Chronic Kidney Disease (CKD)

Chronic kidney disease (CKD) occurs when an individual’s kidneys are damaged (either as a result of another illness, genetic predisposition, age, or injury) and are no longer able to effectively filter and remove waste from the blood stream. In the late stages of the disease, CKD leads to kidney failure, also known as end stage renal disease (ESRD), which can only be treated with regular dialysis or a kidney transplant.

Today:

- Approximately 4.5 million adults in the U.S. are living with diagnosed CKD. However, the true prevalence is estimated to be more than 26 million Americans.
- In 2015, 13.2% of Americans aged 30 and older had CKD. That population is predicted to increase to 14.4% by 2020 and 16.7% by 2030—totaling nearly 38 million people.
- CKD is the ninth leading cause of death in the U.S.
- An estimated 54% of the Americans between the ages of 30 and 49 will develop CKD during their lifetime.
- Of individuals with ESRD, 37% have a primary diagnosis of diabetes and 25% have primary diagnosis of hypertension.
- There are 661,648 Americans with ESRD.

How Research Saves Lives:

- Since 1996, the mortality rate for individuals with ESRD has decreased by nearly one-third for those being treated with dialysis and by 40% for those who receive transplants, due to better treatments and improved care for patients with this chronic disease.
- Kidney transplant remains the most successful treatment for ESRD, with a 95 to 98% one-year survival rate following transplantation. Such a beneficial and life-improving treatment would not have been possible without innovative immunosuppression therapies that prevent a patient’s body from rejecting the new kidney.

How Research Saves Money:

- Utilizing telemedicine to provide clinical care for high-risk patients with ESRD was shown to greatly reduce healthcare costs and improve health outcomes in a Department of Defense-funded study. Patients in the remote technology cohort had inpatient-associated medical costs that were less than half that of the control group’s costs, an average savings of $91,000 per patient over the course of the three year study period.
- A novel treatment, ferric citrate, has been found to reduce hospitalizations, and subsequently, the health care costs of patients on dialysis. For individuals with ESRD, use of this novel medication is expected to result in an annual direct medical savings of $3,002 per patient.

The Cost:

- Medicare has an ESRD program that covers patients under the age of 65 diagnosed with ESRD, as well as those who are otherwise Medicare-eligible. ESRD patients make up 1% of the total population, but Medicare spends $31 billion on their care, totaling 7% of the Medicare budget.
- The annual medical costs associated with CKD and ESRD is $99 billion in Medicare spending, and is predicted to increase.
- Individuals with CKD on Medicare incur approximately double the cost on prescription medications than beneficiaries without CKD.

For Kevin Longino, CEO of National Kidney Foundation, kidney disease is more than just a job; it’s personal. Diagnosed at age 39, he is the third generation in his family to develop kidney disease.

Once diagnosed, Kevin knew the road ahead would not be easy. At the advice of his nephrologist, he was told to control his blood pressure and begin following a healthy diet specifically tailored for people living with chronic kidney disease. “At first I was in denial, but I soon realized that in order to keep my kidneys functioning as long as possible, I had to make serious changes to my lifestyle,” he said. Shortly after diagnosis, Kevin left his corporate career in the computer industry and adopted an overall healthier lifestyle. As a result of these changes, he was able to stave off dialysis for nearly four years.

While on peritoneal dialysis, he received a kidney transplant from a deceased donor, and in the 12 years since his transplant he is still doing well. “I am forever grateful to the anonymous donor’s family who, in the midst of tragedy, gave me the gift of life. I am privileged to be at National Kidney Foundation, honoring that gift and moving our mission forward.” Kevin has served as CEO for the past year, and previously served on the foundation’s national board of directors.

Raising awareness of kidney disease is one of Kevin’s highest priorities. Diagnosis just takes two simple tests: a urine test called ACR looks for protein in the urine—protein may mean your kidneys are not filtering your blood well enough; and a blood test for creatinine, because when kidneys are damaged they have trouble removing this waste product from your blood. Risk factors for kidney disease include diabetes, high blood pressure, family history of kidney failure, age 60 or older, and those of African-American, Hispanic, Asian, Native American or Pacific Islander descent.

“I know first-hand how early detection and preventative actions can actually slow or prevent the progression of kidney disease. I urge anyone at risk to please get tested early and reach out to National Kidney Foundation for help,” he added. NKF offers free support via its helpline, 855-NKF-CARES or email nkfcare@kidney.org.

"If you think research is expensive, try disease.”

- Mary Lasker 1901-1994

* UNITED STATES RENAL DATA SYSTEM, ANNUAL DATA REPORT 2015.
**Hope for the Future:**

- Researchers have identified a new disease marker for CKD, suPAR, a protein found in the bloodstream. Studies show it can correctly predict an individual’s risk of developing CKD as much as five years before irreversible damage begins. With implementation into standard preventative care, physicians will be able to identify high-risk individuals who would greatly benefit from lifestyle changes and prevention techniques. *

- A new technique, currently being developed by researchers at the University of Texas at Dallas, may provide useful insight into the early stages of kidney disease and improve our understanding of disease progression. The innovative method, which uses tiny gold nanoparticles and a fluorescent imaging technique, is inexpensive and much more sensitive compared to the current detection tests. +

- A collaborative research and clinical effort has developed a method known as “desensitization,” which allows patients to receive a kidney from any living donor, regardless of antibody compatibility. In a study of 22 centers, researchers found improved survival rates over eight years for individuals who received an incompatible kidney from a live donor, made possible through desensitization, compared to patients who were on dialysis or who received kidneys from deceased yet compatible donors. This new method has major implications for the future of liver transplants. ^

**The Bottom Line:**

Last year, for every one person who received a kidney transplant, five others remained on the waiting list. This unsustainable system is only predicted to become worse as more individuals develop this chronic and burdensome disease. Robust and sustainable investments into research means hope for the millions of Americans suffering from chronic kidney disease.

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+ University of Texas at Dallas, 2016.