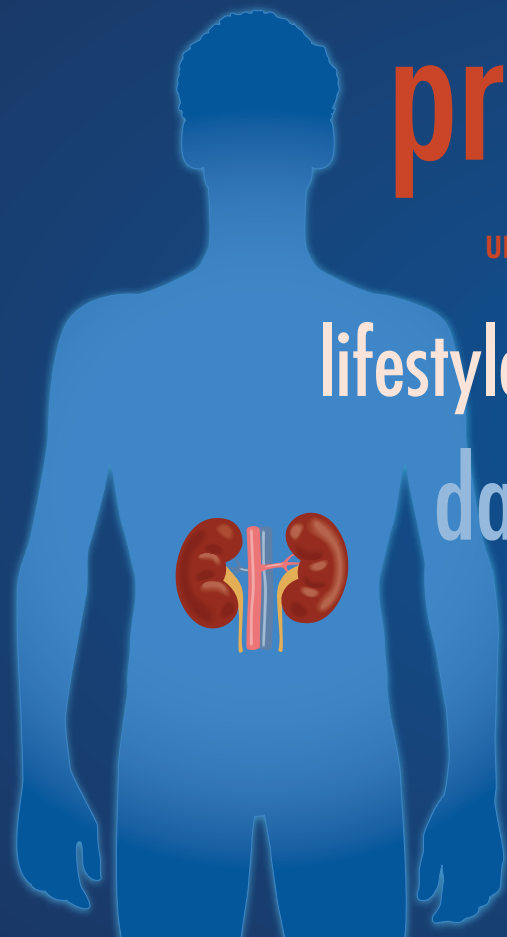


# CHRONIC KIDNEY DISEASE

ISSUE BRIEF

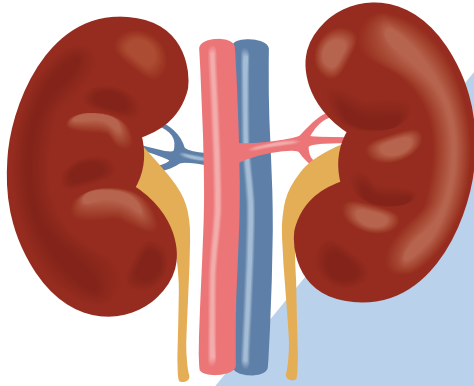


**progressive** prevent and control  
awareness obesity **kidney failure**  
untreated end-stage renal disease  
heart disease **stages** high blood pressure complications  
lifestyle changes **CKD**  
family history damage to kidneys **diabetes**  
few signs or symptoms



**Centers for Disease Control and Prevention**  
National Center for Chronic Disease Prevention and Health Promotion

# PROGRESSION OF CHRONIC KIDNEY DISEASE (CKD)



## RISK FACTORS FOR CKD MAY INCLUDE

- Heart Disease
- Diabetes
- High Blood Pressure
- Obesity
- Lupus
- Family History of CKD
- Age
- High Cholesterol

**NORMAL**

**INCREASED  
RISK**

**KIDNEY  
DAMAGE**

**REDUCED  
KIDNEY  
FUNCTION**

**KIDNEY  
FAILURE**

Preventing CKD and its complications is possible by managing risk factors and treating the disease to slow its progression and reduce the risk of complications

# What Is Chronic Kidney Disease?

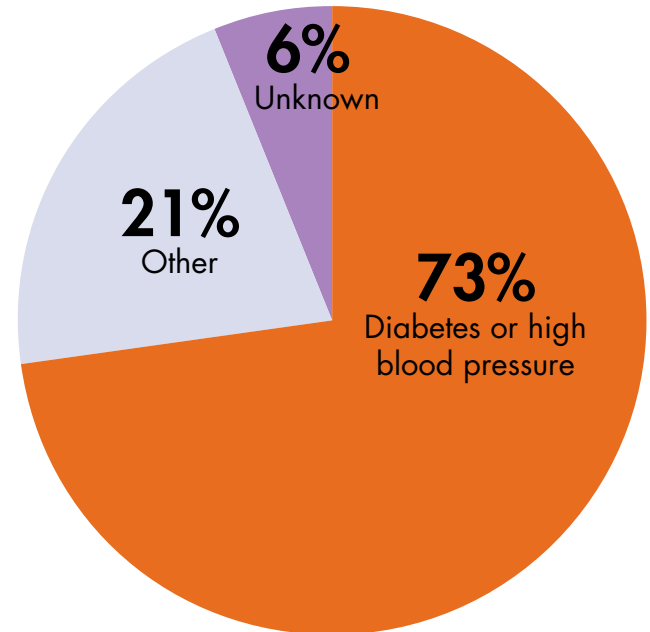
**Fast Fact: Kidney diseases are the 9th leading cause of death in the United States.**

- Chronic kidney disease (CKD) is a condition in which a person has damaged kidneys or reduced kidney function for more than 3 months. During this time, the kidneys cannot properly filter waste out of the blood. If not detected and treated early, CKD can cause many health problems and even lead to kidney failure and early death.
- CKD can start at any age, but the chances of developing it increase as people get older. It is most common among adults aged 70 years or older.
- Once a person has CKD, it usually gets worse over time and lasts for the rest of the person's life. Kidney failure—also called end-stage renal disease—is the final stage of CKD, when the kidneys stop working completely.

# How Big Is the CKD Problem and Who Is at Risk?

**Fast Fact: CDC estimates that more than 20 million US adults aged 20 years or older have CKD—or more than 10% of the US adult population.**

- Risk factors for CKD include diabetes, high blood pressure, heart disease, obesity, high cholesterol, lupus, and a family history of kidney disease.
- Diabetes and high blood pressure are the most common causes of kidney failure.
- Compared with whites, African Americans are more than 3 times as likely to develop kidney failure, and American Indians, Alaska Natives, and Asian Americans are about 1 1/2 times more likely. Hispanics are also about 1 1/2 times more likely to develop kidney failure than non-Hispanics.



**Principal Cause of New Cases  
of Kidney Failure, United States  
Renal Data System, 2012  
(N = 114,813)**

# What Can We Do to Prevent CKD?

**Fast Fact: Every 24 hours, more than 300 people begin treatment for kidney failure.**

**Detection:** People with CKD may not know they have the disease because it has few signs or symptoms in the early stages. As a result, CKD often goes untreated. The only way to find out for sure if a person has CKD is through specific tests—a blood test and a urine test. The results of these tests tell doctors how well the kidneys are working.

**Treatment:** If discovered in the early stages, CKD can be treated. People can make lifestyle changes to slow down the disease's progress and prevent or delay kidney failure. The only treatments for a person with kidney failure are dialysis or a kidney transplant. Hemodialysis, the most common form of treatment, uses a machine to clean waste, salt, and fluid from a person's blood when the kidneys are not healthy enough to do it on their own.

**Prevention:** Detecting and treating CKD can prevent or delay heart disease, kidney failure, and death. If people with diabetes keep their blood sugar and blood pressure levels within safe limits, their risk of getting CKD can be reduced by 33%–40%.

**Progress:** The number of new cases of kidney failure in people with diabetes or high blood pressure declined by about 1% during 2010–2012. This decline may mean that people with those diseases are getting better treatments.

**Interventions:** Improving treatment for people with diabetes and high blood pressure and helping them manage their health better may reduce the number of new cases of CKD and kidney failure.



POLICY  
MAKERS



OTHER FEDERAL  
AGENCIES



INTERNATIONAL  
ORGANIZATIONS



GENERAL  
PUBLIC

CDC's Chronic Kidney  
Disease (CKD) Initiative



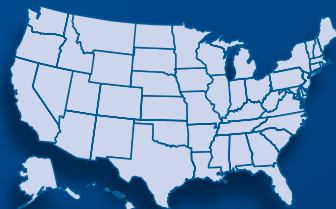
ACADEMIA



NONPROFIT  
ORGANIZATIONS



MEDICAL  
PRACTITIONERS



STATES

# What Is CDC's Role in Preventing CKD?

**Fast Fact: CKD is costly. Treating Medicare patients aged 65 or older with this disease cost the United States \$44.6 billion in 2012.**

In 2006, Congress authorized CDC to create the CKD Initiative. Its purpose is to help enhance the public health response to CKD through surveillance, epidemiology, state-based demonstration projects, and economic studies. The CKD Initiative has strong strategic partnerships with other federal agencies, state governmental agencies, and many national organizations who work together to

- Prevent and control risk factors for CKD.
- Raise awareness of CKD and its complications.
- Promote early diagnosis and treatment of CKD.
- Improve the quality of life for people living with CKD.

# What Has CDC's CKD Initiative Achieved?

## CKD Surveillance

The CKD Initiative created the [Chronic Kidney Disease \(CKD\) Surveillance System](#) to keep track of CKD and its risk factors in the US population over time. This comprehensive system allows the federal government and others to track progress in preventing, detecting, and managing CKD. The data can also be used to track progress in meeting CKD objectives in Healthy People 2020, which sets national objectives for improving the health of all Americans.

## CHERISH Demonstration Project

The CKD Initiative conducted a demonstration project in four states called CKD Health Evaluation and Risk Information Sharing (CHERISH). The goal of the project was to identify and screen people at high risk of CKD earlier—including adults with diabetes or high blood pressure and those aged 50 or older. This study will provide information on how to target this population for CKD screening and how public health officials could implement cost-effective CKD screenings.

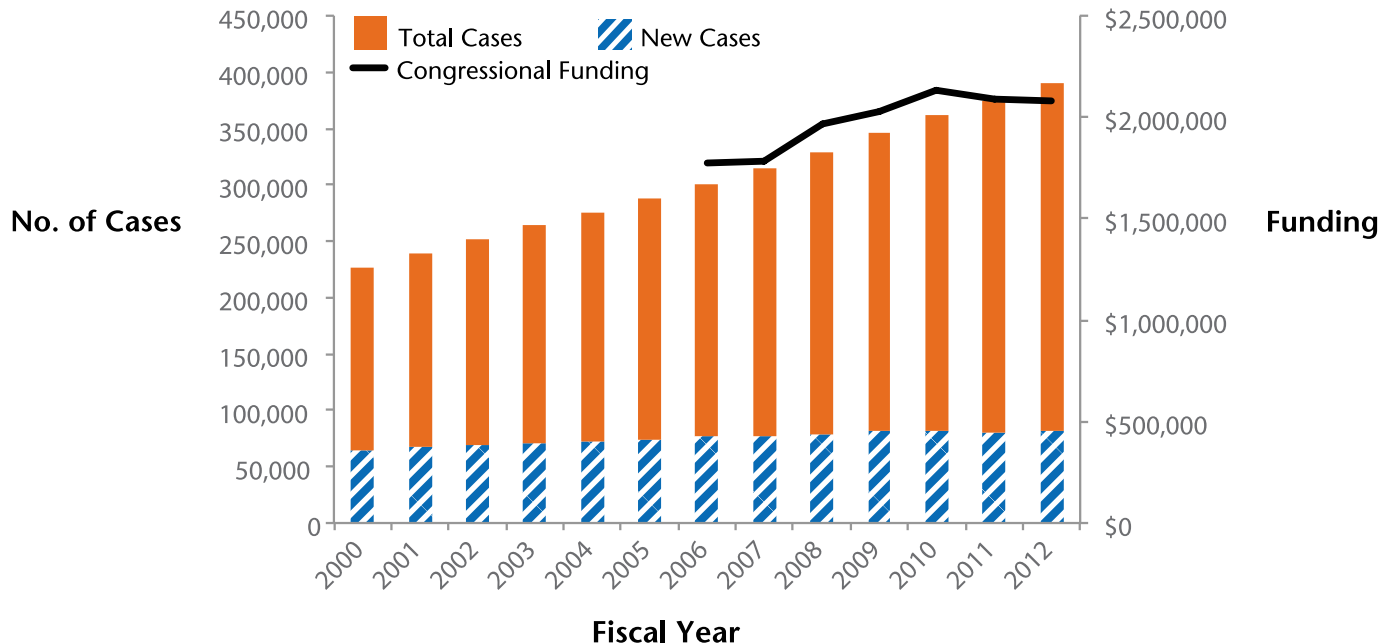
## Economic Research

The CKD Initiative studied the direct and indirect costs of CKD and developed an economic model to study the cost-effectiveness of interventions to prevent and delay CKD. The data collected by these projects will give decision makers the information they need about how to get the best results for the money spent on interventions.



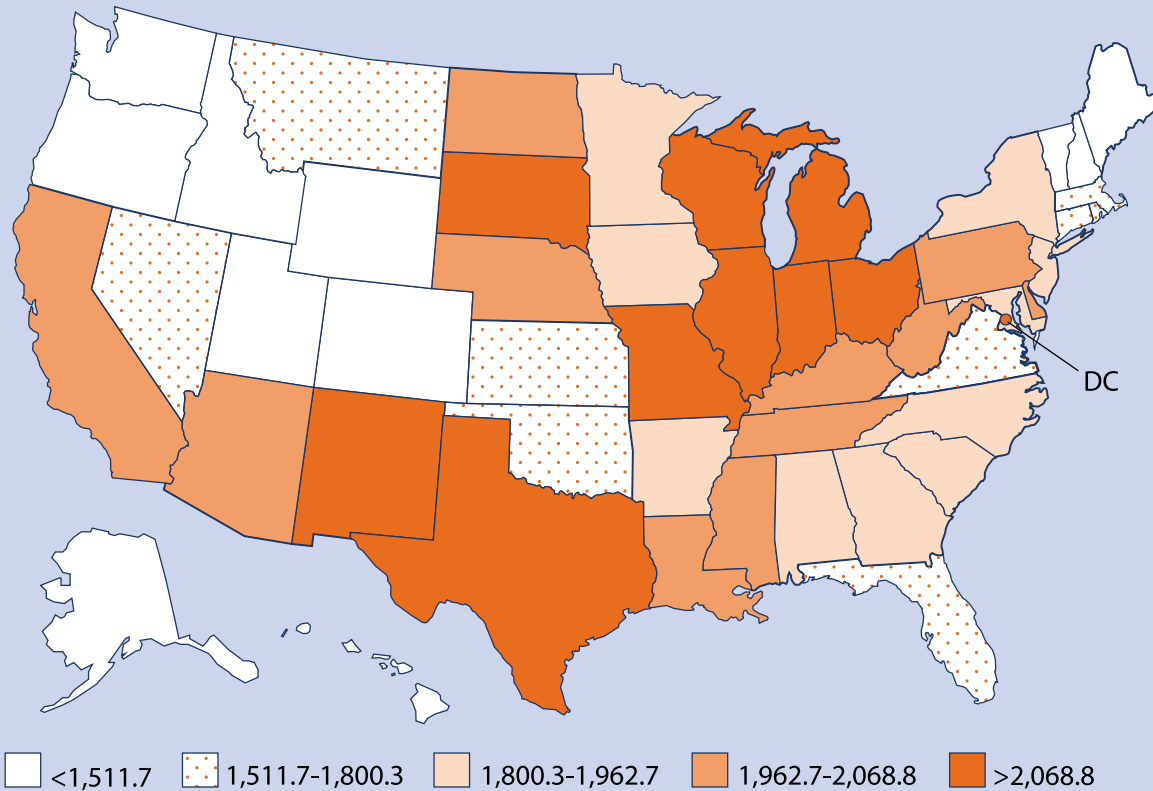
Since 2006, CDC has received an average of about \$2 million from Congress each year for the CKD Initiative. CDC has used these funds to develop a public health strategy to better understand CKD and promote kidney health.

## New and Existing Cases of Kidney Failure and Congressional Funding, 2000–2012



Note: Diabetes or high blood pressure were the primary cause of kidney failure.

# PREVALENCE OF KIDNEY FAILURE, BY STATE, 2012



Note: Prevalence is per million and adjusted for age, sex, and race to the 2011 US standard population. Adapted from: United States Renal Data System (USRDS), *2014 USRDS Annual Data Report (Volume 2, Figure 1.12)*.

# What Are the Next Steps?

Together, CDC and its partners are working to develop and put into action programs to prevent and delay the onset of CKD in the United States. CDC will continue to conduct CKD public health research and promote effective interventions as resources allow by

- Analyzing the results from the CHERISH demonstration project to identify more effective ways to detect and treat CKD in its early stages. Researchers will also look at how screening can affect the control of CKD risk factors and recommend simpler, more efficient protocols for future CKD screening programs.
- Expanding the CKD Surveillance System to add more data sources and, where possible, include state and local data. This expansion would allow CDC, prevention researchers, policy makers, medical practitioners, and states to develop programs and policies that better prevent, detect, and manage CKD. This system also provides data that can be used to monitor progress on 10 of the 14 CKD and kidney failure objectives in Healthy People 2020.
- Conducting new economic studies to identify which CKD interventions are the most cost-effective. This information is especially important because CKD is one of the most expensive diseases in the Medicare budget.
- Working with partners to help public health officials and medical practitioners become more aware of and educated about CKD.

For more information about chronic kidney disease, go to [www.cdc.gov/ckd](http://www.cdc.gov/ckd).

Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

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To see references used for this publication, go to [www.cdc.gov/ckd](http://www.cdc.gov/ckd).