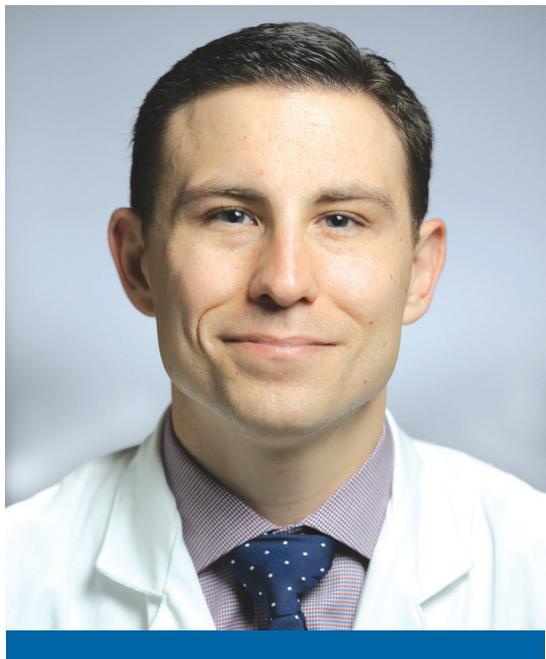# Fellows Corner

Referring the Preventable Before It Becomes the Inevitable

By Daniel Edmonston

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Despite initiatives to improve access and delivery of preventive care, much of medicine is still reactionary. We wait behind brick-and-mortar walls for our patients to come to us with a list of problems in hand.

The field of nephrology is not immune to this limitation. Arguably, we are among the most susceptible. Like the "silent killer" hypertension, most patients with chronic kidney disease (CKD) are asymptomatic until the disease approaches advanced, often irreversible, levels. This lack of symptoms leads to patient under-recognition of even advanced CKD.

Compounding this problem, provider recognition of CKD may also be lacking (1). The adoption of formulas, such as the MDRD and CKD-EPI formulas, to report an estimated glomerular filtration rate may have improved provider recognition of earlier stages of CKD. However, the impact on referral patterns has produced conflicting results (2–4). A large percentage of patients referred to nephrology clinic have mild CKD with low risk of progression, while many high-risk patients go without a referral.

While limited by a lack of randomized-controlled trials, multiple cohort studies and a large Cochrane Review have suggested that timely nephrology referral (defined as referral greater than six months before the initiation of dialysis) leads to an improvement in outcomes including reduced mortality, earlier placement of fistulas, and more patients start-

ing peritoneal dialysis over conventional in-center hemodialysis (5). Furthermore, early referral can potentially decrease the overall cost of care for these patients who may otherwise require a prolonged inpatient admission to initiate hemodialysis.

Although the scope of this problem is vast, as a fellow I did not have to look far for important work addressing these issues. Blake Cameron, MD, pioneered multiple programs to combat this problem while still a nephrology fellow at Duke University. During his fellowship, Blake completed a Masters in Biomedical Informatics and led a team that harnessed electronic health record (EHR) data to identify these at-risk patients. His work is sponsored by the Duke Institute for Health Innovation.

One such program integrates select insurance claims data and information from the EHR to utilize prediction models such as the Kidney Failure Risk Equation to determine which patients in the Duke system are at greatest risk for progression to end stage kidney disease (ESKD) (6–7). Once these patients are identified, a multidisciplinary team including Blake, a primary care provider (PCP), a pharmacist, and nurse care managers meet regularly to determine which of these high-risk patients warrant intervention. The intervention may include home visits, care management, communications to the PCP, arranging for a referral, or re-establishing care if the patient had previously been seen by nephrology.

Another issue regarding provider recognition of CKD is "over-referral" of patients with very low risk of progression to ESKD. To address this issue, a "CKD Help Desk" program was designed to improve communication between PCPs and specialists. A major component of this program is "E-consultations," whereby PCPs can obtain advice from a nephrologist electronically, based on chart review, without the need for a face-to-face referral.

Often, the PCP may have an issue that can be easily resolved with the suggestion of a lab test or imaging study rather than scheduling a traditional consult. This program not only combats over-referral but also helps patients and PCPs have access to the expertise of a specialist without enduring long wait times for appointments and large co-pays. Alternatively, if the patient is appropriate for referral or the question too complex to be addressed in this manner, the nephrologist can recommend full referral and arrange for expedited care.

In addition, the program includes care pathways with algorithms and suggestions for evaluation and management of early CKD that will not only provide early, evidence-based interventions to these patients, but also improve the quality of information available to the nephrologist should the patient ultimately require a referral. Often important labs and imaging may be missing at the time of the initial consult visit leading to multiple visits to address a single problem. Programs such as the E-consultations and CKD Help Desk are part of a larger "Virtual Medical Neighborhood" that will eventually be expanded to include all specialties.

These interventions are intended to not simply increase referrals, but rather to refine the referral of patients with high-risk CKD. Other approaches that rely solely on automatic EHR prompts to providers may contribute more to provider alarm fatigue than improvement in patient care.

Blake's program and other similar ventures across the country are working to make consultative nephrology proactive rather than reactive. By facilitating timely referral and improving communication between nephrologists and PCPs, these programs have the potential to provide earlier access to evidence-based interventions that may slow progression of CKD, limit "crash starts" to hemodialysis, and ultimately improve mortality. This work will hopefully lead to all specialists addressing the preventable before it becomes the inevitable. ●

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