



### **Campaign Update: Focus on Dialysis Optimization ... and a Call to Action**

This month marks the halfway point of the final year of Kidney Care Partners' voluntary quality improvement Campaign – the Performance Excellence and Accountability in Kidney Care (PEAK) Campaign. At the launch of the Campaign in 2009, KCP and PEAK members set an ambitious goal of reducing first-year mortality by 20 percent by the end of 2012.

As noted at the PEAK Campaign launch and in previous editions of *PEAKPOINTS*, 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 on how to improve first-year survival rates. Throughout the Campaign, KCP has disseminated information on the PEAK Best Practices focused on patient education and key clinical care activities as identified by the expert panels through this newsletter, as well as other communication vehicles.

Thanks to the efforts of KCP members, the PEAK Campaign panels, and the entire kidney community, first-year mortality has been on the decline. However, our work is not yet complete. In order to reach our goal, we will need even greater participation by you, our members.

In this edition, we spotlight the Best Practice for Dialysis Optimization, as recommended by the [PEAK Technical/Curriculum Panel](#), which focused on identifying the appropriate evidence-based interventions and best practices to reduce first-year mortality, including curriculum tools/guides, web-content, etc. that dialysis organizations, patients, and healthcare professionals can use as resources in their efforts to reduce first-year mortality.

Based on the body of evidence available to date, the PEAK Technical/Curriculum Panel concluded: ***Optimal dialysis dosing and choice of treatment option can improve quality of life while reducing mortality risks.***

## Why is Dialysis Optimization Important?

According to recent studies, large opportunities exist to improve dialysis patients' care and outcomes specifically with regard to dialysis prescription.<sup>1</sup> More specifically, time on dialysis has been identified as a key modifiable risk factor in patient outcomes. One study confirmed the theory that patients who dialyze thrice-weekly for longer periods ( $\geq 4$  hours) have better outcomes than those who dialyze less ( $< 4$  hours).<sup>2</sup>

Of importance to PEAK is prescription time for patients at the time of dialysis initiation. The latest PEAK data indicate that nephrologists are increasingly prescribing 4 or more hours of dialysis three times a week. (Figure 1) Nevertheless, we also have observed that significant differences exist among Networks. (Figure 2)

Figure 1: Trends in Hemodialysis Prescription

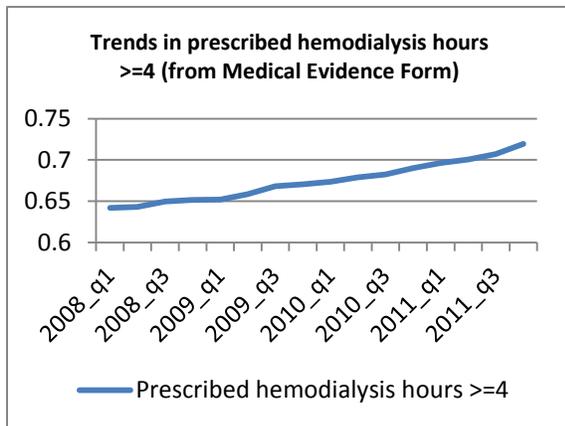
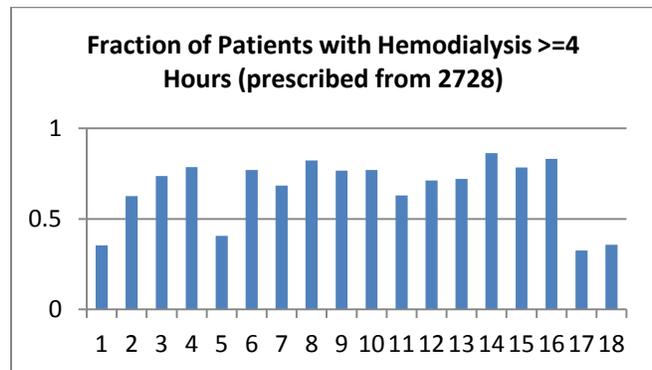


Figure 2: Network-level Differences in Hemodialysis Prescription



## How to Achieve Optimal Dialysis

Several factors must be considered to define what is optimal for given individuals, including dialysis modality, individual behaviors and competing priorities, as well as clinical, cardiac, volume, biochemical, and functional parameters.<sup>3</sup> Consequently, the best practice includes defining optimum for the individual patient and tracking at the facility level the proportion of patients that achieve optimal dialysis, relative to a facility-set target for success.

First, "optimal dialysis" must be defined in terms of processes and outcomes while acknowledging current federal measurement initiatives and best evidence. Based on the current body of evidence, this PEAK Best Practice recommends that the following key processes and outcomes be monitored.

<sup>1</sup> Bernard Canaud, Peter Wabel and Ciro Tetta; Dialysis Prescription: A Modifiable Risk Factor for Chronic Kidney Disease Patients: Blood Purification 2010; 29:366–374.

<sup>2</sup> Steven M. Brunelli et al: Shorter dialysis times are associated with higher mortality among incident hemodialysis patients: Kidney International 2010; 77; 630–636.

<sup>3</sup> The National Kidney Foundation Disease Outcomes Quality Initiative (NKF KDOQI) Clinical Practice Guidelines for Hemodialysis Adequacy was most recently updated in 2006.

#### Processes:

- Select individual targets for optimal dialysis, tracking and intervening as appropriate to achieve and maintain optimal dialysis.
  - Aim for a minimum of four hours, three times weekly, for standard in-center dialysis.
  - Use appropriate dosing for other dialysis modalities based on clinical standards and the emerging evidence base.
  - Serially assess the volume status of each patient to determine euvolemia.
- Provide individualized diet and fluid recommendations to maximize nutrition, limiting sodium to 2 mg/day and restricting fluids and potassium as needed for the chosen modality.
- Monitor left ventricular (LV) function through ECHO and manage volume and medications to control LVH, according to current guidelines.
- Set goals for physician- and facility-level performance for the proportion of patients achieving “optimal dialysis” using a *Plan-Do-Check-Act* (PDCA) approach to achieve the goal.
- Track the proportion of patients who achieve the “optimal dialysis targets”.

#### Outcomes:

- Maintain appropriate fluid levels while minimizing hypotensive episodes.
- Control blood pressure by minimizing volume overload and reducing the use of anti-hypertensives.

Additionally, although interventions to improve patients’ sense of well-being have not yet been established to reduce first-year incident mortality, patient experience and physical and mental state are predictive of mortality outcomes. The PEAK Technical/Curriculum Panel agreed that improving how patients feel could translate to the quality of adherence to their treatment plan and consequently affect mortality outcomes. PEAK thus recommends that physicians and dialysis facilities monitor and attempt to adhere to the following patient-experience parameters:

- Hemodialysis patients have post-dialysis recovery time of 30 minutes or less.
- The case-mix adjusted population has an average or above-average physical and mental component summary score on the KDQOL-36.
- Patients’ ability to perform ADLs is appropriate for their age and physical condition.
- Patients maintain their preferred lifestyle.
- Patients can continue education and vocational training, maintain employment, and/or rejoin the workforce, if desired.
- Dialysis patients have minimal intrusion into their preferred lifestyle.

Finally, to ensure adherence for “optimal dialysis” and, ultimately, improved outcomes, the PEAK Technical/Curriculum Panel recommends that physicians/clinics develop strategies to improve their patients’ ability to follow the treatment plan regarding the dialysis schedule and prescription.

#### **Tools of Engagement and Resources**

For each of the Best Practices identified by the PEAK Campaign, the Panels also present Tools of Engagement to achieve the practice. Specifically, PEAK identifies audio, web-based, and printed tools and resources for patients, healthcare professionals, and providers to implement these Best Practices and improve outcomes.

Examples of resources for achieving optimal dialysis include:

- **Clinical Practice Guidelines for Hemodialysis Adequacy from NKF/KDOQI**  
([http://www.kidney.org/professionals/KDOQI/guideline\\_upHD\\_PD\\_VA/index.htm](http://www.kidney.org/professionals/KDOQI/guideline_upHD_PD_VA/index.htm))
- **KDQOL-COMPLETE™** – A secure site sponsored by the Medical Education Institute scores the KDQOL-36 in multiple languages, case-mix adjusting for age, gender, and diabetes and provides patient and chart report summaries for a small, annual licensing fee based on clinic size. (<http://www.kdqol-complete.org/pdfs/KDQOL-Complete-Brochure.pdf>)
- **KDQOL-36 Scoring Spreadsheet** – A free Excel spreadsheet offered by UCLA/RAND (NOTE: This does not case-mix adjust for diabetes and provides no patient report.) (Register at <http://gim.med.ucla.edu/kdqol/>) (Download the tool at <http://gim.med.ucla.edu/kdqol/downloads/download.html>)
- **Barthel Index Activities of Daily Living (ADL) Scale**  
([http://www.strokecenter.org/trials/scales/barthel\\_reprint.pdf](http://www.strokecenter.org/trials/scales/barthel_reprint.pdf))
- **Instrumental Activities of Daily Living (ADL) Scale from The Gerontological Society of America** (<http://www.medicine.uiowa.edu/igec/tools/function/lawtonBrody.pdf>)
- **Hemodialysis Adequacy Tools for Standard In-Center Hemodialysis**
  - Fishbone Diagram Adequacy of Dialysis  
([http://www.kidneycarequality.com/PDF/01\\_Fishbone\\_Diagram\\_-\\_Adequacy\\_of\\_Dialysis.pdf](http://www.kidneycarequality.com/PDF/01_Fishbone_Diagram_-_Adequacy_of_Dialysis.pdf))
  - Root Cause Documentation Tool Adequacy of Dialysis  
([http://www.kidneycarequality.com/PDF/02\\_Root\\_Cause\\_Documentation\\_Tool\\_-\\_Adequacy\\_of\\_Dialysis\\_-\\_PEAK.pdf](http://www.kidneycarequality.com/PDF/02_Root_Cause_Documentation_Tool_-_Adequacy_of_Dialysis_-_PEAK.pdf))
  - Hemodialysis Adequacy Flow Chart Tool  
([http://www.kidneycarequality.com/PDF/03\\_HD\\_Adequacy\\_Flow\\_Chart\\_Tool\\_-\\_Network\\_7.pdf](http://www.kidneycarequality.com/PDF/03_HD_Adequacy_Flow_Chart_Tool_-_Network_7.pdf))
  - Protocol SAMPLE for Adequacy of Hemodialysis  
([http://www.kidneycarequality.com/PDF/04\\_Protocol\\_SAMPLE\\_for\\_Adequacy\\_of\\_Hemodialysis\\_-\\_PEAK.pdf](http://www.kidneycarequality.com/PDF/04_Protocol_SAMPLE_for_Adequacy_of_Hemodialysis_-_PEAK.pdf))
  - Unit Wide Action Plan: SAMPLE Adequacy of Hemodialysis Tool  
([http://www.kidneycarequality.com/PDF/05\\_Unit\\_Wide\\_Action\\_Plan\\_SAMPLE\\_-\\_Adequacy\\_of\\_HD\\_-\\_PEAK.pdf](http://www.kidneycarequality.com/PDF/05_Unit_Wide_Action_Plan_SAMPLE_-_Adequacy_of_HD_-_PEAK.pdf))
  - Patient POC Action Plan: SAMPLE Adequacy of Hemodialysis Tool  
([http://www.kidneycarequality.com/PDF/06\\_Patient\\_POC\\_-\\_Action\\_plan\\_SAMPLE\\_Adequacy\\_of\\_HD\\_-\\_PEAK.pdf](http://www.kidneycarequality.com/PDF/06_Patient_POC_-_Action_plan_SAMPLE_Adequacy_of_HD_-_PEAK.pdf))
  - Adequacy of Hemodialysis PDCA Module  
([http://www.kidneycarequality.com/PDF/07\\_Adequacy\\_of\\_Hemodialysis\\_Module\\_or\\_Toolkit\\_PEAK.pdf](http://www.kidneycarequality.com/PDF/07_Adequacy_of_Hemodialysis_Module_or_Toolkit_PEAK.pdf))
  - Hemodialysis Adequacy Patient Education Tool  
([http://www.kidneycarequality.com/PDF/08\\_HDAdequacyPatientEducationTool-Network7.pdf](http://www.kidneycarequality.com/PDF/08_HDAdequacyPatientEducationTool-Network7.pdf))

- **Kt/V Calculator** from DaVita, Inc. ([www.davita.com/tools/ktvcalculator](http://www.davita.com/tools/ktvcalculator))
- **Good Dialysis Index** ([www.nocturnaldialysis.org/good\\_dialysis\\_index.htm](http://www.nocturnaldialysis.org/good_dialysis_index.htm))

### **Conclusion: Incorporating PEAK Best Practices in the Final Stretch**

While the PEAK Campaign’s data analyses find that the overall trend for the first-year mortality rate has been downward since the Campaign’s launch, the kidney care community must continue to focus on improvement, including the spotlighted best practice – optimizing dialysis – and all the PEAK Best Practices. Through PEAKPOINTS and other communications channels, we will continue to share Best Practices and Tools and Resources with our partners and the broader kidney care community to achieve PEAK’s goal of improving survivability among first-year dialysis patients.

###