

Kidney and Renal Pelvis

Cancer in Florida

Bureau of Epidemiology



Executive Summary

Kidney and renal pelvis cancer is the twelfth most common cancer, most often occurring in people 45 years and older. In 2004, 2,853 new kidney cancer cases were reported in Florida. The incidence rate was 13 per 100,000 population. The incidence rate was higher among males (18 per 100,000 population) than among females (9 per 100,000 population), and higher among Whites (13 per 100,000 population) than among Blacks (12 per 100,000 population). The percentage of kidney cancer diagnosed at an early stage has increased by 52% since 1981. In 2004, 762 Floridians died of kidney cancer. The kidney cancer mortality rate in Florida was 3 per 100,000 population, which was similar to the national mortality rate. More than two-thirds (70%) of the kidney cancer deaths were among people 65+ years old. In 2004, females had a greater decline in mortality rate (20%) than did males (4%) compared to the rate in 1981. The mortality rate among Blacks increased by 14% while among Whites the rate decreased by 8% during the same time frame.

Background

Kidney and renal pelvis cancer is the twelfth most common cancer, accounting for about 2% of all new cancer cases and deaths each year in the United States¹. It is estimated that 51,190 new cases and 12,890 deaths, will be related to kidney and renal pelvis cancer in the U.S in 2007². Kidney cancer includes renal cell carcinoma, which forms in the lining of the very small tubes that filter the blood and remove waste products, and renal pelvis carcinoma, which forms in the center of the kidney where urine collects^{3,4}. Kidney cancer most often affects elderly people, and is not common among people under age 45³. The cause of kidney cancer is unclear, but, several factors are associated with kidney cancer including smoking, obesity, exercise, certain occupations, male gender, and high blood pressure^{3,4}. Kidney cancer rarely causes early signs and symptoms⁵. The symptoms that may occur during the later stages of cancer include blood in the urine, pain in the side that does not go away, a lump or mass in the side or the abdomen, weight loss, fever, feeling very tired, or having a general feeling of poor health⁴. Kidney cancer patients, when diagnosed and

treated early, have a good chance for a full recovery⁵.

In 2004, 49% of the Florida population, were men and 51% were women; 82% were Whites and 16% were Blacks⁶. More than half of the Florida population were under age 45 (58%), 25% were between 45 and 64 years of age, and 17% were 65+ years old⁶.

Methods

Data on cancer incidence, stage, and histology were provided by the Florida Cancer Data System (FCDS). The FCDS is Florida's statewide, population-based cancer registry, and has collected cancer incidence data since 1981. Only cases diagnosed with kidney and renal pelvis cancers (ICD-O-3 C64.9, C65.9) were included in the analysis.

The mortality data, based on death certificates, were provided by the Office of Vital Statistics of the Florida Department of Health. Only deaths whose underlying cause was kidney and renal pelvis cancers (ICD-10 C64.9, C65.9) were included in the analysis.

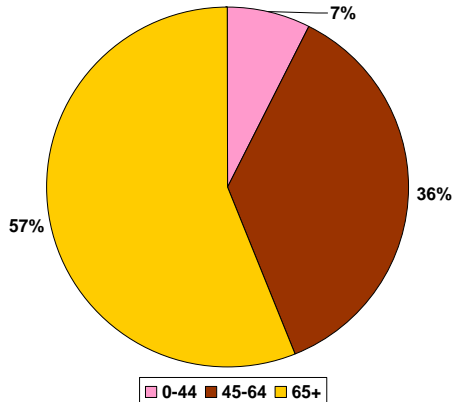
The hospital inpatient discharge data were provided by the Florida Agency for Health Care Administration (AHCA). The hospital inpatient discharge data include the number of hospitalizations and charges for inpatients whose primary diagnosis was kidney and renal pelvis cancers (ICD-9 189.0, 189.1).

Only Florida residents were included in the analyses. Both incidence and mortality rates were age-adjusted using the U.S. 2000 standard population. Age adjustment is a process used that allows comparison of incidence and death rates between populations with the effect of different age compositions removed. When the number of cases or deaths is very small, the rates calculated are not stable. Therefore, caution should be exercised in interpreting the rates for counties with small number of cases.

Incidence Rate

In 2004, 98,547 cancer cases were diagnosed in Florida. Of these cases, 2,853 were kidney cancers. The incidence was 13 per 100,000 population. More than half (57%) of the kidney cancers occurred among people age 65+ years, 36% occurred among people aged 45-64 years, and 7% occurred among people less than 45 years old.

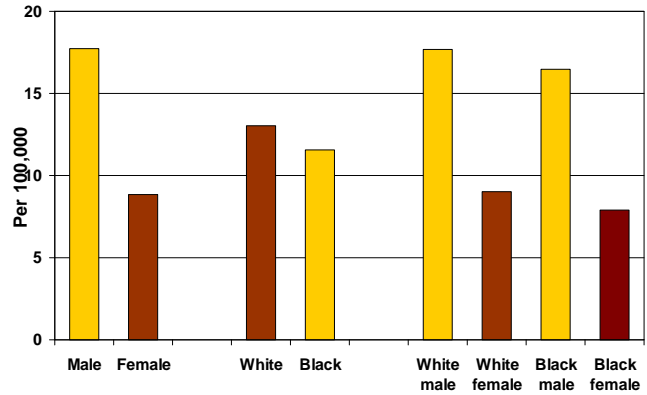
Figure 1. Percent of Kidney Cancer Cases by Age Group, Florida, 2004



In 2004, 51,587 males and 46,912 females were diagnosed with cancers in Florida. Of these, 1,785 (3.5%) men and 1,066 (2.3%) women were diagnosed with kidney cancer. Males had

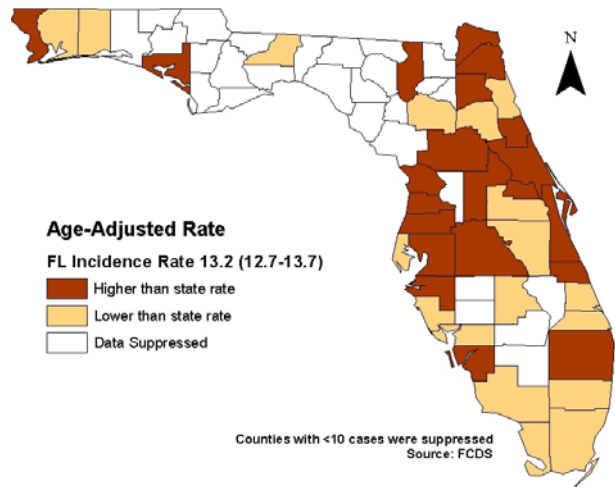
a higher incidence rate of kidney cancer (18 per 100,000 males) than females (9 per 100,000 females)⁷. The incidence rate of kidney cancer was statistically greater among the Whites (13 per 100,000 population) than Blacks (12 per 100,000 population)⁷.

Figure 2. Age-adjusted Incidence Rate of Kidney Cancer, Florida, 2004



In 2004, the age-adjusted incidence rate of kidney cancer ranged from 8.2 per 100,000 in Santa Rosa County to 19.4 per 100,000 in Columbia County.

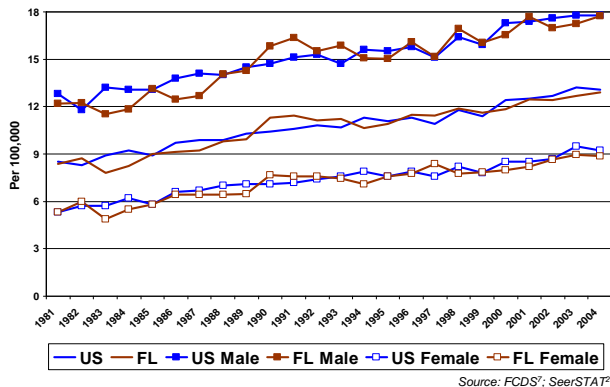
Figure 2. Age-Adjusted Incidence Rate of Kidney Cancer, Florida, 2004



Between 1981 and 2004, the overall kidney cancer incidence rate in Florida did not differ significantly from the national rate; both the national and state incidence rate of kidney cancer increased by more than 50%. In Florida, both

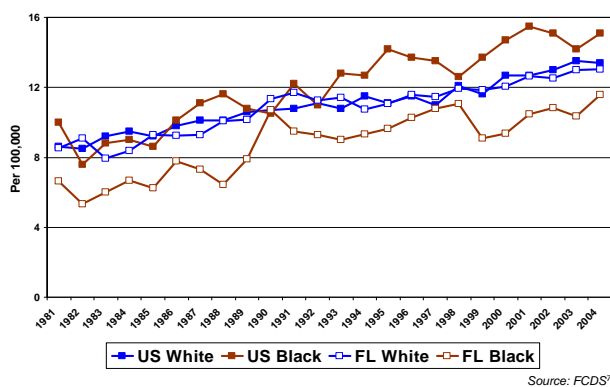
males and females showed a statistically significant increase in the incidence rate in 2004 compared to the rate in 1981. Females showed a greater increase (68%) in the incidence rate than males (45%).

Figure 4. Age-adjusted Incidence Rate of Kidney Cancer, Florida, 1981-2004



Since 1981, the incidence rate among Whites in Florida did not differ significantly from the national rate in 2004. During the same time period, the incidence rate among Blacks in Florida was lower than the national rate overall. In Florida, Whites had a greater incidence rate than Blacks. However, in 2004 the rate among Blacks increased by 76% compared to the rate in 1981, an increase greater than that among Whites (53%). The increases in the incidence rate in both racial groups were statistically significant.

Figure 5. Age-adjusted Incidence Rate of Kidney Cancer, Florida, 1981-2004



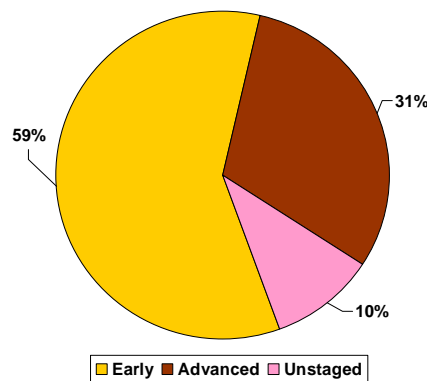
Stages of Cancer

Cancer can be diagnosed at different stages; from an early stage, where the cancer is in its original location and has no signs of invasion to other organs; to an advanced stage, where the cancer has spread to distant organs. For this analysis, regional and distant stage cancers constitute advanced stages, and cancers that have not invaded other organs constitute early stages.

According to the American Cancer Society, many kidney cancers are found at a late stage, because the tumors can become large without causing any pain or discomfort³. Small kidney tumors cannot be felt or seen during routine physical examinations since the kidneys are located deep inside the body. Sometimes kidney cancer can be detected at an early stage, with tests such as routine urine analysis, computer tomography (CT) scans, and Magnetic Resonance Imaging (MRI), but these tests can be misleading and are not usually completed during routine examinations as part of kidney cancer screening. These tests are often recommended for individuals who are at risk for kidney cancer. Kidney cancers can sometimes be detected at an early stage during medical tests for other illness, and when detected early, the survival rate is high.

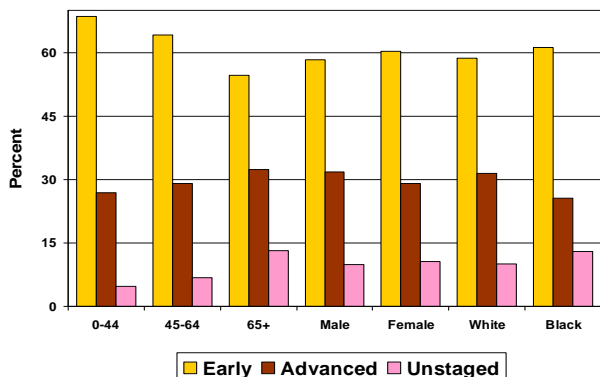
In 2004, 59% of kidney cancers were diagnosed at an advanced stage and 31% were diagnosed at early stage.

Figure 6. Percent of Kidney Cancer by Stage, Florida, 2004



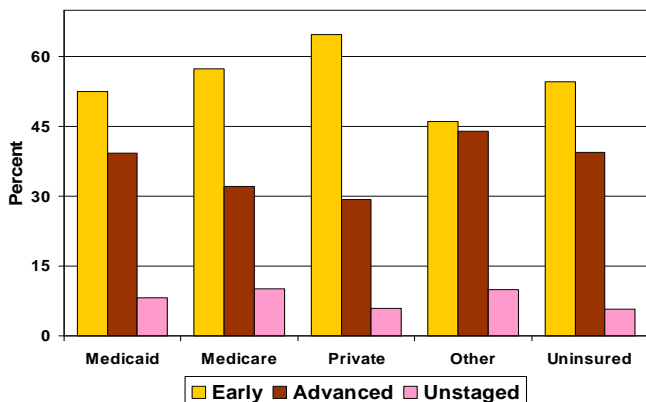
Approximately 60% of the kidney cancer cases were diagnosed at early stages among males and females, and among Whites and Blacks. People less than age 45 had the highest percentage (68%) of kidney cancer diagnosed at early stages among age groups. Almost one-third (32%) of patients of 65 years older were diagnosed at advanced stages, the highest percentage among all sub-populations by age group, sex, or race.

Figure 7. Stage of Kidney Cancer by Demographic Characteristics, Florida, 2004



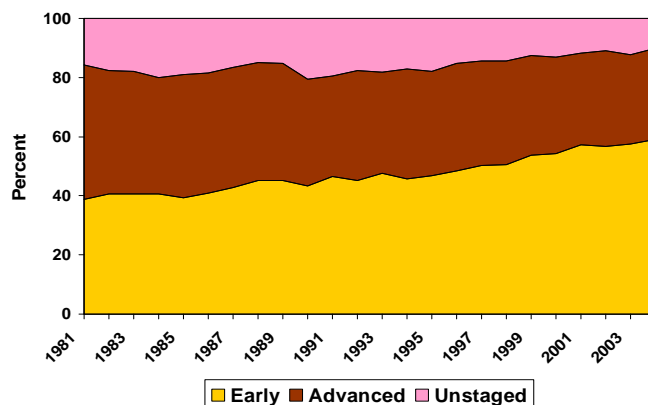
Patients with private insurance had a higher percentage of early stage diagnoses (65%) compared to patients with other insurance (Tricare, VA, and Public Health Services), or no insurance. Approximately 40% of patients with other insurance, Medicaid, or those who were uninsured, were diagnosed at advanced stage.

Figure 8. Stage of Kidney Cancer by Type of Insurance, Florida, 2004



The percentage of early stage diagnoses of kidney cancer in 2004 increased by 52% compared to the percentage in 1981. The percentage of diagnoses with unknown stage decreased 35% during the 24-year period.

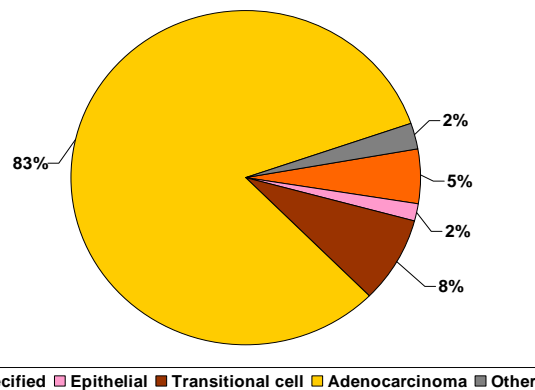
Figure 9. Kidney Cancer Staging, Florida, 1981-2004



Histology Type

Histology is the type of cell on which the cancer forms. The first three-digits of the ICD-O-3 histology codes were used to group the histology types. For this report, histology was analyzed based on the following grouping: (1) adenoma and adenocarcinoma, (2) epithelial neoplasm, and (3) transitional cell papillomas and carcinomas.

Figure 10. Kidney Cancer by Histology Type, Florida, 2004

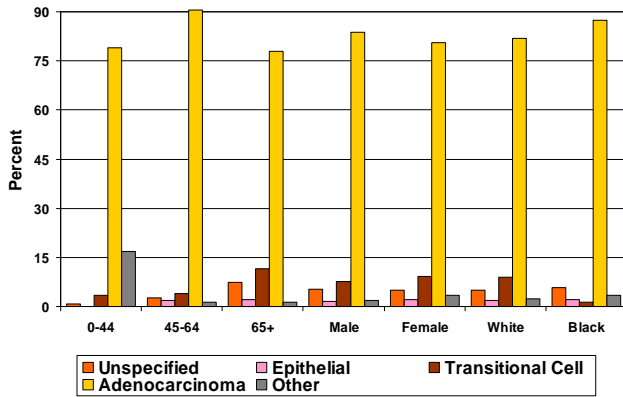


In 2004, these three groups accounted for 92% of all kidney cancers. Other histology type

accounted for 2%, and unspecified histology for another 5%.

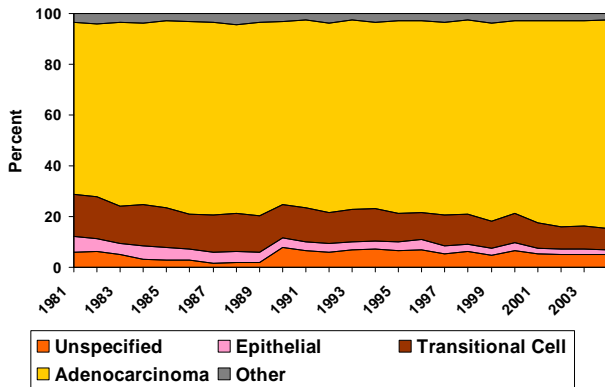
More than 75% of kidney cancer cases diagnosed were adenocarcinoma among all age groups, both sexes, and in both Whites and Blacks.

Figure 11. Histology Type of Kidney Cancer, Florida, 2004



Histology types of kidney cancer changed in Florida during 1981 to 2004. Since 1981, the percentage of adenocarcinoma has increased by 21%. In 2004, all other histology types showed a decline since 1981. The percentage of kidney cancer with histology type of epithelial neoplasm showed a greater decline (70%) than any other histology types.

Figure 12. Histology Type of Kidney Cancer, Florida, 1981-2004



Hospital Discharges

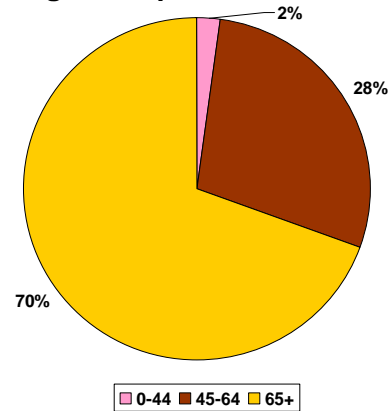
In 2004, 2,621 hospital discharges (1,592 men and 1,029 women) for the treatment of kidney cancer in Florida. The total hospital charges for

kidney cancer hospitalization in 2004 were \$106 million.

Mortality Rates

In 2004, 39,591 men and women died of cancer in Florida. Of these, 762 (1.9%) deaths were related to kidney cancer with an age-adjusted mortality rate of 3.3 per 100,000 population. Seventy percent of the kidney cancer deaths were among people 65+ years old; 28% were among people between 45 and 64 years old.

Figure 13. Kidney Cancer Deaths by Age Group, Florida, 2004



In 2004, 496 men died from kidney cancer in Florida, with a mortality rate of 5 per 100,000 population. Among women, 266 deaths were due to kidney cancer, with a mortality rate of 2 per 100,000 population. The mortality rates were similar between Blacks and Whites; 3 per 100,000 population in 2004.

Figure 14. Age-adjusted Mortality Rate of Kidney Cancer, Florida, 2004

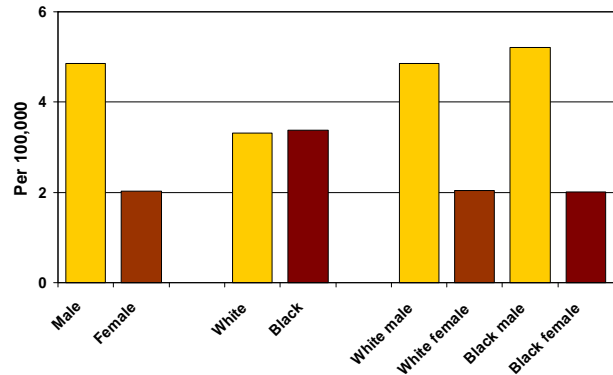
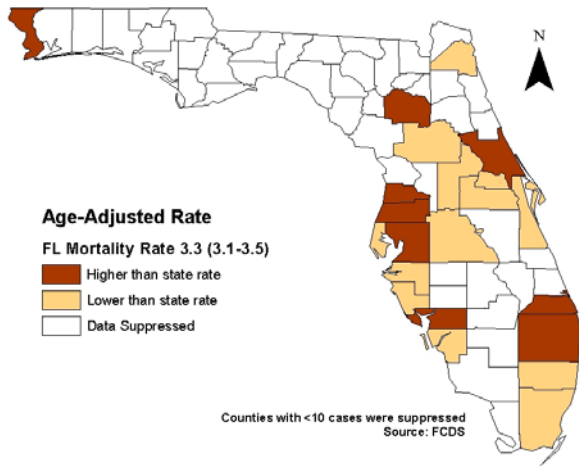
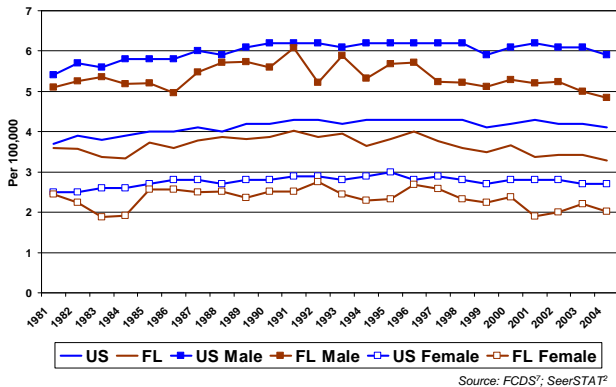


Figure 15. Age-Adjusted Mortality Rate of Kidney Cancer, Florida, 2004



In 2004, the age-adjusted mortality rate of kidney cancer ranges from 2.7 per 100,000 in Orange County to 5.9 per 100,000 in Alachua County.

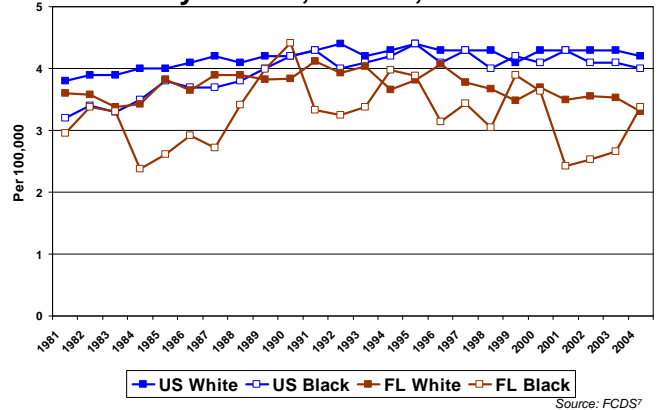
Figure 16. Age-adjusted Mortality Rate of Kidney Cancer, Florida, 1981-2004



Since 1981, the national mortality rate of kidney cancer has increased by 11% in 2004. Mortality rates also showed an increase nationally among both sexes and both races. In Florida, the mortality rate of kidney cancer in 2004 decreased by 8% compared to the rate in 1981. Females showed a greater decline (20%) than males (4%). The decrease in the mortality rate in Florida and the decrease among females

were statistically significant. During the 24 year period Whites had a higher age-adjusted mortality rate of kidney cancer in 18 years than Blacks in Florida.

Figure 17. Age-adjusted Mortality Rate of Kidney Cancer, Florida, 1981-2004



References

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