The Times, They Are A-Changin: Innovations in Health Care Delivery To Reduce CKD Progression

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Over 12 million adults in the United States have CKD stages 3–5 (1). As the population ages and diabetes, hypertension, and obesity rates increase, the prevalence of CKD will grow (1). Kidney disease is the ninth leading cause of death and attributable Medicare expenditures are nearly $80 billion (2). Providers report that limited CKD knowledge, time constraints, complex case-mix, and inadequate system-based resources contribute to gaps in CKD care. These gaps include poor patient education, inadequate diagnostic evaluation, suboptimal treatment of hypertension, and use of renin-angiotensin-aldosterone system inhibitors in patients with albuminuria, inappropriate medications or dosages, late referrals of high-risk patients, and limited engagement in shared decision-making discussions regarding RRT options, particularly kidney transplantation, home modalities, and conservative management. This catalog of shortcomings contributes to increased morbidity and mortality and poorer quality of life.

Recent years have welcomed advances in CKD care, including classification systems, clinical practice guidelines, the near universal adoption of eGFR reporting, and validated risk prediction models. Yet, disappointingly, most metrics of CKD care remain unchanged. When well-intentioned providers caring for heterogeneous groups of patients, in a variety of settings, consistently deliver suboptimal care, systemic shortcomings must be identified and targeted.

Patients with CKD often have multimorbidity and receive fragmented care for their conditions. These patients are expected to adhere to complex medication regimens, difficult dietary restrictions, and frequent health care visits. Further, many of these patients come from vulnerable populations with limited means and low literacy, numeracy, and digital skills. In this era of precision medicine, few health care systems have allocated adequate resources to determine and meet the needs of each patient. Similarly, few health care systems have allocated adequate resources to allow health care teams to bridge the communication and engagement divide that contributes to poor CKD outcomes.

Two feasible approaches to overcome some of these barriers are the use of patient navigators (3) and patient health records (PHRs) (4). Patient navigators have been successfully used to increase access to kidney transplantation (3), and could provide tailored guidance to patients with CKD as they interact with a complex and opaque health care system, as well as the harried and hurried providers that usher them through it. PHRs have become increasingly prevalent since the Health Information Technology for Economic and Clinical Health (HITECH) Act (i.e., “meaningful use”), which required providers and health systems to offer patients timely electronic access to their health information (i.e., meaningful use stage 1), including the ability to view, download, and transmit information and to securely message providers electronically (i.e., meaningful use stage 2). The HITECH Act led to substantial increases in the adoption of PHRs. These tools provide patients an opportunity to view their laboratory results, medications, and upcoming appointments as well as to interact with their providers. PHRs have shown promise in improving patient engagement and self-care, areas of critical importance to improving CKD outcomes (4).

In this setting, Navaneethan and colleagues report the results of their two-by-two factorial, randomized controlled trial examining the effects of patient navigators and/or enhanced PHRs in this issue of the Clinical Journal of the American Society of Nephrology (5). The investigators randomized 209 nondialysis-dependent patients with CKD stage 3b–4 to four arms (usual care, patient navigator, enhanced PHR, patient navigator and enhanced PHR), followed them for 24 months, and assessed the slope of change in eGFR (primary outcome). Notably, the enhanced PHR consisted of the usual PHR augmented with stage-specific CKD education material. Enrolled patients were generally older (median age of approximately 70 years), often had some college education, had access to a computer, and demonstrated adequate literacy (>95% of all participants). Patient and/or family education and the provision of information were the most frequently addressed requests in the nearly 1000 participant-navigator interactions. At the end of follow-up, patients receiving the intervention did not fare significantly better than those receiving usual care with respect to the primary outcome or several secondary outcomes, including nephrology referral, hospitalizations or emergency department visits, and RRT planning referrals (5).

The investigators should be lauded for conducting a rigorous, pragmatic randomized controlled trial testing two novel and complementary patient engagement
interventions. However, several important limitations likely contributed to their negative findings. First, approximately half the patients were under the care of a nephrologist and nearly 90% were taking renin-angiotensin-aldosterone system inhibitors at baseline, indicating that many enrolled patients were receiving excellent care with perhaps little room for improvement. This would have left the study underpowered for its primary and secondary outcomes. Second, the patients enrolled in the study appeared to be better educated than the general CKD population and were not targeted according to their risk for CKD progression. Future studies should consider leveraging validated risk prediction equations to target patients at higher risk of experiencing poor outcomes (6). Third, outcomes that are ideal for the successful conduct of a pragmatic trial may unfortunately be wanting when determining the short-term effects of patient engagement interventions. For example, general and enhanced PHR use were higher in the groups that interacted with the patient navigators. These findings suggest that patients with CKD are willing to increase their engagement when the health system provides tools, assistance, and guidance. Further, approximately 75% of patients who interacted with a navigator felt their quality of life had improved and “that they felt more empowered to make positive health care choices” (5). Unfortunately, longitudinal assessments of patient activation and quality of life (as well as provider outcomes) were not available. Routinely incorporating assessments of patient-reported outcomes into CKD clinic workflow and electronic health records may enhance future pragmatic trials.

Evolving information technology, clinical research advances, population demographics, and federal legislation have intersected to create imperatives to change how chronic disease care is delivered. These changes should be embraced, given the many documented shortcomings in CKD care. Yet much work remains to understand how to enhance care, engage patients, and improve outcomes in a cost-effective manner. Several recent and ongoing studies will offer insight on this question, examining interventions such as electronic health record-based clinical decision support, CKD registries, telephonic management support for patients, practice facilitation, and population health management (7–13). However, many questions remain: how to ensure limited resources (e.g., nephrology or multidisciplinary clinic appointments, remote monitoring) are allocated most efficiently; how to identify, engage, and activate patients who are at high risk for poor outcomes without increasing the burden on inundated frontline providers; how to leverage technology to simplify the complexities of CKD self-management; how to guarantee that vulnerable patients benefit from the same advances that more privileged patients will enjoy; and how to measure and maximize the quality of CKD care while ensuring each patient–provider encounter is patient centered. We better start swimming.

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Disclosures

None.

References


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See related article, “Pragmatic Randomized, Controlled Trial of Patient Navigators and Enhanced Personal Health Records in CKD,” on pages 1418–1427.