itive rates. Their data indicate for most, if not all, screening populations evaluated that combining the albumin-to-creatinine ratio and eGFR substantially improves discrimination, whereas the additional effect of adding the best clinical model variables is marginal. Finally, the predictive importance of albuminuria in general is once again emphasized in this study. This is an important observation in lieu of speculation that microalbuminuria is a manifestation of a systemic disturbance affecting all microcirculations and therefore not a sufficient diagnostic criterion for CKD. Albuminuria in this study is a continuous risk factor for progression to ESRD with no lower limit and at all levels of eGFR. It will be interesting to see whether the results still hold with urine dipstick assessment, a very important practical point.

The study by Hallan et al. should also be interpreted with some caution. The HUNT-2 study population is a homogeneous group of individuals who were exclusively white and relatively young and had limited comorbid conditions, perhaps limiting generalizations. Because the study did not have a repeat assessment of kidney function, it is also not possible to assess individual rates of progression of kidney disease, which might have significant implications in terms of risk for ESRD. Despite the comprehensive and sometimes complex statistical approach, an analysis of observed versus predicted cases of ESRD or a net risk reclassification improvement analysis should provide more straightforward practical information. It should also be emphasized that this study must be interpreted only in the context of predicting progression to ESRD. These results by no means imply that a similar impact would be observed for other clinically important outcomes or that appropriate measures are not available to prevent additional renal injury. Finally, addition of albuminuria testing is not necessarily the only recommended modification of KDOQI guidelines. For example, in a retrospective study, Eriksen and Ingebretsen showed that changing the chronicity criterion to 6, 9, or 12 mo reduces the number of patients with CKD relative to a 3-mo criterion, with consequent differing rates of progression to kidney failure or death.

The study by Hallan et al. provides us much optimism that important modifications to the original KDOQI guidelines for staging of CKD could offer significant improvements in predicting progression to ESRD. The time has come to apply these modifications to the current guidelines. Until we do so, the focus should remain on appropriate management of CKD and associated conditions independent of staging.

**DISCLOSURES**

None.

**REFERENCES**


**Lessons from Geographic Variations in Predialysis Nephrology Care**

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Inadequate access to nephrology subspecialists among patients with advanced chronic kidney disease (CKD) is one of the major public health problems of our discipline. Depending on its

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definition and the specific geographic and health care setting, between 20 and 66% of patients reaching ESRD do not see a nephrologist in a timely manner to receive adequate management of their progressive kidney failure or the long-term complications of advancing CKD. These patients are also robbed of their ability to receive appropriate education to make informed choices about their preferred treatment modality and to prepare optimally for the treatment option they choose. Thus, it has been shown in numerous countries and health care systems that delayed nephrologic care for patients with advanced CKD is associated with inadequate quality of care during transition from CKD to ESRD and with inferior outcomes on renal replacement therapy (RRT).

Patients who have CKD and experience inadequately late nephrologic care are less likely to initiate RRT using peritoneal dialysis, and, when they do, their chances for a technique failure increase. When they start RRT using hemodialysis, patients seen inadequately late by a nephrologist are more likely to require temporary or tunneled central venous catheterization and are less likely to use a more preferable peripheral access, particularly arteriovenous fistulas, for initiation of dialysis thereafter. Delayed nephrologic care is further associated with reduced access to the most desirable of treatment options for ESRD: Kidney transplantation. Patients reaching ESRD without adequate predialysis care are more anemic; less likely to have received erythropoiesis-stimulating agents; more malnourished and less likely to receive dietary counseling; more hyperphosphatemic, and less likely to receive measurement of vitamin D, parathyroid hormone, and other indicators of attention to calcium-phosphate care. Thus, it is not a surprise that duration and frequency of predialysis nephrologic care is a strong determinant of mortality on dialysis or after kidney transplantation. Without any remaining nephrologic care, then health policy can direct resources to such underserved areas to improve access and quality of care in an efficient and particularly cost-effective manner. Furthermore, varying patterns of health care practice can teach which specific interventions or care measures are particularly important and beneficial to the health of patients with advancing CKD. Although only one cluster was identified in this article, many such clusters may exist throughout the United States. Clearly, comprehensive and nationwide analysis of such geographic variation is warranted.

One may raise one odd concern about the validity of their observation. The study period spanned from June 2005 to May 2006. On August 29, 2005, Hurricane Katrina made landfall near the Louisiana-Mississippi border and maintained its hurricane strength until it was downgraded to a tropical depression well into Tennessee. As a result of Hurricane Katrina, the health care system in New Orleans and the subsequent path of the hurricane to areas north were severely damaged, including dialysis and transplant services. The local health care reverberations of this disaster continue to this day. Is it possible that access to nephrologic care in this geographic area was systemically affected and may have contributed to the observed cluster of poor access to nephrologists during this study period? Although the answer is unknown, I wish I could blame a natural disaster for the apparent disaster in inadequate kidney health care delivered to this local population in particular. I am not convinced, however, that I could make this a compelling case.

Renewed focus and resources need to be directed to developing and testing health system interventions to improve the care of patients who have CKD and are approaching end-stage status. Clearly, more than a decade of guidelines recommending early referral to nephrologists of patients with CKD are insufficient. In light of the manpower shortage in nephrology, comprehensive interdisciplinary care delivery models need to be
established and put in place. Important studies such as the novel analysis by McClellan et al. can then teach us where to put our resources to work for the greatest benefit to this vulnerable population about which we care so much.

DISCLOSURES
None.

REFERENCES

See related article, “Treatment Center and Geographic Variability in Pre-ESRD Care Associate with Increased Mortality,” on pages 1078–1085.