

# The first 120 days of crucial care: Strategies for managing incident dialysis patients

Naveena Reddy, MS, RD • Farzeen Sukheswalla, MS, RD • George R. Aronoff, MD, MS, FACP.

*Editor's Note: After nearly a year and a half of rewrites and recalculations, the Centers for Medicare & Medicaid Services appears ready to launch the Comprehensive ESRD Care Initiative, a five-year demonstration using accountable care organization principles to determine if placing dialysis providers and nephrologists in charge of all aspects of a patient's medical needs will improve quality and save money. At the core of this ACO model will be ESRD "Seamless Care Organizations" that will coordinate the care, manage the array of specialists and, if all goes well, divide up the health care savings under the new system.*

*This new series in NN&I—The Renal ACO: New Approaches to Kidney Care—will highlight ideas from three providers on how they are improving the quality of care in their organizations. Two of the three, Dialysis Clinic Inc. and the Centers for Dialysis Care, are participating in the demonstration. The lessons learned by these providers are all applicable to the goal of the ESCOs. Look for these articles and other news posted online about progress during the renal ACO demonstration at [www.nephrologynews.com/aco](http://www.nephrologynews.com/aco).*

## Introduction: A case study

Carlos is a 48-year-old man who started in-center hemodialysis on June 4 2014 to treat his kidney disease. At the initiation of dialysis, he was facing a multitude of challenges, including confusion and memory loss due to a recurrent cerebrovascular accident, physical and cognitive rehabilitation needs, uncontrolled diabetes with suboptimal management, fluid overload, and severe malnutrition. Despite his excellent support system at home, his family felt they had little understanding and knowledge of kidney disease and his deteriorating health status. Moreover, his insurance limited access to services available in the community for his overall recovery.

## Identifying, treating high-risk patients early

When patients such as Carlos start dialysis, they need intensified treatment and care coordination. This article summarizes a program at Renal Ventures Management that coordinates care, educates patients on their health condition, and improves their access to resources during that first four months of therapy, so they are better equipped to make wiser health care decisions, with family members and other caregivers involved in the process.

**Ms. Reddy** is Director of Quality and Patient Programs at Renal Ventures Management LLC, based in Lakewood, Colo. **Ms. Sukheswalla** is a Care Partner in RVM's Dallas region. **Dr. Aronoff** is RVM's Chief Medical Officer, and chair of the Medical Council and Quality Committee, with responsibility to oversee all company's quality initiatives.

## RVCARE

Renal Ventures Management LLC implemented the Coaching for Actions, Results, and Empowerment (RVCARE) program in 2010 to improve dialysis-related outcomes for incident patients. The program's ultimate goal was to reduce mortality and morbidity and to improve clinical outcomes within the first 120 days of starting dialysis treatments and beyond. RVCARE is based on the following crucial elements addressed through individualized counseling and coaching of the patients, their families, and caregiver.

- Educate on treatment options and coordinate a smooth transition to the patients' choice of renal replacement therapy within the first 120 days
- Optimize access management and reduce central venous catheter (CVC) use within 90 days of starting dialysis
- Aggressively address cardiovascular and volume status
- Improve nutritional status
- Education and improve access to care for co-morbid conditions management

### *The RVCARE process*

The RVCARE program is offered to all new dialysis patients within the first week of admission to the dialysis clinic by a Care Partner (CP). The activities of the CP are approved by the dialysis unit Medical Director and the patient's treating nephrologist. The CP establishes a relationship with the new patients and their families and acts as a patient coach for key health topics. Essentially the

CP rolls out the “red carpet” for new patients and facilitates a warm welcome. The CP assists patients in care coordination within dialysis center and community resources, addressing the barriers that may prohibit patients from receiving necessary health care. For example, a CP collaborates with the financial coordinators and social workers to secure local and state resources, such as timely access to dental, vision, and other medical spe-

cialists’ appointments. Patient advocacy is at the core to the CP’s roles and responsibilities.

The core components discussed below are addressed and goals are set during the first visit and then monitored each time at subsequent follow up visits for 120 days (four months). The CP provides immediate and constant feedback and support to the patients and their family members at every one-on-one visit.

*Options education*

Within the first 2-3 weeks of admitting the patient, the CP introduces treatment options and explores collaboratively the best modality based on the patient’s lifestyle and preference. If the patient selects PD as their modality of choice, the CP will refer the patient to a PD program. The CP assists with PD catheter placement and acts as a liaison between the patient and PD clinic to ensure a smooth transition to PD.

*Permanent access*

If the patient has a CVC in place, catheter care is addressed at admission into the RVCARE program, as well as, the options for permanent access. An appointment for permanent access placement is coordinated as appropriate and the patient’s progression towards permanent access achievement is constantly monitored. The access coordinator and the CP work closely to achieve the desired permanent access for the patient and the removal of the CVC; if certain barriers such as transportation or lack of insurance exist, the CP works with the social workers and financial coordinators to assist the patient. Access care and infection prevention was emphasized at one-on-one visits and patient’s skill related to self care was assessed regularly.

*Cardiac health*

Follow up visits are completed every 1-2 weeks throughout the 120 days from admission into the RVCARE program. Patients are always counseled on cardiac health, including interdialytic weight gain, fluid management, sodium restriction and exercise. If excessive interdialytic weight gain (>5%) is consistently noted, the patient is coached on following stricter lifestyle modifications. If euvolemia is not achieved, extra dialysis treatments are recommended to the

Table 1. RVCARE core components and goals

Core Components	Goals
Treatment options education	100% patients educated on options
Access management	Decrease catheter use to <10%
Cardiac & Infection related hospitalizations	<50% of total hospitalizations
Mortality	Maintain at 3 or 4%

Figure 2. Patients who choose PD in the RVCARE Program

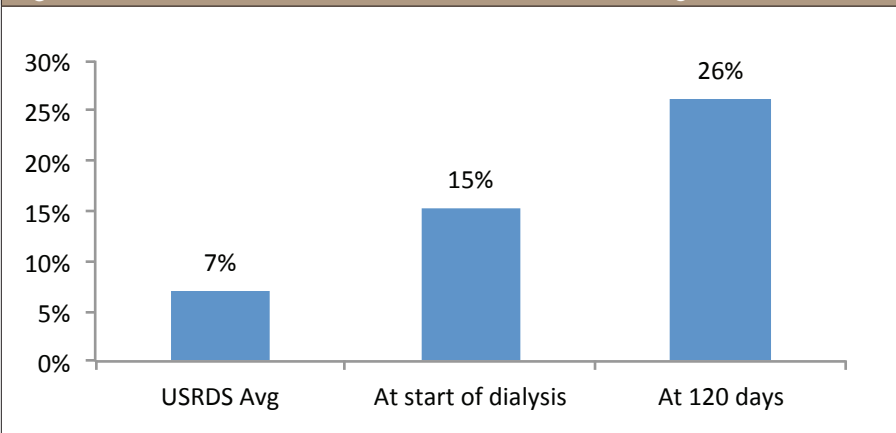
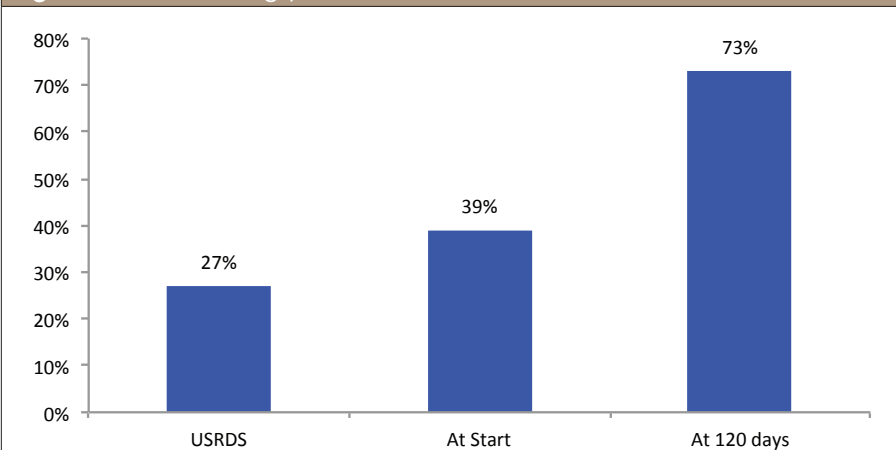


Figure 3. Functioning permanent access



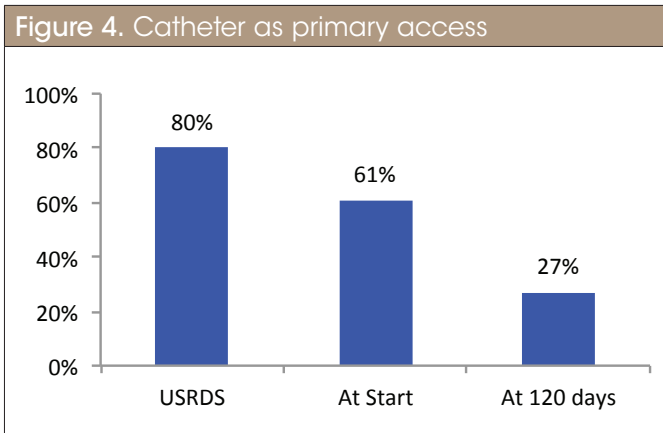
patient and the health care team.

*Clinical education*

The CP also reviews monthly lab results ensuring the patient understands how lab values affect symptoms and quality of life. Treatment compliance and its impact on poor outcomes are also discussed with the patient. Nutritional adequacy and the role of adequate protein ingestion are impressed upon the patient, as well. The CP monitors the patient's albumin and coordinates with the facility dietician to improve protein and calorie intake. If the patient's serum albumin level is below 3.5 gm/dl, an oral protein supplement is provided at no charge to the patient. Transplant education, application, and referral are also coordinated in collaboration

with the clinic transplant coordinator. The CP reviews self-management of diabetes and other chronic conditions as needed. The importance of regular foot checks, eye exams, and glucose monitoring are discussed with the patient. The CP refers patients to the endocrinologist or other specialists as indicated.

When Carlos was admitted into RVCARE, his family members were educated and coached by the CP. Carlos was started on nutrition intervention that included supplementation and increased intake of protein and calories. The CP communicated regularly with the staff at his long term care center regarding his diet, as well as, aggressive management of his diabetes. The family decided to transition to PD therapy; the CP coordinated the PD nurse visit, PD catheter placement and smooth transition to PD when Carlos was



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discharged from the long term care center. She also coordinated the care required to improve diabetes self management by collaborating with the clinic social worker and the financial coordinator to improve the access to resources needed. At 120 days, Carlos met 100% of his goals and overcame many of the challenges he faced at the start of the dialysis.

*Patient exclusions*

Since the core activity of the RVCARE program is to coach patients to self managed care and requires

active involvement of the patient and family members, certain conditions listed below warrant excluding patients from the program:

- Patients in LTC custodial services
- Those whom the physician has recommended for palliative care
- Patients with sufficient cognitive deficit that precludes them from learning

The RVCARE program strives to be inclusive. Every attempt was made to include patients that might fit the exclusion criteria, if the patient has a devoted family member or other care-

giver who is committed to communicating with CP and the will to assist the patient to achieve their treatment goals.

**Results**

Since the inception of the RVCARE program, 79% of the 2,440 patients that applied to the program (n=1,928) were enrolled and 1,513 patients have successfully completed the program. The results presented in Figure 2 are from 2014 and include 511 patients who completed the program.

The 2014 results show that the rate

**What makes mortality a higher risk in the first 120 days?**

A recent report by the United States Renal Data System<sup>1</sup> showed that the incidence of end-stage renal disease—in essence, the number of new starts on dialysis – had been increasing each year until 2010. The strongest increase in new cases was seen in those aged between 45 to 74 years.

The majority of these patients started on in-center hemodialysis; in 2012, for example, only 7% started on peritoneal dialysis (PD). But these PD patients had the lowest mortality rate. Although the mortality rate for hemodialysis patients decreased slightly, it decreased dramatically (from 32% to 16%) in patients who received PD therapy during the years 1985 to 2012.<sup>1</sup> Despite the possible mortality benefit from PD therapy, the use of PD during the first 120 days as renal replacement therapy has grown slowly.

**Mortality:** The mortality rate in dialysis patients remains high. USRDS<sup>1</sup> reported that the initial two-month mortality rate in incident dialysis patients was 42%. The mortality risk gradually decreases as the patient remains on dialysis; however it is fairly stable at nearly 20%. This rate is more than four times higher than the rate seen for Medicare patients with other chronic health conditions, and the expected remaining lifetime for dialysis patients is three to four times shorter than the comparable (same age) general population. The factors associated with this extremely high mortality rate among new dialysis

patients include malnutrition, frequently starting dialysis with catheter vascular access (80%) as opposed to arteriovenous fistula (AVF), poor management of comorbid conditions, and lack of adequate education on self care.

**Malnutrition:** Dialysis patients are at high risk for malnutrition, which is strongly associated with morbidity and mortality<sup>2</sup>. The leading causes of malnutrition in dialysis patients include protein losses through dialysis treatment, accompanied by inadequate calorie or protein intake, metabolic acidosis, and infection/inflammation. Patients are often faced with several hurdles

to increase their intake of protein and calories such as dysguesia, poor appetite, gastrointestinal symptoms, inability to prepare meals, lack of support to provide meals, and financial issues related to food procurement.

**Vascular access:** When a venous catheter is used as the primary access for dialysis, it increases the mortality and hospitaliza-

tion risk by more than two-fold in the first 90 days of dialysis treatment, with significantly higher risk in the first 2 weeks.<sup>3</sup> Despite these ill effects, venous catheters are still the most frequently used access when patients start dialysis (see Figure 1). Even more concerning is that catheter use increases by the third month on dialysis (USRDS, 2014). This effect could be due to inadequate education about new AVF care, or poor surveillance of AVF maturity.

Figure 1. Access rate at start of dialysis (USRDS, 2014)

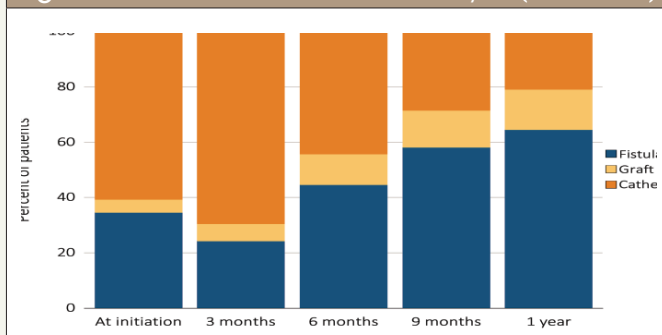
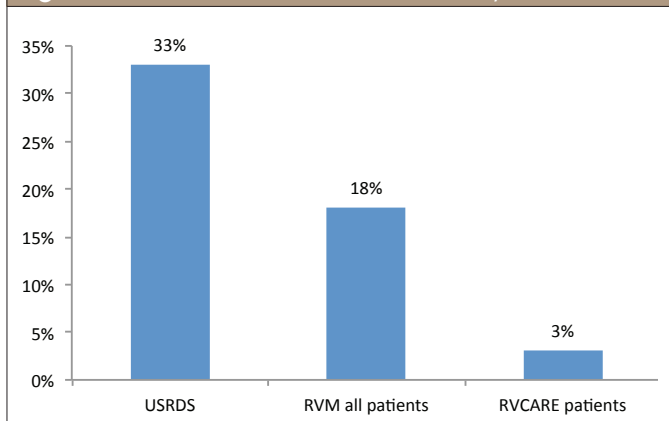




Figure 5. RVCARE annualized mortality rate



of transitioning to PD therapy increased almost four-fold compared to that reported by the USRDS at 120 days (see sidebar on national data regarding PD therapy survival). This increase was due to the intense education, coaching, and coordination received in the RVCARE program. At the end of education, 31% of the patients preferred PD (26% successfully transitioned). The 5% of the patients who preferred PD but could not transition did so after the 120 days or had a medical or living situation that was not conducive for PD.

Figure 3 shows that the percentage of RVCARE patients starting dialysis with a functioning permanent access is above what was reported by the U.S Renal Data System, and was almost doubled at the end of the 120 days. There were several more patients using AVF with inactive catheters that were not included in this data.

In the 511 patients completing the RVCARE program, there were 13 CVC infections, 4 AVF infections, and 9 PD catheter infections. Infections constituted 13% of the total hospitalizations, while cardiac-related hospitalizations were 15%.

A primary goal of this program has been to decrease all-cause mortality. As shown in Figure 5, annual mortality has been dramatically decreased for RVCARE patients since 2010.

The CVC as primary access was also decreased by half at the end of the RVCARE program (see Figure 4), through aggressive coaching and coordination. Some of those reported at 120 days with a catheter had an inactive catheter.

**Conclusion**

Incident patients are at a higher risk for morbidity and mortality and the causes are multifactorial. However, with close attention and intensified care, the outcomes can be improved substantially. Home dialysis, a modality with a

decreased mortality rate and increased patient-reported quality of life, is highly preferred among those who are educated on treatment options. Patients are also more likely to obtain a permanent vascular access with education and good coordination of care by the health care team, eliminating the need for a CVC. *NN&I*

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