

Improving Advance Care Planning in Chronic Kidney Disease

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As the age of dialysis patients increases, it is important to increase attention to advance-care planning (ACP) in the nephrology community. There are numerous ways to accomplish ACP, but it is important to note that having an advance directive (medical power of attorney or living will) does not mean that the clinician has a clear understanding of a patient's perceptions. The goal of this study was to evaluate nephrologists' views of ACP goals-of-care and end-of-life (EOL) discussions and improve ACP in chronic kidney disease (CKD). A needs assessment was created to identify and review barriers and strengths that could inform efforts to increase ACP within a large nephrology practice. A survey of nephrologists from a large practice in Texas regularly seeing patients aged 65 and older (N = 31) was conducted. Two-thirds of nephrologists, compared to 50% of other primary care practitioners (PCPs)/other specialists, feel that it is important to have goals-of-care conversations with patients. Eighty-six percent of the nephrologists had not had a conversation with their own healthcare provider about wishes for care at the end of life, in comparison with 52% of PCPs/other specialists. When nephrologists responded at a higher percentage, 6 out of 7 of those responses were independent from PCPs/other specialists. Nearly three-quarters (74%) of nephrologists thought it was their responsibility to initiate ACP, but also felt that they had not had training for talking to patients and families about ACP. A salient observation is the concern expressed by nephrologists over disagreement between family members and patients, coupled with time constraints and comfort level in discussing goals of care. These factors make licensed and experienced social workers ideal partners to facilitate early and repeated ACP discussions with patients and family members, which lead to greater physician-patient engagement and cost-effective care. By having ongoing ACP conversations with patients and family members prior to late stage CKD, nephrologists could more often achieve the patient- and healthcare-valued outcome of goal-concordant care. Goal-concordant care places the patient's values and wishes at the center of care

INTRODUCTION

Dialysis patients over the age of 65 have substantially higher mortality compared to the general population and Medicare populations with cancer, diabetes, or cardiovascular disease (USRDS, 2018). Many patients with chronic kidney disease (CKD) have complex health scenarios. Quality care at the end of life (EOL) for people with chronic and end-stage kidney disease has long been an area of concern. In 2000, the Renal Physicians Association (RPA) established a clinical practice guideline and toolkit, *Shared Decision-Making in the Appropriate Initiation of and Withdrawal from Dialysis*, to help guide goals-of-care discussions with CKD stage 4 and 5 patients (RPA, 2000). In 2002, the RPA and American Society of Nephrology (ASN) provided a position statement on "Quality Care at the End of Life" to educate the medical community regarding what constitutes quality care at the end of life (RPA/ASN, 2002). Frail, older patients with CKD have special implications, requiring an age-attuned approach to medical management (Schmidt, 2012).

The Core Curriculum in Nephrology Palliative Care (Moss et al., 2004) guides nephrologists through the components and relevance of renal palliative care with background, definitions, and references, yet this area of practice has had limited implementation. There is increasing awareness that older people with comorbidities may not fare well on dialysis and that comprehensive medical management without dialysis may provide the same or longer length of life (Davison, Tupula, Wasynyluk, Siu, Sinnaraja, & Triscott, 2019). Patient-perceived quality of life, including symptom burden, cognitive and physical function, and satisfaction with care are relevant to goals-of-care discussions.

A needs assessment was created to identify and review barriers and strengths that could inform efforts to increase advance-care planning (ACP) within a large nephrology practice. Initial areas noted as opportunities for improvement included:

1. Definition of ACP
2. Territory—referral to another partner or part of routine care
3. Approaches to ACP
4. Expectations
5. Outcomes [STUDY AIM]

BACKGROUND

ACP with CKD patients is now viewed as a priority in chronic disease management by several national organizations including the Renal Physicians Association (2000), the Coalition for Supportive Care of Kidney Patients (CSCKP), and Kidney Disease: Improving Global Outcomes (KDIGO) (Davison et al., 2015).

A consensus classification and staging definition for CKD was published in 2002 by the National Kidney Foundation's Kidney Disease Outcome Quality Initiative (NKF-KDOQI, 2002). There are five stages in this classification, with parameters based on glomerulofiltration rate (GFR) and microalbuminuria. CKD stage 4 is defined as severe loss of kidney function (estimated GFR 15–29 mL/min per 1.73 m²). CKD stage 5 is defined as kidney failure requiring dialysis or transplant for survival. End-stage renal disease (ESRD) is noted with estimated GFR < 15 mL/min per 1.73 m². GFR is also used diagnostically in patients who have received a kidney transplant.

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More CKD stage 4 patients die prior to developing ESRD (8.0 per 100 patient years) than those who develop ESRD (7.7 per 100 patient years) (Sud et al., 2014). Therefore, people with CKD stage 4 with other comorbidities may have a high need for early goals-of-care discussions. These numbers are noteworthy and indicate a need for process improvement in ACP, as the United States Renal Data System (USRDS) reports that CKD in the U.S. general (non-institutionalized) population of people aged 20 and older is more common than diabetes mellitus (DM); an estimated 13.6% of adults have CKD, compared to 12.3% with DM (CDC/NCHS, 2016; USRDS, 2016).

Healthcare costs for patients with CKD now represent 20.1% of all Medicare Parts A, B, and D spending (USRDS, 2017). Further review of this population finds that hospital admissions during the last 90 days of life among Medicare beneficiaries with ESRD has remained steady from 2000–2013 and is between 82–84% of this chronically ill population (USRDS, 2016). Admission to an intensive care unit (ICU) for these beneficiaries has increased from 50% to 63% during this same time period with an average length of hospital stay at 34 days during the last 90 days of life (USRDS, 2016).

Despite its suitability, supportive care has not been widely adopted across nephrology practices in the United States (Cohen, Ruthazer, Moss, & Germain, 2010; Combs, et al., 2015; Crews, et al.; DEcIDE Investigators, 2014). Alridge et al. (2016) cite education, implementation, and policy as primary barriers. For the purposes of this project, supportive care in CKD/ESRD is defined as:

- shared decision making
- patient/family meetings to discuss prognosis and treatment choices
- ACP that may or may not include:
 - an out-of-hospital do-not-resuscitate order;
 - referral to hospice;
 - and/or transitional care planning and coordination of care as patients move between levels of care need.

This definition is consistent with recommendations that promote improved quality care at the end of life.

In 2014, the Institute of Medicine (IOM) called for “universal health professional and clinician education and training in the core principles and practices of palliative care: skilled communication about what matters most to patients and their families and how the healthcare system can help achieve those goals” (IOM; Committee on Approaching Death, 2014). Professionals and clinicians include physicians, nurses, social workers, and others. The Project on Death in America (PDIA) launched many projects that begin to illustrate the contribution of social work in palliative and end-of-life care (Walsh-Burke & Csikai, 2005).

In chronic disease management, particularly kidney disease, early and repeated conversations about treatment choices are indicated as the progression of the disease can lead to uremic symptoms which can bring confusion and fatigue (Germain, Davison & Moss, 2011; Germain, Tamura & Davison, 2011; IOM, 2014; Quill & Abernethy, 2013). These factors often decrease the patient’s cognition, and thus, may decrease their decision-making capacity. Additionally, better quality of life, enhanced family outcomes, and reduced overall costs have been noted when early discussions regarding goals of care have taken place (Bernacki & Block, 2014;). As stated earlier, the benefit of early ACP in nephrology has been documented, yet implementation is slow (Holley, et al., 2003; Moss, et al., 2004; Moss, 2010; O’Hare, Armistead, Shrag, Diamond, & Moss, 2014).

ACP Medicare Current Procedural Terminology (CPT) billing codes became available in January 2016. To explore utilization of this benefit, a 2016 national physician survey was commissioned by The John A. Hartford, Cambia Health and California Health Care Foundations to obtain physicians’ experiences with billing Medicare for ACP conversation(s) with their patients, as well as the motivations for and barriers to having these conversations. From this survey, the majority of practicing physicians reported no prior training in end-of-life communication with patients (John A. Hartford Foundation, Cambia Health Foundation, & California Health Care Foundation, 2016). Eighty-nine percent of the 746 physician respondents reported that having a conversation about ACP was extremely or very important. Of the respondents, 66% supported the Medicare benefit that reimburses providers for this conversation, but 86% had not had a conversation about ACP nor billed Medicare for it. Those with training about end-of-life issues and who had a formal system in place reported being more likely to both have these conversations and find them rewarding rather than challenging—but two thirds stated they lacked a formal system for assessing a patient’s end-of-life care concerns.

ACP has many approaches. Some that are widely accepted include:

1. Serious Illness Care Project (SICP)
2. Vital Talk
3. PREPARE™
4. Priming
5. Social Worker-Aided Palliative Care Intervention
6. Improving communication to achieve goal-concordant care

The Serious Illness Care Program (SICP) was created by a team of palliative care experts at Ariadne Labs (Bernacki et al., 2015). Ariadne Labs’ mission is to improve healthcare delivery through creation of scalable tools, such as the SICP. SICP is a system-level intervention centered on structured questions (*The Serious Illness Conversation Guide*) that have been

developed from best practices in basic palliative care. This framework helps clinicians explore topics to gain a better understanding of what is important to the patient in discussing goals of care (Bernacki et al., 2015).

Vital Talk (<https://www.capc.org/collaborations/vitaltalk/>) comes from a nonprofit organization (Center to Advance Palliative Care) with a mission to offer a communication skills training system. The aim is to help practicing clinicians who care for seriously ill patients and their families gain communication skills. The underlying premise is that training is critical to eliciting patient values and to discussing goals of care.

PREPARE™ (for your care) is a patient-facing website (<https://prepareforyourcare.org>) that includes ACP tools without clinician- or system-level interventions (Sudore, Boscardin, Feuz, McMahon, Katen, & Barnes, 2017). Research showed that easy-to-use ACP tools, without clinician and/or system-level interventions, can increase planning documentation at least 25%.

Priming, the idea of a patient-specific pre-conversation communication (priming intervention), may be helpful in discussing goals of care with patients who have serious illness(es). Priming was also studied in a 1990s randomized trial with the objective of improving end-of-life decision making and reducing the frequency of a prolonged process of dying (Curtis et al., 2018; The SUPPORT Principal Investigators, 1995; Teno, Fisher, Hamel, Coppola, & Dawson, 2002).

Social Worker-Aided Palliative Care Intervention is an approach similar to priming. A pilot randomized clinical trial (O'Donnell, Schafer, & Stevenson, 2018) appearing in *JAMA Cardiology* studied if routine initiation of goals-of-care discussions by a palliative care social worker bridging inpatient to outpatient care could facilitate greater patient-physician engagement. Another study by Kalisiak, Hansen, Newell, & Mills (2017) concluded that Licensed Clinical Social Workers (LCSWs) and Registered Nurses (RNs) could provide substantive ACP within team-based care. Stein, Christ, and Cagel (2017) surveyed over 700 palliative care social workers and found that 96% of respondents conducted ACP discussions and 68% documented planning discussions. As noted in this study, licensed and experienced social workers were facilitating, conducting, and leading ACP.

Improving communication to achieve goal-concordant care—High-quality communication has been shown to be essential in improving serious illness care and supporting goal-concordant care (Sanders, Curtis, & Tulskey, 2018). Goal-concordant care occurs when a clinician has communicated in a manner in which patient care follows patient preferences. Three suggested indicators to measure goal-concordant care are: 1) the timing and setting of the serious illness communication; 2) the patient's (or surrogate's) experience with care; and 3) bereavement surveys of caregivers about their perception of goal-concordant care at the end of life.

METHOD

A needs assessment was completed with nephrologists in 2018 to better understand the current state of ACP in nephrology practice and to more clearly identify strengths and barriers to expanding its implementation within a large nephrology practice.

The Cambia survey (John A. Hartford Foundation, Cambia Health Foundation, & California Health Care Foundation, 2016) polled 736 physicians in 2016. This survey, "Physicians' Views Toward Advance-Care Planning and End-of-Life Care," was administered to internists/PCPs, oncologists, pulmonologists, and cardiologists, because these physicians treat conditions linked to the top three causes of death in the U.S.: 1) heart disease; 2) cancer; and 3) chronic lower respiratory disease (CDC/NCHS, 2016).

Since nephrologists have not been widely included in these types of ACP studies and they also provide care to a large number of seriously ill patients over age 65 (USRDS, 2016) within the last 12 months of life (Foote et al., 2012), understanding nephrologists' perspectives is essential to improving ACP with CKD patients. Therefore, a large nephrology practice was surveyed with data comparison to the larger Cambia survey.

IMPLEMENTATION

1. The survey of 89 nephrologists used for this study was adapted as stated above (John A. Hartford Foundation, Cambia Health Foundation, & California Health Care Foundation, 2016). In December 2017, this initial survey was reviewed by the nephrology corporation's administration. The recommendation was to reduce the number of questions from 35 items to 21 items. The goal in reducing the number of questions was to keep the response time under 2 minutes in order to increase the response rate. This is consistent with literature that supports survey burden as a reason for non-response (Cunningham et al., 2015). Review of the literature shows that response rates for large-scale surveys conducted with various medical practitioners have steadily declined from 2000–2012 (Klabunde, Willis, & Casalino, 2013; Wiebe, Kaczorowski, & MacKay, 2012).
2. The Google Forms survey was approved by Dallas Nephrology Associates (DNA) and emailed to all of their 89 nephrologists on three dates in February and March 2018.
3. Response rate from the Google Forms survey was 35%. This rate is consistent with other non-incentivized physician surveys (Cunningham et al, 2015; Weiner, 2008). James, Ziegenfuss, Tilburt, Harris, and Beebe (2011) found support for the efficacy of prepaid cash incentives to optimize response rates for physician surveys. Incentives were credited for that study exceeding the goal of a 50% response rate. Since there was no funding for this project, monetary incentives were not used.

4. Results of the finalized survey of DNA (“Physicians’ Views Toward Advance-Care Planning and End-of-Life Care”) were compared with the Cambia responses using Fisher’s Exact Test of Independence since the number of responses was relatively low (< 1000). Fisher’s exact test and the Chi-Square test of independence check for statistically significant difference. To evaluate the results of the Fisher’s Test we used the p value ≤ 0.05 to test for 95% probability of statistical significance (McDonald, 2014).
5. Defining Null Hypothesis and Alternate Hypothesis:
 - i. Null Hypothesis: The responses from the Cambia specialty physicians and DNA nephrologists are independent (occurrence of one does not affect the probability of occurrence of the other).
 - ii. Alternate Hypothesis: The responses from the physicians surveyed by Cambia and DNA nephrologists have some relationship.
 - iii. A small p -value (≤ 0.05) indicates a very strong evidence against the null hypothesis defined above.
 - iv. A large p -value (> 0.05) indicates weak evidence against the null hypothesis; therefore, we accept the null hypothesis, i.e., there is not a relationship.
6. Survey questions (see **Appendix A**). The finalized survey has 21 questions which is a subset of the Cambia survey.

RESULTS

After tests of difference were completed, two-thirds of DNA compared to one-half PCPs/other specialists surveyed (Cambia survey) felt that it was important to have goals-of-care discussions with patients.

Eighty-six percent of nephrologists had not had a conversation with their own healthcare providers about wishes for care at the end of life, in comparison with 52 percent of PCPs/other specialists (Cambia survey). When the nephrologists responded at a higher percentage, 6 out of 7 of those responses were independent from PCPs/other specialists (Cambia survey) (**Table 1**). Three-quarters (74%) of nephrologists thought it was their responsibility to initiate ACP. Interestingly, three-quarters (74%) of nephrologists also felt that they had not had training for talking to patients and families about ACP.

Table 1.	Dependent	Independent
Nephrologists <i>More important</i>		
Questions: 6, 7, 8, 9, 13, 17, 21	1	6
Nephrologists <i>Less important</i>		
Questions: 1, 2, 3, 4, 5, 10, 11, 12, 14, 15, 16, 18, 19, 20	7	7

Other independent responses from nephrologists, indicating issues that they feel *more* strongly about, include:

- perceptions that talking to patients about goals of care and end-of-life wishes is important to reducing unnecessary or unwanted hospitalizations at the end of life
- helping patients and family members be more satisfied with their care
- goals-of-care discussions could increase the number of patients who receive hospice care
- common barriers to having conversations about ACP by physicians are time and comfort

Both groups of respondents (DNA/Cambia) noted that conversations about end-of-life care can be more challenging than rewarding (**Figure 1**). Both identified a perception of responsibility to initiate a conversation about ACP (**Figure 2**). Thus, perception of responsibility does not seem to be a barrier to providing these conversations. However, knowledge of documentation required for Medicare billing is low in both groups, and thus notes an area for improvement (**Figure 3**).

Figures 1–3 relate nephrologists’ responses from the survey:

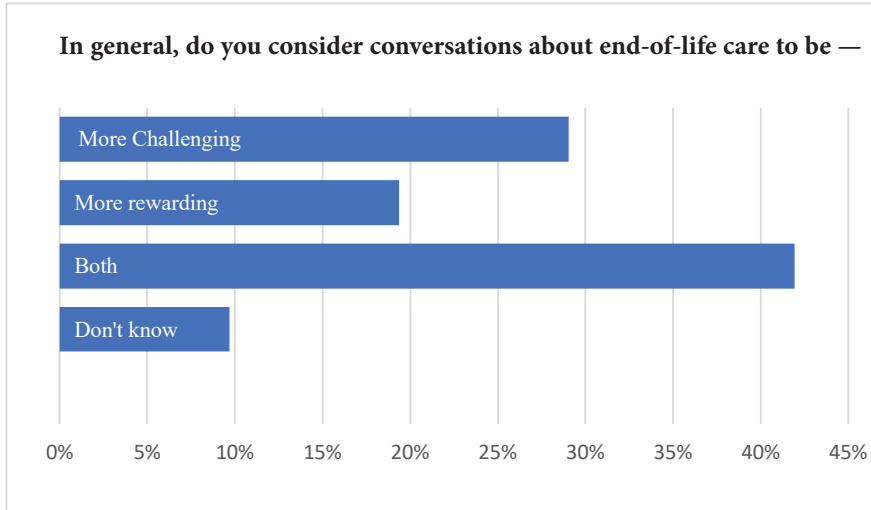


Figure 1.

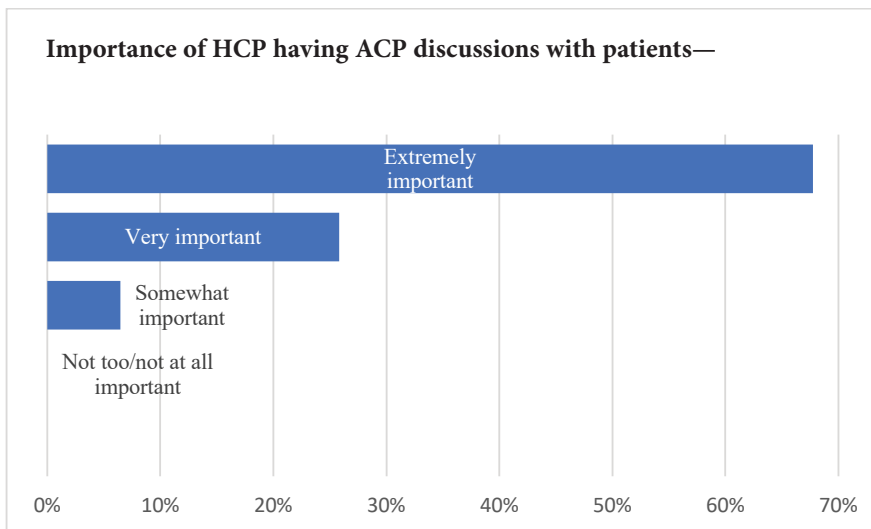
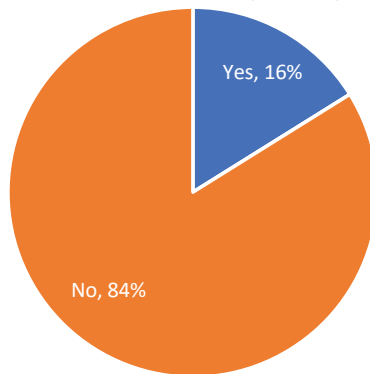


Figure 2.

HCP = healthcare professional

Figure 3.

Do you understand the documentation requirements to bill Medicare? (for ACP)



DISCUSSION

ACP discussions can be difficult because the clinician is often concerned that by talking about serious illness or future care, hope or trust may be diminished. There are numerous ways to accomplish ACP, but it is important to note that having an advance directive (medical power of attorney or living will) does not mean that the clinician has a clear understanding of a patient's perceptions. Listening and asking relevant questions to understand the patient's desire for knowledge (and how much), patient perception of quality of life, how they want to live at the end of life, concerns about treatment now and in the future, life goals, and unfinished business are important for the treating physician to understand in order to define treatment goals that align with patient values. With this information, the patient becomes an active participant in the shared decision-making process.

While kidney disease teams are encouraged to discuss realistic expectations of quality of life related to starting a life-sustaining treatment (dialysis), surveys suggest that many providers find it difficult to have this discussion and feel ill-prepared. Add to this situation that social workers are most often not a part of CKD care, and it creates an opportunity for improvement. Masters'-prepared social workers are in each dialysis setting across the country, but by the time a patient reaches the dialysis social worker, an access (fistula, graft or catheter) has been placed to begin dialysis. Prognosis and patient-perceived quality of life on dialysis have not been explored prior to surgery. With this information, many may have chosen medical management without dialysis. Goals-of-care discussions are often *infrequent, limited, and late* (ILL) (Bernacki et al., 2015).

Kidney transplant recipients continue to have CKD even after transplant. Therefore, kidney transplant teams also have opportunities, often not captured, to address patient quality of life and goals of care. Decisions about how to manage declining transplant function or comorbidities, including cancer, are very relevant to this population who often feel that transplant is a cure rather than a treatment option for kidney failure.

STUDY LIMITATIONS

- Size of sample—the results are based on a comparison to just one other survey of physician specialists. Analysis of larger sample sizes is necessary for more generalizable findings.
- Response rates were fairly low (but consistent with physicians' response rates). Therefore, the sample may be biased.
- Some responses may not be accurately interpreted as facilitators of barriers. For example, we need clearer associations between understanding of how to bill Medicare for ACP and the degree to which this may be a strength or barrier.

CONCLUSIONS AND RECOMMENDATIONS

The purpose of the overall project was to improve ACP within nephrology through a short needs assessment, and to explore how CKD and ESRD patients might receive earlier and repeated goals-of-care discussions, especially as they approach life-changing treatment options. The survey provided important insights into the strengths and barriers to ACP within nephrology when compared to the Cambia responses. As noted in the literature, goal-concordant care requires measuring more than the structural context of care (policy and procedures). Goal-concordant care places the patient's values and wishes at the center of care.

Goals-of-care discussions, palliative care, and symptom management are clinical priorities for CKD patients (Davison, 2001). The decision to start dialysis or have medical management without dialysis is a difficult choice, made even more difficult if the patient and family do not understand the implications of beginning dialysis with multiple comorbidities and advanced age.

A review of survey results with nephrologists indicates opportunities for improvement. Common barriers to physicians having conversations about ACP are time and comfort. These barriers may be ameliorated with team-based approaches to ACP, including licensed, clinical social workers having early and repeated ACP discussions with patients and family members, which lead to greater physician-patient engagement and cost-effective care that is concordant with patient goals (goal-concordant care).

Through the previously related needs assessment and additional training, Dallas Nephrology Associates moved forward with several changes to improve goals-of-care discussions and ACP:

1. Providers are being trained through the Serious Illness Care Project (SICP).
2. The practice has registered for membership with the Center to Advance Palliative Care (CAPC), which provides training in many areas of communication, including delivering serious news, and ACP for all employees.
3. The practice is working with the Pathways Project Collaborative Learning to initiate evidence-based recommendations designed to improve supportive care delivery for patients with kidney disease using the IHI framework of using small tests of change.
4. The practice has designated two new positions to coordinate improvement in goals-of-care discussions: Supportive Care Team Program Manager and Director, Supportive Care Team.

FUTURE RESEARCH

As noted, there are many opportunities to improve goals-of-care discussions early and often for people with CKD. The scope of this project is limited to CKD but End-Stage Renal Disease Seamless Care Organizations (ESCOs) are also looking at providing ACP earlier and repeatedly. Defining impact in an outpatient setting is still being developed but there is potential to define upstream outcomes regarding quality of life, anxiety, and depression that matter to patients and their families. The imperative is to align treatment with the patient's goals of care early, through a process of multiple discussions over time that help a patient manage chronic illness.

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Appendix A.

Survey Question	p-Value	Interpretation (p-value < = 0.05)	DNA More	Comparison Value
1. How often do you talk to patients 65 and older about issues related to advance-care planning or end-of-life care?	0.00012	There is a relationship between responses.	Less	At least once/week
2. Have you had any training on talking with patients and families about advance-care planning?	2.07E-11	There is a relationship between responses.	Less	Yes
3. Have you ever had a conversation with your own doctor or healthcare provider about your wishes for your care at the end of your life?	0.000108	There is a relationship between responses.	Less	Yes
4. In your opinion, how important is it that healthcare providers have these conversations with patients?	0.3683	The responses are independent.	Less	Extremely/ very important
5. Here are some potential outcomes of advance-care planning, goals of care and end-of-life wishes. For you personally, how important is each of these as a reason to talk with your patients about these issues? [You would be better able to honor your patient's values and wishes.]	0.01101	There is a relationship between responses.	Less	Extremely/ very important
6. Here are some potential outcomes of advance-care planning, goals of care and end-of-life wishes. For you personally, how important is each of these as a reason to talk with your patients about these issues? [It could reduce unnecessary or unwanted hospitalization at the end of life.]	0.06102	The responses are independent.	More	Extremely/ very important
7. Here are some potential outcomes of advance-care planning, goals of care and end-of-life wishes. For you personally, how important is each of these as a reason to talk with your patients about these issues? [Patients and family members may be more satisfied with their care.]	0.0932	The responses are independent.	More	Extremely/very important

Continued

8. Here are some potential outcomes of advance-care planning, goals of care and end-of-life wishes. For you personally, how important is each of these as a reason to talk with your patients about these issues? [It could save healthcare costs.]	0.1661	The responses are independent.	More	Extremely/very important
9. Here are some potential outcomes of advance-care planning, goals of care and end-of-life wishes. For you personally, how important is each of these as a reason to talk with your patients about these issues? [It could increase the number of patients who receive hospice care.]	0.09803	The responses are independent.	More	Extremely/very important
10. Have you had an advance-care planning conversation and billed Medicare for it in 2017?	0.7875	The responses are independent.	Less	Yes
11. Do you understand the documentation requirements to bill Medicare? Assumption: This question was framed slightly differently in the two data sets: In the physicians data [Cambia survey] the question is: "Do you bill under Medicare fee-for-service, or not?" In the nephrologists data [DNA survey] the question is: "Do you understand the documentation requirements to bill Medicare?"	$< 2.2e-16$	There is a relationship between responses.	Less	Yes & Question is: 33. Do you bill under Medicare fee-for-service, or not?
12. Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes? If "yes": [You don't have time with everything else on your plate.]	0.8131	The responses are independent.	Less	Frequently/ Sometimes
13. Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes? If "yes": [There's disagreement between family members and the patient.]	0.006899	There is a relationship between responses.	More	Frequently/ Sometimes
14. Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes? If "yes": [You're not sure the time is right.]	0.5315	The responses are independent.	Less	Frequently/ Sometimes

Continued

15. Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes? If “yes”: [It might be an uncomfortable conversation.]	0.3796	The responses are independent.	Less	Frequently/ Sometimes
16. Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes? If “yes”: [You don't want a patient to feel that you are giving up on them.]	0.369	The responses are independent.	Less	Frequently/ Sometimes
17. Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes? If “yes”: [You don't want a patient to give up hope.]	0.587	The responses are independent.	More	Frequently/ Sometimes
18. Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes? If “yes”: [You may be unsure what is culturally appropriate for the patient.]	0.6113	The responses are independent.	Less	Frequently/ Sometimes
19. During conversations about end-of-life care, how often do you feel unsure of what to say?	0.004775	There is a relationship between responses.	Less	Frequently/ Sometimes
20. In general, do you consider conversations about end-of-life care to be more or less challenging?	6.69E-08	There is a relationship between responses.	Less	Frequently/ Sometimes

Continued

<p>21. In general, whose responsibility should it be to initiate advance-care planning with patients: Assumption given slightly different response options: Here are the response options for physicians' data set [Cambia survey]: A. My responsibility B. The patient or family's responsibility C. Another doctor's responsibility D. A different type of healthcare provider, like a nurse or social worker's responsibility</p> <p>For the nephrologists' data set, the response options are [DNA survey]: A. My responsibility B. The patient or family's responsibility C. Another doctor's responsibility D. Another healthcare provider's responsibility, like a nurse or social worker E. A different type of healthcare provider, like a nurse or social worker</p> <p>Given the similarities, we combined the options D and E in the nephrologists data [DNA survey] and compared it with option D in the physicians' data [Cambia survey] set.</p>	<p>0.06175</p>	<p>The responses are independent.</p>	<p>More</p>	<p>Combined options D and E in the nephrologists' data [DNA] and compared it with option D in the physicians data [Cambia] set.</p>
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DNA = Dallas Nephrology Associates

Appendix B.

Survey results with significant differences between DNA and Cambia Surveys	p-value	DNA	Cambia
Think about your patients 65 and older with a serious illness. Have any of the following ever gotten in the way of talking to them about end-of-life wishes: [Don't have time with everything else on your plate.]	0.8131	64%	66%
Had an ACP conversation and billed Medicare for it (2017).	0.7875	9%	13%
Think about your patients 65 and older with a serious illness. What has gotten in the way of talking to them about end-of-life wishes: [You may be unsure what is culturally appropriate for the patient.]	0.6113	42%	43%
Think about your patients 65 and older with a serious illness. What has gotten in the way of talking to them about end-of-life wishes: [You don't want a patient to give up hope.]	0.587	49%	46%
Think about your patients 65 and older with a serious illness. What has gotten in the way of talking to them about end-of-life wishes: [Not sure the time is right.]	0.5315	48%	60%
Think about your patients 65 and older with a serious illness. What has gotten in the way of talking to them about end-of-life wishes: [It might be an uncomfortable conversation.]	0.369	36%	51%
Think about your patients 65 and older with a serious illness. What has gotten in the way of talking to them about end-of-life wishes: [You don't want a patient to feel that you are giving up on them.]	0.369	42%	48%
Importance of HCP having goals-of-care discussions with patients.	0.3683	94%	89%
Goals-of-care discussions could save healthcare costs	0.1661	74%	63%
Goals-of-care discussions could increase the number of patients who receive hospice care.	0.09803	77%	57%
Goals-of-care discussions may help patients and family members be more satisfied with care.	0.0932	84%	81%
Goals-of-care discussions could reduce unnecessary or unwanted hospitalization at the end of life.	0.06102	94%	87%

DNA = Dallas Nephrology Associates