

Chronic Kidney Disease (CKD) and End Stage Renal Disease (ESRD)

This metadata page provides a brief summary of these datasets. More detailed data and metadata may be available from the Centers for Disease Control and Prevention. Chronic Kidney Disease Surveillance System—United States, and the National Institute of Diabetes and Digestive and Kidney Diseases. Please refer to the contact information found on the last page under ‘Questions?’

Definition

Chronic kidney disease (CKD) is a condition in which your kidneys are damaged and can't filter wastes from your blood as well as healthy kidneys. Because of this, wastes from the blood remain in the body and may cause other health problems. Kidney disease is chronic if it lasts for three months or longer.

End Stage Renal Disease (ESRD) is also called kidney failure. According to the Mayo Clinic, it occurs when chronic kidney disease — the gradual loss of kidney function — reaches an advanced state. During ESRD, dangerous levels of fluid, electrolytes and waste build up in your body (2023). Dialysis or a kidney transplant is necessary to sustain life.

Data Sources

- [Centers for Disease Control and Prevention. Chronic Kidney Disease Surveillance System—United States](#)
- [National Institute of Diabetes and Digestive and Kidney Diseases](#) – US Renal Data System Query Tools

The Louisiana Department of Health (LDH) Environmental Public Health Tracking Program downloads these data from other sources (URLs above), by Louisiana Parish (County). The data are processed and added to the Health Data Explorer as sample data which can be viewed next to other health, environmental hazard, exposure and population health (sociodemographic or US Census Bureau) data.

Vintage: The latest dataset available from as of Jan 2023:

- Prevalence of Chronic Kidney Disease (CKD) patient data: data years **2000-2019**
- End Stage Renal Disease (ESRD) Prevalent data: data years **2000-2019**

Data Measure(s)

The LDH Tracking program collects data on the following measures for CKD and ESRD:

- Prevalence Of Chronic Kidney Disease (CKD) by Parish Per 100 Medicare Eligible Patients
- End Stage Renal Disease (ESRD) Prevalent Count

Note that ESRD Prevalent count data are not normalized or adjusted by population. Age-group, etc. These data will show larger counts in urbanized areas and are sample data which may be more helpful to health planners or emergency response.

Explore Data

The LDH Health Data Explorer (<http://ldh.la.gov/tracking>) is an online query tool which allows health, environmental hazard, exposure and population data to be explored and viewed side-by-side in tables, charts, and maps. These data can be viewed, printed and downloaded for further analysis.

To *Explore Data* on the query tool:

Step 1: Select Criteria

Category: Health Outcomes

Topic: **Kidney Disease**

Focus: **CKD** or Focus: **ESRD**

According to CDC Chronic Kidney Disease in the United States, 2021, more than 1 in 7, that is 15% of US adults or 37 million people, are estimated to have CKD.

Kidney disease is ranked as the 10th leading cause of death in Louisiana based on CDC estimates.

(CDC, 2021)

Kidney disease and your Health

According to the United States Centers for Disease Control (US

CDC), kidney diseases are a leading cause of death in the United States. People in the early stages of CKD may not feel ill or notice any symptoms. The only way to find out for sure whether you have CKD is through specific blood and urine tests. Once detected, CKD can be treated with medicines and lifestyle changes, including nutrition. Treatments can slow the worsening of CKD and can help prevent additional health problems.

While kidney disease can be genetic, risk factors can include:

- Diabetes
- High blood pressure
- Heart disease
- Family history of CKD and obesity

If left untreated, CKD can progress to kidney failure and early cardiovascular disease. When the kidneys stop working, dialysis or kidney transplant is needed for survival. Kidney failure treated with dialysis or kidney transplant becomes end-stage renal disease (ESRD). Not all patients with kidney disease progress to kidney failure. To help prevent CKD and lower the risk for kidney failure, the CDC recommends the practice of controlling risk factors. These include getting tested yearly, making lifestyle changes, taking medication as needed, and seeing a health care team regularly.

Chronic Kidney Disease and the Environment

LDH Tracking has included kidney disease as a health outcomes measure in the Health Data Portal because scientists are studying the associations between kidney disease, other health conditions and the environment.

Socioeconomic status. As with many other chronic conditions, both age and socio-economic status are associated with kidney disease. There are very few cases of kidney disease among those under the age of 35. The risk rises incrementally over life, culminating around age 65. The rate of incidence for kidney disease is twice as high for individuals who never graduated high school than for college graduates (6.8% versus 2.5%). Similarly, 2.1% of individuals in the highest earning households have been diagnosed with kidney disease, while 5.7% of those in the lowest earning households have.

Health Disparity. African Americans are almost four times as likely as Whites to develop kidney failure. While African Americans make up about 13 percent of the population, they account for 35 percent of the people with kidney failure in the United States. Diabetes and high blood pressure are leading causes of kidney failure among African Americans.

Pesticides and Chemical Hazards in the Environment. A prospective study in the US from 2001-2010 found that 'long-term exposure to herbicides, such as paraquat, increased the risk of end-stage renal disease (ESRD) among commercial pesticide applicators ([Wan et al, 2021](#)). Many chemical hazards may be harmful to kidney function if directly exposed for specific duration of time. These include exposure to benzene, organic solvents, fuels, paints, degreasing agents, agrochemicals such as fertilizers, pesticides, Perfluoroalkyl chemicals (PFCs) and many others.

Data Methods

Data Privacy and Suppression

- **Prevalent ESRD by Parish.** These data were downloaded from the USRDS. For these data, if count is less than or equal to 10, then data cannot be displayed per CMS reporting rules. In this case, counts are flagged as suppressed. Suppressed values are not displayed.
- The percentage of patients with a CKD code (ICD-9-CM or ICD-10-CM diagnosis code, excluding ESRD) is distributed unevenly across states. Disparities in CKD prevalence are also observed among different counties within states and further investigation about the root cause of high CKD prevalence in some of the hotspot areas would be valuable.
- Prevalence counts are based on 5% Medicare data from 2005–2016. CKD status identified using a CKD code (ICD-9-CM or ICD-10-CM diagnosis code, excluding ESRD). Prevalent CKD rate within state/county is calculated by the total number of patients identified with CKD using CKD code divided by total number of Medicare eligible patients in the state/county.
- Diagnoses for medical conditions within Medicare data come from claims submitted by providers for the fee-for-service sections of Medicare, Part A (hospital care) and Part B (ambulatory care). The analysis sample is restricted to beneficiaries aged 65 years or older who had Parts A and B coverage for the entire calendar year and have at least one outpatient visit in the calendar year. Between 20% and 25% of beneficiaries each year used Part C, managed care/Medicare Advantage plans, and are excluded because their care was paid on a capitated basis and claims with diagnoses are not available.
- Limitations of Indicator. As a measure of prevalence, the use of ICD-9-CM or ICD-10-CM diagnosis codes will underestimate the level of chronic kidney disease in the general population.

- Analytical Considerations. In published literature, disease is diagnosed by ICD-9-CM or ICD-10-CM codes in alternate ways (one outpatient; two or more outpatient or one inpatient; differences in sample). Care must be taken in comparisons.

Data Limitations and Important Considerations

Please refer to the Data Source Pages for complete metadata which accompany these datasets.

Data Re-release

This is a public dataset which can be freely shared. Personally identifiable health information have been removed. Please refer to the Data Methods section of these metadata from more information.

Data Citations

Centers for Disease Control and Prevention. Chronic Kidney Disease Surveillance System—United States

United States Renal Data System, 2021 Annual Data Report: Epidemiology of Kidney Disease in the United States. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 20892

Please cite the US CDC, LDH Environmental Public Health Tracking Program Cooperative Agreement NUE1EH001490, and any data source(s) listed on Page 1 when re-sharing or applying these data in analyses or publications.

Disclaimer

Data are intended to spur further research and should be used only as a starting point to understanding how the environment and other contributing factors may be connected to disease. Datasets presented on the LDH Health Data Explorer site are intended to answer some basic questions, but should ultimately lead to further inquiry and more detailed study.

Data limitations should be noted if conducting exploratory ecological studies with these data. Limitations may include data gaps, reporting discrepancies (for example, a disruption of reporting or instrument recording) and insufficient data on all potentially confounding factors. There are numerous additional factors which may contribute to disease onset. These include genetics, access to health care, existing health conditions, medicines, other chemical substances we come into contact with or ingest, nutrition, route and duration of exposure, level of activity, level of stress, and others.

Responsible use of this data requires exercising caution when drawing conclusions based solely on views of the limited available data. Any perceived relationship, trend, or pattern apparent in the data should not be interpreted to imply causation; may in fact be unrelated; and should be regarded as preliminary, and potentially erroneous, until more in-depth study and if applicable, statistical evaluation, can be applied. The LDH Bureau of Health Informatics and Environmental Public Health Tracking Program cannot guarantee the completeness of the information contained in these datasets and expressly disclaim liability for errors and omissions in their content.

Additional Information

Please visit the following links for more information on Chronic Kidney Disease. See also the LDH Tracking [Glossary of Terms](#).

- [CDC CKD Prevention & Risk Management](#)
- [CDC's CKD Initiative](#)
- [LSU Report on the 2018 Behavioral Risk Factor Surveillance System in Louisiana](#)
- [Chronic Kidney Disease in the United States, 2021](#)
- [Kidney Disease Mortality by State](#)
- [Race, Ethnicity, & Kidney Disease](#)

Questions?

- Email: healthdata@la.gov
- Website: <http://ldh.la.gov/tracking>
- Toll free Phone: 1-888-293-7020