



Improving Transitions in CKD: Failure Mode



In this issue of ACKD, Maria DeVita with her collaborators summarize the important points to consider as patients transition from Stage 4 to Stage 5 CKD. The earlier transition from Stage 3A to Stage 3B portends enhanced cardiovascular risk, and these heart and vascular risks and overall mortality increase exponentially through Stages 4 and 5.^{1,2} The importance of safe navigation through the course of Stage 4 cannot be overemphasized. This is particularly relevant in terms of patient education and modality of renal replacement therapy. Patients who receive in-depth education and have greater time to contemplate their future with kidney failure choose peritoneal dialysis or home hemodialysis. Peritoneal dialysis has demonstrated improved outcomes recently and should not be denied to any patient who is physically and mentally capable of carrying out this procedure. One-year survival for incident peritoneal dialysis was 86.8% in 2008 and improved thereafter.³ The cumulative hazard ratio for death at 1 year was 2.10 for peritoneal dialysis and 2.38 for hemodialysis. Peritoneal dialysis cumulative risk was superior to hemodialysis after just 2 years of follow-up. The difference was not attributable to a reduced incidence of catheter-related bloodstream infections.⁴ In addition, preparation for kidney transplantation is more easily accomplished with controlled passage through Stage 4 into Stage 5. Despite this knowledge, too many patients come unprepared for their news of “kidney failure.”

The consequences of insufficient preparation for renal replacement therapy are well known. The frequency of arteriovenous fistula constructions will be low and, consequently, the frequency of catheters will be greater. This results in a greater number of catheter line-associated bloodstream infections and costly, concomitant hospitalizations, with ensuing morbidity and mortality. Other downstream adverse effects include a lower number of patients initiating peritoneal dialysis. Rejection of the “fistula first” and “catheter last” strategies by the most recent incarnation of the KDOQI Vascular Access Work Group has led to a simpler proposal: each patient should receive the vascular access best suited for him and/or her.

The failure of patients to recognize their kidney issues involves a complex interplay of not insoluble factors, but none easily resolved. A 4-step approach may be

useful. First, no foolproof mechanism exists to identify the nearly one-sixth of Stage 4 CKD patients who will survive and progress to ESRD. Rates of ESRD and death before ESRD are 7.7 and 8.0 per 100 patient-years, respectively.⁵ Sud and colleagues⁵ found 12 variables associated with progression to ESRD and 7 with death without ESRD. The process of predicting progression to ESRD may be facilitated by repeated measurements of estimated glomerular filtration rates (eGFRs), which can vacillate significantly between Stages 4 and 5 as small perturbations of extracellular fluid volume, and medication may significantly alter the eGFR. Notably, at levels of eGFR below 30 mL/min/1.73 m², the bias of estimated glomerular filtration rate is less well defined. Nonetheless, slavish adherence to eGFR calculations currently dictates clinical care at low eGFR levels. Furthermore, there is no definitive benefit to initiating preemptive kidney transplantation or renal replacement therapy early *per se* at 15 mL/min/1.73 m². Waiting until the eGFR is approximately 10 mL/min/1.73 m² is not only fine but “ideal.”⁶ Second, the optimal circumstance to transition toward definitive ESRD care includes only those individuals who have the capacity to thrive and increase their quality of life, particularly within the age group >75 years.⁷ Third, repeated venipuncture to determine the eGFR that requires a serum creatinine is precisely what is unwanted because vein injury occurs with each blood draw, thereby compromising the success of future vascular access surgery. Fourth, the message is that patients must be focused on their symptoms at this point, not on their eGFRs.

Despite the National Kidney Foundation’s reconciling of all kidney-related terms under the rubric of CKD and its evolution to stages and categories per Kidney Disease: Improving Global Outcomes, there must be more education of frontline providers. Internists, family practitioners, and advanced practitioners must appreciate this message as well because the initiation of kidney replacement

treatment should be either event driven or symptom driven, not numerically driven. Much can be achieved during CKD transitions that could potentially alter one's trajectory toward ESRD, ESRD modality, and survival during the first year of ESRD. Knowing the stages of CKD is a prerequisite for adequate CKD care and not its alpha or omega. Few high-grade programs with this targeted aim exist. The study by Fox and colleagues⁸ provides evidence that enhancement of CKD education among frontline physicians is necessary. Their primary care physicians' survey revealed several important qualitative findings that include: (1) lack of awareness of evidence-based guidelines; (2) desire for more CKD practice guidelines; (3) clinging to traditional and less-accurate diagnostic procedures; (4) variability of the treatment of complications; and (5) uncertainty of the timing of referral to a kidney specialist. To reduce the number of low-quality transitions from Stage 4 to Stage 5 CKD (eg, ones in which patients and physicians are not completely prepared for) will require review of those experiences that resulted in suboptimal patient outcomes. In other words, we must question ourselves: "Why do we fail?" As medical experts, we fail because we embrace success overly much, and do not know the science of failure. Our unstinting desire to succeed for our patients and thereby ourselves renders blindness to failure, which must be equally embraced.

A recent perusal of the Harvard Business Review⁹ suggests that the benefits of failure result from a 3-step process: (1) learn from every failure; (2) share the lessons; and (3) review the pattern of failure. The latter 2 steps are difficult because medical practitioners loathe to discuss failure, much less rehash it in painstaking detail within larger, interdisciplinary groups. But, this is what it takes to improve patient care.

Failure mode and effects analysis (FMEA) is a systematic and structured technique used to analyze failures of many types: functional, design, and process. For example, component risks that contribute to a failure are first identified and then assigned a risk priority number, that is, the order in which they will be repaired. Greater precision in the assignment of risk prioritization involves high-level matrix analysis of each potential contributory factor. Risks are prioritized by matrix FMEA and quantified by the factors that contribute to the risk. This enhances prioritization of failures requiring corrective actions more accurately.¹⁰

FMEA has been used as a successful tool in internal medicine to analyze clinical and operational processes that resulted in above-target international normalized ratios in patients treated with highly potentiating antimicrobial therapy.¹¹ Four principal failure modes were determined by an interdisciplinary team, underscoring the importance of involving multiple disciplines to determine risks, causation, and resolutions.

This highly detailed approach is transportable to multiple problems in nephrology. One example would be central line-associated bloodstream infections (CLABSI). Through a variety of processes, including FMEA, our own group reduced the frequency of these dialysis

catheter-related infections, while concurrently developing a successful antimicrobial lock.¹² The trend in CLABSI reduction is real.¹³ CLABSIs decreased to 17,758 in 2014, a 50% decrease from the number of infections in 2008 from this "access of evil." Undoubtedly, effective FMEAs were conducted in many institutions across the United States to achieve this impressive result. Another nephrological example would be safety management of continuous renal replacement therapies. A Brazilian group conducted a retrospective, observational study before performing a process FMEA.¹⁴ Then, a cohort study was conducted between 54 patients in a control pre-FMEA group and 72 patients in a post-FMEA group. Risk frequencies declined in the post-FMEA group regarding 24-hour hemofilter survival time, circuit coagulation, and hypophosphatemia.

A simple way to determine how an individual, a team, or an organization fails is to illustrate it with an Ishikawa diagram, nicknamed a "fishbone" or Fishikawa diagram. The processes impinging a goal and the nuances of failure can be evinced efficiently by such figures. They form a living template for future process alignment and optimization as well, that is, it is a dynamic document that can be edited.¹⁵ To stop failing, a checklist may be helpful. The checklist for either the primary care physician or nephrologist can be all encompassing as shown in Figure 1. If all these performance metrics were "checked off" by any provider without expert knowledge of nephrology, patients may experience improved renal and cardiovascular outcomes, even if Pareto's "80/20" principle applied, that is, 20% of a CKD clinic's patients represented 80% of resources and time consumed in caring for them.¹⁶

With integrated care models becoming *de rigueur*, physicians may now be paid for performance or not to perform. High-value care and value-based purchasing have been discussed for years, but now they are reality. They have arrived in the ESRD arena and will be even more evident with ESRD Seamless Care Organizations. Fresenius Medical Care North America and Davita, Inc are participating in the ESRD Seamless Care Organization phenomenon. Dialysis Clinic, Inc—the largest nonprofit dialysis organization—is participating too. Greenfield Health Systems, a wholly owned subsidiary corporation of Henry Ford Health System, an integrated health care corporation, has been practicing the precepts and concepts of high-value care for years with particular emphasis of "centrality," the more formal term for patient- and community-based centeredness.

Of course, the primacy of communication cannot be overstated. No matter how well any of the above is done, if the knowledge is not processed for efficient, simple, and clear communication, all will be for naught.

In summary, we can and must do better in this changing medical environment. The transition points for patients must be smoothed out and "seamless"—the new catchword of the Centers for Medicare & Medicaid Services.¹⁷ Seamlessness will involve multiple, nontraditional visits to meet patients' needs and will be accounted for in newly proposed payment schemes,

Download English Version:

<https://daneshyari.com/en/article/3846209>

Download Persian Version:

<https://daneshyari.com/article/3846209>

[Daneshyari.com](https://daneshyari.com)