

# NEPHROLOGY

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## Why a fluid manager makes sense in your dialysis clinic

Anne Diroll, RN, CNN June 13, 2013

Fluid overload (FO) is common in hemodialysis patients and leads to complications such as hypertension, left ventricular disease, myocardial stunning, with its associated fibrosis, arrhythmias, heart failure, and sudden cardiac death. Small increases in extracellular volume (ECV) drive left ventricular disease.<sup>1</sup> In these patients, greater fluid retention between two subsequent dialysis sessions is associated with even higher all-cause risk of mortality and morbidity.<sup>2</sup>

Non-dialysis strategies to prevent FO include dietary restriction of sodium and diabetic control, because both hyponatremia and hyperglycemia increase thirst. Additionally a normal serum albumin is required to maintain oncotic pressure, assisting the intradialytic recruitment of fluid from the extracellular to the intravascular compartment. Dietary restriction of fluid is hugely complicated by the iatrogenic burden of the intradialytic process: IV saline in prime, rinseback, medications, normal and hypertonic saline bolus, dialysate sodium, and sodium modeling.<sup>3</sup>

### Part of our job

Under CMS §494.80 (a)(1) in the Medicare Conditions for Coverage, dialysis providers are required to “manage the patients volume status.” The V504 tag mandates blood pressure and fluid management as part of the Patient Assessment; whereas V543 includes managing blood pressure and volume status in the Plan of Care. According to these conditions, euvoemia is correlated to a BP of 130/80. <sup>4</sup>

Potentially 90% of patients who take antihypertensives have fluid volume excess.<sup>5</sup> This management of BP and volume status will require daily focus by a professional.

### How a fluid manager could affect outcomes

In the same way a vascular access coordinator follows a protocol for referral based on clinical and physician guidelines, or an anemia manager tracks

symptoms of anemia and follows a prescriptive protocol to keep the patient's Hb/Hct in a prescribed range, a fluid manager would maintain normalized fluid balance or ECV control. The Kt/V, urea reduction ratio, and blood volume reduction (BVR) need to be given equal weight as dialysis adequacy outcome metrics.<sup>6</sup> Even with monitoring and a protocol, it is doubtful that hospitalizations can be reduced and outcomes can be changed without a fluid manager.<sup>7</sup>

## **Teamwork**

The fluid manager would be part of the collaborative interdisciplinary team and responsible for oversight of the following:

- Extra treatments for fluid removal
- Updating BP med lists
- UFR (max rate <12 mL/kg/hour)
- Individualized dialysate sodium
- O<sub>2</sub> therapy and hypoxia avoidance
- Root cause analysis of intradialytic morbidities
- Avoidance of injudicious saline administration
- Evaluating ECV targets
- Monthly validation of normalized ECV
- CDC reportable events of drop in BP and hospitalization
- Developing, implementing and evaluating Action Plans to decrease fluid-related hospitalizations/morbidity/mortality

The fluid manager would particularly work closely with the renal dietitian who concentrates on the nutritional status of the patient, i.e. calorie/protein intake, and who monitors interdialytic weight gains of the patient as it relates to sodium and fluid intake. It must be a team effort to bring fluid overload under control.

## **Cost-benefit analysis**

Fluid overload can be costly to both the patient's health and to Medicare. The 2012 U.S. Renal Data System annual data report reveals that the average dialysis patient spends 12 days in the hospital each year.<sup>8</sup> This equates to approximately 5-6 missed treatments in the dialysis clinic, at a loss to the facility of approximate \$2,000 per patient per year (\$200,000 for a 100 patient facility).

If better fluid management resulted in just a 20% reduction in hospitalizations (returning \$40,000 in missed revenue to the clinic in that scenario), that goes a long way to covering the cost of a dedicated fluid manager. The recently reported results from a quality initiative undertaken by Fresenius Medical Care, DaVita, and Renal Ventures<sup>6</sup> showed a nearly 50% decrease in fluid-related and all-cause hospitalizations when fluid was monitored and staff and patient education was provided. In an evolving payment system where accountability for care gets rewarded, a fluid manager can play a pivotal role.

## **Conclusion**

Adding the position of Fluid Manager to your dialysis staff would not only improve health and outcomes for dialysis patients, it would demonstrate a commitment to continuous Quality Assurance Performance Improvement (QAPI). It is a position that ought to receive serious consideration. Similar to the unpopular Access Manager pushing the idea of a fistula to a catheter-happy patient, the nurses, nephrologists and patients may tire of the Fluid Manager harping on sodium, ECV, fluid status, blood pressure medications and adherence to fluid protocols. But it will add months, years and quality to the patient's life. That's what is important.

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