



ADDRESSING  
**CHRONIC  
KIDNEY  
DISEASE**  
IN TEXAS

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Report of the Chronic Kidney Disease Task Force

January 2009

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## *Table of Contents*

Executive Summary, 1

Chronic Kidney Disease: A Public Health Threat, 6

Comorbidities and Complications, 7

Disparities, 9

Financial Burden, 10

Addressing the Problem, 12

Texas Legislation, 13

Primary Prevention and Early Detection, 18

*ESRD Prevention Campaign, 19*

Professional Education, 20

Clinical Prevention and Treatment, 21

*Quality Care Initiative, 22*

Policy Change, 23

Data Collection and Surveillance, 23

Summary of Findings, 25

Recommendations, 26

References, 29

*Dictionary, 32*

*Acronyms, 34*

*The Chronic Kidney Disease Task Force respectfully submits this report of their findings and recommendations in compliance with Health and Safety Code, Chapter 98, created by HB 1373 (80th Texas Legislature, 2007).*

# *Executive Summary*

## *The Problem*

Chronic kidney disease (CKD) is now recognized as a major public health threat worldwide, nationally, and in Texas.

In the U.S., based on 2006 data, the United States Renal Data System (USRDS) reports:

- 26 million Americans have diagnosed kidney disease and another 20 million are at risk.
- 500,000 patients are undergoing dialysis or kidney transplantation to sustain life.
- 88,000 people die of kidney failure each year.
- Expenditures are \$49 billion and almost \$34 billion respectively for CKD and End Stage Renal Disease (ESRD).
- The U.S. has the second highest rate of new cases of ESRD in the world.

The USRDS and End Stage Renal Disease Network 14 report in 2006:

- Texas has the second highest prevalence of CKD in the nation.
- Texas has the second highest expenditures for CKD in the nation.
- 42,000 Texans are receiving renal replacement therapy to stay alive.
- The incidence of ESRD in Texas exceeds the national rate.

The number of new cases of CKD and patients on dialysis continues to escalate, yet many Texans remain unaware that they are at risk. Early detection and management of CKD can delay disease progression and decrease complications and comorbidities, but CKD remains under-diagnosed. Diabetes and hypertension are the leading causes of kidney disease, yet fewer than 20 percent of Medicare patients with diabetes are screened for CKD.

## *Legislation*

Recognizing the significant burden of CKD and ESRD in Texas, the 80<sup>th</sup> Texas Legislature passed House Bill 1373 in 2007. The bill established the Chronic Kidney Disease Task Force (Task Force), a team of experts in the fields of nephrology, family practice medicine, pediatrics, dietetics, transplantation, education, and state government. National and state kidney organizations are also represented on the committee. The Legislature directed the Task Force to:

1. Develop a plan to educate health care professionals about the advantages and methods of early screening, diagnosis, and treatment of CKD and its complications based on the National Kidney Foundation (NKF) Kidney Disease Outcomes Quality Initiative (K/DOQI) Clinical Practice Guidelines for CKD, or other medically recognized clinical practice guidelines.
2. Develop a plan to educate health care professionals and individuals with CKD about the advantages and options for early renal replacement therapy.
3. Make recommendations on the implementation of a cost-effective plan for early screening, diagnosis, and treatment of CKD for the State's population.

## *Addressing CKD in Texas*

In addressing their legislative charge, the Task Force recommends a public health approach across health care systems to establish timely, coordinated, and comprehensive prevention and patient care.

Adapting a K/DOQI care model, the Task Force applied evidence-based public health methods to address problems at each stage of disease progression:

- Education and Outreach for health care providers, patients, and the general public
- Clinical Prevention and Treatment
- Partnering
- Policy Change
- Data Collection and Surveillance

## *Recommendations*

### *Priority 1: Data and Surveillance*

The Task Force recommends that the State study the feasibility and effectiveness of a public screening demonstration project that will:

- Yield population-based data, representative of all Texans, to identify the number of people with CKD at each stage,
- Compare population cohorts for evidence of disparities and population trends,
- Provide cost-effective CKD screening to Texans, using evidence-based screening protocols and adhering to established quality standards,
- Increase awareness of CKD, its risk factors and complications, and
- Provide opportunities to educate patients and the general public on the importance of prevention, early detection, treatment and management of disease burden.

### *Priority 2: Clinical Prevention and Treatment*

House Resolution (HR) 6331: Medicare Improvements for Patients and Providers Act of 2008 (110<sup>th</sup> U.S. Congress, 2007-2008) amends Part P of Title III of the Public Health Service Act (42 U.S.C. 280g et seq.) to include Sec. 399R, Chronic Kidney Disease Initiatives. In general, the resolution directs the Secretary to establish pilot projects to: increase public and medical community awareness of CKD, increase screening for CKD, and enhance surveillance systems to better assess prevalence and incidence of CKD.

- The Task Force recommends that the State study the feasibility of a pilot project that would apply these objectives to state funded health coverage programs, including:
  - The State Medicaid Program, and
  - The Employees Retirement System of Texas, which provides health care coverage for State employees.

### *Priority 3: Professional Education*

- The Task Force recommends one hour of continuing education on chronic disease prevention, treatment, and control be required of all licensed physicians, nurses, and dietitians. The Task Force recommends the inclusion of the same education in medical and nursing school curricula.
- The Task Force recommends one hour of continuing education specific to ESRD treatment modalities be required of all nephrologists and other specialists who treat patients with CKD and ESRD, on an annual basis.
- The Task Force recommends education of clinical professionals in all Texas laboratories to promote calculation and reporting of estimated glomerular filtration rate (eGFR) with all serum creatinine determinations for individuals 18 years and older.

### *Priority 4: Policy Change*

- The Task Force recommends that a rider be attached to the standing Texas Kidney Health Care Program appropriation that will direct funding to prevention.
- The Task Force recommends Texas laboratories automatically calculate and report eGFR with all serum creatinine determinations for individuals 18 years and older. The Task Force strongly recommends that this become a standard of care.

### *Priority 5: Public Education and Outreach*

The Task Force recommends:

- Continue and expand the highly successful ESRD Prevention Campaign throughout the State, through recurring appropriations.
- Continue to integrate and coordinate CKD and ESRD prevention education and initiatives into existing Department of State Health Services (DSHS) programs and Councils.

- Continue to partner with kidney related organizations to leverage shared goals and objectives, and to provide consistent messaging to Texans regarding the importance of prevention and early detection of CKD.

*Priority 6: Administrative*

The Chronic Kidney Disease Task Force provides leadership and a forum for discussion and planning among all kidney related organizations in Texas.

The Task Force requests that the State consider continuation of the Chronic Kidney Disease Task Force beyond its expiration of August 31, 2009, in order that its members can continue their efforts toward decreasing the burden of CKD in Texas.

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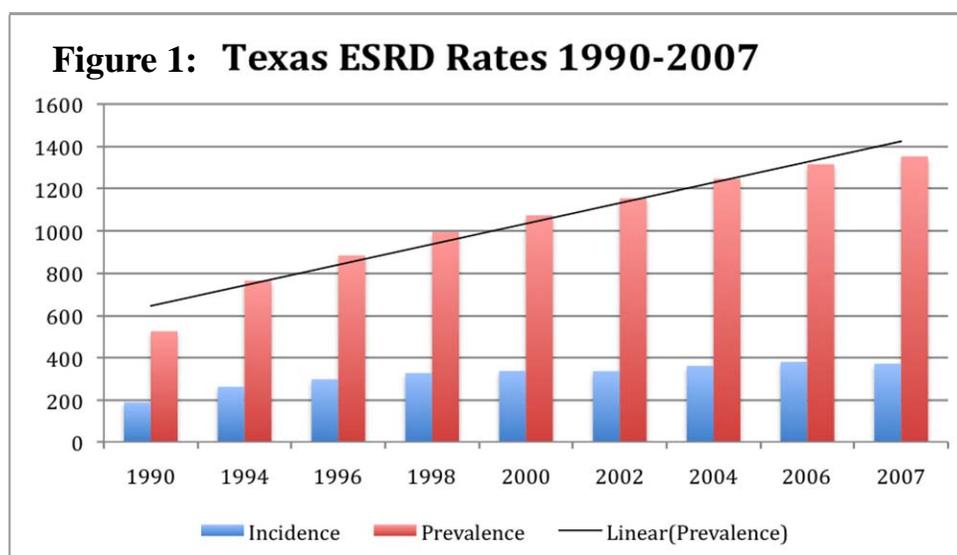
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## Chronic Kidney Disease: A Public Health Threat

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Chronic Kidney Disease (CKD) has emerged as a major public health threat worldwide, nationally, and in Texas. An estimated 26 million Americans have CKD, representing a staggering 30 percent increase over the past decade. (1, 2) Over 500,000 patients are being treated for End Stage Renal Disease (ESRD), when kidneys fail and dialysis or transplantation is needed to sustain life. Nearly 88,000 Americans die of kidney failure each year. (2)

In 2006, the U.S. had the third highest prevalence rate for CKD and the second highest reported incidence of ESRD in the world, at 360 per million population. (2, 3) In the same year, the number of new cases of ESRD in Texas surpassed the national average, climbing to 379 per million population. Figure 1 depicts ESRD growth in Texas over a 17 year period. Incidence and prevalence rates have more than doubled since 1990. Currently, 42,000 Texans are being treated for kidney failure through renal replacement therapy. (4)



Data Source: End Stage Renal Disease Network of Texas, Inc. #14, 1999-2007 Annual Reports

The ESRD population is unique in that there is a detailed registration system through the Centers for Medicare and Medicaid Services (CMS) that allows ESRD patients to be tracked from their first service date and by treatment modality. State-specific incidence and prevalence data on ESRD are available through respective End Stage Renal Disease Networks. At present, there is no comparable registry or surveillance system for tracking earlier stages of CKD, before dialysis or transplantation, so the prevalence of early-stage CKD is generally estimated from population studies.

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To estimate the increasing prevalence of CKD in the U.S., Coresh et al. analyzed data from 28,000 adult participants in the National Health and Nutrition Examination Surveys (NHANES) for 1988-1994 and 1999-2004. (1) NHANES is a continuous survey of the health and nutritional status of Americans conducted by the National Center for Health Statistics (NCHS). Using population samples, data are collected through participant interviews and physical examinations, including laboratory tests. Early kidney damage may be detected by a presence of protein in urine samples, or albuminuria. Another indicator is the estimated glomerular filtration rate (eGFR), a calculation that is based on the level of creatinine found in the blood correlated with demographic characteristics of the individual. The eGFR helps to estimate the ability of the kidneys to filter and remove waste products from the blood. CKD is defined as structural or functional kidney damage for  $\geq 3$  months with or without a low measure of eGFR, or as a GFR measurement of  $<60\text{mL}/\text{min}/1.73\text{m}^2$  for  $\geq 3$  months, with or without kidney damage. (5)

Comparison of the NHANES sample populations indicated a slight increase in earlier stages of CKD and a more significant increase in the prevalence of later stages of CKD, where impaired kidney function is increasingly evident. Overall, the prevalence of CKD increased from 10 percent to 13 percent, over a 10 year period, with crude estimates as high as 16 percent. (6)

## *Comorbidities and Complications*

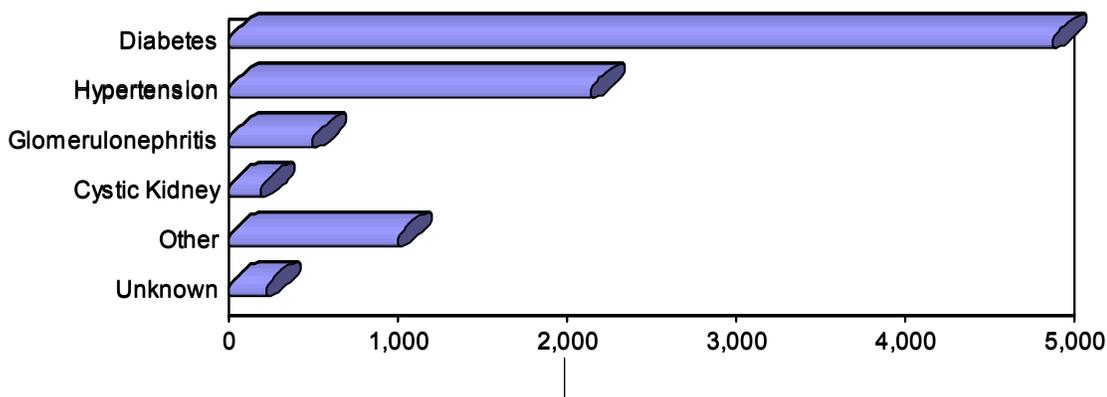
Any assessment of CKD predictors is complex because there is considerable interaction with age and race, as well as with other chronic diseases. CKD prevalence increases with age. The United States Renal Data System (USRDS) reports that Americans over age 60 are 5.9 times more likely to have CKD than the population under 60 years of age. Individuals who are 65 years of age and older comprise 44 percent of CKD cases. (2) Of the CKD population who are ages 20-64, the number one predictor of kidney disease is diabetes, followed by hypertension. Diabetes and hypertension increase the odds of progressing to CKD by more than 2.5 and 1.8 times respectively. (2)

The national rate of new ESRD cases due to diabetes increased by 50 percent from 1996-2006, with the largest growth occurring in Texas. (2) Diabetes is the primary diagnosis in more than 50 percent of CKD and ESRD patients in Texas. (4) An estimated 1.8 million Texans have diabetes, placing them at heightened risk for CKD. (7)

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Hypertension is another major predictor of CKD and ESRD. In 2007, 4.9 million Texans were reported to have high blood pressure, placing this population at risk for kidney disease. (8) Figure 2 demonstrates the powerful relationship between diabetes, hypertension, and end stage kidney failure.

**Figure 2:  
Texas ESRD Incidence by Primary Diagnosis, 2006**



Data Source: ESRD Network 14, Inc., 2007 Annual Report

In 2006, the number of new cases of ESRD in Texas was 8,911. Diabetes was the primary diagnosis in 55 percent of these patients. Hypertension as the primary diagnosis accounted for 24 percent of patients who progressed to kidney failure. (4)

Conversely, CKD increases the probability of comorbid conditions, such as hypertension and heart disease. Complications intensify with disease progression and age. Hypertension as a comorbidity may be found in 80-90 percent of patients who have late stage CKD and ESRD. (2) CKD also shares a powerful relationship with cardiovascular disease (CVD). Complications and death from CVD are 10 to 30 times more likely in CKD patients than in the general population. (9-14) In fact, most CKD patients do not make it to dialysis because they die prematurely from heart disease or other complications. (9-14) Programs designed to attenuate the problem of CKD must be framed within the context of its connection to other major chronic diseases. Complications associated with anemia, walking disabilities, bone disease, infection, and impaired vision are also common among CKD and ESRD patients.

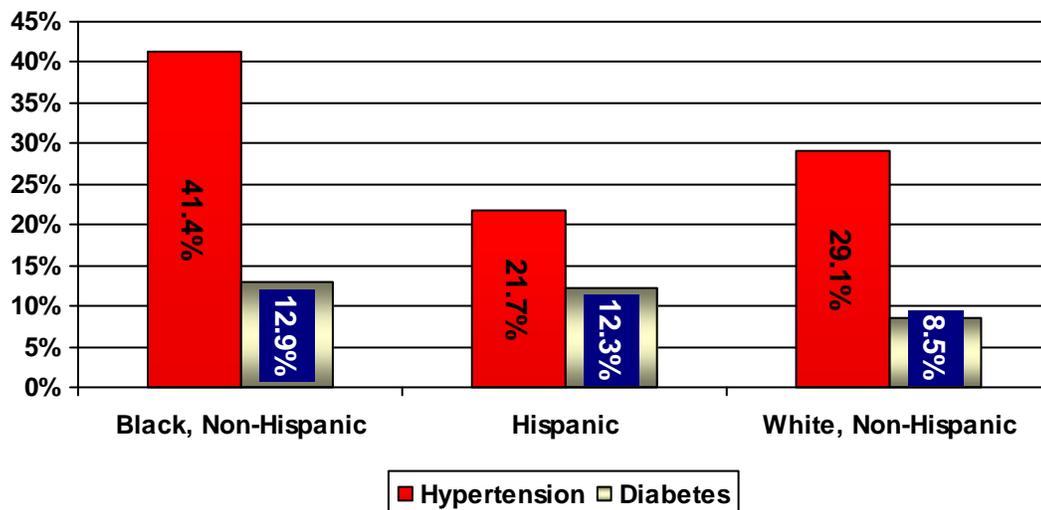
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## Disparities

CKD disproportionately affects certain racial and ethnic populations, and generally results in worse outcomes and higher costs of treatment for minority populations. (9-10, 15-17) African-American and Hispanic patients are 3.8 and 1.5 times more likely respectively than white patients to progress to kidney failure, and develop ESRD at an earlier age. CKD and ESRD prevalence are also high among Native Americans and Asian/Pacific Islanders. Native Americans are two times more likely to progress to kidney failure than whites, and Asian/Pacific Islanders are 1.3 times more likely than whites to develop ESRD. Diabetes and hypertension are also more prevalent among these populations and tend to be familial. (18)

Texas is particularly vulnerable to high rates of CKD for several reasons. More than 10 percent of the nation's 18.3 million patients with diabetes reside in Texas. (7) About 24 percent of Texans have hypertension. (8) African Americans represent only 11.6 percent of the Texas population (19), yet among the adult African-American population, 13 percent have diabetes, and an alarming 41 percent have hypertension. The prevalence of diabetes and hypertension among the adult Hispanic population is 12 percent and 22 percent, respectively. (7-8)

**Figure 3:  
Prevalence of Hypertension and Diabetes in Texas by  
Race/Ethnicity, 2007**



Data Source: Texas Behavioral Risk Factor Surveillance System, 2007

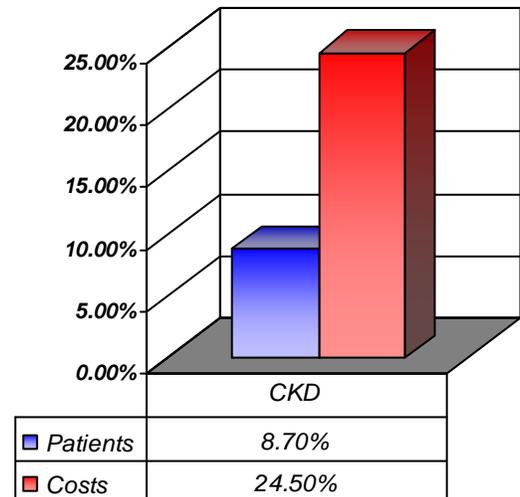
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## Financial Burden

Medicare is the primary payor for ESRD patients at all ages; however, Medicare predominately pays for CKD patients who are 65 years and older. Based on Medicare data, costs associated with CKD and ESRD are rising exponentially. In 2006, Medicare costs for CKD exceeded \$49 billion, nearly five times greater than costs in 1993. (2) While CKD patients represent 8.7 percent of the Medicare population, they consume 24.5 percent of the total Medicare budget. (2)

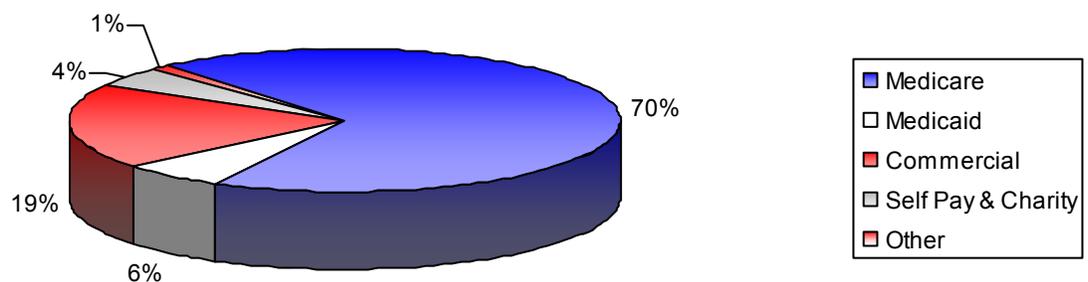
Similarly, CKD patients who reach ESRD also use a disproportionate share of the Medicare budget. ESRD patients represent only 1.2 percent of Medicare beneficiaries, but generate 6.4 percent of Medicare expenditures, reaching \$22.7 billion in 2006. (2, 9, 18) Non-Medicare spending, including employee group health plans, Medicaid and self-pay, accounted for an additional \$10.9 billion spent on ESRD in 2006 (2)

**Figure 4:  
CKD Patients & Costs as  
Percentage of Medicare  
Population, 2006**



Data Source: USRDS 2008 Annual Report

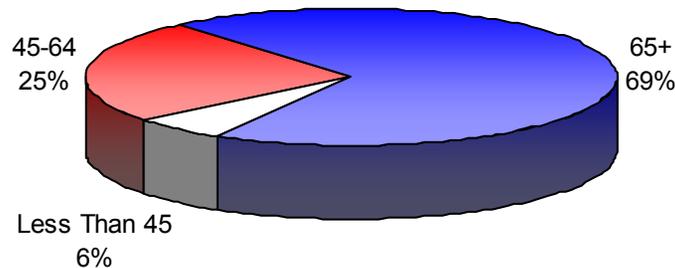
There are no accurate data on the financial impact of CKD on the Texas economy. Expenditures are largely drawn from Medicare and other claims data. Based on 2006 hospital discharge data, figure 5 shows the different payment sources for CKD. Using the same data, patients can be divided by age group. (Figure 6) The large percentage of patients who are 65 and older appears to correlate with the large percentage of costs absorbed by Medicare.



Data Source: Texas Health Care Information Collection (THCIC), Hospital Discharge Data, Department of State Health Services, 2006

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**Figure 6:  
Texas CKD Patients Without ESRD  
by Age Group, 2006**



Data Source: Texas Health Care Information Collection (THCIC), Hospital Discharge Data, Department of State Health Services, 2006

Texas Medicaid claims data in 2006 totaled \$6.8 million for CKD and \$43.6 million for ESRD. (20) In the same year, the Texas Department of State Health Services (DSHS) Kidney Health Care Program paid an additional \$17 million for ESRD patients meeting program eligibility requirements. (21) In addition to direct health care costs, indirect costs include lost productivity, lost wages, travel time for treatment, and caregiver expenses.

## *Texas Challenges*

Texas is further challenged by its many problems surrounding access to health care. Texas has the highest percentage of uninsured individuals in the U.S. Overall, 25 percent of Texans are uninsured, shifting significant costs to local and state resources. (22-24) Of its 254 counties, 119 have been designated as Health Professional Shortage Areas (HPSA) by the U.S. Department of Health and Human Services. (25) Primary health care physicians and specialists, including nephrologists, are largely clustered in large metropolitan areas, such as Houston, Dallas, and San Antonio. Patients living in rural areas often have far to travel to seek health care, without the benefit of public transportation.

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Demographic trends also impact health care. Texas has a fast growing and diverse population. The Hispanic population is growing at a faster rate than other racial/ethnic groups. From 2000 to 2007, the Hispanic population grew from 32 to 37 percent and is predicted to become the predominant racial/ethnic group in Texas in the next two decades. (25) If current trends continue, state resources will be further stressed to ensure CKD care in this high prevalence population.

A major challenge for Texas is the lack of reliable incidence, prevalence, and cost data for CKD. DSHS collects prevalence data on diabetes and hypertension, but not for CKD. This is a barrier to crafting fiscally responsible solutions to the burden of CKD in Texas.

While physician shortage, geographic expanse, and lack of health care coverage are beyond the purview of this report, it is important to understand these limitations. An analysis of demographic trends, particularly as they relate to populations at highest risk for chronic disease, is central to public health planning. Further, study of the complicated yet powerful interactive relationship among leading causes of morbidity and mortality is essential for disease prevention, management and treatment.

## *Addressing the Problem*

In 2002, the National Kidney Foundation (NKF) published the NKF Kidney Disease Outcomes Quality Initiative (K/DOQI) Clinical Practice Guidelines for Chronic Kidney Disease. The plan provides a uniform definition of CKD, a classification system for disease stage and severity, and an action plan to address CKD at each stage. (5, 9, 26-27)

The K/DOQI guidelines evolved from previous guidelines published in 1993 and 1995. The earlier recommendations focused on treatment methods to reduce death and disability among dialysis patients. The 2002 guidelines emphasize front-end medicine, focusing on early detection and evidence-based approaches to delay disease progression.

The K/DOQI guidelines are nationally and internationally recognized as the preeminent tool for clinicians, as well as stakeholders, for developing programs to improve kidney patient outcomes. CKD continues to gain prominence and is the emergent topic among clinicians and educators across several countries. In the U.S., the NKF, the National Kidney Disease Education Program (NKDEP, an initiative of the National Institutes of Health), and the Centers for Disease Control and Prevention have taken the lead in efforts to increase awareness of CKD and to encourage adherence to clinical practice guidelines among clinicians and health care systems.

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Awareness of CKD remains disappointingly low. The NKF estimates 20 million Americans are at risk for CKD, but are not aware of it. (5) In the most current NHANES study, participants were asked if they had ever been told by a doctor or other health care professional that they had weak or failing kidneys. Less than 10 percent of participants with moderately decreased kidney function reported being told they had weakened or failing kidneys. Awareness of the disease state was highest among patients with severe kidney disease, but of that group, only 42 percent knew they had the condition. (1)

Early detection and management of CKD can delay disease progression and decrease complications and comorbidities, yet CKD remains under-diagnosed and under-treated. (9, 18, 28-29) The NKDEP reports that most practices screen fewer than 20 percent of their Medicare patients with diabetes, and less than one-third of people with identified CKD are prescribed an angiotensin converting enzyme (ACE) inhibitor, the recommended standard of care for patients with diabetes and proteinuria or hypertension. Treatment among primary care physicians and specialists remains fragmented. Referral to a nephrologist is generally not timely. Patient education of kidney replacement options is limited and comes late, leading to a higher incidence of emergency dialysis and a shorter survival from dialysis initiation. (30) In addition, pre-emptive transplantation is only practiced in a minority of patients, reducing survival rates of transplantation and increasing the number of patients who return to CKD and ESRD.

Over the past several years, it has become apparent that individual states need to join national efforts to increase awareness of CKD, as well as address the problems inherent in their own populations. Since the release of the K/DOQI guidelines, several states have acted to address the CKD burden, most notably New York, Michigan, North Carolina, and Texas.

## *Texas Legislation*

In 2007, the 80<sup>th</sup> Texas Legislature passed House Bill 1373, which amended Health and Safety Code, Chapter 98, and established the Chronic Kidney Disease Task Force (Task Force). Members appointed by the Governor represent nephrologists, primary and pediatric care physicians, transplant surgeons, renal dietitians and treatment coordinators, health plans, laboratories, medical schools, the NKF, ESRD Network 14, Texas Renal Coalition (TRC), and DSHS. Additionally, two State Senators were appointed to the Task Force by the Lieutenant Governor and two State Representatives were appointed by the

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Speaker of the House. The Legislature directed the Task Force to:

1. Develop a plan to educate health care professionals about the advantages and methods of early screening, diagnosis, and treatment of chronic kidney disease and complications related to chronic kidney disease based on the Kidney Disease Outcomes Quality Initiative Clinical Practice Guidelines for Chronic Kidney Disease or other medically recognized clinical practice guidelines;
2. Develop a plan to educate health care professionals and individuals with chronic kidney disease about the advantages of end stage renal disease modality education and early renal replacement therapy, including in-center dialysis, home hemodialysis, peritoneal dialysis as well as other access options, and transplantation, before the onset of end stage renal disease when kidney function is declining; and
3. Make recommendations on the implementation of a cost-effective plan for early screening, diagnosis, and treatment of chronic kidney disease for the State's population.

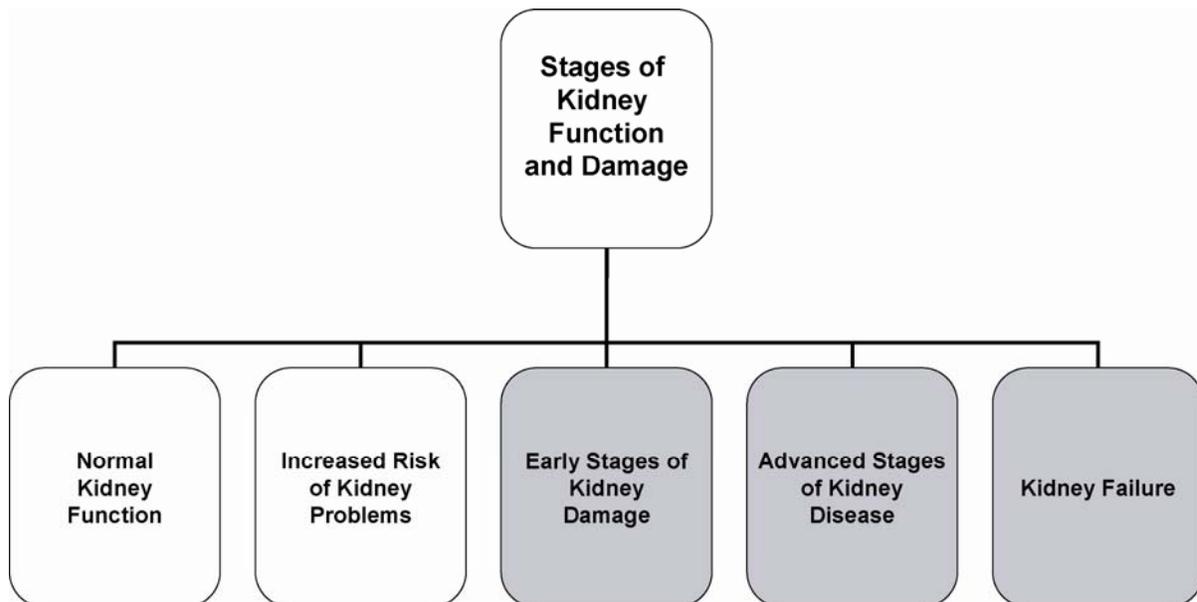
Members were appointed in April 2008 and have worked diligently over a period of six months to study the burden of CKD in Texas and outline strategies to address the problem. At the first meeting, the chair assigned four subcommittees to address issues surrounding public education, professional education, data and surveillance, and insurers and health plans. Members conducted an extensive review of the literature, analyzed data and patient trends, and met with medical societies, health plan medical directors, and stakeholders to reach consensus on recommendations. Similar to other countries and states, the Task Force recommends a public health approach across health care systems to increase awareness of CKD and to establish a coordinated system of care. (31-33) The Task Force frames its recommendations around these goals:

- ▶ Prevent CKD, its comorbidities and complications through increased public and medical community awareness and education, with particular emphasis on at-risk patients.
- ▶ Promote early screening and detection of CKD to delay disease progression.
- ▶ Provide and promote physician and other health care provider education related to the importance of:
  - ▶ Primary prevention of chronic diseases as the foundation for dealing with CKD and ESRD,
  - ▶ Early recognition, diagnosis, and treatment of CKD,

- ▶ A multidisciplinary approach to patient care among primary care, nephrology, and other specialty physicians, and
- ▶ Educating patients on renal replacement options in a timely manner to improve outcomes and decrease complications.
- ▶ Implement clinical practice guidelines, based on the published K/DOQI guidelines and other medically recognized strategies, through systems: physician practices, insurers and health plans, laboratories, medical associations, medical and nursing schools, and agency partners.
- ▶ Implement guidelines that will result in annual measurement of urinary protein creatinine ratio and eGFR on all patients with diabetes, hypertension, and/or a family history of kidney disease, followed by timely intervention and disease management.
- ▶ Enhance surveillance systems to include CKD data collection and State oversight, to better assess the prevalence and incidence of CKD in Texas, and to more effectively address this epidemic.
- ▶ Use evidence-based public health methods to facilitate timely, coordinated, and comprehensive prevention and care.

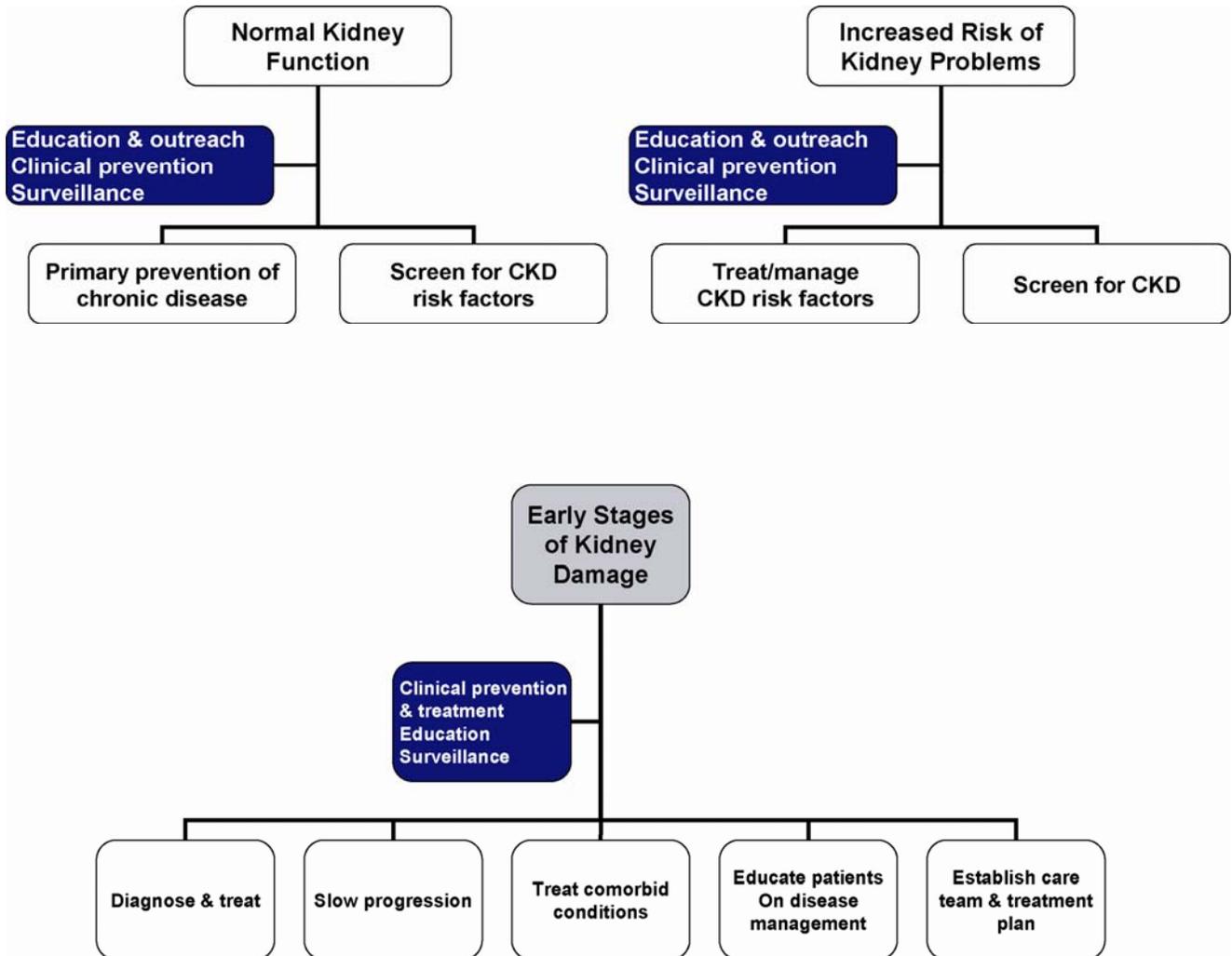
Using an adapted K/DOQI care model, disease prevention and progression are illustrated in Figure 7. The gray shaded components represent stages of CKD to ESRD.

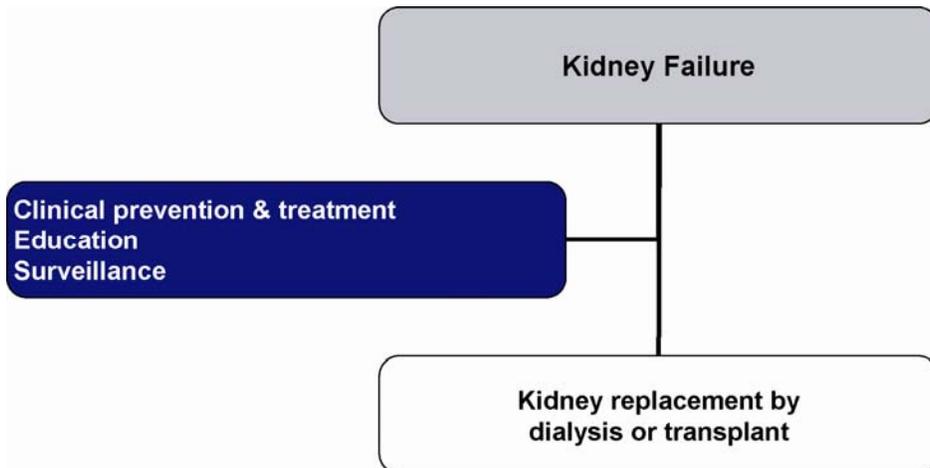
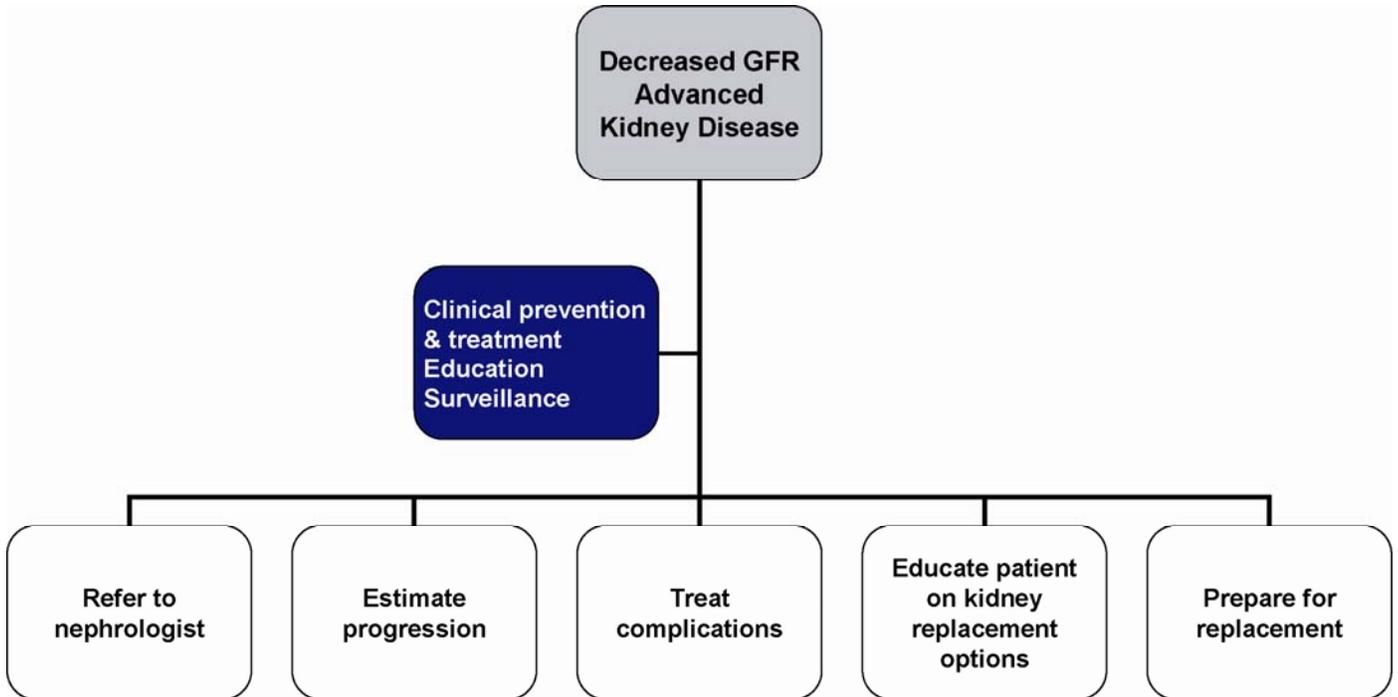
**Figure 7: K/DOQI Model**



Source: National Kidney Foundation, K/DOQI Clinical Practice Guidelines for Chronic Kidney Disease, 2002

Further division of the model shows minimum standards of care at each stage, paired with public health strategies.





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## *Primary Prevention and Early Detection Through Education and Outreach/ Partnering*

The burden of kidney disease in Texas continues to increase, yet CKD remains under-recognized and under-diagnosed. Signs and symptoms of early kidney disease may be minimal or non-existent, and symptoms of advanced disease are not always distinguishable from other conditions. Texas needs a concerted effort to increase awareness among at-risk patients and the general public.

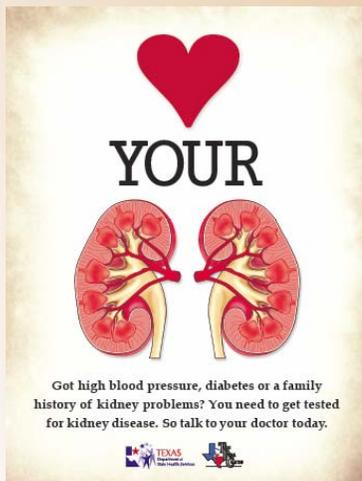
The Public Education Subcommittee was charged with gathering resources, surveying existing infrastructure for integration opportunities, and meeting with other groups who shared similar objectives. The subcommittee has accomplished the following to date:

- Developed a compendium of kidney disease resources to include primary prevention of chronic disease, early detection of patients at risk for CKD, and management and treatment of CKD and ESRD.
- Coordinated and integrated CKD education into existing DSHS programs, including diabetes, cardiovascular disease, and the Kidney Health Care Program. The Texas Diabetes Program/Council, for example, has featured articles related to state CKD prevention efforts in its newsletter, which is distributed to 31,000 health care providers across the state.
- Established strong partnerships with sister agencies to leverage shared goals. Agency representatives regularly attend Task Force meetings and include: NKF, ESRD Network 14, Texas Renal Coalition, Texas Transplantation Society, Texas Medical Association, TMF Health Quality Institute, Walk the Talk America, and local representation from the American Nephrology Nurses Association (ANNA).

The Public Education Subcommittee recommends continued coordination and integration with DSHS programs, as well as national and state organizations, to provide consistent messaging to Texans. Additionally, the work group recommends state-wide implementation of the successful *ESRD Prevention Campaign*.

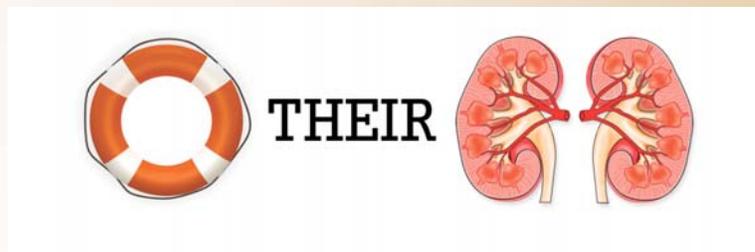
## *ESRD Prevention Campaign*

The 80<sup>th</sup> Texas Legislature attached a rider to the General Appropriations Act directing DSHS and TRC to develop and implement a program to increase awareness among Texans at risk for CKD. DSHS contracted with Enviromedia Social Marketing to develop a multi-media awareness campaign with statewide application. In the summer of 2008, the State sent an urgent message to its citizens explaining the connection between CKD and its risk factors with a specific call to action: if you have diabetes, hypertension, or a family history of CKD, you need to get tested.



The “Love Your Kidneys” campaign was launched in Lubbock, Laredo, and the Lower Rio Grande Valley in July 2008 and has met with great success. Campaign components include television, cable and radio public service announcements (PSAs); posted messages in pharmacies and grocery stores; and print ads in publications popular among African-American and Hispanic populations. A dual campaign directed at health care providers, “Save Their Kidneys,” urges physicians to screen their patients who are at risk for CKD. Outreach to providers includes print ads in *Texas Medicine* and *Texas Family Physician*, development of the [savekidneys.com](http://savekidneys.com) website, and a direct

mailing to physicians and other health care providers in target markets. The website and mailing include practice guidelines and patient education resources. Additionally, an exhibit for professional meetings was created and is currently being used at statewide meetings.



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In September 2008, DSHS contracted with the University of Texas Medical Branch (UTMB) to conduct an independent evaluation of the prevention campaign. Patient and provider surveys were administered through community diabetes projects under contract with the Texas Diabetes Program. Survey return rates for patients and physicians were 73 percent and 61 percent, respectively. More than half of patients surveyed reported having seen the PSAs. Of those patients that saw, heard, or read the announcements, an overwhelming 98 percent indicated at least one change in awareness or behavior specific to CKD. (34) The evaluators strongly recommend statewide application of the ESRD Prevention Campaign.

The campaign will launch in Tyler, Beaumont-Port Arthur, San Antonio, and Corpus Christi in January 2009. At the same time, media ads will continue to run in first year sites. In the Task Force's assessment, assigning resources to increase the reach and scope of the campaign could significantly impact public and professional awareness of CKD.

## *Professional Education*

While the "Save Their Kidneys" campaign is designed to increase awareness of the importance of prevention and early detection, a review of clinician practice trends indicates the need for more rigorous training on CKD prevention, management, and treatment. Continuing professional education programs should be framed within the context of the interactive relationships among leading chronic diseases.

The World Health Organization (WHO), in its 2005 report, *Preventing Chronic Diseases: A Vital Investment*, reported that 35 million of the 58 million annual deaths from all causes worldwide are attributed to chronic diseases. Sixty (60) percent of all deaths among all ages are due to chronic diseases. (35) Modifiable risk factors are common to most and include, for example, unhealthy diet, lack of physical exercise, obesity, and tobacco use. Primary prevention, early detection, treatment, and management to lessen severe outcomes are also a common denominator among all practice guidelines.

The Professional Education Subcommittee recommends that Texas require course work on chronic disease prevention, detection, treatment, and management for all licensed physicians, physician assistants, and nurses practicing in Texas. The subcommittee also recommends these courses be required in medical and nursing schools. A number of professional education courses on different chronic diseases are available as online modules, webcasts, presentations at medical conferences, and through grand rounds.

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The extent to which they are used across disciplines varies. Morbidity and mortality related to chronic diseases demonstrate that continued professional education is a necessity.

Education specific to CKD and the K/DOQI guidelines within the medical community and among payors is essential in working towards a comprehensive system of patient care that will not only delay CKD disease progression, but will lessen complications from comorbid conditions. The importance of educating providers and patients on different options for renal replacement therapy in a timely manner cannot be overstated. Preparation of vascular access for patients receiving hemodialysis, for example, should occur weeks or months before the initiation of dialysis to allow more efficient removal and replacement of blood, and to reduce the risk of infection or blockage. Similarly, referral for transplantation in a timely manner could increase patient and kidney survival. The option of pre-emptive transplantation should be emphasized to ensure better outcomes for patients with advanced CKD.

The three main access options for hemodialysis include catheter, graft, or arteriovenous (AV) fistula. The Task Force recommends the use of AV fistula whenever possible because of its:

- Lower risk of infection,
- Lower tendency for blood clotting,
- Greater blood flow,
- Reduced treatment time, and
- Cost effectiveness.

## *Clinical Prevention and Treatment*

The Task Force recommends adoption of the K/DOQI Clinical Practice Guidelines for Chronic Kidney Disease in Texas. The Task Force will create a committee of practicing physicians and academicians to write a white paper on the guidelines for publication in *Texas Medicine*, the journal of the Texas Medical Association distributed to over 40,000 Texas providers. Over time, the Task Force will develop strategies to incorporate the guidelines into physician practice tools and flow charts to facilitate their implementation, and to measure performance.

Consensus among physician practices, health plans, and insurers is essential to create a coordinated, seamless system of care for patients. The Insurance and Health Plans Subcommittee studied current practices among health plans and insurers, and national quality

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measures surrounding CKD care. Meetings with the State Association of Health Plans have indicated a favorable response to promoting and encouraging increased physician utilization of clinical practice guidelines among their members.

The Task Force encourages application of quality assurance measures for CKD care by CMS and other payors. Members are developing a position paper and working with the National Committee for Quality Assurance (NCQA) to include nephropathy screening for individuals with hypertension as a Healthcare Effectiveness Data and Information Set (HEDIS) measure.

### *Quality Care Initiative*

The Task Force has joined efforts with TMF Health Quality Institute, the National Kidney Foundation, ESRD Network 14, Texas Renal Coalition, and DSHS in an initiative to promote improvements in CKD quality measures. Texas is one of 10 states selected by CMS to participate in this initiative. Physician practices across the state will receive on-site technical assistance to:

- Identify high risk patients,
- Use evidence-based clinical guidelines to monitor, treat, and slow disease progression,
- Provide patient education, and
- Improve quality performance measures.

This project is designed to improve performance measures as they relate to:

- Timely testing of urine microalbumin to identify early kidney disease due to diabetes,
- Prescription of ACE inhibitors and/or angiotensin receptor blocking agents to slow progression of CKD in patients with diabetes and hypertension, and
- Increased use of AV fistula as the first choice for individuals who elect hemodialysis.



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## *Policy Change*

GFR is an important measure of kidney function that can be estimated through a calculation based on serum creatinine levels and patient demographics, such as age, gender, body size, and ethnicity. Estimated GFR (eGFR) is recognized as a simple, cost effective method to assess progression of kidney disease. (36-37) A survey funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) revealed that 38 percent of labs automatically report eGFR, with the highest reporting from high volume labs and the lowest from low-volume independent labs, particularly those in physician offices. (38-39) The Task Force recommends a similar survey of Texas laboratories.

The Task Force supports national efforts to encourage automatic eGFR reporting by all hospital and clinical laboratories in the U.S. Implementation of this simple measure can dramatically increase early detection and intervention to impede disease progression. It is also useful as an annual measure to manage patient care. The Task Force recommends education of clinical laboratory professionals to promote calculation and reporting of eGFR with all serum creatinine determinations for individuals 18 years and older. The Task Force strongly recommends that this become a standard of care.

## *Data Collection and Surveillance*

ESRD incidence and prevalence data are readily available from CMS and local ESRD networks. Data on the stages of CKD that precede ESRD are lacking, particularly state data. To document the incidence and prevalence of CKD and assist the Task Force and various state advisory councils to develop strategies that address the burden of chronic disease in Texas, the Task Force recommends the creation of a state CKD registry. Specifically, the Task Force recommends:

- CKD surveillance be incorporated into existing surveillance programs, such as the Behavioral Risk Factor Surveillance System (BRFSS).
- Data from existing surveillance programs continue to be used for surveillance of CKD risk factors.
- CKD incidence and prevalence data be collected and analyzed from population-based screening and surveillance programs.

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In 2000, the NKF launched its Kidney Early Evaluation Program (KEEP). The program is designed to detect early kidney disease in at-risk patients. Since its inception, KEEP has screened approximately 100,000 individuals who have risk factors that predispose them to CKD. (40) The Task Force supports efforts to expand KEEP throughout Texas.

KEEP is an intensive health screening free to qualifying individuals. Participants enrolling in the program are 18 years and older with diabetes, hypertension, or a family history of kidney disease, diabetes, or hypertension. Individuals without known CKD risk factors are excluded from the program. The screening includes a blood pressure check, urine test, blood test, and physician consultation. Screenings are valued at \$250 per person.

KEEP has been very successful in identifying individuals with CKD. A national study compared KEEP results with NHANES 1999-2004 outcomes. Of the 61,674 KEEP cohort, 27 percent were found to have CKD. The NHANES sample of 14,632 participants revealed 15 percent of participants had CKD. (41) Comparison of the two studies must be viewed with caution. KEEP specifically screens at-risk patients. NHANES is a nationally representative cross-sectional survey. The percentage of African-American respondents was higher among the KEEP population who were screened. Additionally, the percentage of obese participants and those with self-reported diabetes, hypertension, or CVD was higher among KEEP participants.

The Task Force recognizes the importance of screening for a number of reasons. Screening detects individuals at risk of CKD, allowing patients to be treated and managed to slow disease progression. It provides an opportunity for patient education and public awareness, and provides much needed data on CKD. Members have been studying cost effective, quality controlled methods to screen large numbers of Texans. The Task Force has identified state employees as being representative of the Texas population and an ideal group in which to initiate a CKD screening and education demonstration project.

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## *Summary of Findings*

- CKD is a major public health threat in the U.S. and in Texas.
- The U.S. has the third highest prevalence of CKD in the world; Texas has the second highest prevalence rate in the country.
- CKD continues to be under-recognized, under-diagnosed, and under-treated.
- Diabetes, hypertension, and heart disease are the primary diagnoses among people with CKD and ESRD. CKD, in turn, increases problems associated with diabetes and hypertension, and severely accelerates heart disease, often resulting in death before a patient can progress to ESRD.
- CKD affects the population disproportionately, with African Americans, Hispanics, American Indians, and Asian/Pacific Islanders at highest risk.
- Prevention and management of risk factors can reduce the incidence and prevalence of CKD and ESRD.
- Clinical practice guidelines and tools are available for screening, management, and treatment of CKD from initiation and through disease stage.
- CKD patient care is often fragmented, and clinical guidelines are not consistently applied through health systems.
- The K/DOQI clinical guidelines have been adopted in several countries and states. The immediate objective in Texas is to work within health care systems to adopt and use the guidelines.

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## *Recommendations*

### *Priority 1: Data and Surveillance*

A data collection and surveillance system to determine and monitor the incidence and prevalence of CKD in all stages over time is essential to public health planning and implementation of strategies to address the problem. (16, 42-43)

- ▶ The Task Force recommends that the State study the feasibility and effectiveness of a public screening demonstration project that will:
  - ▶ Yield population-based data, representative of all Texans, that will determine the number of people with CKD at each stage, and those at risk.
  - ▶ Compare predominately Hispanic and non-Hispanic population cohorts.
  - ▶ Provide cost-effective CKD screening to Texans, using evidence-based screening protocols and adhering to recognized standards of care.
  - ▶ Increase awareness of CKD, its risk factors, and complications, and
  - ▶ Provide opportunities to educate patients and the general public on the importance of prevention, early detection, treatment, and management to decrease disease burden.
  
- ▶ The Task Force further recommends:
  - ▶ CKD surveillance be incorporated into existing surveillance programs, such as the Behavioral Risk Factor Surveillance System (BRFSS) used by the DSHS diabetes and cardiovascular disease programs, among others.
  - ▶ Data from existing surveillance programs continue to be used to estimate at-risk patients, i.e., those with diabetes, hypertension, cardiovascular disease, and obesity.
  - ▶ CKD surveillance be initiated in the State Employee Retirement System, which oversees employee health plans, to provide the State with preliminary data on CKD incidence and prevalence.

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## *Priority 2: Clinical Prevention and Treatment*

House Resolution (HR) 6331: Medicare Improvements for Patients and Providers Act of 2008 (110<sup>th</sup> U.S. Congress, 2007-2008) amends Part P of Title III of the Public Health Service Act (42 U.S.C. 280g et seq.) to include Sec. 399R, Chronic Kidney Disease Initiatives. In general, the resolution directs the Secretary to establish pilot projects to:

1. Increase public and medical community awareness (particularly of those who treat patients with diabetes and hypertension) regarding chronic kidney disease, focusing on prevention;
  2. Increase screening for chronic kidney disease, focusing on Medicare beneficiaries at risk of chronic kidney disease; and
  3. Enhance surveillance systems to better assess the prevalence and incidence of chronic kidney disease.
- ▶ The Task Force recommends that the State study the feasibility of a pilot project that would apply these objectives to state funded health coverage programs, including:
    - ▶ The State Medicaid Program, and
    - ▶ The Employees Retirement System of Texas, which provides health care coverage for State employees.

## *Priority 3: Professional Education*

- ▶ The Task Force recommends that one hour of continuing education on chronic disease prevention, treatment, and control be required of all licensed physicians, physician assistants, nurses, pharmacists, and dietitians. The Task Force recommends the inclusion of the same education in medical and nursing school curricula.
- ▶ The Task Force recommends one hour of continuing education specific to ESRD treatment modalities be required of all nephrologists and other specialists who treat patients with CKD and ESRD, on an annual basis. AV fistula should be presented as the recommended access option for patients who elect hemodialysis.
- ▶ The Task Force recommends education of clinical professionals in all Texas laboratories to promote calculation and reporting of eGFR with all serum creatinine determinations for individuals 18 years and older.

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### *Priority 4: Policy Change*

- ▶ The Task Force recommends that a rider be attached to the standing Texas Kidney Health Care Program appropriation that will direct funding to prevention. This funding would support Task Force recommendations and activities.
- ▶ The Task Force recommends Texas laboratories automatically calculate and report eGFR with all serum creatinine determinations for individuals 18 years and older. The Task Force strongly recommends that this become a standard of care.

### *Priority 5: Public Education and Outreach*

The Task Force recommends the following actions:

- ▶ Continue and expand the highly successful ESRD Prevention Campaign throughout the State through recurring appropriations.
- ▶ Continue to integrate and coordinate CKD and ESRD prevention education and initiatives into existing DSHS programs and Councils.
- ▶ Continue to partner with organizations to leverage shared goals and objectives, and to provide a consistent message to Texans regarding the importance of prevention and early detection of CKD.

### *Priority 6: Administrative*

The Chronic Kidney Disease Task Force provides leadership and a forum for discussion and planning among all kidney related organizations in Texas. The Task Force requests that the State consider continuation of the Chronic Kidney Disease Task Force beyond its expiration of August 31, 2009, so it may continue its efforts toward decreasing the burden of CKD in Texas. The Task Force also recommends continued integration among the diabetes, cardiovascular disease, obesity, and CKD programs, and cross representation at respective meetings.

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## Dictionary

ACE Inhibitor:	A medicine used to treat high blood pressure. ACE inhibitors keep the body from making the hormone angiotensin. ACE inhibitors are often used to slow kidney damage.
Albumin:	A type of protein.
Albuminuria:	More than normal amounts of albumin in the urine.
Anemia:	The condition of too few red blood cells. If the blood is low on red blood cells, the body does not get enough oxygen.
Arteriovenous (AV) Fistula	Surgical connection of an artery to a vein created in persons who will have hemodialysis. The AV fistula causes the vein to grow thicker to allow for repeated needle insertions.
Chronic Kidney Disease (CKD):	Progressive loss of kidney function over time, often resulting in kidney failure.
Creatinine:	A waste product from meat protein in the diet and from body muscle use. Creatinine is removed from the blood by the kidneys. When kidneys do not work correctly, creatinine levels in the blood increase.
Diabetes Mellitus:	A condition characterized by high blood sugar resulting from the body's inability to use sugar (glucose) efficiently. In type 1 diabetes, the pancreas is not able to make enough insulin; in type 2 diabetes, the body is resistant to available insulin.
Dialysis:	The process of cleaning wastes from the blood artificially, when kidneys fail.
End Stage Renal Disease (ESRD):	Kidney failure. Treatment is necessary to replace the work of the kidneys.

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Glomerulonephritis:	Inflammation of the glomeruli, where blood is filtered in the kidney.
Hemodialysis:	The use of a machine to clean wastes from the blood, once kidneys fail.
Hypertension:	Sustained high blood pressure.
Insulin:	A hormone that turns the sugars we eat into energy.
Kidneys:	The two bean shaped organs in the body that filter wastes from the blood.
Peritoneal Dialysis:	Cleaning the blood by using the lining of the abdomen as a filter.
Pre-emptive Transplantation:	Transplantation without prior dialysis.
Renal:	Of the kidneys.
Renal Replacement Therapy:	Life-supporting treatments for kidney failure.
Transplant:	Replacement of a diseased organ with a healthy one.

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## *Acronyms*

<b>ACE:</b>	Angiotensin Converting Enzyme
<b>AV:</b>	Arteriovenous
<b>BRFSS:</b>	Behavioral Risk Factor Surveillance System
<b>CKD:</b>	Chronic Kidney Disease
<b>CMS:</b>	Centers for Medicare and Medicaid Services
<b>CVD:</b>	Cardiovascular Disease
<b>DSHS:</b>	Department of State Health Services
<b>eGFR:</b>	Estimated Glomerular Filtration Rate
<b>ESRD:</b>	End Stage Renal Disease
<b>HEDIS:</b>	Healthcare Effectiveness Data and Information Set
<b>HPSA:</b>	Health Professional Shortage Area
<b>KEEP:</b>	Kidney Early Evaluation Program
<b>NCQA:</b>	National Committee for Quality Assurance
<b>K/DOQI:</b>	Kidney Disease Outcomes Quality Initiative
<b>NHANES:</b>	National Health and Nutrition Examination Surveys
<b>NIDDK:</b>	National Institute of Diabetes & Digestive & Kidney Diseases
<b>NKDEP:</b>	National Kidney Disease Education Program
<b>NKF:</b>	National Kidney Foundation
<b>TRC:</b>	Texas Renal Coalition
<b>USRDS:</b>	United States Renal Data System
<b>UTMB:</b>	University of Texas Medical Branch
<b>WHO:</b>	World Health Organization



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