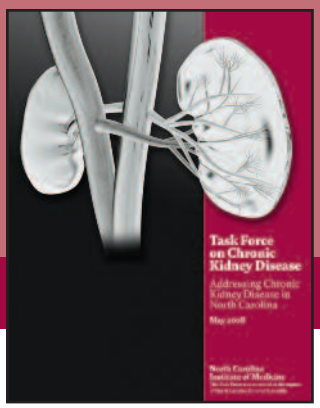


Issue Brief

Chronic Kidney Disease

Affecting One Million North Carolinians

June 2008

Imagine a health problem that affects over 13% of American adults and leads to the ninth most common cause of death. Now imagine that many people, including many of those with the earliest form of the disease, have no idea they have this health problem. In fact, many of these people may not know they have the disease until they arrive at an emergency room and have to be admitted immediately to undergo an invasive procedure.

Such is the case with *chronic kidney disease*. Chronic kidney disease (CKD) is a condition that encompasses several levels of kidney damage, ranging from a decline in function to total kidney failure. A small decrease in kidney function may not cause a problem; however a more significant decline in kidney function can lead to serious consequences, such as kidney or organ failure. It is estimated that over 13% of the US population has CKD, amounting to approximately 26 million people.[1] In North Carolina alone, there are just under one million people with CKD. This figure does not include the approximately 11,000 people with kidney failure,[2] which is the most severe form of CKD. Kidney failure, or end-stage kidney disease (ESKD), requires the patient to undergo kidney replacement therapy, by way of either transplant or dialysis. Nationally the number of ESKD cases has doubled since 1990, although the number of new cases has begun to level off in recent years.[3] Nonetheless, as people live longer with this disease, the overall number of people with ESKD is expected to rise. Applying one study's estimates of annual costs incurred due to the prevalence of CKD by stage, the estimated medical costs of North Carolinians with CKD, including those with ESKD, is approximately $5 billion per year.[4]

To address this problem, the 2006 North Carolina General Assembly asked the North Carolina Institute of Medicine to convene a task force to study chronic kidney disease and to make recommendations. Marcus Plescia, MD, MPH, chief of the Chronic Disease and Injury Section of the North Carolina Division of Public Health, and Leanne Skipper, chief executive officer of the National Kidney Foundation of North Carolina, served as co-chairs of the Task Force. A full report detailing the work and recommendations of the Task Force is available on the North Carolina Institute of Medicine's website, http://www.nciom.org.

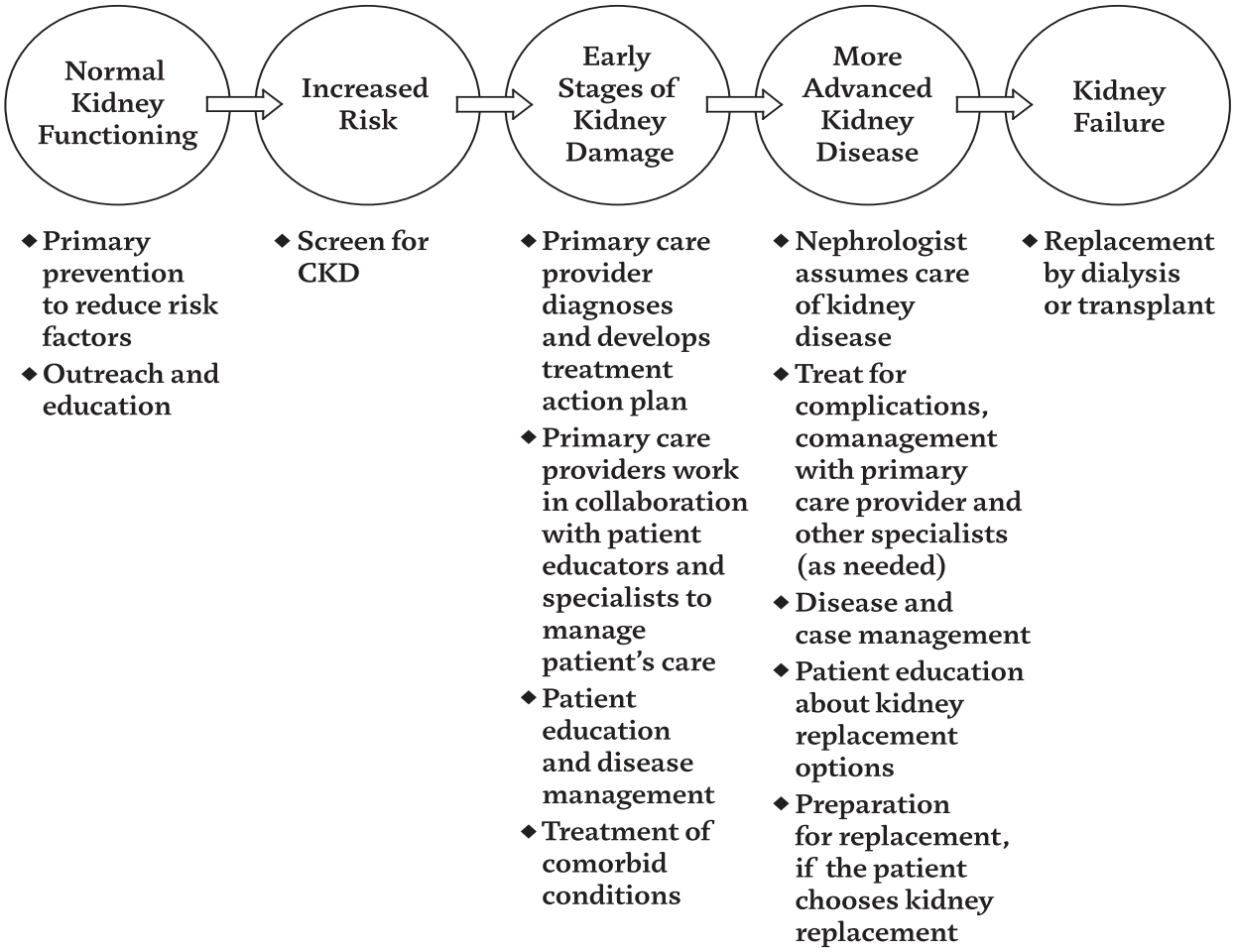
Developing a Comprehensive System of Care for Chronic Kidney Disease

Many people with CKD—or with a risk factor for CKD—are not aware they have it. For example, patients with stage 4 CKD, the stage immediately prior to kidney failure, should be receiving regular care from a nephrologist and preparing for kidney replacement therapy. However, only 42% of stage 4 patients indicated they had "weak or failing kidneys."[1] In patients with stage 3, that percentage fell to under 12%. This is a significant failure in our health system, as early detection and treatment can help slow the progression of the disease. A properly designed health care system—one that includes preventive services, early screening and intervention, comprehensive primary care services, and disease management—will help reduce the number of people who develop comorbid conditions (such as cardiovascular disease) or who develop kidney failure. (See Figure 1.)

North Carolina Can Minimize the Number of People Who Develop CKD by Reducing the Prevalence of Certain Risk Factors

Certain health conditions such as diabetes, hypertension, and cardiovascular disease lead to an increased risk of chronic kidney disease. Diminishing the prevalence of these risk factors could help minimize the burden of

Figure 1.
Coordinated System of Care for Patients as They Progress with Kidney Disease



Adapted from: National Kidney Foundation. KDOQI clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratification. *Am J Kidney Dis*. 2002;39(suppl 1):S1-S266.

CKD on North Carolinians. *To accomplish this goal, the Task Force recommended that the North Carolina General Assembly increase funding to the Office of Minority Health and Health Disparities to expand existing diabetes education programs that educate at-risk populations about CKD and the importance of early screening.* These programs should be developed in collaboration with community partners such as faith-based health ministries, civic organizations, and senior citizen groups and should be evaluated to determine their effectiveness.

Targeted Screening of High-Risk Populations is Needed to Promote Early Identification of People with CKD

High-risk individuals should be screened to determine their kidney functioning. Those with CKD should be referred into a primary care medical home. There are a variety of screening tests that are widely available, easily obtained, and relatively inexpensive to use. While people with health insurance are generally covered for screening and treatment, there is no statewide system to pay for screenings or treatment for people who are uninsured. *With these gaps in mind, the Task Force recommended that the North Carolina General Assembly appropriate funding to screen, pay for primary care services, and pay for needed nephrology consultations for uninsured low-income people with CKD.*

Enhancing the Capacity of Primary Care Providers to Treat Patients with CKD

Research suggests that chronic kidney disease is often not detected, even when patients have access to primary care.[5] This is due in part to the fact that some primary care providers are unaware of CKD risk factors or of the current evidence-based guidelines for prevention and treatment. *To address this information gap among providers, the Task Force recommended that health professions organizations across the state collaborate to provide targeted CKD education for primary care providers.*

Primary care providers (PCPs) can play a critical role in identifying people with CKD and with helping to treat and manage the patient's health condition. This is particularly true for people with early stages of the disease as there are too few nephrologists to effectively manage the care of every person with CKD. *The Task Force recommended that primary care providers routinely screen their patients who are at high risk for chronic kidney disease, stage patients who have been identified with CKD, follow evidence-based guidelines to manage and slow the progression of CKD, and refer patients with severely declining kidney function to nephrologists for ongoing care.*

North Carolina laboratories can help primary care providers identify people with CKD. One of the most accurate and simple tests of kidney function is called the estimated glomerular filtration rate (eGFR). The eGFR can be calculated from a person's serum (blood) creatinine lab results using a formula that considers the patient's age, gender, and ethnicity. However, laboratories do not always report the eGFR when reporting lab results for routine serum creatinine screenings unless specifically ordered by the physician. *Thus, the Task Force recommended that eGFR values should be computed and reported on all serum creatinine determinations by clinical laboratories in North Carolina.* This should assist primary care providers in identifying people with CKD and getting them into treatment earlier.

The work of primary care providers can be augmented by disease and case managers. Disease or case managers are trained to help individuals manage chronic illnesses and maneuver through the complicated maze of health care services. Many individuals with CKD also have other chronic illnesses such as diabetes, hypertension, and/or cardiovascular disease. *Because of the close link between diabetes and CKD, the Task Force recommended that the General Assembly provide funding to expand the availability of diabetes educators who would help educate at-risk individuals about CKD screening and management. Further, the Task Force recommended that disease or case managers who work with patients with diabetes, hypertension, or cardiovascular disease be cross-trained in the management of chronic kidney disease, rather than have separate disease managers for every health condition.*

Easing Coordination with and Transition to Nephrologist Care

Nephrologists play a critical role in the effective management of kidney disease. However, because of the relative shortage of nephrologists, most of their work is limited to people who have more advanced forms of kidney disease. The Task Force recognized the critical importance of creating a collaborative team between primary care providers, nephrologists, and other health care professionals to manage the care of people with CKD throughout the course of their disease. *The Task Force recommended that nephrologists actively build collaborative relationships with primary care providers. Furthermore, nephrologists should help educate patients about different renal replacement options and early vascular access in advance of kidney failure.* Early preparation helps ease the transition into kidney replacement therapy and improves outcomes and costs.

Although it has relatively low awareness among the general public, chronic kidney disease imposes a high burden of disease on nearly one million North Carolinians. If implemented, the recommendations of this Task Force will lead to reductions in the incidence of chronic kidney disease in the future. Equally as important, the recommendations will help ensure that people with chronic kidney disease are identified early and provided appropriate education, support, and treatment to manage their health issues. This should lead to improved health status, increased productivity, and reduced disability.

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A copy of the full report, including the complete recommendations, is available on the North Carolina Institute of Medicine's website, http://www.nciom.org or by calling 919-401-6599.

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