

Valuation of Dialysis Centers: Introduction

Approximately 10% of the global population is affected by *chronic kidney disease* (CKD), and over 2 million individuals suffer from *end-stage renal disease* (ESRD), which must be treated through either dialysis or kidney transplant.¹ Additionally, healthcare spending on kidney disease in general, and specifically on ESRD, is rising. Overall Medicare spending on the treatment of ESRD in the U.S. was over \$34 billion in 2015, while the United Kingdom's *National Health Service* (NHS) spent approximately 3% of its budget on kidney failure services in 2014.² The burden of kidney diseases is rising in developing countries as well, with nearly 440,000 patients in China undergoing dialysis.³ The rise in the use of ESRD treatment is driven by increases in both the prevalence of diabetes and the geriatric population.⁴ According to the *International Diabetes Federation*, globally, the number of adults with diabetes (diagnosed or undiagnosed) is projected to increase from 425 million in 2017 to 629 million by 2045,⁵ while individuals aged 60 years and older are expected to account for at least 20% of the global population by 2050, up from 13% in 2017.⁶

Dialysis centers provide in-center outpatient hemodialysis, peritoneal dialysis, pharmacy, and laboratory services, as well as home hemodialysis and home peritoneal dialysis training and services,⁷ to patients with ESRD. ESRD is the final stage of CKD, marked by the complete or nearly complete irreversible loss of renal function, which results in the body retaining fluid and harmful waste build up.⁸ In 2015, Medicare expenditures for ESRD totaled approximately \$33.8 billion, of which approximately \$11.1 billion were spent on outpatient dialysis services.⁹ CKD may be more likely to progress to ESRD in the presence of various cardiovascular issues, as a 2014 study published in the *American Journal of Nephrology* noted that CKD patients with self-reported heart failure are “*more likely to...reach ESRD over time.*”¹⁰

Treatment of ESRD is predominantly marked by either: (1) the use of dialysis; or, (2) a kidney transplant.¹¹ For patients treating ESRD with dialysis, two broad categories of the treatment are available to address their condition: (1) *hemodialysis*; or, (2) *peritoneal dialysis*.¹² *Hemodialysis* is the process of filtering blood through an artificial membrane, known as a dialyzer, to remove wastes and excess fluids,¹³ and is most often provided in a dialysis center three times a week for three to four hours

per treatment.¹⁴ To perform hemodialysis, a physician creates a vascular access pathway using an arteriovenous (AV) fistula, AV graft, or central venous catheter, to transport blood from the body to the dialyzer and back to the body.¹⁵ Hemodialysis performed in an outpatient setting is the most common form of dialysis treatment undergone by ESRD patients by 88%,¹⁶ with approximately 69% of all industry revenue for dialysis centers derived from outpatient hemodialysis treatments.¹⁷

Peritoneal dialysis uses the lining of the patient's abdomen as a filter to clear wastes and extra fluids.¹⁸ Through a surgically implanted catheter, a cleaning solution, called *dialysate*, is gravity-drained from a bag into the patient's abdomen.¹⁹ Fluids and wastes flow through the lining of the abdominal cavity and remain trapped, purifying the dialysis solution and the patient's blood.²⁰ There are two types of peritoneal dialysis – *continuous ambulatory peritoneal dialysis* (CAPD), which can be done at home or at work, and *automated peritoneal dialysis* (APD), which uses a machine called a cycler to empty and fill the abdomen while the patient sleeps.²¹ One of the advantages of peritoneal dialysis is that patients may perform this technique outside of the home; however, such technique is less prevalent, in part, due to its reduced effectiveness in removing wastes produced by the body.²²

The *Centers for Medicare & Medicaid Services* (CMS) requires dialysis centers to be certified by Medicare in order to receive Medicare reimbursement for dialysis services;²³ this requirement is critical for many dialysis centers, as Medicare served as the primary or secondary payor for approximately 68% of all ESRD patients in 2015.²⁴

Dialysis centers will face significant opportunities and challenges in the near future as a result of the current conditions in the reimbursement, regulatory, competitive, and technological environments in which these providers operate. Chief among these challenges is the projected rise in demand for healthcare services resulting from the increased life expectancy of dialysis patients, the aging of the “*baby boomer*” population, and the growing prevalence of ESRD, which indicates that higher utilization of ESRD-related services for the aging population is likely to occur.²⁵ Although this potential influx of patients may provide valuable revenues, current

conditions in the reimbursement environment, i.e., reductions in the market basket update for the base rate of payment from Medicare for dialysis services (creating a setting in which dialysis centers must simultaneously provide high-quality healthcare and control the costs associated with providing healthcare), will require dialysis centers to control their costs and provide high-quality care in order to convert these revenues into profit. Further, dialysis centers must continue to navigate

increasing regulatory scrutiny of healthcare fraud and abuse. To meet these challenges, dialysis centers may be able to leverage certain technological advancements in order to provide the high-quality, efficient healthcare that is demanded by the modern healthcare industry. The following articles in this series will provide more detail regarding the current conditions in the competitive, reimbursement, regulatory, and technological environments in which dialysis centers operate.

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- 10 “Association Between Chronic Kidney Disease Progression and Cardiovascular Disease: Results from the CRIC Study” By Mahboob Rahman, et al., American Journal of Nephrology, Vol. 40, No. 5 (November 2014) p. 405.
- 11 Medicare Payment Advisory Commission, March 2016, p. 151.
- 12 *Ibid.*
- 13 U.S. Department of Health and Human Services, p. 5-6.
- 14 Medicare Payment Advisory Commission, March 2016, p. 151; “IBISWorld Industry Report OD4038: Dialysis Centers in the U.S.” By James Crompton, IBISWorld, November 2014, p. 7.
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- 16 Medicare Payment Advisory Commission, March 2018, p. 167
- 17 Crompton, November 2014, p. 12.
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- 25 Crompton, November 2014, p. 14.



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