger et al., 2013). The importance of ACP education for healthcare providers and patients was demonstrated in a study by Sadeghi, Walling, Romano, Ahluwalia, and Ong (2016). In this study, a hospital-based educational intervention aimed at improving ACP and POLST was

implemented and included showing patients an educational video about the importance of ACP as well as employing a protocol to engage the outpatient providers in ACP counseling post-hospitalization (Sadeghi et al., 2016). The results of this study demonstrated that completion and implementation of POLST orders increased from 27% to 43% in the six months post educational intervention (Sadeghi et al., 2016). Both the patient and the provider were included in this educational intervention, and this led to better communication between both parties regarding ACP and POLST.

While POLST directives are orders that are signed by a healthcare provider, many physicians have verbalized their apprehension in utilizing them related to lack of criminal and civil immunity (Matthews & Souther, 2013). California, which has a fully mature POLST program, provides immunity from criminal or civil liability if the provider was acting in the patient's best interest by adhering to POLST orders (Matthews & Souther, 2013). Clearly, the literature and data demonstrates, with 25 states nationwide including POLST orders as an important part of ACP, the value of patients having and using POLST. Arizona does not formally support the POLST paradigm at this time but is currently developing a statewide grassroots initiative to develop a POLST program throughout the state. Flagstaff Medical Center and Northern Arizona University have taken a leadership role by initiating a POLST pilot program which is the first in the state.

Arizona POLST initiative. In 2012, with assistance from the National POLST Paradigm Task Force (NPPTT), a group of statewide Arizona healthcare professionals, researchers, and stakeholders launched a grassroots task force to look at the feasibility of developing a POLST program in Arizona (TLC, n.d.). The Arizona POLST task force was established in 2012 to guide the implementation of the POLST paradigm in Arizona. This task force is led by Sandy

Severson, Vice President of Care Improvement at the Arizona Hospital and Healthcare Association (AzHHA), and includes representatives from FMC and Northern Arizona University (NAU) and other stakeholders from around the state and is part of a statewide coalition known as Thoughtful Life Conversations [TLC] (TLC, n.d.). Support for POLST has, in the past, been gained through three avenues: grassroots efforts, regulatory changes, and legislation (Reynolds et al., 2016).

The Arizona healthcare community is well versed at recognizing and adhering to the state's prehospital medical care directives (DNR), but because of current legislation, Arizona has encountered unique barriers to POLST implementation in the form of Senate Bill 1404. This bill states "if there is a conflict between a provision of a valid health care directive, the decision of the patient's agent or the decision of the surrogate decision maker is presumed to represent the decision of the patient (AZ S.B 1404). This Senate Bill could effectively negate the documented wishes of the patient and may well allow for a surrogate decision maker to override the patient's wishes established in the health care directive.

As a result, the Arizona POLST task force has chosen the grassroots avenue for POLST implementation through pilot programs (beginning in Flagstaff) and by collecting and analyzing data regarding the efficacy of the program that can then be used to support changes within regulatory and legislative bodies (Reynolds et al., 2016). The need for practice change and clear direction were the next steps necessary to move POLST forward. These recognized needs, in conjunction with the Clinical Scholar Model, have guided the implementation of this DNP project.

Theoretical and Conceptual Frameworks

“Just as any health care provider’s treatment is a prediction based on a theory (diagnosis), a health care leaders’ strategies and visions are based on theories about what improves effectiveness and efficiency in the organization” (MacCoby, Norman, Norman & Margolies, 2013, p. 170). Brathwaite (2002) points out that theories are important because they guide the development of the intervention and how the study is formulated. The theoretical framework for this doctoral project is based on the concepts of the Clinical Scholar Model.

The Clinical Scholar Model

The Clinical Scholar Model was created to educate providers in direct patient care areas as well as create a mentorship program for the use of evidence-based practice [EBP] (Melnyk, & Fineout-Overholt, 2015). Since educating RNs and other medical providers is an important step in the POLST pilot project, use of the Clinical Scholar Model is a logical guide for this project.

There are four goals associated with the Clinical Scholar Model as follow: “(a) challenge current practices within direct care (b) speak and understand the research language, (c) critique and synthesis of current research and (d) serve as mentors to other staff and to teams who question their practices and seek to improve clinical outcomes” (Melnyk, & Fineout-Overholt, 2015, p. 298). The motivation for choosing this model was based on the fact that a practice change was implemented to increase knowledge about ACP and POLST through the education of direct care nurses and medical staff throughout the POLST pilot project at FMC and, the components of the Clinical Scholar Model fit the POLST pilot project vision. The use of evidence from systematic reviews, randomized controlled trials (RCTs) and other scholarly publications was instrumental in creating educational materials to teach RNs and providers at FMC about POLST. The Clinical Scholar Model is useful for examining and applying EBP

changes by direct care providers (Honess, Gallant, & Keane, 2009). Creating, implementing and evaluating a POLST pilot program, and educating the nursing and medical staff at FMC were key components in the success of POLST implementation and adoption as well as its viability in Northern Arizona and ultimately within the state of Arizona.

One of the project deliverables was to implement a change in process within the clinical setting (Moran, Burson & Conrad, 2014). During the ongoing piloting of the POLST project, there must be a change in the mindset of the internal customer (staff) so that they may identify qualifying patients (external customer) and initiate a very sensitive discussion regarding ACP and POLST. If the education of the nursing and medical staff regarding POLST and how to identify triggers that would warrant a palliative care and POLST consult continues to be successful, then the following outcomes will be seen: (a) an increase in provider knowledge about ACP and POLST (b) an increased number of patient referrals by nurses and providers and (c) an increase in the use of POLST in Northern Arizona thereby increasing patient awareness. Moran, Burson, and Conrad (2014) describe outcomes as “the improvement of the health status of patients and populations” (p. 387).

A fundamental system change was accomplished when healthcare workers were educated about ACP and POLST and as their knowledge of the subject increased, so did their comfort with the subject matter, and the number of referrals to palliative care for POLST consults increased.

Population & Setting

The setting for the POLST pilot project began in Flagstaff, Arizona in partnership with Northern Arizona Healthcare (NAH). NAH is a healthcare system that serves the population of Northern Arizona in largely rural areas and is made up of Verde Valley Medical Center

(VVMC), Flagstaff Medical Center (FMC) and many primary and specialty clinics and programs (nahealth.com). Three thousand healthcare providers care for the more than 700,000 residents served by NAH (nahealth.com).

FMC is a 267-bed teaching hospital and Level I trauma center (nahealth.com) and supports the state-wide POLST initiative. The POLST pilot project at FMC is currently the only POLST program in the state of Arizona and is funded by NAH through a grant from the Translational Health Research Initiative (THRIVE) and clearly addresses the Institute for Healthcare Improvement (IHI) Triple Aim to increase patient and family/caregiver satisfaction, improve the quality of care and minimize medical/hospital costs .

Flagstaff Medical Center and its parent company, NAH have been supportive of the POLST pilot project by being advocates of Palliative Care and allowing for the use of valuable staff resources such as the Palliative Care Department and its director as well as the director of evidence-based practice and her team of experts. This project builds on an earlier pilot under the guidance of the Palliative Care Department at FMC. In 2015, Stage C or D heart failure patients were automatically referred to the Palliative Care team, and a consult was generated for a palliative care and POLST consultation. A palliative care nurse would then initiate a conversation with the patient about goals of care and treatment preferences with the aim being POLST order completion. Patients were followed every three months through telephone conversations to determine if the POLST form was being used once they were discharged. It was discovered that even though POLST was being implemented at the hospital, the patients did not remember the form after discharge. After six months, 122 patient consults to POLST had been received, and 86 patients had been enrolled in POLST, there was clearly a need to expand the patient population as well as increase awareness, knowledge and increase the use of POLST.

Project Implementation

In order to increase awareness and utilization of POLST in Northern Arizona, the following became apparent: (a) the need to develop a staff initiated POLST referral system (b) the need for nursing and medical provider education and, (c) the need to engage patients in POLST awareness after discharge to improve continuity of care.

Referral Process

An initial referral mechanism was created with the assistance of the computer programmers at FMC in which RNs, as well as physicians and other providers, may initiate a POLST consult after identifying an appropriate patient. This involved learning how to input a POLST referral and determining who would act upon any referrals once they were received. After researching RN scope of practice through the Arizona nurse practice act (azbn.gov, 2016) as well as hospital administration, it was determined that an RN has the authority to initiate a POLST consult and this process was included in the educational offerings.

With the newly created referral system, an RN or other provider can identify any patient who qualifies for POLST and enter the referral under “scope of practice” orders in the computer system and a POLST referral is sent to the Palliative Care team. When the POLST nurse (who is part of the Palliative Care team) gets a referral, she visits with the patient to initiate a discussion regarding patient goals of care and treatment preferences and introduces the patient to POLST. After a patient had agreed to complete the POLST form, a copy of the document was then sent to medical records to be scanned into the electronic patient record, and copies were sent to the known providers while the original POLST form was placed into a clear page protector for the patient to take home and hang on the refrigerator. With the new referral system in place, nurses and providers were provided with educational opportunities, with the intended result of increased

RN knowledge regarding POLST patient identification and how to initiate a POLST consult to the palliative care team.

Education of staff nurses and providers

Education of nursing staff and healthcare providers regarding ACP and POLST was necessary for the smooth implementation of POLST because they were the ones to identify a POLST candidate and begin the referral process to the Palliative Care team. To meet the goals of education and evaluating the success of the POLST implementation process, the following plan was implemented: staff education relative to POLST principles, patient identification and the referral process, pre and post-education knowledge surveys, implementation of transparent refrigerator magnetic hangers for patient POLST documents and one week follow-up reminder calls to patients after discharge to assess POLST knowledge and use and finally, the evaluation of the number of POLST referrals and how they are initiated.

For this DNP project, convenience sampling was used to locate nursing staff for education and pre/post-tests. This type of sampling was most appropriate for this project because the nursing staff was readily available on the hospital campus and most were willing to listen to an “on-the-fly” in-service. Terry (2012) explains that a potential disadvantage of this type of sampling may occur because the subjects are volunteers and their motivation to participate should be scrutinized. The nurses with interest in this project vs. the disengaged nurse may skew the results of increased or decreased referrals due to their levels of participation regarding the new referral system. In October 2015, a POLST knowledge survey (pre-test) was administered to nursing staff to better assess their understanding and comfort levels with POLST and ACP discussions. This knowledge survey reached ninety-one nurses at FMC over a 2-week period. Ninety-five percent of the respondents stated they were not familiar with POLST while 96%

stated they were familiar with advance directives. Of those surveyed, 62% claimed that they were uncomfortable answering questions from their patients or families about advance directives.

Advance care planning and POLST education began with the staff RNs, who are often the first providers to identify a patient who qualifies for POLST (Hickman, Keevern & Hammes, 2015). In the fall of 2016, a POLST education module was created and provided to the FMC nursing staff with a post-test to determine if knowledge of POLST and the referral process had improved after education. This educational module contained (a) background and legal information about POLST, (b) a trigger tool to assist RNs with the identification of qualifying POLST patients, (c) explanation the referral process, (d) description of the FMC pilot project, (e) key questions to cover when interviewing the patient and, (f) frequently asked questions (FAQ's). The initial RN education began on two nursing units with similar acuities at FMC; Humphreys and 3-South. Both of these units focus on medical-surgical nursing, and a large majority of potential POLST patients were identified and approached for ACP discussions on these units. Humphreys specializes in oncology, and 3-South specializes in telemetry, and because of the patient population and increased acuity on these units, the nursing staff may be more familiar with ACP than in other areas of the hospital. Education was swiftly expanded to include all medical-surgical and critical care nursing units in the hospital.

Fifty-six nurses at FMC were taught about POLST and the referral process through March 2017. Effectiveness was evaluated with a post test and by assessing the number of POLST referrals. This education is still ongoing and has expanded to staff meetings, during slow periods at the nurse's station and nursing skills labs.

The education process was adapted and continued with the physicians, nurse practitioners, and physician assistants since they may also initiate a referral and are ultimately

responsible for signing the POLST orders thereby ensuring that the patient's ACP wishes are heard. A POLST quick reference sheet was created and strategically posted at twelve provider dictation areas and also sent electronically to the medical staff with step-by-step instructions regarding the POLST referral process. The effectiveness of this process was measured by increased referrals and the pre and post test results.

Patient Awareness

In the initial phase of the POLST pilot project, patient follow-up phone calls began three months after discharge, and many patients verbalized not using the POLST form or did not have any memory of the form or its intended use. Because of this poor rate of patient awareness of POLST after three months, two post discharge activities were implemented for this project: (a) a one-week post discharge follow-up call was implemented to improve patient awareness of POLST and, (b) the creation and implementation of a transparent refrigerator magnetic hanger. Patient education and patient follow-up continued by including the following information with the magnetic hanger (a) the original copy of the POLST form on a bright pink paper (b) the copy of the orange medical directive or DNR form and, (c) contact information for the FMC POLST team.

Implementation Barriers

A barrier to the success of this project was the preconceived beliefs of the nursing staff regarding ACP and EoL planning and obtaining buy-in regarding the importance of the POLST trigger tool and was addressed through education of the staff and charge nurses. Another barrier that was identified was a miscommunication by an educator and staff members who were trained on POLST in October 2016 before the RN referral phase went live. In March 2017, this RN stated that she thought POLST was not being implemented yet and that only the initial two

nursing units of 3-South and Humphreys were allowed to have POLST patients. The educator, as well as another FMC staff member, were found to be miscommunicating information about the POLST implementation process due to lack of knowledge or failure to remain up to date with the POLST implementation process. Finally, lack of palliative care staff availability dedicated to POLST resulted in numerous consults being missed when the patient was discharged or died prior to approach. This final barrier was addressed by hiring a part time staff member dedicated to POLST and data entry, which freed up the Palliative Care/POLST staff for more patient encounters.

Evaluation and Data Analysis Plan

Evaluation of this project was organized over 3 months by (a) calculating the number of patient referrals and if they were system generated or provider generated, (b) looking at pre and post test results surrounding the education of the nursing and medical staff and, (c) assessing patient awareness by implementing 1 week follow up calls and refrigerator magnetic hangers.

A large part of this project was to facilitate referrals to POLST by educating the nursing and medical staff about the newly created POLST referral system. Following a patient referral from start to finish by identifying all POLST referrals through the computer system, making contact with the potential referral and explaining POLST, and then to obtain the signature of the healthcare provider on the POLST order sheet were instrumental steps to ensure the smooth flow of the system. Finally, a new evaluative method was added to the data collection plan because past 3-month patient follow-up phone calls yielded poor retention of POLST information by patients. Beginning January 2017, all POLST patients who were discharged have been contacted 1-week post discharge to determine their knowledge of POLST.

An excel spreadsheet was created at the onset of the POLST pilot project and updated weekly to include: all patients who qualify for POLST, who was approached or not approached about POLST and why or why not, who referred the patient and, patient diagnosis.

The use of descriptive statistics was chosen for this project to examine variables before and after provider education and the implementation of the new referral mechanism (Terry, 2012). The analysis of nursing staff's knowledge and consultation skills before and after POLST education was determined by chi-square testing (Bonnel & Smith, 2014).

Evaluation of Findings

As the nursing and medical staff became more comfortable with ACP and POLST discussions, an increased number of POLST appropriate patients were identified by staff, and more POLST referrals were directed to the POLST team. In addition to education, a POLST referral system was established and implemented to identify and enroll appropriate patients in POLST. The education and referral system resulted in: better staff understanding of POLST, more POLST referrals, expansion of types of patients approached and ultimately, an increased number of patients with POLST orders in Northern Arizona. The evidence-based practice team at FMC in conjunction with the POLST implementation team and their NAU colleagues used a statistician to assist with creating spreadsheets and graphs incorporating the data collected by the team members.

Overall Referrals

In the first quarter of the initial phase of this project, there were 61 hospitalist system-generated POLST consults entered into the computer system. In the second phase, the total number of provider-generated consults was 46. While the number of overall consults decreased, the number of patients approached for a conversation about POLST increased from 24 in the

initial phase of this project to 28 in the second phase and after implementation of this DNP project. Between the time that a POLST consult was entered into the computer system, and the RN approached the patient for the conversation about goals of care and treatment preferences, some patients were discharged or died.

Of the patients in the initial phase who were approached for a POLST conversation, 62.5% accepted POLST orders while only 32.1% accepted POLST orders in phase II.

Education

A comparison of the categorical data regarding nursing staff's knowledge and consultation skills before and after POLST education was measured by a chi-square test (Kim & Mallory, 2014). The RN knowledge survey that was delivered in October 2015 reached ninety-one nurses (n=91) at FMC over a 2-week period. Only five-percent of the respondents stated they were familiar with POLST while 96% stated they were familiar with advance directives. Of those surveyed, 38% claimed that they were comfortable answering questions from their patients or families about advance directives.

After RN education had been provided through March 2017, a post-education knowledge survey was delivered to the 56 participants (n=56) who were reached for POLST education. The results of the post-education survey determined that 100% of respondents stated they were familiar with POLST ($p < 0.0001$) and these results were determined to be statistically significant. The nurses who reported they were familiar with advance directives increased from 96% to 100% after education. Finally, the number of RNs who reported they were comfortable speaking about advance directives increased from 38% pre-education to 66% post-education ($p = 0.001$). These results are also statistically significant as measured by a chi-square test.

While there were no pre and post education tests available for comparison for the physicians and other providers, POLST knowledge was evaluated by assessing the frequencies of the POLST consults from the first quarter of the initial phase compared to the first quarter of phase II using descriptive statistics. In the initial phase, the POLST consults were all system generated from heart failure patients who were mainly cared for by the hospitalist team. In October 2015 there were 26 POLST consults, in November 2015, there were 18, and in December 2015 there were 16 POLST consults on heart failure patients. In January 2017, phase II of the POLST pilot project began, and RN, as well as provider, initiated POLST referrals began. In January 2017, hospitalist referrals decreased, and referrals directly to the Palliative Care team increased. In January 2017, hospitalist system generated referrals were 13, and Palliative Care referrals to POLST were 4. In February 2017, hospitalist system generated referrals had decreased to 9 while Palliative Care POLST referrals increased to 6 and there was one RN initiated referral. In March 2017, hospitalist system generated referrals decreased to 7 while Palliative Care POLST referrals were six. The steady decline of hospitalist system generated referrals, and the increase of RN and provider based referrals indicates that the education has made an impact on the providers and more referrals are being entered by people rather than system generated. These results also demonstrate improved provider knowledge of POLST and the POLST referral system as well as *an increased comfort level with this subject matter*.

Patient Awareness of POLST

In the initial phase of the POLST pilot program, patients were contacted three months post discharge for follow-up questions regarding their knowledge and utilization of POLST. Descriptive statistics were used to describe the results of patient awareness of POLST between

the first quarters of the initial phase and phase II. In the initial phase, 14 patients (n=14) were called between January and March 2016 for a three-month post discharge conversation. Of these 14 patients, 50% did not remember having a POLST form, 7% stated they had the form on the refrigerator, 14% remembered the form and 29% did not answer the telephone. In January 2017 at the start of phase II, a one-week follow-up call was implemented as well as the transparent document hanger for the patients to hang their POLST forms on the refrigerator after discharge. The results of the initial phase II calls showed that 0% of the patients don't remember having the POLST form, 33% have the form on the refrigerator, 33% remember the form and there was no answer with 33% of the follow-up telephone calls. The results of the follow-up telephone calls determine an increase in the patient awareness and utilization of POLST after the implementation of 1-week follow up calls and the implementation of the transparent document hanger for the refrigerator.

In a study by Wilson, Avalos, and Dowling (2016), it was concluded that as nurses and providers became more knowledgeable regarding palliative care, their attitudes became more positive. The results of this study illustrate what the FMC POLST pilot project was aiming to accomplish; educated nurses and providers will result in more comfortable EoL conversations with patients thereby increasing utilization and awareness of POLST in Northern Arizona.

Conclusion

While ACP and POLST have been shown to improve patient satisfaction and perceived QOL (Garrido, et al., 2015), many healthcare providers, as well as patients and families, are hesitant to have EoL planning discussions. This hesitancy may be due to fear, lack of knowledge or past life experiences, all of which may define one's current beliefs related to this sensitive topic. The Translational Health Research Initiative (THRIVE) grant (2015) has provided the

foundation for FMC and NAU to implement the POLST pilot program to the qualifying population of Northern Arizona. While working with the Arizona POLST task force and Thoughtful Life Conversations in Phoenix, FMC has utilized some of the existing educational materials and strategies for implementation by collaborating with experts in the field of ACP and POLST. In order for the POLST pilot program to gain the base of support, it will need to be successful; an early step was to educate RNs and other healthcare providers about POLST and how to identify qualifying patients to ensure that the palliative care team at FMC is consulted to follow up. The project described in this paper incorporates education of healthcare providers about POLST in order to ensure successful implementation of POLST in Northern Arizona thus, successfully increasing awareness and utilization of POLST and accomplishing the purpose of this project.

References

- American Cancer Society (2015). The Patient Self-Determination Act (PDSA). Retrieved from <http://www.cancer.org/treatment/findingandpayingfortreatment/understandingfinancialandlegal matters/advancedirectives/advance-directives-patient-self-determination-act>
- Arizona State Board of Nursing (2016). The Nurse Practice Act. Retrieved from <https://www.azbn.gov/laws-rules/nurse-practice-act/>
- Bonnel, W., & Smith, K. (2014). *Proposal writing for nursing capstones and clinical projects*. New York, NY: Springer Publishing Company.
- Brathwaite, A. (2013). Selecting a conceptual model/framework for guiding research interventions. *The Internet Journal of Advanced Nursing Practice*. Retrieved from <http://ispub.com/IJANP/6/1/8576>
- Brinkman-Stoppelenburg, A., Rietjens, J., & van der Heide, A. (2014). The effects of advance care planning on end-of-life care: a systematic review. *Palliative medicine*. doi: 10.1177/0269216314526272
- Brnovich, M. (2016). Life care planning packet: Advance Directives for health care planning. Attorney General State of Arizona. Retrieved from <https://www.azag.gov/seniors/life-care-planning>
- Brooks, L. A., Manias, E., & Nicholson, P. (2017). Communication and Decision-Making About End-of-Life Care in the Intensive Care Unit. *American Journal of Critical Care*, 26(4), 336-341. doi:10.4037/ajcc2017774
- Cavallaro, V. (2015). Advance Directive Accessibility: Unlocking the toolbox containing our end-of-life decisions. *Touro Law Review*, 31(3), 555-587.
- Corcoran, K. (2016). Evaluation of an Educational Workshop to Increase Comfort Levels of

- Professional Caregivers with End-of-Life Care. *MEDSURG Nursing*, 25(2), 103-109.
- Coulter A., Entwistle V., Eccles A., Ryan S., Shepperd S., Perera R. (2015) Personalised care planning for adults with chronic or long-term health conditions. *Cochrane Database of Systematic Reviews* 2015, Issue 3. Art. No.: CD010523. doi: 10.1002/14651858.CD010523.pub2.
- Dahlin, C.M., & Wittenberg, E. (2015). Communication in palliative care: an essential competency for nurses. In B. R. Ferrell, N. Coyle, & J. Paice (Eds.), *Oxford textbook of palliative nursing*, 4th edition (Chapter 5, pp. 81-109). New York, NY: Oxford University Press.
- Dunn, P., Tolle, S., Moss, A., & Black, J. (2007). The POLST paradigm: Respecting the wishes of patients and families. *Annals of Long-Term Care*, 15 (9). pp. 33-40. Retrieved from: <http://www.polst.org/wp-content/uploads/2013/01/the+polst+paradigm+respecting+wishes.pdf>
- Emanuel, L. L., Barry, M. J., Stoeckle, J. D., Ettelson, L. M., & Emanuel, E. J. (1991). Advance directives for medical care—a case for greater use. *New England Journal of Medicine*, 324(13), 889-895.
- Emanuel, L. L., von Gunten, C. F., & Ferris, F. D. (2000). Advance care planning. *Archives of Family Medicine*, 9(10), 1181.
- Ethical Currents: POLST* (2010). Retrieved from: <http://polst.org/wp-content/uploads/2016/09/9d79de7abcd84947be29818cd43e411d1-pdf1.pdf>
- Fried, T. R., Bullock, K., Iannone, L., & O'leary, J. R. (2010). Understanding advance care planning as a process of health behavior change. *Journal of the American Geriatrics Society*, 57(9), 1547-1555. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2783892/>

- Garrido, M., Balboni, T., Maciejewski, P., Bao, Y., & Prigerson, H. (2015). Quality of life and cost of care at the end of life: the role of advance directives. *Journal Of Pain And Symptom Management*, 49(5), 828-835. doi:10.1016/j.jpainsymman.2014.09.015
- Giovanni, L. (2012). End-of-Life care in the United States: Current reality and future promise-A policy review. *Nursing Economics*, 30(3), 127. doi:10.1016/j.jpainsymman.2015.12.318
- Harris, J., Roussel, L., Dearman, C., & Thomas, P. (2016). *Project planning and management: A guide for nurses and interprofessional teams* (2nd ed.). Massachusetts: Jones & Bartlett.
- Hickman, S., Keevern, E., & Hammes, B. (2015). Use of the Physician Orders for Life-Sustaining Treatment program in the clinical setting: A systematic review of the literature. *Journal Of The American Geriatrics Society*, 63(2), 341-350 10p. doi:10.1111/jgs.13248
- Hickman, S., Nelson, C., Moss, A., Tolle, S., Perrin, N., & Hammes, B. (2011). The consistency between treatments provided to nursing facility residents and orders on the physician orders for life-sustaining treatment form. *Journal Of The American Geriatrics Society*, 59(11), 2091-2099. doi:10.1111/j.1532-5415.2011.03656.x
- Honess, C., Gallant, P., & Keane, K. (2009). The Clinical Scholar Model: evidence-based practice at the bedside. *Nursing Clinics of North America*, 44(1), 117-130. doi: 10.1016/j.cnur.2008.10.004
- Institute of Medicine (US). Committee on Approaching Death: Addressing Key End-of-Life Issues. (2015). *Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life*.
- Kim, M., & Mallory, C. (2014). *Statistics for evidence-based practice in nursing*. Barlington, MA: Jones & Bartlett Publishers.

- MacCoby, M., Norman, C.L., Norman, C.J. & Margolies, R. (2013). Transforming health care leadership: A systems guide to improve patient care, decrease costs, and improve population health. San Francisco, CA: Jossey-Bass.
- Matthews, J. J., & Souther, C. E. (2013). Factors associated with implementation of the POLST paradigm: Results from a survey of Florida physicians. *Care Management Journals*, 14(4), 247-253.
- Melnyk, B., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: A guide to best practice (3rd ed.). Philadelphia, PA: Wolters Kluwer.
- Mirarchi, F. L., Doshi, A. A., Zerkle, S. W., & Cooney, T. E. (2015). TRIAD VI: How well do emergency physicians understand Physicians Orders for Life Sustaining Treatment (POLST) forms? *Journal Of Patient Safety*, 11(1), 1-8 8p.
doi:10.1097/PTS.0000000000000165
- Moran, K., Burson, R., & Conrad, D. (2014). *The doctor of nursing practice scholarly project: A framework for success*. MA: Jones and Bartlett.
- National Hospice and Palliative Care Organization [NHPCO]. (2015). Retrieved from <http://www.nhpco.org/advance-care-planning>
- Northern Arizona Healthcare (2016). Handling emergencies of any kind. Retrieved from <https://nahealth.com/emergency-services>
- O'Connor, N. R., Moyer, M. E., Behta, M., & Casarett, D. J. (2015). The Impact of Inpatient Palliative Care Consultations on 30-Day Hospital Readmissions. *Journal Of Palliative Medicine*, 18(11), 956-961. doi:10.1089/jpm.2015.0138
- POLST Oregon (2017). Oregon POLST history. Retrieved from <http://oregonpolst.org/history/>

Pang, W. F., Kwan, B. C. H., Chow, K. M., Leung, C. B., Li, P. K. T., & Szeto, C. C. (2013).

Predicting 12-month mortality for peritoneal dialysis patients using the “surprise” question. *Peritoneal Dialysis International*, 33(1), 60-66.

Physician Orders for Life-Sustaining Treatment (POLST) paradigm (2017). Retrieved from

<http://www.polst.org/about-the-national-polst-paradigm/>

Reynolds, M.A., Kennedy, E., Beckett, C., Rivas, D., & Guerrero, J. (2016). POLST, A

community grassroots initiative. CAPC poster presentation.

Richardson, D. K., Fromme, E., Zive, D., Fu, R., & Newgard, C. D. (2014). Concordance of out-

of-hospital and emergency department cardiac arrest resuscitation with documented end-of-life choices in Oregon. *Annals of emergency medicine*, 63(4), 375-383.

doi:10.1016/j.annemergmed.2013.09.004

Sadeghi, B., Walling, A. M., Romano, P. S., Ahluwalia, S. C., & Ong, M. K. (2016). A hospital-

based Advance Care Planning intervention for patients with heart failure: A feasibility study. *Journal Of Palliative Medicine*, 19(4), 451-455. doi:10.1089/jpm.2015.0269

Schaller, T. K., & Malhotra, N. K. (2015). Affective and cognitive components of attitudes in

high-stakes decisions: An application of the theory of planned behavior to hormone replacement therapy use. *Psychology & Marketing*, 32(6), 678-695.

Temel, J.S., Greer, J.A., Muzikansky, A., Gallagher, E.R., Admane, S., Jackson, V.A., Dahlin,

C.M., Blinderman, C.D., Jacobsen, J., Pirl, W.F. and Billings, J.A. (2010). Early palliative care for patients with metastatic non–small-cell lung cancer. *New England Journal of Medicine*, 363(8), pp.733-742.

Terry, A.J. (2012). *Clinical research for the doctor of nursing practice*. MA: Jones and Bartlett.

Thoughtful Life Conversations (2016). Retrieved from

<http://www.thoughtfullifeconversations.org/about/>

- Tolle, S. W., & Teno, J. M. (2017). Lessons from Oregon in Embracing Complexity in End-of-Life Care. *New England Journal Of Medicine*, 376(11), 1078-1082.
doi:10.1056/NEJMs1612511
- Tolle, S., Tilden, V., Nelson, C., & Dunn, P. (1998). A prospective study of the efficacy of the physician order form for life-sustaining treatment. *Journal Of The American Geriatrics Society*, 1097-1102 6p.
- Tuohey, R. J., & Hodges, M. O. (2011). End of Life: POLST Reflects Patient Wishes, *Clinical Reality*. Retrieved from <https://www.chausa.org/publications/health-progress/article/march-april-2011/end-of-life-polst-re%EF%AC%82ects-patient-wishes-clinical-reality>
- Wenger, N., Citko, J., O'Malley, K., Diamant, A., Lorenz, K., Gonzalez, V., & Tarn, D. (2013). Implementation of physician orders for life sustaining treatment in nursing homes in California: evaluation of a novel statewide dissemination mechanism. *JGIM: Journal Of General Internal Medicine*, 28(1), 51-57 7p. doi:10.1007/s11606-012-2178-2
- Wilson, O., Avalos, G., & Dowling, M. (2016). Knowledge of palliative care and attitudes towards nursing the dying patient. *British Journal of Nursing*, 25(11).

Table I

Evaluation Table of retained studies: POLST and quality of life

Author(s), Date of Publication and Title	Conceptual Framework	Design/Method	Sample/Setting	Major Variables Studied and their definitions	Measurement of major variables	Data Analysis	Study Findings	Level & Quality of Evidence Study Strengths and weaknesses
Brinkman-Stoppelenburg, A., Rietjens, J. A., & van der Heide, A. (2014). The effects of advance care planning on end-of-life care: a systematic review.	NA	Systematic review of experimental and observational studies. Some RCT, prospective studies and retrospective or observational or cross-sectional studies were examined	Search of 3751 studies. 113 used for this review. Most studies originated in the US or Canada and were performed in hospitals or nursing homes.	Does advance care planning (ACP) reduce the use of cardiopulmonary support measures and reduce hospitalizations and could it potentially improve end-of-life care?	Advance directives are not often specific. Studies of DNR mostly pertained to life-sustaining treatment and hospitalization with length of stay.	Searches of PubMed, EMBASE and PsycINFO databases for experimental and observational studies	ACP positively impacts the quality of end-of-life care. Complex ACP interventions may be more effective in meeting patients' preferences than written documents alone.	Level I: evidence from a systematic review. Strengths: systematic review of 113 articles Weaknesses: studies were not included in which ACP was one component of a larger intervention such as in a palliative care consultation.
Chan R.J., Webster J., & Bowers A. (2016) End-of-life care pathways for improving outcomes in caring for the	NA	1254 articles were reviewed through MEDLINE, EMBASE, PsychINFO, CINAHL, review articles, trial registries and reference	Original search in September 2009 and updated search in July 2015	NA	If some data were missing in studies, an available-case analysis was performed based on the numbers of participants for whom outcome	Two review authors independently assessed the results of the searches against the predetermined criteria for inclusion,	There is limited available evidence concerning the clinical, physical, psychological or emotional effectiveness of EOL care	Level I: evidence from a systematic review Strengths: a systematic review of the literature.

dying		lists of relevant articles. All RCTs, and quasi-randomized trials. These studies were narrowed down to 35 full text articles. 34 articles were excluded and 1 Italian study was reviewed.			data were known. IF SD's were missing, the authors imputed them from other studies, or where possible.	assessed risk of bias, and extracted data.	pathways to guide effective care and aid decision-making.	Weaknesses: low quality of evidence due to potential biases such as: not being able to prevent participants from knowing which group they were in (and others).
Coulter A., Entwistle V.A., Eccles A., Ryan S., Shepperd S., & Perera R. (2015) Personalised care planning for adults with chronic or long-term health conditions.	NA	Systematic review of MEDLINE< EmBASE, PsychINFO, ProQuest, clinical trials.gov, and WHO. 43 articles were assessed in this review.	Included randomized controlled trials and cluster-randomized trials involving adults with long-term conditions. Excluded were studies where there was little or no opportunity for patients to have meaningful influence on goal selection. A total of 19 studies were included, involving a total of 10,856 participants.	Does a personalized approach in which patients are encouraged to participate in setting goals for ACP lead to better outcomes than when these decisions are left up to health care professionals.	None of the 19 studies were determined as having a high risk of bias.	Two review authors independently screened citations for inclusion, extracted data and assessed risk of bias.	Personalized care planning is a promising approach that offers the potential to provide effective help to patients, leading to better health outcomes.	Level I: evidence from a systematic review Strengths: A systemic review of the literature. Weaknesses: Attempts were made to contact eight authors for further information or unpublished data but helpful information was only obtained from five.
Garrido, M.M., Balboni, T.A.,	NA	Retrospective analysis	N= 336 patients with	Interviews	Baseline and post mortem	Stratification	1. 76% of patients in the	Level VI: Evidence

Maciejewski, P.K., Bao, Y., & Prigerson, H.G. (2015) Quality of life and cost of care at the end of life: The role of advance directives		Qualitative Stratification due to small sample size	advanced cancer Setting: outpatient clinics in CT, NH, MA, NY and TX		interviews with family members or caregivers		study did not want heroic measures. 2. DNR orders were associated with a higher quality of life ($\beta=0.75$, standard error =0.30, $P=0.01$) 3. Documentation of EOL preferences (DNR) may be beneficial to patients.	from qualitative study Strengths: explores relationship between DNR orders and QOL Weaknesses: EOL care costs were estimated based on care utilization in last week of life as reported in post-mortem interviews with family/cg. Interviews were conducted 3.5 months prior to patient death (median) and post-mortem interviews with caregivers (median two weeks after death).
Hickman, S.E., Keevern, E. &	NA	Systematic review of the	OVID Medline database search	More than half of POLST studies	Most of the studies have	23 POLST research	1.POLST is most often used	Level I: systematic

<p>Hammes, B.J. (2015)</p> <p>Use of the physician orders for life-sustaining treatment program in the clinical setting: A systematic review of the literature</p>		<p>literature</p> <p>23 research studies reviewed. Most were chart reviews, and a few were interviews, and telephone surveys.</p>	<p>for POLST, MOLST, Physician orders for life sustaining treatment, medical orders for life-sustaining treatment, physician orders for scope of treatment, medical orders for scope of treatment.</p>	<p>have been conducted in Oregon but it is unclear if findings are generalizable to other states.</p>	<p>been conducted in Oregon. Population was mostly white. Intensive POLST education and implementation efforts have been in place since the early 1990s. Many studies rely on descriptive data.</p>	<p>studies with chart review as most common method of data collection (10/23), and 16 studies with patient reported data.</p>	<p>to guide the care of older adults near EOL. 2. MSW or RNs most often initiate discussion about POLST. 3. POLST orders reflecting decisions to withhold interventions are usually honored.</p>	<p>review</p> <p>Strengths: reviewed 23 research studies</p> <p>Weaknesses: May not be generalizable to states outside of Oregon. The study states the fact that Oregon is largely white and homogenous and efforts to implement POLST began in the early 1990's.</p>
<p>Hickman, S.E., Nelson, C.A., Moss, A.H., Tolle, S.W., Perrin, N.A., & Hammes, B.J. (2011)</p> <p>The consistency between treatments provided to nursing facility residents and orders on the physician</p>	NA	<p>Retrospective chart abstraction</p> <p>Randomization consisted of a two-step process: charts of minority residents were oversampled and secondly a list of eligible living and deceased residents was</p>	<p>Stratified random sample of 90 nursing facilities in Oregon, Wisconsin and West Virginia. Twenty charts randomly selected from each facility with a goal of 10 living and 10 deceased patients. Stratification</p>	<p>Consistency between POLST orders for each section of the document: A: Resuscitation B: Medical interventions vs comfort care C: Antibiotics D: Feeding Tube use.</p>	<p>There is no general consensus among healthcare professionals as to what exactly constitutes comfort measures, therefore, when DNR was chosen and patients wanted comfort measures, it</p>	<p>Computerized data collection developed to facilitate systematic data abstraction across sites. Descriptive statistics were computed using SPSS. The chi-square test was used to test for significant</p>	<p>1. 85.2% of residents had the same POLST form in place during the review period. 2. With the exception of feeding tubes and antibiotic use in residents with orders for no antibiotics, the use of medical</p>	<p>Level V: evidence from systematic reviews of 90 nursing home charts.</p> <p>Strengths: looked at every section of the POLST orders and reviewed compliance.</p> <p>Weakness: again, may</p>

orders for life-sustaining treatment form.		obtained.	based on location (rural/urban), profit status and minority representation. Living and deceased nursing home residents with POLST order dated at least 60 days prior to date of data collection.		was difficult to determine. IE. Is treatment of pneumonia with antibiotics. Heroic measures or comfort measures to provide symptom management.	differences between groups.	treatments was nearly always consistent with POLST orders to provide or withhold life-sustaining interventions.	not be generalizable to many other states outside of Oregon.
<p>Mirarchi, F.L., Doshi, A.A., Zerkle, S.W., & Cooney, T.E. (2015)</p> <p>TRIAD VI: How well do emergency physicians understand physician orders for life sustaining treatment (POLST) forms?</p>	NA	Internet based survey	223 (out of 855 queried) members of the Pennsylvania chapter of the American College of Emergency Physicians were surveyed between September and October 2013. Mean age 42 years. 54% men. Attending physicians constituted 81% and 36% of participants received POLST training for a mean (SD) of 1.3 hours.	Respondents were only from one state of a nationwide organization. Response rate was 26% of those initially surveyed. Probably generalizable because there is little difference in the practice and curriculum of ED medicine across the country.	Randomization was not used in ordering the questions in the survey.	McNemar test was used to analyze the degree to which the respondents changed coding responses in POLST scenarios.	1. It was determined that significant confusion exists among the surveyed physicians regarding the use of POLST in critically ill patients. The authors determined that this confusion can pose a risk to patient safety and more training is warranted. Age of the physician affected responses. Physicians 40 years or older, rates of	<p>Level VI: evidence from a single descriptive study</p> <p>Strengths: Evaluation of MD understanding of POLST is important.</p> <p>Weaknesses: response rate was only 26% or 223/855.</p>

							choosing DNR were between 17% and 31% lower than younger physicians.	
<p>Richardson, D.K., Fromme, E., Zive, D., Fu, R., & Newgard, C.D. (2014)</p> <p>Concordance of out-of-hospital and emergency department cardiac arrest resuscitation with documented end-of-life choices in Oregon</p>	NA	Retrospective cohort study	1,577 Patients with out of hospital cardiac arrest evaluated by EMS and had valid POLST forms. In urban and suburban as well as some outlying rural areas in Oregon.	Since this study was in Oregon, it may not be generalizable to other states that do not have electronic POLST registries.	Oregon requires an electronic POLST registry, and other states do not. An attempt to identify all patients with an existing POLST from before the arrest was made, but a small portion of patients without a matched POLST from were found to have an EMS charted DNR order but chart reviews were unable to determine where this DNR order originated.	Descriptive statics were utilized to characterize the demographics and 2-sample tests. 95% confidence intervals (CIs) were calculated and were obtained by the Clopper-Pearson exact method.	Of 1,577 patients in out of hospital cardiac arrest who were evaluated by EMS, 951 (60%) had resuscitation provided by EMS at the scene of arrest. 82 had previously signed POLST forms stating do not resuscitate	<p>Level IV: evidence from cohort study.</p> <p>Strengths: Large population.</p> <p>Weaknesses: Not generalizable to other states outside of Oregon who do not have electronic POLST registries.</p>
<p>Tolle, S., Tilden, V., Nelson, C., & Dunn, P. (1998)</p> <p>A prospective study of the efficacy of the</p>	NA	Prospective cohort study	N=180 nursing home residents in Oregon who had a POLST recording DNR designation and who indicated a desire for	Oregonians may be better educated about rights to refuse life-sustaining treatment than other states.	Nursing homes were first in the state to use POLST and therefore the staff may have had a better respect for	Review of records	POLST orders regarding CPR in nursing home residents were mostly respected. Study subjects received high	<p>Level IV: evidence from a cohort study.</p> <p>Strengths: good sample size</p>

physician order form for life-sustaining treatment.			transfer only if comfort measures failed, were followed for one year.		refusal of treatment. May not be generalizable to states other than Oregon because Oregon's liberal advance directives law permits the refusal of any medical treatment and authorizes surrogates to make decisions for patients who are terminally ill. Also, of the 28,000 patients who died in Oregon in 1995, only 1255 (4%) were other than the white race.		levels of comfort care and low rates of transfer for aggressive life-extending treatments.	Weaknesses: The study was limited to nursing homes operating under conditions that may not be generalizable to all other states. Oregon has more liberal advance directive laws and secondly, Oregon's demographics differ in that only 4% of people who died in Oregon in 1995 were a race other than white.
Wenger, N., Citko, J., O'Malley, K., Diamant, A., Lorenz, K., Gonzalez, V., & Tarn, D. (2013). Implementation of physician orders for life	NA	Survey. Prospective analysis of nursing home patients with a POLST containing a DNR order.	546 nursing homes surveyed.	POLST usage in California nursing homes in community coalition and non-community coalition areas.	Because aggressive treatment is the default, misunderstood preferences translate into aggressive treatments not wanted by the	Review of surveys.	The study demonstrated broad uptake of POLST after only a brief time. There was little difficulty in translating POLST information	Level VI: Evidence from a single descriptive or qualitative study. Strengths: good response rate from

sustaining treatment in nursing homes in California: evaluation of a novel statewide dissemination mechanism.					patient rather than symptom management.		into care, more than one third of facilities noted difficulty in engaging physicians.	those surveyed. Weaknesses: rural counties with few nursing homes were not included in sample and the findings cannot be generalized to rural facilities due to this factor.
---	--	--	--	--	---	--	---	---

TABLE II

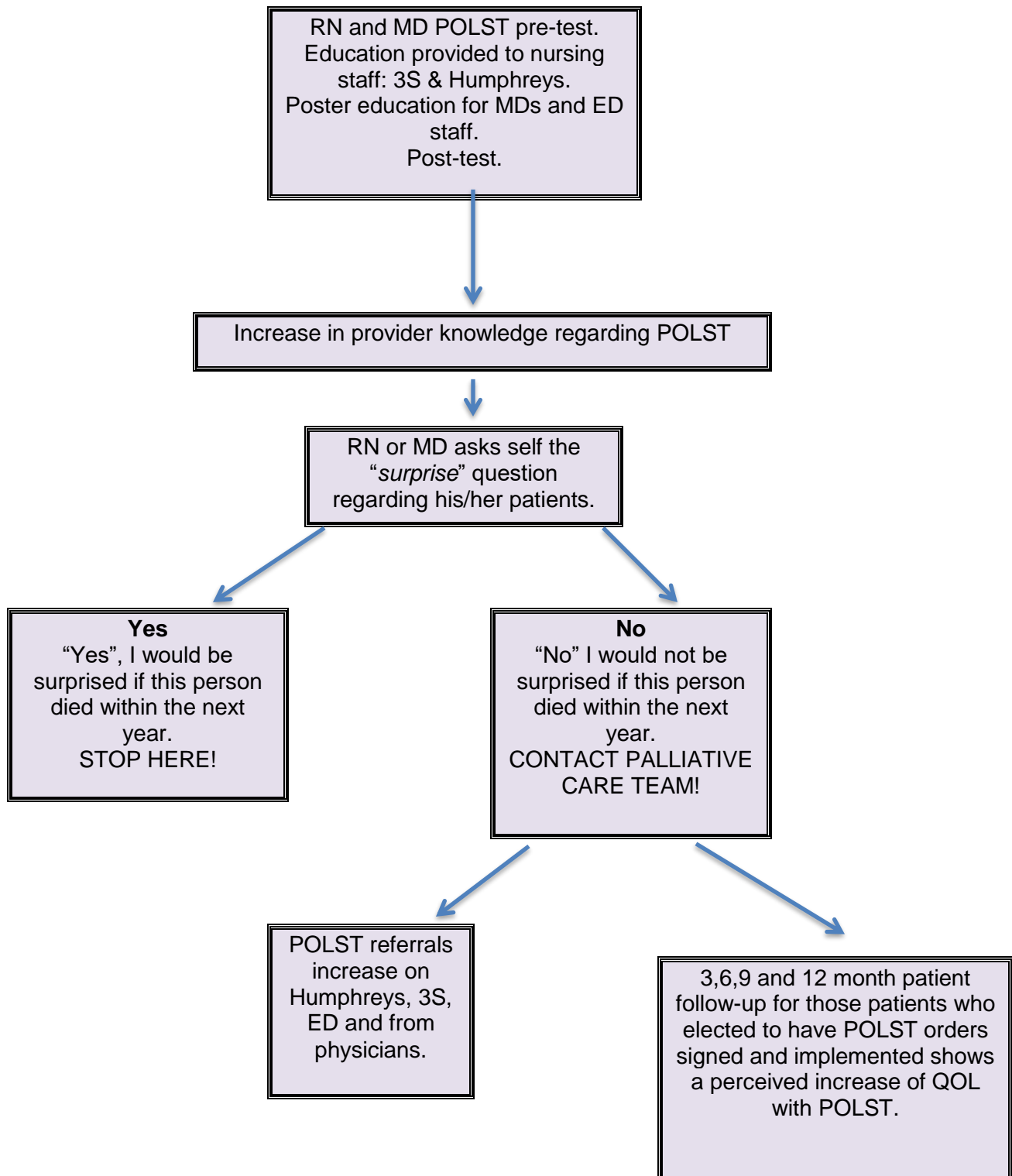
Primary Author and Publication Year	Brinkman-Stoppelenburg et al. (2014)	Chan et al. (2016)	Coulter et al. (1998)	Garrido et al. (2015)	Hickman et al. (2015)	Hickman et al. (2011)	Mirarchi et al. (2015)	Richardson et al. (2014)	Tolle et al. (1998)	Wenger, et al. (2013)
Study Design	SR	SR	SR	RA	SR	RCA	Inter-net based survey	Retro-spective cohort study	Prospective cohort study	Survey Prospective analysis
Number	113	232	1703	336	23	90	223	1,577	180	546
Gender M/F %		190/118	M/F				54% men			
Age		75.6					42 mean			
Education Years							MD			
Race %		unk					unk			
Setting										
Hospital	X	X	X							
Out-pt clinics				X						
Community								X		
Nursing Home	X					X			X	X
ER							X			
Urban								X		
Suburban								X		

SR=systematic review, RA= retrospective analysis, RCA= retrospective chart abstract

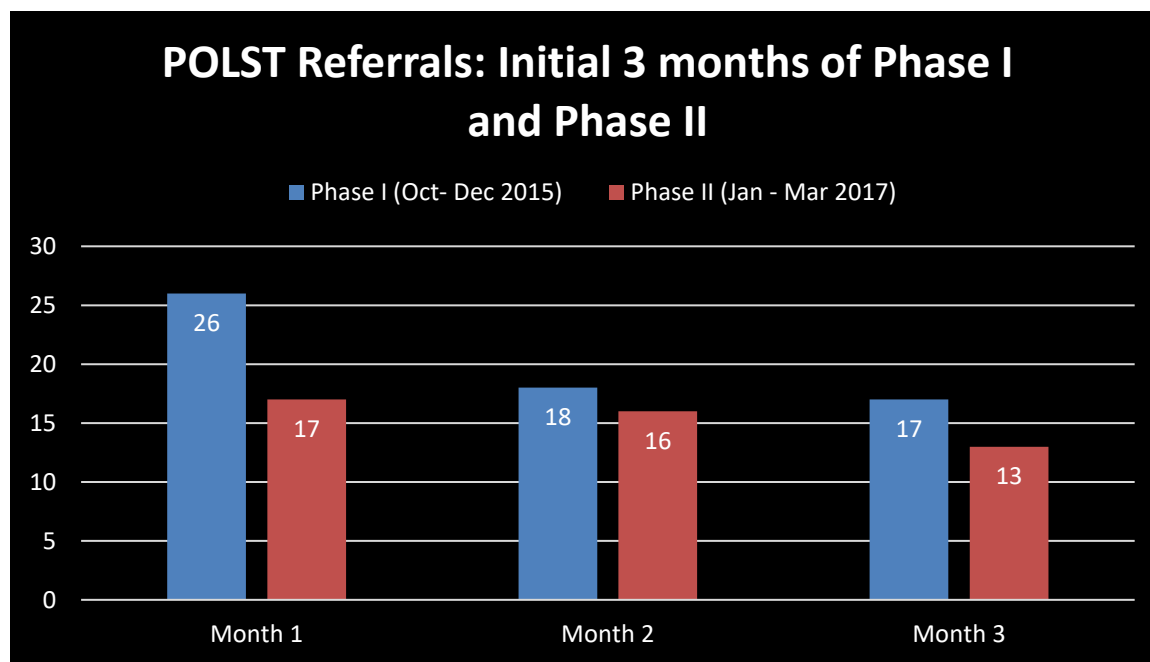
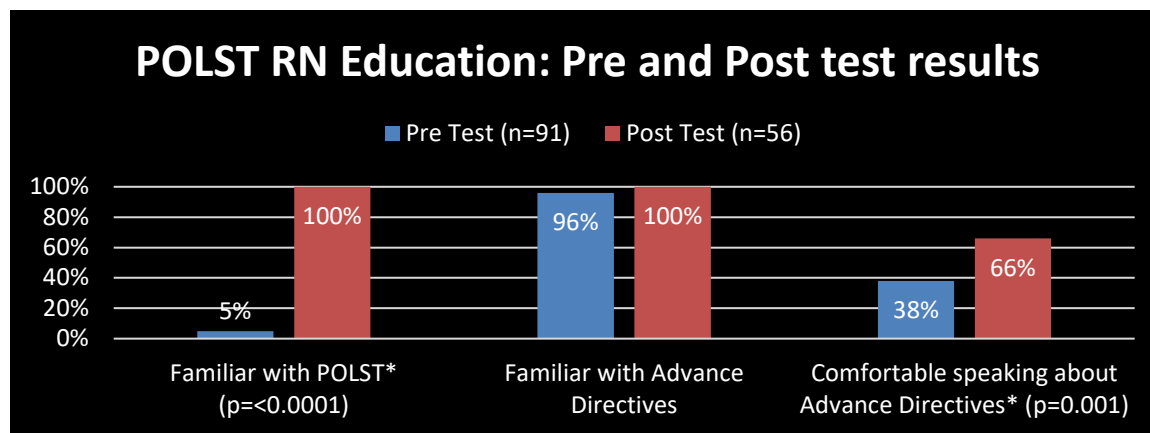
TABLE III

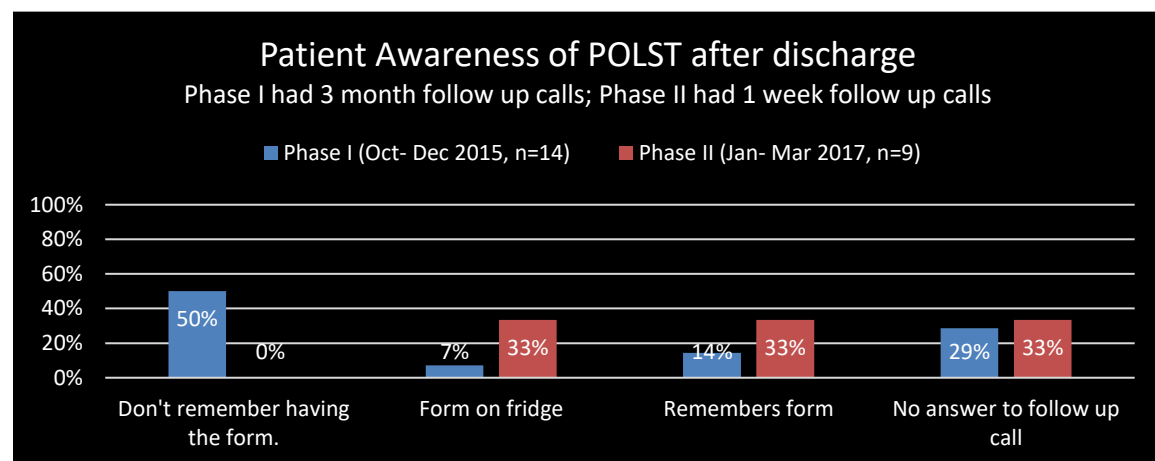
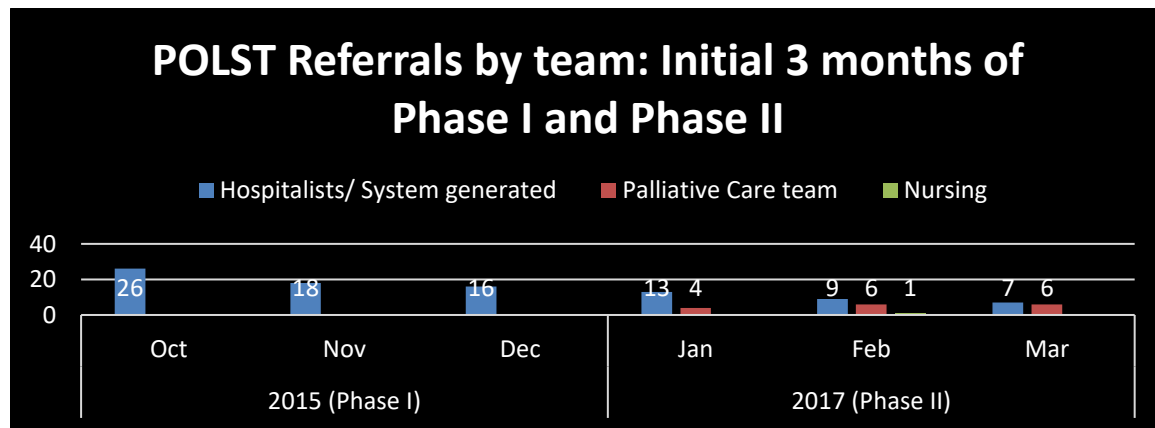
Studies	Outcome
Brinkman, et al. (2014).	Advance care planning (ACP) positively impacts the quality EoL care. Complex ACP interventions may be more effective in meeting patients' preferences than written documents.
Chan et al. (2016)	There is limited available evidence concerning the clinical, physical, psychological or emotional effectiveness of EoL care pathways.
Coulter et al. (2015)	Personalized care planning is a promising approach that offers the potential to provide effective help to patients and leads to better health outcomes.
Garrido et al. (2015)	DNR orders associated with a higher QOL. Documentation of EoL preferences may be beneficial to patients.
Hickman et al. (2015)	POLST is most often used to guide the care of older adults near EoL. POLST orders reflecting decisions to withhold interventions are usually honored.
Hickman et al. (2011)	With the exception of feeding tubes and antibiotic use in residents with orders for no antibiotics, the use of medical treatments was nearly always consistent with POLST orders to provide or withhold life-sustaining treatment.
Mirarchi et al. (2015)	Significant confusion exists among physicians regarding the use of POLST in critically ill patients.
Richardson et al. (2014)	POLST is not always adhered to pre-hospital. EMS does, at times, provide resuscitation to patients who have POLST initiatives signed.
Tolle et al. (1998)	POLST orders regarding CPR in nursing home residents were mostly respected. Study participants received high levels of comfort care and lower rates of transfer for aggressive treatment.
Wenger et al. (2013).	Broad uptake of POLST after only a brief time since introduction. Very little difficulty in translating POLST information into actual care.

Appendix A

POLST Project Protocol

Appendix B
Project Results





IRB



Institutional Review Board for the
Human Research Protection Program

800 S. Beaver
PO Box: 4062
Flagstaff AZ 86011
928-523-9551
928-523-1607 fax
<http://nau.edu/Research/Compliance/Human-Subjects/>

To: Dawn Rivas, MS, RN
From: NAU IRB Office
Date: November 6, 2016

Project: Provider Orders for Life Sustaining Treatment (POLST) Education and Implementation at Flagstaff Medical Center

Project Number: 975299-1
Submission: New Project
Review Level: Administrative Review
Action: RESEARCH - NOT HSR
Project Status: Research - Not HSR

The project listed above does not require oversight by the Northern Arizona University Institutional Review Board because the project does not meet the definition of 'research' and/or 'human subject'.

- **Not Research as defined by 45 CFR 46.102(d):** As presented, the activities described above do not meet the definition of research as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge".
- **Not Human Subjects Research as defined by 45 CFR 46.102(f):** As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention or interaction with the individual, or identifiable private information".

Note: Modifications to projects not requiring human subjects review that change the nature of the project should be submitted to the Human Research Protection Program (HRPP) for a new determination (e.g. addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the research question). Please contact the HRPP to consult on whether the proposed changes need further review.

Northern Arizona University maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #0000357).