THE ROLE OF HEALTH CARE PROVIDERS GOALS, PLANS, AND PHYSICIANS ORDER FOR LIFE SUSTAINING TREATMENT (POLST) IN PREPARING FOR CONVERSATIONS ABOUT END-OF-LIFE CARE

By

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ABSTRACT

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The Physicians Order for Life Sustaining Treatment (POLST) is a planning tool representative of an emerging paradigm aimed to facilitate elicitation of patient end-of-life care preferences and to ensure that such preferences are honored wherever the patient receives care. This patient-centered communication approach to advance care planning requires patients and health care providers to engage in difficult conversations regarding treatment options and preferences. The proposed study assesses the impact of the POLST document on health care provider goals and plans for conversations about end-of-life care treatment options. A 2 (POLST: experimental, control) x 3 (topic of possible patient misunderstanding: CPR, medical intervention, artificially administered nutrition) experimental design was employed to assess goals, plans, and strategies for plan creation and alterations by medical professionals. Findings suggest that the POLST had little impact on plan complexity or reaction time with initial plans. However, preliminary evidence suggests that the utility of the POLST comes when providers need to provide responses to patient misunderstanding. Significant differences in goals were identified, with arousal management emerging as the primary goal in shaping conversational engagement. The role of goals, provider experience, concern for consequences and meta-goals or constraints are discussed. As goals and plans drive behavior, the results of this study are a means to identify existing constraints to health care provider conversational engagement and the utility of POLST in planning the process.

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INTRODUCTION

The advances in medicine and continued development of life-prolonging medical technologies cause questions of indiscriminate use of aggressive and life-sustaining treatments to arise. Advance care planning in the form of advance directives was created as a means for people to retain autonomy over their medical care by specifying life-sustaining treatment values and choices when they were no longer capable of doing so (Hickman, Hammes, Moss, & Tolle, 2005). Such discussions and planning of end-of-life treatment preferences were intended to not only help individuals maintain a sense of control (Brown, 2003), but also to reduce unnecessary or ineffective care and care that may conflict with patient wishes (e.g., Bomba & Vermilyea, 2006).

Conversations regarding end-of-life care and treatment options are inherently difficult. Difficult conversations occur when high uncertainty about the receiver's emotional response occurs (Browning, Meyer, Truog, & Solomon, 2007). The Physician Order for Life Sustaining Treatment (POLST) is a patient-centered communication approach that encourages patients and health care providers to engage in such difficult conversations regarding treatment options and preferences (Bomba et al., 2012; Wenger et al., 2012). Eliciting patient preferences of care relies on patient-provider discussions and shared understanding of end-of-life treatment options (von Gunten, Ferris, & Emanuel, 2000). The POLST was created to be a stimulus for such discussions, encouraging providers to engage patients with serious, life-limiting illnesses in a conversation about preferences for care (e.g., Sabatino & Karp, 2011, Wenger et al., 2012), although no known research to date has tested the utility of the document as a conversational tool. Furthermore, research does exist that documents physician and health care provider reticence in initiating such conversations given their difficult nature (e.g., Larson & Tobin, 2000; Meyer et al., 2009).

The goal of the current study is to assess the impact of the POLST document on health care provider goals and plans for conversations about end-of-life care treatment options. This paper first reviews literature related to advance care planning and the POLST and then considers multiple goals (Caughlin, 2010; Dillard, Segrin, & Harden, 1989) and planning theory (Berger, 1988; 1997) perspectives for examining plans for these conversations. In the context of advance care planning, communication is likely strategic (Kellermann, 1992) with goals and plans influencing behavior (e.g., Berger, 1997; Dillard et al., 1989). Operating from this perspective, the results of this study have the potential to inform existing constraints and facilitators to conversational engagement, as well as the utility of the POLST, in facilitating the process. The intersection of advance care planning and the POLST, multiple goals, and planning theory will provide the basis for the research questions and hypotheses posed. Implications for findings will be discussed.

REVIEW OF LITERATURE

Advance Care Planning

Life-sustaining medical care of patients with terminal illnesses at the end-of-life is costly and often difficult on the patient and his or her family (e.g., Cherlin et al., 2005; Fried, Bradley, & O'Leary, 2003; Tilden, Tolle, Nelson, & Field, 2001). Patient-physician discussions about end-of-life wishes are associated with lower rates of intensive interventions, lower rates of intensive care unit (ICU) admission (Wright et al., 2008) and significantly lower health care costs (Zhang et al., 2009). Advance care planning has also been attributed to improvement of end-of-life care (Zhang et al., 2009), increased patient and family satisfaction (Tierney et al., 2001) as well as the reduction of stress, anxiety, and depression in surviving relatives (Detering, Hancock, Reade, & Silvester, 2010).

Advance directives or living wills emerged with policy laws aiming to provide a standardized means for terminally ill patients to communicate their wishes regarding end-of-life care once they were no longer capable of doing so. Advance directives alone have not been as successful as originally hoped in providing patient autonomy of end-of-life care (e.g., Dunn, Tolle, Moss, & Black, 2007; Hickman et al., 2005). Reports suggest that only 20-30% of Americans have completed and signed advance directives (e.g., Bomba & Vermilyea, 2006; Hickman et al., 2005; Robley, 2009). Even those with advance directives face logistic and system barriers, giving such documents limited effect on treatment decisions towards the end-of-life (Bomba & Vermilyea, 2006).

Traditional advance care directives also vary in their specificity; often they do not translate into immediately actionable orders which requires interpretation by both family members and clinical practitioners (Robley, 2009). Thus, for a patient with a terminal illness, converting treatment goals into actionable medical orders while the patient retains the capacity to do so is a more effective means of communicating preferences and ensuring such preferences are honored than are traditional advance directives alone (Bomba & Vermilyea, 2006).

Additional barriers in the treatment of terminally ill patients includes the absence of a system in which patients' preferences for life-sustaining treatment are both honored and documented across health care settings (Sabatino & Karp, 2011). For those with completed advance care directives, they may not be readily available when needed and they are often not transferred through different health care settings with the patient (Dunn et al., 2007). Such system barriers lead to inconsistencies between patient preference of life-sustaining treatments and actual care provided (Covinsky et al., 2000). In response to the shortcomings of the traditional legalistic approach, a more communication-centered paradigm has emerged (Sabatino & Karp, 2011).

POLST Paradigm

The POLST was introduced to overcome many of the barriers present in existing advance care directives. The POLST clinical paradigm was designed to improve the quality of care for people who have advanced, progressive illness and/or frailty (Bomba, Kemp, & Black, 2012) by providing a system for eliciting, documenting, and communicating patient treatment preferences for life-sustaining treatment during end states of life. The central focus of the POLST is the clarification and communication of patient treatment preferences, the documentation of such goals and wishes in a format that is distinctly recognizable with an obligation of health care professionals to honor these preferences across all care settings (Citko, Moss, Carley, & Tolle, 2010).

The POLST paradigm was created in the early 1990s in Oregon by a coalition of medical professionals. By 2010, 12 states had approved statewide programs with the majority of other states at various stages of state or local development. Although some states use different names, the program is universally referred to as the POLST Paradigm Program (Hickman et al., 2005).

The POLST is intended for any patient with serious life-limiting illness who has a life expectancy of less than a year, or anyone of advanced age interested in defining their end-of-life care wishes (Bomba et al., 2012). The centerpiece of the POLST paradigm is a standardized advance care planning document (See capolst.org) to be completed by health care professionals including physicians, physician's assistants, nurse practitioners, and social workers who work as an interdisciplinary team together with the patient, and where applicable, an appointed decision maker (Hickman et al., 2005).

The brief directive is a portable document containing specific information about the patient's treatment wishes that must accompany them as they transfer through the health care system (Robley, 2009). The POLST form conveys treatment preferences of the patient into immediately active medical orders. It is brightly colored and divided into three sections for easy identification that include patient preferences for cardiopulmonary resuscitation (i.e., resuscitate, do not resuscitate), medical intervention decisions ranging from comfort measures to full treatment (i.e., the administration of antibiotics, intravenous fluids, the use of intubation and mechanical ventilation), and medically administered nutrition (i.e., none, defined trial period, long-term use) (Citko et al., 2010). The three sections of the POLST document will be later discussed in terms of potential areas for patient misunderstanding. The POLST is outcome neutral in that it may be used to either limit or request designated medical interventions (Bomba et al., 2012).

Advance Directives vs. POLST

The POLST paradigm fits within the broader spectrum of advance care planning tools. It is not intended to replace existing advance directives, but rather complement them. The POLST is not an advance directive or living will, but rather an advance care planning tool that reflects patient's immediate goals for medical decisions in a way that is transferable into actionable orders (Sabatino & Karp, 2011). The documents differ in that advance directives are still necessary to appoint a legal decision maker on behalf of the patient and are recommended for all adults regardless of age and health status. Alternatively, the POLST form is a brief, recognized document and is only intended for seriously ill patients, or those who are medically frail at the end stages of life (Bomba et al., 2012). The POLST also differs from traditional advance care directives in that the POLST paradigm centers on communication encounters between patients and providers (Sabatino, 2010).

POLST Support

Research suggests that the POLST form is more effective at communicating patient wishes than traditional advance directives (Bomba et al., 2012; Hickman et al., 2005), and that end-of-life care under the POLST is consistent with treatment wishes the majority of the time (Meyers et al., 2004; Lee et al., 2002). A longitudinal study of eight nursing homes over the course of a year was conducted to assess the POLST effectiveness in honoring patient wishes. Residents whose POLST forms indicated a do not resuscitate order (DNR) and an order for comfort measures only, received only desired treatments. None of the residents received undesired intensive care, ventilator support, or CPR (Tolle et al., 1998). Research also suggests the utility of the POLST in conveying immediately actionable medical orders. A survey of 572 emergency medical technicians (EMTs) revealed that a large majority perceived that the POLST document clearly articulated instructions for patient preferences and found the document to be useful in deciding which treatments to provide (Schmidt, Hickman, Tolle, & Brooks, 2004). Despite reported success, barriers exist. The status of the POLST implementation in twelve states was assessed. Communication skills for facilitating conversations with patients and families posed the greatest implementation challenge (Sabatino & Karp, 2011).

The POLST Conversation

The focal point of the POLST paradigm is a planning form intended to communicate the wishes of seriously ill patients and their preferences for life-sustaining medical treatments. The document was created to be a mechanism to facilitate difficult conversations about end-of-life care, however, to date the utility of the document as a conversational tool has yet to been assessed. Given that existing literature suggests that health care professionals report high levels of state communication apprehension associated with initiating end-of-life decision-making discussions (e.g., Momen, Hadfield, Kuhn, Smith, & Barclay, 2012; Sabatino & Karp, 2011) and that communication competence is reportedly the primary barrier in the POLST implementation (Sabatino & Karp, 2011), such assumptions need to be examined. One way to assess these assumptions is through the examination of health care provider goal(s) and subsequent plan production for having such conversations both with and without the POLST document. The planning of end-of-life care conversations is purposeful and requires people to pursue multiple and possibly conflicting goals, therefore the process can be informed through a multiple goals perspective.

Multiple Goals

Goals are defined as states of affairs that individuals wish to attain or maintain (Caughlin, 2010; Dillard, 2008). People pursue social goals through interaction, and as such, one way to gain insight to conversations regarding end-of-life treatment options is through a multiple goals framework. A multiple goals perspective provides an account for how various objectives are managed to produce messages (Berger, 2005) and acknowledges that the production and interpretation of messages are motivated by more than the basic desire to exchange information (Sillars, 1998). From a multiple goals perspective, people seek to satisfy multiple and sometimes conflicting goals simultaneously during interaction (Caughlin, 2010; Dillard, 1990).

Goals are hierarchically structured (Berger, 1997) and are typically considered as being primary or secondary in nature although they are pursued concurrently (Dillard, 2008). Primary goals refer to the main reason for enacting a communicative event and often define a particular communication situation (Dillard, 1989). Primary goals, also referred to as instrumental goals, encompass the primary focus of a communicator’s task or what the person is trying to accomplish in the interaction. For example, a physician might have the primary goal of informing a patient of common misperceptions about cardiopulmonary resuscitation or of changing an attitude regarding Hospice care. These primary goals are the drive or purpose for the interaction. Secondary goals often provide a counterforce to the primary goals. Secondary goals refer to secondary considerations about the interaction that might constrain conversation, such as the desire to avoid conflict or to refrain from offending the other person (Dillard, Segrin, & Harden, 1989) and are typically concerned with relational issues. A number of secondary goals have been discussed in the literature, including influence, identity, interaction, relational resource, personal resource, and arousal management goals (Dillard et al., 1989; Schrader & Dillard, 1998).

Influence goals concern the desire to bring about behavioral change in a target person. *Identity* goals relate to portraying or protecting a desired image of the self or conversational partner (Berger, 2005). Such goals concern behaving in ways consistent with personally held beliefs and values. *Interaction* goals deal with the desire to engage in socially normative conversation. *Relational resource* goals are associated with the development and maintenance of relationships and refer to concerns about preserving one's relationship with the other interactant. *Personal resource* goals concern the desire to avoid consequences for one's own resources, such as finances. *Arousal management* goals refer to concerns about avoiding feelings of embarrassment or nervousness. The importance of specific goals will vary depending on the situation (e.g., Schrader & Dillard, 1998).

The distinction between primary and secondary goals indicates that while multiple goals might be present in a given interaction, and thus play an influential role, they have respective weighted importance. Even if one has a primary goal is driving an interaction, other goals are still potentially relevant and might subsequently alter the communicative pursuit of the primary goal. That is, to say that message production is not likely the outcome of one given goal, but rather attending to multiple goals simultaneously.

One implication of the multiple goals perspective is the presence of multiple goals might influence communication outcomes (Sillars, 1998). The effort in managing multiple and sometimes competing goals inevitably leads to adaptation and altering of communication patterns. Additionally, it might be the case that certain goals are prioritized over others in the given context (Wilson, 2002).

As communicative goals likely to be salient are shaped by contextual circumstance (Goldsmith, Miller, & Caughlin, 2008) some of these goals may be more or less important to health care providers during end-of-life conversations regarding advance care planning. For example, a physician discussing end-of-life treatment options may have the primary goal of changing attitudes regarding which treatment options would be preferred (i.e., influence goals), but also worry about feeling uncomfortable (i.e., arousal management goal) or want to avoid unseemly questioning (i.e., interaction goals). Given that no known research has yet examined the goals inherent in advance care planning conversations, one objective of this project is to discover what types of goals are important to health care providers during such discussions. Though primary and secondary goals often conflict with each other, this may not always be the case because “it is possible for a single motive to generate both a [primary] goal and a secondary goal” (Dillard, 1990, p. 48). To investigate the relationships between primary and secondary goals guiding difficult end-of-life care conversations, the following research question is posed:

> RQ1: What is the relative importance of influence, identity, interaction, relational resource, personal resource, and arousal management goals from the health care provider perspective in planning conversations about end-of-life care?

In addition to Dillard’s (1989, 1990; Dillard et al., 1989) goals, health care practitioners who engage in discussions regarding end-of-life care likely deal with potential consequences in both initiating and having the conversation. Furthermore, negotiating, or attempting to avoid, various consequences is another goal that health care practitioners potentially account for when planning such difficult conversations.

Consequences. When deciding to engage in a conversation, people often evaluate potential consequences of having that conversation. In the context of the current study, health care providers might consider what the consequences of having the difficult conversation might be for the relationship between the provider and patient or with the patient's family members. When a conversation occurs, especially one that is perceived as difficult in nature, both short- and long-term consequences may be present (Russell, Keating, Cornacchione, & Smith, 2012; Keating, Russell, Cornacchione, & Smith, in press). Cody and McLaughlin (1980) found perceived consequences to be a dimension of compliance gaining in interpersonal interactions, and they were subsequently identified as dimensions of compliance-gaining situation perception (Cody, Woelfel, & Jordan, 1983). By nature, difficult conversations are often uncertain. The uncertainty associated with the conversation might be related to the potential outcomes or consequences. Specifically, one might fear that engaging in a conversation regarding end-of-life care will render negative consequences. For example, a health care practitioner initiating a conversation about end-of-life treatment options, might worry about creating anxiety and distress with the patient and or/family. The conversation could affect long-term consequences if the patient shuts down further communication (Russell et al., 2012) hindering provider ability to facilitate pain and symptom management. To address this issue, the following research question is posed:

> RQ2: What are the perceived consequences of engaging in difficult conversations regarding end-of-life treatment options.

Meta-goals

Meta-goals or constraints are similar to primary and secondary goals, as well as consequences, in that they influence how one goes about interacting with others. Meta-goals are termed as such as they are consistently present and influence how the primary and secondary goals are achieved (Berger, 1988, 1997) through the regulation and constraint of behavior

(Berger & Kellermann, 1983). Communication is regulated by two overarching constraints: *politeness* and *efficiency* (Kellermann, 1992; Kellermann & Park, 2001).

Politeness refers to behavioral social norms and is concerned with the degree to which a message is “nice, civil, proper, and courteous” as opposed to “rude, uncivilized, nasty, improper, and ill-mannered” (Kellermann & Shea, 1996, p. 161). Politeness is rooted in intentions to mitigate face threats present in social interaction (Mills, 2003). *Efficiency* is concern for behavioral expediency (Kellerman & Park, 2001) and is reflected in the degree to which a message is “direct, immediate, and to the point, wasting neither time, energy, steps, or effort” as opposed to “roundabout, indirect, and wasteful, consuming time, energy, and/or effort” (Kellermann & Shea, 1996, p. 161). The meta-goal of efficiency suggests that goal pursuers often want to achieve their primary goal without wasting time and resources. They strive to be efficient in achieving their goals, with the intent to expend the minimum effort possible, yet still reach their goal.

The meta-goals of politeness and efficiency are considered constraints as they set limits on individual options during the pursuit of a goal. Kellerman (1992) emphasizes that communication is strategically selected, enacted, and evaluated based on the degree of politeness and efficiency perceived necessary in a given situation.

Politeness and efficiency are not represented on a single dimension (Kellermann & Shea, 1996). While in some cases, goal attainment might emphasize one meta-goal, while sacrificing the other; this might not necessarily be the case. There are instances in which the two meta-goals are highly compatible (Berger, 1997). For example, a direct request could be perceived as the most polite and efficient means to attain a goal in a given situation (Kellermann & Shea, 1996).

Regardless of association, the meta-goals of politeness and efficiency likely shape and constrain social interactions. For example, if a health care provider has a primary goal of informing a patient of treatment options, a meta-goal of efficiency might suggest a terse and direct approach. However, a meta-goal of politeness might curb the direct approach and suggest a more other-oriented approach garnering patient-centered needs and engagement of ingratiation tactics before disclosing options available. Given the unique contextual circumstances of health care providers, the influence of such meta-goals in the planning process is of interest.

RQ3: What is the relative importance of the meta-goal(s) efficiency and politeness in planning difficult conversations regarding end-of-life treatment options?

Goals vs. Plans

Goals and consequences are the states and outcomes of the communication interaction. Goals reflect the ideal outcome of the social interaction both relationally and instrumentally (Dillard et al., 1989). However, goals are limited in that they provide little insight to the path or preparation process interactants engage in to achieve such objectives.

Given that goals are defined as states of affairs that individuals wish to attain or maintain (Caughlin, 2010), it follows that goals are viewed as cognitive representations of desired states (Berger, Knowlton, & Abrahams, 1996). Similarly, plans are hierarchically organized cognitive representations of action sequences used to achieve goals (Berger, 1997). In defining plans, Berger (1988) indicates:

> A plan specifies the actions that are necessary for the attainment of a goal or several goals. Plans vary in their level of abstraction. Highly abstract plans can spawn more detailed plans. Plans can contain alternative paths for goal attainment from which the social actor can chose (p. 96).

As such, plans are flexible processing structures that contain alterative paths for achieving goals accounting for various action contingencies.

Both plans and goals are ways of organizing knowledge toward a purpose and can range from very specific to general. Berger and colleagues differentiate the two in explaining that plans are a means for goals to be achieved. A plan implies a goal whereas a goal does not necessitate a plan (Berger, Knowlton, & Abrahams, 1996).

Planning Theory

Planning is a multi-staged process that produces a plan to be implemented in action as its end product (Berger, 1997). The planning process includes “assessing a situation, deciding what goals to pursue, creating plans to secure these goals, and executing plans (Wilensky, 1983, p. 5). It is the integration of instrumental and social goals into the formulation and revision of plans, along with the consideration for constraints and challenges, which provides the basis for and scope of planning theory.

Planning theory provides a conceptual link between communicative goals and communicative action (Waldron, Caughlin, & Jackson, 1995) and posits that communication success is due in part to the communicator’s efforts to formulate and implement plans of action (Waldron & Lavitt, 2000). Plans representing sequences of goal directed action are stored in memory in as specific a form as possible to be drawn upon at a later time when presented with a similar situation. Plans are mental representations as they do not constitute the actions themselves and thus, discrepancies might exist between the actual plans and eventual enactment (Berger, 1988; Berger & Bell, 1988).

Drawing upon the plans allows for application and strategic navigation of the situation at hand. Given contextual variation, plans of action(s) must be modified to take into account unique circumstances that arise when applied in specific circumstances.

Planning Sources

To gain insight on plan formation, the sources of knowledge drawn on in creating plans to achieve their goals are of interest. According to planning theory, there are two overarching sources from which social actors derive plans: long-term memory and current information inputs. However, it is posited that when confronted with achieving a goal, these two sources are not equal. When people derive plans to reach their goals, priority is given to accessing their long-term memory to determine whether an already formulated plan or canned plan is available for use (Berger, 1997). Canned plans are those that have either been enacted or mentally rehearsed in the past.

People planning to achieve a goal are presumed to search their memory for instances in which they have tried to reach that goal or one of similar nature in the past rather than devising a new plan from scratch (Hammond, 1989; Riesbeck & Schank, 1989). This process allows for cognitive efficiency (Fiske & Taylor, 1984), as it negates the need to generate new plans for each experience. Instead, planners access previous episodes to guide current situations (Berger & Jordan, 1992) making it easier, and thus, more efficient. If people fail to identify a canned plan in long-term memory, they will formulate plans utilizing potentially relevant plans from memory, from current information outputs, or a combination of both (Berger, 1997).

Previous research investigating plan origins suggest several knowledge sources that planners can draw upon in developing plans including: *specific episodes, hypothetical episodes, ensembles of episodes, role models, instruction,* and *previous plans* (Berger & Jordan, 1992).

Specific episodes entail the recall a specific instance in which they have attempted to achieve the same or similar goal. In *hypothetical episodes*, planners imagine themselves attempting to achieve the goal in a given situation that they have not previously experienced. *Ensembles of episodes* encompass the simultaneous consideration of several similar experiences in which planners were trying to reach a similar goal. If planners have none of the above planning sources available, they might rely on *role models* or person(s) who have accomplished the goal previously and employ their actions as a planning source. *Instruction* refers to instances in which planners indicate they have had explicit instruction on how to reach the goal. *Previous plan* origins entail instances where planners state they have developed plans to achieve goal previously, yet had not yet acted on them.

In the case of planning a conversation with a patient about end-of-life treatment options, health care providers might draw from myriad knowledge structures. The knowledge structures informing such conversational planning practices are of interest here. This is especially informative in the context of end-of-life treatment discussions, as health care providers frequently report under-preparedness and high communication apprehension (e.g., Larson & Tobin, 2000; Meyer et al., 2009; Weissman et al., 1998). As such, the following research question is posed:

RQ4: What are the sources of knowledge that health care providers draw upon when devising their conversational plans regarding end-of-life treatment options?

Given that those participants in the POLST condition will be provided a POLST document, it is likely that they will more likely report using it as a source of knowledge. As the POLST provides a guide to the array of topics to be covered in designating patient preferences for treatment options it is referenced as an instruction source. As such, the following hypothesis is posed:

H1: Those in the POLST condition will be more likely to report instruction sources of knowledge than will those in the condition not using the POLST.

Complexity

Plans vary in their complexity (Berger & Bell, 1988). Complexity is traditionally assessed in two ways, level of detail and number of contingencies. In terms of detail, plans can range from a few abstract steps to highly detailed behavioral descriptions of the specific actions to be taken (Berger, 1997). As complexity of plans increase, so do the number of action sequences indicated for attaining goals. Complex plans also take into consideration potential responses and thus integrate contingencies to account for them. For example, a health care provider trying to elicit treatment preferences from a patient could plan to approach the patient directly or circuitously with visiting family members by encouraging them to engage in the conversation. Plans often contain such contingency action sequences to afford interactants the ability to make real time adjustments about which path to take (Waldron, 1997).

The POLST document was created to be a planning tool (e.g., Sabatino & Karp, 2011, Wenger et al., 2012) and as such, should aid health care providers in creating a plan to have an end-of-life care conversation. Further, the POLST details the primary areas of treatment options and thus, should require less cognitive resources for more detailed plan development. A health care provider can refer to the POLST form as a guided resource for plan development, rather than being required to develop their own approach to engaging in the conversation. In such cases, the POLST serves as a heuristic to plan creation, allowing those with the POLST to create plans with greater detail, while expending less cognitive effort. As such, the following hypothesis is posed:

> H2: Those in the POLST condition will produce more complex plans than those in the condition not using the POLST.

Plan complexity is also said to increase with prioritization or desire to reach goals (Berger, 1997). Inferences can be made concerning the importance of goals to planners by observing the conduct they display in trying to reach their objectives. Perceptions of energy expended, effort, or arousal can guide inferences about goal or outcome desirability (Berger, 1988; 1997). According to planning theory, greater prioritization or desire to achieve objectives results in greater allocation of resources (i.e., effort) to the task at hand. As such, it should follow that providers with a greater desire to aid patient understanding about end-of-life treatment options will be more likely to allocate greater resources to the planning process. To assess this proposition in the context of provider conversations about end-of-life care, the following hypothesis is posed:

> H3: The prioritization to aid patients in advance care planning through conversations about end-of-life treatment will be positively associated with plan complexity.

Another determinant of plan complexity is the knowledge that planners have about the domain under consideration (Berger, 1997). Health care providers with greater knowledge about end-of-life treatment options or greater conversational experience about such treatment options with patients, possess greater knowledge about the task at hand. Greater domain knowledge will likely afford provider ability to construct a more complex plan. Thus, the following hypothesis is posed:

> H4: Increases in specific domain knowledge will be associated with increased plan complexity.

Domain knowledge might also moderate the prioritization-complexity relationship, such that health care providers might have a strong desire to have end-of-life conversations with patients and strongly value their importance in contributing to patient quality care, but do not posses the knowledge or skills to engage in such conversations. As previous research suggests that feelings of ill preparedness are a barrier in difficult health conversations (e.g., Meyer et al., 2009) and that provider's feel a sense of reticence in initiating such conversations, domain knowledge is an important variable to consider. Thus, the following hypothesis is posed:

> H5: The higher the response complexity, the stronger the relationship between domain knowledge and prioritization.

Planning Constraints and Meta-goals

As meta-goals are claimed to regulate interaction through the guidance and constraint of behaviors (Kellermann & Shea, 1996) they will likely impact the complexity of plans. As conversational constraints are heightened, ability for planning decreases, whereas if constraints are removed, planning options increase (Waldon, 1990). A need for efficiency given high case load or limited time allocated with each patient might limit the approaches readily available to health care providers engaging with patients about end-of-life treatment options. The constraint eliminates potential routes or strategies to be used. Alternatively, if health care providers have limited case loads and ample time to discuss treatment options, a wider range of strategies to chose from when devising plans will likely exist. A high concern for politeness is also likely to attenuate communication options as significant preoccupation with concerns for being courteous in a context addressing treatment alternatives might limit the content discussed or alter the structure of the conversation. Further, heightened concerns for both meta-goals are also associated with greater cognitive complexity (Waldon, 1990). Thus, plans with substantive consideration for meta-goals of efficiency and politeness will require greater cognitive resources allocated to planning in comparison to those with less concern for such constraints. As individuals strive to be cognitively efficient (Chen & Chaiken, 1999; Fiske & Taylor, 1984), and likely have limited cognitive resources devoted to conversational planning, the following hypotheses are posed:

> H6: The meta-goal of efficiency will be negatively associated with the complexity of plans to reach social goals.
>
> H7: Higher levels of the meta-goal of social politeness will be negatively associated with the complexity of plans to reach social goals.

Hierarchy Principle of Plans

As people pursue goals through strategic social interactions with others, they might encounter barriers preventing them from desired outcomes (Knowlton & Berger, 1997). The hierarchy principle of plans addresses cognitive and communicative responses to failed plans (Berger, 1997). The principle suggests that when one fails to achieve a goal, yet continues in pursuit, their first tendency is to alter plans at the lowest level of abstraction. In other words, the communicator will have a tendency to first alter lower level, concrete aspects of the message plan like rate of delivery and wording before changing more abstract aspects, located at the top of the hierarchies, like structure and sequencing of message content (Berger & diBattista, 1992, 1993; Berger, Knowlton, & Abrahams, 1996). This pattern of plan alteration is based on the notion that more concrete, or higher level, alterations are more demanding of cognitive resources. In a series of field and laboratory studies, direction givers were met with failure to reach instrumental goals (i.e., giving adequate directions) to confederates. Respondents prompted to give more abstract alterations to their directions (i.e., provide an alternative route) experienced higher rates of cognitive load assessed by speech latency than those respondents asked to provide more lower level alterations (i.e., provide an alternative landmark, slow speech rate) (Knowlton & Berger, 1997; Berger, Knowlton, & Abrahams, 1996).

Altering more abstract plan features requires greater effort and is more demanding of cognitive resources (Berger, 1997; Berger, Knowlton, & Abrahams, 1996) than is altering more concrete dimensions. In the context of conversational planning for end-of-life treatment options, a health care provider faced with patient confusion will need to adapt their conversation plans in order to attain their goals. According to the hierarchy principle, in response to patient confusion or misunderstanding, the health care provider might revise the same plan, but with the intention to communicate more slowly and with greater emphasis on clear articulation. The initial alteration of concrete dimensions of their initial communicative plan (i.e., slowing the speaking rate), rather than discarding the plan altogether and trying a different approach (i.e., more abstract level alterations) would minimize cognitive load (Berger & diBattista, 1993). Plan alternation can occur via modification when barriers such as patient misunderstanding occur.

In the context of discussing end-of-life care treatment options, thwarted plans are likely pervasive given limited patient understanding of medical outcomes. Research suggests that patients and their families have significant health illiteracy about efficacy and invasiveness of life-sustaining treatment adding to the burden of communicating treatment options. A case study that examined registered nurse practitioner experiences with advance care planning identified a lack of understanding and knowledge of treatment options as a primary barrier inhibiting the completion of advance directives. Practitioners reported that patients and their families vastly overestimated the benefits of resuscitation (Jeong, Higgins, & McMillian, 2011). Similarly, another study assessing patient understanding after discussions associated with CPR reported that 66% of patients were unaware that mechanical ventilation is often required after resuscitation, 37% believed that ventilated patients were able to speak, and 20% thought that ventilators were oxygen tanks (Fischer et al., 1998).

Given factors such as health illiteracy, misunderstandings associated with treatment options and respective levels of invasiveness, health care providers might not reach their goals in their initial attempts. Understanding health care provider reported approaches to plan alterations in the face of failed goals will provide insight into techniques of patient-centered communication adaptation and outcomes of quality care.

The POLST was created to help with conversations and thus, it is likely to be used as a resource in response to thwarted plans (i.e., patient misunderstandings) such that, when a patient misunderstanding occurs, a health care provider can refer to the POLST form as a means of explanation rather than engaging in the more cognitively taxing task of developing a new plan. This process of referencing the POLST guide should require less cognitive resources and occur with a shorter reaction time (i.e., instrumental resources) than those without the document. Given the need for efficiency, both cognitively and in terms of resources (i.e., time), it is likely that initial adaptation techniques will follow the proposition of the hierarchy principle's logic in adaptation based on cognitive resourcefulness. As such, the following hypothesis is posed:

H8: Adaptation reaction time to thwarted plans (i.e., patient misunderstanding) will be faster in the POLST condition than in the condition not using the POLST.

In addition to the general reaction time of the POLST vs. non-POLST users, are the specific topics covered in the POLST and whether ease of developing plans or alterations thereof are in part dependent upon the topic is of interest. Insight to response ease can be examined through both reaction time and response complexity. Thus, the following research question are posed:

RQ5: Does reaction time in addressing a thwarted plan (i.e., patient misunderstanding) vary depending on topic (CPR, Medical Intervention, Artificially Administered Nutrition)?

RQ6: Does response complexity to a thwarted plan (i.e., patient misunderstanding) vary depending on topic (CPR, Medical Intervention, Artificially Administered Nutrition)?

METHOD

Procedures

Health care providers were recruited through a variety of online listservs including the Palliative Care Nurses Association, Hospice and Palliative Care Association, Coalition for Compassionate Care, California HealthCare Foundation, American Association of Case Management, Healthcare Chaplains Ministry Foundation, and the California Nurses Association. The survey was titled “Advance Care Planning.” Respondents were notified that participation was voluntary and that all provided information was confidential. No compensation was offered, and all phases of the study were approved by the Institutional Review Board (IRB).

In the recruitment notice (see Appendix A), a link to the study was provided. The first screen asked respondents to review and indicate their agreement to the informed consent before initiating the survey. They were then randomly assigned into one of six conditions created by crossing (1) POLST: experimental vs. control and (2) topic of possible patient misunderstanding: CPR, Medical Intervention, Artificially Administered Nutrition. Those in the experimental condition were provided the POLST document (see capolst.org) and the following information about the POLST:

> The POLST provides a framework for documenting and communicating patient treatment preferences for life-sustaining treatment during end stages of life. The document covers the range of treatment options ranging from comfort measures only to full treatment medical interventions. The POLST document can be used as a tool for conversations with patients about their preferences for end-of-life treatment.

Those in the control condition did not receive any information and proceeded directly to the planning prompt. Participants in both conditions were provided the following prompt:

> You have a patient living in a skilled nursing facility with a terminal illness. Their spouse is no longer living. They have a remaining life expectancy of less than a year. While they have full capacity to make decisions, you are asked to have a discussion with the patient about his or her end-of-life treatment options so that the medical staff aiding the patient is clear about what the patient wants.

Participants were asked to report relative importance of their primary (instrumental) versus secondary goals (i.e., identity, interaction, relational resource, personal resource, and affect management), meta-goals (i.e., efficiency, politeness) as well as the potential consequences for the planned conversation.

Next, they were presented with the following:

> Please design a plan to communicate to the patient about their options for life-sustaining treatment. In this plan, please write (a) how you would engage in the conversation with the patient and (b) what specifically you would plan to discuss. Please be as detailed as possible in your plan generation.

To control for potential ordering effects, participants were randomly assigned to either construct a plan first or complete goal measures. Following the plan generation, they were asked to indicate what thoughts they had when designing the plan, and more specifically, the sources of knowledge were drawn upon in plan development (i.e., past experiences, guide or instructional tool, course taken). Next, questions concerning priority to fulfill objectives and domain specific knowledge (i.e., communication and documentation of patients preferences for life-sustaining medical treatments) were elicited.

Both conditions were then provided with an additional prompt indicating that the patient did not understand their plan. Patient misunderstandings pertained to one of the three areas

(CPR, Medical Intervention, Artificially Administered Nutrition) covered in the POLST document (See Appendix B for scenarios). Participants were then asked to indicate how they would alter the plan to respond to the patient.

To conclude, respondents were asked to report descriptive information including age, sex, race/ethnicity, education, position, current job title, length of time in current position, length in time in health care profession, and frequency of end-of-life care discussions (i.e., estimated number of times monthly respondent engages in end-of-life care conversations).

Respondents

Respondents included 297 individuals who ranged in age from 21 to 80 years old (*M* = 47.22, *SD* = 15.08); 123 (41.4%) were male, 167 (56.2%) were female, and six (2.0%) did not indicate their sex. The majority identified themselves as Caucasian (82.5%), followed by Asian/Pacific Islander (6.7%), Hispanic (4.7%), African American (1.7%), and 4.3% indicated other or declined to state. With respect to education, 2 had some college (.7%), 8 had earned a 2-year or associates degree (2.7%), 71 had earned a 4-year college degree (23.9%), 129 had earned a Master's degree (43.4%), 15 had earned a doctoral degree (5.1%), 48 had earned a medical degree (16.2%), and 24 indicated other (8.0%). Other forms of education included Board certifications and seminary training.

A range of occupations were represented, including Certified Nurse Assistant (.7%), Nurse Practitioner (4.4%), Registered Nurse (10.1%), Chaplain (36.0%), Social Worker (7.4%), Medical Student (20.9%), Physician (15.2%), Hospital Administrator (1.3%), and other (4%). Other occupations included Attorney, Clinical Ethicist, End-of-Life Coach, Hospital Case Manager, and Occupational Therapist. Respondents occupied their current position for an average of 8.80 years (*SD* = 8.42) and worked in the health care field for an average of 16.30

years (*SD* = 12.89). A range of experience with end-of-life care conversations were represented, with the estimated number of times monthly they engaged in such conversations ranging from 0 to 100 (*M* = 9.69, *SD* = 17.03).

Measures

Except where noted, measures were comprised of seven-point, semantic differential and Likert-type items and scored such that higher scores indicate greater perceptions of the construct being measured.

Plan Complexity. Plan complexity was assessed by the number of action units in a particular plan.[1] A higher number of actions units indicated greater complexity. Complexity was assessed at two points: initial plan creation (*M* = 5.90, *SD* = 6.37) and planned response to patient misunderstanding (*M* = 2.08, *SD* = 2.23).

Sources of Knowledge. Sources of knowledge in which health care providers reportedly drew upon in creating their plans were assessed using a checklist method. Checklist categories were adapted from those proposed by Berger and Jordan (1992). Health care providers were asked to indicate which sources of knowledge they drew upon in creating their plan and included: personal experience with end-of-life conversations, personal experience with difficult conversations, role models, instructional tools, training, previous plans, and other.

Goals. Goals items followed the prompt: “How important is the following in conversations about end-of-life treatment options?” Except where noted, measures to assess goals were adapted from Dillard, Segrin, and Harden (1989) and were scored such that higher scores indicate greater perceptions of the construct being measured.

Influence goals. Influence goals were assessed using a 4-item scale[2] and included items as "Influence the patient" and "Suggest that certain treatment options are more desirable." Influence goals had a mean of 3.19 (*SD* = 1.51, *α* = .87).

Identity goals. Identity goals were assessed using a 4-item scale[3] and included items such as "Adhering to my ethical standards" and "Being true to myself." Identity goals had a mean of 4.21 (*SD* = 1.42, *α* = .78).

Interaction goals. Interaction goals were assessed using a 5-item scale[4] and included items such as "Maintaining a good impression" and "Having a favorable conversation." Interaction goals had a mean of 4.70 (*SD* = 1.15, *α* = .83).

Relational resource goals. Relational resource goals were assessed using a 3-item scale[5] and will included items such as "That I do not harm the patient-provider relationship in having this conversation." Relational resource goals had a mean of 4.24 (*SD* = 1.17, *α* = .75).

Personal resource goals. Personal resource goals were assessed using a 4-item scale[6] adapted from Dillard (2008). The scale included items such as "I minimize my time lost" and "That the conversation not detract too much from my schedule." Personal resource goals had a mean of 2.37 (*SD* = 1.16, *α* = .79).

Arousal management goals. Arousal management (i.e., affect management) goals were assessed using a 4-item scale[7] and included items such as "The patient stays calm" and "Nobody gets worked up." Arousal management goals had a mean of 4.91 (*SD* = 1.29, *α* = .89).

Meta-goals. Multiple measures (i.e., forced-choice comparison, relative importance) to assess meta-goals were adapted from Kellerman & Park (2001). The following prompt was provided: “Though you would typically like to spend as much time as a patient needs discussing care options and ensuring understanding, the unfortunate reality is that often constraints exist. Given the time constraints you face in your job, would you find yourself: sacrificing time to meet the patients needs completely or with a greater concern for time constraints than patient needs?” These options anchored a 7-point semantic differential item with a higher score indicating greater concern for time constraints (i.e., efficiency).

The relative importance of politeness and efficacy was assessed using a forced-choice comparison approach. They were asked to indicate their choice among four alternatives as to whether acting efficiently or with complete focus on politeness with patient was more important in their plans to discuss end-of-life treatment options. Options included: It is more important for me to act expediently that to act politely; it is more important for me to act politely than to act expediently; it is equally important for me to act expediently and politely; and it is not important to act expediently or politely.

Last, participants were asked to place two marks along a 10-point continuum measure to identify their minimum preferred level of efficiency, defined as “expediency, not squandering time, avoiding unnecessary steps” and their minimum preferred level of politeness, defined as “nice, pleasant, well-mannered, dignity” when engaging in end-of-life treatment conversations. Participants were instructed to place the two marks to reflect not only the absolute minimum level of perceived preference for efficiency and politeness, but also the relative importance of efficiency and politeness to each other. Examples demonstrated the placement of the two marks (one for efficiency, and one for politeness) that reflect (a) equally important concerns for efficiency and politeness, (b) efficiency being more important than politeness, and (c) politeness being more important than efficiency. The relative importance was calculated by subtracting efficiency from politeness. When relative importance was less than zero, efficiency was considered more important than politeness, when equal to zero they were of equal importance, and when greater than zero, politeness was reportedly more important than efficiency. Efficiency had a mean of 5.86 (*SD* = 2.22) and politeness had a mean of 8.17 (*SD* = 1.84).

Priority. Prioritization was assessed using a 4-item, Likert-type scale[8] and included items such as, “I feel it is my responsibility to engage in conversations about end-of-life care” and “I prioritize conversations with patients about end-of-life care options.” Prioritization had a mean of 5.81 (*SD* = 1.19, *α* = .84).

Domain Knowledge. Knowledge regarding end-of-life conversations was assessed using a 6-item, 7-point semantic differential scale.[9] Participants were asked to indicate the number that corresponds to the word that best describes their degree of knowledge concerning end-of-life care conversations and were scored such that the greater number indicates greater self-reported domain knowledge. The scale included: “familiar/unfamiliar,” “informed/uninformed,” “educated/uneducated,” “experienced/inexperienced,” “expert/novice,” and “prepared/unprepared.” Domain knowledge had a mean of 5.65 (*SD* = 1.32, *α* = .92).[10]

Reaction time. As an additional measure of efficiency, reaction time was assessed at two points: during the creation of initial plan for the provided prompt and when creating alterations to the plan as a response to patient misunderstanding. Reaction time was measured by amount of time spent on the relevant page and was assessed such, that a shorter time lapse indicates greater efficiency. Reaction time in creating the initial plan was *M* = 12.12 minutes (*SD* = 77.41) and *M* = 2.66 minutes (*SD* = 9.32) for creating alterations to plan as a response to patient misunderstanding.

Data Analysis

Given that specific items are specified a priori to measure only one factor, confirmatory factor analysis was performed for all scales to test both internal consistency and parallelism (Anderson, Gerbing, & Hunter, 1987; Hunter & Gerbing, 1982; Levine, 2005). To test the measurement model, the current study examined the magnitude of the errors between the predicted and obtained correlations, calculated the Root Mean Square Error (*RMSE*) for each variable for tests of internal consistency and parallelism, and assessed reliability using Cronbach's alpha. The data were found to be consistent with the proposed factors. Internal consistency tests showed that the errors calculated between items measuring the same construct were within sampling error of zero. Likewise, the parallelism test indicated that the errors calculated between items measuring different constructs also were within sampling error of zero (See Table 1 for Descriptive Statistics and Measurement Model Analyses).

Table 1:

Descriptive Statistics and Measurement Model Analyses

	Internal Consistency *RMSE*	Parallelism *RMSE*	*α*	Mean	Standard Deviation	Range
Influence Goals	.02	.05	.87	3.19	1.51	1.00-7.00
Identity Goals	.04	.05	.77	4.21	1.42	1.00-7.00
Interaction Goals	.03	.05	.83	4.70	1.15	1.00-7.00
Relationship Resource Goals	< .01	.06	.75	4.24	1.17	1.00-7.00
Personal Resource Goals	.02	.06	.79	2.37	1.16	1.00-7.00
Arousal Management Goals	.04	.04	.89	4.91	1.29	1.00-7.00
Efficiency	-	-	-	5.86	2.22	0.00-10.00
Politeness	-		-	8.17	1.84	0.00-10.00
Domain Knowledge	.03	.04	.92	5.65	1.32	1.00-7.00
Prioritization	<.01	.05	.84	5.81	1.19	1.00-7.00

Coding Procedures

Two independently trained coders unitized all open-ended responses using Guetzkow's U (Guetzkow, 1950). The unit of analysis was one complete thought or action unit. After unitizing, category coding reliability for perceived consequences was established (Cohen, 1960).

The coding scheme for *consequences* described below was generated for this study. Categories were created using constant comparative methodology, which involves developing and reworking categories as the data are read and coded instead of having categories prepared beforehand (Glaser & Strauss, 1967).

The trained coders were given 30 open-ended survey responses. They read responses and coded using a fine-grained approach similar to the one used by Berger and diBattista (1992). Consequences were first coded for valence and then impacting party. Coders subsequently met and compared the codes to identify any discrepancies that might exist between coders. Once adequate reliability was established and all discrepancies resolved between the coders, the remaining surveys were coded independently by the two coders and a final reliability analysis was conducted. The unitization statistic of Guetzkow's U (Guetzkow, 1950) and Cohen's Kappa (Cohen, 1960) are reported for each variable.

Plan complexity. Plan complexity, defined by the number of action units in the plan, was assessed with both the initial plans and responses to patient misunderstanding. A highly reliable U of .06 for initial plans and .05 for patient response was obtained.

Consequences. Consequences were coded for both valence: *positive*, *negative*, or *contingent* (κ = .93) and into one of five broad categories based on impacting parties: *provider*, *patient*, *patient-provider*, *family*, and *institution* (κ = .87). A highly reliable U of .04 was obtained.

RESULTS

Goals

The first research question concerned the relative importance of influence, identity, interaction, relational resource, personal resource, and arousal management goals from the health care provider perspective in planning conversations about end-of-life care. A within subjects repeated measures ANOVA was conducted to assess whether goals differed from one another in terms of perceived importance. The repeated measures ANOVA revealed a significant effect for differences in the importance of given conversational goals, F (5, 292) = 233.67, $p < .001$, partial $\eta^2 =.441$.

Multiple comparisons using the Bonferroni method indicated that arousal management (M =4.91, SD =1.29) was of highest importance, followed by interaction goals (M =4.70, SD =1.14). Personal resource goals (M =2.37, SD =1.16) and influence goals (M =3.19, SD =1.51) had the lowest levels of perceived importance in considering conversational engagement with a patient about end-of-life treatment options. See Table 2 for correlations among all goals and Table 3 for full results of the pairwise comparisons. Further, Table 4 highlights pairwise comparisons with arousal management given it being the highest rated goal.

Table 2:

Correlations Among Measures

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Influence														
Identity	.35***													
Interact	.19**	.17**												
Pers. Resource	.33***	.26**	.33***											
Rel. Resource	.24***	.12*	.68***	.36***										
Arousal Manage	.22***	.09	.46***	.20***	.35***									
Efficiency	.22***	.01	.18**	.26***	.17**	.23***								
Politeness	-.03	-.01	.10	-.18**	.14*	.14*	.15*							
Domain Know	.03	-.03	-.14*	-.13*	-.10	-.13	.00	.12*						
M # of Conversations Monthly	.01	.06	-.02	.10	-.04	-.05	.14*	.04	.34***					
Years in Health Care	.16**	.05	.05	-.04	.03	.10	.20**	.03	.48***	.17**				
Priority	.12*	.06	-.07	.02	-.05	-.06	-.10	.09	.46***	.17**	.24***			
Plan Complex	-.04	-.10	-.02	-.12*	.01	-.03	.12*	.07	.21***	.12*	.23***	.15***		
Response Complex	.00	-.16**	.04	-.06	.05	.00	.17**	.02	.14**	.16**	.26***	.14**	.58***	

**p* < .05; ***p* <.01; ****p* <.001.

Table 3:

Pairwise Comparison of Goals

Factor		Mean Difference	Standard Error	95% Confidence Interval for Difference Lower Bound	Upper Bound
1	2	-1.02*	,10	-1.31	-.74
	3	.82*	.09	.55	1.09
	4	-1.06*	.10	-1.34	-.77
	5	-1.51*	.10	-1.81	-1.22
	6	-1.73*	.10	-2.03	-1.43
2	1	1.02*	.10	.74	1.31
	3	1.85*	.09	1.57	2.12
	4	-.03	.10	-.33	.27
	5	-.49*	.10	-.78	-.20
	6	-.70*	.11	-1.02	-.39
3	1	-.82*	.09	-1.09	-.55
	2	-1.85*	.09	-2.12	-1.57
	4	-1.88*	.08	-2.10	-1.65
	5	-2.33*	.08	-2.56	-2.11
	6	-2.55*	.09	-2.81	-2.28
4	1	1.06*	.10	.77	1.34
	2	.03	.10	-.27	.33
	3	1.88*	.08	1.65	2.10
	5	-.46*	.05	-.62	-.30
	6	-.67*	.08	-.91	-.43
5	1	1.51*	.10	1.22	1.81
	2	.49*	.10	.20	.78
	3	2.33*	.08	2.11	2.56
	4	.46*	.05	.30	.62
	6	-.21	.07	-.43	.00
6	1	1.73*	,10	1.43	2.03
	2	.70*	.11	.39	1.02
	3	2.55*	.09	2.28	2.81
	4	.67*	.08	.43	.91
	5	.21	.07	.00	.43

Factor: 1- Influence; 2 –Identity; 3- Personal Resource; 4- Relational Resource; 5- Interaction; 6- Arousal Management

*$p < .001$

Table 4:

Pairwise Mean Comparison with Arousal Management Goal

Goal	Mean Difference	Standard Error	95% Confidence Interval for Difference	
			Lower Bound	Upper Bound
Influence	1.73*	,10	1.43	2.03
Identity	.70*	.11	.39	1.02
Personal Resource	2.55*	.09	2.28	2.81
Relational Resource	.67*	.08	.43	.91
Interaction	.21	.07	.00	.43

* $p < .001$

Consequences

The second research question concerned the perceived consequences of engaging in difficult conversations regarding end-of-life treatment options. Consequences were coded into one of six categories: *patient, provider*, *patient-provider*, *family, institution,* and *no consequences*. Within each category, responses were further coded for valence: *positive*, *negative*, and *contingent*. Frequencies of each category and consequence valence are presented in Table 5.

Table 5:

Reported Consequence Frequencies and Valence

Category	Valence	*F*	%
Patient		(170)	(57.2)
	Positive	88	29.6
	Negative	45	15.2
	Contingent	37	12.4
Provider		(34)	(11.4)
	Positive	15	5.1
	Negative	16	5.4
	Contingent	3	1.0
Patient-Provider		(51)	(17.2)
	Positive	30	10.1
	Negative	11	3.7
	Contingent	9	3.1
Family		(66)	(22.2)
	Positive	31	10.4
	Negative	23	7.7
	Contingent	12	4.0
Institution/Health Care System			
	Positive	16	5.4
No Consequences		88	29.6

Note. Some respondents indicated more than one consequence and thus, totals will not reflect N = 297.

An examination of valence frequencies suggest that perceived consequences are most frequently positive followed by negative and contingent. The total actual distribution of consequences by valence differs significantly from the null hypothesis that the variables are equally distributed (χ^2 (2, *N*= 336) 67.09, *p* <.001). Thus, there is a significant deviation between consequences and valence; such that the valence distribution of consequences differs from that expected by chance alone.

Reported consequences of engaging in conversations about end-of-life treatment options primarily concerned patients (57.2%). Examples of positive patient consequences included increased autonomy over end-of-life care decisions, enhanced quality of life, receiving care desired, gained understanding of options available, and emotional relief and closure associated with dying process. Example responses included, “The consequence is a patient who feels empowered, heard, valued and more engaged in their treatment” and “Better quality of life & peace of mind for the patient.”

Negative patient consequence examples included upsetting the patient, patient misunderstanding regarding treatment, and patients feeling pressured to make decisions. Example responses included, “feelings of alienation,” “patient not ready to make decisions, feeling like he/she is being abandoned,” “fear,” and “making patients think we are trying to kill them off.”

Contingent responses were based on patient reaction to the conversation and included potential positive and negative valenced outcomes and included examples such as:

> The conversation can go one of two ways. If the patient is not onboard - the subject may upset them and they will likely shut down and refuse any further discussion. Depending on their personality and how they are feeling that day - they may ask you to leave…Conversely, the patient may be most appreciative that someone takes the time to treat them with loving concern and respect in taking up an important matter like this.

Other providers mentioned contextual factors, “Much depends on the patient’s culture, life experience, religious faith, relationship with family and others...and how they are approached” that would influence the contingency.

Provider consequences (11.4%) were both positive and negative in valence. Positive provider consequences referenced the satisfaction and joy resultant from engaging with someone at the end stages of their life and equipping them with greater control and quality of life during this process. Responses included, “The best consequence is that you will empower the patient and their family in making the best and most appropriate plan for their care. By being open, honest…you will become a better provider and person.” Other positive provider consequences were associated with ease and ability to provide care consistent to patient desires, “Clarification is provided to the medical staff and designated decision maker about what the patient's wishes are.”

Examples of negative provider consequences included increased time and energy required as well as the blame or anger from others (i.e., patients, family, other providers) for engaging in such conversations. Responses included, “It can require a greater need to spend additional time and energy to assist with processing and understanding” and “Time, energy and emotional requirements.” Negative consequences also included provider apprehension and included responses such as, “personal discomfort at these discussions, nervousness about patient response” and “Not knowing how to comfort the patient.”

Contingent provider consequences included:

> Consequences can go either way, the patient is ready to continue treatment or not and each of those decisions have consequences of their own. If they choose treatment and it doesn't work, you are dealing with that disappointment. If the treatment does work, then you are celebrating and praising God! If you don't choose treatment, then you are looking at preparing for death. In any of the scenarios that bring something other than health and

> healing, you could be blamed for being the one who persuaded the patient to take a course of action which means you have to be very sure it is the patent’s decision and not something you are influencing them to do.

Patient-provider consequences (17.2%) concerned the impact broaching an end-of-life conversation about treatment options would have on the patient-provider relationship. Examples of those coded as positive included responses in which having such a conversation would bring them closer, establish a bond, open lines of communication and dual-empowerment in the health care process, and included:

> When done with openness and transparency the conversation results in enhanced trust between provider and patient, greater understanding of the patients own value systems and the beliefs that guide their decision making. This meeting of mind and heart results in the development of a platform from which to pursue developing circumstances with a level of respect between the caregiver and the cared for.

Those responses coded as negative concerned the potential for the patient-provider relationship to be damaged, and in some cases severed through the shutting down of future interactions or in some cases seeking an alternate provider. Example responses included, “Sometimes you destroy the relationship with the patient and he may no longer trust you.” and “These conversations are not always pleasant and do not always end well. There is always the risk that the patient will cut off communication and refuse to ever talk about the subject.” Other referenced the importance of patient assessment to attenuate negative consequences, “It is possible that there may be some loss of rapport with the patient if they are not ready for such a discussion. That is why it is important to gauge where they are at and what they're ready to discuss.”

Responses pertaining to the patient's family or extended network were coded as family (22.2%). Positive family consequences concerned a sense of relief among members that a plan of care was in place, a conversational burden lifted, a sense of closeness established as the issues were broached. Example responses included, "Less guilt and burden on family regarding decision-making," "family relief, it is a gift to those left behind, that the patient makes the decision not them!" and "it addresses family fears that are often unspoken, facilitating family discussion of issues, and prompts closure of tension."

Negative family consequences referenced emerging conflicts resulting from initiating such conversations, disagreements among members with patient decisions, and family denial of patient illness or current terminal state. Example responses included, "Misunderstandings can occur with a patient's family members who are either not present for these important conversations or have goals for the patient that the patient does not have for him/herself." Family conflict was also referenced, "Many families argue about decisions if the patient has not previously mentioned them. Sometimes when a patient has made a decision (i.e. DNR) that members in the family oppose to, the patient feels obligated to go along with the family rather than their preferred choice." Other family consequences included the onset of negative emotions, "When families are not ready to hear what is being said and become angry with care treatment team members. Many are in denial."

Similar to patient-centered consequences, family consequences coded as contingent pertained to responses positive and negative outcomes. Such responses included, "Depending on the family response, the conversation can strengthen the lines of communication or shut them down. It really depends on how receptive they are to the information."

Institutional consequences (5.4%) were all coded as positive and exclusively pertained to better allocation of health care system resources through the minimization of futile treatment options that ultimately detract from quality of life. Responses included, “The facility will perform less futile procedures” and “the avoidance of unnecessary and painful operations.”

Many respondents indicated no consequences (29.6%) associated with engaging in the conversation including responses such as, “none,” “n/a.” Several providers acknowledged that the term consequence was not especially relevant, “Consequences are negative. The only consequence here is not having the conversation” and “ I actually prefer the term results or outcomes instead. There are no consequences.”

Meta-goals

The third research question concerned the relative importance of the meta-goal(s) efficiency and politeness in planning difficult conversations regarding end-of-life treatment options. Three response options were utilized to assess perceived importance of the meta-goals politeness and efficiency. Each of the three indicators indicated a greater concern for social politeness over that of efficiency.

With the forced-response options, respondents primarily indicated it was equally important to act expediently and politely (56.9%), followed by more important to act politely than to act expediently (40.1%), more important to act expediently than to act politely (1.7%) and it is not important to act expediently or politely (1.3%).

Minimum preferred level of efficiency (*M* = 5.86, *SD* = 2.22) was less than minimum preferred level of politeness (*M* = 8.17, *SD* = 1.84) when engaging in end-of-life treatment conversations. The relative importance was calculated by subtracting efficiency from politeness. Given that the relative mean is 2.31 (*SD* = 2.67), the data suggest that providers weight politeness as a constraint more so than that of efficiency.

The last indicator depicts a similar finding with concerns for efficiency (*M* = 2.17, *SD* = 1.07) below the midpoint of the scale, *t(296)* = -29.52, *p* < .001.

The fourth research question concerned the sources of knowledge that health care providers draw upon in devising their conversational plans regarding end-of-life treatment options. In creating the plans, health care providers most commonly reported to draw upon personal experience with end-of-life conversations (72.7%), followed by personal experience with difficult conversations (66.7%), role models (55.2%), instructional tools (36.7%), training (13.5%), previous plans (11.4%) and other (6.7%). Other sources of knowledge include belief systems, patients, and their families (see Table 6).

Table 6:

Reported Knowledge Source Frequencies

Category	*F*	%
Personal Experience with End-of-Life Conversations	216	72.7
Personal Experience with Difficult Conversations	198	66.7
Role Models	164	55.2
Instructional Tools	109	36.7
Training	40	13.5
Previous Plans, not yet acted upon	34	11.4
Other	20	6.7

Note. Some respondents indicated more than one knowledge source and thus, totals will not reflect N = 297.

To address the hypothesis that those in the POLST condition would be more likely to report instruction sources of knowledge than the condition not using the POLST a Chi-Square was conducted. The Chi-Square revealed that those in the POLST condition (*M* = 0.16, *SD* = .37) did not differ significantly than those in the control condition (*M* = 0.11, *SD* = .32), suggesting that the data were not consistent with the hypothesis, χ^2 (*N*= 297) = 1.50, n.s.

Plan Complexity

To address the hypothesis that those in the POLST condition would be more likely to produce more complex plans than those in the condition not using the POLST independent sample t-tests were conducted. Plan complexity was assessed at two points: initial plan and plan response to patient misunderstanding. Initial plan complexity did not differ among those in the POLST (*M* = 5.29, *SD* = 6.26) and those in the condition without the POLST (*M* = 6.47, *SD* = 6.44), thus the data were not consistent with the hypothesis, *t(295)* = 1.60, n.s. The impact of POLST on plan complexity was also assessed among health care providers that created a response plan to address patient misunderstanding, In response to patient misunderstanding, those in the POLST condition produced more complex plans (*M* = 3.67, *SD* = 2.12) than those in the condition without the POLST (*M* = 2.88, *SD* = 1.85). Thus, when examining plans in response to patient misunderstanding, produced plans were consistent with the hypothesis, such that, those in POLST condition were more likely to produce more complex plans *t(189)* = -2.76, p <.01.

Further, a two-way analysis of variance in which the POLST (presence v. absence) was treated as an independent groups factor and the initial and thwarted plan (TIME) was treated as a repeated measure indicated that the complexity of the initial plan (*M*=5.92, *SD* = 6.37) was substantially higher than that of the thwarted plan (*M* = 2.08, *SD* = 2.23), *F*(1, 294) =149.90, *p*

$<.001$. Moreover, a substantial POLST by TIME interaction was obtained, $F(1, 294) = 3.97$, $p < .05$. The nature of this non-additive relationship can be seen by comparing the change scores in the POLST condition and the control condition. Although complexity decreased in the POLST condition ($M = -3.20$, $SD = 5.16$), it did so less than that for the control ($M = -4.40$, $SD = 5.54$). As indicated previously this difference was statistically significant, albeit modest ($d = .23$).

It was posited that prioritization to aid patients in advance care planning through conversations about end-of-life treatment would be positively associated with plan complexity. Results indicate that the data support this hypothesis, $r\ (297) = .15$, $p = .01$ for initial plans and $r\ (297) = .14$, $p = .01$ for response to patient misunderstanding.

It was also posited that plan complexity would increase with domain knowledge. The data indicate support for the hypothesis, $r\ (297) = .21$, $p = .01$ for initial plans and $r\ (297) = .14$, $p = .01$ for response to patient misunderstanding.

Strength of prioritization and domain knowledge were predicted to interact to produce differences in plan complexity, such that high prioritization and high levels of knowledge produce more complex plans and low and high prioritization levels coupled with low knowledge levels would produce less complex plans. Regression results indicate that the data support this hypothesis both with initial plan complexity $F\ (1, 295) = 13.67$, $p < .001$, adj. $R^2 = 0.04$ (see Table 7 for this interaction) and plan response to patient misunderstanding complexity, $F\ (1, 294) = 11.23$, $p < .01$, adj. $R^2 = 0.03$ (see Table 8 for this interaction).

Table 7:

The Interaction between Experience and Prioritization on Initial Plan Complexity

Model	*Sum of Squares*	*Degrees of Freedom*	*Mean Square*	*F*	*Adjusted R^2*
Regression	531.81	1	531.81	13.67*	.04
Residual	11479.16	295	38.91		
Total	12010.97	296			

* *p* < .01

Table 8:

The Interaction between Experience and Prioritization on Response Plan Complexity

Model	*Sum of Squares*	*Degrees of Freedom*	*Mean Square*	*F*	*Adjusted R^2*
Regression	54.08	1	54.08	11.23*	.03
Residual	1415.97	294	4.82		
Total	1470.05	295			

* *p* < .01

Meta-goals, or constraints, were predicted to be negatively associated with the complexity of plans to reach social goals. Regression results suggest that the data were not consistent with the hypothesis in that an increase in concern for meta-goal of efficiency would be negatively associated with the complexity of plans to reach social goals. Alternatively, there was a significant positive association, albeit small in magnitude, F (1, 295) = 4.01, $p < .05$, adj. R^2 =

0.01.

Increase in concerns for meta-goal of social politeness was predicted to be negatively associated with the complexity of plans to reach social goals. Results of a linear regression suggests the data were not consistent with this hypothesis, *F* (1, 295)= 1.57, n.s.

To address the hypothesis that adaptation reaction time to thwarted plans (i.e., patient misunderstanding) will be faster in the POLST condition than in the condition not using the POLST, an independent samples t-test was conducted. The independent samples t-test revealed that those in the POLST condition (*M* = 137.00 seconds, *SD* = 359.54) did not differ significantly than those in the control condition (*M* = 169.49 seconds, *SD* = 682.58), suggesting that the data were not consistent with the hypothesis, *t(295)* = .51, n.s.

To address the research question whether reaction time in addressing a thwarted plan (i.e., patient misunderstanding) varies depending on topic (CPR, Medical Intervention, Artificially Administered Nutrition) a one-way ANOVA was conducted. CPR had a mean response time 104.93 seconds (*SD* = 233.97, Range 0- 2022.45). Mean response time for medical intervention misunderstanding was 123.55 seconds (*SD* = 168.66, Range 0- 1371.05). Mean response time for artificial nutrition was 240.05 seconds (*SD* = 240.05, Range 0- 938.51). The results of the one-way ANOVA suggest that reaction time did not vary as a function of topic, *F*(2, 294) = 1.68, n.s.

The final research question addressed whether thwarted plan complexity (i.e., response to patient misunderstanding) varies depending on topic (CPR, Medical Intervention, Artificially Administered Nutrition). Thwarted response plan complexity for CPR had a mean of 1.78 (*SD* = 1.88, Range 0- 7). Mean response complexity for medical intervention misunderstanding was 2.34 action units (*SD* = 2.34, Range 0- 11). Mean response complexity for artificial nutrition was 2.08 action units (*SD* = 2.41, Range 0- 12). The results of the one-way ANOVA suggest that plan complexity did not vary as a function of topic, *F* (2, 294) = 1.65, n.s

DISCUSSION

The current study aimed to assess how goals and plans are prioritized and constructed in provider conversations associated with end-of-life treatment options. Insight into the importance of such goals and the role they play in plan creation informs how health care providers might engage in such difficult conversations with their patients. This process also provides insight into how certain goals and constraints shape, what health care providers ultimately say, during such interactions. In examining goal and planning processes, initial insight into the utility of the POLST is gained.

One means to gain insight into end-of-life conversations was eliciting provider goals. It is argued that goals give insight into the ideal outcome of the social interaction both relationally and instrumentally (Dillard et al., 1989). Of goals derived from previous research (Dillard et al., 1989; Schrader & Dillard, 1998), health care providers indicated that arousal management was of highest importance. These findings are consistent with previous research indicating high provider reticence in ability to engage in the conversation (e.g., Larson & Tobin, 2000), fear of upsetting the patient (e.g., Meyer et al., 2009), and feelings of threat by such discussions (e.g., Morrison, 1998) due to insufficient skills or communication competence (e.g., Weissman et al., 1998). Given that research indicates a high degree of anxiety surrounding such conversations and providers report that the management of emotions is a driving force in their willingness and ability to have an end-of-life care conversation, a potential barrier exists. Thus, ultimate success of the POLST conversation will be largely dependent on whether it addresses adequate alleviation of conversational anxiety. High prioritization of such arousal management goals alludes to an area of important future training and development.

The low perceived importance of personal resource (i.e., time, effort, energy) goals is also of interest. Previous research indicates that one of the primary constraints providers have impeding their ability to effectively engage in meaningful end-of-life care conversations is their limitation of time and resources (e.g., Larson & Tobin, 2000). The data suggest that the providers in the current study did not perceive that to be a goal, in terms of driving or constraining conversational engagement. However, these findings should be interpreted with caution, as it might be a function of measurement (i.e., social desirability), or limitation of assessing idealistic circumstances in comparison to actual behavior.

The low prioritization of influence goals begins to provide support for end-of-life conversations being patient-centered and outcome neutral (Bomba et al., 2012). The POLST document is designed to reflect such neutrality in that it may be used to either limit or request designated medical interventions (Bomba et al., 2012). Continued provider emphasis on their neutral stance might be one way to attenuate some of the reported negative conversational consequences, ensuring patients and their families that the intent of such conversations is not to persuade or favor treatment options, but rather set up a plan consistent with patient values (Hickman et al., 2005).

The intent in eliciting consequences of discussing end-of-life treatment options with patients was to gain insight on inhibitory factors impeding conversational engagement. However, respondents overwhelming indicated that consequences were positive. Several providers acknowledged that the term consequence was not especially relevant in that consequences have a negative connotation implying that there were no negatives associated with end-of-life conversations. Instead they recommended using the terms results and outcomes rather than consequences.

Reported positive consequences associated with the patient were consistent with the POLST objectives of enhancing quality of life at end stages. Respondents in both the POLST and control conditions perceived that in engaging in end-of-life care discussions improves quality of life through means of patient empowerment, resulting in improved quality care and reduced utilization of futile resources. Opened lines of communication and shared decision-making were also commonly reported outcomes. Enhanced communication transcended the patient-provider relationship to include family members and members of the health care team.

Negative consequences of engaging in end-of-life conversations illustrate directions for future training. In addressing perceived consequences, interventions can better equip providers with the means to attenuate such effects or bolsters their ability to overcome them. Provider barriers such as communication apprehension might be addressed with resources like the POLST or training simulations to gain more experience in developing a plan to minimize discomfort or refine communication competence skill set. Provider barriers were also assessed through concern for meta-goals or constraints.

Providers indicated that both constraints of efficiency and politeness influence communication with patients about treatment options. Using three distinct response options, provider perceptions of constraints were assessed, each painting a similar picture. While consideration for both efficiency and politeness were of importance, politeness was perceived as more important in the context of provider-patient communication about treatment options. Framed in ways aiming to attenuate social desirability, providers still reported greater willingness to sacrifice time to meet the patients needs completely. It might be the case that in conversational planning, time constraints and need for efficiency are under-estimated. It also might be a function of occupation. For example, palliative care chaplains might perceive different constraints than physicians or nurse practitioners. Given providers in the current study come from a range of occupations and positions, efficiency constraints might be more or less salient.

Heightened concerns for politeness are consistent with reported perceived importance of arousal management and interaction goals. A high concern for avoiding anxiety and tension might promote avoidance of difficult conversations with the patient and their families about treatment options. A high value on politeness or being “nice, pleasant, well-mannered” might translate to letting another provider “ask the difficult questions.” Future research should consider whether this prescription to politeness constraints promotes conversational avoidance.

When prompted to create a plan to discuss end-of-life treatment options with the target patient, health care providers most commonly reported reliance on personal experience in plan development. Only a third reported to rely on instructional tools, a percentage that did not vary as a function of condition (POLST vs. control). It might be the case, that given the experience in the sample, health care providers already have an established protocol for engaging in such conversations and the introduction of additional resources or instructional tools is seen as unnecessarily cognitively taxing and thus, not considered. Further credence for this possibility is identified in considering plan complexity.

The POLST document was predicted to impact plan complexity such that those with the document would be able to produce more detailed plans than those without the POLST. Although initial plan complexity did not differ among conditions, differences did emerge in response to patient misunderstanding. This suggests that although health care providers might not have utilized the POLST in initial plan creation, once presented with patient misunderstandings regarding a specified treatment category, the POLST served as a resource.

Data also suggested that while plan complexity decreased in provider responses to patient misunderstanding, this decrease was less so among those in the POLST condition. Planned responses to topics of patient misunderstanding are discussed more in-depth below.

Additional predictors of plan complexity derived from the central tenets of planning theory were also assessed as an exploratory means of gaining insight to factors influencing planning ability. Providers reporting greater levels of perceived prioritization of and experience with end-of-life conversations produced plans that were more complex. Prioritization follows the principles behind central processing, such that those more involved or perceive greater importance will designate more cognitive effort toward the social goals. Increased domain knowledge and the positive impact on plan complexity suggests that with greater experience, providers are better able to articulate in detail what needs to be considered in conversational engagement with patients regarding end-of-life treatment options.

Meta-goals, efficiency and politeness were predicted to negatively impact plan complexity. The data suggest that these constraints did not attenuate plans. Concerns for efficiency was positively associated with complexity. It might be the case that heightened concerns for efficient patient interactions encourage greater pre-conversation planning, or that detailed conversational plans promote efficiency when actually engaging in the conversation. This association warrants further investigation. An alternative explanation might be the focus on plans versus conversational engagement. Efficiency and politeness constraints might have little impact on planning, and yet, might manifest more so in patient engagement.

One explanation for the utility of the POLST was the potential for it to enhance reaction time to patient misunderstandings and thus, enhance efficiency. While the data were not consistent with this hypothesis, it might warrant further investigation. Those in the POLST condition did provide more detailed responses to patient misunderstandings and did so with no significant differences in reaction time. As such, future research might continue investigating the POLST utility in enhancing planning efficiency. Further, while initial exposure to the POLST might require time to gain understanding of the document, experience and familiarity with it might enhance planning and conversational efficiency down the line.

Variance in reaction time as a function of topic was also of interest. Provider response to patient misunderstanding did not differ across the three broad areas of the POLST. This suggests that the providers in the current study did not perceive or experience differences in explanatory complexity in their attempts at addressing topic-specific patient misunderstandings. In other words, providers were able to plan addressing misunderstandings with CPR, medical interventions, and artificially administered nutrition in relative equal units of time.

These findings need to be interpreted with caution. While response time differences did not emerge across topics, a high percentage of providers (35.6%) did not indicate a response plan or explicitly indicated that this type of interaction was beyond the scope of their position. Additionally, limitations exist with response time as the indicator for perceived differences in explanatory complexity. Further investigation into the comprehensiveness and effectiveness of the provider responses will add credence to the claims above. Content analysis of the plans can begin to address quality of provider planned responses and assess them for feasibility in adequately addressing treatment misunderstandings.

Limitations and Future Research

Respondents had a great deal of experience from a range of health care professions targeted by the POLST paradigm. In attaining such diversity, the current study relied on recruitment from a range of health care organizations and online listservs. As such, the proportion of those receiving the invitation relative to those completing the study is difficult to discern. Further, the study was voluntary and no compensation was offered. Given that the target population of health care providers might be particularly strained for time, a degree of self-selection might have occurred, such that, those more invested in "advance care planning" as the survey was titled, would be more likely to participate.

The highly invested nature of some of the participants was noted throughout data collection process. The researcher received eight emails from individuals that had heard of the study from colleagues and wanted to participate. Another four participants contacted the researcher about follow-up studies and requests for the findings. One participant wrote a one page response applauding any work on communication at end-of-life stating the high number of his patients that are "literally dying to have these conversations." Investment was also evident in the sheer time commitment that some respondents dedicated to completing the survey (*M* = 30.24 minutes, *SD* = 23.09).

Another limitation was the number of individuals that indicated "N/A" or did not construct a plan. Of the 297 respondents, 104 (35.0 %) indicated that they were either unable to construct an initial plan, it was not in their job description to have treatment conversations with patients, they did not have enough experience to detail a plan, they were not knowledgeable on subject matter, or did not indicate a reason and left the question blank.

The POLST paradigm specifies an interdisciplinary approach to advance care planning conversations including physicians, physician's assistants, nurse practitioners, chaplains, and social workers (Hickman et al., 2005). The current study targeted respondents from careers specified by the POLST paradigm as providers designated to engage in the POLST conversation. Despite the inclusion of targeted professions, several respondents perceived this end-of-life conversation to not be part of their job responsibility. For example, one respondent indicated, "Since I am not a doctor, I am not in a position to present their options for life-sustaining treatment" and another indicated, "This conversation should happen with the doctor, not an RN." Such responses were not limited to non-physicians, "This conversation would be better suited for someone that can spend greater time with the patient" and "this is not a part of my current job."

The high rate of non-responses is a potential inhibitor of the POLST utility and an area that future research should focus. It might be the case that greater emphasis on the interdisciplinary approach and role clarification, might enhance perceived responsibility to engage with patients about treatment options. It also might be the case that given the difficult nature of such conversations, it is easier to ascribe conversational responsibility to another, especially in contexts of multidisciplinary health care.

Along similar lines, there might also be a disconnect between perceived responsibility and being the person to willingly engage in them when the situation arises. This attitude and behavior discrepancy can also be a function of goal management. As providers indicated that arousal management was of primary concern, the desire to avoid nervousness or situations that might heighten emotions could inhibit conversation engagement and promote avoidance of the topic.

Plans vs. Action

Structural features of plans in terms of complexity with number of action afford limited insight to plan effectiveness. A next step in the progression of this research is the consideration of plan content. Factors such as topics addressed, comprehensiveness, and feasibility can identify areas needing attention. Given the multidisciplinary approach to end-of-life conversations, plan content could illuminate different occupational approaches and emphasis to the conversation. Content examination can also aid preliminary judgments of effectiveness.

The examination of plans is limited in that they do not translate directly into behavior. While one might be able to devise a comprehensive and effective plan adhering to best practices in palliative medicine, there are many factors that impact how such plans are ultimately carried out. Patient, provider, family, and institutional characteristics might attenuate or impede the plans-action association. While this research starts the foundational groundwork, continued research efforts should observe of how plans translate to conversational behavior and desired end-of-life care planning outcomes.

Further, the plans based approach relies on self-report. Health provider ability to script what should be done is synonymous with their understanding of best practices in palliative care and might not translate to what they are willing to do. Although the plans approach is a first step in addressing the paucity of research surrounding the POLST utility, future research aimed at conversational and behavioral assessment of those using the document will help continue to fill the gap in the existing research.

Another direction for future research is the exploration of the POLST as a stimulus for family communication about treatment preferences. Given that the POLST was created to be a stimulus for treatment discussions (e.g., Sabatino & Karp, 2011, Wenger et al., 2012) it might serve as a conversational stimulus for patients and their families. Providers reported that patient family members account for just over one-fifth of reported conversation consequences. Though many of those consequences were deemed positive in valence, it does bring to light the importance of families in such discussions. The POLST form might aid in overcoming noted negative family consequences such as arising conflict over the decision-making process.

Specifically, the POLST could be utilized as a teaching tool with families about possible outcomes and decisions to be made. To aid with the decision-making process, families could be given a copy of the POLST document in advance of the discussion to have time to look it over and think about it. Future research might also explore patient perceptions of the POLST utility in aiding the initiation and clarification of treatment options and preferences to their family members.

Conclusion

The POLST paradigm addresses many of the existing limitations of traditional advance directives by introducing a standardized form that documents patient treatment preferences into immediately active medical orders (Hickman et al., 2005). While the POLST form is claimed to be a planning tool aimed to facilitate patient-provider communication about treatment options, the claim has yet to be assessed. This study identified the relative importance of provider goals, meta-goals or constraints, and consequences associated with conversational engagement and how such goals manifest in planning. In examining goals and planning processes among health care providers both with and without the POLST, initial deductions on potential utility are gleaned.

Arousal management goals were ranked highest and personal resource and influence goals as least in terms of relative importance. Perceived consequences of conversational engagement were predominantly positive and concerning the patient. While meta-goals, efficiency and politeness, were recognized as important, providers indicated greater concern for politeness during patient interactions concerning treatment options. When prompted to generate a conversational plan, providers drew upon personal experiences with both end-of-life conversations and other difficult conversations. While initial plans did not differ in complexity between the POLST and control conditions, provider responses to patient misunderstandings were more complex in the POLST condition.

These findings not only begin to address the deficit regarding communication about end-of-life treatment options, but also assess utility of the multiple goals framework and planning theory to begin explaining provider experiences in conversation preparation with their terminally ill patients. Given the impact of difficult provider conversations about treatment options on the patient, provider, family, and health care system outcomes, continued effort in filling these gaps are not only valuable in theory, but practice.

APPENDICES

Appendix A: Recruitment

End-of-life patient care is often delivered by a team of providers from different educational and occupational backgrounds.

In an effort to gain insight on this interdisciplinary approach to patient-centered care, I am inviting you to complete this survey on end-of-life care conversational planning. If there are any questions that you feel unable to answer, feel free to skip or indicate “not applicable.”

There are no right or wrong answers to any of the questions on the following pages. It should take no more than about 15 minutes of your valued time to complete the survey. Once you begin the survey, please try to minimize any distractions.

Your participation in this research study will further assist healthcare providers facilitate discussions around advance care planning.

Survey link:

If you have any questions about this study, please contact me.

Again, your support is greatly appreciated.

Sincerely,

Jessica Russell
russe346@msu.edu

Appendix B: Conditions

Control Condition

Communication about advance care planning allows for health care providers and patients to gain understanding about end-of-life treatment options and preferences.

You have a patient with a terminal illness. They have a remaining life expectancy of less than a year. While they have full capacity to make decisions, you are asked to have a discussion with the patient about his or her end-of-life treatment options so that the medical staff aiding the patient is clear about what the patient wants.

Please design a plan to communicate to the patient, the options for life-sustaining treatment. In this plan, please write (a) how you would engage in the conversation with the patient and (b) what specifically you would plan to discuss. Please be as detailed as possible in your plan generation.

Experimental Condition

Communication about advance care planning allows for health care providers and patients to gain understanding about end-of-life treatment options and preferences.

The POLST provides a framework for documenting and communicating patient treatment preferences for life-sustaining treatment during end stages of life. The document covers the range of treatment options ranging from comfort measures only to full treatment medical interventions. The POLST document can be used as a tool for conversations with patients about their preferences for end-of-life treatment.

You have a patient with a terminal illness. They have a remaining life expectancy of less than a year. While they have full capacity to make decisions, you are asked to have a discussion with a patient about his or her end-of-life treatment options so that the medical staff aiding the patient is clear about what the patient wants.

Please design a plan to communicate to the patient, the options for life-sustaining treatment. In this plan, please write (a) how you would engage in the conversation with the patient and (b) what specifically you would plan to discuss. Please be as detailed as possible in your plan generation.

Patient Misunderstanding

After presenting your plan, your patient says that they do not understand the implications for (CPR, levels of medical intervention, artificially administered nutrition) options. How would you adjust your plan to respond to the patient?

ENDNOTES

ENDNOTES

[1] Given the low number of contingency response units in coded in provider plans (*M* = 0.69, *SD* = 1.14) and in response to patient misunderstanding (*M* = 0.20, *SD* = 0.51), plan complexity was assessed only using number of action units.

[2] Influence goal items included: That I influence the patient; That I persuade the patient to make the right choice; That I impact the patient's decision on treatment options; Suggest certain treatment options as more desirable

[3] Identity goal items included: Adhering to my ethical standards; Explaining my values; Following my beliefs; Being true to myself

[4] Interaction goal items included: Maintaining a good impression; Appearing favorable; Not saying the wrong thing; Managing a positive interaction; Having a favorable conversation

[5] Relational resource goal items included: The patient still likes me as much as they did prior to the conversation; That I do not harm the patient-provider relationship in having this conversation; The patient is still fond of me after having this conversation

[6] Personal resource goal items included: I minimize my time lost; That the conversation not detract too much from my schedule; That the conversation does not wear on me emotionally; That I can complete the conversation satisfactorily in ten minutes.

[7] Arousal management (i.e., affect management) goal items included: Anxiety is at a minimum; Emotions remain stable; The patient stays calm; Nobody gets worked up

[8] Priority items included: I feel it is my responsibility to engage in conversations about end-of-life care; I prioritize conversations with patients about end-of-life care options; It is very important for me to have conversations with patients about end-of-life care; I feel responsible to explain end-of-life care options to patients

[9] Domain knowledge had the prompt, Please indicate the number that corresponds to the word that best describes your degree of knowledge concerning end-of-life care conversations and included: familiar/unfamiliar; informed/uninformed; educated/uneducated; experienced/inexperienced; expert/novice; prepared/unprepared

[10] Reported domain knowledge did not differ across conditions, F (5, 291) =1.28, n.s., but did vary as a function of occupational position *F* (2, 294) = 38.59, *p* <.001. An examination of descriptive statistics suggests that such that differences emerged such that Medical Students (*M* = 4.14, *SD* = 1.22) reported less domain knowledge regarding end of life conversations than other occupations, including Nurses (*M* = 5.91, *SD* = 1.31), Doctors (*M* = 6.20, *SD* = 0.95), Chaplains

and Social Workers (*M* = 6.07, *SD* = 0.88) and Hospital Administrations (*M*= 5.71, *SD* = 1.52) that did not significantly differ from one another.

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