# The Economics of Late-Stage Chronic Kidney Disease



Robert Provenzano

Health care reimbursement is undergoing a fundamental change from volume-driven to value-driven care. The Patient Protection and Affordable Care Act is marshaling this change and empowering hospitals through Accountable Care Organizations to accept risk. ESRD care/nephrology was awarded the only disease-specific Accountable Care Organization, ESRD Seamless Care Organizations. Dialysis providers in partnership with nephrologists will be exploring how ESRD Seamless Care Organizations will drive improvement in care. CKD care and economics will no longer be isolated from ESRD but possibly more closely linked to global patient outcomes. Preparation for these changes will require unique co-operation and collaboration between nephrologists, dialysis providers, payers, and hospitals/health care systems. Early pilot trials, demonstration projects, and special need programs have suggested value care can be delivered. Whether these results are scalable needs to be determined.

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Key Words: Chronic kidney disease, CKD, ESRD, Patient Protection and Affordable Care Act, Kidney care

Economics: The science that deals with the production, distribution, and consumption of goods and services, or the material welfare of humankind.

### INTRODUCTION

When discussing the "economics" of any subject, the point of reference is critical, as viewing economics from the perspective of payers, providers, or consumers can differ significantly. This article will take a broad perspective, that of population health, and work through processes of care and its impact on the delivery of value to all stakeholders. The hope is that the reader will be left with the benefits of considering a wide-ranging approach to this complex medical-financial issue. Sensitivity to the reality that economics, specifically medical economics, are affected by many tangential influences; politics or political will, societal value placed on the issues, and available financial resources must also be considered.

Recent history is littered with health care payment experiments with differing levels of success and failures.<sup>1,2</sup> Much of what was learned by these trials must be carefully evaluated as value-based reimbursement models are now considered.

Finally, kidney disease (CKD and ESRD) is a worldwide problem with worldwide economic impacts.<sup>3</sup> Although one could argue this global economic condition is linked, for the purposes of clarity, and given the recent changes in health care economics in the United States, this article will only focus on an US perspective.

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# **ASSUMPTIONS**

There are certain key assumptions that must be considered in developing acceptable economic kidney care models. The first is that CKD progresses to ESRD. Although there are arguments as to what stages of CKD will progress, most agree that CKD 4 and 5 will progress even with appropriate management. The majority of these patients, however, will not survive to ESRD making predictive application of resources difficult.<sup>4</sup> Second, that "upstream" care of CKD 4 and 5 can deliver downstream economic value by forestalling ESRD or presenting more stable, appropriate, and healthy incident patients or increase the number of pre-emptive kidney transplants. Last, that ESRD consumes a disproportional share of US Health care dollars. The most recent USRDS data report ESRD population represents 1% of Medicare beneficiaries and consumes 5.6% of all Medicare dollars.<sup>5</sup>

#### **EPIDEMIOLOGY**

As mentioned earlier, CKD is a worldwide public health problem and is linked to ESRD; both are increasing.<sup>3</sup> Although precise reasons for this remain unclear, increases in diabetes and hypertension, changing disease burdens among racial groups, genetic factors, and unrecognized early-stage CKD all play a part.

CKD is more common than diabetes in the United States; an estimated 13.6% of adults have CKD compared with 12.3% with diabetes.<sup>5</sup> Additionally, the overall prevalence of CKD (stages 1-5) has increased from 12% to 14% from study periods 1988 to 1994 vs 1999 to 2004 but since has remained stable with the largest increase has occurred in patients with CKD Stage 3, 4.5% to 6%.<sup>6</sup>

These increasing number of patients with multiple comorbidities present a clinical and payment conundrum because financial resources are not limitless and societal expectation for improved outcomes remains high.

# **FINANCIAL MODELS**

The best example of a mature business/economic model of kidney care is that of ESRD. For more than 30 years, a focus on ESRD care has created precise financial models. Ease of

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identifying patients with ESRD, incident rates, defined payment for treatment, known hospitalization and mortality rates have all allowed this medical industry to prosper and grow. Much less focus and data exist for CKD patients that have been for all intents and purposes a fee for service (FFS) payment. Valid arguments have been made that without viable financial models for CKD patients, providers, out of financial necessity, will continue to apply disproportional resources to ESRD. The Patient Protection and Affordable Care Act (PPACA) changed the focus in all of health care, targeting health care value rather than care volume.<sup>7</sup> This game-changing concept was best summed up by then CMS director, Donald Berwick, in his "Triple Aim of Care": improvement in the health of populations, improvement in the experience of care, and reducing health care costs.<sup>8</sup> This creates an incentive to move the FFS CKD payment system to a value care model that may be linked to the totality of kidney care potentially inclusive of ESRD care.

Creating a "value-based" model around kidney disease offers us an opportunity to uniquely offer to patients the benefits of Dr. Berwick's Triple Aim of Care. Unfortunately, our kidney care systems remain fragmented, and this creates real barriers that must first be surmounted to move

forward in a meaningful way. Additionally, the capital investments necessary for this metamorphosis to occur is out of reach of most practices necessitating strategic partnerships for participation in this model of care.

Kidney care is delivered from 3 clinical distinct environments, in dialysis facilities, hospitals, and nephrologists offices. ESRD care is, for the most part, proparathyroid hormone, calcium, phosphorus, and albumin targets that have served as surrogates of quality clinical care and resulted in significant outcome improvement. Whether these measures themselves or the processes of achieving them resulted in improvement remain unclear; however, they are now evolving into more sophisticated processes of care that includes catheter avoidance, fluid management, influenza vaccination programs, and more. The knowledge of the impact of these measures and processes on care allowed financial models to evolve toward a more value-driven focus (Fig 1).<sup>12</sup>

Examples of this "maturation" include models, such as the demonstration projects (DP), implemented in the 1990s, that focused on bundles of care for ESRD patients inclusive of broader quality metrics. Nephrologists were paid quality stipends above their baseline ESRD FFS. The DP showed that patients with ESRD could have their care improved in a financially responsible manner by developing care processes specific to their disease state. The ESRD DPs were an important learning experience but suffered from having little ability to impact care outside the dialysis facilities (hospital or nephrologists offices) nor were they easily able to influence non-nephrologist care givers (emergency room physicians, hospitalists, vascular

surgeons,

cohort.<sup>2</sup>

further

cardiologists,

developed

etc.), all whom can, and do,

influence the cost and effi-

ciency of care for this patient

Medicare advantage spe-

cial need plans (SNPs) took

the DP models one step

more robust care networks

with those subspecialists

involved in ESRD care and

expanding processes that

pre-emptively affected care

and

# **CLINICAL SUMMARY**

- Value-driven reimbursement is the new norm in health care.
- The care delivery models for ESRD/CKD are fragmented.
- The Patient Protection and Affordable Care Act will drive health care delivery in the future.
- CKD care and financial remuneration will be tied to these changes.

vided by organized for-profit and not-for-profit providers in partnership with nephrologists (clinical care, medical directorships, and/or joint venture relationships). Value models are well known and mostly predictable for ESRD care. Payment for care is split with government payments (~80% of patients) being cross-subsidized by commercial payers for the first 30 months for therapy.<sup>9</sup> Payment is based on a "bundle" of services inclusive of all aspects of delivering the dialysis treatment and all injectable renal medications.<sup>10</sup>

Nephrologists, on the other hand, are paid on an FFS model for incremental monthly care (1 visit, 2-3 visits and 4 visits per month).<sup>10</sup> The greater the volume of patients under your care and the more efficiently you can deliver that care, the more financially successful the practice. This very model incentivizes increasing the volume of ESRD patients rather than delivering "upstream" value-based care that may negatively affect ESRD incident rates. Predictably, ESRD care and fees for medical directorship contribute 50% to 60% of a total nephrologists income.<sup>11</sup>

ESRD clinical measures (process and outcome) have been reported for many years. These early value-based foci included biochemical markers, hemoglobin, (influenza immunization, catheter avoidance, diabetic foot check, etc.) adding to lessons learned from the DP.<sup>2,13</sup> Participants in care under SNPs in many instances showed improved clinical outcomes with financial savings. Predictably, more fully integrated care delivery systems (Kaiser) fared better than insurance providers.<sup>1</sup>

Hospital value-based care models, models focused on integrated kidney care, are currently negligible. Under the FFS payment system, patients with advanced CKD present to the hospital with other immediate critical health problems. They may develop acute kidney injury and recover or have an accelerated progression to ESRD. Similarly, hospitalized patients with previously undiagnosed CKD are newly identified and require care in nephrologists' offices after discharge. Although the FFS diagnosis-related group payment models are defined and predictable, there are no strong incentives to identify at-risk patients and apply processes of care to avoid acute kidney injury, move the patients efficiently through the hospital stay or ensure proper handoffs, and follow-up post-hospitalization to decrease readmissions. Nephrologists receive FFS payment incenting them to freely admit patients and accept daily payments. Accordingly, hospital care makes Download English Version:

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