

## ORIGINAL RESEARCH &amp; CONTRIBUTIONS

## Upstream Discussion Provided in the Ambulatory Setting to Assist Patients with Chronic Kidney Disease Considering Dialysis

Tuan K Le, MD; Mi Chang, MD; Craig Nelson, PhD, CLS;  
Julie Ann Sortais, LCSW; Pushkar Chand, MD; Karen Tallman, PhD

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## ABSTRACT

**Objectives:** Extensive discussion with renal patients about treatment intensity is not systematically integrated into their care and often occurs during an acute hospitalization. We conducted a “test-of-change” pilot study to assess the utility of providing an upstream discussion in the ambulatory setting as an additional nephrology consult to assist patients with chronic kidney disease considering treatment choices.

**Methods:** We randomly assigned patients with Stage 4 or Stage 5 chronic kidney disease who had not yet begun renal dialysis to 1 of 2 groups. The test group received the additional nephrology consult and met with an interdisciplinary team composed of a nephrologist, social worker, and clinical ethicist, and the control group did not. Qualitative data were collected in 2012 and 2013 via oral questionnaire. Both groups received a 6-month follow-up assessment.

**Results:** Patients who received the nephrology consult reported that they experienced help in forming a treatment plan, felt well understood, and had the opportunity to thoroughly discuss questions. The controls had a 26% increased probability of beginning dialysis and had a statistically significant increase in dialysis and clinic visits ( $p < 0.10$  and  $p < 0.05$ ). Controls also were likelier than the test group to be admitted to the hospital (0.5 vs 0.2 admissions per patient in the test group), spend more days hospitalized (2.8 vs 0.5 bed days per patient), and visit the emergency room (0.73 vs 0.66 visits per patient) and clinic (6.6 vs 3.6 visits per patient).

**Conclusions:** An additional nephrology consultation proved helpful both qualitatively and quantitatively.

## INTRODUCTION

It is important that patients participate in medical decision making.<sup>1</sup> Specifically for patients with chronic kidney disease (CKD), there is a need for more thorough upstream treatment intensity discussions.<sup>2</sup> One study by Davison<sup>3</sup> indicated that of 584 patients with Stage 4 and Stage 5 CKD, 61% regretted their decision to start renal dialysis. Davison’s study identified gaps between current treatment practices and patient preferences for those with CKD. We were impressed by her data and the possibility that a more in-depth communication of prognosis and a more detailed discussion reviewing preferences for treatment

planning could improve the routine care of patients with CKD.

The primary goal of our additional nephrology consult “test of change” was to assist patients with CKD, in the ambulatory setting, to make informed treatment planning decisions when their renal function markedly deteriorates. A test of change is a process that examines a small modification in patient care that can lead to a larger refinement when expanded to include a larger patient population. This additional nephrology consult test of change offered an important opportunity to measure whether the early decision-making conversations improved the overall care experience for

patients with CKD. These discussions also attempted to help patients more thoroughly understand what it is like to receive dialysis and also to better comprehend the benefits of optimal conservative management without dialysis.

The aim of this test of change was to examine the utility of having an upstream discussion in the ambulatory setting that included introducing the Advance Directive for Health Care and Physician Orders for Life-Sustaining Treatment form. Operational issues affecting the delivery process of the consultation were examined, and statistical metrics were employed to evaluate the effectiveness of the additional nephrology consultation.

## METHODS

Analysis of this test of change was approved by the Kaiser Permanente (KP) Southern California institutional review board. All consultations were held in the ambulatory setting and included patients and family members in 2012 and 2013 at KP South Bay Medical Center in Harbor City, CA. All sessions lasted approximately 2 hours. Each test patient had a consultation as part of our test protocol. This test of change used a random-assignment 2-sample test. The selection criteria for patients included age 80 years and older; CKD Stage 4 or Stage 5; one of the following comorbidities malnutrition, dementia, or vascular disease (peripheral vascular disease, coronary artery disease, cerebrovascular disease); or patients referred from their primary nephrologist with a negative response to the surprise question

Tuan K Le, MD, is the Chief of Nephrology at the South Bay Medical Center in Harbor City, CA. E-mail: [tuan.k.le@kp.org](mailto:tuan.k.le@kp.org).

Mi Chang, MD, is a Nephrologist at the South Bay Medical Center in Harbor City, CA. E-mail: [mi.x.chang@kp.org](mailto:mi.x.chang@kp.org).

Craig Nelson, PhD, CLS, is the Director of Medical Bioethics at the South Bay Medical Center in Harbor City, CA. E-mail: [craig.m.nelson@kp.org](mailto:craig.m.nelson@kp.org). Julie Ann Sortais, LCSW, is a Social Worker at the Los Angeles Medical Center in CA. E-mail: [julie.sortais@kp.org](mailto:julie.sortais@kp.org).

Pushkar Chand, MD, is a Physician and Director of the Inpatient Palliative Care Team at the South Bay Medical Center in Harbor City, CA. E-mail: [pushkar.chand@kp.org](mailto:pushkar.chand@kp.org). Karen Tallman, PhD, is a Research Consultant for the Center for Care Experience, Care Management Institute and The Permanente Federation in Oakland, CA. E-mail: [karen.tallman@kp.org](mailto:karen.tallman@kp.org).

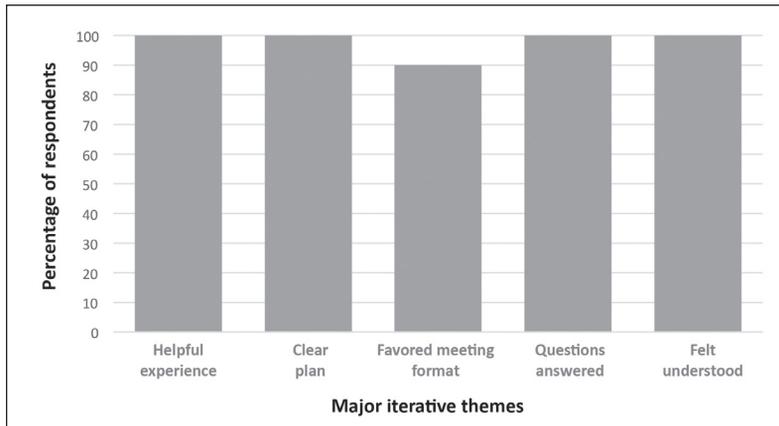


Figure 1. Major iterative themes for the test group responding to the oral questionnaire.

“Would you be surprised if this patient dies within the next 6 to 12 months?”

Patients who fit the selection criteria were randomly assigned into 2 groups. The total participants numbered 30: 15 in the test group and 15 in the control group. Another 5 patients declined participation in the test of change. The test group received the additional

nephrology consultation; the control group did not receive this consultation.

The additional nephrology consultation consisted first of a thorough case review and medical examination by the test-of-change nephrologist experienced and comfortable with discussing patients’ lived values and comfortable with exploring different treatment trajectories. This was followed by a patient and his/her family meeting with the entire consultation team, which was composed of the test-of-change nephrologist, a social worker, and a clinical ethicist. All consultation team members were the same individuals for the entire test of change. The family meeting included a clinical review of the patient’s short-term and long-term prognosis, questions patient or family members may have voiced, and a review of patient values and lived choices, as well as an introduction to the Advance Directive for Health Care and/or Physician Orders for Life-Sustaining Treatment form as appropriate. In addition, chaplaincy services were offered if the patient or family narrative indicated an interest or need, as was a follow-up by a social worker if requested by the patient or family. The conversation was documented in detail in the electronic medical record.

Qualitative data were collected within one week following the consultation using a structured oral questionnaire. Questions were posed by an interviewer other than a member of

the test-of-change consultation team (see Sidebar: Structured Questions for examples of the questions posed).

Data collection for the qualitative arm of our study continued until saturation. We reviewed the data collected from the questionnaire and identified distinct recurring themes or patterns. Saturation occurred when no new themes or patterns emerged. Our sample size for the test of change was small, but qualitative studies, relying on grounded theory, emphasize the number of themes or categories, not the number of individual participants.<sup>4</sup>

For the quantitative arm of the test of change, both test and control groups received a 6-month follow-up assessment consisting of a review of documentation in the electronic medical record to see if a patient began dialysis, to record the number of hospital admissions, how many bed days were utilized, the number of emergency room visits and clinic visits, and whether the patient had completed an advance directive and/or executed a Physician Orders for Life-Sustaining Treatment form. Quantitative statistical analysis included  $\chi^2$  association between categorical variables, Bayes probability analysis, paired-differences *t* test, Z test, and Spearman rank order correlation ( $\rho$ ). We used a significance level of 10% for our statistical analysis. Our hypothesis was that the data would exhibit a *p* value approaching 0.10 because of our small *n*. We were not confident a more

### Structured Questions

- Did Dr ( ) and his/her team listen carefully to you and answer your questions fully?
- During this visit, did you feel you and your family were treated with dignity and respect?
- During the team’s visit, did you feel your wishes were understood and honored?
- Do you now feel you have a clear plan for your health care?
- After the visit, do you have a better understanding of your medical condition?
- Would you say this visit was very helpful, somewhat helpful, or not very helpful?
- Could you explain what made it that way?
- How could Dr ( ) and his/her team improve meetings with patients in the future?
- Is there anything else we should know?
- How would you rate the overall experience you’ve had with Dr ( )? (Outstanding, Excellent, Good, Adequate, or Poor)

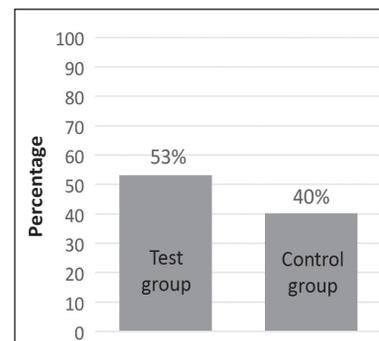


Figure 2. Comparison of completed advance directives or Physician Orders for Life-Sustaining Treatment forms.<sup>a</sup>

<sup>a</sup> $\chi^2 = 1.2$ ;  $p = 0.27$ . There was no statistically significant change at  $p < 0.10$ .

Measure	t test	Spearman $\rho^a$	Z test
Dialysis <sup>b</sup>	Increase in control group ( $p < 0.10$ )	Unable to calculate correlation	Increase in control group ( $p < 0.10$ )
Admissions	Increase in control group ( $p > 0.10$ )	Weak correlation ( $R = -0.271$ )	Increase in control group ( $p < 0.05$ )
Bed day use	Increase in control group ( $p > 0.10$ )	Weak correlation ( $R = -0.342$ )	Increase in control group ( $p > 0.10$ )
Emergency room visits	Increase in control group ( $p > 0.10$ )	Weak correlation ( $R = -0.154$ )	Increase in control group ( $p > 0.10$ )
Clinic visits	Increase in control group ( $p < 0.05$ )	Weak correlation ( $R = -0.402$ )	Increase in control group ( $p > 0.10$ )

<sup>a</sup> For Spearman rank order correlation ( $\rho$ ), the sign of the coefficient indicates the direction of the relationship; if one variable tends to increase as the other decreases, the coefficient is negative. Statistical significance is  $p < 0.10$ .

<sup>b</sup> Patients in the control group had a 26% increased probability of beginning dialysis, when data were analyzed by Bayes probability.

robust level of confidence (ie, 5%) would be achievable.

## RESULTS

Figure 1 shows the results of the qualitative arm of the test of change for the additional nephrology consult. The major iterative themes for the test group responding to the oral questionnaire were that the consult was a helpful experience; the patients felt they had a clear plan after the consult, they favored the meeting format, they had their questions answered, and they felt understood. We also compared the completion of advance directives and/or Physician Orders for Life-Sustaining Treatment forms for the test group (those who received the additional nephrology consult) and for the control group (those who did not receive the test of change, the additional nephrology consultation).

Figure 2 shows that the test group had a higher percentage of completed advance directives and/or Physician Orders for Life-Sustaining Treatment forms than the control group. Although the increased amount of advance directives and/or Physician Orders for Life-Sustaining Treatment forms was encouraging,  $\chi^2$  analysis of our data showed no statistical significance at  $p < 0.10$  ( $p = 0.27$ ).

Statistical tests were used to analyze the data collected to determine if there was a statistically significant difference between the control group and the test group in dialysis use, hospital admissions, bed days, emergency room visits, and clinic visits. For dialysis use, Bayes probability showed that the control group had a 26% increase

in dialysis use, and both the  $t$  test and the Z test also showed a statistically significant increase in dialysis use ( $p < 0.10$  for both statistical tools). For hospital admissions, Spearman  $\rho$  showed a weak correlation ( $R = -0.271$ ), and the Z test showed an increase in control group admissions ( $p < 0.05$ ). When we analyzed bed day use and emergency room visits, the Spearman  $\rho$  showed a weak correlation ( $R = -0.342$  and  $-0.154$ , respectively). The data collected for clinic visits when analyzed by  $t$  test showed an increase in clinic visits in the control group ( $p < 0.050$ ), and the Spearman  $\rho$  showed a weak correlation ( $R = -0.402$ ). Tables 1 and 2 detail all quantitative results.

## DISCUSSION

Our test-of-change pilot study attempted to review the utility of providing an upstream discussion in the ambulatory setting for renal patients considering treatment plan decision making. It has been noted that treatment planning conversations must present “a clear understanding of the limits and possibilities of medicine and realize this understanding to be more

of a process and not an epiphany.”<sup>5</sup> We believe this process is important for patients who need to clarify treatment goals<sup>6</sup> in settings where more intense treatment options, such as commencing dialysis, may be a possible outcome of CKD. Interdisciplinary consultations in the ambulatory setting allow us to begin a conversation that can include helping patients and families better understand the possibilities of medicine, patients’ treatment goals, and lived values from the patients’ context.<sup>7</sup> Documentation of this conversation in the patient’s electronic medical record serves as a future reference.

## CONCLUSION

The analysis described in this article showed that for a small cohort of patients, an additional nephrology consultation test of change proved helpful both qualitatively and quantitatively. It would be important to expand the test-of-change intervention to include a larger number of patients. When statisticians introduced ways of thinking about data, such as  $p$  values introduced by Ronald Fisher in the 1920s, tools of statistical analysis were seen as an informal way to judge whether evidence was worthy of a second look. We recommend that our work should be seen as Part 1 in a 2-stage analysis, and a second look should be seriously considered.<sup>8,9</sup> Our exploratory test of change and data analysis gathered interesting and helpful findings. In the future, we encourage larger, more rigorous studies to be undertaken in this area. ♦

## Disclosure Statement

The author(s) have no conflicts of interest to disclose.

Measure	Control	Test
Dialysis (no. of patients)	2.0	0.0
Admissions	0.5	0.2
Bed day use	2.8	0.5
Emergency room visits	0.73	0.66
Clinic visits	6.6	3.6

<sup>a</sup> Data are expressed as number per patient except for dialysis.

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**References**

1. Tuso P, Watson H, Garofalo-Wright HL, et al. Complex case conferences associated with reduced hospital admissions for high-risk patients with multiple comorbidities. *Perm J* 2014 Winter;18(1):38-42. DOI: <http://dx.doi.org/10.7812/TPP/13-062>.
2. Tuso P. Choosing wisely and beyond: shared decision making and chronic kidney disease. *Perm J* 2013 Fall;17(4):75-8. DOI: <http://dx.doi.org/10.7812/TPP/13-006>.
3. Davison SN. End-of-life care preferences and needs: perceptions of patients with chronic kidney disease. *Clin J Am Soc Nephrol* 2010 Feb;5(2):195-204. DOI: <http://dx.doi.org/10.2215/CJN.05960809>.
4. Steinhäuser KE, Barroso J. Using qualitative methods to explore key questions in palliative care. *J Palliat Med* 2009 Aug;12(8):725-30. DOI: <http://dx.doi.org/10.1089/jpm.2009.9580>.
5. Gawande A. Letting go: what should medicine do when it can't save your life? [Internet]. New York, NY: The New Yorker; 2010 Aug 2 [cited 2014 Jul 18]. Available from: [www.newyorker.com/reporting/2010/08/02/100802fa\\_fact\\_gawande](http://www.newyorker.com/reporting/2010/08/02/100802fa_fact_gawande).
6. Chand P, Gabriel T, Wallace CL, Nelson CM. Inpatient palliative care consultation: describing patient satisfaction. *Perm J* 2013 Winter;17(1):53-5. DOI: <http://dx.doi.org/10.7812/TPP/12-092>.
7. Nelson C. The familiar foundation and the fuller sense: ethics consultation and narrative. *Perm J* 2012 Spring;16(2):60-3. DOI: <http://dx.doi.org/10.7812/TPP/11-150>.
8. Abbott A. Number crunch: the correct use of statistics is not just good for science—it is essential (Editorial). *Nature* 2014 Feb 13;506(7487):131-2. DOI: <http://dx.doi.org/10.1038/506131b>.
9. Nuzzo R. Scientific method: statistical errors. *Nature* 2014 Feb 13;506(7487):150-2. DOI: <http://dx.doi.org/10.1038/506150a>.

**A True Impression**

A straight answer does not mean for me what is often called the “blunt truth,” the “naked truth,” the dry cold facts. The truth that I mean is a true impression, a fully drawn and properly shaded account such as is, as I well know, very difficult to give ... But better than either a misleading half truth or a pleasing lie, is an attempt to answer the patient's question that he shall see not only what he can't do and can't hope for, but what he can do and what there is to work for hopefully.

— Richard C Cabot, MD, 1868-1939, American physician