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Jerry Yee

Henry Ford Health, JYEE1@hfhs.org

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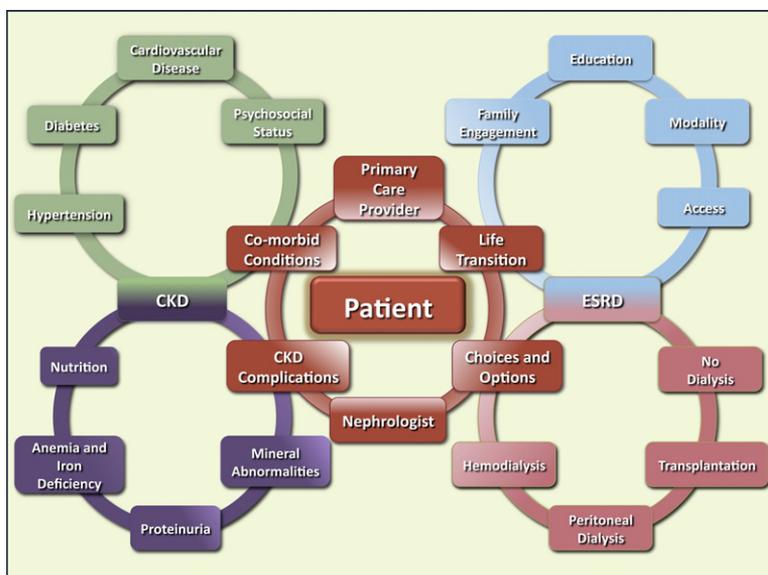
Quality in CKD: The 3 “Cs”

In this issue of *Advances in Chronic Kidney Disease*, we find its essence in the cover illustration—an idealized, but not unrealistic, interdigitating conceptualization of the multiplicity of interactions of clinical CKD care between nephrologist and primary care physician (PCP), with the patient juxtaposed between them. The Co-Editors of this issue, Drs. Rebecca J. Schmidt and Bethany S. Pellegrino, in conjunction with their contributing authors, present a series of papers that portrays the colors of CKD that continually confront and challenge PCPs and kidney physicians in their efforts to deliver quality care. But, what is the formula for ensuring the quality of CKD care?

“Quality doesn’t cost, it pays” is the slogan that is splashed across my housepainter’s truck. He’s right, and the secret to improving the quality of care in CKD, improving efficiency and reducing costs, is within the CKD acronym itself. The “C” of CKD may first be considered as “capturing” kidney disease. Correspondingly, spirited and vigorous educational efforts have been and must still be focused on empowering PCPs to ascertain when CKD is present. The NKF’s eGFR equations have accomplished this and in a large way. Presently, nearly 90% of United States clinical laboratories yield an eGFR from serum creatinine values. However, what proportion of PCPs can correctly explain the concept of eGFR to their patients? My own experience, and that of others, reveals that the proportion is highly variable and a direct

function, in large part, of the degree of eGFR education imparted to PCPs and the follow-up and reinforcement of that education. Clearly some institutions have made it a priority to educate physicians and nurses regarding this CKD-capturing tool and others have not. Producing an eGFR strategy is not the problem, but implementing a sound educational program around it is. One other problem in the interpretation is the various formulas for eGFR that may be confusing to PCPs and nephrologists alike.

Furthermore, has a mantra for capturing kidney disease pervaded all institutions? Hardly, as hypertension, heart failure, stroke, diabetes, arthritis, cancer, and asthma have assumed preeminent importance at many institutions as core disorders on which many programmatic developmental dollars have been allocated. Distressingly, CKD is only considered an expense generator when the bills come in, despite that



CKD is part and parcel of many of these core disease states. Until patients at risk for CKD are screened appropriately for eGFR, especially in association with albuminuria, obstruction, and acute kidney injury, the capture rate will remain suboptimal. Here, nephrologists must clearly

assume leadership and recognize that despite rigorous and disciplined educational efforts at the national level, success at the individual point-of-service level represents the appropriate established benchmark and true challenge.

To effect and sustain quality, the second “C” of CKD must be considered “collaborative,” as espoused in the Guest Editorial, especially because there are typically several health care providers per CKD patient. Collaborative care will be vital to the initiation and maintenance of the CKD advanced medical home, with the nephrologist as neighbor. Likewise, if accountable care organizations come to the fore, collaboration will be the linchpin of the relationships among physicians participating in the care of CKD and beyond.¹ Therefore, physician alignment is incumbent for programmatic CKD success. Correspondingly, the increasing trend toward full employment staffing models of hospitals and health systems may be the first step in the process. A recent survey acknowledged that 70% of hospital and health care respondents intended to gravitate to a full staff model, a significant increase from <50% several years ago.² Caution must be exerted though, as simply putting physicians together under a single banner does not increase engagement *pari passu*. Effective and broadly based engagement strategies are implicit to goals’ attainment over the long-term, and the “overriding goal of a physician employment strategy needs to focus on quality.”² Moreover, requirements for collaboration and synergy are not limited to intersections between primary care and nephrology, but are also intrinsic to interactions between clinicians, including other subspecialists and allied health care professionals, and clinical laboratories.

Directed care as part of the collaborative process must be learned and embraced by nephrologists. Neither the nephrologist nor PCP should anticipate shepherding the CKD patient through all stages of the disease. The PCP and nephrologist are chiral partners: each has an overlapping, but not exactly similar, skill set. Nephrologists must abandon the classical referral-based model, and Medicare already has. Composing a nicely worded letter back to a referring physician with multiple recommendations ensures neither their implementation nor the high fidelity processing of trend analysis that each CKD parameter deserves. Brief summaries of important findings and concise, precise, and definitive recommendations are preferred over the classical model. The latter is “better” than that which is conventionally practiced, but “best” when the nephrologist enacts his own recommendations and collaboratively implements a longitudinal CKD action plan in partnership with a PCP.

Immediate communication back to the PCP is indispensable in the conduct of directed care, as professional collegiality and colloquy remain logistical cornerstones of nephrologist-directed care.³ However, in large health organizations, institution of directed care by subspecial-

ists should be thoroughly discussed among all interested and impacted parties. With the hope of improving timeliness of referral of advancing CKD patients to nephrologists, it is notable that this goal has not been achieved, even within benchmark organizations.⁴ Locally generated educational and evidence-based materials may prompt in-house engagement and must be distributed widely to nursing staff, midlevel providers, and physicians in training.⁵ Within the realm of CKD, the data of Curtis and colleagues clearly demonstrated that their deployment of multidisciplinary directed care correlated with improved outcomes for patients who progressed to ESRD.⁶

The third “C” of CKD is computerization, and this must be established throughout the continuum of care. Speedy, efficient, and automated CKD patient database generation eases the capture of CKD patients. Risk stratification can also be automated and conveniently reported. An exemplar of such a strategy was recently described at the Cleveland Clinic.⁷ Given that the American Recovery and Reinvestment Act’s subsidiary incentivized Health Information Technology for Economic and Clinical Health Act^{8,9} has established minimal standards within the context of “improving health care quality, safety, and efficiency,” one cannot argue that data and biomedical and health informatics are inessential or avoidable in the proactive operationalization of CKD action plans. Efficacious care entails knowledge of business principles and the will and skill to carry these out. A prototypical Six Sigma-type approach like this fully lends itself to the complex care of CKD patients and can retain the art of doing so. Therefore, defining processes of care, measuring their output, analyzing the results, improving on them, and controlling patient outcomes are obligatory.¹⁰ The automation of processes to this end is mandatory to achieve “meaningful use.”⁸

In areas that do not possess a sufficient clinical evidence base to establish definitive practice guidelines, automated information gathering is critical. Furthermore, an overlaying of natural language processing and other sophisticated techniques can render novel insights and potential solutions to problems that heretofore were equated as insoluble.¹¹ Finally, a supplementary benefit of CKD computerization is hypothesis generation for comparative effectiveness research, whereby large populations may be, in unadjusted manner, retrospectively probed for positive determinants of CKD care as well as adherence to such determinants.¹² Consequently, we can no longer consider the aforementioned electronic health record applications as “secondary” uses or “re-uses” but as “primary” uses.^{12,13} An outstanding benefit of skilled deployment of CKD computerization is that it potentially informs existing and nonexistent computerized order entry systems while it allows practice assessment and facilitates quality improvement.

Capturing CKD, collaborating with stakeholders of CKD, and embedding computerization into CKD processes

to improve the quality of CKD care and its outcomes are underway. Local, state, and national funding of the initial associated financial distresses incurred from operationalizing CKD processes is a proviso and must be fought for. In parallel, physicians—notoriously slow “change” agents—who take up to 17 years to fully implement a published guideline must be compelled to carry out the “3 Cs” of CKD in concert and discharge them effectively, to overcome therapeutic inertia and to gain the momentum necessary to advance the quality of care in CKD.¹⁴

Finally, to underscore the NKF's efforts to cooperatively combat CKD, the organization's President, Dr. Lynda Szczech, has reached out to PCPs to participate in a multi-site cross-sectional study that estimates the prevalence of CKD in type 2 diabetic adults. In the study “Awareness, Detection and Drug Therapy in Type 2 Diabetes Mellitus and Chronic Kidney Disease” (study description available at: <http://www.kidney.org/ADD-CKD>), PCPs will enroll patients, obtain specific blood and urine tests, and retrospectively determine whether CKD was captured within the health record as a problem, diagnosis, and so on. This information will potentially provide a more facile comprehension of current CKD screening and health care utilization in a high-risk population, thereby facilitating future improved development of NKF educational efforts for all CKD care providers and patients.

Jerry Yee, MD
Editor

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