

CHAPTER 8
Kidney Cancer

Table 8-1. Codes used in the diagnosis and management of kidney cancer**Individuals 35 years or older, with one or more of the following:***ICD-9 diagnosis codes*

189	Malignant neoplasm of kidney and other unspecified organs
189.0	Malignant neoplasm of kidney, except pelvis
189.8	Malignant neoplasm of other specified sites or urinary organs

ICD-9 procedure codes

55.3 ^a	Local excision or destruction of lesion or tissue of kidney
55.4	Partial nephrectomy
55.5	Complete nephrectomy
55.52	Nephrectomy of remaining kidney
55.54	Bilateral nephrectomy

CPT procedure codes

50220 ^a	Nephrectomy, including partial ureterectomy, any open approach including rib resection
50225 ^a	Nephrectomy, including partial ureterectomy, any open approach including rib resection; complicated because of previous surgery on same kidney
50230	Nephrectomy, including partial ureterectomy, any open approach including rib resection; radical, with regional lymphadenectomy and/or vena caval thrombectomy
50240	Nephrectomy, partial
50543	Laparoscopy, surgical; partial nephrectomy
50545	Laparoscopy, surgical; radical nephrectomy (includes removal of Gerota's fascia and surrounding fatty tissue, removal of regional lymph nodes, and adrenalectomy)
50546 ^a	Laparoscopy, surgical; nephrectomy, including partial ureterectomy

^aMust occur with diagnosis of 189.0 (malignant neoplasm of kidney, except pelvis) or 189.8 (malignant neoplasm of other specified sites or urinary organs).**Table 8-2. Estimated new kidney cancer cases and deaths in the United States, 2011**

	Estimated New Cases	Estimated New Deaths
Total	60,920	13,120
Male	37,120	8,270
Female	23,800	4,850

SOURCE: American Cancer Society. *Cancer Facts & Figures 2011*: American Cancer Society, Inc.

Table 8-3. Incidence rates of kidney cancer, age-adjusted, by race/ethnicity and gender

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Year of Diagnosis ^a									
1975	7.1	10.3	4.5	7.3	10.8	4.6	6.2	8.2	4.3
1976	8.0	11.2	5.5	8.1	11.5	5.6	7.8	11.7	4.7
1977	8.1	11.4	5.5	8.1	11.7	5.5	8.5	11.1	6.4
1978	7.8	11.8	4.8	8.0	12.1	4.9	8.0	11.0	5.7
1979	7.6	11.1	5.1	7.8	11.6	5.1	7.3	8.2	6.3
1980	8.1	11.7	5.4	8.4	12.2	5.6	6.0	8.0	4.4
1981	8.5	12.8	5.3	8.6	13.0	5.3	10.0	15.8	5.8
1982	8.4	11.8	5.7	8.5	12.0	5.9	7.6	11.2	4.9
1983	8.9	13.2	5.7	9.2	13.8	5.8	8.8	13.5	5.5
1984	9.2	13.1	6.2	9.5	13.6	6.3	9.0	12.0	6.9
1985	9.0	13.1	5.8	9.2	13.6	5.9	8.6	11.7	6.2
1986	9.7	13.8	6.6	9.8	14.1	6.7	10.1	15.0	6.6
1987	9.9	14.1	6.7	10.1	14.4	6.9	11.1	15.6	7.5
1988	9.9	14.0	7.0	10.1	14.3	7.0	11.6	15.4	8.8
1989	10.3	14.5	7.2	10.6	15.0	7.2	10.8	15.1	7.8
1990	10.4	14.7	7.1	10.7	15.0	7.5	10.5	15.9	6.6
1991	10.6	15.1	7.2	10.8	15.2	7.4	12.3	18.3	7.8
1992	10.8	15.3	7.4	11.1	15.6	7.7	11.0	16.4	7.2
1993	10.8	14.7	7.6	10.9	14.7	7.7	12.8	17.3	9.4
1994	11.3	15.7	7.9	11.6	16.0	8.0	12.7	18.0	8.7
1995	11.1	15.5	7.7	11.1	15.4	7.7	14.2	21.5	9.2
1996	11.4	15.8	7.9	11.5	16.2	7.8	13.9	17.4	11.3
1997	10.9	15.1	7.6	11.0	15.1	7.7	13.7	19.7	9.4
1998	11.8	16.4	8.2	12.1	16.7	8.4	12.7	17.4	9.0
1999	11.4	16.0	7.8	11.6	16.2	7.9	13.7	18.9	9.9
2000	12.5	17.4	8.6	12.7	18.0	8.5	14.8	19.3	11.9
2001	12.6	17.5	8.6	12.8	17.7	8.8	15.6	23.0	10.3
2002	12.9	17.8	8.9	13.1	18.0	9.1	15.3	22.5	10.3
2003	13.5	18.2	9.7	13.8	18.4	10.1	14.5	21.6	9.2
2004	13.5	18.4	9.6	13.8	18.7	9.8	15.7	22.1	11.0
2005	13.9	19.1	9.6	14.1	19.3	9.8	16.5	24.4	11.0
2006	14.4	18.9	10.7	14.6	19.2	10.8	15.7	20.7	12.0
2007	15.2	20.8	10.5	15.3	20.8	10.7	18.3	25.9	12.7
2008	15.4	20.9	10.8	15.3	20.6	10.8	19.6	28.9	13.3
1975-2008	11.1	15.5	7.6	11.2	15.7	7.7	12.7	18.0	8.9
Age at Diagnosis, ^b 2004-2008									
All ages	14.6	20.0	10.2	15.1	20.5	10.5	16.5	23.3	11.6
Under 65	7.7	10.2	5.4	7.9	10.4	5.6	9.1	12.8	6.0
65 and over	62.3	87.8	43.7	64.3	90.8	44.7	67.6	95.6	50.1
All ages ^c	10.3	13.8	7.2	10.5	14.1	7.4	11.8	16.5	8.1

^aBased on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta). Rates are per 100,000 and are age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130).

^bBased on the SEER 17 areas. Rates are per 100,000 and are age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130), unless noted.

^cRates are per 100,000 and are age-adjusted to the International Agency for Research on Cancer (IARC) world standard population.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-4. Incidence rates^a of kidney cancer, age-specific, by race/ethnicity and gender

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Age at Diagnosis									
<1	1.4	1.5	1.2	1.5	1.5	1.4	...	...	...
1-4	1.8	1.7	1.9	1.9	1.7	2.0	2.0	2.3	1.6
5-9	0.6	0.4	0.7	0.6	0.5	0.7	0.8	...	1.0
10-14	0.1	...	0.2	0.1	...	0.2	...	...	...
15-19	0.2	0.1	0.2	0.2	...	0.3	...	...	...
20-24	0.4	0.4	0.4	0.4	0.4	0.4	...	...	...
25-29	0.9	0.9	0.9	0.9	0.9	0.9	1.2	1.4	0.9
30-34	2.2	2.4	2.0	2.3	2.4	2.2	2.4	3.4	1.4
35-39	4.0	4.9	3.1	4.1	5.0	3.2	4.6	5.6	3.8
40-44	7.6	9.7	5.5	7.9	9.9	5.8	8.7	11.9	5.8
45-49	12.8	16.9	8.9	13.2	17.2	9.1	14.4	20.0	9.5
50-54	20.4	27.7	13.3	20.8	27.9	13.7	24.6	36.3	14.6
55-59	30.7	41.8	20.2	31.2	42.0	20.7	39.4	56.5	25.4
60-64	43.5	60.0	28.4	45.2	61.6	29.8	49.1	71.3	31.6
65-69	56.3	78.4	36.9	57.5	79.9	37.4	67.4	98.2	44.0
70-74	64.3	87.1	45.7	66.8	90.8	46.8	68.0	86.7	54.7
75-79	70.0	97.6	49.7	72.4	101.3	50.9	78.4	104.9	61.6
80-84	66.1	94.9	47.8	68.8	98.9	49.6	60.2	88.3	44.9
85+	53.9	84.6	39.7	55.2	87.5	40.4	56.9	100.5	40.3

... Statistic not shown. Rate based on less than 16 cases for the time interval.

^aBased on the SEER 17 areas. Rates are per 100,000 and are age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130).

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-5. Age-adjusted incidence rates^a and trends^b of kidney cancer, by race/ethnicity and gender

Race/ethnicity	Rate 2004-2008 Rate per 100,000			Trend 1999-2008 AAPC ^c (%)		
	Total	Males	Females	Total	Males	Females
All Races	14.6	20.0	10.2	3.0*	2.2*	3.1*
White	15.1	20.5	10.5	2.8*	2.2*	2.5*
White Hispanic ^d	14.9	19.8	11.0	2.9*	2.5*	3.1*
White Non-Hispanic ^d	15.1	20.7	10.5	2.7*	2.1*	2.9*
Black	16.5	23.3	11.6	2.5*	2.5*	2.6*
Asian/Pacific Islander	7.7	10.6	5.4	3.1*	2.7*	3.9*
American Indian/Alaska Native ^e	17.6	22.1	13.9	1.2	1.2	...
Hispanic ^d	14.5	19.2	10.7	2.9*	2.7*	3.1*

The AAPC is the Average Annual Percent Change over the time interval.

*The AAPC is significantly different from zero ($p < .05$).

... Statistic not shown. Trend based on less than 10 cases for at least one year within the time interval.

^aBased on the SEER 17 areas. Rates are age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130).

^bBased on the SEER 13 areas. Trends are based on rates age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130).

^cThe 1999-2008 AAPC estimates are based on a Joinpoint analysis with up to 5 Joinpoints over diagnosis years 1975-2008.

^dHispanic and Non-Hispanic are not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Incidence data for Hispanics and Non-Hispanics are based on NHIA and exclude cases from the Alaska Native Registry. The 2004-2008 Hispanic and Non-Hispanic death rates exclude deaths from the District of Columbia, New Hampshire, and North Dakota. The 1999-2008 Hispanic and Non-Hispanic mortality trends exclude deaths from Connecticut, the District of Columbia, Maine, Maryland, Minnesota, New Hampshire, New York, North Dakota, Oklahoma and Vermont.

^eIncidence data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-6. Estimated kidney cancer prevalence counts^a and age-adjusted percents^b in the United States on January 1, 2008 by race/ethnicity and gender

	Count	Percent
All Races	296,074 ^c	0.0709% ^d
Males	174,350 ^c	0.0936% ^d
Females	121,724 ^c	0.0521% ^d
White	258,417 ^c	0.0743% ^d
Males	152,158 ^c	0.0978% ^d
Females	106,259 ^c	0.0545% ^d
Black	30,300 ^c	0.0737% ^d
Males	15,965 ^c	0.0957% ^d
Females	14,335 ^c	0.0574% ^d
Asian/Pacific Islander ^d	...	0.0405%
Males	...	0.0559%
Females	...	0.0282%
Hispanic ^e	...	...
Males	...	...
Females	...	...

... Data not available.

^aUS 2008 cancer prevalence counts are based on 2008 cancer prevalence proportions from the SEER registries and 1/1/2008 US population estimates based on the average of 2007 and 2008 population estimates from the US Bureau of the Census. Prevalence was calculated using the First Malignant Primary Only for a person.

^bPercentages are age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130) by 5-year age groups.

^cStatistics based on the SEER 9 Areas.

^dStatistics based on the SEER 11 Areas and Rural Georgia.

^eStatistics based on NHIA for Hispanic for the SEER 11 Areas and Rural Georgia.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-7. Estimated kidney cancer prevalence counts^a on January 1, 2008 in the United States, by race/ethnicity and years since diagnosis

Years Since Diagnosis	0 to < 5	5 to < 10	10 to < 15	15 to < 20	20 to < 25	25 to < 30	0 to < 18 ^e	0 to < 33 ^e	≥ 33 ^f	Complete ^g
Race/ethnicity										
All Races ^b	118,656	64,398	40,460	24,125	13,726	7,577	252,095	285,286	10,788	296,074
Males	71,212	37,694	23,736	13,729	8,074	3,970	150,012	168,405	5,945	174,350
Females	47,444	26,704	16,724	10,396	5,652	3,607	102,083	116,881	4,843	121,724
White ^b	101,614	55,395	34,968	21,570	12,294	6,652	216,342	246,063	12,354	258,417
Males	61,102	32,877	20,939	12,429	7,375	3,585	129,807	146,640	5,518	152,158
Females	40,512	22,518	14,029	9,141	4,919	3,067	86,535	99,423	6,836	106,259
Black ^b	11,788	6,679	4,183	2,010	1,160	766	25,594	28,438	1,862	30,300
Males	6,962	3,407	2,063	1,013	523	313	14,111	15,327	638	15,965
Females	4,826	3,272	2,120	997	637	453	11,483	13,111	1,224	14,335
Asian/Pacific Islander ^c	2,946	1,421	698	...	...	...	5,295	...	...	...
Males	1,841	859	440	...	...	...	3,267	...	...	...
Females	1,105	562	258	...	...	...	2,028	...	...	...
Hispanic ^d	10,670	5,375	2,726	...	...	...	19,898	...	...	...
Males	6,216	3,119	1,483	...	...	...	11,396	...	...	...
Females	4,454	2,256	1,243	...	...	...	8,502	...	...	...

... Data not available.

^aUS 2008 cancer prevalence counts are based on 2008 cancer prevalence proportions from the SEER registries and 1/1/2008 US population estimates based on the average of 2007 and 2008 population estimates from the US Bureau of the Census. Prevalence was calculated using the First Malignant Primary Only for a person.

^bStatistics based on the SEER 9 Areas.

^cStatistics based on the SEER 11 Areas and Rural Georgia.

^dStatistics based on NHIA for Hispanic for the SEER 11 Areas and Rural Georgia.

^eMaximum limited-duration prevalence: 33 years for 1975-2008 SEER 9 data; 18 years for 1990-2008 SEER 11 data (used to calculate prevalence for Hispanics and Asian Pacific Islanders).

^fCases diagnosed more than 33 years ago were estimated using the completeness index method (Capocaccia et. al. 1997, Merrill et. al. 2000).

^gComplete prevalence is obtained by summing 0 to <33 and ≥33.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-8. Risk of being diagnosed with kidney cancer in 10, 20 and 30 years, lifetime risk of being diagnosed given alive and cancer-free at current age, by race/ethnicity, both sexes

All Races				
	> 10 years	> 20 years	> 30 years	Eventually
Current Age				
0	0.01	0.01	0.02	1.56
10	0.00	0.01	0.04	1.57
20	0.01	0.04	0.14	1.58
30	0.03	0.14	0.38	1.58
40	0.11	0.35	0.78	1.57
50	0.25	0.69	1.18	1.50
60	0.47	0.98	1.27	1.33
70	0.59	0.92	...	0.99
80	0.46	...	...	0.55
Lifetime Risk of Being Diagnosed = 1.56		Lifetime Risk of Dying = 0.47		
Whites				
	> 10 years	> 20 years	> 30 years	Eventually
Current Age				
0	0.01	0.01	0.02	1.62
10	0.00	0.01	0.04	1.63
20	0.01	0.04	0.15	1.63
30	0.03	0.14	0.39	1.64
40	0.11	0.36	0.80	1.62
50	0.26	0.71	1.22	1.55
60	0.48	1.02	1.32	1.37
70	0.61	0.95	...	1.02
80	0.47	...	...	0.56
Lifetime Risk of Being Diagnosed = 1.62		Lifetime Risk of Dying = 0.48		
Blacks				
	> 10 years	> 20 years	> 30 years	Eventually
Current Age				
0	0.01	0.01	0.02	1.44
10	0.00	0.01	0.05	1.46
20	0.01	0.04	0.15	1.47
30	0.04	0.15	0.42	1.48
40	0.11	0.39	0.83	1.48
50	0.29	0.75	1.18	1.43
60	0.51	0.99	1.22	1.27
70	0.60	0.88	...	0.94
80	0.43	...	...	0.51
Lifetime Risk of Being Diagnosed = 1.44		Lifetime Risk of Dying = 0.39		

... Statistic could not be calculated.

NOTE: A percent of 0.00 represents a value that is below 0.005.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-9. Stage at diagnosis for kidney cancer 2001-2007,^a total case counts, estimated case counts, and percentages

Stage at Diagnosis	All Races		
	All	Males	Females
All Stages	55,307 (100%)	33,945 (100%)	21,362 (100%)
Localized	33,737 (61%)	20,367 (60%)	13,458(63%)
Regional	9,402 (17%)	6,110 (18%)	3,418 (16%)
Distant	9,955 (18%)	6,449 (19%)	3,418 (16%)
Unstaged	2,212 (4%)	1,358 (4%)	1,068 (5%)
Stage at Diagnosis	Whites		
	All	Males	Females
All Stages	46,494 (100%)	28,609 (100%)	17,885 (100%)
Localized	27,896 (60%)	16,879 (59%)	11,268 (63%)
Regional	8,369 (18%)	5,150 (18%)	2,862 (16%)
Distant	8,369 (18%)	5,436 (19%)	2,862 (16%)
Unstaged	1,860 (4%)	1,144 (4%)	894 (5%)
Stage at Diagnosis	Blacks		
	All	Males	Females
All Stages	5,338 (100%)	3,187 (100%)	2,151 (100%)
Localized	3,468 (65%)	2,040 (64%)	1,463 (68%)
Regional	694 (13%)	414 (13%)	258 (12%)
Distant	961 (18%)	606 (19%)	344 (16%)
Unstaged	214 (4%)	127 (4%)	86 (4%)

^aBased on the SEER 17 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJM/LA, Kentucky, Louisiana and New Jersey). Based on follow-up of patients into 2008.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Allekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-10. Survival (%) for kidney cancer, by race, gender, diagnosis year, stage and age

	All Races			Whites			Blacks		
	All	Males	Females	All	Males	Females	All	Males	Females
5-Year Relative Survival (%)									
Year of Diagnosis									
1960-1963 ^a	...	...	...	37.0	36.0	39.0	38.0	38.0	37.0
1970-1973 ^a	...	...	...	46.0	44.0	50.0	44.0	40.0	49.0
► 1975-1977 ^b	50.2	50.3	50.0	49.9	50.2	49.4	49.3	47.9	51.5 ^c
1978-1980 ^b	53.0	52.7	53.4	52.7	52.9	52.2	57.0	51.9	63.4 ^c
1981-1983 ^b	50.2	51.2	48.5	50.1	51.3	47.9	50.7	50.3	51.2
1984-1986 ^b	54.8	55.3	53.8	54.9	55.7	53.7	52.9	49.7	57.8
1987-1989 ^b	56.7	57.1	56.1	57.3	58.1	56.1	54.8	52.7	57.2
1990-1992 ^b	60.3	60.6	59.8	60.8	61.2	60.0	57.2	55.6	58.9
1993-1995 ^b	61.5	61.7	61.3	62.0	62.8	60.8	57.5	54.3	62.0
1996-2000 ^b	63.3	62.7	64.1	63.0	62.8	63.3	65.6	64.2	66.7
2001-2007 ^b	70.9 [*]	70.7 [*]	71.0 [*]	71.0 [*]	70.8 [*]	71.2 [*]	68.4 [*]	68.0 [*]	68.7 [*]
5-Year Relative Survival (%), 2001-2007^d									
Stage at Diagnosis									
All Stages	69.5	69.5	69.4	69.7	69.7	69.8	66.2	66.6	65.6
Localized	90.8	91.1	90.3	91.5	91.6	91.3	85.0	86.1	83.4
Regional	63.3	65.4	59.6	63.8	65.6	60.3	57.9	62.3	50.8
Distant	11.1	11.8	9.8	10.6	11.4	9.0	12.5	12.1	13.0
Unstaged	34.8	36.9	32.3	34.2	36.1	31.7	32.4	35.6 ^c	27.3 ^c
Age at Diagnosis									
< 45	83.3	81.6	85.6	84.6	83.0	87.0	73.0	69.4	77.7
45-54	76.6	74.7	80.4	77.0	74.8	81.3	72.1	71.0	74.3
55-64	71.4	70.3	73.4	71.9	70.7	74.2	67.0	67.0	66.9
65-74	67.8	67.5	68.2	67.8	67.2	68.7	66.5	69.3	62.9
75+	55.3	57.5	53.0	56.3	58.7	53.6	46.1	45.2	46.1
< 65	75.5	73.9	78.5	76.0	74.3	79.3	70.3	69.0	72.6
65+	61.9	63.1	60.2	62.2	63.4	60.6	58.3	61.1	55.4

... Statistic could not be calculated due to fewer than 25 cases during the time period.

► Denotes reference group.

^{*}The difference between 1975-1977 and 2001-2007 is statistically significant ($p < .05$).

^aBased on End Results data from a series of hospital registries and one population-based registry.

^bBased on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta). Based on follow-up of patients into 2008.

^cThe standard error is between 5 and 10 percentage points.

^dBased on the SEER 17 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, Los Angeles, Alaska Native Registry, Rural Georgia, California excluding SF/SJMLA, Kentucky, Louisiana and New Jersey). Based on follow-up of patients into 2008.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-11. Relative survival^a (%) for kidney cancer, by year of diagnosis, all races, males and females

	1975- 1980- 1985-																				
	1979	1984	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Survival Time																					
1-year	69.6	71.2	73.5	76.3	77.1	77.4	76.6	77.0	77.3	77.5	76.9	78.3	78.3	80.2	81.6	80.0	82.1	85.4	84.2	85.2	86.3
2-year	60.7	62.0	65.3	68.3	68.9	69.0	70.8	69.7	69.7	70.7	70.1	71.3	71.9	74.2	74.2	75.0	76.4	79.8	80.1	81.6	
3-year	56.6	57.2	60.9	65.4	64.5	66.1	66.6	67.0	65.4	67.5	66.0	67.8	67.7	69.5	71.0	71.4	73.4	76.6	77.6		
4-year	53.1	54.1	57.9	62.8	62.1	62.9	63.1	64.9	63.4	64.4	63.5	64.8	64.6	67.6	68.3	69.2	71.1	73.7			
5-year	51.0	52.2	55.9	59.9	60.4	60.5	61.1	62.1	61.4	62.6	61.8	63.5	62.4	65.7	66.6	67.5	69.1				
6-year	49.5	49.9	54.0	57.9	58.3	59.0	59.2	60.8	59.4	60.9	59.7	61.6	60.6	64.2	64.9	65.5					
7-year	47.5	48.7	52.4	55.5	57.4	56.5	58.6	59.1	58.0	59.2	58.1	59.7	59.0	62.4	63.2						
8-year	46.3	47.5	51.2	54.7	56.3	55.4	56.9	57.5	56.9	58.6	55.9	58.1	57.3	60.3							
9-year	45.1	46.2	49.8	53.6	54.7	54.1	55.8	56.9	55.5	58.0	54.1	56.9	55.6								
10-year	44.1	45.0	48.1	52.8	52.7	53.2	53.3	54.7	54.4	56.0	53.1	55.8									
11-year	43.2	43.7	46.6	51.7	51.2	51.0	51.8	53.2	52.4	55.1	51.9										
12-year	42.3	42.8	45.5	50.1	50.2	49.8	51.4	51.6	50.7	53.7											
13-year	41.6	42.0	44.5	49.3	49.5	48.3	50.4	50.0	49.3												
14-year	40.6	41.3	43.2	47.8	48.0	47.6	49.0	48.7													
15-year	39.6	41.0	42.3	46.1	48.0	46.7	48.4														
16-year	39.3	40.4	41.3	45.8	46.9	46.1															
17-year	38.8	39.8	40.4	45.0	46.3																
18-year	37.7	39.2	39.5	44.1																	
19-year	36.8	38.2	38.6																		
20-year	36.1	37.4																			

^aBased on the SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Allekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-12. Age-adjusted mortality rates^a for kidney cancer, by year, race, and gender

	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Year of Death									
1975	3.6	5.2	2.4	3.7	5.3	2.5	2.8	4.2	1.8
1976	3.6	5.2	2.4	3.7	5.4	2.5	2.9	4.2	1.9
1977	3.7	5.4	2.5	3.8	5.5	2.5	2.9	4.0	2.0
1978	3.7	5.4	2.4	3.8	5.5	2.5	3.2	4.8	1.9
1979	3.6	5.3	2.4	3.7	5.5	2.4	3.0	4.2	2.0
1980	3.7	5.5	2.4	3.8	5.6	2.4	3.0	4.2	2.0
1981	3.7	5.4	2.5	3.8	5.5	2.6	3.2	4.6	2.1
1982	3.9	5.7	2.5	3.9	5.8	2.6	3.4	4.8	2.4
1983	3.9	5.6	2.6	3.9	5.7	2.7	3.3	4.9	2.2
1984	3.9	5.8	2.6	4.0	5.9	2.6	3.5	4.9	2.5
1985	4.0	5.8	2.7	4.0	5.8	2.7	3.8	6.0	2.4
1986	4.1	5.8	2.8	4.1	5.9	2.8	3.7	5.3	2.5
1987	4.1	6.0	2.8	4.2	6.2	2.8	3.7	5.5	2.4
1988	4.0	5.9	2.7	4.1	5.9	2.8	3.8	5.8	2.4
1989	4.2	6.1	2.8	4.2	6.2	2.8	4.0	6.1	2.6
1990	4.2	6.2	2.8	4.2	6.2	2.8	4.2	6.4	2.8
1991	4.3	6.2	3.0	4.3	6.2	3.0	4.3	6.4	3.0
1992	4.3	6.2	2.9	4.4	6.3	2.9	4.0	5.9	2.6
1993	4.2	6.1	2.8	4.2	6.2	2.8	4.1	6.1	2.8
1994	4.3	6.2	2.9	4.3	6.3	2.9	4.2	6.4	2.8
1995	4.3	6.2	3.0	4.4	6.3	3.0	4.4	6.3	3.1
1996	4.3	6.2	2.8	4.3	6.3	2.9	4.2	5.9	2.9
1997	4.3	6.2	2.9	4.3	6.2	2.9	4.3	6.6	2.8
1998	4.3	6.2	2.8	4.3	6.3	2.9	4.0	6.3	2.5
1999	4.1	5.9	2.7	4.1	6.0	2.7	4.2	6.1	2.8
2000	4.2	6.1	2.8	4.3	6.2	2.8	4.1	6.3	2.7
2001	4.3	6.2	2.8	4.3	6.3	2.8	4.3	6.5	2.8
2002	4.2	6.2	2.8	4.3	6.3	2.8	4.1	5.9	2.9
2003	4.2	6.1	2.7	4.3	6.2	2.8	4.1	6.2	2.8
2004	4.1	6.0	2.7	4.2	6.1	2.8	4.0	5.9	2.7
2005	4.1	6.0	2.7	4.2	6.0	2.8	4.1	6.2	2.6
2006	4.0	5.8	2.6	4.1	5.9	2.7	3.9	6.0	2.5
2007	4.0	5.8	2.6	4.1	5.9	2.7	4.1	6.1	2.8
2008	4.0	5.9	2.5	4.1	5.9	2.6	3.9	5.9	2.6
1975-2008	4.1	5.9	2.7	4.1	6.0	2.8	3.9	5.7	2.6
Age at Death									
All ages	4.0	5.9	2.7	4.1	6.0	2.7	4.0	6.0	2.6
Under 65	1.4	2.0	0.8	1.4	2.0	0.8	1.6	2.5	0.9
65 and over	22.2	32.4	15.2	22.7	33.1	15.5	20.6	30.6	14.8
All ages ^b	2.5	3.6	1.6	2.5	3.6	1.6	2.5	3.8	1.6

^aUS Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention. Rates are per 100,000 and are age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130), unless noted.

^bRates are per 100,000 and are age-adjusted to the International Agency for Research on Cancer (IARC) world standard population.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD,

http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-13. Age-adjusted mortality^a rates^b and trends^c of kidney cancer, by race/ethnicity and gender

Race/ethnicity	Rate 2004-2008 Rate per 100,000			Trend 1999-2008 AAPC ^d (%)		
	Total	Males	Females	Total	Males	Females
All Races	4.0	5.9	2.7	-0.4*	-0.4*	-0.6*
White	4.1	6.0	2.7	-0.4*	-0.4*	-0.6*
White Hispanic ^e	3.7	5.4	2.4	0.1	0.0	0.0
White Non-Hispanic ^e	4.1	6.0	2.7	-0.3*	-0.3*	-0.5*
Black	4.0	6.0	2.6	-0.3	-0.2	-0.5
Asian/Pacific Islander	1.9	2.6	1.2	0.0	0.0	0.2
American Indian/Alaska Native						
Total U.S.	4.5	6.7	2.8	-0.4	-0.1	-1.7
CHSDA ^f						
Counties	6.2	8.9	4.1	0.1	-0.1	-0.5
Non-CHSDA ^f						
Counties	2.6	4.1	1.3	...	...	...
Hispanic ^e	3.6	5.2	2.3	0.1	-0.1	0.0

The AAPC is the Average Annual Percent Change over the time interval.

*The AAPC is significantly different from zero ($p < .05$).

... Statistic not shown. Trend based on less than 10 cases for at least one year within the time interval.

^aUS Mortality Files, National Center for Health Statistics, CDC.

^bRates are age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130).

^cTrends are based on rates age-adjusted to the 2000 US standard population (19 age groups - Census P25-1130).

^dThe 1999-2008 AAPC estimates are based on a Joinpoint analysis with up to 3 Joinpoints over diagnosis years 1992-2008.

^eHispanic and Non-Hispanic are not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaska Natives. Incidence data for Hispanics and Non-Hispanics are based on NHIA and exclude cases from the Alaska Native Registry. The 2004-2008 Hispanic and Non-Hispanic death rates exclude deaths from the District of Columbia and North Dakota. The 1999-2008 Hispanic and Non-Hispanic mortality trends exclude deaths from Connecticut, the District of Columbia, Maine, Maryland, Minnesota, New Hampshire, New York, North Dakota, Oklahoma and Vermont.

^fIncidence data for American Indian/Alaska Native are based on the CHSDA (Contract Health Service Delivery Area) counties.

SOURCE: Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2008, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Table 8-14. Nationally representative inpatient stays for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=37,296)		2003 (N=36,938)		2004 (N=39,127)		2005 (N=41,084)		2006 (N=43,259)		2007 (N=46,641)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	17.5	25.5	17.1	24.5	18.2	26.6	18.9	27.4	19.7	28.3	20.9	29.9
Age												
35-39	5.0*		4.9*		4.5*		5.5*		5.4*		5.3*	
40-44	8.1*		8.4*		9.1*		9.5*		10.0*		10.6*	
45-54	18.5*		17.1*		17.4*		17.9*		18.9*		21.0*	
55-64	37.4		34.2		36.9		37.7		37.8		38.9	
▶ 65-74	52.6		53.5		55.2		58.3		59.7		63.9	
75-84	41.7*		42.8*		56.5*		54.0*		58.2*		58.9*	
85+	37.7*		32.0*		32.6*		37.3*		37.5*		43.5*	
Race/ethnicity												
▶ White	12.2	18.0	13.9	18.9	15.7	21.7	16.1	22.0	15.5	21.1	16.9	22.8
Black	11.0*	17.7	12.0*	18.7	12.2*	19.1	10.9*	16.9	12.4*	19.1	13.8*	21.0
Hispanic	†	†	9.1*	17.1	7.6*	14.3	8.6*	15.9	10.0*	18.0	9.9*	17.6
Asian	4.5*	7.6	5.0*	7.9	5.1*	9.8	4.7*	7.4	5.5*	8.5	8.2*	12.6
Other	29.6*	47.8	16.6*	28.4	13.5*	23.2	24.4*	41.1	28.1*	45.9	30.6*	49.2
Region												
Northeast	20.1	27.7	16.8	23.1	19.3	27.2	22.1	30.9	19.4	26.9	25.5	35.1
South	18.3	26.8	19.7	28.4	20.4	29.8	18.9	27.5	21.4	30.9	21.8	31.2
▶ Midwest	17.2	24.6	16.6	23.9	19.9	29.2	19.4	28.1	19.6	28.2	20.6	29.4
West	14.2*	21.9	13.7*	20.4	12.2*	18.4	15.7*	23.4	17.2*	25.3	16.2*	23.9
Gender												
Female	13.3	18.9	13.1	18.3	14.4	20.6	14.8	21.0	15.3	21.6	15.6	21.9
▶ Male	22.1	33.0	21.5	31.6	22.4	33.4	23.3	34.4	24.3	35.6	26.7	38.8

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

† Figure does not meet standard for reliability or precision.

^aRate per 100,000 individuals in the same demographic stratum is based on 2002-2007 population estimates from Current Population Survey (CPS).^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: Healthcare Cost and Utilization Project Nationwide Inpatient Sample, 2002-2007.

Table 8-15. Inpatient stays by Medicare beneficiaries for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=9,680)		2003 (N=10,580)		2004 (N=11,020)		2005 (N=11,820)		2006 (N=10,420)		2007 (N=10,240)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	27.2	30.4	29.0	32.7	29.8	33.2	31.8	34.9	28.7	32.8	28.3	32.8
Under 65/65+												
< 65 Years	17.4*	17.4	16.8*	16.8	20.8*	20.8	24.5*	24.5	17.8*	17.8	16.5*	16.5
▶ 65+ Years	29.7	30.4	32.2	32.7	32.2	33.2	33.9	34.9	31.8	32.8	31.8	32.8
Age												
▶ 65-69	27.9		31.1		30.7		32.2		33.6		30.7	
70-74	36.3*		38.4*		37.8*		34.5*		34.2*		39.4*	
75-79	37.8*		37.7*		39.9*		45.8*		40.4*		35.2*	
80-84	27.2*		31.0*		34.1*		34.2*		25.9*		28.0*	
85-89	14.5*♦		17.6*♦		15.6*♦		22.2*♦		22.1*♦		26.4*	
90-94	6.3*♦		18.4*♦		2.0*♦		13.7*♦		15.8*♦		13.7*♦	
95-97	0.0*♦		0.0*♦		9.9*♦		0.0*♦		0.0*♦		19.9*♦	
98+	...		0.0*♦		10.6*♦		10.4*♦		0.0*♦		0.0*♦	
Race/ethnicity												
▶ White	27.6	30.8	29.0	32.7	29.9	33.8	32.1	35.4	28.1	32.4	28.9	33.1
Black	29.2*	35.3	32.7*	41.1	32.0*	32.6	38.0*	41.9	32.3*	35.2	22.1*	29.4
Hispanic	6.1*♦	10.5	26.2*♦	25.4	17.0*♦	13.0	8.2*♦	3.0	25.3*♦	38.8	24.7*♦	37.5
Asian	20.2*♦	22.9	7.6*♦	7.1	7.2*♦	14.5	10.1*♦	14.5	16.6*♦	9.0	19.0*♦	21.3
Other	31.1*♦	22.0	28.4*♦	28.9	48.4*♦	51.1	31.4*♦	36.3	42.1*♦	47.6	43.3*♦	36.4
Unknown	0.0*♦	...	57.4*♦	...	0.0*♦	...	29.4*♦	...	93.8*♦	...	67.3*♦	...
Region												
▶ Northeast	29.4	32.7	29.3	33.9	27.5	33.4	35.7	39.7	32.0	35.5	34.4	40.8
South	27.6*	31.5	30.0*	33.0	33.1*	36.8	31.4*	33.1	28.4*	32.9	28.0*	31.3
Midwest	25.9*	28.9	29.2*	33.3	30.7*	33.1	29.5*	33.1	28.3*	31.5	24.8*	30.7
West	25.5*	27.8	26.0*	29.9	23.3*	25.1	31.9*	36.0	26.0*	31.1	27.2*	30.7
Gender												
Female	18.0*	19.0	19.9*	22.6	19.8*	22.0	22.0*	23.8	20.0*	22.9	19.1*	21.8
▶ Male	38.9	46.2	40.6	46.5	42.4	48.4	44.1	50.0	39.4	45.6	39.6	47.3

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

*Rate based on a count less than 600, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.

^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: Centers for Medicare and Medicaid Services, 5% Standard Analytical Claims Files.

Table 8-16. Inpatient stays by privately insured individuals for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=1,571)		2003 (N=1,761)		2004 (N=1,844)		2005 (N=2,135)		2006 (N=1,775)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	17.8	40.7	17.9	43.0	18.3	43.6	20.0	45.4	17.1	44.4
Age										
35-39	5.7*		6.2*		5.9*		5.6*		4.0*	
40-44	10.4*		11.2*		11.2*		10.5*		10.7*	
45-54	23.8*		23.7*		23.3*		20.8*		19.8*	
55-64	54.7*		47.7*		46.9*		54.0*		51.1*	
▶ 65-74	77.0		79.2		82.8		90.5		83.7	
75-84	64.6*		96.8*		101.5*		99.6*		112.1*	
85+	...		51.4*		46.7*		56.2*		44.1*♦	
Race/ethnicity										
▶ White	17.4	36.4	18.2	40.9	20.0	47.2	21.1	47.7	18.2	46.0
Black	16.7*	28.7	16.9*	32.5	16.7*	35.2	21.8*	41.9	14.6*	43.1
Hispanic	8.7*♦	23.0	8.7*	23.8	10.6*	28.9	14.1*	37.0	10.3*	28.7
Asian	5.1*♦	46.4	7.0*♦	24.9	6.7*♦	22.7	10.7*	32.1	4.7*♦	25.3
Other	9.9*♦	30.1	12.1*♦	122.0	6.1*♦	15.7	21.3*♦	50.6	14.3*♦	33.1
Unknown	22.4*	...	19.4*	...	17.7*	...	18.1*	...	18.1*	...
Missing	19.0*	...	19.3*	...	18.9*	...	20.5*	...	19.3*	...
Region										
Northeast	22.5*	50.9	15.8*	36.8	19.0	47.7	23.7*	56.6	16.7	50.8
South	16.0*	35.9	19.0	45.0	18.0*	42.3	19.8	45.9	17.1	46.5
▶ Midwest	19.7	43.2	18.5	43.2	20.8	46.1	21.1	44.3	18.6	46.5
West	14.9*	37.5	14.3*	41.8	12.9*	36.7	15.6*	37.9	14.1*	32.5
Gender										
Female	13.2*	29.9	12.6*	30.9	12.7*	30.3	14.5*	32.7	12.4*	33.1
▶ Male	22.7	51.7	23.5	55.4	24.3	57.0	25.8	58.4	21.9	54.9

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

♦Rate based on a count less than 30, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: i3 Claims Database, 2002-2006.

Table 8-17. Hospital outpatient visits by Medicare beneficiaries for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=11,080)		2003 (N=10,660)		2004 (N=12,740)		2005 (N=14,840)		2006 (N=15,500)		2007 (N=20,840)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	31.2	32.3	29.2	34.5	34.4	40.0	40.0	44.7	42.6	45.0	57.6	65.0
Under 65/65+												
< 65 Years	30.4	30.4	12.9*	12.9	19.1*	19.1	26.7*	26.7	39.2*	39.2	39.3*	39.3
▶ 65+ Years	31.3	32.3	33.5	34.5	38.6	40.0	43.7	44.7	43.6	45.0	63.1	65.0
Age												
▶ 65-69	33.9		36.4		53.5		46.4		45.0		93.2	
70-74	38.0*		42.7*		38.9*		48.2*		52.2*		63.2*	
75-79	40.9*		43.3*		43.9*		65.1*		50.0*		57.8*	
80-84	14.3*		18.5*		25.9*		27.9*		42.6*		43.7*	
85-89	23.9*♦		16.7*♦		18.9*♦		15.6*♦		22.9*♦		38.4*	
90-94	8.4*♦		6.1*♦		2.0*♦		15.7*♦		13.9*♦		19.6*♦	
95-97	0.0*♦		...		...		38.9*♦		0.0*♦		0.0*♦	
98+	...		...		0.0*♦		...		...		...
Race/ethnicity												
▶ White	30.3	31.1	29.0	34.6	32.8	38.0	39.8	45.1	40.5	43.6	58.6	66.4
Black	29.2*	25.5	27.2*	25.8	32.6*	35.4	33.6*	24.5	52.4*	43.3	48.2*	50.1
Hispanic	18.2*♦	17.7	17.5*♦	26.8	14.1*♦	14.7	57.7*♦	68.8	90.0*	115.1	66.0*♦	72.4
Asian	60.6*♦	80.7	30.3*♦	59.7	21.5*♦	25.0	40.3*♦	57.1	13.3*♦	31.6	9.5*♦	8.5
Other	79.6*♦	100.0	66.3*♦	99.3	160.2*	225.9	65.6*♦	89.4	61.7*♦	63.7	92.0*	81.3
Unknown	26.7*♦	...	0.0*♦	...	0.0*♦	...	29.4*♦	...	62.6*♦	...	67.3*♦	...
Region												
▶ Northeast	43.8	49.7	45.2	55.1	41.1	50.7	48.0	57.6	54.0	58.0	79.4	83.3
South	21.8*	18.0	16.7*	19.6	23.0*	27.7	22.5*	24.1	29.3*	29.8	37.0*	40.3
Midwest	35.7*	37.1	41.4*	47.0	47.8*	50.8	58.9*	61.7	58.5*	60.0	78.6*	94.5
West	30.7*	36.9	21.0*	25.3	33.4*	39.1	43.0*	51.1	36.9*	42.2	49.9*	56.8
Gender												
Female	17.8*	19.9	16.5*	18.7	21.3*	24.6	24.5*	25.4	29.5*	30.1	44.9*	48.5
▶ Male	48.2	49.4	45.4	55.8	50.9	60.7	59.3	70.0	58.9	64.5	73.2	86.5

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

♦Rate based on a count less than 600, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: Centers for Medicare and Medicaid Services, 5% Standard Analytical Claims Files.

Table 8-18. Hospital outpatient visits by privately insured individuals for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=3,628)		2003 (N=3,877)		2004 (N=4,608)		2005 (N=5,074)		2006 (N=4,330)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	41.1	93.9	39.3	88.6	45.8	117.9	47.5	106.5	41.6	94.5
Age										
35-39	6.8*		9.3*		9.6*		10.7*		7.7*	
40-44	25.2*		21.4*		17.5*		17.3*		21.8*	
45-54	52.5*		47.8*		47.8*		56.1*		53.4*	
55-64	144.0*		144.7		130.8*		141.2*		141.6*	
▶ 65-74	203.8		152.5		242.2		159.7		165.2	
75-84	78.3*		130.2*		315.2*		281.6*		150.4*	
85+	...		53.1*		116.1*		70.6*		83.7*	
Race/ethnicity										
▶ White	33.3	66.5	39.1	83.4	46.3	107.9	48.3	97.7	45.9	100.5
Black	22.9*	44.0	27.3*	57.3	26.6*	59.0	27.1*	53.0	23.7*	54.5
Hispanic	19.4*	48.4	15.9*	39.6	13.3*	36.3	15.4*	45.2	14.0*	40.6
Asian	8.0*♦	37.3	4.0*♦	12.7	5.3*♦	15.2	41.5*	124.2	33.7*	167.2
Other	12.4*♦	57.8	8.6*♦	29.1	11.0*♦	19.8	39.3*	86.1	48.5*	105.5
Unknown	50.6*	...	66.3*	...	46.5*	...	39.4*	...	33.3*	...
Missing	50.0*	...	42.9*	...	74.6*	...	76.6*	...	50.2*	...
Region										
Northeast	48.5	112.7	36.4*	84.5	39.3*	94.4	47.8*	108.7	46.1*	112.1
South	34.4*	73.0	34.5*	74.7	30.6*	72.0	37.7*	81.8	34.5*	80.7
▶ Midwest	49.8	110.2	53.7	115.5	76.5	187.0	67.6	147.1	52.2	109.4
West	34.0*	103.1	21.8*	65.5	28.8*	79.3	34.8*	74.5	39.1*	87.9
Gender										
Female	23.3*	56.4	26.1*	61.3	33.4*	104.7	35.3*	88.2	25.9*	59.4
▶ Male	60.0	132.2	53.3	116.7	59.0	131.5	60.5	125.3	58.0	128.7

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

♦Rate based on a count less than 30, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: i3 Claims Database, 2002-2006.

Table 8-19. Nationally representative hospital outpatient visits for kidney cancer listed as primary diagnosis, 2002-2007 (merged), 6-year count

	6-Year Count
Total	217,448
Age	
40-44	1,284
45-54	60,999
55-64	89,281
65-74	40,848
75-84	15,285
85+	9,751
Race/ethnicity	
White	186,727
Black	18,071
Hispanic	11,503
Asian	1,147
Region	
Northeast	29,538
South	104,788
Midwest	78,179
West	4,943
Gender	
Female	81,485
Male	135,963

SOURCE: National Ambulatory Medical Care Survey, 2002-2007; National Hospital Ambulatory Medical Care Survey, 2002-2007.

Table 8-20. Ambulatory surgery center visits by Medicare beneficiaries for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=1,680)		2003 (N=1,760)		2004 (N=2,160)		2005 (N=2,200)		2006 (N=2,200)		2007 (N=2,180)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	5.4	6.5	5.5	6.4	6.5	7.8	6.5	8.0	7.3	9.0	7.0	8.7
Age												
▶ 65-69	6.3 [♦]		7.3 [♦]		6.9		5.9 [♦]		6.0 ^{*♦}		10.0	
70-74	6.1 ^{*♦}		6.4 ^{*♦}		8.6 ^{*♦}		8.7 ^{*♦}		10.9 [*]		9.8 [*]	
75-79	8.8 ^{*♦}		8.0 ^{*♦}		8.0 ^{*♦}		10.0 ^{*♦}		13.2 [*]		8.2 ^{*♦}	
80-84	5.7 ^{*♦}		6.0 ^{*♦}		8.6 ^{*♦}		9.5 ^{*♦}		8.3 ^{*♦}		8.1 ^{*♦}	
85-89	4.3 ^{*♦}		1.7 ^{*♦}		6.6 ^{*♦}		5.8 ^{*♦}		5.7 ^{*♦}		4.8 ^{*♦}	
90-94	6.3 ^{*♦}		...		4.0 ^{*♦}		5.9 ^{*♦}		4.0 ^{*♦}		5.9 ^{*♦}	
95-97	0.0^{*♦}		...		...		...		...		...
Race/ethnicity												
▶ White	5.6	6.5	5.5	6.4	6.9	8.2	6.9	8.4	7.6	9.0	7.4	9.0
Black	5.7 ^{*♦}	13.2	6.1 ^{*♦}	8.6	6.5 ^{*♦}	7.8	5.4 ^{*♦}	8.1	8.9 ^{*♦}	14.3	5.1 ^{*♦}	7.8
Hispanic	...	...	...	...	...	...	2.7 ^{*♦}	14.0	...	...	8.2 ^{*♦}	29.8
Asian	...	...	3.8 ^{*♦}	18.8	3.6 ^{*♦}	27	3.4 ^{*♦}	25.6	3.3 ^{*♦}	17	3.2 ^{*♦}	16.7
Other	6.9 ^{*♦}	34.1	6.3 ^{*♦}	14.3	...	...	...	...	0.0 ^{*♦}	0.0	2.7 ^{*♦}	9.7
Unknown	...	...	28.7^{*♦}	...	...	...	29.4^{*♦}	...	...	...	...	...
Region												
▶ Northeast	4.2 [♦]	5.5	5.0 [♦]	8.5	2.8 [♦]	4.7	2.2 [♦]	3.9	6.9 ^{*♦}	8.5	6.9 [♦]	9.6
South	6.3 [*]	8.2	5.7 [*]	6.6	7.2 [*]	8.0	7.9 [*]	9.7	8.7 [*]	10.3	8.9 [*]	11.3
Midwest	6.0 ^{*♦}	7.5	7.0 [*]	7.8	8.6 [*]	10.8	9.1 [*]	10.6	6.8 [*]	9.6	6.1 ^{*♦}	8.4
West	3.8 ^{*♦}	4.4	3.3 ^{*♦}	4.8	6.2 ^{*♦}	7.5	4.4 ^{*♦}	5.8	5.5 ^{*♦}	7.5	4.4 ^{*♦}	5.2
Gender												
Female	4.9 [*]	5.6	3.2 [*]	3.7	5.1 [*]	6.0	4.2 [*]	4.6	4.8 [*]	5.8	5.3 [*]	6.5
▶ Male	6.0	7.7	8.3	10.1	8.3	10.2	9.5	12.3	10.5	13.2	9.1	11.6

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group (p<.05).

♦Rate based on a count less than 600, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: Centers for Medicare and Medicaid Services, 5% Standard Analytical Claims Files.

Table 8-21. Ambulatory surgery center visits by privately insured individuals for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=15)		2003 (N=32)		2004 (N=41)		2005 (N=68)		2006 (N=69)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	0.2*	0.3	0.3	0.6	0.4	0.9	0.6	1.1	0.7	1.2
Age										
35-39	0.1*		0.1*		0.2**		0.6*		0.9*	
40-44	0.1*		0.4*		0.6*		0.4*		0.5*	
45-54	0.2*		0.6*		0.6*		0.9*		1.1*	
55-64	0.7*		0.9*		0.6*		2.2*		1.4*	
▶ 65-74	0.3*		0.3*		1.3*		0.9*		1.3*	
75-84	...		0.5**		3.1**		0.8**		1.7**	
85+	...		1.6**		...		...		...
Race/ethnicity										
▶ White	0.2*	0.3	0.3*	0.6	0.5*	1.0	0.8	1.3	0.7	1.1
Black	...	...	0.6**	4.2	0.2**	2.1	0.4**	1.4	0.7**	2.9
Hispanic	...	...	0.4**	1.3	0.1**	1.7	0.1**	0.7	0.5**	1.8
Asian	...	...	...	...	0.4**	2.1	0.3**	12.5	0.3**	70.6
Other	...	...	...	...	1.2**	6.2	...	...	...	...
Unknown	...	...	0.4**	...	0.6**	...	0.9**	...	1.0**	...
Missing	0.2**	...	0.3**	...	0.3**	...	0.1**	...	0.5**	...
Region										
Northeast	0.5**	1.3	0.4*	1.3	0.1*	0.4	0.3**	2.0	0.4*	1.0
South	0.1*	0.2	0.3*	0.7	0.6**	1.4	0.3**	0.7	0.6*	1.3
▶ Midwest	0.1*	0.4	0.2*	0.6	0.3*	0.8	0.7*	1.3	0.6*	1.2
West	0.3**	0.6	0.8**	1.5	0.5**	1.0	1.8**	3.4	1.0**	1.7
Gender										
Female	0.1**	0.4	0.1**	0.7	0.2**	0.7	0.1**	0.3	0.0**	0.1
▶ Male	0.3*	0.5	0.6*	1.1	0.6	1.3	1.2	2.0	1.3	2.3

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

**Rate based on a count less than 30, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.

^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: i3 Claims Database, 2002-2006.

Table 8-22. Nationally representative ambulatory surgery center visits for kidney cancer listed as primary diagnosis, count, rate,^a age-adjusted rate^b

	Count	Rate	Age-Adjusted Rate
Total	3,026	1.4	4.1
Age			
45-54	258	0.6	
55-64	...	...
▶ 65-74	267	1.4	
75-84	2,501	19.3*	
Gender			
Female	267	0.2	2.7
▶ Male	2,759	2.6	10.5

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

^aRate per 100,000 individuals in the same demographic stratum is based on 2006 population estimates from Current Population Survey (CPS).

^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: National Survey of Ambulatory Surgery, 2006.

Table 8-23. Physician office visits by Medicare beneficiaries for kidney cancer listed as any diagnosis, rate,^a age-adjusted rate^b

	2002 (N=155,640)		2003 (N=171,160)		2004 (N=160,900)		2005 (N=166,120)		2006 (N=176,560)		2007 (N=178,400)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	437.6	520.9	469.3	566.1	434.9	514.8	447.6	532.9	485.7	588.1	493.2	588.0
Under 65/65+												
< 65 Years	155.1*	155.1	158.9*	158.9	195.1*	195.1	201.3*	201.3	196.5*	196.5	235.8*	235.8
▶ 65+ Years	509.7	520.9	551.2	566.1	499.7	514.8	516.9	532.9	568.7	588.1	570.4	588.0
Age												
▶ 65-69	443.7		492.4		432.0		432.6		504.4		503.9	
70-74	600.7*		563.5*		516.4*		524.1*		585.9*		633.8*	
75-79	596.3*		693.2*		653.1*		649.0*		675.4*		701.2*	
80-84	578.8*		691.4*		555.7*		636.3*		659.9*		621.8*	
85-89	323.1*		338.8*		399.1*		441.7*		540.3*		440.6*	
90-94	181.5*		175.8*		203.9*		204.2*		231.6*		307.7*	
95-97	92.2*♦		50.1*♦		49.3*♦		253.0*♦		239.0*♦		139.2*♦	
98+	...		...		21.2*♦		10.4*♦		10.2*♦		10.2*♦	
Race/ethnicity												
▶ White	458.6	543.3	489.1	587.0	452.9	532.9	462.4	547.0	504.0	599.4	517.8	606.4
Black	295.3*	386.6	352.8*	424.4	346.3*	415.8	378.6*	467.7	371.7*	521.2	347.4*	463.7
Hispanic	218.6*	238.0	207.0*	220.7	296.9*	320.6	403.6*	508.8	368.3*	523.3	379.3*	549.8
Asian	161.5*	194.0	151.4*	174.0	118.1*	156.3	201.6*	225.3	305.8*	429.2	278.8*	326.2
Other	702.2*	570.4	612.4*	787.3	450.5*	554.3	387.9*	485.9	504.7*	640.7	449.3*	584.6
Unknown	293.8*♦	...	1,377*	...	814.3*	...	617.1*♦	...	875.8*♦	...	740.5*♦	...
Region												
▶ Northeast	542.5	639.2	501.3	600.9	435.7	517.1	495.6	587.1	544.5	653.6	565.7	674.6
South	451.5*	539.9	504.4*	610.5	475.5*	565.1	455.8*	543.7	523.5*	636.8	536.3*	643.7
Midwest	407.3*	480.9	445.0*	534.1	429.5*	511.3	439.9*	532.1	450.2*	537.5	437.7*	518.3
West	322.3*	394.4	385.5*	475.3	347.6*	404.3	385.8*	443.2	385.8*	476.6	395.4*	472.4
Gender												
Female	300.8*	355.3	321.0*	379.2	299.6*	345.2	308.1*	360.1	344.1*	408.5	347.9*	402.3
▶ Male	612.3	753.6	657.4	823.5	605.2	744.1	622.0	766.2	661.0	827.5	671.3	831.2

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group ($p < .05$).

♦Rate based on a count less than 600, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: Centers for Medicare and Medicaid Services, 5% Standard Analytical Claims Files.

Table 8-24. Physician office visits by privately insured individuals for kidney cancer listed as any diagnosis, rate,^a age-adjusted rate^b

	2002 (N=10,793)		2003 (N=11,925)		2004 (N=13,712)		2005 (N=15,273)		2006 (N=14,570)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	122.3	295.3	121.0	298.5	136.3	323.9	143.1	327.2	140.0	380.9
Age										
35-39	28.5*		28.4*		23.3*		24.9*		26.5*	
40-44	67.4*		68.3*		68.6*		63.5*		63.1*	
45-54	138.1*		138.6*		163.4*		145.2*		159.2*	
55-64	383.2*		385.4*		414.6*		422.8*		432.0*	
▶ 65-74	684.1		503.5		644.5		638.5		738.2	
75-84	451.6*		723.5*		628.8*		727.6*		1,041*	
85+	...		319.9*		322.7*		295.4*		350.3*	
Race/ethnicity										
▶ White	117.9	254.5	139.3	328.4	144.1	340.0	148.1	329.9	147.8	382.7
Black	80.1*	148.3	118.2*	225.4	140.3*	284.7	98.7*	195.0	94.2*	276.7
Hispanic	72.0*	140.0	56.3*	156.2	80.7*	225.4	75.5*	233.2	65.7*	191.9
Asian	31.9*	119.0	51.3*	181.0	47.0*	139.4	72.0*	212.8	106.7*	478.1
Other	22.3*♦	81.6	32.8*♦	118.8	37.8*	79.0	139.1*	272.0	72.8*	147.3
Unknown	102.4*	...	149.9*	...	141.0*	...	128.9*	...	124.9*	...
Missing	136.6*	...	109.0*	...	150.8*	...	199.1*	...	187.0*	...
Region										
Northeast	137.8	334.2	120.9*	314.0	119.9*	298.5	140.5*	340.0	120.1*	333.9
South	111.9*	266.3	116.1*	278.3	135.3*	320.8	137.8*	315.5	140.3*	390.7
▶ Midwest	130.9	298.3	133.8	313.5	156.9	349.9	159.5	348.3	145.0	410.1
West	121.1*	368.4	105.2*	324.8	105.8*	287.5	127.0*	292.5	143.5*	351.4
Gender										
Female	68.4*	156.9	75.9*	193.9	86.0*	211.3	97.6*	223.1	85.1*	229.5
▶ Male	179.4	435.6	168.7	405.2	189.5	440.1	191.1	435.0	197.3	522.8
Unknown	139.2*♦	...	...	...	...	...	31.7*♦	...	74.5*♦	...

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group (p<.05).

♦Rate based on a count less than 30, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: i3 Claims Database, 2002-2006.

Table 8-25. Nationally representative physician office visits for kidney cancer listed as any diagnosis, 2002-2007 (merged), 6-year count

	6-Year Count
Total	2,306,372
Age	
40-44	27,147
45-54	213,383
55-64	644,318
65-74	522,311
75-84	556,322
85+	342,891
Race/ethnicity	
White	2,109,471
Black	124,117
Hispanic	72,784
Region	
Northeast	283,818
South	1,108,501
Midwest	598,608
West	315,445
Gender	
Female	864,797
Male	1,441,575

SOURCE: National Ambulatory Medical Care Survey, 2002-2007; National Hospital Ambulatory Medical Care Survey, 2002-2007.

Table 8-26. Emergency room visits by privately insured individuals for kidney cancer listed as primary diagnosis, rate,^a age-adjusted rate^b

	2002 (N=52)		2003 (N=158)		2004 (N=112)		2005 (N=105)		2006 (N=84)	
	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate	Rate	Age-Adjusted Rate
Total	0.6	2.3	1.6	3.4	1.1	2.5	1.0	2.2	0.8	1.8
Age										
35-39	...		0.2 ^{*♦}		...		0.2 ^{*♦}		0.2 ^{*♦}	
40-44	...		0.6 ^{*♦}		0.8 ^{*♦}		0.3 ^{*♦}		0.2 ^{*♦}	
45-54	0.7 ^{*♦}		1.2 ^{*♦}		0.9 ^{*♦}		0.9 ^{*♦}		1.1 ^{*♦}	
55-64	1.6 ^{*♦}		9.0 [*]		4.5		3.1 [*]		3.2	
▶ 65-74	7.1 [♦]		3.2 [♦]		4.9 [♦]		5.6 [♦]		2.9 [♦]	
75-84	...		3.2 ^{*♦}		1.5 ^{*♦}		3.7 ^{*♦}		...	
85+	...		3.2 ^{*♦}		6.0 ^{*♦}		1.2 ^{*♦}		...	
Race/ethnicity										
▶ White	0.5 [♦]	1.1	0.7	1.6	0.9	2.6	0.8	2.4	0.7	1.6
Black	...	...	8.4 ^{*♦}	18.7	2.0 ^{*♦}	4.8	1.0 ^{*♦}	2.7	0.9 ^{*♦}	2.8
Hispanic	...	...	0.8 ^{*♦}	3.4	2.0 ^{*♦}	5.5	0.9 ^{*♦}	1.9	0.6 ^{*♦}	2.6
Asian	...	...	...	...	0.4 ^{*♦}	166.9	...	...	...	...
Unknown	0.3^{*♦}	...	...	...	...	...	...	...	0.3 ^{*♦}	...
Missing	0.8 [*]	...	2.6 [*]	...	2.0 [*]	...	2.7 [*]	...	2.1 ^{*♦}	...
Region										
Northeast	0.1 [♦]	0.6	0.3 ^{*♦}	1.6	0.1 ^{*♦}	10.6	0.1 ^{*♦}	2.1	0.1 [♦]	0.4
South	0.5 [♦]	1.5	3.1 [*]	6.2	2.0 [*]	4.7	1.8 [*]	4.1	1.6 [*]	3.6
▶ Midwest	0.3 [♦]	0.8	0.8 [♦]	1.9	0.6 [♦]	2.0	0.5 [♦]	1.8	0.2 [♦]	0.4
West	2.1 ^{*♦}	32.9	...	...	0.2 ^{*♦}	1.3	...	...	0.3 ^{*♦}	0.9
Gender										
Female	0.2 ^{*♦}	0.5	1.3 [*]	2.7	1.2	2.7	0.7 [*]	1.5	0.5 ^{*♦}	1.0
▶ Male	1.1	4.1	1.9	4.2	1.0	2.8	1.3	3.7	1.1	3.1

... Data unavailable.

▶ Denotes reference group.

*Statistically different from reference group (p<.05).

♦Rate based on a count less than 30, should be interpreted with caution.

^aRate per 100,000 based on enrollment in calendar years for individuals in the same demographic stratum.^bRate per 100,000 age-adjusted to the 2005 US standard population (US Population Estimates from Current Population Survey).

SOURCE: i3 Claims Database, 2002-2006.

Table 8-27. Nationally representative inpatient stays for kidney cancer listed as primary diagnosis with partial nephrectomy performed, rate,^a rate per visit^b

	2002 (N=6,353)		2003 (N=6,862)		2004 (N=7,413)		2005 (N=8,740)		2006 (N=9,340)		2007 (N=12,229)	
	Rate	Rate Per Visit	Rate	Rate Per Visit	Rate	Rate Per Visit	Rate	Rate Per Visit	Rate	Rate Per Visit	Rate	Rate Per Visit
Total	3.0	17,035	3.2	18,578	3.5	18,945	4.0	21,274	4.2	21,591	5.5	26,218
Age												
35-44	1.4	22,025	1.5	23,103	1.6	23,495	2.4	32,179	2.4	30,249	2.7	34,191
45-54	3.5	18,758	3.7	21,400	3.6	20,382	4.2	23,484	5.1	27,277	6.3	30,077
55-64	7.0	18,714	6.9	20,075	7.8	21,222	9.0	23,897	8.8	23,164	11.2	28,661
65-74	8.8	16,751	9.9	18,572	11.0	19,826	12.3	21,144	12.2	20,413	16.5	25,836
75-84	5.6	13,328	5.9	13,887	7.7	13,664	7.1	13,126	8.2	14,016	11.2	19,003
85+	†	†	†	†	†	†	†	†	†	†	†	†
Race/ethnicity												
White	2.1	17,338	2.7	19,619	3.2	20,244	3.3	20,680	3.3	21,202	4.7	27,839
Black	2.1	18,763	2.2	18,447	2.0	16,498	2.6	24,376	2.9	23,341	3.6	25,658
Hispanic	†	16,011	1.2	13,242	1.4	18,163	1.5	17,501	2.0	19,949	2.4	24,538
Region												
Northeast	3.8	19,115	3.4	20,541	4.3	22,388	5.8	26,298	5.2	26,866	9.3	36,531
South	3.0	16,406	3.7	18,659	3.8	18,703	3.7	19,338	4.4	20,423	5.2	23,818
Midwest	2.9	16,750	3.0	18,402	3.4	17,200	4.0	20,345	3.7	18,888	4.7	22,956
West	2.3	16,074	2.3	16,527	2.2	17,847	3.2	20,231	3.8	21,992	3.6	22,146
Gender												
Male	3.8	17,188	3.9	18,072	4.1	18,368	4.8	20,610	4.9	20,247	6.7	24,948
Female	2.2	16,802	2.5	19,343	2.8	19,786	3.3	22,256	3.6	23,592	4.4	28,259

† Figure does not meet standard for reliability or precision.

^aRate per 100,000 based on 2002-2007 population estimates from the Public Use Microdata Sample (PUMS) files from the American Community Survey, for relevant demographic.

^bRate per 100,000 adults 35+ with partial nephrectomy performed is based on estimated number of visits for kidney cancer in Healthcare Cost and Utilization Project Nationwide Inpatient Sample, 2002-2007.

SOURCE: Healthcare Cost and Utilization Project Nationwide Inpatient Sample, 2002-2007.

Table 8-28. Use of inpatient surgical procedures for kidney cancer, count, percent

Patient-level covariate	Number of Patients (%)				Patient-level covariate	Number of Patients (%)			
	LPN	OPN	LRN	ORN		LPN	OPN	LRN	ORN
Total	43 (0.8)	568 (10.4)	515 (9.4)	4,357 (79.5)	Median census tract income ^{c,d}				
Age at Surgery					<\$35,000	9 (0.7)	120 (9.3)	112 (8.7)	1,050 (81.3)
66-69	12 (1.1)	142 (12.6)	92 (8.2)	880 (78.1)	\$35,000-44,999	8 (0.6)	132 (10.4)	101 (7.9)	1033 (81.1)
70-74	11 (0.7)	183 (10.8)	143 (8.4)	1359 (80.1)	\$45,000-59,999	13 (0.9)	148 (10.2)	154 (10.7)	1128 (78.2)
74-79	7 (0.5)	156 (10.6)	149 (10.1)	1164 (78.8)	≥\$60,000	12 (0.9)	147 (11.3)	132 (10.2)	1005 (77.6)
80-84	9 (1)	68 (7.8)	95 (10.9)	698 (80.3)	Percentage of residents in Census tract with less than a high school education ^e				
85+	<5 (1.3)	19 (6)	36 (11.4)	256 (81.3)	>25	8 (0.7)	124 (10.5)	101 (8.6)	944 (80.2)
Sex ^a					15.1-25	11 (0.9)	108 (8.9)	114 (9.4)	979 (80.8)
Men	13 (0.6)	216 (9.5)	234 (10.3)	1801 (79.6)	10-15	8 (0.8)	98 (9.9)	107 (10.9)	774 (78.4)
Women	30 (0.9)	352 (10.9)	281 (8.8)	2556 (79.4)	<10	12 (0.8)	175 (12.1)	148 (10.2)	1116 (76.9)
Race/ethnicity					Tumor size, cm ^{a,f}				
White, Non-Hispanic	39 (0.8)	468 (10.3)	441 (9.7)	3615 (79.2)	≤4	34 (1.5)	415 (17.7)	260 (11.1)	1631 (69.7)
White, Hispanic	<5 (0.3)	33 (9.8)	22 (6.6)	279 (83.3)	>4	6 (0.2)	112 (3.8)	238 (8)	2604 (88)
Black	<5 (0.8)	46 (11.6)	32 (8.1)	315 (79.5)	Charlson Index Score				
Other/unknown	<5 (0)	21 (11.1)	20 (10.6)	148 (78.3)	0	22 (0.7)	337 (10.4)	319 (9.8)	2573 (79.1)
Marital Status ^{a,b}					1	11 (0.8)	137 (10.2)	120 (9)	1074 (80)
Married	31 (0.9)	362 (10.8)	312 (9.3)	2648 (79)	≥2	10 (1.1)	94 (10.6)	76 (8.5)	710 (79.8)
Not Married	10 (0.5)	184 (9.6)	186 (9.7)	1539 (80.2)	Hypertension ^a				
SEER Registry ^a					Yes	25 (0.9)	305 (11.5)	235 (8.8)	2092 (78.8)
Atlanta	<5 (1.8)	12 (7.1)	15 (8.8)	140 (82.4)	No	18 (0.6)	263 (9.3)	280 (9.9)	2265 (80.2)
Connecticut	<5 (0.6)	48 (9.6)	50 (10)	400 (79.8)					
Detroit	6 (0.9)	82 (12.3)	57 (8.5)	522 (78.3)					
Greater California	<5 (0.5)	50 (8.5)	62 (10.5)	476 (80.5)					
Hawaii	<5 (0)	<5 (4.7)	<5 (4.7)	58 (90.6)					
Iowa	<5 (0.2)	48 (9)	25 (4.7)	460 (86.1)					
Kentucky	<5 (0.8)	34 (9.4)	42 (11.5)	285 (78.3)					
Los Angeles	8 (1.5)	79 (14.4)	43 (7.8)	419 (76.3)					
Louisiana	5 (1.5)	29 (9)	43 (13.4)	245 (76.1)					
New Jersey	7 (1)	78 (10.8)	91 (12.5)	549 (75.7)					
New Mexico	<5 (0)	12 (7.1)	10 (6)	146 (86.9)					
Rural Georgia	<5 (0)	<5 (5.9)	<5 (17.7)	13 (76.5)					
San Francisco	<5 (0.5)	30 (15.4)	25 (12.8)	139 (71.3)					
San Jose	<5 (0)	15 (11)	7 (5.1)	115 (83.9)					
Seattle	<5 (0.6)	28 (8.4)	28 (8.4)	276 (82.6)					
Utah	<5 (0.7)	19 (13.1)	11 (7.6)	114 (78.6)					

LPN: Laparoscopic partial nephrectomy.

OPN: Open partial nephrectomy.

LRN: Laparoscopic radical nephrectomy.

ORN: Open radical nephrectomy.

SEER: Surveillance, Epidemiology, and End Results Program.

^aP <.05 (general chi-square test).^bMarital status was unknown for 211 patients.^cInformation on income was missing for 179 patients.^dP <.05 (chi-square test for linear trend).^eInformation on education was missing for 656 patients.^fInformation on tumor size was missing for 183 patients.

SOURCE: Reprinted from Miller DC, Saigal CS, Banerjee M, Hanley J, Litwin MS and the Urologic Diseases in America Project. Diffusion of Surgical Innovation Among Patients With Kidney Cancer. Cancer, April 2008; 112(8): 1708-1717, Copyright 2008 American Cancer Society, with permission from Elsevier.

Table 8-29. National proportion of urology office visits for kidney cancer listed as primary diagnosis, 2002-2007 (merged), count, percent

	Count	Percent
Kidney Cancer	675,979	0.007%

SOURCE: National Ambulatory Medical Care Survey, 2002-2007.

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