Campaign Update

In 2009, Kidney Care Partners launched a voluntary quality improvement campaign to reduce mortality among first-year dialysis patients by 20 percent by the end of 2012. The Performance Excellence and Accountability in Kidney Care—or PEAK—Campaign (www.kidneycarequality.org) has set an ambitious goal of improving survival rates among the most vulnerable dialysis patients during their first year on this life-sustaining therapy.

As noted at the PEAK Campaign launch and in previous PEAK*POINTS* e-newsletters, KCP, with the assistance of research partners at Brown University and Quality Partners of Rhode Island, created three expert panels to identify valuable, first-hand perspectives from kidney care experts, researchers, clinicians, and patients themselves on how to improve first-year survival rates and track progress made as a result of the efforts of our members and members of the kidney community in implementing many of the Campaign's Best Practices.

Since the PEAK Campaign began receiving data from the Centers for Medicare and Medicaid Services (CMS), Dr. Vincent Mor of Brown University and the Data/Results Panel[1] have made great strides in analyzing the information—identifying trends that illustrate progress in reducing overall mortality, as well as what factors, such as catheter use, are important contributors to early mortality. The PEAK project is unique in that it receives real-time, quarterly Renal Information Management System (REMIS) files from CMS, allowing the Campaign to measure contemporaneous progress in a manner not found elsewhere nationally.

Dr. Mor recently presented several of the analyses to date at the American Society of Nephrologists annual meeting in November 2011, reporting on current trends in *Types of Access Used in End Stage Renal Disease Patients* and *One Year Mortality in End Stage Renal Disease*.

[1] The Data/Results Panel is comprised of expert members of the kidney community: **Brian D. Bradbury**, MA, DSc Amgen; **Barbara Fivush**, MD Johns Hopkins; **David T. Gilbertson**, PhD USRDS; **Raymond Hakim**, MD, PhD Fresenius Medical Care; **Mahesh Krishnan**, MD, MPH, FASN DaVita, Inc.; **Rajnish Mehrotra**, MD, FACP, FACN Harbor UCLA Medical Center; **Paul M. Palevsky**, MD VA Pittsburgh Healthcare System and University of Pittsburgh; **Ron Pisoni**, PhD, MS Arbor Research Collaborative for Health; and **Edward Vonesh**, PhD Northwestern University.

The findings reveal a downward trend in mortality (Table 1), as well as statistically significant Network differences in both catheter use and mortality rates—even after controlling for the following nine patient characteristic factors: age, race, gender, albumin>3.5, hemoglobin>10, creatinine, previous care by a nephrologist, whether a maturing fistula was present, and whether diabetes is listed as primary cause.

Table 1. First-year Mortality

Incident Period	First-year Rate (per person year)
January-December 2007	0.267
January-December 2008	0.259
January-December 2009	0.250
April 2009-March 2010	0.246

Background and Data Sources

The REMIS files provide information on the characteristics (demographic and clinical) of ALL incident ESRD patients each year. As noted earlier, the data are received in real time and updated each quarter. In addition, REMIS data are merged with data on dates of death from the Social Security Master Death File to ensure all deaths are captured.

To date, Brown and the Data/Results Panel have reviewed data that cover the period through June 30, 2011, but because of observed lags in completeness of the Form 2728, only data through March 2011 are reported here.

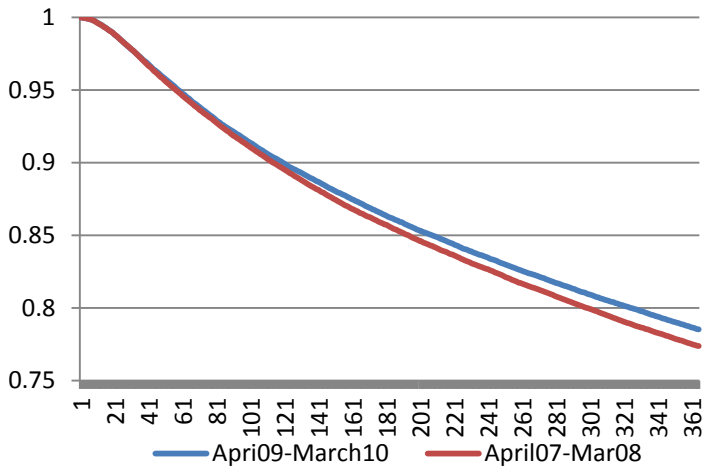
One-Year Mortality

While first-year mortality rates are on the decline, reducing mortality even further remains a priority in the kidney community. The PEAK Campaign along with other quality improvement initiatives, including RightStart and IMPACT, were launched to focus attention on this important issue and to reduce mortality rates.

To date, the PEAK Data/Results Panel has examined the trends in first-year ESRD mortality, including a focus on characterizing ESRD Network-level differences in mortality after adjusting for differences in the characteristics of incident patients, as noted above.

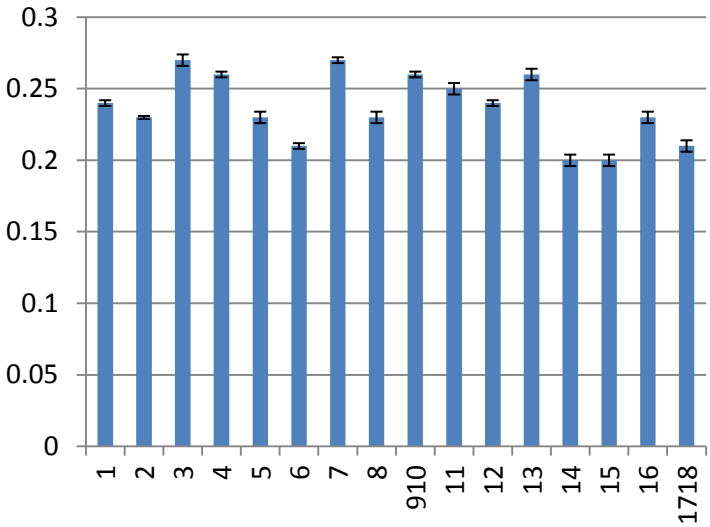
After measuring one-year and 90-day mortality and adjusting for the above-mentioned patient characteristics (age, race, gender, albumin>3.5, hemoglobin>10, creatinine, previous care by a nephrologist, whether a maturing fistula was present, and whether diabetes is listed as primary cause), **the Campaign has identified a decline in the one-year mortality rate that is primarily driven by a decline in mortality after 90 days (Figure A-1).**

Figure A-1. First-year Survival Curves (2007-2008 cohort vs. 2009-2010 cohort)



Notably, as well, more than 20 percent differences in Network-level one-year mortality rates exist even after adjusting for the key patient characteristics (Figure A-2).

Figure A-2. Regression Adjusted Predicted Probability of First-year Mortality by Network



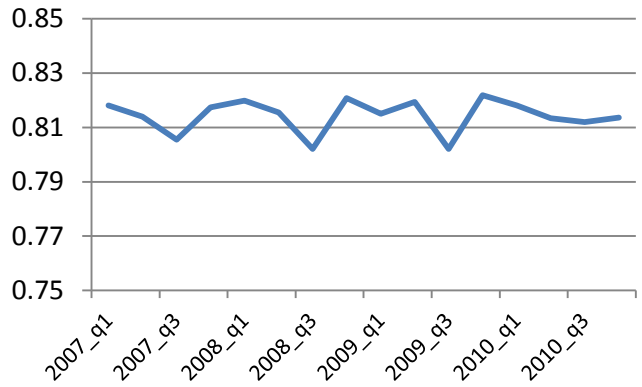
Implications of the analyses to date with regard to mortality include:

- Little variation exists in 90-day survival over time and across Networks, after adjusting for patient characteristics;
- Substantial Network variation in one-year survival may be attributable to treatment variation *not patient characteristics*;
- It is likely that real Network-level differences in treatment practices exist, and/or unmeasured factors contribute to Network-level differences in mortality, and more research is needed to understand these factors.

Catheter Use

Catheters, widely used as modes of access in dialysis patients, have been associated with higher mortality rates in ESRD patients. Many initiatives, including Fistula First and the Renal Physicians Association's Vascular Access Initiative, have focused on reducing the use of catheters.

Figure B-1. Catheter Rates in Hemodialysis Patients



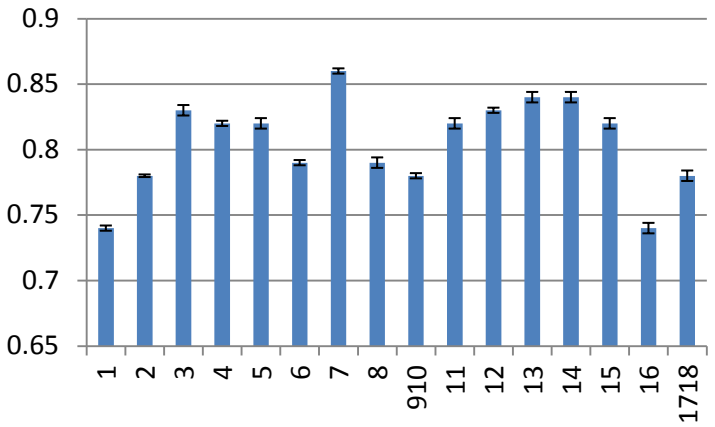
The PEAK Data/Results Panel examined the use of catheters at the initiation of dialysis and, in particular, the extent of Network-level variation. **The data showed no downward trend in catheter use (Figure B-1), nor in whether an alternative, a maturing fistula/graft, was present at time of entry into ESRD (Table 2).**

Table 2. Trends in Type of Access in Hemodialysis Patients

Year of Incidence	Catheter	Fistula/Graft	Maturing Fistula/Graft*
2007	0.814	0.176	0.22
2008	0.815	0.172	0.21
2009	0.814	0.178	0.21
2010	0.815	0.182	0.22

Of note, Network-level differences in catheter rates were identified, even after adjusting for the aforementioned nine important patient characteristics: age, race, gender, albumin>3.5, hemoglobin>10, creatinine, previous care by a nephrologist, whether a maturing fistula was present, and whether diabetes is listed as primary cause (Figure B-2)**.**

Figure B-2. Regression Adjusted Predicted Probability of Use of Catheter Upon Dialysis Initiation by Network



Implications of these analyses to date with regard to catheter use include:

- More effort must be made to reduce the use of catheters upon entry in ESRD;
- It is likely that real Network-level differences in treatment practices exist, and/or unmeasured factors contribute to Network-level differences in use of catheters and more research is needed to understand these factors.

Conclusions/Outstanding Questions

The PEAK Campaign's data analyses suggest that mortality rates are trending down, but clearly more can be done given that catheter rates themselves are not trending downward in any appreciable way and research clearly demonstrates that catheters at dialysis initiation are the largest contributor to morbidity and early mortality. Finally, the PEAK Data/Results Panel has noted that it appears there are significant Network-level differences in catheter use and first-year mortality that should be addressed.

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