

# 2008 Georgia Data Summary

## KIDNEY DISEASE



**Kidney disease is a leading cause of death and medical expenditure in Georgia.**

### WHAT IS KIDNEY DISEASE?

The term “kidney disease” or “renal disease” refers to a partial or complete loss of kidney function, which may lead to heart disease, bone disorder, anemia, and nerve damage, or even premature death.

If detected early, the progression of kidney disease and its complications can be delayed. Unfortunately, mild loss of kidney function at the early stage of the disease has no symptoms.

In contrast, severe renal function loss can have a broad range of symptoms: weakness; shortness of breath; swelling of the hands, feet, or face; difficulty in concentration; loss of appetite; and nausea.

Certain types of kidney disease, if untreated, can cause progressive loss of kidney function and eventually kidney failure. Persons with kidney failure cannot survive without receiving dialysis or a kidney transplant; this irreversible, terminal state is called end-stage renal disease (**ESRD**).

### VITAL FUNCTIONS OF THE KIDNEYS

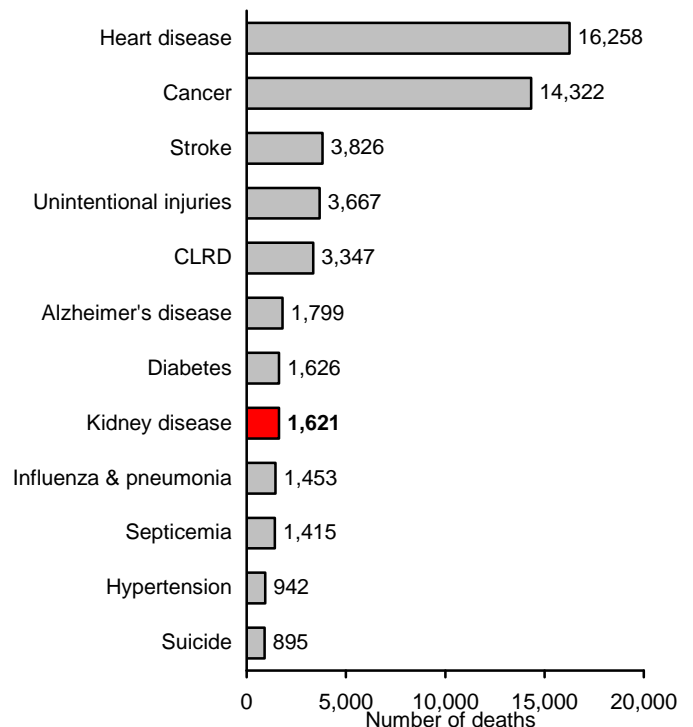
The kidneys regulate the fluid and electrolytes balance; control acid-base equilibrium; remove excess water, waste, and toxic products from the body; play a role in the red blood cell formation; and maintain blood pressure within the normal range.

Many factors such as infections, chemicals, metabolic disorders, mechanical causes, and genetic conditions can impair kidney function. Among them, diabetes and hypertension are the two most common, but preventable and controllable, causes of kidney damage.

### Kidney Disease in Georgia (2006)

- A common, serious, and costly chronic disease
- The 8<sup>th</sup> leading cause of death, accounting for 1,621 deaths, equivalent to 31 deaths every week
- The age-adjusted death rate — 21.1 deaths per 100,000 population
- Risk of dying from kidney disease —
  - Males were 1.3 times more likely than females.
  - Blacks were 2.5 times more likely than whites.
  - Both black males and females were 2 to 3 times more likely than their white counterparts.
- Premature death (before age 65) —
  - Blacks were 2.2 times more likely than whites.

**Leading causes of death in Georgia, 2006**  
N = 67,079



Total deaths = 67,079

Note. CLRD = chronic lower respiratory disease

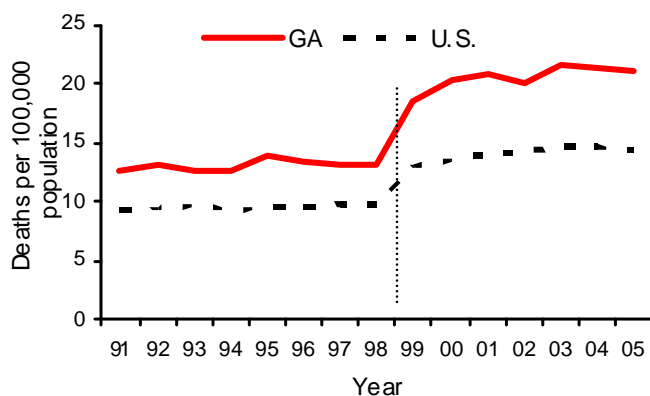
## MORTALITY FROM KIDNEY DISEASE

Kidney disease is a common, serious, and costly chronic disease in Georgia as well as in the United States.

In 2006, kidney disease was the eighth leading cause of death in Georgia, accounting for **1,621** deaths. The age-adjusted death rate for kidney diseases (nephritis, nephrotic syndrome, and nephrosis) was **21.1** deaths per 100,000 population.

The age-adjusted death rate of kidney disease in Georgia has been consistently higher than that of the United States. From 1999 through 2005, the difference became greater. The sudden increase in rates in 1999 for both Georgia and the United States was due to a change in the coding scheme (from ICD-9 to ICD-10).

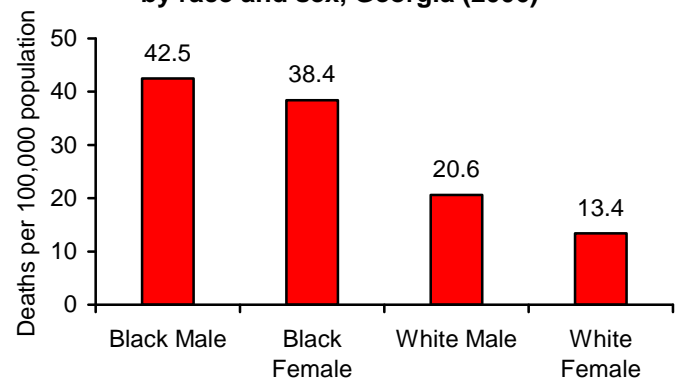
Age-adjusted kidney disease death rates Georgia vs. United States (1991-2005)



In Georgia, age-adjusted death rates of kidney disease in 2006 were higher for males (**24.7** per 100,000) than for females (**19.1** per 100,000); and higher for blacks (**39.9** per 100,000) than for whites (**16.1** per 100,000).

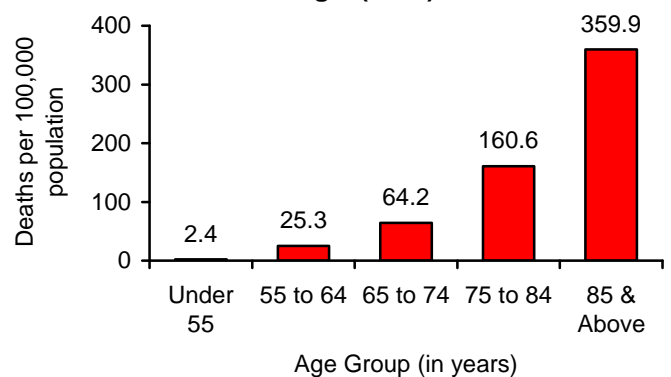
During the same year, the age-adjusted death rate for black males (**42.5** per 100,000) was two times higher than for white males (**20.6** per 100,000). The rate for black females (**38.4** per 100,000) was also almost three times higher than for white females (**13.4** per 100,000).

Age-adjusted kidney disease death rates by race and sex, Georgia (2006)



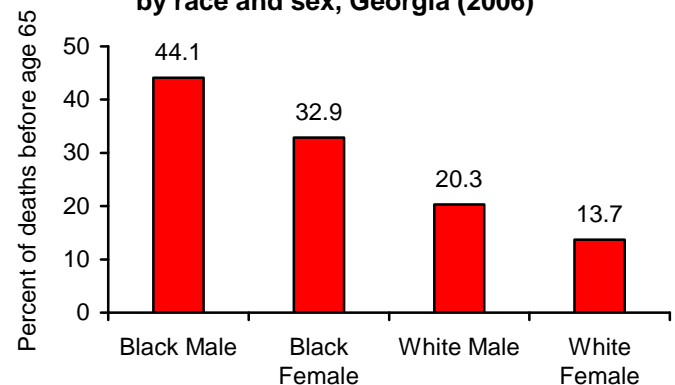
Death rates due to kidney disease were highest among older Georgians. The age-specific death rate per 100,000 population for kidney disease increased from **2.4** for persons under 55 years of age to **359.9** for persons aged 85 years and older, an increase of 150-fold.

Age-specific kidney disease death rates Georgia (2006)



Of the 1,621 deaths from kidney disease in Georgia during 2006, **415** deaths (**25.6%**) occurred in people younger than 65 years of age. The proportion of deaths before age 65 (premature death) was highest for black males.

Premature deaths from kidney disease by race and sex, Georgia (2006)

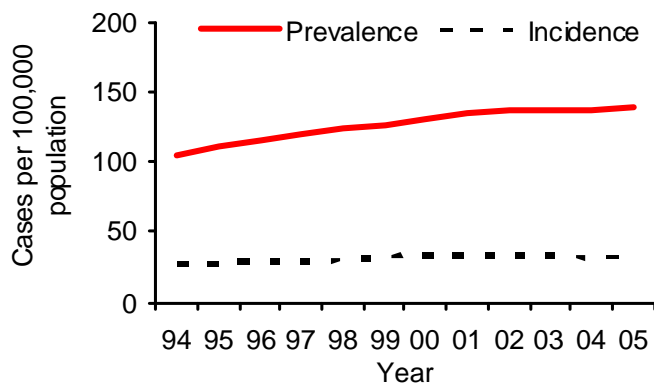


## INCIDENCE AND PREVALENCE OF ESRD

The age, gender, and race adjusted incidence\* of ESRD in both Georgia and the United States has steadily increased since 1980. In 2005, the annual ESRD incidence rates per 100,000 population were **33.1** for Georgia and **35.1** for the U.S. Georgia and the nation had 20% and 24% increases from their 1994 rates of 27.6 and 28.4, respectively.

In Georgia, the age, gender, and race adjusted prevalence\*\* of ESRD has increased since 1980 as its incidence rate went up. The number of Georgians living with ESRD is growing faster than the incidence of ESRD because more people acquire the disease every year than die from it.

Adjusted prevalence and incidence rates for ESRD in Georgia (1994-2005)



As of December 31, 2005, about **16,500** people in Georgia had ESRD. With an average cost of \$62,000 per dialysis patient per year, the total health care cost of ESRD for Georgia in 2005 was estimated more than **\$1 billion**.

\* Incidence is the number of **new cases** of ESRD per 100,000 population in a certain time period, usually a year.

\*\* Prevalence is the number of **existing cases** of ESRD per 100,000 population at a specific point in time, no matter how long the person has had ESRD.

Rates are adjusted for age, gender, and race for comparing risks of two or more populations at one point in time or one population at two or more points in time.

## End-Stage Renal Disease (2005)

### Georgia

- The adjusted incidence rate — 33 per 100,000 population
- The adjusted prevalence — 139 per 100,000 population
- Number of patients with ESRD — 16,489  
Include 5,855 persons with diabetes (36%).
- The estimated cost of health care for ESRD patients — over \$1 billion

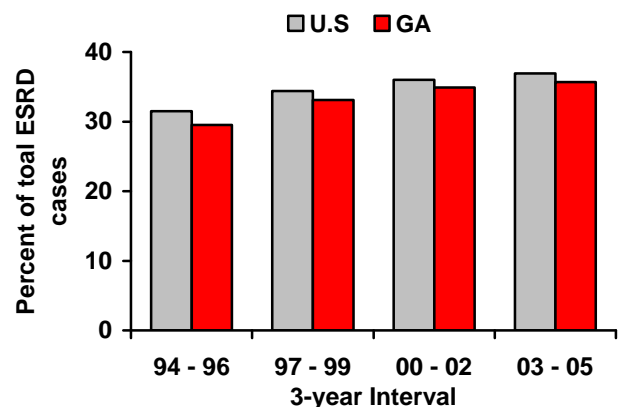
### United States

- The primary causes of ESRD —  
Diabetes (accounted for 37% of cases)  
Hypertension (contributed to 24% of cases)
- Risk of developing to ESRD —  
Males are 54% more likely than females.  
Blacks are 270% more likely than whites.

## DIABETES AND ESRD

Diabetes itself is a serious, slowly progressive, chronic disease. It is also the leading cause of kidney failure across the nation. As its prevalence grows year after year, the proportion of the prevalence of ESRD attributable to diabetes also increases.

ESRD patients with diabetes  
Georgia and United States (1994-2005)



In the 2003-2005 3-year period, diabetes accounted for more than one third of total ESRD cases in Georgia (**35.7%**) and the nation (**36.9%**).

## PREVENTION OF ESRD

Adverse outcomes of chronic kidney disease can often be prevented or delayed through early detection and treatment. Earlier stages of chronic kidney disease can be detected through routine laboratory examinations.

### Get Tested to Know Glomerular Filtration Rate

According to the National Kidney Foundation's Clinical Practice Guidelines, there are five stages of chronic kidney disease (CKD) based on a person's glomerular filtration rate (GFR). GFR indicates how fast the kidneys filter waste from one's blood, and it can be estimated based on a person's blood creatinine level, height, weight, sex, race, and age.

Each stage of CKD includes a range of GFR values. The lower the GFR, the weaker the kidneys' ability to filter out wastes from the blood, and the greater the severity of CKD. Persons with GFR less than 15 are in Stage 5 and are considered to have kidney failure (complete loss of kidney function). Persons in this category are treated as ESRD cases. Their survival depends on regular dialysis or kidney transplantation.

### Stages of chronic kidney disease and estimated number of Georgians with the disease (2000)

Stage	GFR <sup>1</sup>	Description	Estimated cases <sup>2</sup>
1	≥90	Kidney damage <sup>3</sup> with normal or an ↑ in GFR	270,000
2	60-89	Kidney damage with a mild ↓ in GFR	246,000
3	30-59	Moderate ↓ in GFR	352,000
4	15-29	Severe ↓ in GFR	16,000
5	<15 or on dialysis	Kidney Failure	14,000

1. Measured in mL/min/1.73 m<sup>2</sup>  
 2. Based on the 2000 Georgia population estimates and the NHANES III results.  
 3. Kidney damage is defined as the presence of pathologic abnormalities or makers of damage, including abnormalities in blood or urine tests or imaging studies.

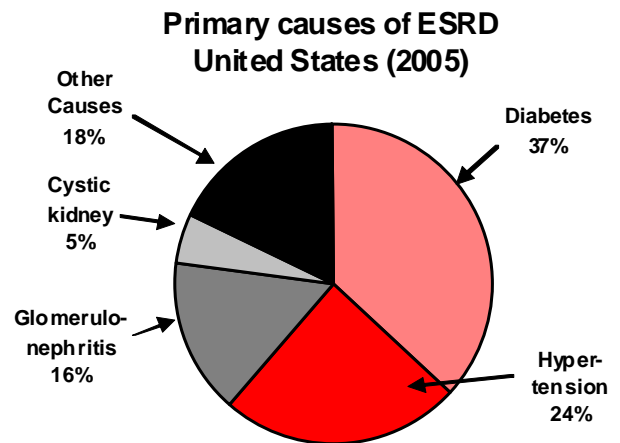
#### Data Sources:

1. Georgia death records file, 1991-2006.
2. National Center for Health Statistics.
3. USRDS. The 2007 annual data report.
4. National Kidney Foundation.
5. Georgia Division of Public Health. The 2005 kidney disease report.

In addition to about 14,000 Stage 5 CKD or ESRD patients in Georgia in 2000, the National Kidney Foundation of Georgia estimated that there were approximately 884,000 Georgians living with CKD of Stages 1 through 4.

### Preventing Common Risk Factors for ESRD

Diabetes and hypertension are the two most common causes of ESRD. According to the recent national data, there were a total of more than 485,000 Americans living with ESRD at the end of 2005. Of them, **37%** had diabetes and **24%** had hypertension.



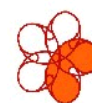
Maintaining a healthy body weight and staying physically active can help prevent diabetes and high blood pressure. Even if these diseases do occur, they can be controlled by modifying lifestyles and taking appropriate medications. Preventing and controlling these two preventable conditions will greatly reduce the risk of developing ESRD.

People living with either or both diseases should regularly monitor their blood pressure and blood sugar levels. They should also take medications as prescribed by their physician. Individuals with a family history of kidney disease or ESRD should also routinely see their physician for periodic evaluation to ensure early detection and timely interventions.

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**The People At Risk.  
The Power To Prevent.**



**National  
Kidney  
Foundation  
of Georgia**