

# Chronic Kidney Disease Initiative

## Protecting Kidney Health

October 2012



*CDC's CKD Initiative provides public health strategies for promoting kidney health.*

The spectrum of chronic kidney disease (CKD) extends from microalbuminuria, which is the leakage of excess protein into the urine due to damage to the kidney tubules, to end-stage renal disease (ESRD), kidney failure requiring dialysis, or transplantation. If left untreated, CKD can progress to ESRD and premature cardiovascular death.

- More than 20 million (or more than 10%) U.S. adults are estimated to have CKD and most are undiagnosed.
- Kidney disease is the 9th leading cause of death in the United States.
- The number of cases of ESRD in the U.S. population has more than doubled since 1990 and is expected to continue to grow with the increasing prevalence of risk factors, including diabetes, hypertension, obesity and an aging U.S. population.
- In the United States, diabetes and hypertension are the leading causes of ESRD, accounting for 72% of new cases.
- Total Medicare expenditures for ESRD reached \$33 billion in 2010, more than 6% of the total Medicare budget. About 1.3% of Medicare patients had ESRD in 2010, yet accounted for 7.5% of Medicare spending. Medicare costs for ESRD were \$75,000 per patient per year.

**Improving blood glucose (sugar) and blood pressure control in people with diabetes reduces the risk for kidney disease by 33–40%**

### The Good News

Disability and death from CKD is not inevitable.

- Among persons with diabetes, early detection and treatment of kidney disease can help prevent or delay cardiovascular death and progression to ESRD. Among those with diabetes and hypertension, blood sugar and blood pressure control have been shown to prevent or delay the onset of kidney disease.
- Several studies have demonstrated the potential for preventing or delaying the initial onset of diabetic kidney disease by treating patients who have diabetes with angiotensin-converting enzyme inhibitors and angiotensin receptor blockers. In addition to lowering blood pressure, these drugs reduce proteinuria, a risk factor for developing kidney disease, by about 35%.

### CDC's Investment

In recognition of the growing problem of kidney disease, CDC's CKD Initiative is designed to provide comprehensive public health strategies for promoting kidney health. These strategies seek to prevent and control risk factors for CKD, to raise awareness, to promote early diagnosis, and to improve outcomes and quality of life for those living with CKD. Current activities include surveillance and epidemiology, state-based demonstration projects, and health outcomes and economic studies in collaboration with partners from other government agencies, universities, and national organizations.

## Surveillance and Epidemiology

CDC is working with the University of Michigan and the University of California at San Francisco to establish and support a national surveillance system for CKD. The National CKD Surveillance System, available through an interactive Web site [www.cdc.gov/ckd](http://www.cdc.gov/ckd), is crucial for monitoring national trends in prevalence, risk factors, and care practices that impact on CKD prevention and control, and for monitoring kidney disease objectives for *Healthy People 2020*.

In partnership with other federal agencies, academia, national organizations, and other partners, CDC developed and disseminates the National CKD Fact Sheet. This document provides a consensus document about the burden of CKD in the United States. The National CKD Fact Sheet includes data on prevalence by race/ethnicity, risk factors, and health consequences.

In addition, CDC is supporting the collection of national data on kidney measures in the National Health and Nutrition Examination Survey (NHANES).

**CKD surveillance data is available at**  
[www.cdc.gov/ckd](http://www.cdc.gov/ckd).

## Health Outcomes

CDC is completing a screening demonstration project for early identification of CKD in the U.S. population in partnership with the National Kidney Foundation. The program, CKD Health Evaluation and Risk Information Sharing (CHERISH), identified individuals at high risk for CKD. Screenings were conducted in 8 sites in 4 states in the United States (2 sites each in New York, Florida, Minnesota, and California) to optimize the diversity, e.g., Hispanics, African Americans, Native Americans, and Asians/Pacific Islanders, in the sample.

CDC is also working with partners to conduct research into various aspects of CKD using national datasets like NHANES and the United States Renal Data System (USRDS). In addition, a data use agreement with the Veterans Administration has been established to examine the natural history and health outcomes of CKD in this population.

## Health Economics

In collaboration with RTI International, CDC developed a cost-effectiveness model using a lifetime simulation model to assess the costs and benefits of various CKD care and prevention interventions. The model will be used to predict the development, progression, and complications of CKD, and will also test the effectiveness of various public health interventions. CDC cost-effectiveness studies have found that CKD screening should target people aged 50 or older or those with diabetes or hypertension and screening those not at high risk is not cost-effective.

Also with RTI International, CDC initiated an economic study on the direct and indirect costs of CKD. These studies will be vital in health policy decisions about CKD, as it has become one of the most expensive diseases in the Medicare budget.

**For more information, please contact the Division of Diabetes Translation**

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