

## The Role of Nephrologists in Coordinating Care with Primary Care Practitioners

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Estimates based upon data from the most recent National Health and Nutrition and Examination Survey (NHANES III) and 2006 population estimates suggest more than 20 million Americans and almost 1 million North Carolinians have chronic kidney disease (CKD).<sup>1,2</sup> This increased rate of CKD is associated with and possibly exacerbated by poor access to health care and high rates of poverty (North Carolina ranks 12th worst in the nation), obesity (17th worst), diabetes (9th worst), and hypertension (10th worst).<sup>3</sup> In addition, minorities are at increased risk for CKD, and North Carolina ranks 8th highest in the nation for percent minorities in the population. The relatively higher prevalence of these risk factors in certain geographical areas of North Carolina is magnified by a lack of resources to manage the problem of CKD. This has led to an inordinately high prevalence of end-stage kidney disease (ESKD) in parts of North Carolina, primarily eastern North Carolina.

Presently in the United States, there are 7473 practicing nephrologists. Considering there are 20 million individuals with CKD in the US, each nephrologist would need to assume care for almost 3000 patients with CKD to manage this expanding problem. Of further concern are estimates that suggest North Carolina has 5% of the total US population with CKD but only 2.8% of the nephrologists in the US.<sup>4,5</sup> Realistically, it is not possible for the nephrology community to take care of this problem without forming partnerships with primary care providers. With the length of the average physician visit continuing to decline, primary care physicians will be unable to treat CKD without a more efficient approach. Clearly a new model of care is needed.

The prevention of CKD progression is an obvious alternative to stretching our already thin resources. Screening for kidney disease identifies individuals with or at risk for kidney disease

and is the first step in delaying or stopping the progress of the disease. Several groups have made a significant contribution by screening for CKD in North Carolina. However, recent studies have demonstrated that only aggressive long-term management of multiple risk factors can slow the progression of kidney failure, with most studies only demonstrating an impact after several years of intervention.<sup>6,7</sup> CKD requires prolonged, methodical management strategies to achieve a measured improvement in outcomes. Thus, screening without long-term management will probably not impact outcomes.

The Kidney Disease Outcomes Quality Initiative (KDOQI)

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clinical practice guidelines are a complicated, very detailed series of recommendations that unfortunately are frequently beyond the capacity of a busy clinician to implement—especially given the multitude of preventive guidelines primary care providers are asked to follow.<sup>8,9</sup> Both the National Kidney Foundation (NKF) and the Renal Physicians Association (RPA) have developed toolkits to aid clinicians with the management of patients with CKD. However, neither set of guidelines provides clear recommendations for the operational management of CKD in a busy clinic setting.

Primary care physicians want continuity of care with full

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knowledge of what is going on with their patients and have demonstrated their ability to take on the CKD guidelines. Furthermore, there has been improvement in the rate of compliance with recommendations to initiate angiotensin converting enzyme inhibitors (ACEI) and angiotensin receptor blockers (ARB). Recent information suggests that the decline in the increasing incidence of ESKD may be attributed to widespread utilization of these medications along with careful control of diabetes and blood pressure.<sup>10</sup> However, the remaining CKD guidelines are more complex and less well-supported by evidence-based medicine. Many of the guidelines involve the purchase and administration of expensive injectables. As new and sometimes contradicting data emerge, the interpretation of these guidelines adds an additional layer of complexity for the primary care physician to sort through. Clearly the CKD treatment guidelines, beyond prescribing ACEIs and ARBs, are more difficult to effect in a primary care setting.

The nephrology community wants to stem the growing tide of ESKD though the magnitude of the CKD and ESKD problem precludes nephrology from managing it alone. Nephrology providers want to be involved. They want to develop a relationship with a patient and their primary care physician before the patient reaches ESKD. The KDOQI guidelines, NKF toolkit, and the RPA toolkit have given us a great start in slowing the CKD epidemic; however, we must develop a second generation approach. In fact, a commentary in this issue of the *North Carolina Medical Journal* discusses the importance of kidney care educators and care managers. The East Carolina Center for

the Study of Kidney Disease has inserted nephrologists into primary care resident clinics to ensure our trainees are capable of managing CKD after residency. We are now piloting the insertion of nephrology teams into primary care clinics in eastern North Carolina. These teams will work side by side with their primary care colleagues as they demonstrate a hands-on approach to the institution of KDOQI guidelines. Long-term follow up will be needed to determine the efficacy of these new efforts. Models beyond standard consultation are needed.

Most importantly, patients want and deserve a medical home. Dependence on multiple providers is necessary but complicates care. With the recent downturn in the economy, regular follow-up with multiple providers is at even greater risk, especially when significant travel is involved. The primary care and nephrology communities in North Carolina have done much to improve the care of patients with CKD, but it is clear that patients need convenient and effective preventive strategies to slow the progression of CKD as well as one for primary prevention. Communication between primary and subspecialty providers must be strengthened to manage the multiple complex comorbidities involved in this population.

A substantial amount of work has been done to reduce the heavy burden of CKD in our state, but in light of the significant financial and human cost of CKD, we must do more. With rising health care costs, decreasing resources, and a patient population that deserves and needs coordinated care, we will need to explore more effective options for delivery of subspecialty preventive care. **NCMJ**

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