

Invasive Cancer Incidence and Survival — United States, 2011

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Background

- Cancer is the leading cause of illness and death in United States.
- This report summarizes the most recent cancer incidence rates by sex, age, race, ethnicity, primary site, and state of residence using data from the United States Cancer Statistics: 2011 Incidence and Mortality report (USCS).
- USCS is the official federal statistics on cancer incidence and mortality.
- For the first time, cancer incidence rates in Puerto Rico are included with the state-specific cancer incidence rates.
- Also for the first time, a subset of the USCS dataset includes the 5-year relative survival rate.

Methods

- USCS includes incidence from CDC's National Program of Cancer Registries (NPCR) and the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program and mortality data from the National Vital Statistics System.

Incidence

- Data on new cases of invasive cancer diagnosed during 2011 submitted to CDC or NCI by November 2013.
- Data from DC and all states except Nevada met USCS publication criteria for 2011; consequently, data in this report cover 99% of the U.S. population.
- Cases were first classified by anatomic site using the International Classification of Diseases for Oncology, Third Edition. Cases with hematopoietic histologies were further classified using the World Health Organization Classification of Tumours of Haematopoietic and Lymphoid Tissues, Fourth Edition.
- Population denominators for incidence rates are race-, ethnicity-, and sex-specific county population estimates from the US Census, as modified by the SEER program and aggregated to the state and national levels.
- Rates are per 100,000 population and age-adjusted by the direct method to the 2000 U.S. standard population.

Survival

- Defined as the proportion of persons surviving ≥ 5 years after cancer diagnosis compared with the proportion of survivors expected in a set of comparable cancer-free persons.
- Survival estimates are based on data from NPCR-funded states that met USCS publication criteria and conducted active case follow-up or linkage with CDC's National Center for Health Statistics National Death Index.
- For this report, 30 states met criteria, covering 71% of the U.S. population.
- The 5-year relative survival rates were calculated for cases diagnosed during 2003–2010 with follow-up through 2010.

Results

Table 1. Number of invasive cancers* and annual rate† by sex, primary site, race/ethnicity †, and age group — National Program of Cancer Registries, and Surveillance, Epidemiology, and End Results Program, United States, † 2011

Characteristic	Overall			Males			Females		
	Rate	No.	(%)	Rate	No.	%	Rate	No.	%
All sites	450.6	1,532,066	(14)	507.5	786,102	(27)	410.3	745,964	(30)
Prostate	NA	209,292	(14)	128.3	209,292	(27)	NA	NA	(30)
Female breast	NA	220,097	(14)	NA	NA	(27)	122.0	220,097	(30)
Late-stage female breast	NA	73,485	(14)	NA	NA	(27)	41.4	73,485	(30)
Lung and bronchus	61.0	207,339	(14)	73.0	110,322	(14)	52.0	97,017	(13)
Colon and rectum	39.9	135,260	(9)	46.1	70,099	(9)	34.9	65,161	(9)
Cervix uteri	NA	12,109	(1)	NA	NA	(27)	7.5	12,109	(2)
Race/Ethnicity									
White	449.7	1,286,265	(84)	499.7	658,861	(84)	414.8	627,404	(84)
Black	458.3	165,062	(11)	554.5	84,664	(11)	393.8	80,398	(11)
American Indian/Alaska Native	273.4	7,877	(1)	293.5	3,776	(1)	261.0	4,101	(1)
Asian and Pacific Islander	290.4	43,738	(3)	310.1	19,882	(3)	279.8	23,856	(3)
Hispanic	350.6	109,279	(7)	393.5	53,066	(7)	324.2	56,213	(8)
Age group (yrs)									
0-19	17.9	14,754	(1)	18.4	7,780	(1)	17.3	6,974	(1)
20-49	154.3	189,430	(12)	114.2	70,352	(9)	194.0	119,078	(16)
50-64	816.1	505,334	(33)	887.1	267,543	(34)	750.6	237,791	(32)
65-74	1,840.0	406,275	(27)	2,258.3	231,725	(29)	1,477.5	174,550	(23)
≥ 75	2,223.2	416,273	(27)	2,819.2	208,702	(27)	1,830.3	207,571	(28)

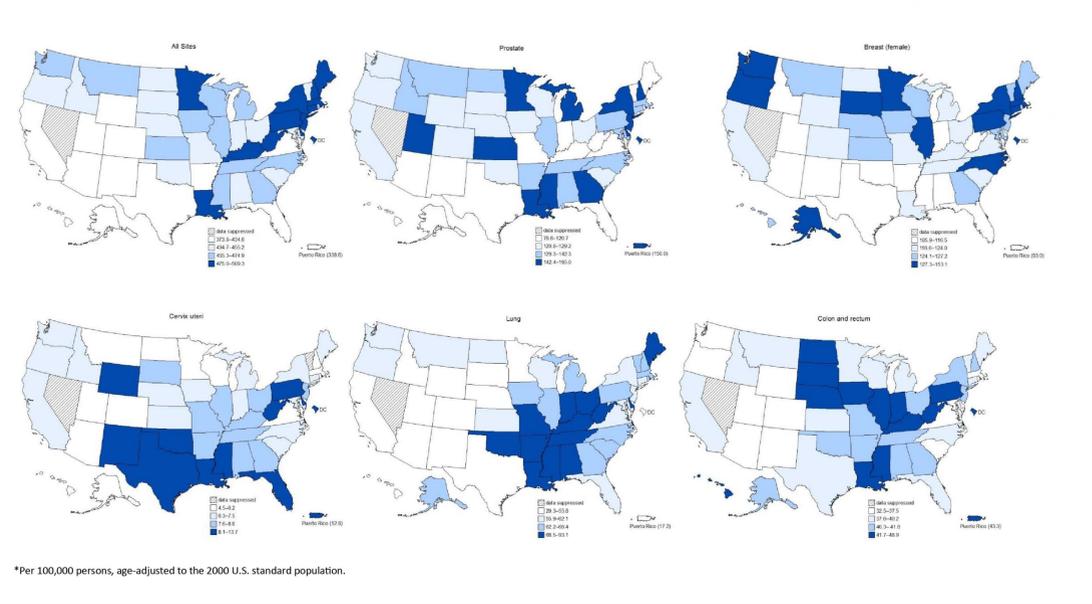
Abbreviation: NA = not available.
 *Excludes basal and squamous cell carcinomas of the skin except when these occur on the skin of the genital organs, and in situ cancers except urinary bladder.
 †Per 100,000 persons, age-adjusted to the 2000 U.S. standard population.
 †Racial categories are not mutually exclusive from Hispanic ethnicity. Rates are not presented for cases with unknown or other race.
 †Compiled from cancer registries that meet the data quality criteria for all invasive cancer sites combined (covering approximately 99% of the U.S. population).

Table 2. 5-year relative survival (percentage) after cancer diagnosis* by race, sex, primary site, and age group — National Program of Cancer Registries, United States †

Characteristic	All Races			White			Black		
	Overall	Males	Females	Overall	Males	Females	Overall	Males	Females
All Sites	65	65	65	65	65	66	60	62	57
Prostate	NA	97	NA	NA	97	NA	NA	96	NA
Female breast	NA	NA	88	NA	NA	89	NA	NA	79
Lung and bronchus	18	15	21	18	16	21	15	13	18
Colon and rectum	63	63	64	64	63	64	57	56	59
Cervix uteri	NA	NA	68	NA	NA	69	NA	NA	58
Age group at diagnosis (yrs)									
0-44	81	76	84	82	77	85	70	63	74
45-54	71	66	76	73	66	78	62	60	65
55-64	68	68	69	69	68	70	63	65	59
65-74	64	67	60	64	66	61	60	66	52
≥ 75	52	55	49	52	55	50	45	50	40

Abbreviation: NA = not available.
 *Based on cases diagnosed during 2003-2010 and follow-up of patients through 2010.
 †Compiled from 30 cancer registries that met data quality criteria for survival analysis, covering approximately 71% of the U.S. population.

Figure. Rate* of invasive cancer by primary cancer site — National Program of Cancer Registries and Surveillance, Epidemiology, and End Results Program, United States, 2011



Major Findings of 2011 Report

In 2011, in the United States (excluding Nevada)

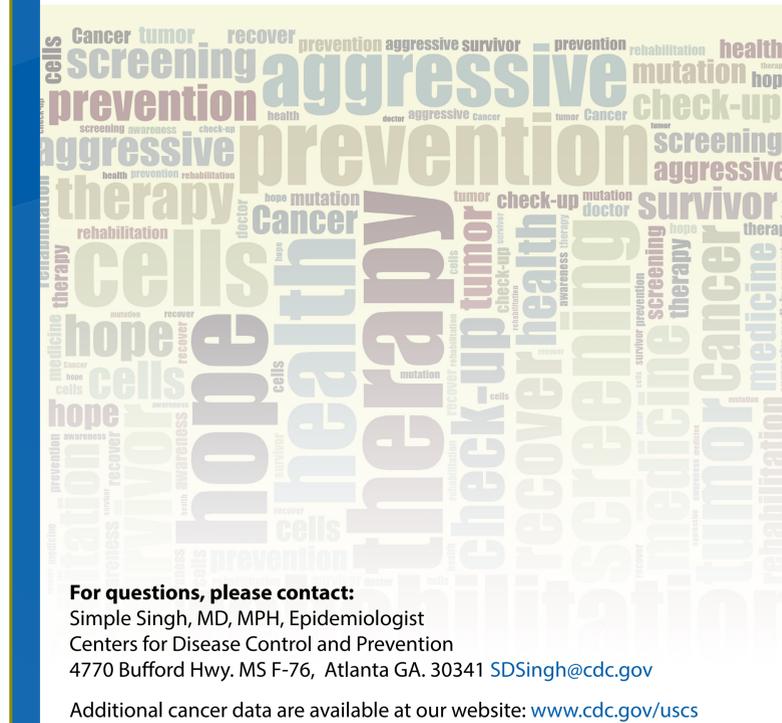
- 1,532,066 invasive cancer cases were diagnosed
 - 786,102 among males
 - 745,964 among females
 - 14,754 among persons aged <20 years.
 - The age-adjusted incidence rate was 451 cases per 100,000
 - 508 among males
 - 410 among females
 - 18 among persons aged <20 years.
 - Rates were highest for cancers of prostate, female breast, lung and bronchus, and colon and rectum cancer.
 - Prostate, female breast, lung and bronchus, and colon and rectum accounted for half of cancers diagnosed in 2011.
 - Cervical cancer incidence rate was 7.5 per 100,000 women, representing 12,109 reported cancers.
 - By state, all-sites cancer incidence rates ranged from 374 to 509 cases per 100,000 persons.
 - *Healthy People 2020* targets reached in 37 states for incidence of colorectal cancer and in 28 states for incidence of cervical cancer.
 - Compared to US, cancer incidence rates in Puerto Rico were lower for all-sites cancer (339 /100,000 persons), lung cancer (17 per 100,000), and breast cancer (93 per 100,000 women) and higher for prostate cancer (150 per 100,000 men), colorectal cancer (43 per 100,000), and cervical cancer (13.5 per 100,000 women).
- ### 5-year Relative Survival estimates based on data from 30 NPCR registries for cases diagnosed in 2003-2010:
- 5-year relative survival rate was 65%.
 - No differences in survival between males and females.
 - 5-year relative survival decreased with increasing age.
 - highest among those diagnosed with cancer before age 45 years
 - 5-year relative survival was highest for prostate cancer (97%) and breast cancer (88%), intermediate for colorectal cancer (63%), and lowest for lung cancer (18%).
 - 5-year relative survival was lower for black persons (60%) than for white persons (65%).

Limitations

- Potential race and ethnicity misclassification.
- Underestimation of certain cancer sites due to reporting delays.
- Relative survival rates could be calculated only for white and black racial groups because accurate life tables were not available for other racial/ethnic groups.

Conclusions

- National cancer surveillance data are essential for public health officials to monitor cancer incidence, mortality, and survival in the United States; identify populations that might benefit most from targeted cancer prevention and control efforts; help guide the planning of health care allocation and support services; and track progress toward the national cancer objectives set forth in *Healthy People 2020*.
- Using cancer incidence and survival data to effectively develop comprehensive cancer control programs, including supporting the needs of cancer survivors, can help reduce cancer incidence and improve survival.



For questions, please contact:

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Additional cancer data are available at our website: www.cdc.gov/uscs