CALIFORNIA CANCER REGISTRY

June 2013

CANCER STAGE AT DIAGNOSIS

Searching for Causes & Cures

KEN MADDY

CCR

CALIFORNIA CANCER REGISTRY

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

UCDAVIS
INSTITUTE FOR POPULATION HEALTH IMPROVEMENT

This publication was prepared by the Institute for Population Health Improvement, UC Davis Health System, for the Chronic Disease Surveillance and Research Branch, California Department of Public Health, pursuant to Grant Number 11-10828.

Chronic Disease Surveillance and Research Branch
California Department of Public Health
1631 Alhambra Blvd., Suite 200
Sacramento, CA 95816
(916) 731-2500
http://www.cdph.ca.gov or http://www.ccrcal.org

Suggested citation:

Morris CR, Ramirez CN, Cook SN, Parikh-Patel A, Kizer KW, Bates JH, Snipes KP. Cancer Stage at Diagnosis, 2013. Sacramento, CA: California Department of Public Health, California Cancer Registry, June 2013.

Production and design by Maggie Burgos, California Cancer Registry.

This and other California Cancer Registry (CCR) publications are available on the World Wide Web at http://www.cdph.ca.gov or http://www.ccrcal.org

Prepared by

Cyllene R. Morris, D.V.M., Ph.D.
California Cancer Registry
Institute for Population Health Improvement
UC Davis Health System

Cody N. Ramirez, M.A.
California Cancer Registry
Public Health Institute

Sara N. Cook, M.P.H., C.H.E.S.
California Cancer Registry
Institute for Population Health Improvement
UC Davis Health System

Arti Parikh-Patel, Ph.D., M.P.H.
Program Director
California Cancer Registry
Institute for Population Health Improvement
UC Davis Health System

Kenneth W. Kizer, M.D. , M.P.H.
Director & Distinguished Professor
Institute for Population Health Improvement
UC Davis School of Medicine, UC Davis Health System

Janet H. Bates, M.D., M.P.H., Director
California Cancer Registry
Chronic Disease Surveillance and Research Branch
California Department of Public Health

Kurt P. Snipes, Ph.D., M.S., Chief
Chronic Disease Surveillance and Research Branch
California Department of Public Health

Edmund G. Brown Jr. Governor
State of California

Diana S. Dooley, Secretary
California Health and Human Services Agency

Ron Chapman, MD, MPH, Director & State Health Officer
California Department of Public Health

ACKNOWLEDGEMENTS AND DISCLAIMER

The collection of cancer incidence data used in this study was supported by the California Department of Public Health as part of the statewide cancer reporting program mandated by California Health and Safety Code Section 103885; the National Cancer Institute's Surveillance, Epidemiology and End Results Program under contract HHSN261201000140C awarded to the Cancer Prevention Institute of California, contract HHSN261201000035C awarded to the University of Southern California, and contract HHSN261201000034C awarded to the Public Health Institute; and the Centers for Disease Control and Prevention's National Program of Cancer Registries, under agreement U58DP003862-01 awarded to the California Department of Public Health. The ideas and opinions expressed herein are those of the author(s) and endorsement by the State of California, Department of Public Health, the National Cancer Institute, and the Centers for Disease Control and Prevention or their Contractors and Subcontractors is not intended nor should be inferred.

Inquiries regarding the content of this report should be directed to the California Cancer Registry, 1631 Alhambra Blvd., Suite 200, Sacramento, CA 95816 by telephoning us at (916) 731-2500, or by visiting our website at http://www.cdph.ca.gov or http://www.ccrcal.org

TABLE OF CONTENT

CANCER SITES

INTRODUCTION

This report presents information collected by the California Cancer Registry (CCR) on stage at diagnosis and five-year survival for some of the most commonly diagnosed cancers among Californians age 20 and older. Information obtained through the California Behavioral Risk Factors Survey (BRFS) about screening for breast, cervical, and colorectal cancers is also presented to show the State's progress towards reaching the *Healthy People 2010* goals. By monitoring cancer occurrence over time, the CCR helps assess California's progress in cancer prevention and early detection.

CANCER STAGE AT DIAGNOSIS

Cancer staging describes the severity of the disease at the time of the diagnosis, taking into account the growth and size of the tumor and whether it has spread to adjacent organs, lymph nodes or distant organs. Knowing the staging of a cancer is crucial for determining the most effective treatment(s) and for predicting survival. Determining the stage of a cancer at the time of diagnosis is also important for identifying whether a patient may be an appropriate candidate for a clinical trial and for exchanging of information among health care providers and researchers.

Staging is based on knowing how a cancer progresses. The fundamental problem in cancer is that, for many different reasons, cells begin to grow and multiply abnormally fast and in abnormal ways, and they do not die when normally expected. As a result, they typically form a mass of tissue called a tumor. As the tumor grows, depending on the cell type, it can invade nearby tissues and organs and/or cancerous cells from the tumor can break away and enter the bloodstream or lymphatic system and spread, or metastasize, to lymph nodes or other organs, where they may form new tumors. Different types of cancer grow and spread in different ways.

The methods or systems for staging cancer have evolved over time, and continue to change as more is learned about cancer and as new diagnostic

technologies become available. Some staging systems cover many types of cancer, while others focus on a particular type. This report presents information on stage at diagnosis according to the classification developed by the American Joint Committee on Cancer (AJCC), the organization that provides oversight of staging for most forms of cancer (except brain tumors and hematologic malignancies such as leukemia and lymphomas).

The AJCC classification and staging of cancers is based on the widely used 'TNM system', which describes the three most significant characteristics of cancer progression: size and extent of tumor (T), spread to regional lymph nodes (N), and presence of distant metastasis (M). TNM components are determined through both clinical and pathological exams. The clinical staging uses all information obtained from physical examinations, laboratory tests, and imaging procedures such as radiographs and CT scans. The pathological staging is based on microscopic confirmation of the cancer through the examination of specimens or tissues removed during the surgical treatment. The overall stage of cancer is assigned by combining the T, N, and M information for the tumor. Most cancers have four stages (I to IV); some cancers also have a stage 0 (zero). Stages are often further subdivided, indicated by letters and numbers.

The way that the T, N, and M elements are combined into a stage varies according to the specific cancer type. Generally speaking, AJCC staged tumors have the following characteristics:

Stage 0 (*in situ*):
The tumor is still near the place it started and has not extended through the first layer of cells (the basement membrane). Stage 0 tumors are typically highly curable.

Stage I:
This is usually a small cancer or invasive tumor that has not grown deeply into the nearby tissues and has not spread to either lymph nodes or other parts of the body.

Stages II and III:
These stages indicate tumors that are larger in size than stage 1 tumors and that have grown more deeply into nearby tissue and/or spread to lymph nodes but not to other parts of the body. Stage III denotes larger or more advanced tumors than stage II.

Stage IV:
This stage means that the cancer has spread to other organs or parts of the body and is typically described as being "advanced" or "metastatic".

CANCER SCREENING

Screening means checking for a disease when it has caused no symptoms. Screening tests may find diseases at an early stage when there is a better chance of curing or slowing the progress of the disease, although this is not always the case. Examples of cancer screening tests are the mammogram for breast cancer, fecal occult blood test and colonoscopy for colon cancer, prostate-specific antigen (PSA) blood level for prostate cancer, and the Pap smear for cancer of the cervix. Cancers of the oral cavity and skin (e.g., melanoma) may be detected at an early stage by careful visual inspection of the skin or mouth during a physical examination. Screening can also include checking for a person's risk of developing an inherited disease by doing genetic tests. For some cancers, screening not only detects tumors at an early stage but may also prevent cancers from developing by removing pre-cancerous lesions. Most cancers of the cervix, colon, and rectum can be prevented by regular screening.

In this report, charts illustrating the percent of adults reporting having been screened for breast, cervical, and colon and rectum cancers are based on data from the California Behavioral Risk Factor Survey (conducted by the Survey Research Group, California Department of Public Health). Each chart also displays the corresponding *Healthy People 2010* goal to illustrate whether California has met the national cancer screening objectives set forth by this public health initiative.

CANCER SURVIVAL

In this report, cancer survival is presented by the stage at which the cancer was diagnosed. More specifically, relative survival estimates for each cancer type are presented at 12, 24, 36, 48, and 60 month time periods after diagnosis of Stage 0, Stage I, Stage II, Stage III, and Stage IV cancers. Estimates are also presented for cancers that were either not staged or for which information was not available. For most internal organs, a diagnosis of an *in situ* tumor is often an incidental finding. Therefore, survival following a diagnosis of an *in situ* tumor is presented only for those cancer sites that can be diagnosed through screening: breast, colon, rectum, melanoma of the skin, and oral cavity/pharynx.

Note: Although *in situ* cancers of the cervix can be diagnosed through screening, the CCR no longer collects information on this type of cervical tumors.

Relative survival is a *net survival* measure that estimates the probability of avoiding death due to a particular cancer. It is defined as the ratio (expressed as a percent) of the observed survival rate divided by the survival rate expected for people of the same sex, race, and age. In the calculation of relative survival, only deaths caused by the specific cancer are counted. Therefore, relative survival compares the survival of people who have the disease with those that do not.

In this report, the expected survival rate has been based on life tables specific for the California population. A relative survival of 100 percent does not mean that everyone will survive the cancer, but can be interpreted as cancer patients in that specific group being just as likely to survive during that time period as persons in the general population of the same sex, age, and race. Further, certain populations may have a life expectancy that is higher or lower than that in life tables. This can affect the cancer relative survival estimates as well.

GEOGRAPHIC DISTRIBUTION OF LATE-STAGE DIAGNOSES

California maps showing Medical Service Study Areas (MSSA) with a high proportion of patients diagnosed at a late stage disease were created for cancers of the breast, cervix, colon and rectum, oral cavity and pharynx, and melanomas. MSSAs are aggregations of census tracts that make up "rational service areas" for primary health care and are used to identify medically underserved areas. (MSSA boundaries are defined by the California Office of Statewide Health Planning and Development) For the purpose of identifying areas where cancer cases were diagnosed at a "late stage", the SEER Summary Stage at Diagnosis System was used. Based on this staging system, tumors that extended beyond the limits of the organ of origin were considered a late diagnosis. Cases with unknown stage at diagnosis were considered late stage because their likelihood of survival was similar to the likelihood of survival for late stage disease.

The proportion of cancer cases diagnosed at late stage in each MSSA was compared to the proportion of cancers diagnosed at late stage in the comparison group, taking into consideration differences in the sex and age distribution of the two groups. The comparison group selected was non-Hispanic white persons residing in affluent neighborhoods in California because they had the lowest proportion of cancers

diagnosed at late stage compared to other race/ethnicity and income groups. Affluent neighborhoods were identified using census indicators of income, employment, and education for the census block group of residence at diagnosis. For each cancer, percentages of late stage diagnosis were only mapped in MSSAs that had at least 15 cases of that specific cancer diagnosed during the 2005-2009 time period.

REFERENCES

1. Greene FL, Page DL, Fleming ID, Fritz AG, Balch CM, Haller DG, Morrow M. AJCC Cancer Staging Manual, 6th ed. New York, NY: Springer Science & Business Media Inc., 2002.
2. American Cancer Society, California Department of Public Health, California Cancer Registry. California Cancer Facts and Figures, 2012. Oakland, CA: American Cancer Society, California Division, September 2011.
3. Ries LAG, Young JL, Keel GE, Eisner MP, Lin YD, Horner M-J (editors). SEER Survival Monograph: Cancer Survival Among Adults: U.S. SEER Program, 1988-2001, Patient and Tumor Characteristics. National Cancer Institute, SEER Program, NIH Pub. No. 07-6215, Bethesda, MD, 2007.
4. United States Department of Health and Human Services. Healthy People 2010: Understanding and Improving Health. 2nd Ed. Washington, DC: United States Printing Office, November 2000.
5. California Behavioral Risk Factor Survey SAS Data Set Documentation and Technical Report, Survey Research Group, California Department of Public Health, 2007.
6. Young JL Jr, Roffers SD, Ries LAG, Fritz AG, Hurlbut AA (Eds.). SEER Summary Staging Manual – 2000: Codes and Coding Instructions, National Cancer Institute, NIH Pub. No. 01-4969, Bethesda, MD, 2001.

CANCER SITES

FEMALE BREAST

Breast cancer is the most commonly occurring cancer in California and accounts for 32 percent of all cancers diagnosed in women. Almost 23,500 new breast cancers are expected to be diagnosed in California in 2012, and over 4,300 deaths due to the disease are expected to occur. Screening through mammography can detect tumors at an early stage, when the disease may still be curable. The majority of breast cancers in California are now diagnosed at stages 0 and I, and only about four percent of new breast cancer diagnoses are now for stage IV disease. Breast cancer staging is based on the size and degree of infiltration of the tumor, lymph node involvement (detected by clinical or pathological exams), and presence or absence of distant metastases. According to these characteristics, breast cancer is staged as:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor 2 centimeters (cm) or less in dimension, no spread to lymph nodes.

Stage II:
Tumor is either larger than 2 cm without any metastases, or up to 2 cm but with spread to movable axillary lymph nodes.

Stage III:
Tumor larger than 5 cm with spread to axillary lymph nodes; or tumor of any size with spread to axillary lymph nodes that are fixed to one another; or tumor that extends to the chest wall or skin, with or without spread to lymph nodes; or tumor of any size with spread to other distant lymph nodes.

Stage IV:
Presence of metastasis to other organs.

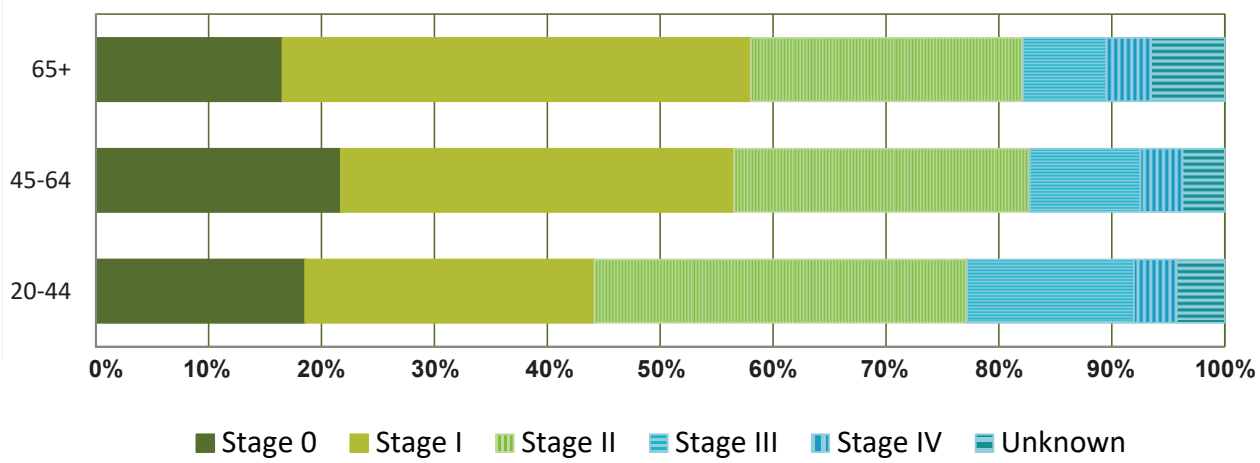
Stages II and III breast cancers are further subdivided into stages IIA, IIB, IIIA, IIIB, and IIIC ; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Women Age 20 and Older Diagnosed With Breast Cancer, by Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Race/Ethnicity:														
Non-Hispanic White	17,315	18.83	36,067	39.22	23,185	25.21	7,899	8.59	3,304	3.59	4,181	4.55	91,951	100.00
African American	1,634	18.56	2,548	28.94	2,533	28.77	1,073	12.19	549	6.24	467	5.30	8,804	100.00
Hispanic	4,155	18.18	6,887	30.13	6,663	29.15	2,915	12.75	988	4.32	1,248	5.46	22,856	100.00
Asian/Pacific Islander	3,818	23.49	5,515	33.94	4,353	26.79	1,359	8.36	525	3.23	681	4.19	16,251	100.00
All Race/ Ethnicities	27,344	19.30	51,515	36.37	37,083	26.18	13,360	9.43	5,415	3.82	6,937	4.90	141,654	100.00
Age:														
20-44	3,071	18.54	4,245	25.63	5,466	33.01	2,445	14.76	627	3.79	706	4.26	16,560	100.00
45-64	15,088	21.70	24,218	34.84	18,211	26.19	6,812	9.80	2,590	3.73	2,602	3.74	69,521	100.00
65+	9,185	16.53	23,052	41.48	13,406	24.12	4,103	7.38	2,198	3.96	3,629	6.53	55,573	100.00
All Ages	27,344	19.30	51,515	36.37	37,083	26.18	13,360	9.43	5,415	3.82	6,937	4.90	141,654	100.00

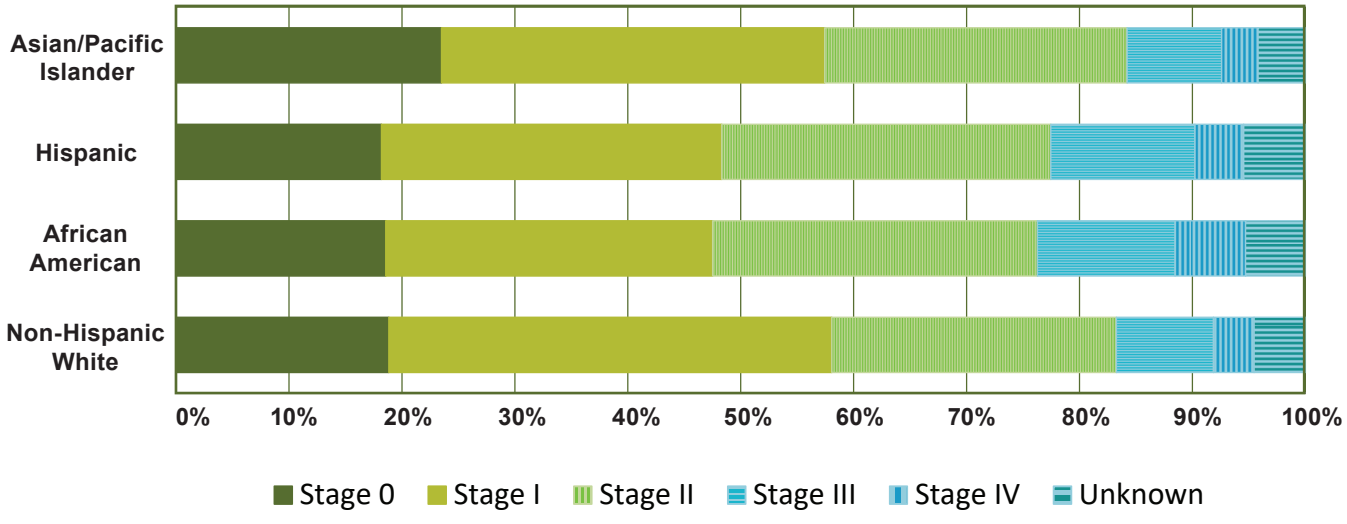
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Breast Cancer



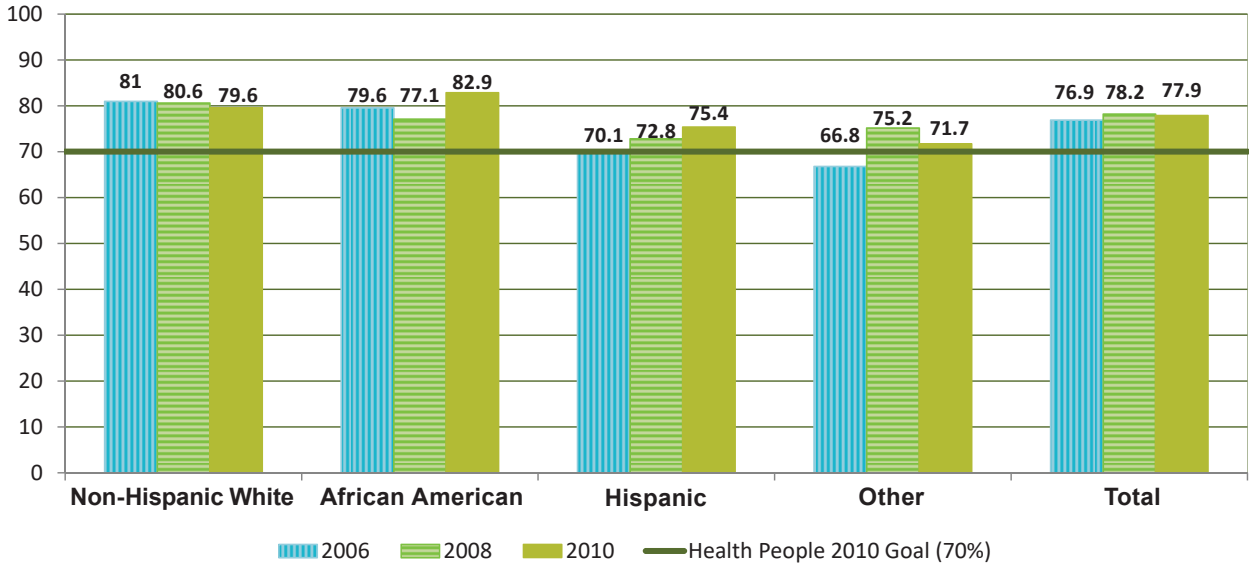
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Breast Cancer



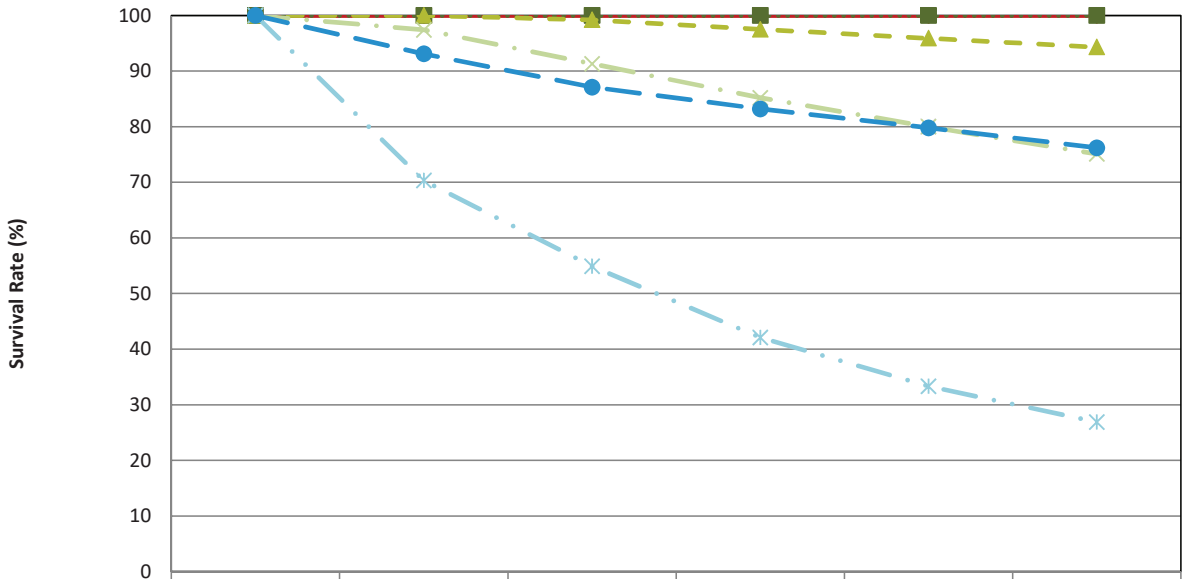
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of California Women Age 40 and Older Who Had a Mammography Within the Previous Two Years by Race Ethnicity: 2006, 2008, and 2010 Surveys



Notes: Data are weighted to the 2000 California population. Healthy People 2010 goal (http://www.healthypeople.gov/): increase to 70% or more the proportion of women having a mammogram at least every two years.
Source: California Behavioral Risk Factor Survey, California Department of Public Health, Survey Research Group.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Breast Cancer by Stage at Diagnosis, California, 2004-2009

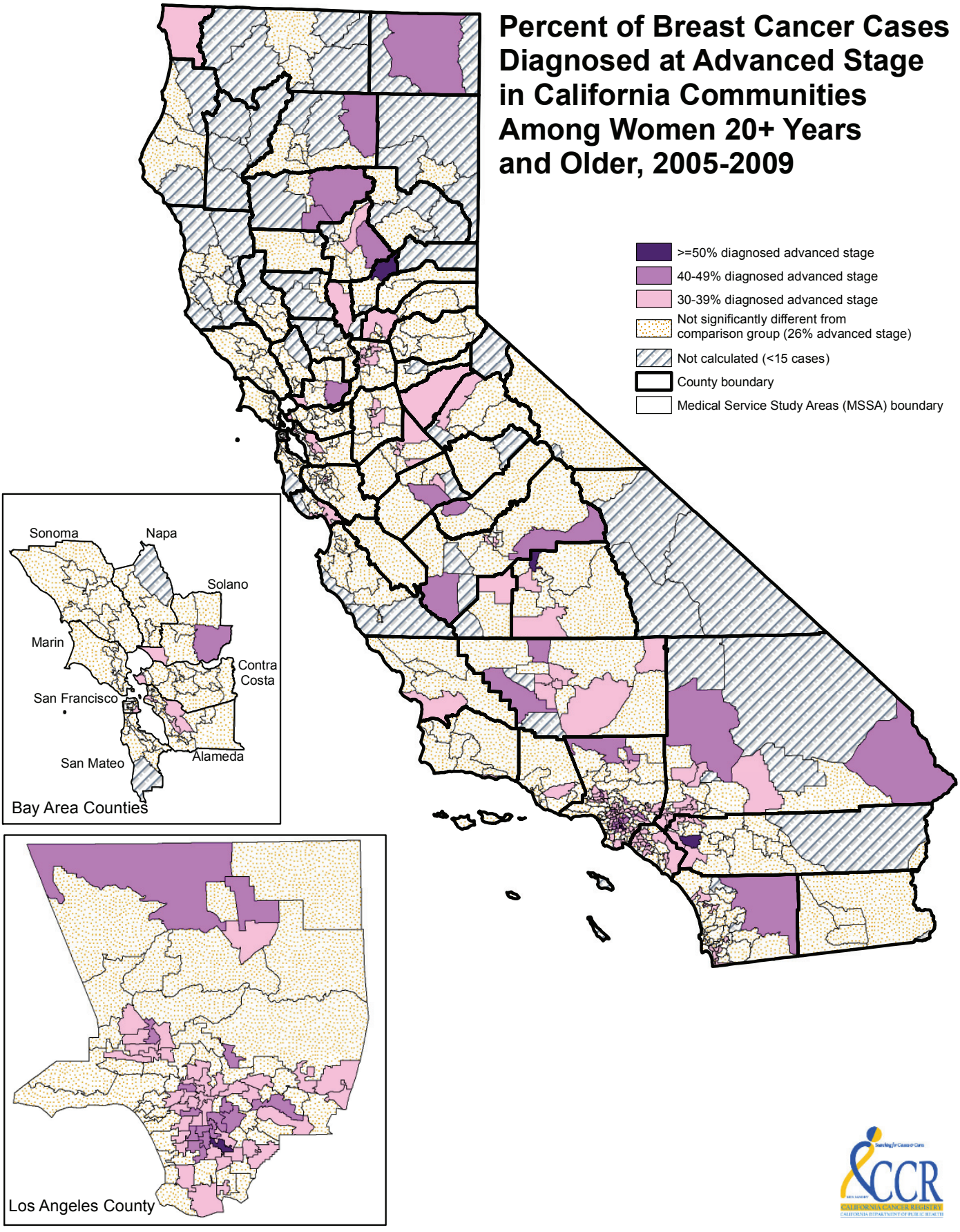


	0	12	24	36	48	60
In Situ	100	100	100	100	100	100
Stage I	100	100	100	100	100	100
Stage II	100	100	99.2	97.5	95.9	94.3
Stage III	100	97.4	91.3	85.2	80	75.1
Stage IV	100	70.3	54.9	42.1	33.33	26.9
Unknown	100	93.1	87.1	83.2	79.8	76.2

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Breast Cancer Cases Diagnosed at Advanced Stage in California Communities Among Women 20+ Years and Older, 2005-2009



CERVIX

In California, almost 1,500 new cervical cancers are expected to be diagnosed in 2012, and over 430 deaths due to the disease are expected to occur. The cervix is the lower third of the uterus and is a site that can be effectively screened for cancer with the Pap test. If detected early, cervical cancer is highly curable, and almost half of all invasive (i.e., stage I or higher) cervical cancers among Californians are now diagnosed at stage I disease. Staging for cervical cancer is based on tumor extension; however, a tumor that spreads to regional lymph nodes is considered stage III. Although pathologists may classify a cervical tumor as Stage 0, or an *in situ* tumor, the California Cancer Registry no longer collects information on these tumors. The stage groups for cervical cancer are summarized as follows:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor confined to the uterus.

Stage II:
Tumor extends beyond the uterus, but not to the pelvic wall or lower third of the vagina.

Stage III:
Tumor either (a) invades the pelvic wall and/or involves lower third of the vagina, and/or causes non-functioning kidney, or (b) spreads to regional lymph nodes.

Stage IV:
Tumor invades the bladder or rectum, extends beyond the pelvis, or spreads to other distant sites.

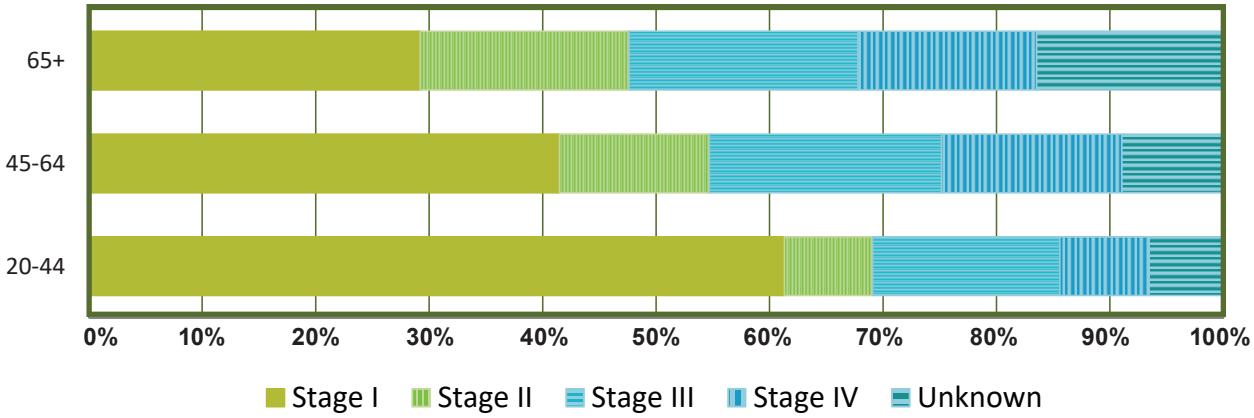
Stages I through IV cervical cancers are further subdivided into stages IA, IA1, IA2, IB, IB1, IB2, IIA, IIB, IIIA, IIIB, IVA, and IVB; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Women Age 20 and Older Diagnosed With Cervix Uteri Cancer, by Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Race/Ethnicity:												
Non-Hispanic White	1,511	49.4	314	10.3	538	17.6	432	14.2	259	8.5	3,054	100.0
African American	170	38.7	47	10.7	91	20.7	73	16.6	58	13.2	439	100.0
Hispanic	1,327	46.8	371	13.1	563	19.9	298	10.5	276	9.7	2,835	100.0
Asian/Pacific Islander	443	44.1	157	15.6	195	19.4	130	13.0	79	7.9	1,004	100.0
Other/Unknown	65	53.3	5	4.1	15	12.3	9	7.4	28	22.9	122	100.0
All Race/Ethnicities	3,516	47.0	894	12.1	1,402	18.9	942	12.7	700	9.3	7,454	100.0
Age at Diagnosis:												
20-44	1,843	61.3	234	7.8	496	16.5	237	7.9	197	6.6	3,007	100.0
45-64	1,265	41.5	403	13.2	624	20.5	485	15.9	273	9.0	3,050	100.0
65+	408	29.2	257	18.4	282	20.2	220	15.8	230	16.5	1,397	100.0
All Ages	3,516	47.0	894	12.1	1,402	18.9	942	12.7	700	9.3	7,454	100.0

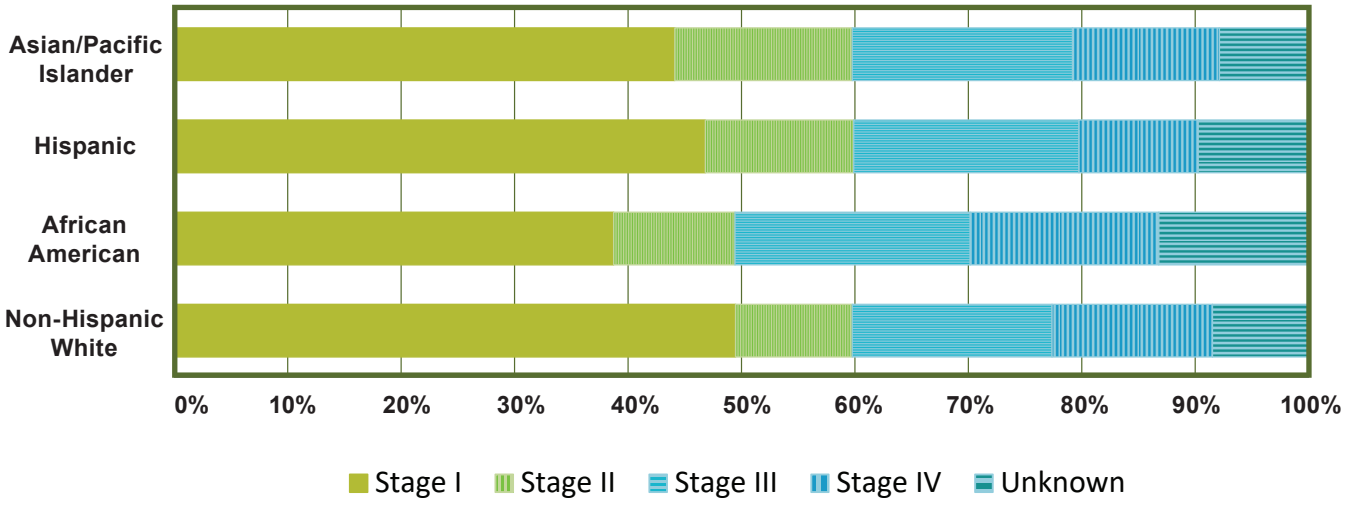
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Cervix Uteri Cancer



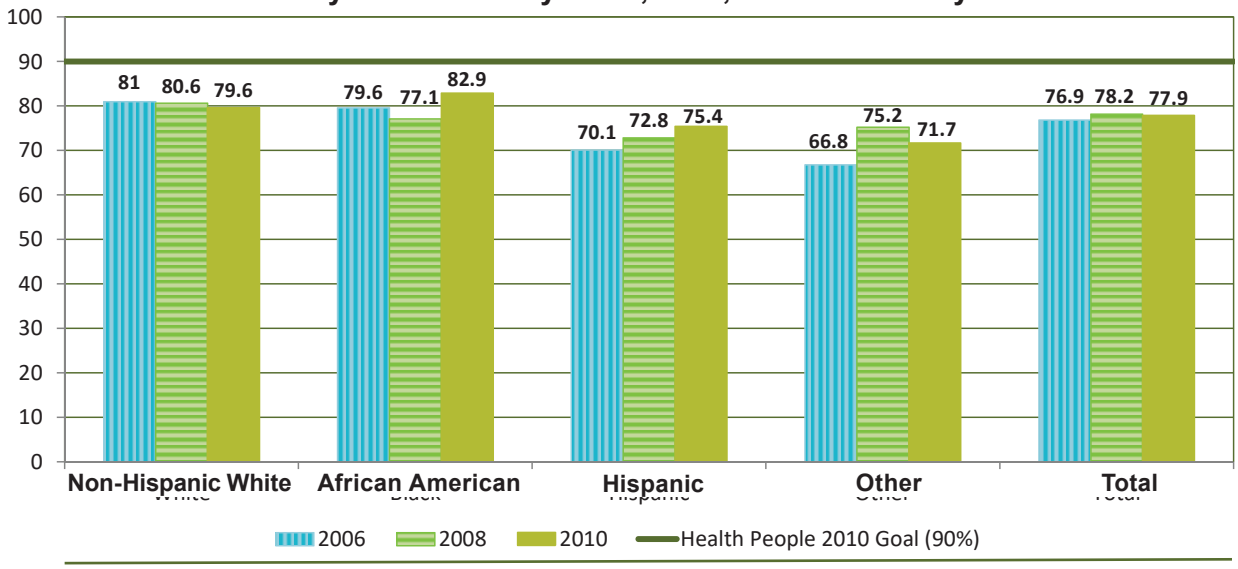
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Cervix Uteri Cancer



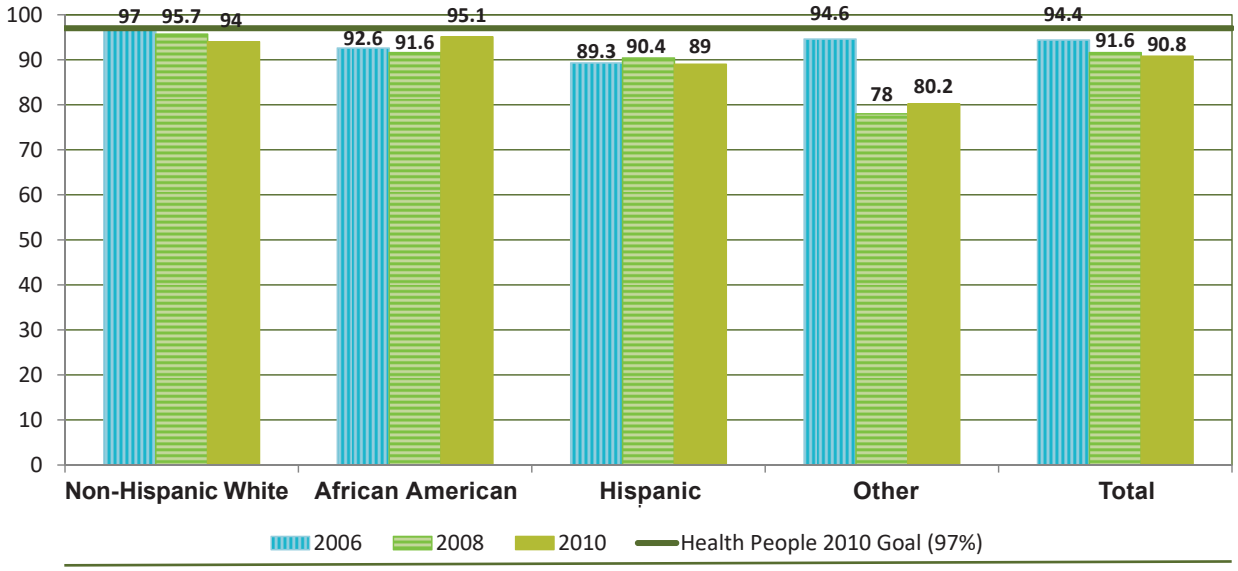
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of California Women Who Had a Pap Test Within the Previous Three Years by Race Ethnicity: 2006, 2008, and 2010 Surveys



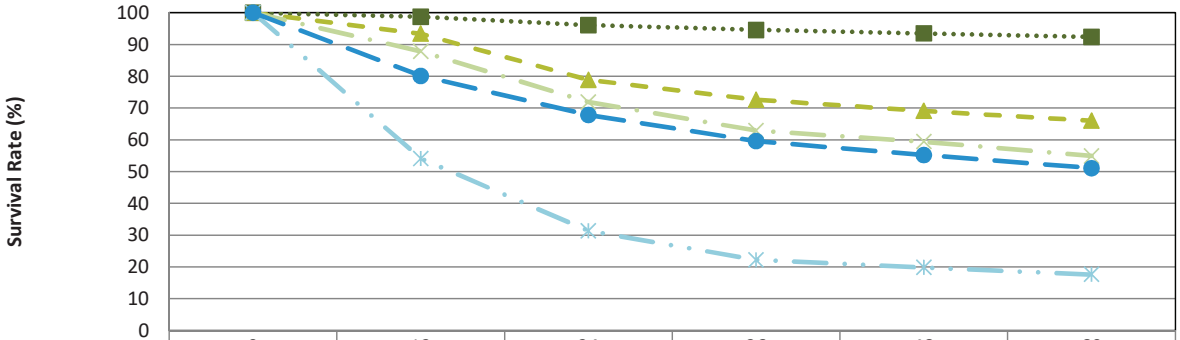
Notes: Data are weighted to the 2000 California population. Healthy People 2010 goal (http://www.healthypeople.gov/): increase to 90% or more the proportion of women having a Pap test at least every three years.
Source: California Behavioral Risk Factor Survey, California Department of Public Health, Survey Research Group.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of California Women Who Have Ever Had a Pap Test by Race Ethnicity: 2006, 2008, and 2010 Surveys



Notes: Data are weighted to the 2000 California population. Healthy People 2010 goal (http://www.healthypeople.gov/): increase to 97% or more the proportion of women having had a Pap test at any time in her life.
Source: California Behavioral Risk Factor Survey, California Department of Public Health, Survey Research Group.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Cervix Uteri Cancer by Stage at Diagnosis, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	98.7	96.1	94.6	93.5	92.4
Stage II	100	93.4	78.9	72.6	69.1	66
Stage III	100	87.8	71.9	62.9	59.4	54.9
Stage IV	100	54.1	31.4	22.2	19.8	17.6
Unknown	100	80.1	67.8	59.6	55.2	51.1

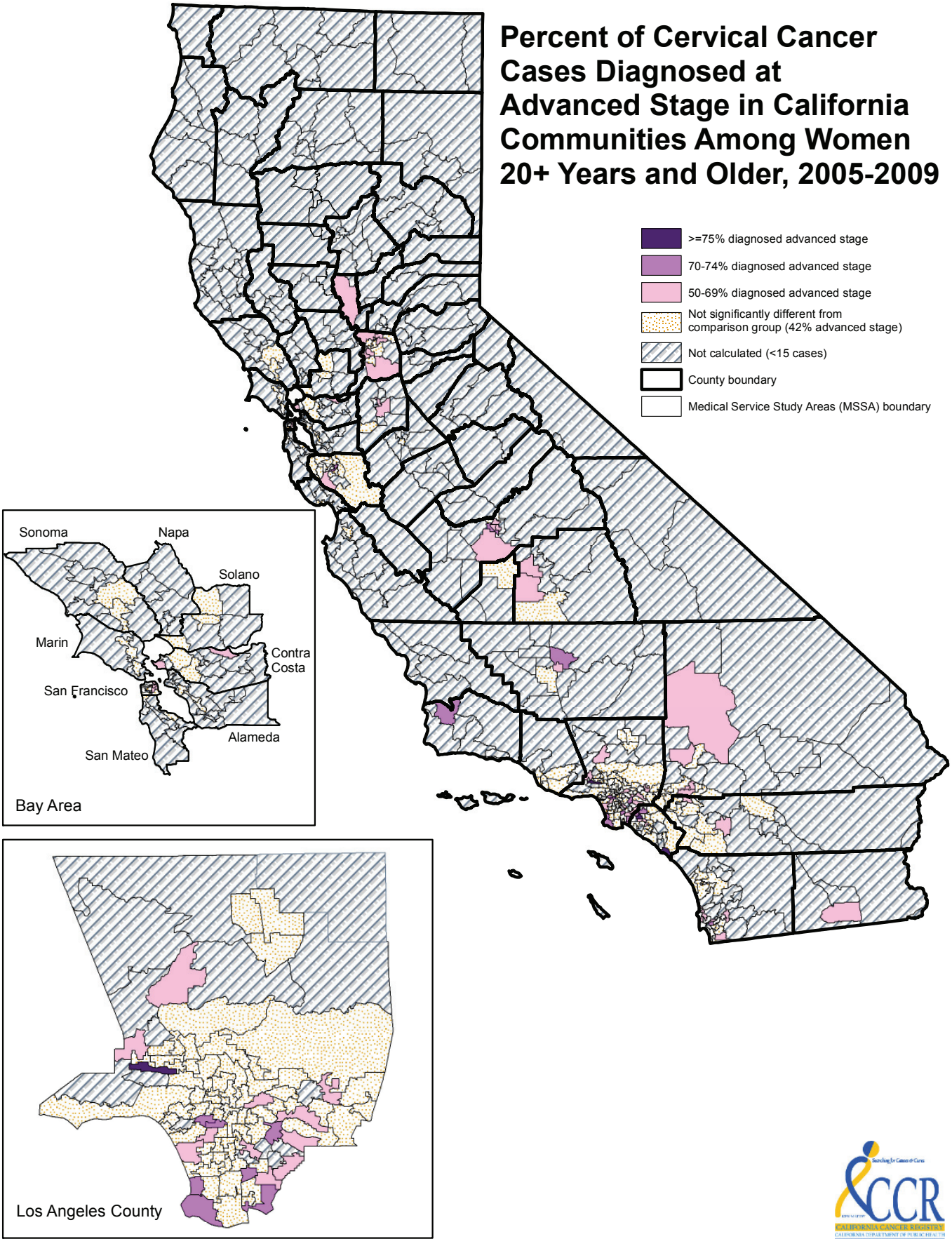
Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.

Source: California Cancer Registry, California Department of Public Health.

Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cervical Cancer Cases Diagnosed at Advanced Stage in California Communities Among Women 20+ Years and Older, 2005-2009



COLON AND RECTUM

(includes colon and rectum/recto-sigmoid cancers)

Cancer of the colon and rectum is the fourth most commonly diagnosed cancer in California. In 2012, nearly 10,300 new colon cancers are expected to be diagnosed, and almost 4,200 deaths due to the disease are expected to occur. The incidence (occurrence of new cases) of rectum cancer in California is less than half the incidence of colon cancer. In 2012, an estimated 4,235 new rectum cancers are expected to be diagnosed, and 935 deaths due to the disease are expected to occur. The majority of the large intestine is made up of the colon; the rectum is the last 12 centimeters, or so, of the large intestine.

Regular screening starting at age 50 can detect colorectal cancer at early stages, when it is most likely to be curable. Screening may prevent colorectal cancer from developing, because it detects and allows for the removal of pre-cancerous polyps.

Cancers originating in the colon or rectum are staged according to the depth of invasion into the multiple layers of the intestinal wall (mucosa, lamina propria, submucosa, muscularis propria, subserosa, and serosa, the layer outside the colon and rectum) rather than on the size of the tumor. When the tumor spreads to regional lymph nodes it is classified as stage III or higher. The following description applies to the staging of colorectal cancer:

Stage 0:
Carcinoma *in situ* (intraepithelial) or tumor invades the lamina propria.

Stage I:
Tumor invades submucosa, or muscularis propria.

Stage II:
Tumor invades into the subserosa, directly extends to other organs, or structures, or perforates the serosa, or visceral peritoneum.

Stage III:
Tumor with any depth of invasion plus spread to regional lymph nodes.

Stage IV:
Presence of distant metastasis.

Stages II and III colon and rectum cancers are further subdivided into stages IIA, IIB, IIIA, IIIB, and IIIC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Colon Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	2,702	9.9	5,786	21.1	6,434	23.5	5,676	20.7	4,954	18.1	1,839	6.7	27,391	100.0
Female	2,170	7.8	5,556	19.9	6,959	24.9	6,324	22.6	4,895	17.5	2,083	7.4	27,987	100.0
Total	4,872	8.8	11,342	20.5	13,393	24.2	12,000	21.7	9,849	17.8	3,922	7.1	55,378	100.0
Race/Ethnicity:														
Non-Hispanic White	2,876	8.1	7,564	21.4	8,922	25.2	7,469	21.1	6,101	17.2	2,460	7.0	35,392	100.0
African American	487	10.7	828	18.3	936	20.6	970	21.4	977	21.5	337	7.4	4,535	100.0
Hispanic	754	8.9	1,552	18.3	2,025	23.9	1,928	22.8	1,577	18.6	634	7.5	8,470	100.0
Asian/Pacific Islander	572	9.1	1,218	19.4	1,417	22.6	1,552	24.7	1,117	17.8	399	6.4	6,275	100.0
Other/Unknown	183	25.9	180	25.5	93	13.2	81	11.5	77	10.9	92	13.0	706	100.0
All Race/Ethnicities	4,872	8.8	11,342	20.5	13,393	24.2	12,000	21.7	9,849	17.8	3,922	7.1	55,378	100.0
Age at Diagnosis:														
20-44	136	5.8	291	12.3	545	23.0	635	26.9	625	26.4	133	5.6	2,365	100.0
45-64	1,798	10.7	3,316	19.8	3,382	20.2	3,855	23.0	3,480	20.8	911	5.4	16,742	100.0
65+	2,938	8.1	7,735	21.3	9,466	26.1	7,510	20.7	5,744	15.8	2,878	7.9	36,271	100.0
All Ages	4,872	8.8	11,342	20.5	13,393	24.2	12,000	21.7	9,849	17.8	3,922	7.1	55,378	100.0

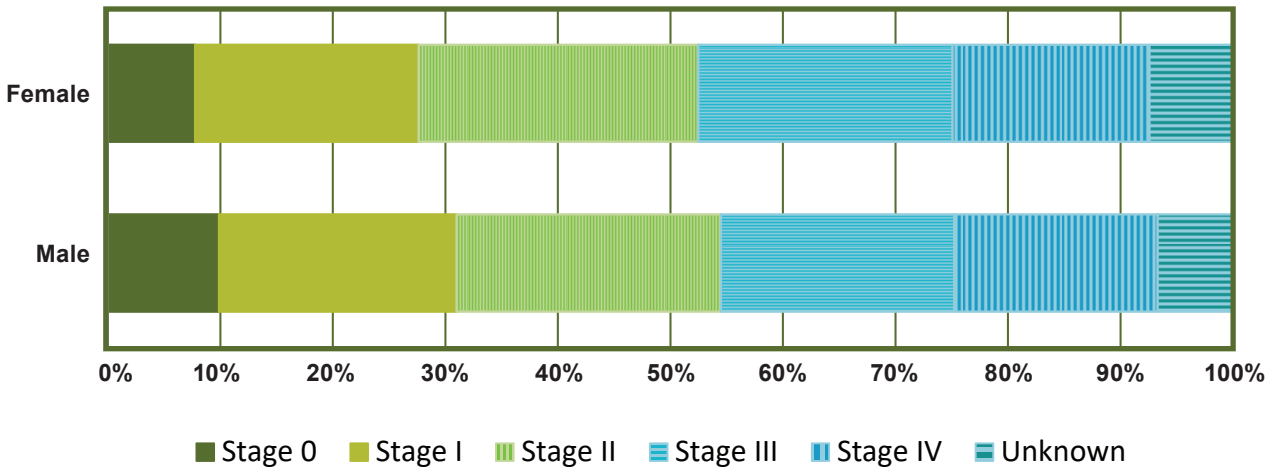
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Number and Percentage of California Adults Age 20 and Older Diagnosed With Rectum and Rectosigmoid Junction Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	1,174	9.1	2,956	23.0	2,215	17.2	2,678	20.8	2,016	15.7	1,815	14.1	12,854	100.0
Female	871	9.1	2,176	22.6	1,610	16.8	1,953	20.3	1,390	14.5	1,614	16.8	9,614	100.0
Total	2,045	9.1	5,132	22.8	3,825	17.0	4,631	20.6	3,406	15.2	3,429	15.3	22,468	100.0
Race/Ethnicity:														
Non-Hispanic White	1,312	9.7	3,345	24.8	2,416	17.9	2,792	20.7	2,040	15.1	1,575	11.7	13,480	100.0
African American	101	7.6	252	18.9	177	13.3	249	18.7	229	17.2	325	24.4	1,333	100.0
Hispanic	293	7.2	807	19.8	687	16.9	849	20.8	673	16.9	765	18.8	4,074	100.0
Asian/Pacific Islander	260	8.3	638	20.3	516	16.4	713	22.7	424	13.5	592	18.9	3,143	100.0
Other/Unknown	79	18.0	90	20.6	29	6.6	28	6.4	40	9.1	172	39.3	438	100.0
All Race/Ethnicities	2,045	9.1	5,132	22.8	3,825	17.0	4,631	20.6	3,406	15.2	3,429	15.3	22,468	100.0
Age at Diagnosis:														
20-44	87	5.6	239	15.3	208	13.4	433	27.8	306	19.6	285	18.3	1,558	100.0
45-64	860	9.0	2,042	21.4	1,416	14.9	2,070	21.7	1,526	16.0	1,622	17.0	9,536	100.0
65+	1,098	9.7	2,851	25.1	2,201	19.4	2,128	18.7	1,574	13.8	1,522	13.4	11,374	100.0
All Ages	2,045	9.1	5,132	22.8	3,825	17.0	4,631	20.6	3,406	15.2	3,429	15.3	22,468	100.0

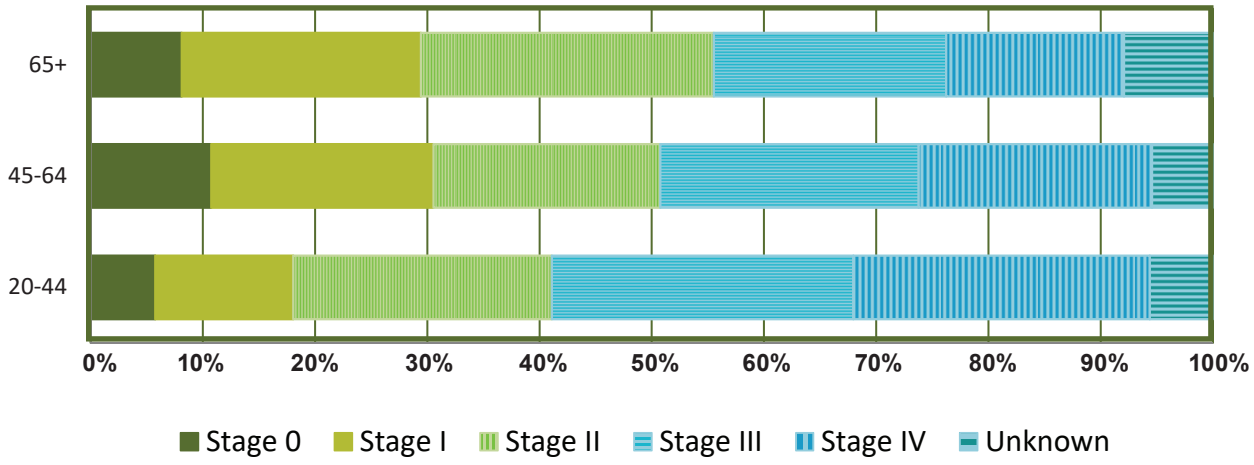
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Colon Cancer



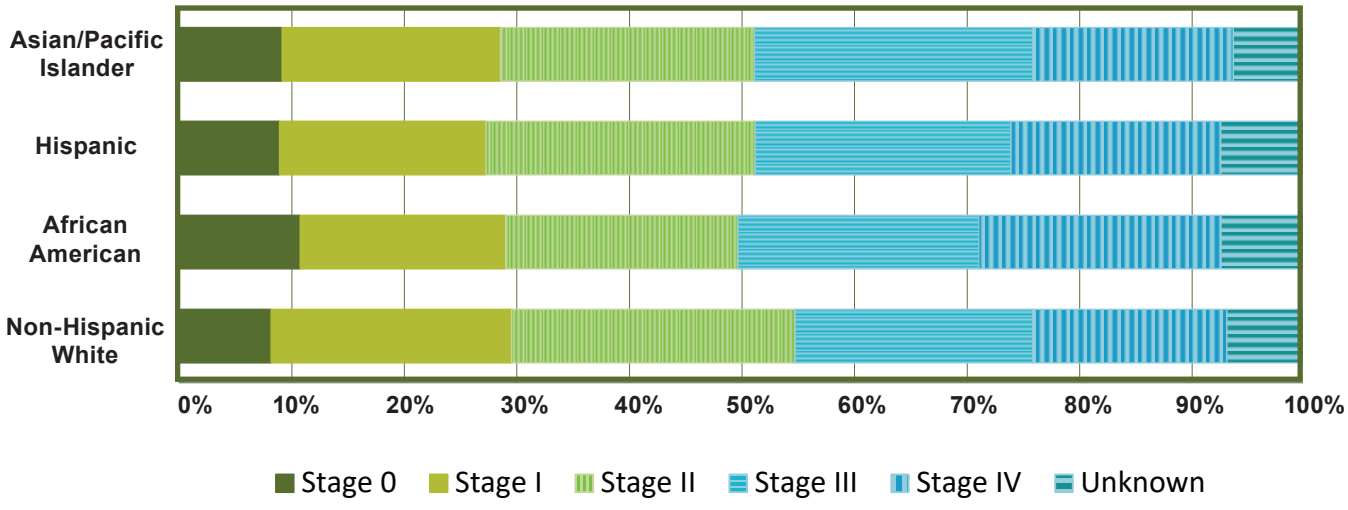
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Colon Cancer



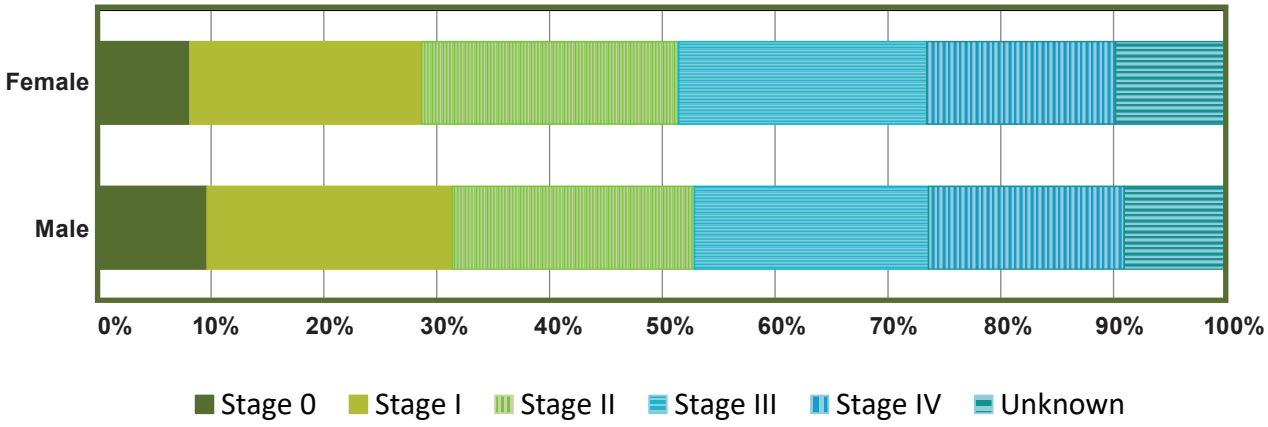
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Colon Cancer



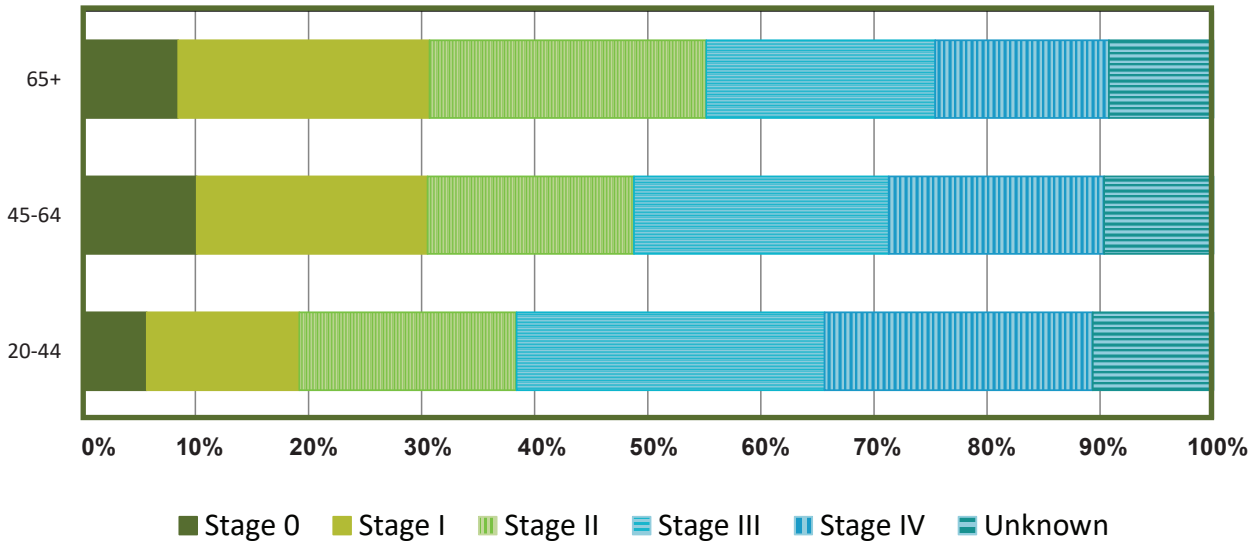
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Colon and Rectum Cancer



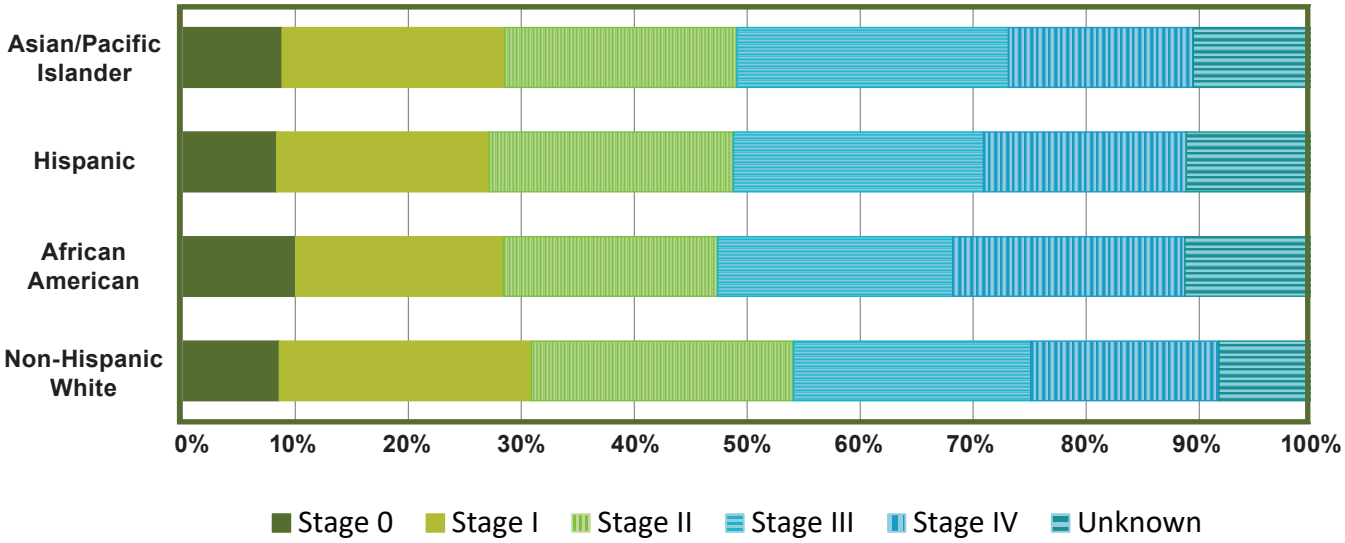
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Colon and Rectum Cancer



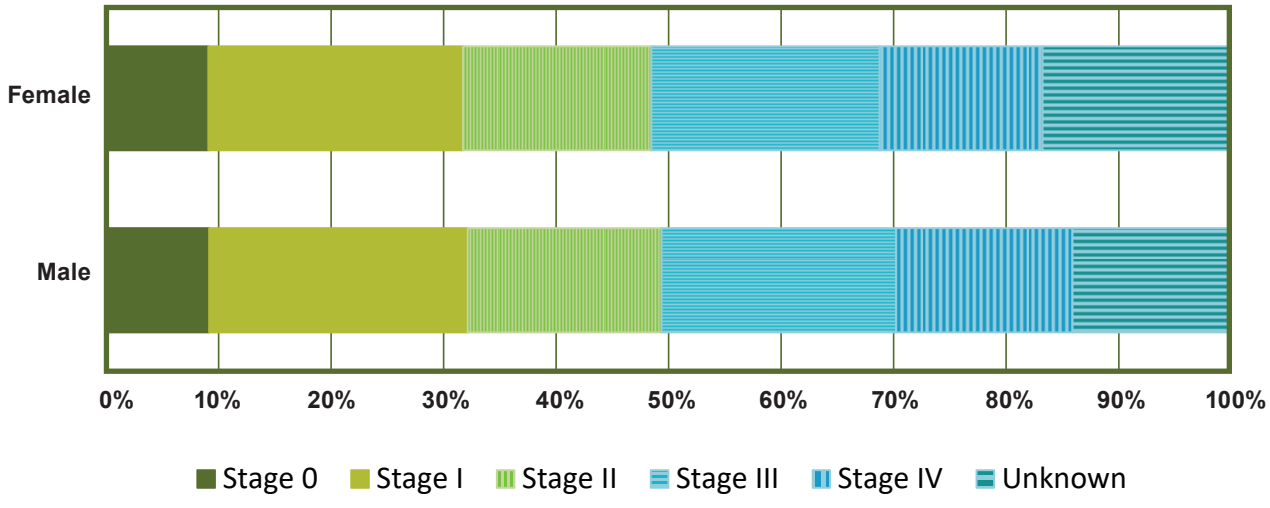
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Colon and Rectum Cancer



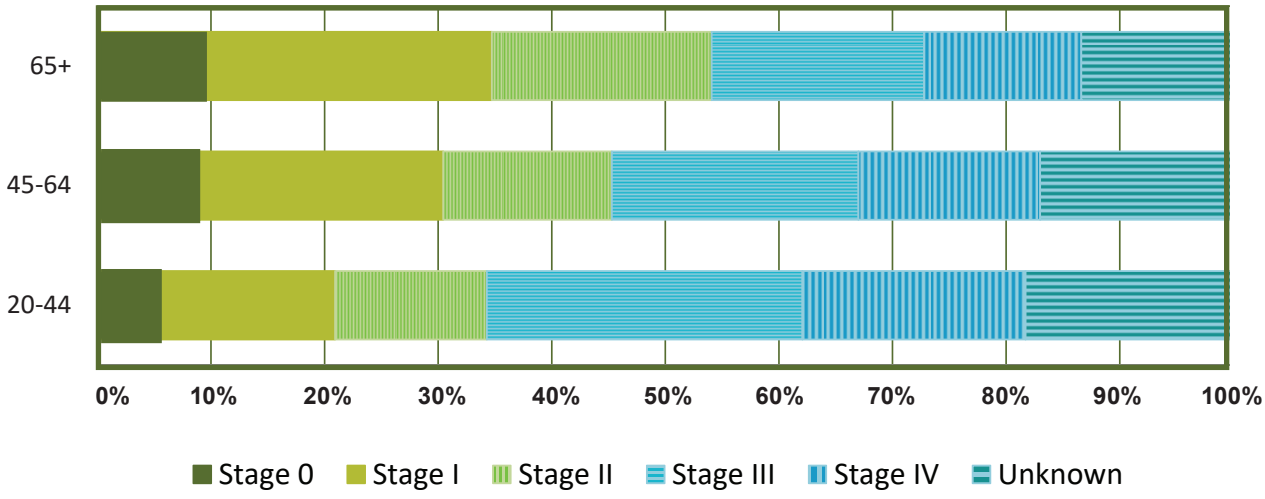
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Rectum and Rectosigmoid Cancer



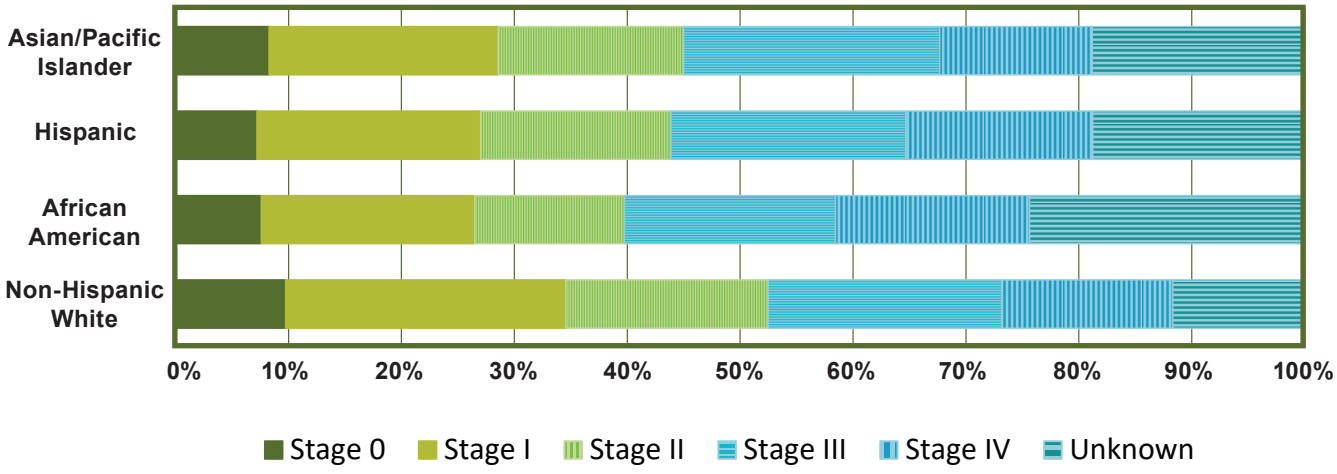
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Rectum and Rectosigmoid Cancer



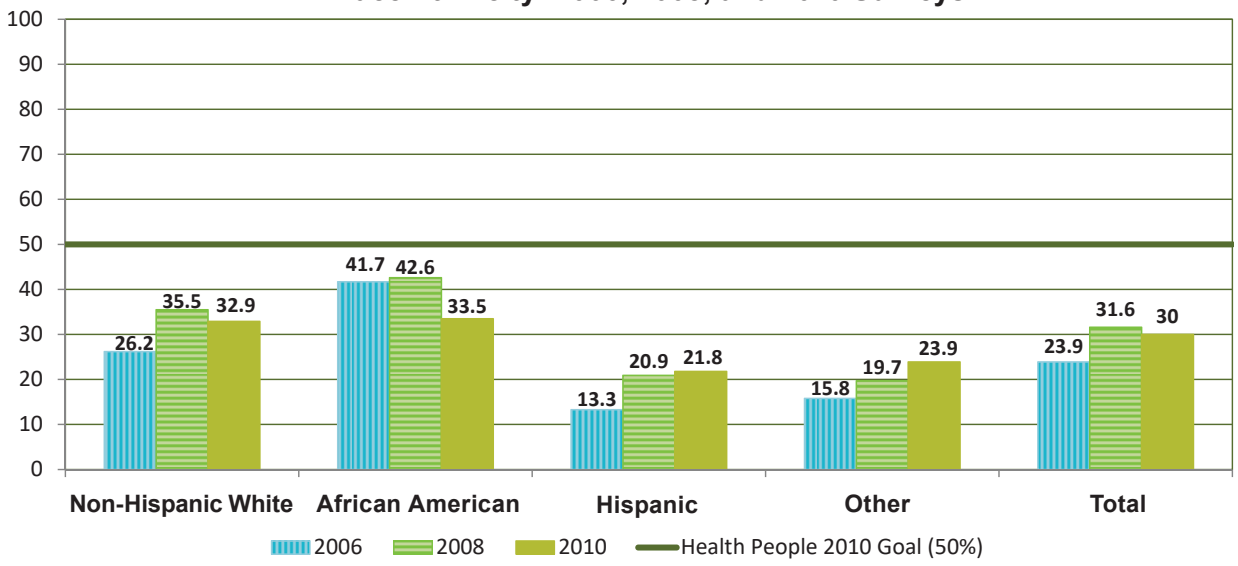
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Rectum and Rectosigmoid Cancer



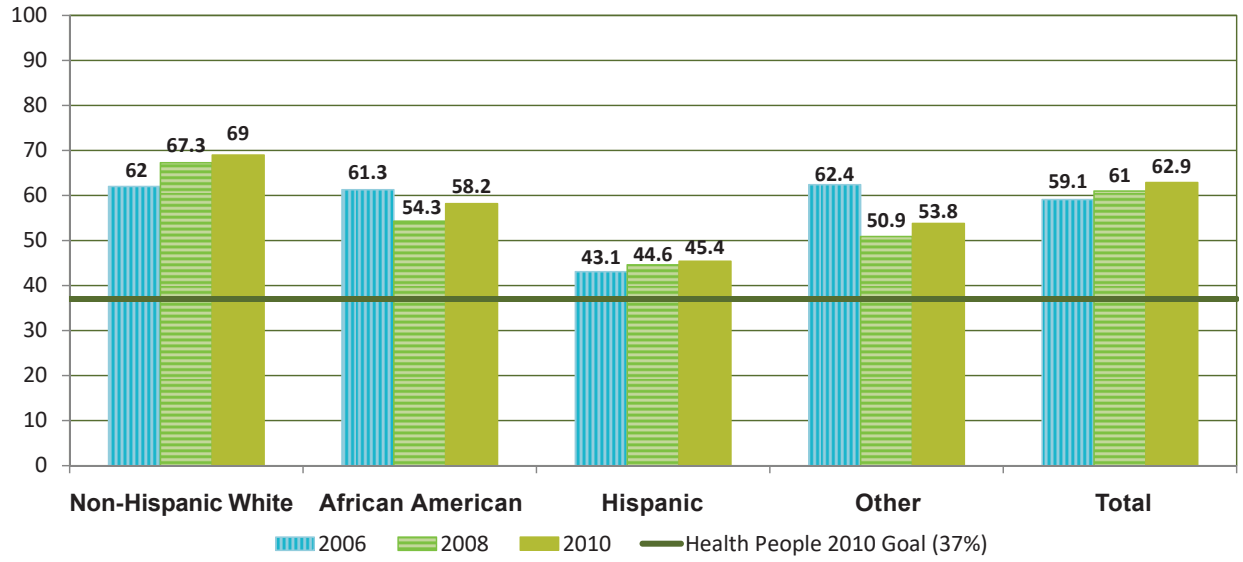
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of California Adults Age 50 and Older Who Had a Fecal Occult Blood Test (FOBT) Within the Previous Two Years by Race Ethnicity: 2006, 2008, and 2010 Surveys



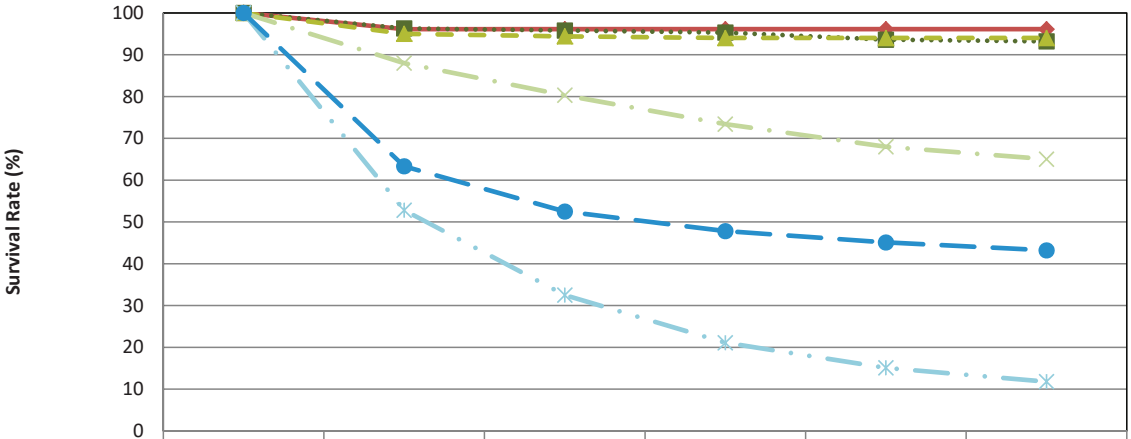
Notes: Data are weighted to the 2000 California population. Healthy People 2010 goal (http://www.healthypeople.gov/): increase to 50% or more the proportion of adults age 50 and older who having a FOBT at least every two years.
Source: California Behavioral Risk Factor Survey, California Department of Public Health, Survey Research Group.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of California Adults Age 50 and Older Who Have Ever Had a Sigmoidoscopy by Race Ethnicity: 2006, 2008, and 2010 Surveys



Notes: Data are weighted to the 2000 California population. Healthy People 2010 goal (http://www.healthypeople.gov/): increase to 37% or more the proportion of people age 50 and older who have ever had a sigmoidoscopy (or colonoscopy).
Source: California Behavioral Risk Factor Survey, California Department of Public Health, Survey Research Group.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Colon Cancer by Stage at Diagnosis, Female, California, 2004-2009

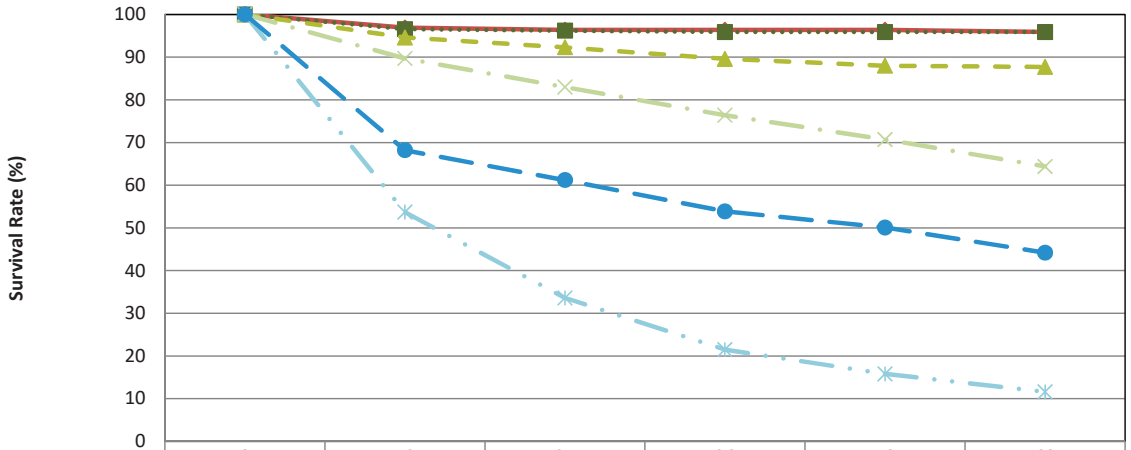


	0	12	24	36	48	60
In Situ	100	96.1	96.1	96.1	96.1	96.1
Stage I	100	96.3	95.8	95.3	93.6	93.2
Stage II	100	95	94.4	94	94	94
Stage III	100	88	80.3	73.4	68	65
Stage IV	100	52.8	32.5	21.1	15.1	11.8
Unknown	100	63.3	52.5	47.8	45.1	43.2

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Colon Cancer by Stage at Diagnosis, Male, California, 2004-2009

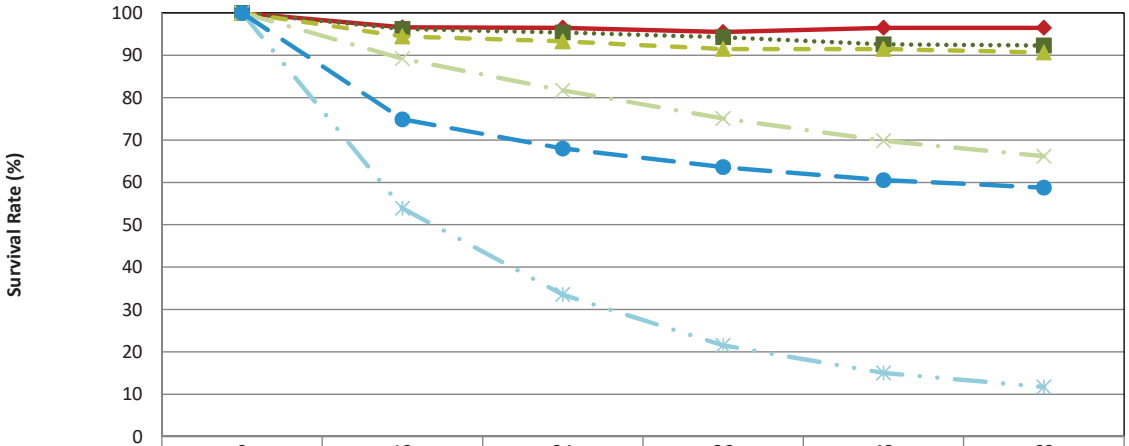


	0	12	24	36	48	60
In Situ	100	96.9	96.4	96.4	96.4	95.9
Stage I	100	96.6	96.2	95.9	95.9	95.9
Stage II	100	94.6	92.3	89.6	88	87.7
Stage III	100	89.7	83	76.4	70.7	64.4
Stage IV	100	53.7	33.6	21.5	15.8	11.6
Unknown	100	68.2	61.2	53.9	50.1	44.2

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Colon and Rectum Cancer by Stage at Diagnosis, Female, California, 2004-2009

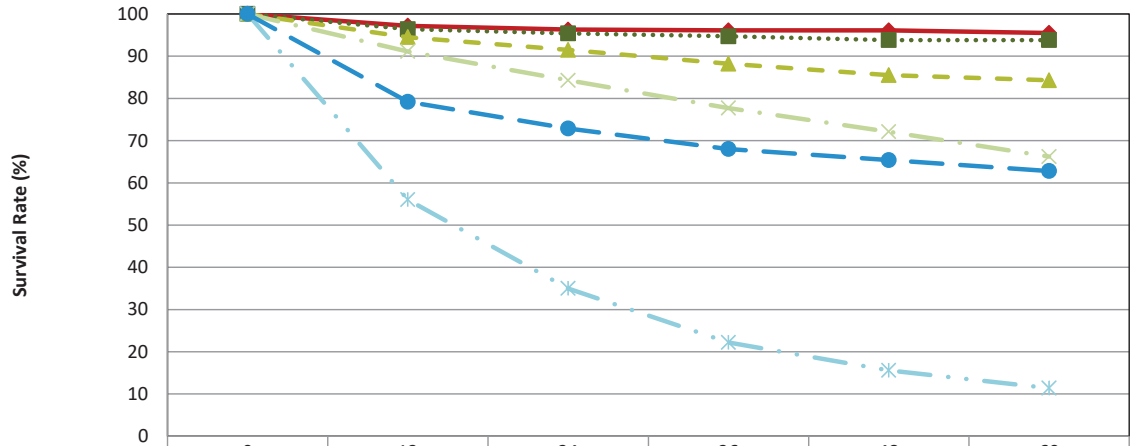


	0	12	24	36	48	60
In Situ	100	96.6	96.5	95.5	96.5	96.5
Stage I	100	96.2	95.4	94.3	92.6	92.3
Stage II	100	94.5	93.3	91.5	91.5	90.7
Stage III	100	89.2	81.7	75.1	69.8	66.2
Stage IV	100	53.9	33.5	21.5	15	11.7
Unknown	100	74.9	68	63.6	60.5	58.8

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Colon and Rectum Cancer by Stage at Diagnosis, Male, California, 2004-2009

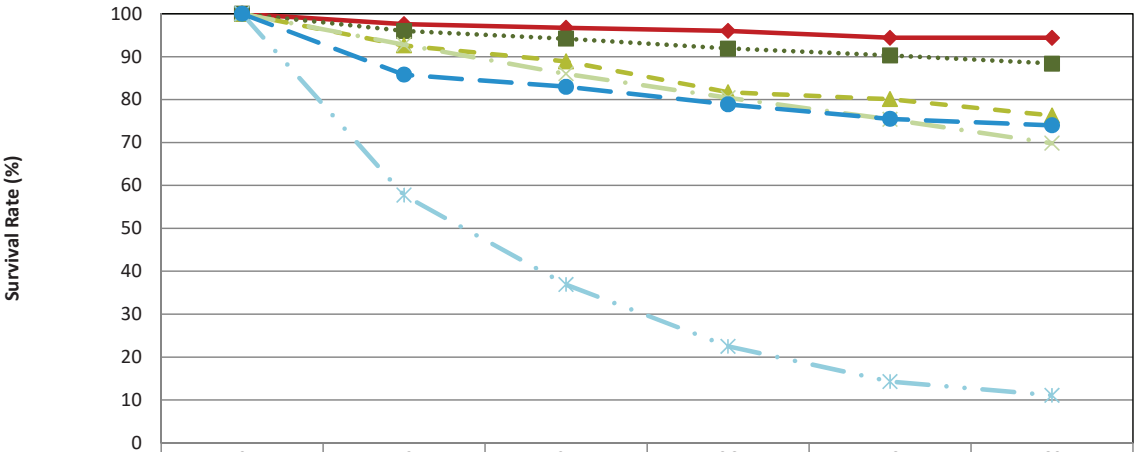


	0	12	24	36	48	60
In Situ	100	97.2	96.3	96.1	96.1	95.5
Stage I	100	96.4	95.4	94.7	93.8	93.8
Stage II	100	94.5	91.5	88.2	85.5	84.3
Stage III	100	91.1	84.3	77.7	72.1	66.2
Stage IV	100	56	35	22.2	15.6	11.4
Unknown	100	79.2	72.9	68	65.4	62.8

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Rectum and Rectosigmoid Cancer by Stage at Diagnosis, Female, California, 2004-2009

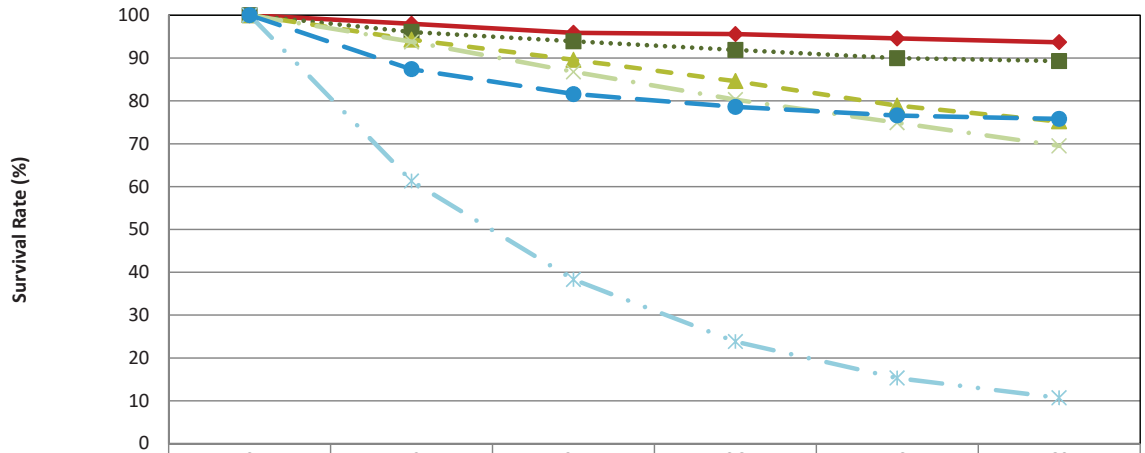


	0	12	24	36	48	60
In Situ	100	97.6	96.7	96	94.4	94.4
Stage I	100	96	94.2	91.9	90.3	88.4
Stage II	100	92.6	88.9	81.7	80.1	76.3
Stage III	100	92.8	86	80.4	75.4	69.8
Stage IV	100	57.7	36.9	22.5	14.3	11.1
Unknown	100	85.8	83	78.9	75.5	74

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Rectum and Rectosigmoid Cancer by Stage at Diagnosis, Male, California, 2004-2009

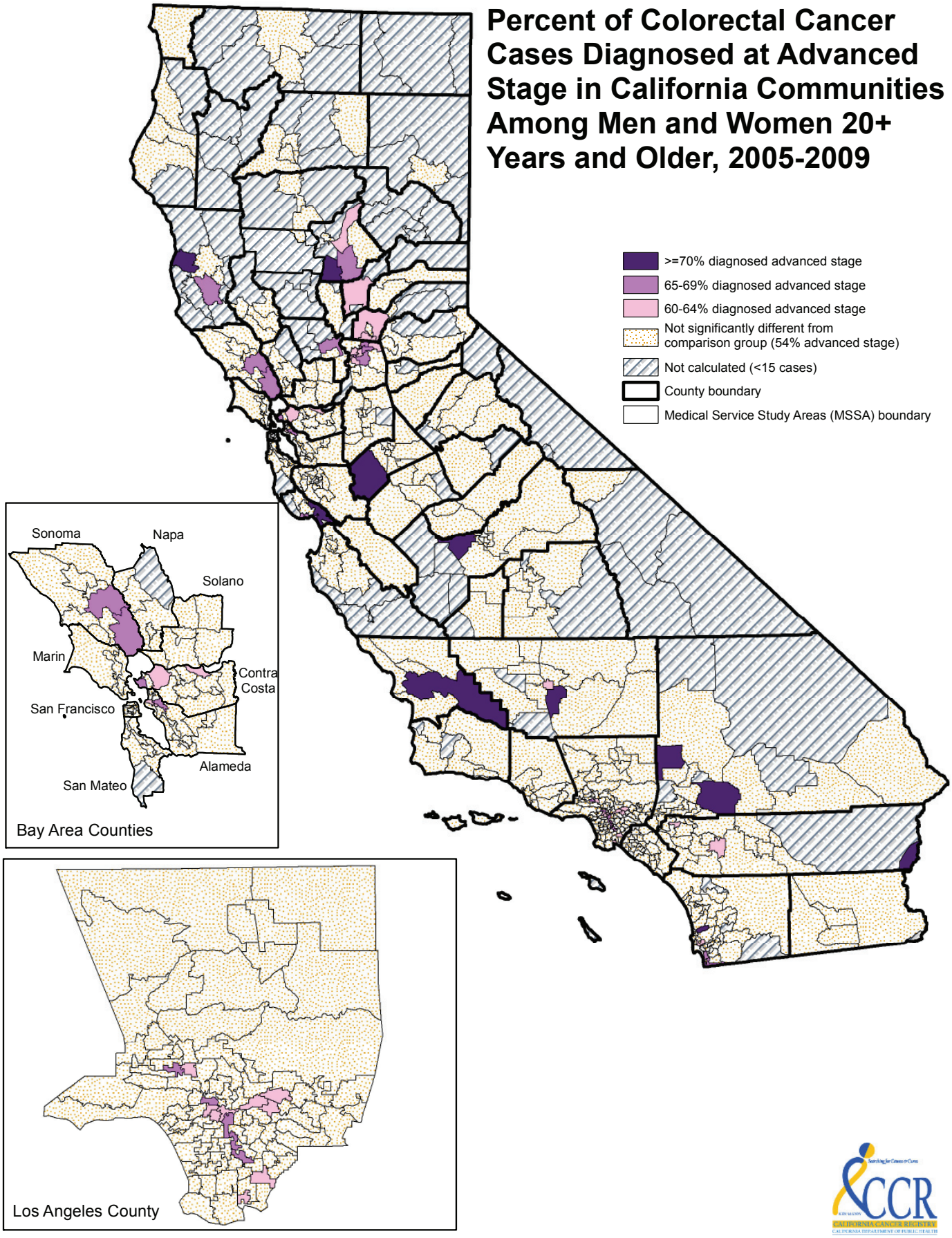


	0	12	24	36	48	60
In Situ	100	98	95.9	95.6	94.6	93.7
Stage I	100	96.1	93.9	91.9	90	89.3
Stage II	100	94.3	89.6	84.6	78.9	75.2
Stage III	100	93.8	86.8	80.3	74.9	69.5
Stage IV	100	61.3	38.3	23.8	15.3	10.7
Unknown	100	87.4	81.6	78.6	76.6	75.8

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Colorectal Cancer Cases Diagnosed at Advanced Stage in California Communities Among Men and Women 20+ Years and Older, 2005-2009



ESOPHAGUS

Cancer of the esophagus is highly lethal although relatively uncommon. In 2012, over 1,350 new cases are expected to be diagnosed in California, and almost 1,250 people are expected to die of the disease. Because there are few symptoms during the early stages of the disease, most esophageal cancers are diagnosed when the disease has already spread.

The esophagus wall has four layers: mucosa (the internal layer), submucosa, muscularis propria, and adventitia. Staging of esophageal cancer is based on the depth of tumor invasion into these layers and on spread to lymph nodes (or to other organs), as follows:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor invades the submucosa.

Stage II:
Tumor may either (a) invade the adventitia without spread to lymph nodes, or (b) penetrate no deeper than the muscularis propria but spread to regional lymph nodes.

Stage III:
Tumor invades the adventitia and spreads to lymph nodes, or tumor extends to adjacent structures.

Stage IV:
Tumor spreads to distant organs, or lymph nodes.

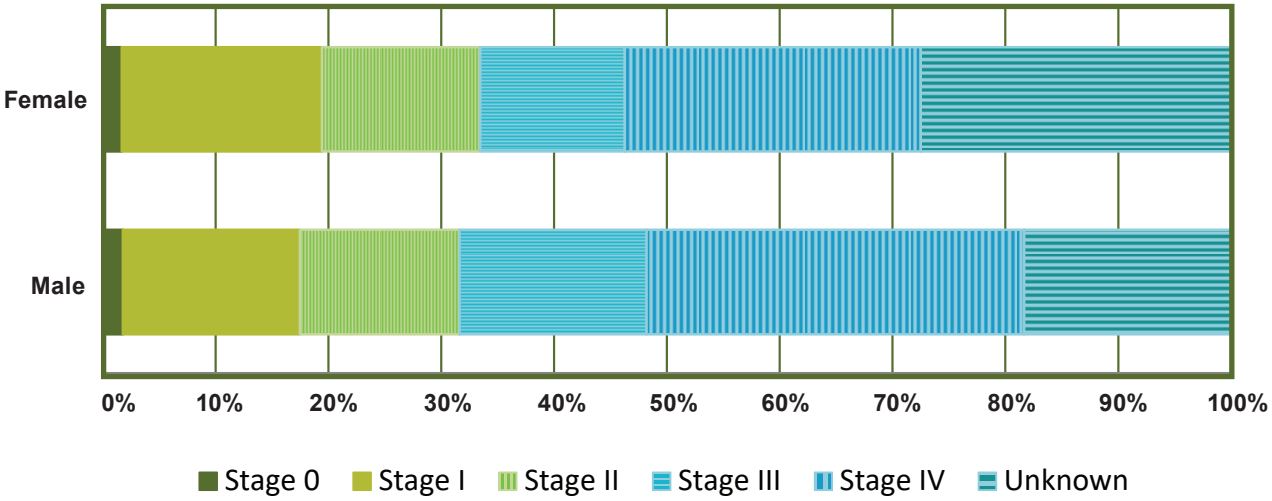
Stages II and IV esophageal cancers are further subdivided into stages IIA, IIB, IVA, and IVB; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Esophagus Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	91	1.76	810	15.69	731	14.16	855	16.56	1,728	33.48	947	18.35	5,162	100.00
Female	27	1.66	288	17.73	228	14.04	208	12.81	426	26.23	447	27.52	1,624	100.00
Total	118	1.74	1,098	16.18	959	14.13	1,063	15.66	2,154	31.74	1,394	20.54	6,786	100.00
Race/Ethnicity:														
Non-Hispanic White	97	1.95	841	16.87	718	14.40	778	15.61	1,587	31.84	964	19.34	4,985	100.00
African American	7	1.81	54	13.99	65	16.84	63	16.32	102	26.42	95	24.61	386	100.00
Hispanic	8	0.94	115	13.53	93	10.94	133	15.65	299	35.18	202	23.76	850	100.00
Asian/Pacific Islander	5	1.05	75	15.76	80	16.81	83	17.44	136	28.57	97	20.38	476	100.00
All Race/Ethnicities	118	1.74	1,098	16.18	959	14.13	1,063	15.66	2,154	31.74	1,394	20.54	6,786	100.00
Age:														
20-44	2	1.39	9	6.25	24	16.67	28	19.44	69	47.92	12	8.33	144	100.00
45-64	28	1.17	314	13.17	332	13.93	438	18.37	915	38.38	357	14.97	2,384	100.00
65+	88	2.07	775	18.20	603	14.16	597	14.02	1,170	27.48	1,025	24.07	4,258	100.00
All Ages	118	1.74	1,098	16.18	959	14.13	1,063	15.66	2,154	31.74	1,394	20.54	6,786	100.00

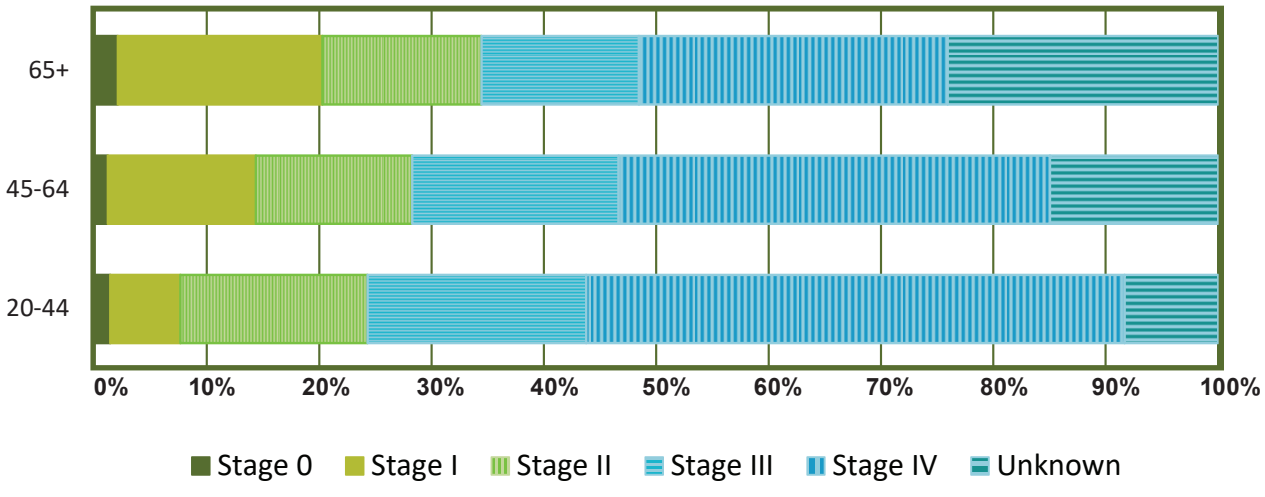
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Esophagus Cancer



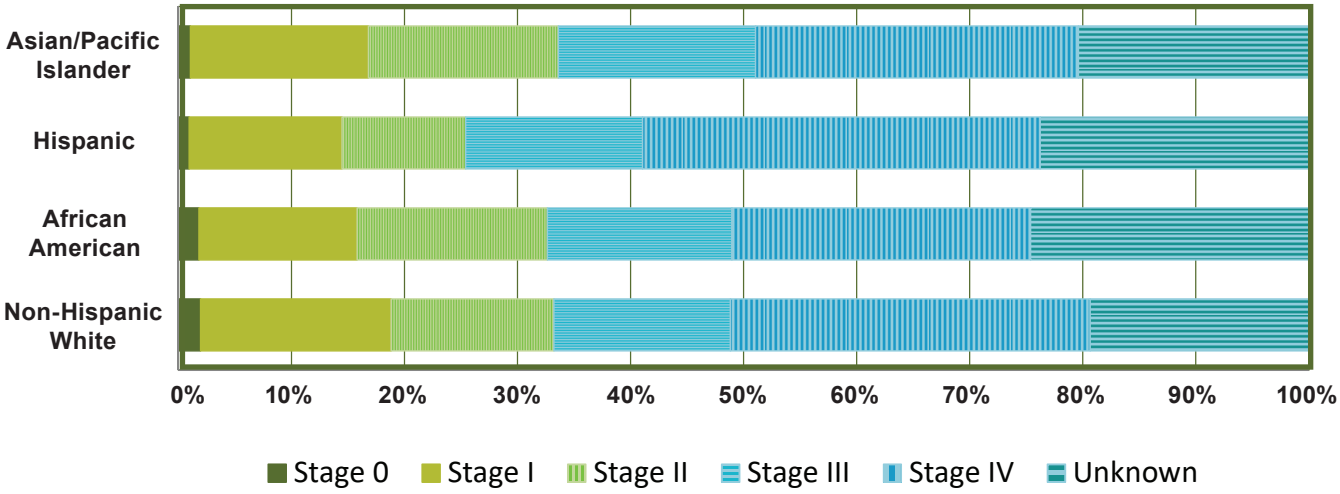
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Esophagus Cancer



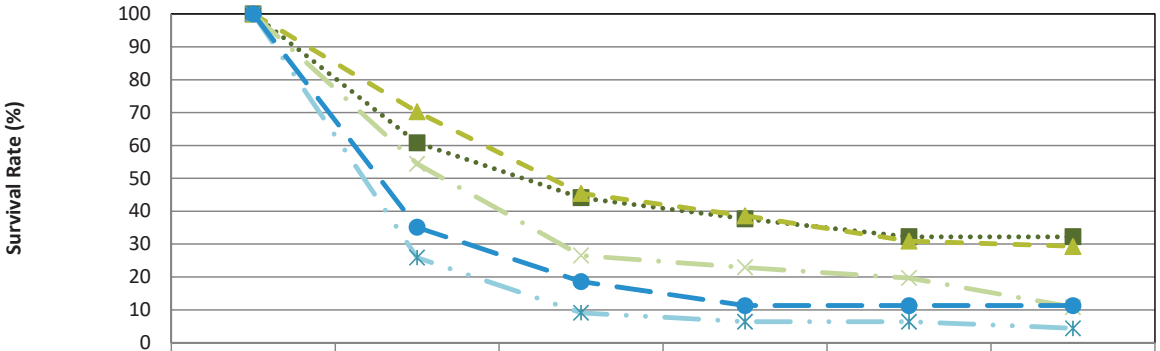
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Esophagus Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Esophagus Cancer by Stage at Diagnosis, Female, California, 2004-2009

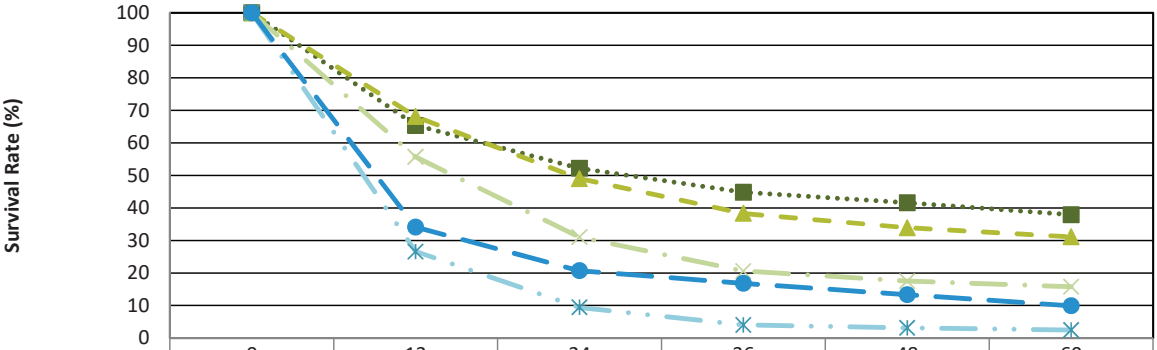


	0	12	24	36	48	60
Stage I	100	60.8	44.1	37.7	32.2	32.2
Stage II	100	70.2	45.4	38.6	30.9	29.3
Stage III	100	54.4	26.5	22.9	19.7	10.8
Stage IV	100	25.9	9.1	6.4	6.4	4.4
Unknown	100	35.1	18.6	11.3	11.3	11.3

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Esophagus Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	65.4	52.2	44.8	41.6	37.9
Stage II	100	68.1	49	38.3	33.9	31.1
Stage III	100	55.7	31	20.6	17.5	15.8
Stage IV	100	26.6	9.4	4	3.1	2.5
Unknown	100	34.1	20.7	16.8	13.3	9.9

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

KIDNEY AND RENAL PELVIS

In 2012, over 5,000 new kidney cancers are expected to be diagnosed in California, and more than 1,200 are expected to die of the disease. For reasons not well understood, the incidence of kidney cancer has increased in California during the past two decades. Although kidney cancers present few symptoms during the early stages of the disease, over 50 percent of adults with kidney cancer in California were diagnosed at stage I disease during the 2005-2009 period.

Staging of kidney cancer depends on the size of the primary tumor, invasion of the adjacent structures, and extension to the main blood vessels. Based on these characteristics, kidney cancers are classified into the following stages:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor 7 cm or less, limited to the kidney.

Stage II:
Tumor larger than 7 cm, limited to the kidney.

Stage III:
Tumor of any size that invades adjacent tissues, major veins, or the adrenal gland; there may be spread to a single regional lymph node.

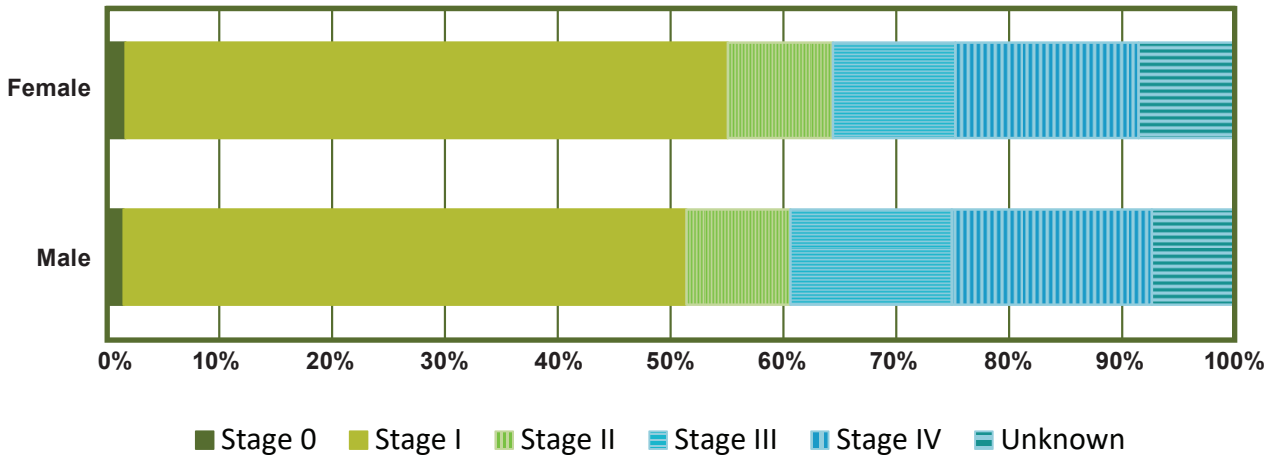
Stage IV:
Tumor with extensive invasion, spread to more than a single lymph node, or presence of distant metastasis.

Number and Percentage of California Adults Age 20 and Older Diagnosed With Renal Pelvis Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	228	1.5	7,505	49.9	1,389	9.2	2,151	14.3	2,670	17.7	1,109	7.4	15,052	100.0
Female	145	1.7	4,595	53.4	804	9.3	933	10.8	1,400	16.3	735	8.5	8,612	100.0
Total	373	1.6	12,100	51.1	2,193	9.3	3,084	13.0	4,070	17.2	1,844	7.8	23,664	100.0
Race/Ethnicity:														
Non-Hispanic White	287	2.0	7,401	50.7	1,312	9.0	1,917	13.1	2,488	17.0	1,204	8.2	14,609	100.0
African American	11	0.6	988	57.5	192	11.2	158	9.2	255	14.8	115	6.7	1,719	100.0
Hispanic	45	0.8	2,737	51.2	509	9.5	737	13.8	940	17.6	382	7.2	5,350	100.0
Asian/Pacific Islander	30	1.7	837	48.6	147	8.5	241	14.0	349	20.3	117	6.8	1,721	100.0
Other/Unknown	0	0.0	137	51.7	33	12.4	31	11.7	38	14.3	26	9.8	265	100.0
All Race/Ethnicities	373	1.6	12,100	51.1	2,193	9.3	3,084	13.0	4,070	17.2	1,844	7.8	23,664	100.0
Age at Diagnosis:														
20-44	5	0.3	1,148	64.3	221	12.4	129	7.2	197	11.0	85	4.8	1,785	100.0
45-64	111	1.1	5,323	54.6	1,005	10.3	1,193	12.2	1,640	16.8	486	5.0	9,758	100.0
65+	257	2.1	5,629	46.4	967	8.0	1,762	14.5	2,233	18.4	1,273	10.5	12,121	100.0
All Ages	373	1.6	12,100	51.1	2,193	9.3	3,084	13.0	4,070	17.2	1,844	7.8	23,664	100.0

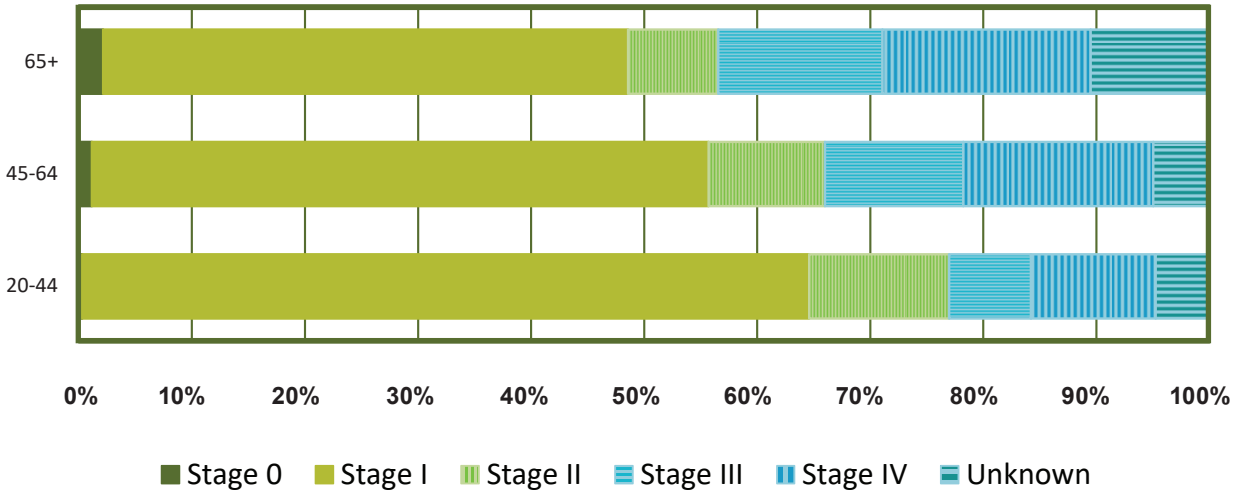
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Kidney and Renal Pelvis Cancer



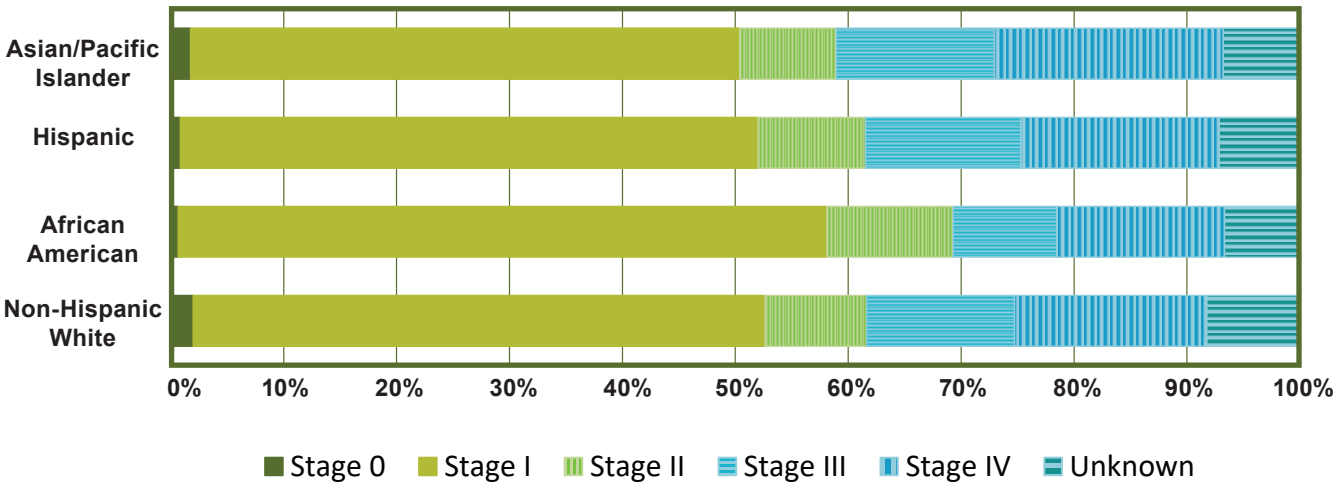
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Kidney and Renal Pelvis Cancer



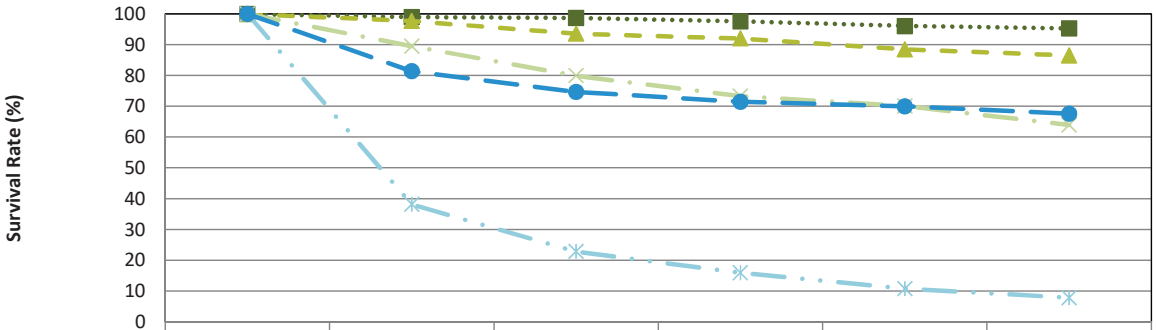
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Kidney and Renal Pelvis Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Kidney and Renal Pelvis Cancer by Stage at Diagnosis, Female, California, 2004-2009

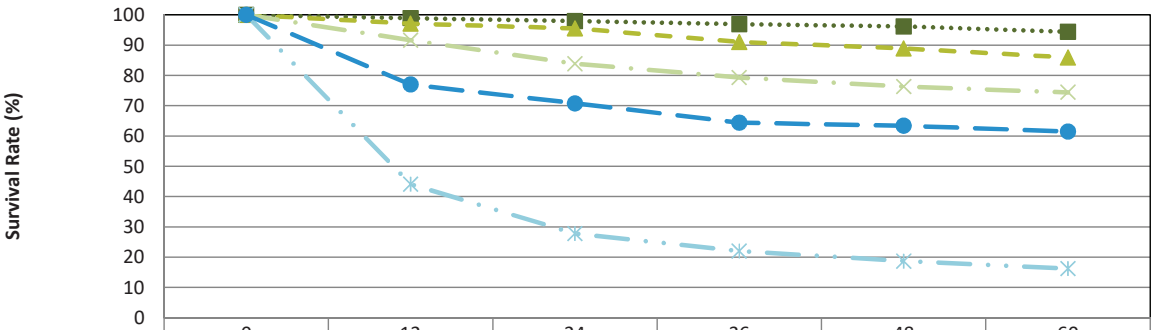


	0	12	24	36	48	60
Stage I	100	99	98.7	97.6	96.1	95.3
Stage II	100	97.7	93.6	92	88.5	86.5
Stage III	100	89.5	79.9	73.3	70.1	63.9
Stage IV	100	38.1	22.8	15.9	10.7	7.8
Unknown	100	81.4	74.7	71.5	70	67.6

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Kidney and Renal Pelvis Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	98.9	97.9	96.9	96.2	94.4
Stage II	100	97.1	95.5	91	88.9	85.9
Stage III	100	91.6	83.9	79.3	76.3	74.4
Stage IV	100	44.1	27.8	22	18.7	16.2
Unknown	100	77	70.8	64.4	63.4	61.5

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

LARYNX

The incidence of larynx cancer has decreased in California, but 810 cases and 295 deaths due to laryngeal cancer are still expected to occur in 2012. The larynx is located in the throat, below the pharynx, and has three distinct subdivisions: glottis (where the vocal cords are located), supraglottis, and subglottis. Presence of symptoms and opportunity for early diagnosis vary depending on the specific site where the tumor develops.

Staging of tumors of the larynx is based on the anatomic extent of the disease, which varies according to the site or region of the larynx where the tumor originates. For example, a laryngeal cancer that involves the vocal cords may be assigned a stage II or higher if the tumor is located in the subglottis, but could be considered stage I if the tumor was located in other parts of the larynx.

In general, cancer of the larynx is staged as follows:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor limited to its site of origin within the larynx, no lymph nodes involved.

Stage II:
Tumor invades adjacent tissues.

Stage III:
Tumor confined to the larynx but with vocal cord fixation; tumor invades adjacent tissues, or structures, or there is a metastasis to a single lymph node, 3 cm or less in dimension.

Stage IV:
Tumor extends beyond the larynx, has larger or more extensive metastases to lymph nodes, or spreads to distant organs.

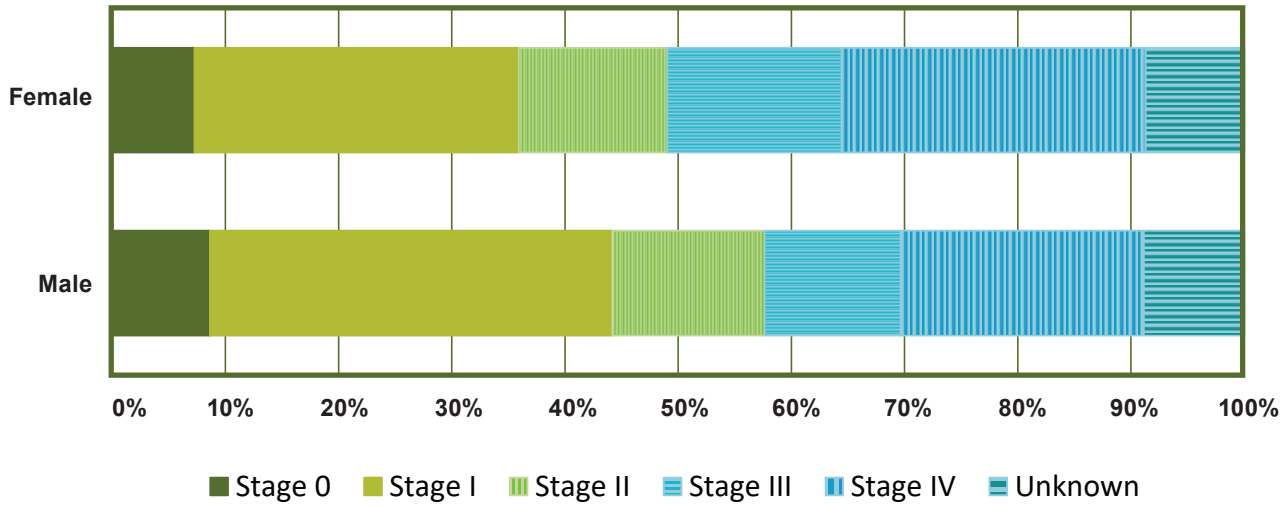
Stage IV laryngeal cancers are further subdivided into stages IVA, IVB, and IVC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Larynx Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	338	8.6	1,394	35.6	528	13.5	470	12.0	843	21.5	347	8.9	3,920	100.0
Female	64	7.3	253	28.7	116	13.1	136	15.4	237	26.8	77	8.7	883	100.0
Total	402	8.4	1,647	34.6	644	13.4	606	12.6	1,080	22.5	424	8.8	4,803	100.0
Race/Ethnicity:														
Non-Hispanic White	286	8.7	1,179	35.8	451	13.7	396	12.0	690	21.0	291	8.8	3,293	100.0
African American	24	5.5	113	26.0	59	13.6	75	17.2	132	30.3	32	7.4	435	100.0
Hispanic	61	8.0	238	31.3	98	12.9	104	13.7	189	25.1	68	9.1	758	100.0
Asian/Pacific Islander	20	8.2	94	38.5	30	12.3	25	10.3	53	21.7	22	9.0	244	100.0
Other/Unknown	11	15.1	23	31.5	6	8.2	6	8.2	16	21.9	11	15.1	73	100.0
All Race/Ethnicities	402	8.4	1,647	34.6	644	13.4	606	12.6	1,080	22.5	424	8.8	4,803	100.0
Age at Diagnosis:														
20-44	15	12.7	41	34.8	11	9.3	16	13.6	23	19.5	12	10.2	118	100.0
45-64	122	6.4	563	29.4	249	13.0	287	15.0	552	28.8	142	7.4	1,915	100.0
65+	265	9.6	1,043	37.7	384	13.9	303	10.9	505	18.2	270	9.8	2,770	100.0
All Ages	402	8.4	1,647	34.6	644	13.4	606	12.6	1,080	22.5	424	8.8	4,803	100.0

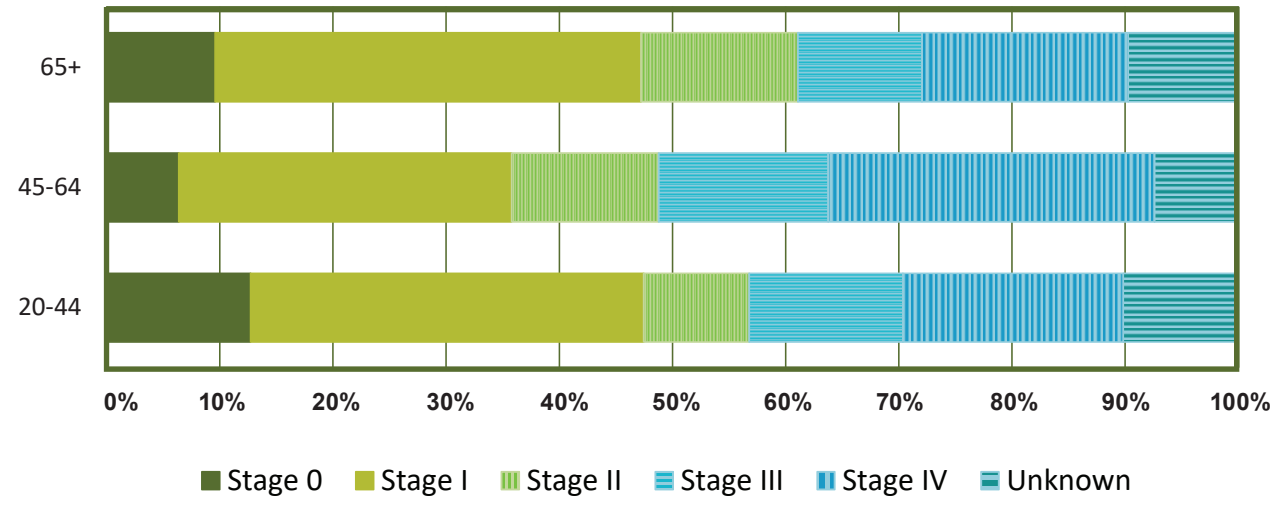
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Larynx Cancer



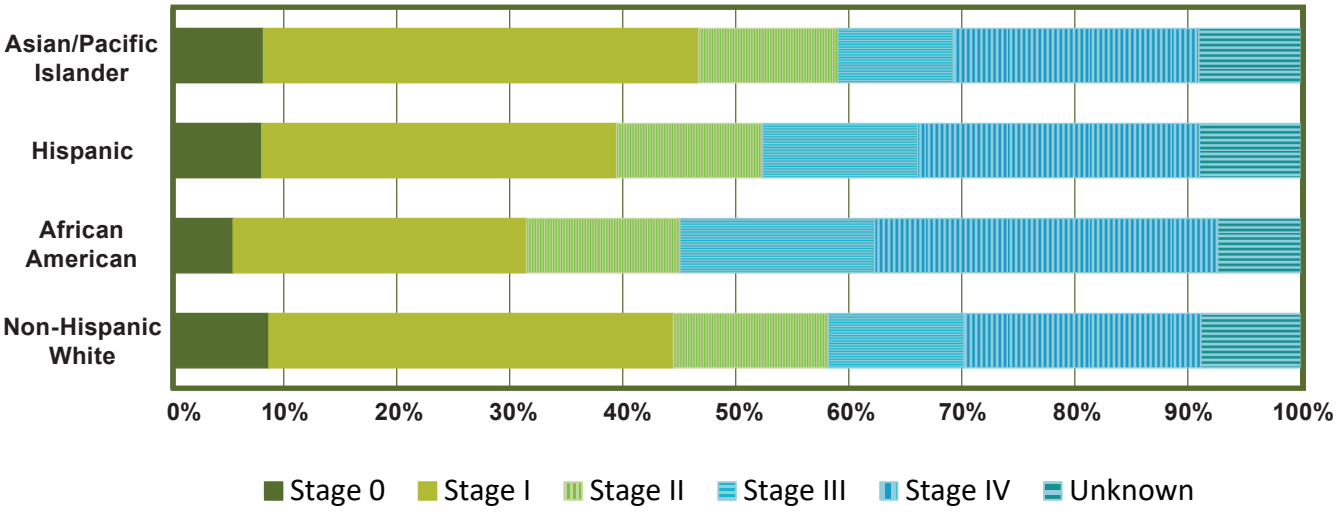
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Larynx Cancer



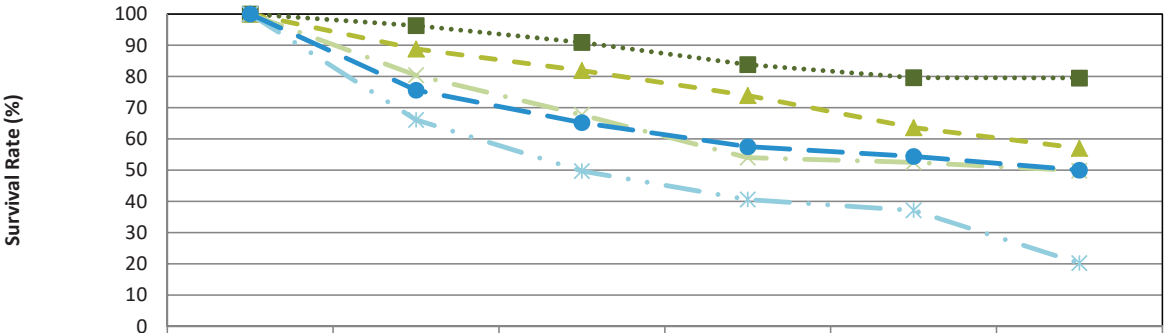
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Larynx Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Larynx Cancer by Stage at Diagnosis, Female, California, 2004-2009

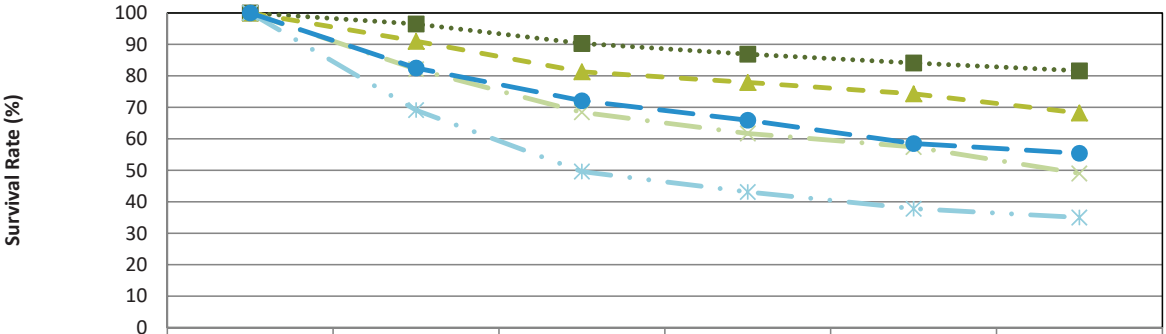


	0	12	24	36	48	60
Stage I	100	96.3	90.9	83.8	79.6	79.5
Stage II	100	88.8	81.9	73.9	63.6	57
Stage III	100	80.4	67.7	54	52.5	49.8
Stage IV	100	66.1	49.7	40.6	37.1	20.2
Unknown	100	75.6	65.2	57.5	54.4	50

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Larynx Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	96.5	90.3	86.9	84.1	81.6
Stage II	100	91	81.3	77.9	74.3	68.2
Stage III	100	82.1	68.4	61.7	57.4	49
Stage IV	100	69.1	49.6	43.1	37.8	35
Unknown	100	82.5	72.1	65.9	58.5	55.4

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

LIVER AND INTRAHEPATIC BILE DUCTS

Liver cancer is expected to be diagnosed in almost 3,100 Californians in 2012, and over 2,500 are expected to die of the disease. Liver cancer is one of the few cancers in California for which the incidence has increased since 1988. Typically, early stage liver cancers do not cause symptoms, which is why the disease is often detected only after it has spread.

The staging of liver cancer is based on factors that affect prognosis: presence or absence of tumor invasion into the blood vessels (vascular invasion), number of tumor nodules (single versus multiple), size of the largest nodule (≤ 5 cm versus > 5 cm), and lymph node involvement. If imaging studies show that complete removal of the tumor is not possible, surgery may not be performed. As a result, stage at diagnosis is not known for a substantial proportion of liver cancers.

The following characteristics are used in the staging of liver cancer:

Stage I:
Single tumor without vascular invasion.

Stage II:
Solitary tumor with vascular invasion or multiple tumors, none larger than 5 cm.

Stage III:
Any of the following: multiple tumors larger than 5 cm, major vascular invasion, direct invasion of adjacent organs, tumor perforates the visceral peritoneum, or spreads to regional lymph node(s).

Stage IV:
Presence of distant metastasis.

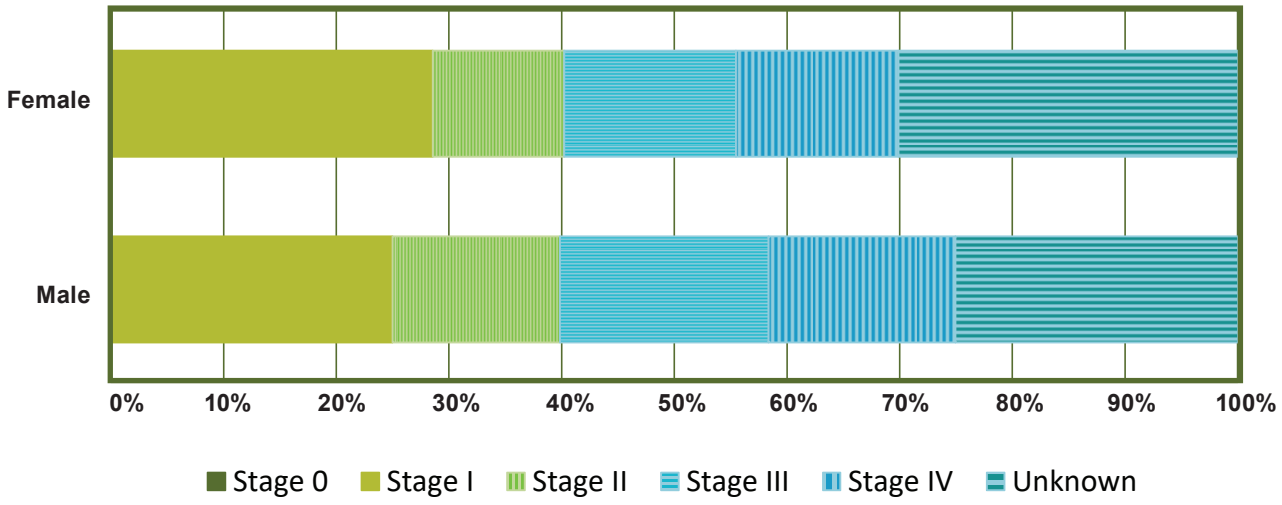
Stage III liver cancers are further subdivided into stages IIIA, IIIB, and IIIC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Liver and Intraheptic Bile Duct Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:												
Male	2,725	25.0	1,619	14.9	2,021	18.5	1,807	16.6	2,733	25.1	10,905	100.0
Female	1,239	28.5	507	11.7	661	15.2	626	14.4	1,308	30.1	4,341	100.0
Total	3,964	26.0	2,126	13.9	2,682	17.6	2,433	16.0	4,041	26.5	15,246	100.0
Race/Ethnicity:												
Non-Hispanic White	1,581	25.1	863	13.7	1,078	17.1	1,012	16.1	1,760	28.0	6,294	100.0
African American	261	23.3	136	12.1	228	20.3	218	19.5	278	24.8	1,121	100.0
Hispanic	1,032	25.4	575	14.2	668	16.5	649	16.0	1,136	28.0	4,060	100.0
Asian/Pacific Islander	1,051	29.3	532	14.8	676	18.9	526	14.7	799	22.3	3,584	100.0
Other/Unknown	39	20.9	20	10.7	32	17.1	28	15.0	68	36.4	187	100.0
All Race/Ethnicities	3,964	26.0	2,126	13.9	2,682	17.6	2,433	16.0	4,041	26.5	15,246	100.0
Age at Diagnosis:												
20-44	115	20.1	62	10.9	135	23.6	120	21.0	139	24.3	571	100.0
45-64	1,941	25.8	1,270	16.9	1,344	17.9	1,251	16.7	17	22.7	5,823	100.0
65+	1,908	26.6	794	11.1	1,203	16.8	1,062	14.8	2,197	30.7	7,164	100.0
All Ages	3,964	26.0	2,126	13.9	2,682	17.6	2,433	16.0	4,041	26.5	15,246	100.0

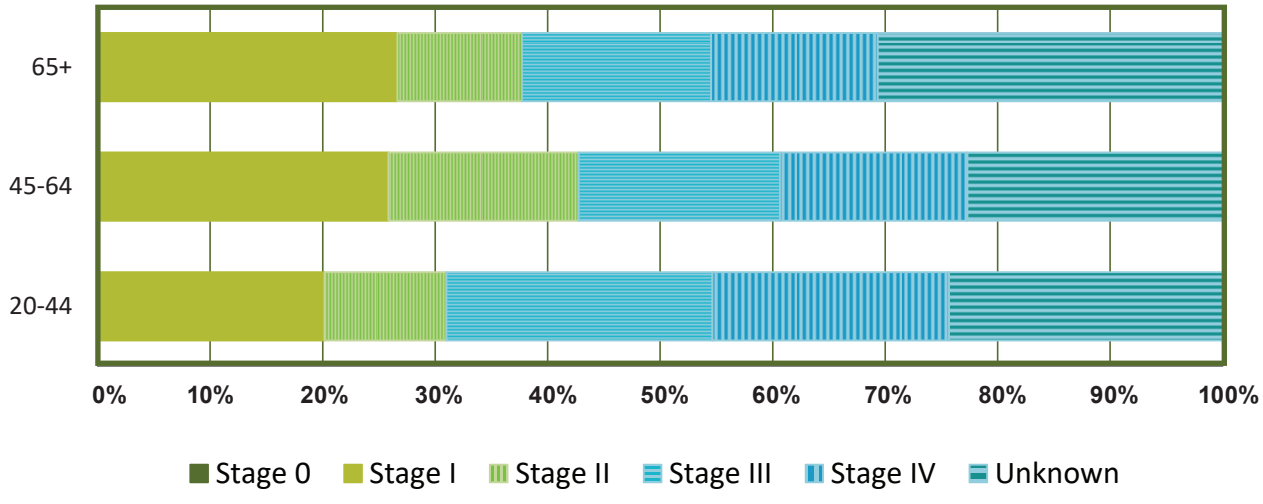
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Liver and Intrahepatic Bile Cancer



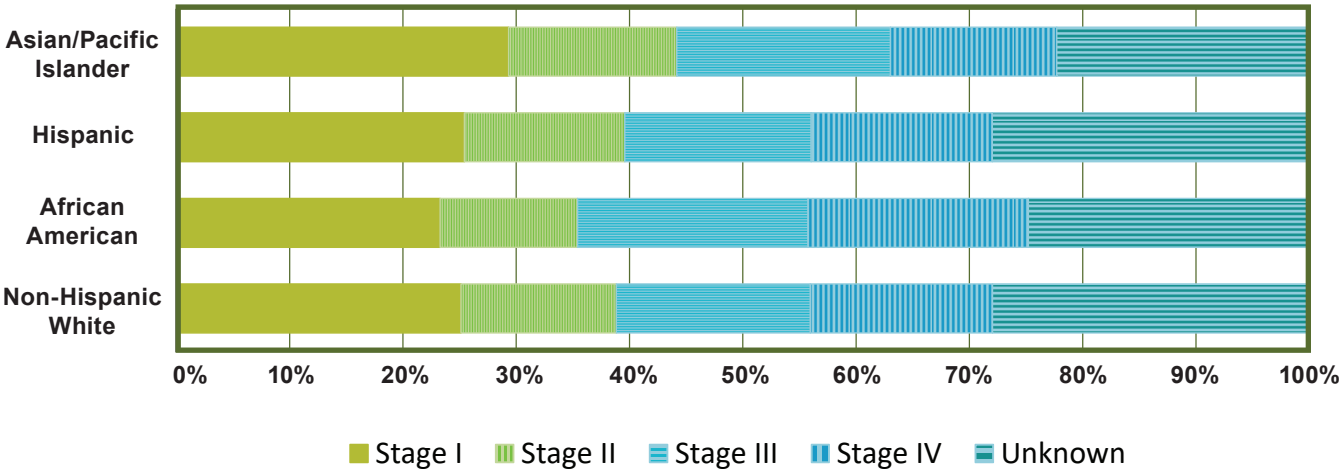
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Liver and Intrahepatic Bile Cancer



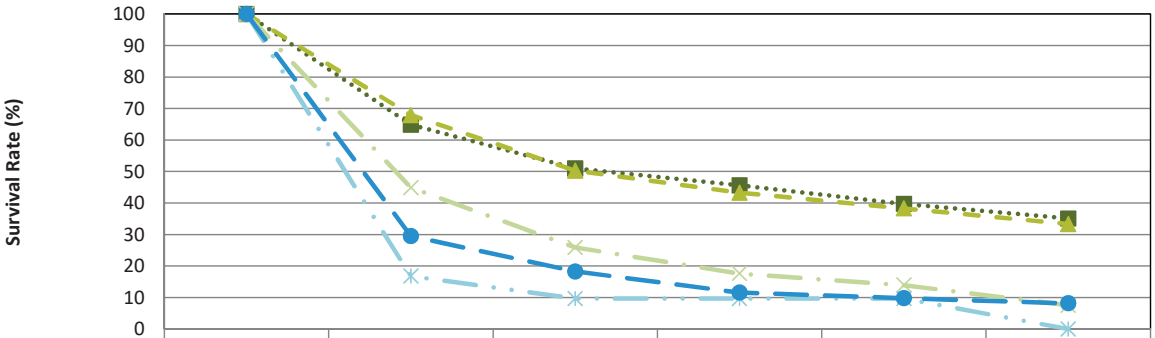
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Liver and Intrahepatic Bile Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Liver Cancer by Stage at Diagnosis, Female, California, 2004-2009

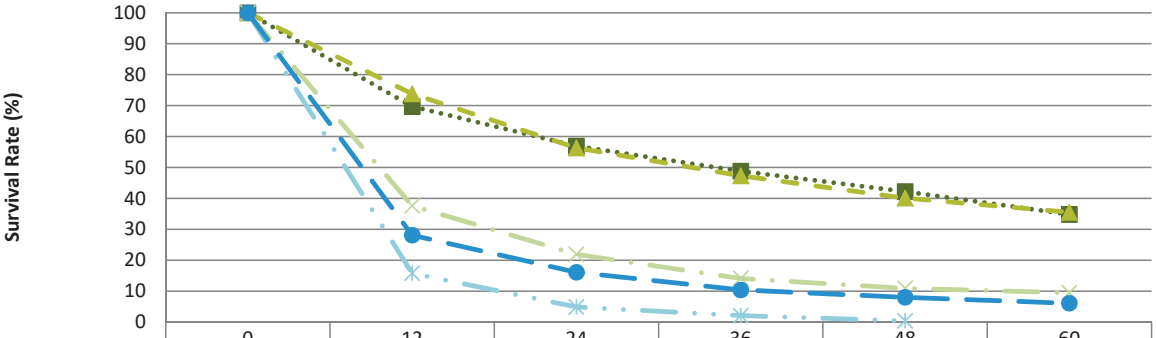


	0	12	24	36	48	60
Stage I	100	64.9	51	45.6	39.7	35.1
Stage II	100	67.9	50.3	43.3	38.3	33.3
Stage III	100	44.9	25.9	17.6	13.9	7.5
Stage IV	100	16.8	9.7	9.7	9.7	0
Unknown	100	29.5	18.3	11.6	9.8	8.2

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Liver Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	69.7	56.9	48.8	42.2	34.8
Stage II	100	73.8	56.3	47.3	40.1	35.5
Stage III	100	37.6	21.9	14.1	10.9	9.5
Stage IV	100	15.8	4.9	2.1	0.4	
Unknown	100	28.1	16.1	10.4	8	6.1

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

LUNG AND BRONCHUS

Lung cancer is the third most frequently diagnosed cancer in California for both men and women. Nearly 90 percent of lung cancer continues to be caused by smoking cigarettes. In 2012, over 16,500 Californians are expected to be diagnosed with lung cancer, and over 13,000 deaths due to the disease are expected to occur. The prognosis for lung cancer is typically poor because the lack of effective screening tests has resulted in the disease usually being diagnosed too late for surgery and other treatments to be curative.

Much research has been done to find effective screening tests for lung cancer. Routine chest radiographs and examination of sputum cytology have not been found useful for this purpose. However, low dose computerized tomography (CT) of the lungs recently has been shown to be useful in detecting early stage lung cancer in persons at high risk of developing lung cancer (i.e., 30 or more pack years of smoking). Some organizations are now recommending routine screening of persons at high risk of developing lung cancer with low dose lung CT scans, although at the time this report was written the U.S. Preventive Services Task Force had not yet opined on the matter. Importantly, screening with low dose lung CT scans has not been shown to be beneficial and is not recommended for persons not at high risk of developing the disease.

Staging of lung cancer is based on clinical information obtained from imaging procedures and laboratory tests plus pathological information obtained from surgical procedures and examination of the resected tumor and lymph nodes. Based on these characteristics, lung cancer stage of disease at diagnosis can be summarized as follows:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor may involve the main bronchus, or visceral pleura, but without spread to lymph nodes.

Stage II:
Tumor (a) as above but with spread to lymph nodes, or (b) there is no spread to lymph nodes, but the tumor extends to adjacent structures (such as the chest wall or diaphragm), or is associated with atelectasis, or obstructive pneumonitis of the entire lung.

Stage III:
Tumor with either (a) any of the features described above plus presence of extensive spread to lymph nodes, or (b) regardless of lymph node status, tumor spreads further into adjacent organs (such as the heart, great vessels, trachea, esophagus, or ribs); or there are multiple tumor nodules in the same lobe; or there is malignant pleural effusion.

Stage IV:
Presence of metastasis to a distant organ.

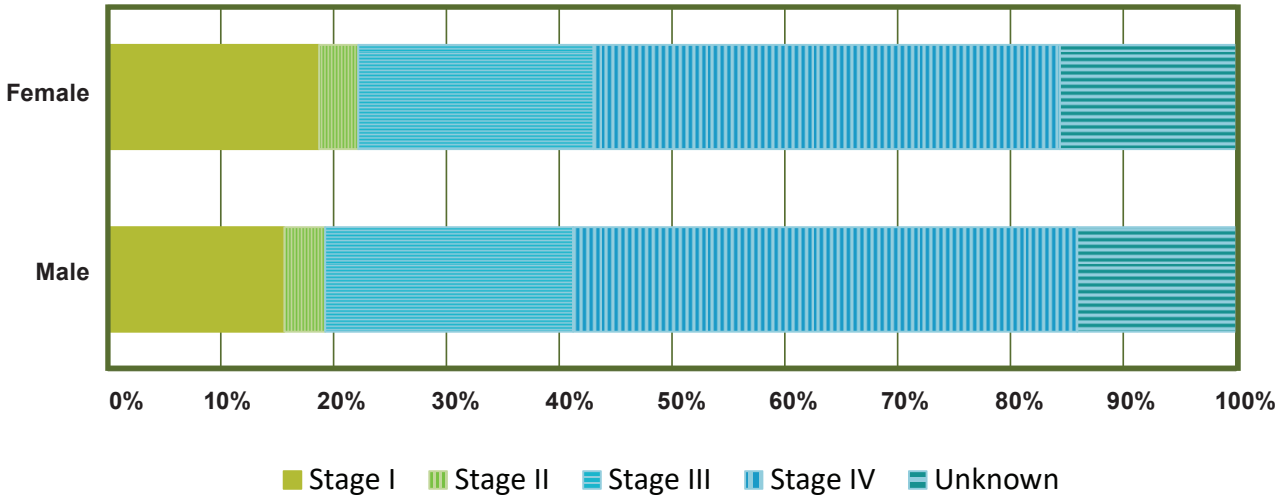
Stages I, II, and III lung cancers are further subdivided into stages IA, IB, IIA, IIB, IIA, and IIIB; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Lung and Bronchus Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	19	0.0	7,035	15.6	1,631	3.6	9,914	22.0	20,165	44.7	6,356	14.1	45,120	100.0
Female	15	0.0	7,812	18.7	1,452	3.5	8,725	20.9	17,302	41.6	6,528	15.6	41,834	100.0
Total	34	0.0	14,847	17.1	3,083	3.6	18,639	21.4	37,467	43.1	12,884	14.8	86,954	100.0
Race/Ethnicity:														
Non-Hispanic White	30	0.1	11,381	18.1	2,301	3.7	13,317	21.2	26,422	42.0	9,423	15.0	62,874	100.0
African American	3	0.1	899	13.9	234	3.6	1,510	23.3	2,959	45.6	881	13.6	6,486	100.0
Hispanic	0	0.0	1,175	13.5	262	3.0	1,849	21.2	4,056	46.5	1,378	15.8	8,720	100.0
Asian/Pacific Islander	0	0.0	1,297	15.8	263	3.2	1,821	22.2	3,762	45.9	1,050	12.8	8,193	100.0
Other/Unknown	1	0.1	95	14.0	23	3.4	142	20.9	268	39.4	152	22.3	681	100.0
All Race/Ethnicities	34	0.0	14,847	17.1	3,083	3.6	18,639	21.4	37,467	43.1	12,884	14.8	86,954	100.0
Age at Diagnosis:														
20-44	0	0.0	126	9.0	43	3.1	164	18.9	715	51.2	249	17.8	1,297	100.0
45-64	8	0.0	3,384	14.6	865	3.7	4,882	21.0	11,589	49.9	2,504	10.8	23,232	100.0
65+	26	0.0	11,337	18.2	2,175	3.5	13,493	21.7	25,163	40.4	10,131	16.3	62,325	100.0
All Ages	34	0.0	14,847	17.1	3,083	3.6	18,639	21.4	37,467	43.1	12,884	14.8	86,954	100.0

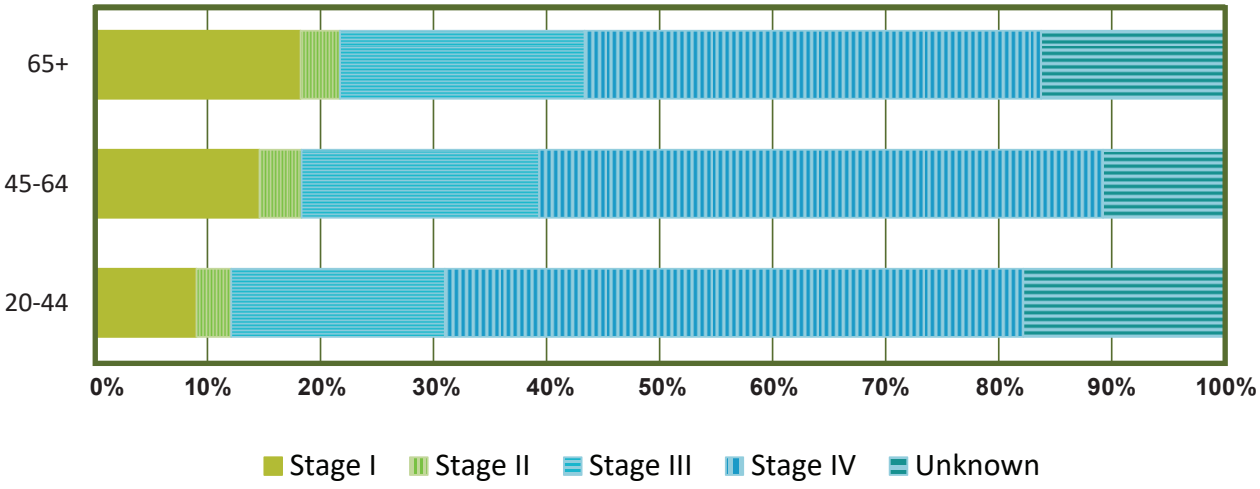
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Lung and Bronchus Cancer



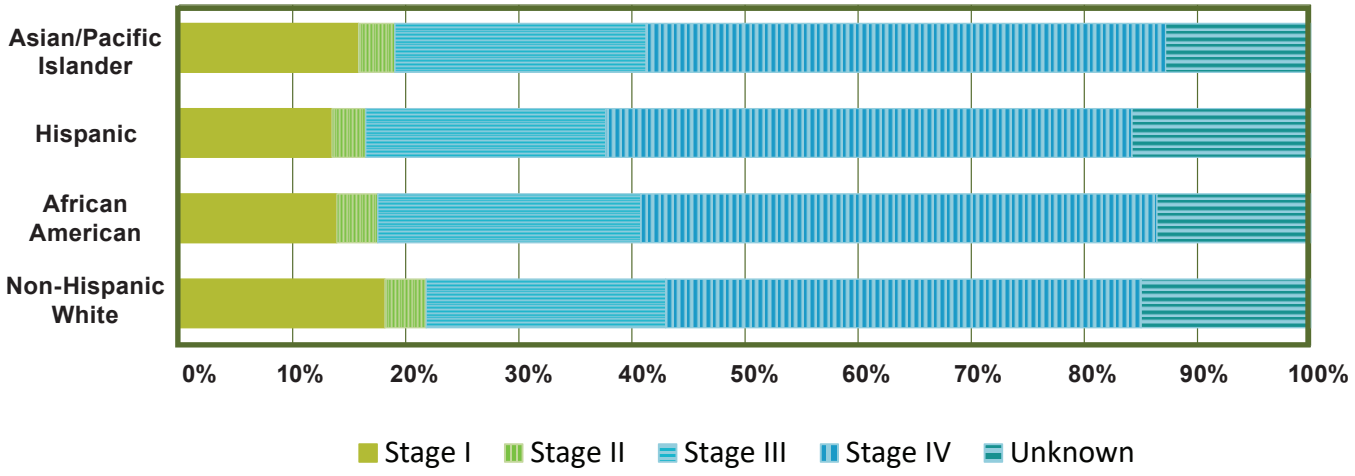
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Lung and Bronchus Cancer



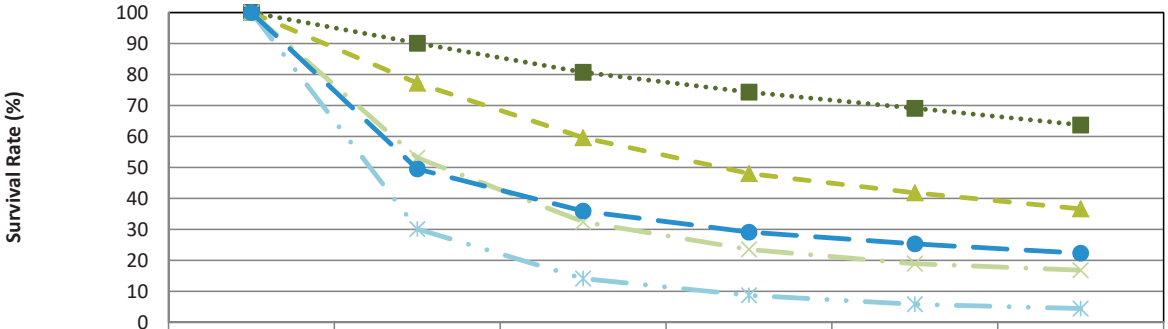
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Lung and Bronchus Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Lung and Bronchus Cancer by Stage at Diagnosis, Female, California, 2004-2009

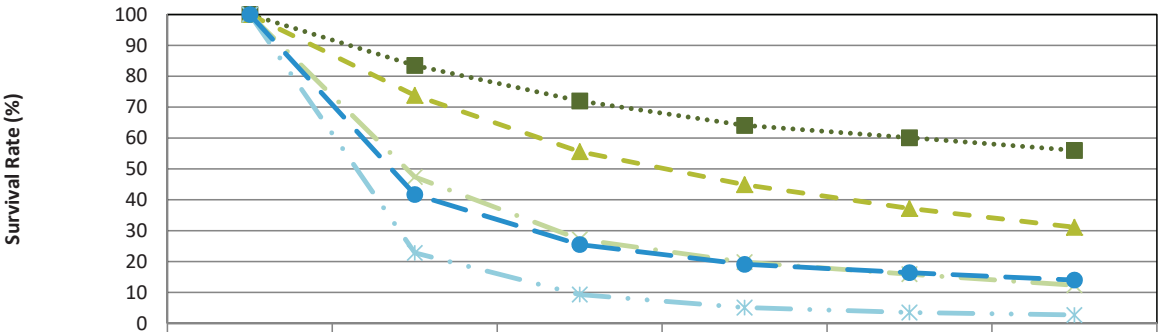


	0	12	24	36	48	60
Stage I	100	90.1	80.7	74.3	69.1	63.7
Stage II	100	77.2	59.6	48	41.8	36.6
Stage III	100	53.1	32.4	23.5	18.9	16.8
Stage IV	100	30.1	14.1	8.7	5.8	4.4
Unknown	100	49.5	35.9	29.1	25.3	22.3

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Lung and Bronchus Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	83.5	72	64.1	60.1	56
Stage II	100	73.8	55.6	44.9	37.2	31.1
Stage III	100	47.4	27.2	19.8	15.9	12.3
Stage IV	100	22.8	9.3	5.1	3.5	2.7
Unknown	100	41.7	25.5	19.1	16.4	14

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

MELANOMA OF THE SKIN

Melanoma is the most serious and aggressive type of skin cancer. The incidence of the disease has sharply increased since the early 1990s. In 2012, over 7,000 Californians are expected to be diagnosed with melanoma. If detected early, these tumors are highly curable. In California, about 77 percent of melanomas are diagnosed at stage 0 or I.

Staging of melanomas is staged based on the tumor thickness, depth of invasion, the presence of ulceration, and evaluation of lymph nodes for metastasis. Generally speaking, the following characteristics are used to determine the stage at diagnosis for melanomas:

Stage 0:
Melanoma *in situ*.

Stage I - II:
Different combinations of tumor thickness and presence (or absence) of skin ulceration, without spread to lymph nodes.

Stage III:
Tumor of any thickness (with or without ulceration), that has spread to regional lymph nodes.

Stage IV:
Presence of metastasis to any distant lymph node, or organ.

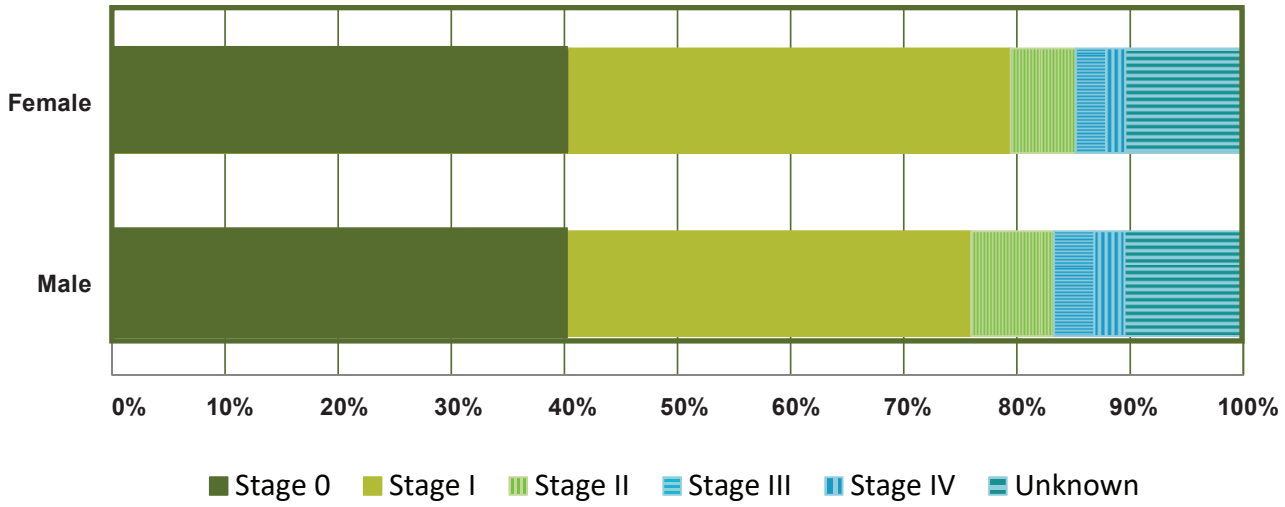
Stages I, II and III melanomas of the skin are further subdivided into stages IA, IB, IIA, IIB, IIC, IIIA, IIIB, and IIIC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Melanoma of the Skin Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	14,018	39.9	12,696	36.1	2,577	7.3	1,259	3.6	932	2.7	3,698	10.5	35,180	100.0
Female	9,902	40.4	9,554	39.0	1,413	5.8	651	2.7	423	1.7	2,553	10.4	24,496	100.0
Total	23,920	40.1	22,250	37.3	3,990	6.7	1,910	3.2	1,355	2.3	6,251	10.5	59,676	100.0
Race/Ethnicity:														
Non-Hispanic White	20,119	39.2	19,441	37.9	3,616	7.1	1,673	3.3	1,182	2.3	5,248	10.2	51,279	100.0
African American	26	24.3	25	23.4	14	13.1	10	9.4	15	14.0	17	15.9	107	100.0
Hispanic	803	31.6	890	35.1	229	9.0	168	6.6	119	4.7	329	13.0	2,538	100.0
Other/Unknown	2,881	53.5	1,784	33.1	82	1.5	22	0.4	9	0.2	606	11.3	5,384	100.0
Asian/Pacific Islander	91	24.7	110	29.9	49	13.3	37	10.1	30	8.2	51	13.9	368	100.0
All Race/Ethnicities	23,920	40.1	22,250	37.3	3,990	6.7	1,910	3.2	1,355	2.3	6,251	10.5	59,676	100.0
Age at Diagnosis:														
20-44	2,504	30.4	3,910	47.5	344	4.2	358	4.4	137	1.7	980	11.9	8,233	100.0
45-64	9,178	39.0	9,419	40.0	1,267	5.4	790	3.4	546	2.3	2,323	9.9	23,523	100.0
65+	12,238	43.8	8,921	32.0	2,379	8.5	762	2.7	672	2.4	2,948	10.6	27,920	100.0
All Ages	23,920	40.1	22,250	37.3	3,990	6.7	1,910	3.2	1,355	2.3	6,251	10.5	59,676	100.0

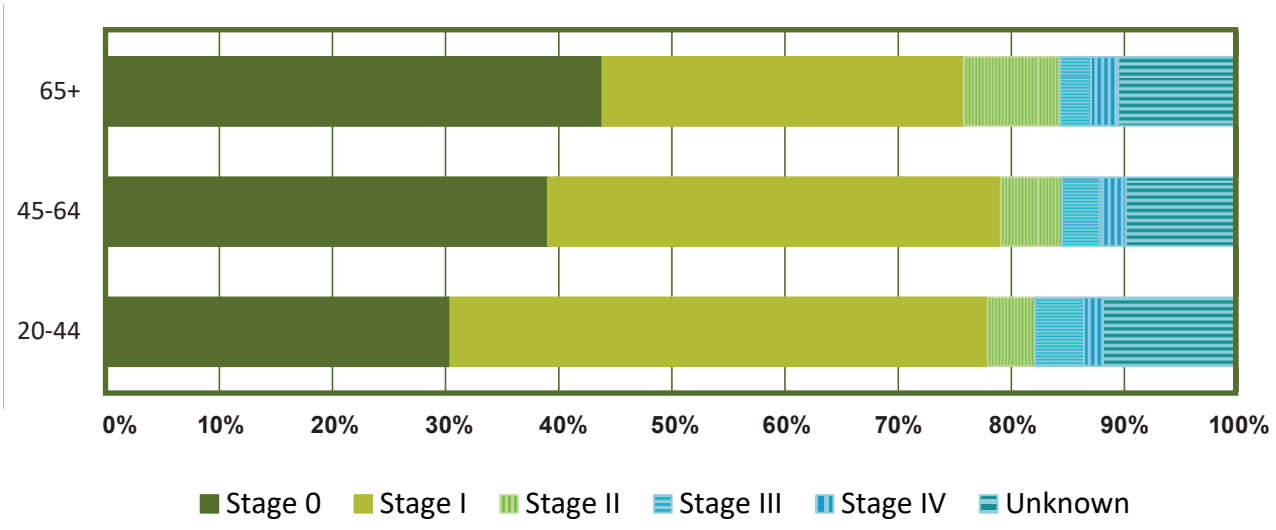
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Melanoma of the Skin Cancer



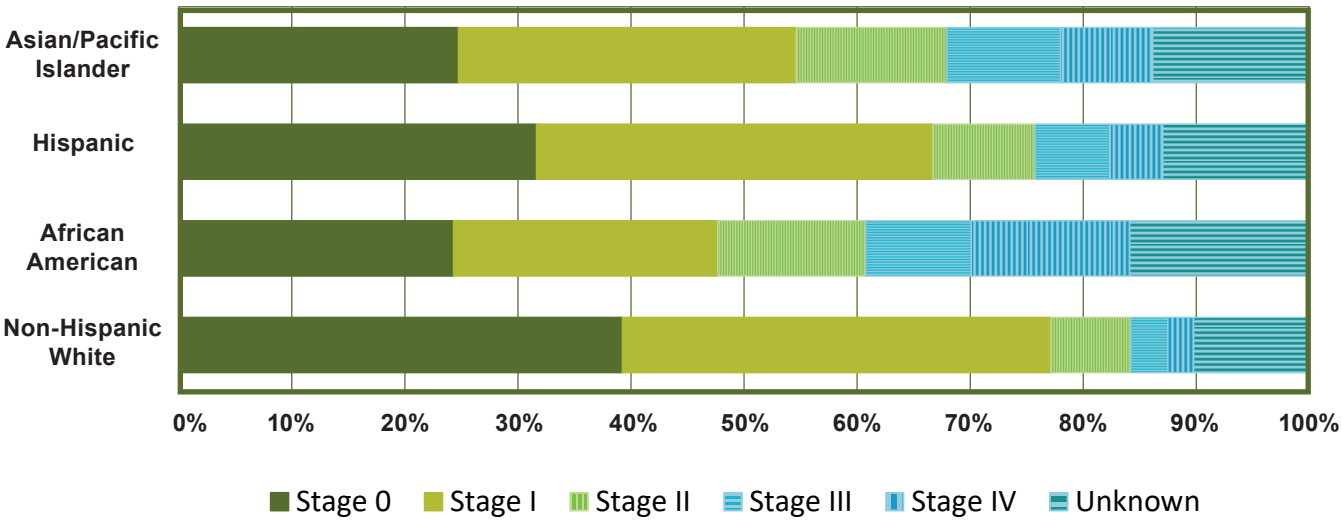
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Melanoma of the Skin Cancer



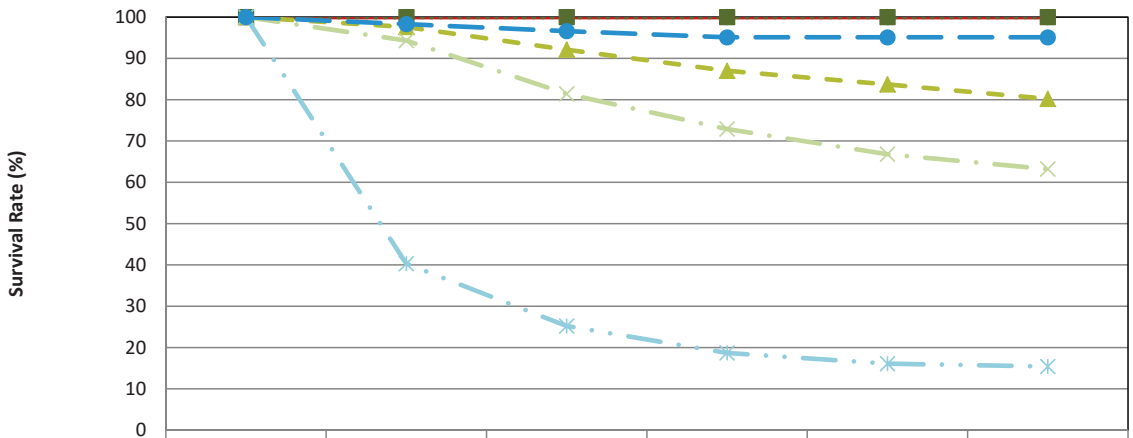
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Melanoma of the Skin Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Melanoma of the Skin Cancer by Stage at Diagnosis, Female, California, 2004-2009

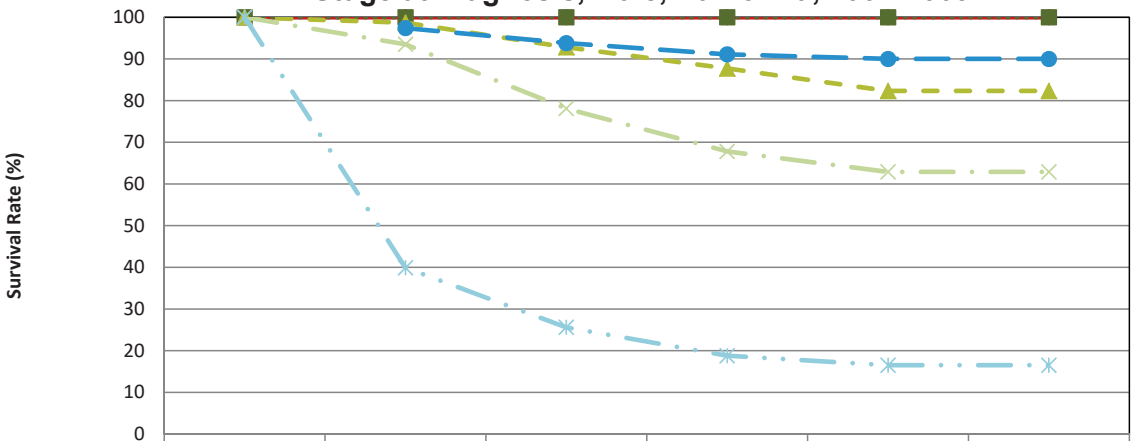


	0	12	24	36	48	60
In Situ	100	100	100	100	100	100
Stage I	100	100	100	100	100	100
Stage II	100	97.6	92.1	87	83.7	80.2
Stage III	100	94.3	81.4	72.9	66.8	63.2
Stage IV	100	40.3	25.2	18.7	16.1	15.4
Unknown	100	98.3	96.6	95.1	95.1	95.1

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Melanoma of the Skin Cancer by Stage at Diagnosis, Male, California, 2004-2009

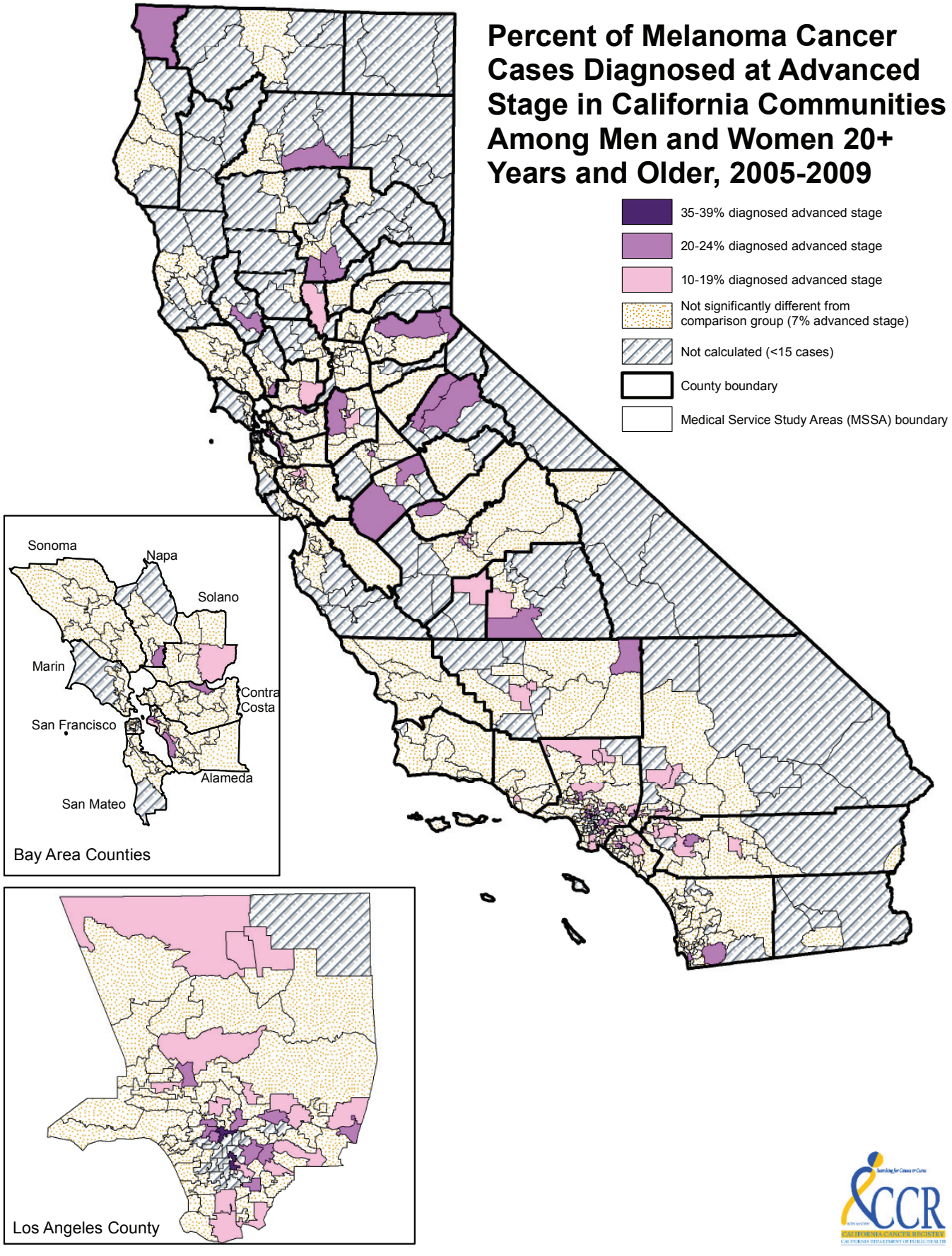


	0	12	24	36	48	60
In Situ	100	100	100	100	100	100
Stage I	100	100	100	100	100	100
Stage II	100	98.7	92.8	87.7	82.3	82.3
Stage III	100	93.5	78.1	67.8	62.9	62.9
Stage IV	100	39.9	25.6	18.8	16.5	16.5
Unknown		97.4	93.8	91.1	90	90

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Melanoma Cancer Cases Diagnosed at Advanced Stage in California Communities Among Men and Women 20+ Years and Older, 2005-2009



ORAL CAVITY AND PHARYNX

Despite advances is surgical treatment, cancers of the oral cavity and pharynx remain a challenge because of the functional and esthetic problems that may result. In 2012, almost 3,700 Californians are expected to be diagnosed with cancer of the oral cavity and pharynx, and 870 deaths due to the disease are expected to occur.

The oral cavity includes the lip, tongue, floor of the mouth, gingiva, buccal surface (mucosa), hard palate and oropharynx. Although these sites are accessible for self-inspection or during medical and dental exams, cancer is often confused with more common benign lesions. As a result, the majority of oral pharyngeal cancers are diagnosed after the disease has spread, when the prognosis for both survival and quality of life are poor. Greater awareness is needed to improve the detection of oral cancers.

Staging of oral cavity cancers is based on tumor size and extension of invasion to adjacent tissues. Spread to any lymph node places the tumor at stage III or higher. Although staging rules vary according to the specific site of the tumor within the oral cavity, the following characteristic are considered in the staging of cancers of the oral cavity and pharynx:

Stage 0:
Carcinoma *in situ*, no metastases.

Stage I:
Tumor 2 cm or less in dimension, confined to the specific site of origin.

Stage II:
Tumor between 2 cm and 4 cm, or with extension to the adjacent tissue.

Stage III:
Tumor larger than 4 cm, or smaller tumor with metastasis no larger than 3 cm in a single lymph node.

Stage IV:
Tumor invades muscle, bone or other structures; tumor with larger metastases to lymph nodes; or presence of distant organ metastasis.

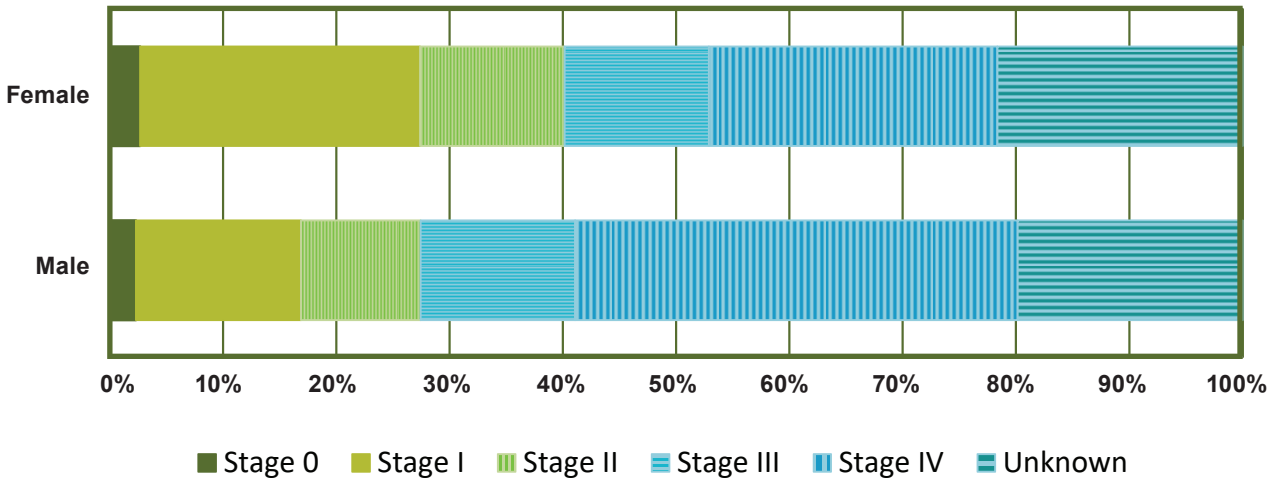
Stage IV oral cancer is further subdivided into stages IVA, IVB, and IVC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Oral Cavity and Pharynx Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	291	2.3	1,842	14.6	1,336	10.6	1,726	13.7	4,941	39.1	2,513	19.9	12,649	100.0
Female	154	2.7	1,430	24.7	738	12.8	737	12.7	1,474	25.5	1,252	25.5	5,785	100.0
Total	445	2.4	3,272	17.8	2,074	11.3	2,463	13.4	6,415	34.8	3,765	20.4	18,434	100.0
Race/Ethnicity:														
Non-Hispanic White	351	2.7	2,447	18.8	1,382	10.6	1,679	12.9	4,516	34.7	2,632	20.2	13,007	100.0
African American	16	1.6	107	10.5	111	10.8	141	13.8	458	44.7	191	18.7	1,024	100.0
Hispanic	30	1.4	323	15.0	280	13.0	290	13.4	800	37.1	434	20.1	2,157	100.0
Asian/Pacific Islander	20	1.1	325	17.9	267	14.7	321	17.7	560	30.9	321	17.7	1,814	100.0
Other/Unknown	28	6.5	70	16.2	34	7.9	32	7.4	81	18.7	187	43.3	432	100.0
All Race/Ethnicities	445	2.4	3,272	17.8	2,074	11.3	2,463	13.4	6,415	34.8	3,765	20.4	18,434	100.0
Age at Diagnosis:														
20-44	21	1.3	355	22.1	227	14.1	241	15.0	495	30.8	266	16.6	1,605	100.0
45-64	188	2.2	1,395	16.0	868	10.0	1,201	13.8	3,515	40.4	1,534	17.6	8,701	100.0
65+	236	2.9	1,522	18.7	979	12.0	1,021	12.6	2,405	29.6	1,965	24.2	8,128	100.0
All Ages	445	2.4	3,272	17.8	2,074	11.3	2,463	13.4	6,415	34.8	3,765	20.4	18,434	100.0

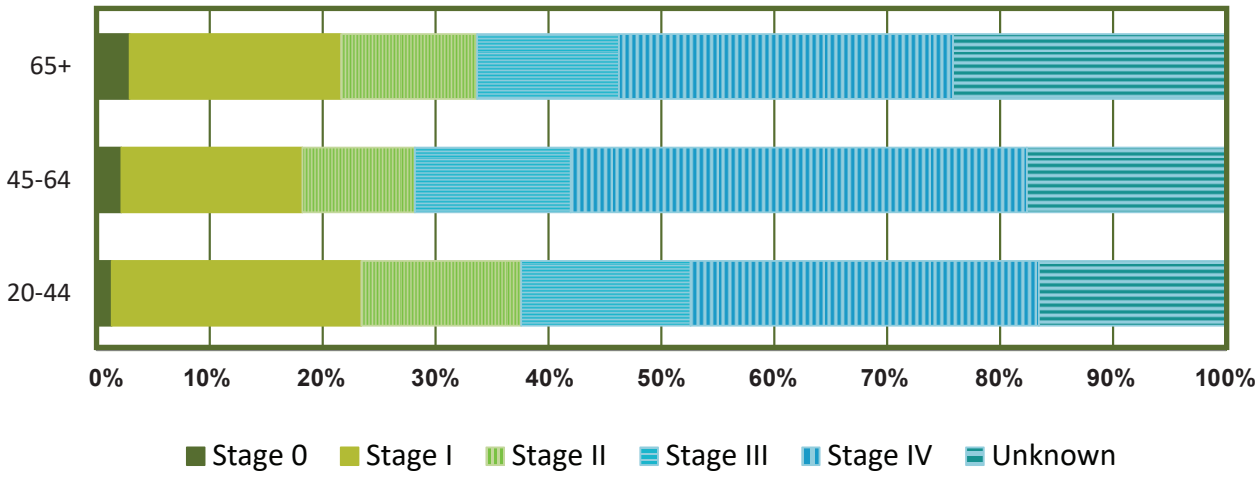
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Oral Cavity and Pharynx Cancer



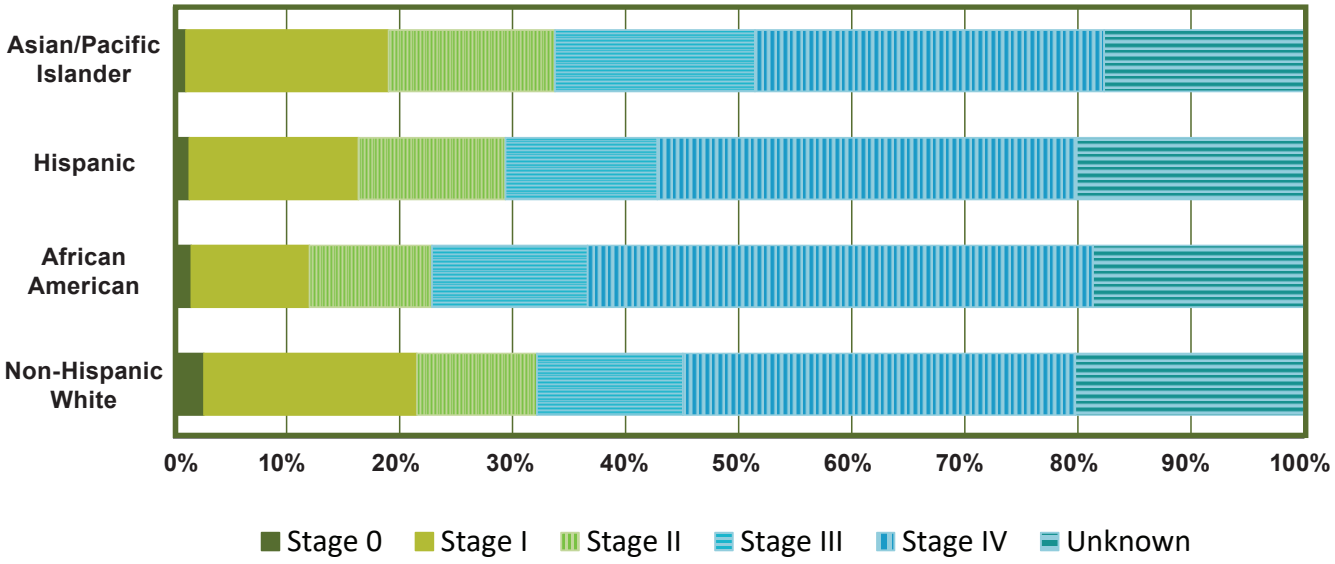
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Oral Cavity and Pharynx Cancer



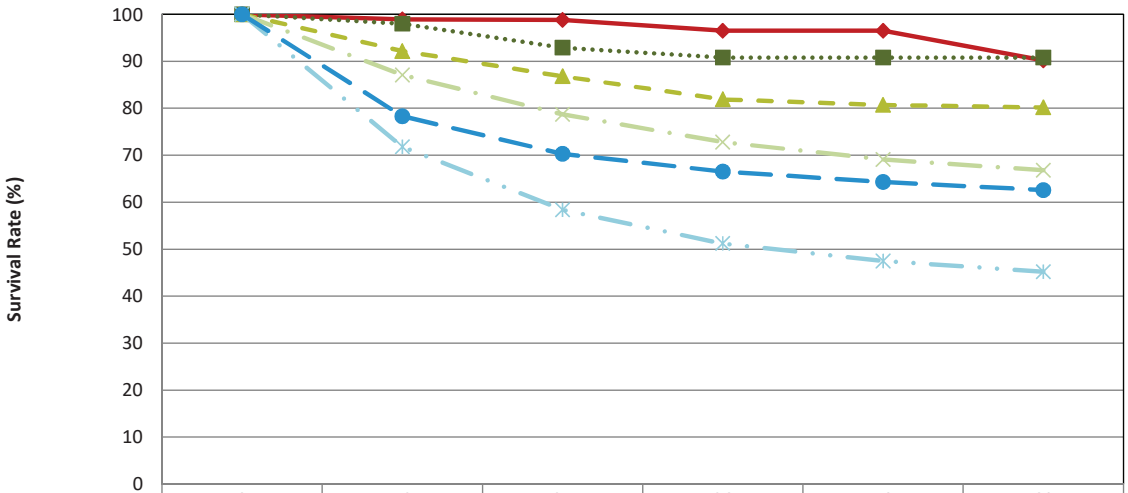
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Oral Cavity and Pharynx Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Oral Cavity and Pharynx Cancer by Stage at Diagnosis, Female, California, 2004-2009

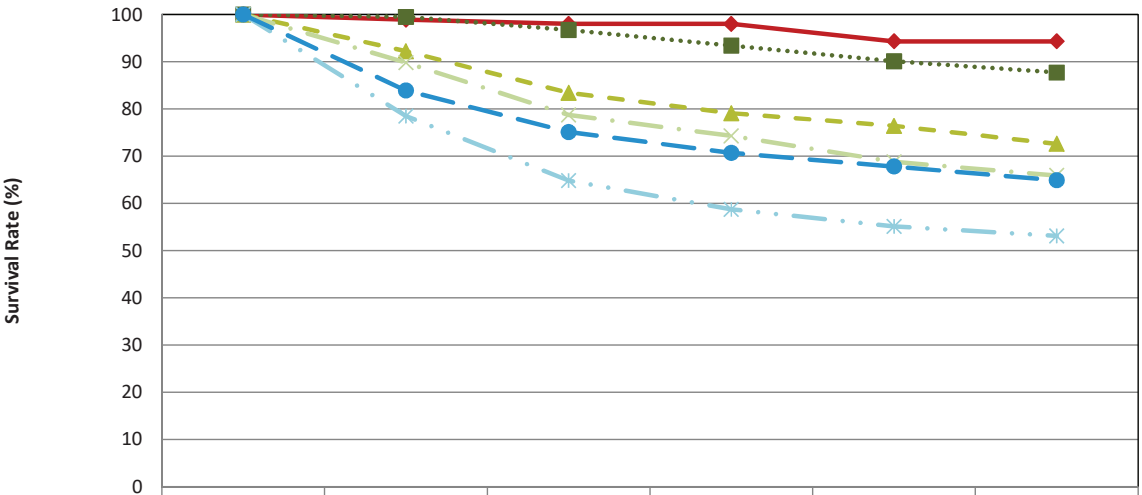


	0	12	24	36	48	60
In Situ	100	98.9	98.8	96.5	96.5	90.2
Stage I	100	98	92.9	90.8	90.8	90.8
Stage II	100	92.2	86.8	81.9	80.7	80.2
Stage III	100	87.1	78.7	72.8	69.1	66.8
Stage IV	100	71.8	58.4	51.2	47.5	45.2
Unknown	100	78.3	70.3	66.5	64.3	62.6

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Oral Cavity and Pharynx Cancer by Stage at Diagnosis, Male, California, 2004-2009

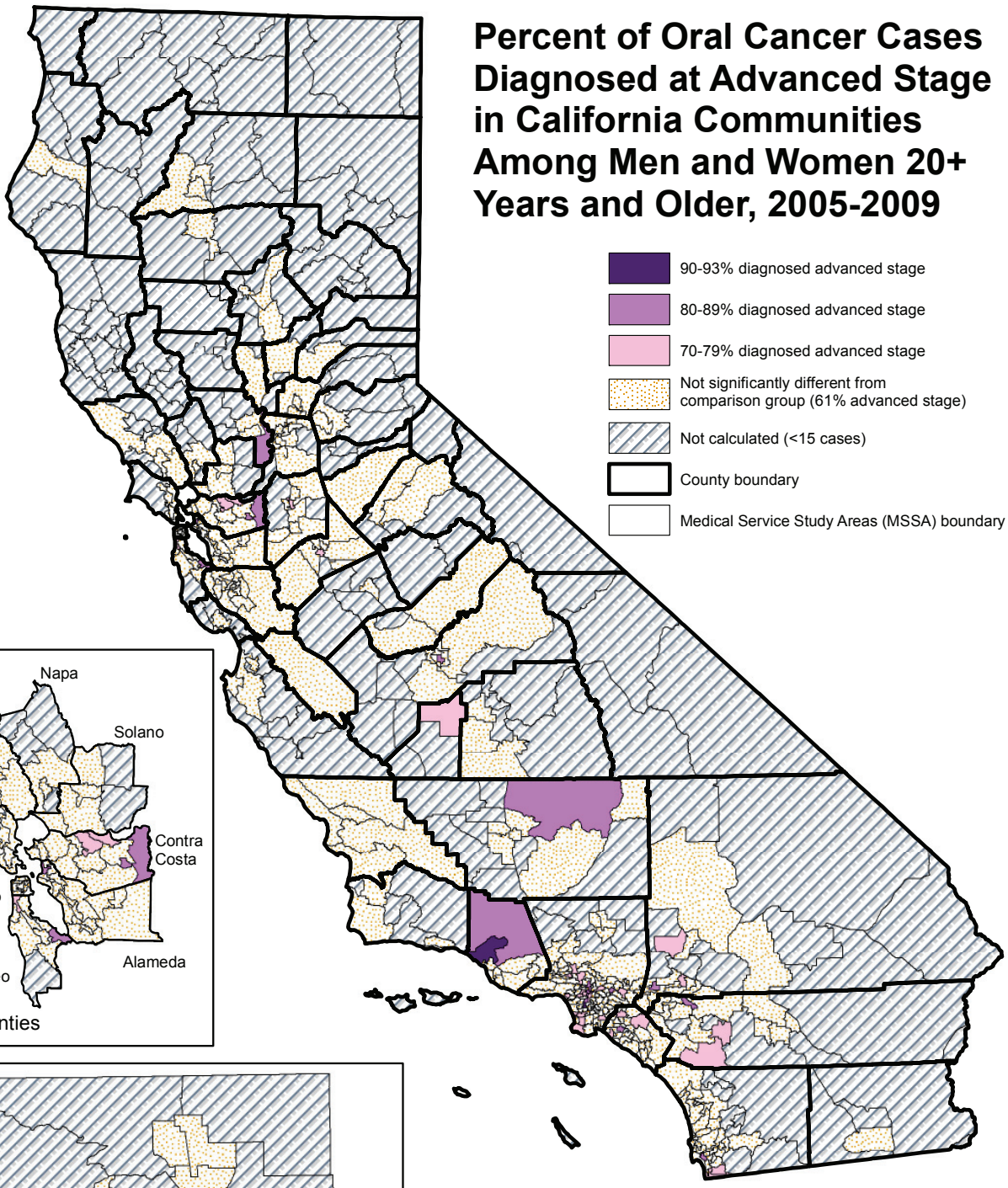


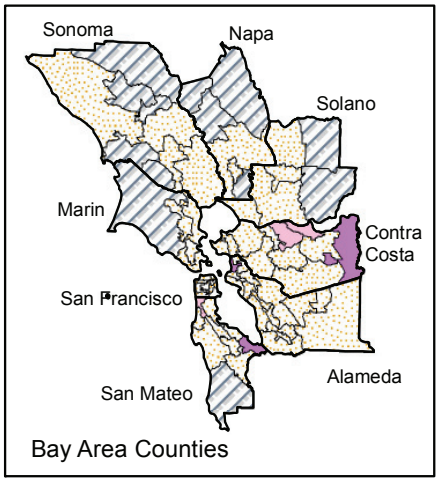
	0	12	24	36	48	60
In Situ	100	98.9	98	98	94.3	94.3
Stage I	100	99.5	96.7	93.4	90.1	87.7
Stage II	100	92.2	83.4	79.1	76.4	72.6
Stage III	100	89.8	78.7	74.3	68.8	65.9
Stage IV	100	78.5	64.8	58.7	55.1	53.1
Unknown	100	83.9	75.1	70.7	67.8	64.9

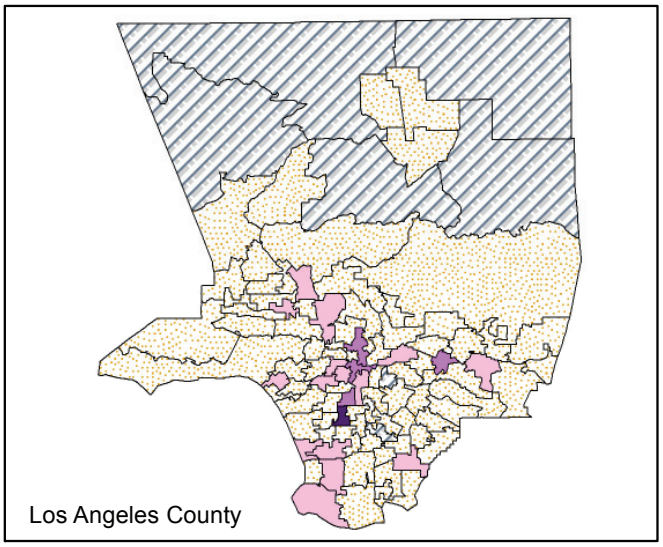
Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Oral Cancer Cases Diagnosed at Advanced Stage in California Communities Among Men and Women 20+ Years and Older, 2005-2009







OVARY

Ovarian cancer is the most deadly of all gynecologic cancers. In 2012, over 2,300 women are expected to be diagnosed with ovarian cancer in California, and approximately 1,550 women will die of the disease. At the present time there are no effective screening tests for ovarian cancer. (The Pap test does not check for ovarian cancer). Thus, the disease tends to be diagnosed late, when the prognosis is poor.

The main factor considered when determining the stage of ovarian cancer at the time of diagnosis is the extent of disease, regardless of the size of the tumor. Ovarian cancers are classified as follows:

Stage I:
Tumor limited to one or both ovaries.

Stage II:
Tumor involves one or both ovaries and extends to the pelvis.

Stage III:
Tumor involves one or both ovaries and spreads to the peritoneum beyond the pelvis and/or to lymph nodes.

Stage IV:
Tumor spreads to distant organs.

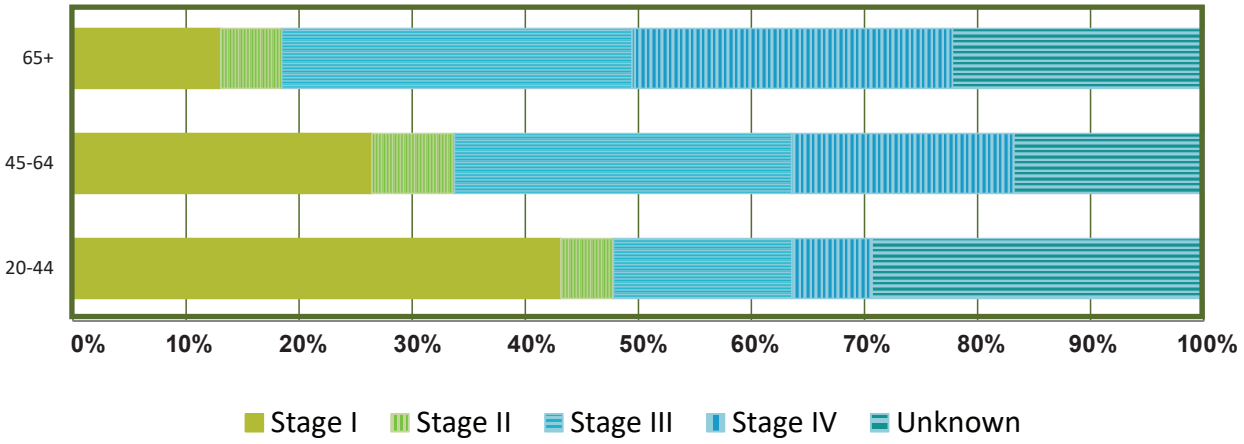
Stages I, II, and III ovarian cancers are further subdivided into stages IA, IB, IC, IIA, IIB, IIC, IIIA, IIIB, and IIIC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Women Age 20 and Older Diagnosed With Ovary Cancer, by Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Race/Ethnicity:												
White	1,929	21.6	544	6.1	2,676	30.0	1,923	21.5	1,860	20.8	8,932	100.0
African American	136	19.4	29	4.1	176	25.1	205	29.2	155	22.1	701	100.0
Hispanic	849	28.5	169	5.7	729	24.4	559	18.7	677	22.7	2,983	100.0
Asian/Pacific Islander	474	30.6	122	7.9	369	23.9	281	18.2	301	19.5	1,547	100.0
Other/Unknown	39	29.6	6	4.6	34	25.7	27	20.4	26	19.7	132	100.0
All Race/Ethnicities	3,427	24.0	864	6.1	3,950	27.9	2,968	21.0	2,993	21.1	14,295	100.0
Age at Diagnosis:												
20-44	1,063	43.1	115	4.7	389	15.8	175	7.1	723	29.3	2,465	100.0
45-64	1,621	26.4	447	7.3	1,829	29.8	1,206	19.7	1,029	16.8	6,132	100.0
65+	743	13.0	308	5.4	1,766	31.0	1,614	28.3	1,267	22.2	5,698	100.0
All Ages	3,427	24.0	870	6.1	3,984	27.9	2,995	21.0	3,019	21.1	14,295	100.0

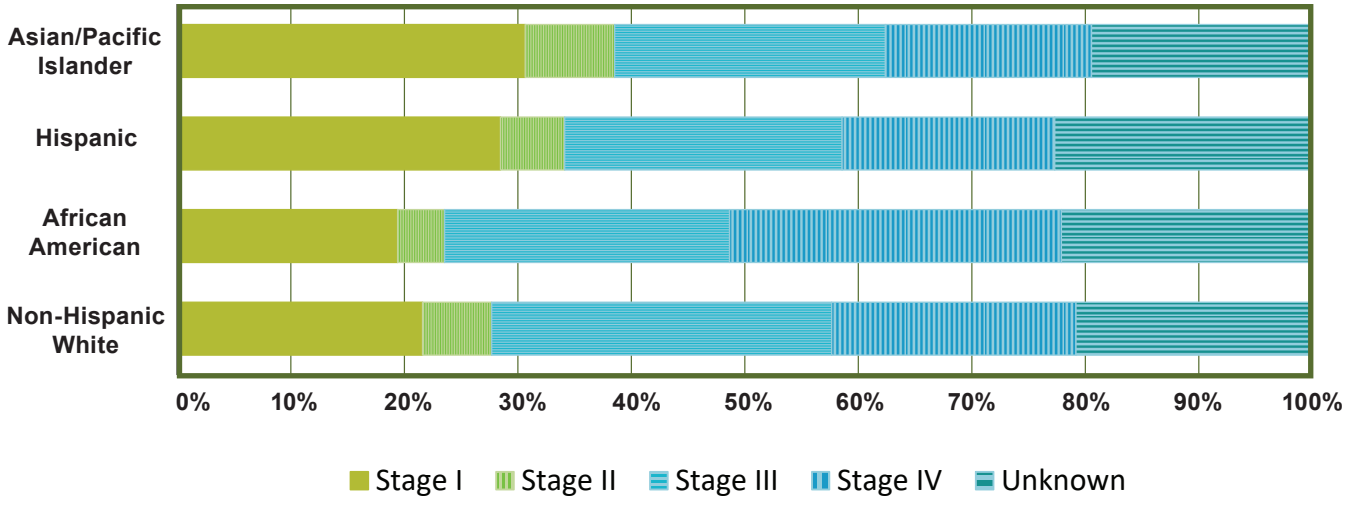
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Ovary Cancer



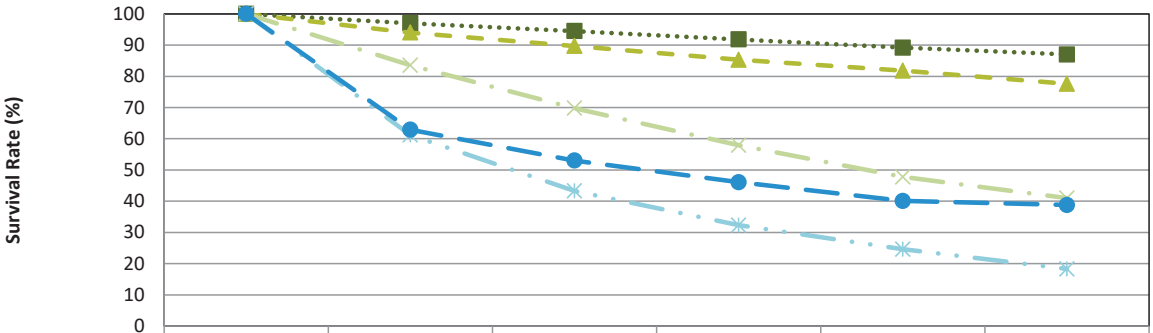
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Ovary Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Ovary Cancer by Stage at Diagnosis, Female, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	97	94.5	91.8	89.2	87
Stage II	100	94	89.7	85.3	81.8	77.6
Stage III	100	83.5	69.8	57.9	47.8	41
Stage IV	100	61.2	43.3	32.3	24.6	18.3
Unknown	100	62.9	53	46.1	40.1	38.8

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

PANCREAS

Pancreatic cancer is the fourth leading cause of cancer deaths in California. In 2012, approximately 3,750 new cancers of the pancreas are expected to be diagnosed, and over 3,600 people will die from the disease. Pancreatic cancer is so lethal because most patients do not experience symptoms of the disease until it is at an advanced and incurable stage. At present, there are no effective screening tests for pancreatic cancer.

Staging of pancreatic cancers is based on the size and extent of the primary tumor, as well as on clinical relevance. Stage III disease refers to tumors that cannot be surgically removed, while stage IV is reserved for metastatic disease.

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor is limited to the pancreas, without spread to lymph nodes.

Stage II:
Tumor may be localized, or extend beyond the pancreas, with spread to lymph nodes.

Stage III:
Tumor involves the celiac axis, or the superior mesenteric artery (unresectable tumor), with or without spread to lymph nodes.

Stage IV:
Presence of distant metastasis.

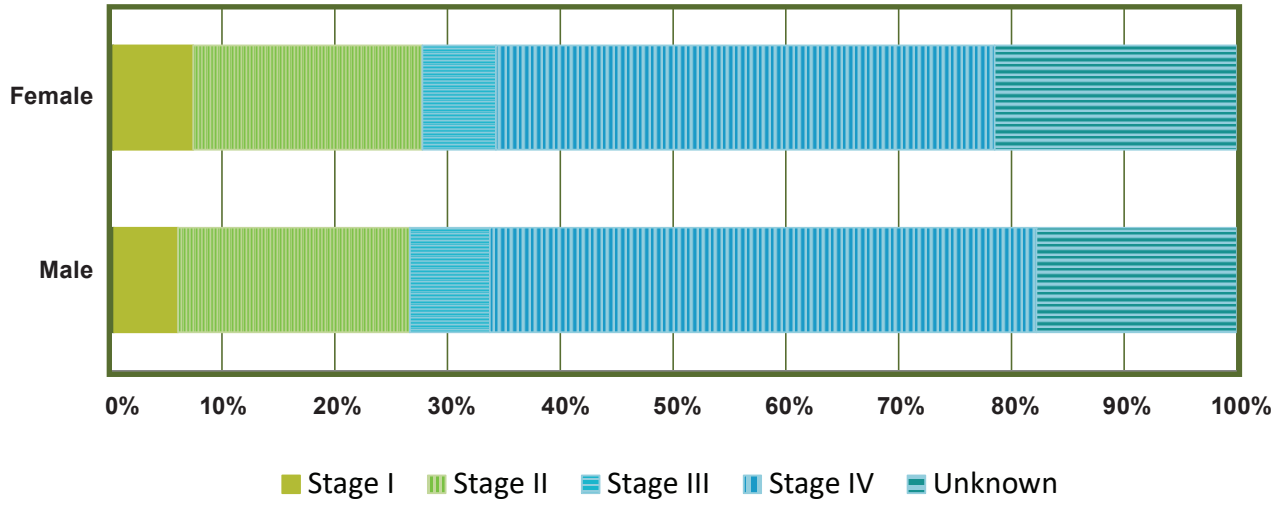
Stages I and II pancreatic cancers are further subdivided into stages IA, IB, IIA, and IIB; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Pancreas Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	41	0.4	548	5.7	1,985	20.6	686	7.1	4,679	48.5	1,717	17.8	9,656	100.0
Female	36	0.4	700	7.1	2,010	20.3	645	6.5	4,375	44.2	2,123	21.5	9,889	100.0
Total	77	0.4	1,248	6.4	3,995	20.4	1,331	6.8	9,054	46.3	3,840	19.7	19,545	100.0
Race/Ethnicity:														
Non-Hispanic White	39	0.3	848	6.7	2,645	20.9	824	6.5	5,785	45.6	2,543	20.1	12,684	100.0
African American	4	0.3	94	6.3	293	19.5	110	7.3	713	47.5	287	19.1	1,501	100.0
Hispanic	13	0.4	170	5.3	624	19.4	218	6.8	1,559	48.6	626	19.5	3,210	100.0
Asian/Pacific Islander	20	1.0	124	6.2	403	20.2	168	8.4	926	46.5	352	17.7	1,993	100.0
Other/Unknown	1	0.6	12	7.6	30	19.1	11	7.0	71	45.2	32	20.4	157	100.0
All Race/Ethnicities	77	0.4	1,248	6.4	3,995	20.4	1,331	6.8	9,054	46.3	3,840	19.7	19,545	100.0
Age at Diagnosis:														
20-44	4	0.8	46	8.9	104	20.2	41	8.0	255	49.5	65	12.6	515	100.0
45-64	26	0.5	266	4.6	1,269	22.1	486	8.5	3,004	52.2	703	12.2	5,754	100.0
65+	47	0.4	936	7.1	2,622	19.8	804	6.1	5,795	46.7	3,072	23.1	13,276	100.0
All Ages	77	0.4	1,248	6.4	3,995	20.4	1,331	6.8	9,054	46.3	3,840	19.7	19,545	100.0

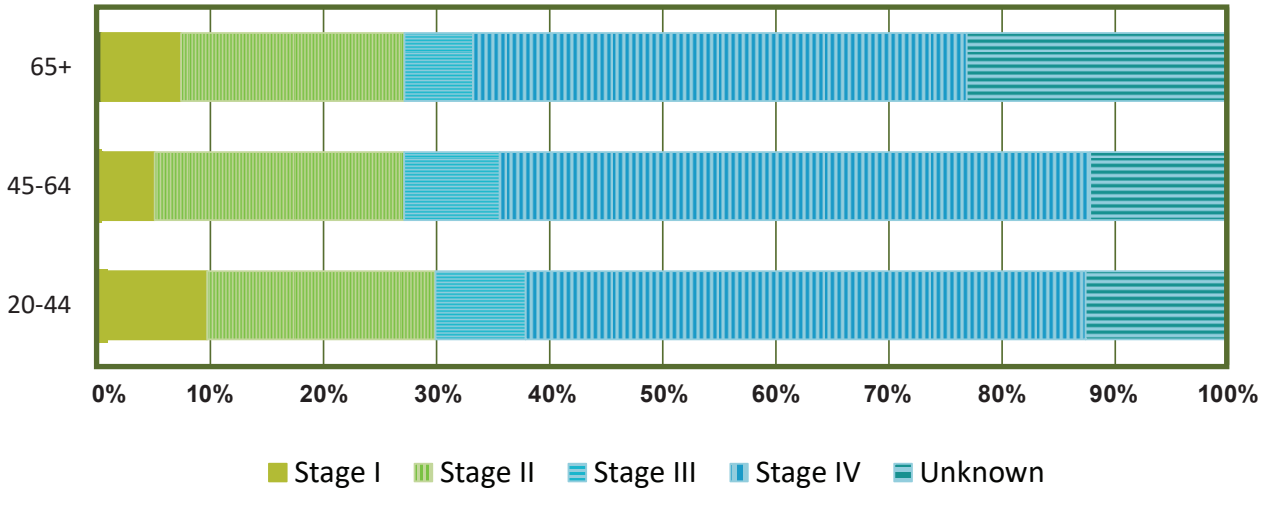
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Pancreas Cancer



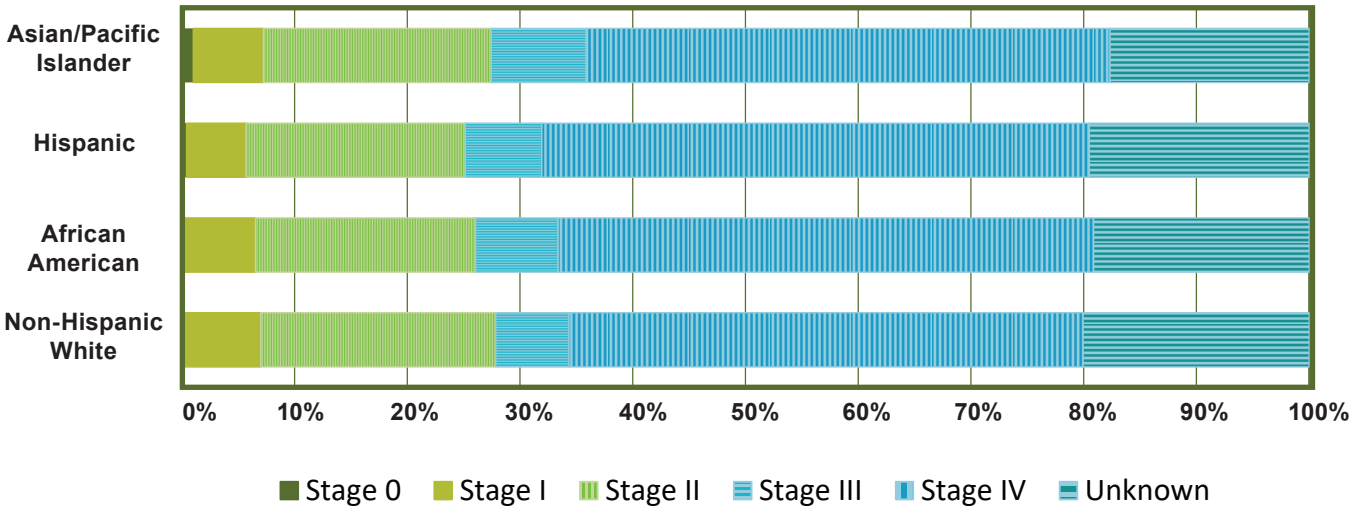
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Pancreas Cancer



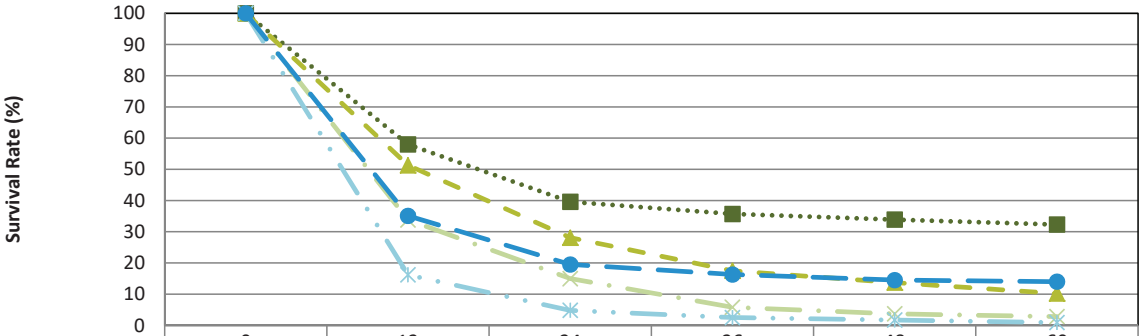
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Pancreas Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Pancreas Cancer by Stage at Diagnosis, Female, California, 2004-2009

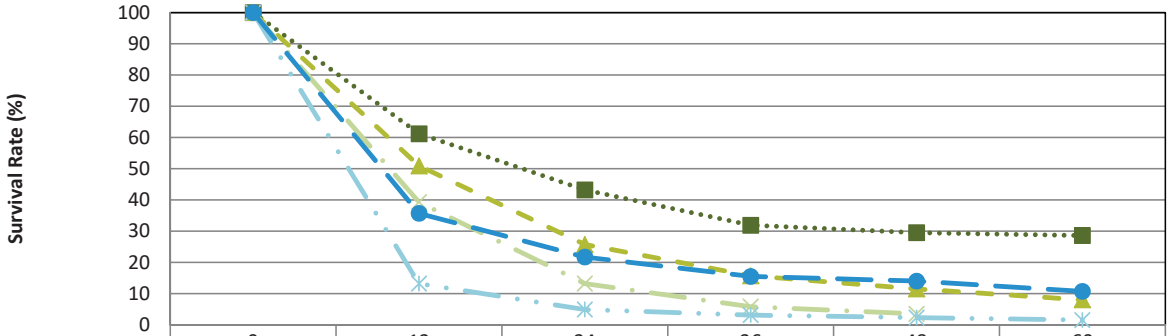


	0	12	24	36	48	60
Stage I	100	58	39.6	35.7	33.9	32.3
Stage II	100	51.3	28.1	17.5	13.7	10.2
Stage III	100	33.8	15	5.8	3.7	2.8
Stage IV	100	16.2	4.8	2.5	1.7	0.9
Unknown	100	35.1	19.5	16.3	14.5	14

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Pancreas Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	61.2	43.2	31.9	29.5	28.6
Stage II	100	50.9	25.7	15.7	11.5	8
Stage III	100	39.3	13.2	5.8	3.5	
Stage IV	100	13.2	4.9	3.1	2.3	1.5
Unknown	100	35.7	21.7	15.5	14	10.7

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

PROSTATE

Prostate cancer is the most commonly occurring cancer among men and overall, the second most common cancer in California. In 2012, almost 21,000 cases of prostate cancer are expected to be diagnosed in California, and nearly 3,100 men will die of the disease.

The prostate-specific antigen (PSA) blood test is helpful in detecting the disease at an early stage; however, the PSA test also detects tumors that would not cause harm if they were not treated. Aggressive treatment for such tumors may cause considerably more harm than the tumor itself.

Because there is no easy way to differentiate which tumors if left untreated would progress from those that would not, and given the substantial harm caused by aggressive treatment, the US Preventive Services Task Force now recommends against PSA-based screening for prostate cancer.

Staging of prostate cancer is based primarily on tumor spread, but characteristics (or grade) of the tumor cells are also considered and assigned a Gleason score. Spread to lymph nodes means the disease is considered stage IV, or metastatic. The following characteristics are used to determine the stage at diagnosis for prostate cancer:

Stage I:
Tumor is found incidentally, in five percent, or less of the tissue resected, with a Gleason score between two and four.

Stage II:
Tumor as above but with a Gleason score between five and ten, or tumor confined within the prostate (palpable or not) with any Gleason score.

Stage III:
Tumor extends through the prostate capsule and may invade the seminal vesicle, regardless of Gleason score.

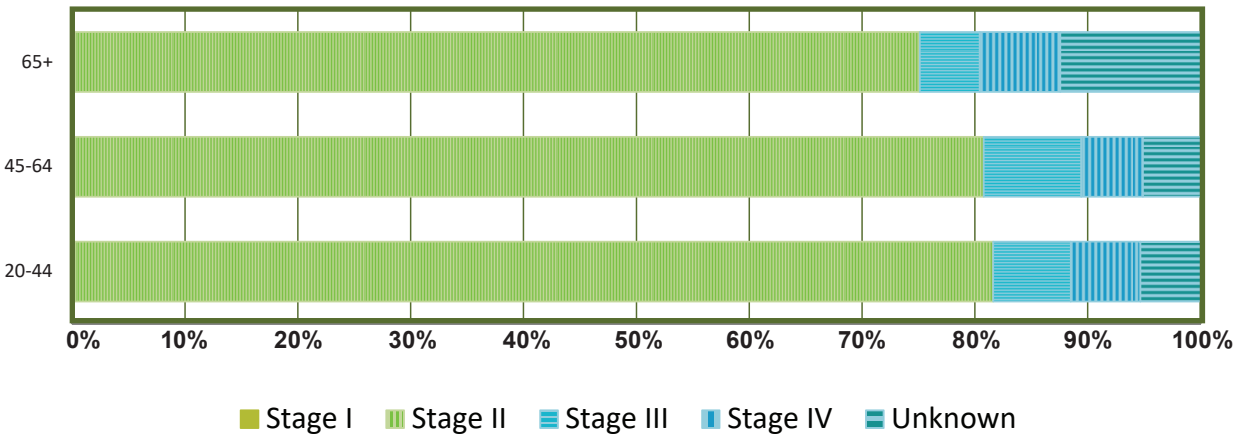
Stage IV:
Tumor that either (a) is fixed or invades adjacent structures, (b) spreads to lymph nodes, or (c) spreads to the bones, or other distant organs.

Number and Percentage of California Men Age 20 and Older Diagnosed With Prostate Cancer, by Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Race/Ethnicity:												
Non-Hispanic White	88	0.1	55,062	79.1	4,964	7.1	4,369	6.3	5,162	7.4	69,645	100.0
African American	10	0.1	7,481	78.2	564	5.9	768	8.0	737	7.7	9,560	100.0
Hispanic	27	0.2	12,559	74.3	1,117	6.6	1,298	7.7	1,903	11.3	16,904	100.0
Asian/Pacific Islander	8	0.1	6,035	77.7	539	6.9	524	6.7	670	8.6	7,776	100.0
Other/Unknown	1	0.0	3,536	62.9	99	1.7	138	2.4	1,942	34.0	5,716	100.0
All Race/Ethnicities	133	0.1	81,137	77.3	7,184	6.7	6,959	6.5	8,472	9.5	109,601	100.0
Age at Diagnosis:												
20-44	0	0.0	475	81.6	40	6.9	36	6.2	31	5.3	582	100.0
45-64	23	0.1	34,898	80.7	3,740	8.7	2,362	5.5	2,206	5.1	43,229	100.0
65+	111	0.2	49,300	74.9	3,503	5.3	4,699	7.1	8,177	12.4	65,790	100.0
All Ages	134	0.1	84,673	77.3	7,283	6.7	7,097	6.5	10,414	9.5	109,601	100.0

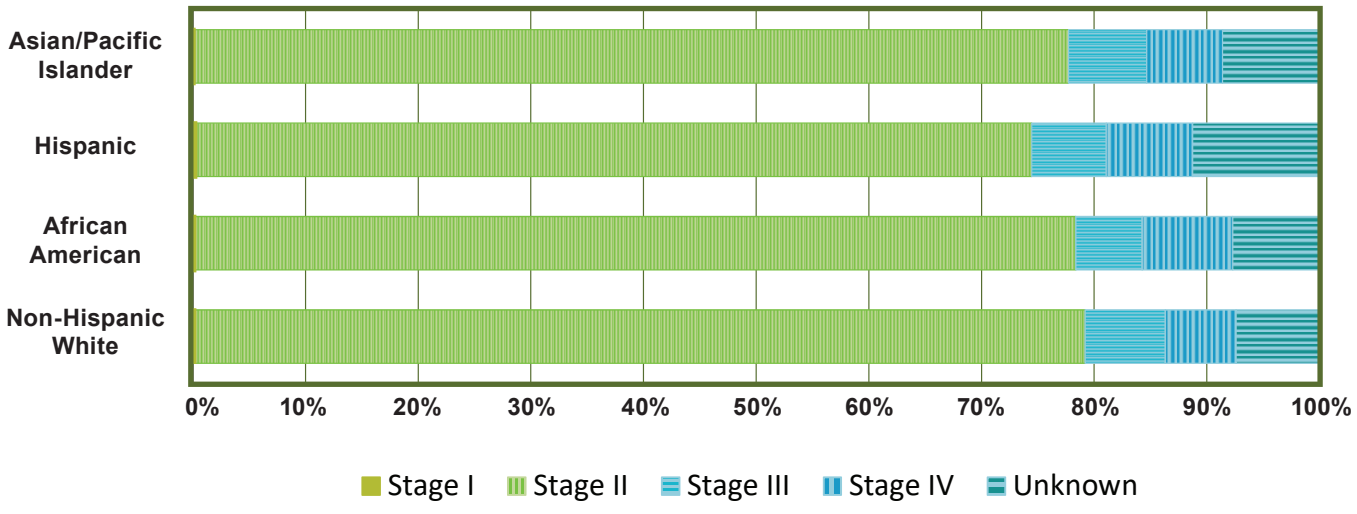
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Prostate Cancer



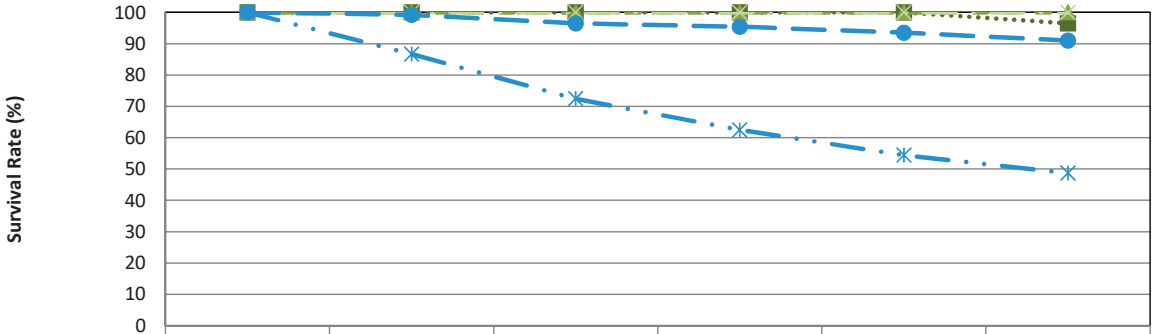
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Prostate Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Prostate Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	100	100	100	100	96.5
Stage II	100	100	100	100	100	100
Stage III	100	100	100	100	100	100
Stage IV	100	86.7	72.4	62.5	54.4	48.7
Unknown	100	99.2	96.5	95.4	93.5	91

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

STOMACH

In 2012, an estimated 2,600 Californians will be diagnosed with stomach cancer, and 1,500 persons are expected to die from the disease. Stomach cancer is more often diagnosed in the elderly and is also more common in men than in women. The incidence of stomach cancer in California has declined substantially since 1988, although most patients are still diagnosed at late stage and face a poor prognosis.

The incidence of stomach cancer in California and the U.S. is low compared to some Asian and European countries where screening for the disease by use of serum pepsinogen and Helicobacter pylori antibody blood tests appears to be useful in identifying persons having an elevated risk of developing stomach cancer. Persons identified as being at high risk of the disease by such tests must then undergo additional and more invasive tests to determine if they actually have the disease. Importantly, the risks associated with the additional diagnostic tests are too great for screening to be recommended in countries having a relatively low occurrence of stomach cancer. Screening for stomach cancer using serum pepsinogen and/or Helicobacter pylori antibody tests is not recommended in California.

Anatomically, the stomach wall is comprised of five layers: mucosa (internal layer), submucosa, muscularis propria, subserosa, and serosa (visceral peritoneum). Staging of stomach cancer is based on the depth of tumor invasion into the stomach layers and spread to lymph nodes.

The five stages at diagnosis for stomach cancer are as follows:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor may either (a) invade the subserosa without spread to lymph nodes, or (b) invade no deeper than the submucosa but there is spread to 1 - 6 regional lymph nodes.

Stage II:
Tumor (a) penetrates only the submucosa but spreads to 7 - 15 lymph nodes, (b) penetrates the subserosa and spreads to 1 - 6 lymph nodes, or (c) invades all the stomach layers, but does not spread to lymph nodes.

Stage III:
Tumor may invade all stomach layers and spread to up to 15 lymph nodes, or invade adjacent structures without spread to lymph nodes.

Stage IV:
Tumor spreads to other organs or to more than 15 regional lymph nodes.

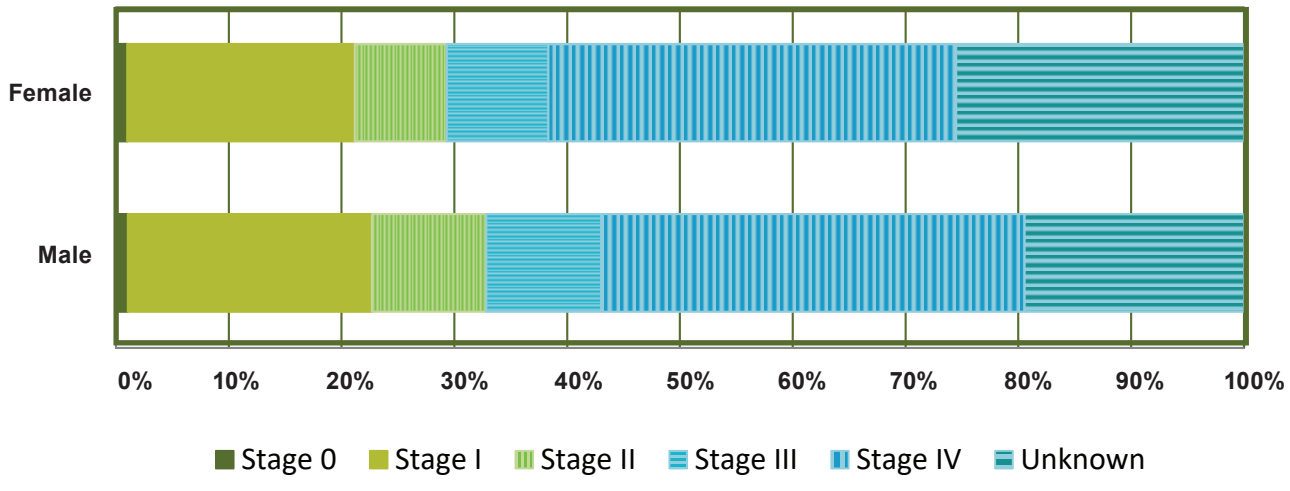
Stages I and III stomach cancers are further subdivided into stages IA, IB, IIIA, and IIIB; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Stomach Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:														
Male	86	1.1	1,764	21.6	827	10.1	831	10.2	3,057	37.5	1,587	19.5	8,152	100.0
Female	54	1.0	1,091	20.2	442	8.2	488	9.0	1,957	36.2	1,382	25.5	5,414	100.0
Total	140	1.0	2,855	21.1	1,269	9.4	1,319	9.7	5,014	37.0	2,969	21.9	13,566	100.0
Race/Ethnicity:														
Non-Hispanic White	60	1.0	1,240	20.9	576	9.7	523	8.8	2,136	36.0	1,393	23.5	5,928	100.0
African American	9	0.9	192	19.1	81	8.1	87	8.7	345	34.3	292	29.0	1,006	100.0
Hispanic	32	0.9	643	17.5	312	8.5	370	10.1	1,590	43.4	720	19.6	3,667	100.0
Asian/Pacific Islander	39	1.4	763	26.9	286	10.1	329	11.6	909	32.1	509	18.0	2,835	100.0
Other/Unknown	0	0.0	17	13.1	14	10.8	10	7.7	34	26.1	55	42.3	130	100.0
All Race/Ethnicities	140	1.0	2,855	21.1	1,269	9.4	1,319	9.7	5,014	37.0	2,969	21.9	13,566	100.0
Age at Diagnosis:														
20-44	2	0.2	72	7.8	60	6.5	84	9.1	526	56.9	181	19.6	925	100.0
45-64	25	0.6	698	16.5	391	9.2	446	10.5	1,864	44.1	808	19.1	4,232	100.0
65+	113	1.3	2,085	24.8	818	9.7	789	9.4	2,624	31.2	1,980	23.6	8,409	100.0
All Ages	140	1.0	2,855	21.1	1,269	9.4	1,319	9.7	5,014	37.0	2,969	21.9	13,566	100.0

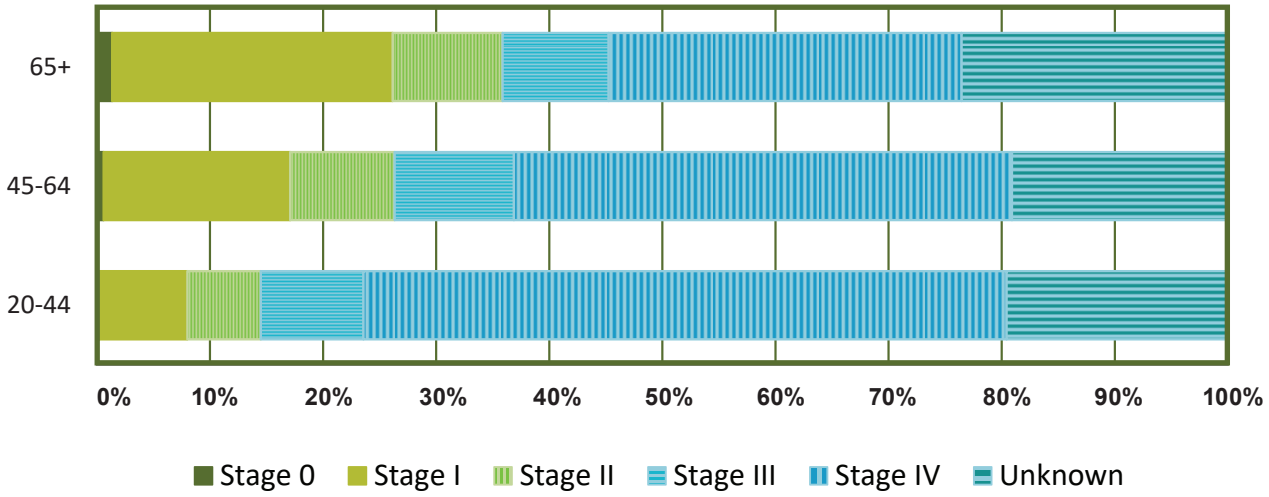
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Stomach Cancer



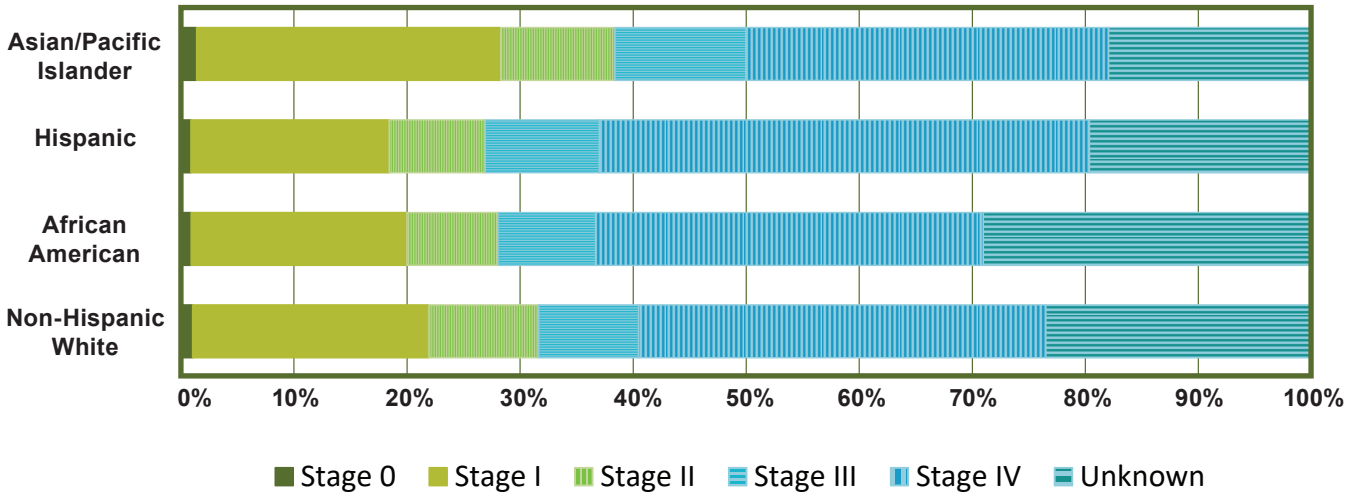
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Stomach Cancer



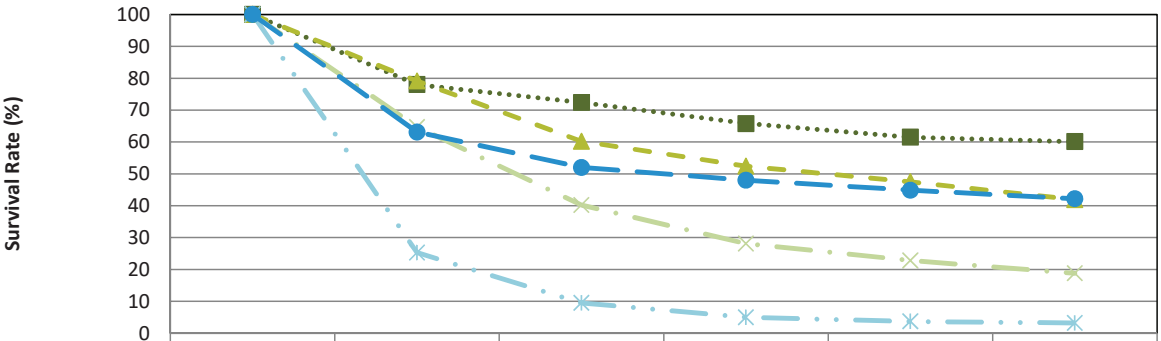
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Stomach Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Stomach Cancer by Stage at Diagnosis, Female, California, 2004-2009

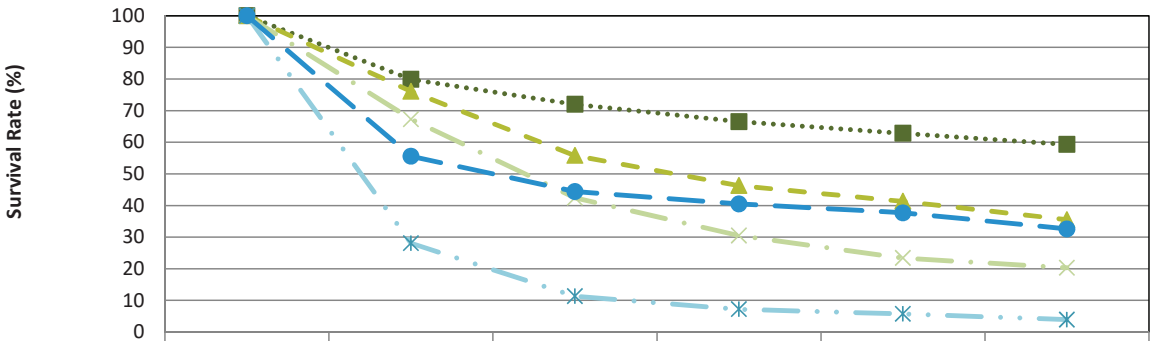


	0	12	24	36	48	60
Stage I	100	78	72.4	65.8	61.5	60.1
Stage II	100	79.1	60.2	52.4	47.5	41.9
Stage III	100	64.7	40.2	28.1	22.8	18.8
Stage IV	100	25.3	9.5	5	3.7	3.2
Unknown	100	63.1	52	48	44.9	42.2

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Stomach Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	79.9	72	66.5	62.8	59.3
Stage II	100	76.1	55.8	46.3	41.3	35.5
Stage III	100	67.3	42.4	30.5	23.4	20.3
Stage IV	100	28.1	11.3	7.2	5.7	3.9
Unknown	100	55.6	44.4	40.5	37.7	32.6

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

TESTIS

Cancer of the testes is most commonly found in young men and generally has an excellent prognosis. In 2012, nearly 1,050 Californians are expected to be diagnosed with testicular cancer, and 60 men are expected to die from the disease. Early detection of testicular tumors is conducted by clinical or self-examination; very often the tumor is detected by the patient himself.

Staging of testicular cancer is based on the extent of the tumor, spread to lymph nodes or distant organs, and serum levels of the tumor markers alpha-fetoprotein (AFP), human chorionic gonadotropin (hCG), and lactate dehydrogenase (LDH).

Testicular cancer is classified into the following stages at diagnosis:

Stage 0:
Intratubular germ cell carcinoma *in situ*.

Stage I:
Tumor is either (a) limited to the testis, or invades the scrotum, with no spread to lymph nodes, or (b) cannot be detected but serum markers are elevated.

Stage II:
Presence of metastasis with a lymph node mass of any size and serum tumor markers may be somewhat elevated.

Stage III:
Tumor has either spread to distant organs and/or lymph nodes, or serum markers are substantially elevated.

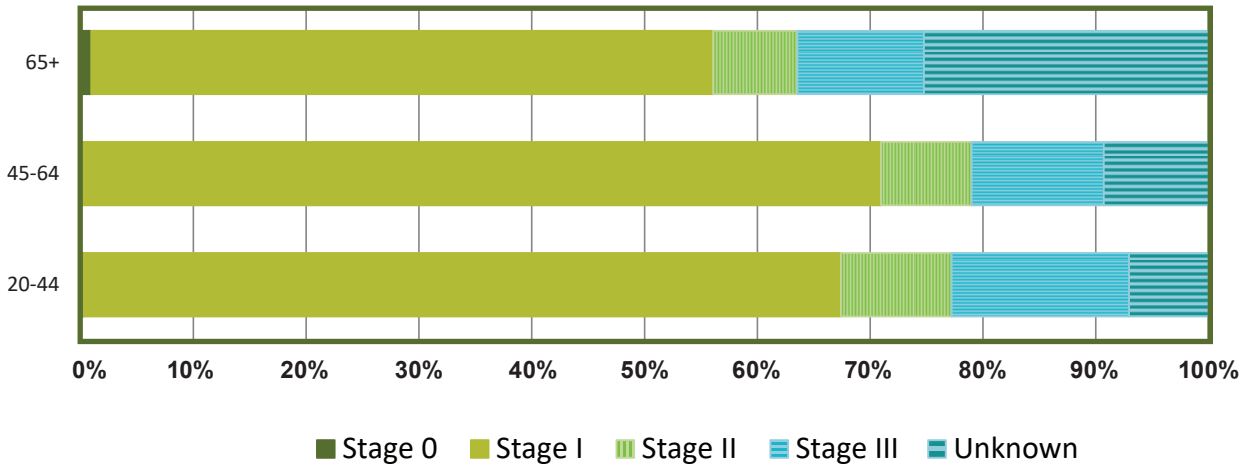
Stages I, II and III testicular cancers are further subdivided into stages IA, IB, IC, IIA, IIB, IIC, IIIA, IIIB, and IIIC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Men Age 20 and Older Diagnosed With Testis Cancer, by Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Race/Ethnicity:														
Non-Hispanic White	5	0.2	1,968	70.4	268	9.6	360	12.9	0	0.0	195	7.0	2,796	100.0
African American	1	1.1	58	62.4	11	11.8	17	18.3	0	0.0	6	6.5	93	100.0
Hispanic	1	0.1	992	62.5	154	9.7	301	19.0	0	0.0	140	8.8	1,588	100.0
Asian/Pacific Islander	1	0.5	140	68.3	14	6.8	31	15.1	0	0.0	19	9.3	205	100.0
Other/Unknown	3	2.4	91	71.7	7	5.5	8	6.3	0	0.0	18	14.2	127	100.0
All Race/Ethnicities	8	0.2	3,158	67.6	447	9.4	709	14.9	0	0.0	360	7.9	4,809	100.0
Age at Diagnosis:														
20-44	9	0.2	2,573	67.2	376	9.8	603	15.7	0	0.0	270	7.1	3,831	100.0
45-64	1	0.1	617	70.8	70	8.0	102	11.7	0	0.0	81	9.3	871	100.0
65+	1	0.9	59	55.1	8	7.5	12	11.2	0	0.0	27	25.2	107	100.0
All Ages	11	0.2	3,249	67.6	454	9.4	717	14.9	0	0.0	378	7.9	4,809	100.0

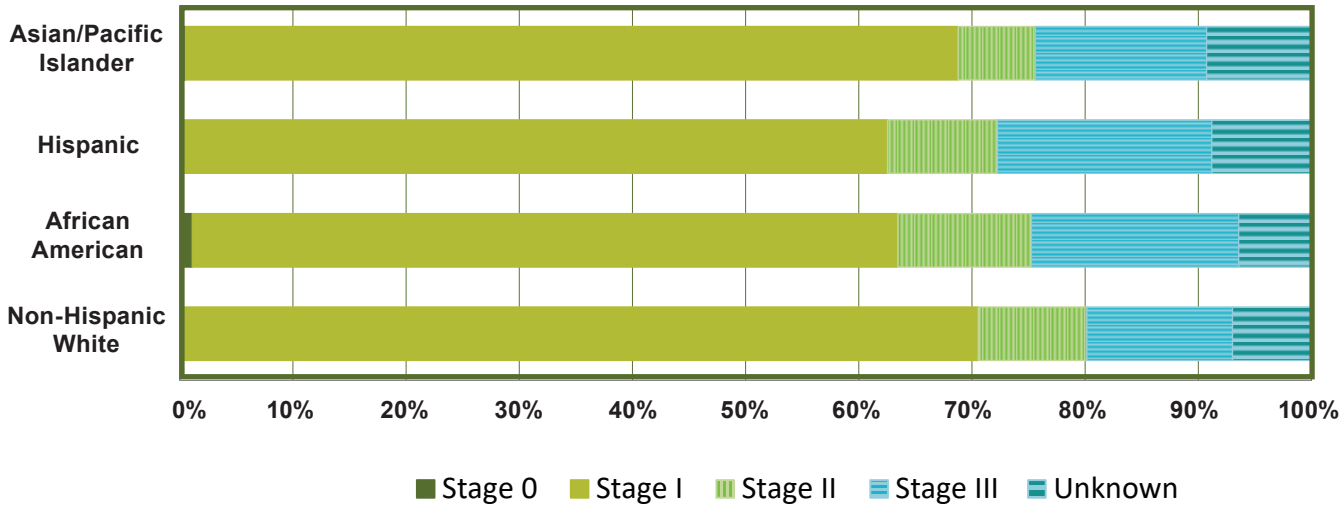
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Testis Cancer



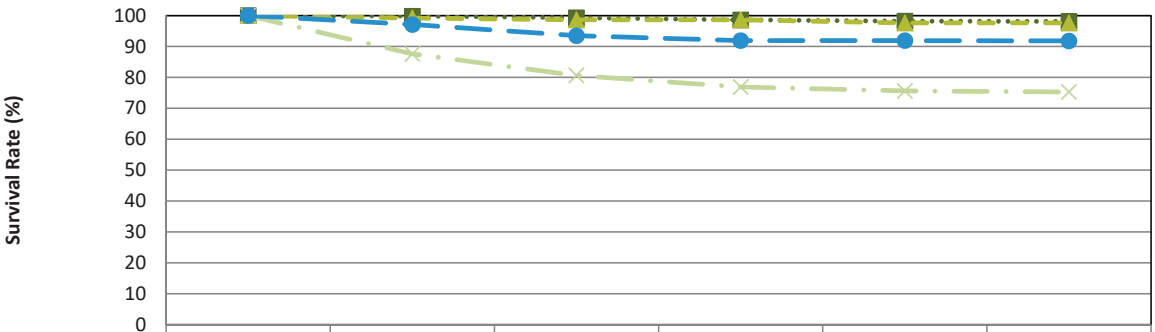
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Testis Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Testis Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	99.8	99.3	98.6	98.2	98.1
Stage II	100	99.2	98.6	98.6	97.6	97.6
Stage III	100	87.6	80.6	76.9	75.6	75.3
Stage IV						
Unknown	100	97.1	93.5	91.9	91.9	91.8

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

THYROID

The incidence of thyroid cancer has increased sharply in California since 1988. An estimated 4,430 Californians are expected to be diagnosed with thyroid cancer in 2012, and 210 persons will likely die from the disease. However, due to earlier diagnosis, most thyroid cancers are highly treatable. Younger patients have a much better prognosis than elderly persons.

Staging of thyroid cancers is based on the age of the patient, anatomic extent of the disease, and the histologic type of the tumor: follicular, papillary, medullary, or anaplastic carcinoma (the most aggressive type of thyroid malignancy). For example, spread to lymph node(s) is of lesser importance for papillary and follicular tumors than for medullary thyroid cancers. Also, for patients under 45 years, the presence or absence of distant metastasis determines whether the tumor is stage I or II. All anaplastic thyroid cancers are considered stage IV disease. According to all these characteristics, thyroid cancers for patients 45 years and older are staged as follows:

Stage I:
Tumor up to 2 cm limited to the thyroid, no metastases.

Stage II:
Papillary or follicular tumor larger than 2 cm but no greater than 4 cm, or medullary tumor larger than 4 cm; no lymph node metastasis.

Stage III:
Papillary and follicular tumor larger than 4 cm with no metastasis to lymph nodes, or tumor of any size and type but with regional lymph node metastasis.

Stage IV:
Tumor extending beyond the thyroid, or tumor of any size with either extensive lymph node metastasis or spread to distant organs.

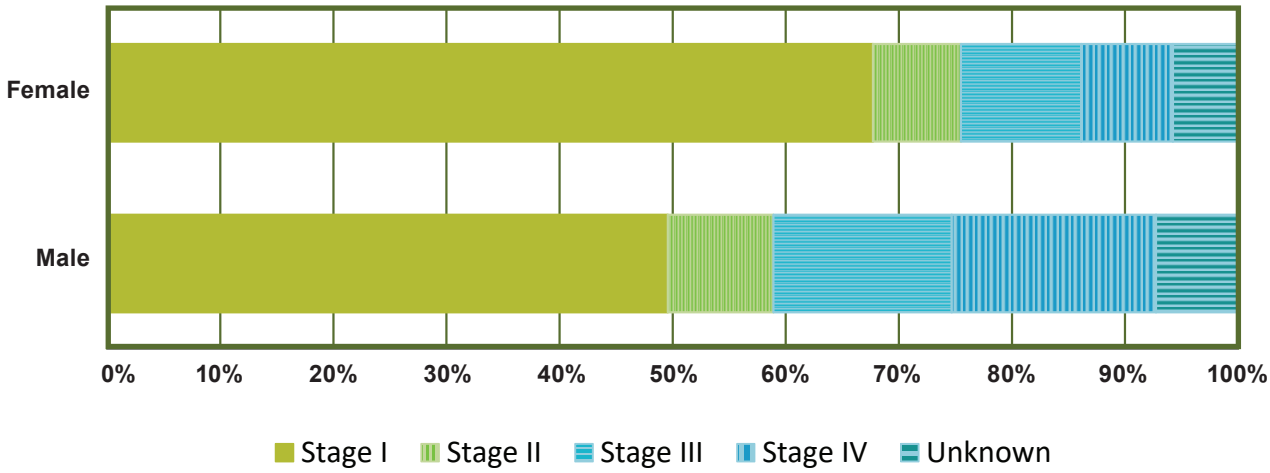
Stage IV thyroid cancers are further subdivided into stages IVA, IVB, and IVC; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Thyroid Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:												
Male	2,158	49.6	406	9.3	686	15.8	787	18.1	316	7.3	4,353	100.0
Female	9,217	67.7	1,060	7.8	1,448	10.6	1,103	8.1	767	5.8	13,595	100.0
Total	11,375	63.3	1,466	8.2	2,134	11.9	1,890	10.5	1,103	6.1	17,968	100.0
Race/Ethnicity:												
Non-Hispanic White	6,207	63.4	860	8.8	1,192	12.2	958	9.8	577	5.9	9,794	100.0
African American	436	61.2	76	10.7	91	12.8	70	9.8	39	5.5	712	100.0
Hispanic	2,881	65.2	305	6.9	485	11.0	480	10.9	265	6.0	4,416	100.0
Asian/Pacific Islander	1,681	60.2	210	7.5	348	12.5	370	13.3	183	6.6	2,792	100.0
Other/Unknown	170	66.9	15	5.9	18	7.1	12	4.7	39	15.4	254	100.0
All Race/Ethnicities	11,375	63.3	1,466	8.2	2,134	11.9	1,890	10.5	1,103	6.1	17,968	100.0
Age at Diagnosis:												
20-44	6,265	95.0	96	1.5	5	0.1	43	0.7	188	2.9	6,597	100.0
45-64	3,794	48.6	985	12.6	1,502	19.2	981	12.6	543	7.0	7,805	100.0
65+	1,316	36.9	385	10.8	627	17.6	866	24.3	370	10.4	3,564	100.0
All Ages	11,375	63.3	1,466	8.2	2,134	11.9	1,890	10.5	1,103	6.1	17,968	100.0

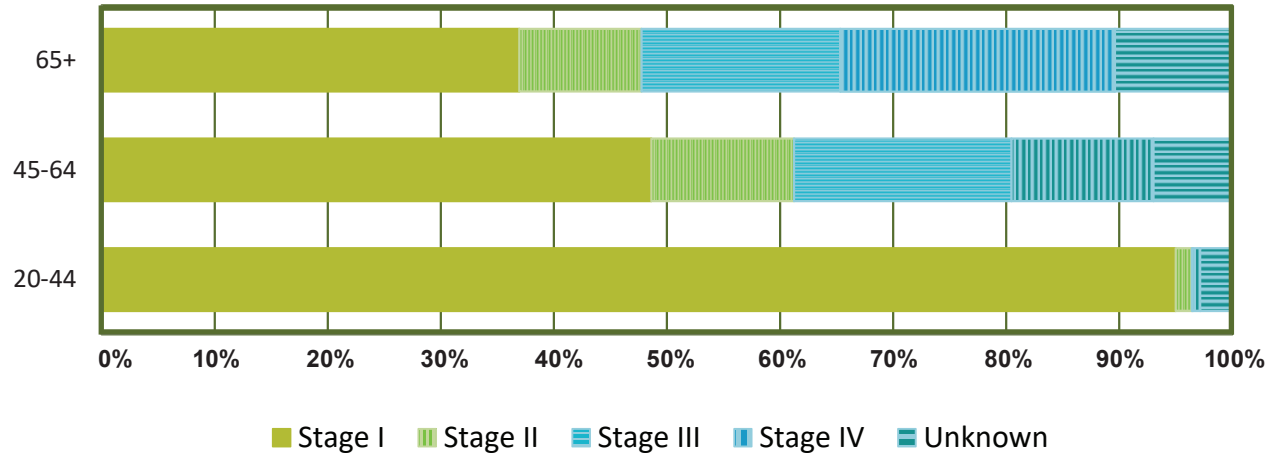
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Thyroid Cancer



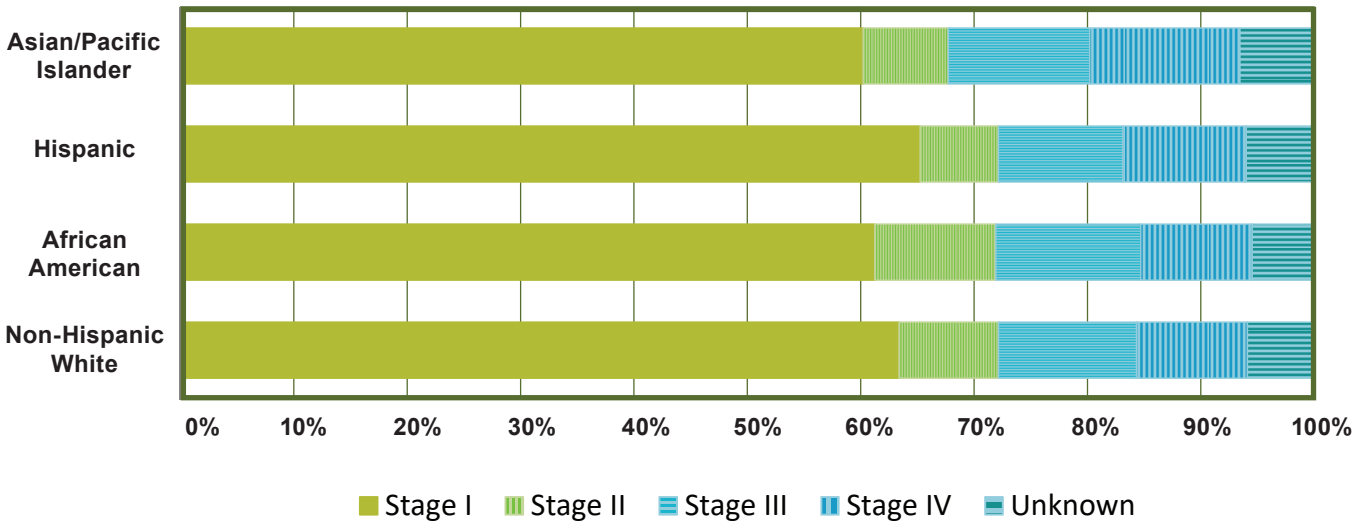
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Thyroid Cancer



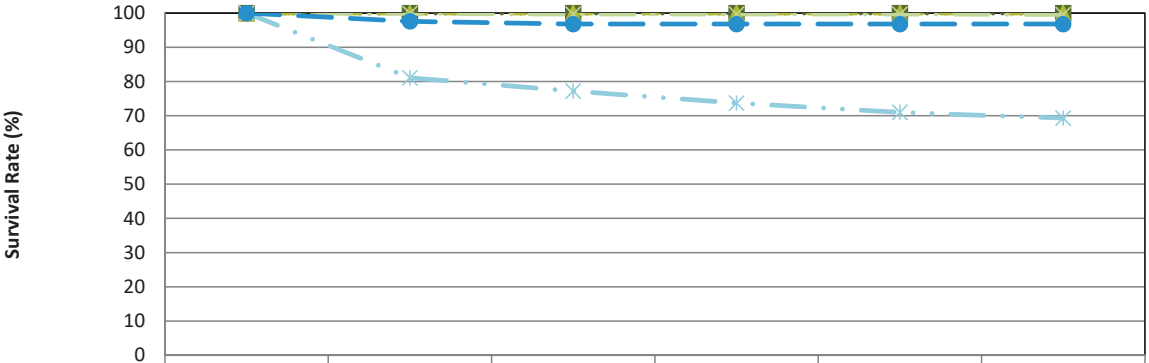
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Thyroid Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Thyroid Cancer by Stage at Diagnosis, Female, California, 2004-2009

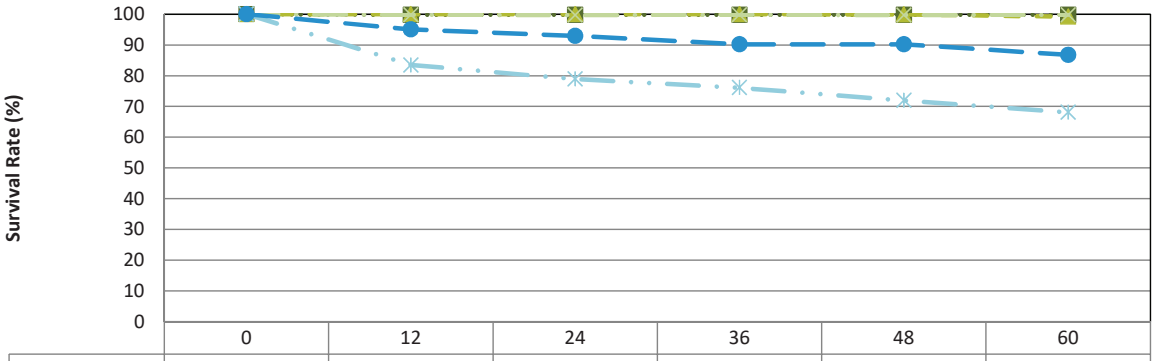


	0	12	24	36	48	60
Stage I	100	100	100	100	100	100
Stage II	100	100	100	100	100	100
Stage III	100	99.9	99.7	99.7	99.7	99.6
Stage IV	100	81.1	77.2	73.7	71	69.3
Unknown	100	97.6	96.8	96.8	96.8	96.8

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Thyroid Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	99.8	99.8	99.8	99.8	99.8
Stage II	100	100	100	100	99.9	99.2
Stage III	100	99.8	99.7	99.8	99.7	99.8
Stage IV	100	83.5	78.9	76.1	71.9	68.1
Unknown	100	95.1	92.9	90.2	90.2	86.8

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

URINARY BLADDER

Over 6,200 cancers of the urinary bladder are expected to be diagnosed in California in 2012, and more than 1,300 deaths from the disease are expected. Three-fourths of urinary bladder cancers will occur in males.

There are no screening tests for urinary bladder cancer, but urinalysis findings (abnormal appearing cells) may prompt suspicion of bladder cancer, which may explain why 72 percent of bladder cancer cases in California were diagnosed at an early stage of the disease (stage 0/1).

The urinary bladder is formed by three layers: the epithelium and subepithelial connective tissue, the muscularis (muscular layer), and the perivesical fat tissue. Stage at diagnosis for bladder cancer is based on the depth of penetration of the tumor into the bladder wall. Spread to lymph nodes or other organs categorize the cancer as stage IV.

Because of the difficulty in interpreting the language used by pathologists to describe the extent of invasion of bladder cancers, *in situ* and stage I tumors were combined in this report as stage 0/I. The following characteristics define stage at diagnosis for bladder cancer:

Stage 0:
Non-invasive papillary carcinoma, or carcinoma *in situ* ("flat tumor").

Stage I:
Tumor invades subepithelial connective tissue.

Stage II:
Tumor invades the muscularis.

Stage III:
Tumor invades the perivesical tissue, the prostate, the uterus, or the vagina.

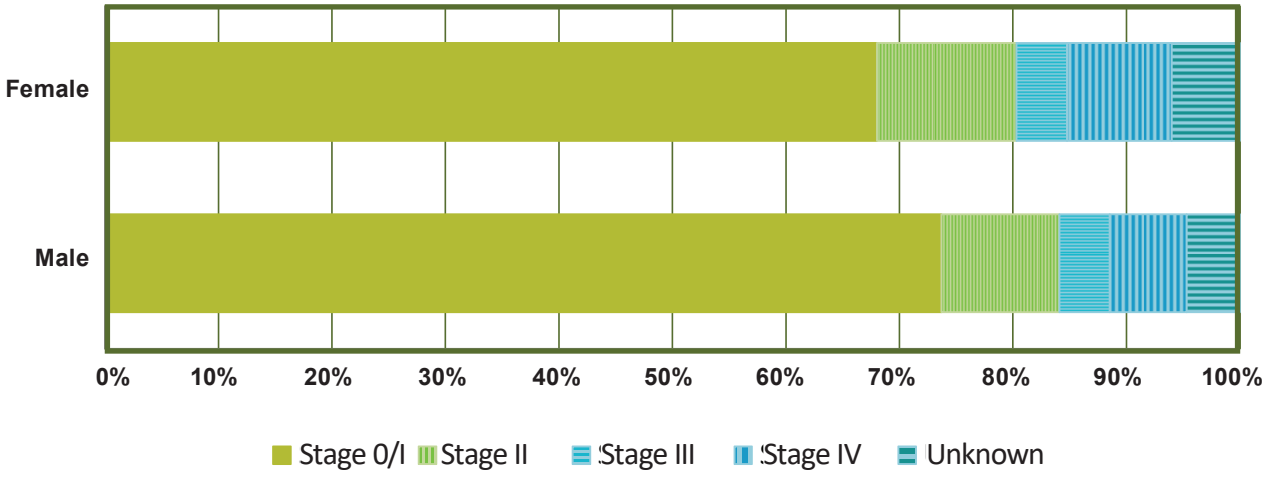
Stage IV:
Tumor may (a) invade the pelvic or abdominal wall, or (b) spread to regional lymph nodes, or (c) spread to distant organs.

Urinary Bladder Cancer in Adults (Age 20 and Older) by Sex, Race/Ethnicity, and Age at Diagnosis: California, 2005-2009

	0/I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sex:												
Male	17,726	73.7	2,504	10.4	1,064	4.4	1,632	6.8	1,132	4.7	24,058	100.0
Female	5,149	68.0	930	12.3	337	4.5	699	9.2	455	6.0	7,570	100.0
Total	22,875	72.3	3,434	10.9	1,401	4.4	2,331	7.4	1,587	5.0	31,628	100.0
Race/Ethnicity:												
Non-Hispanic White	17,916	72.7	2,744	11.1	1,100	4.5	1,743	7.1	1,144	4.6	24,647	100.0
African American	789	63.1	158	12.6	73	5.8	149	11.9	81	6.5	1,250	100.0
Hispanic	2,207	70.1	307	9.8	134	4.3	295	9.4	205	6.5	3,148	100.0
Asian/Pacific Islander	1,367	72.1	200	10.5	86	4.5	135	7.1	108	5.7	1,896	100.0
Other/Unknown	596	86.8	25	3.6	8	1.2	9	1.3	49	7.1	687	100.0
All Race/Ethnicities	22,875	72.3	3,434	10.9	1,401	4.4	2,331	7.4	1,587	5.0	31,628	100.0
Age at Diagnosis:												
20-44	500	77.2	38	5.9	24	3.7	52	8.0	34	5.3	648	100.0
45-64	5,750	74.8	662	8.6	335	4.4	709	9.2	234	3.0	7,690	100.0
65+	16,625	71.4	2,734	11.7	1,042	4.5	1,570	6.7	1,319	5.7	23,290	100.0
All Ages	22,875	72.3	3,434	10.9	1,401	4.4	2,331	7.4	1,587	5.0	31,628	100.0

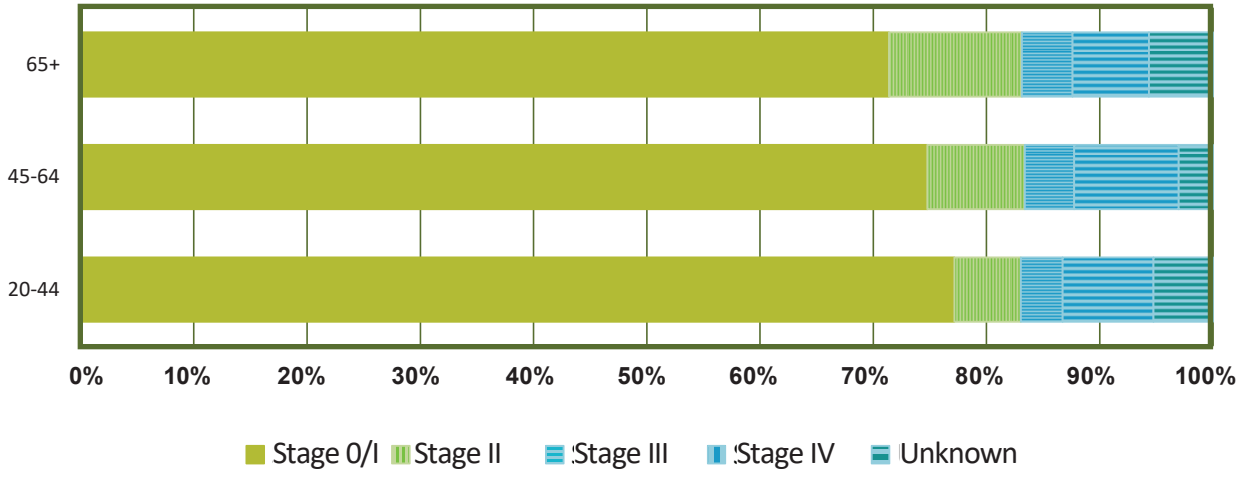
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Sex, 2005-2009: Urinary Bladder Cancer



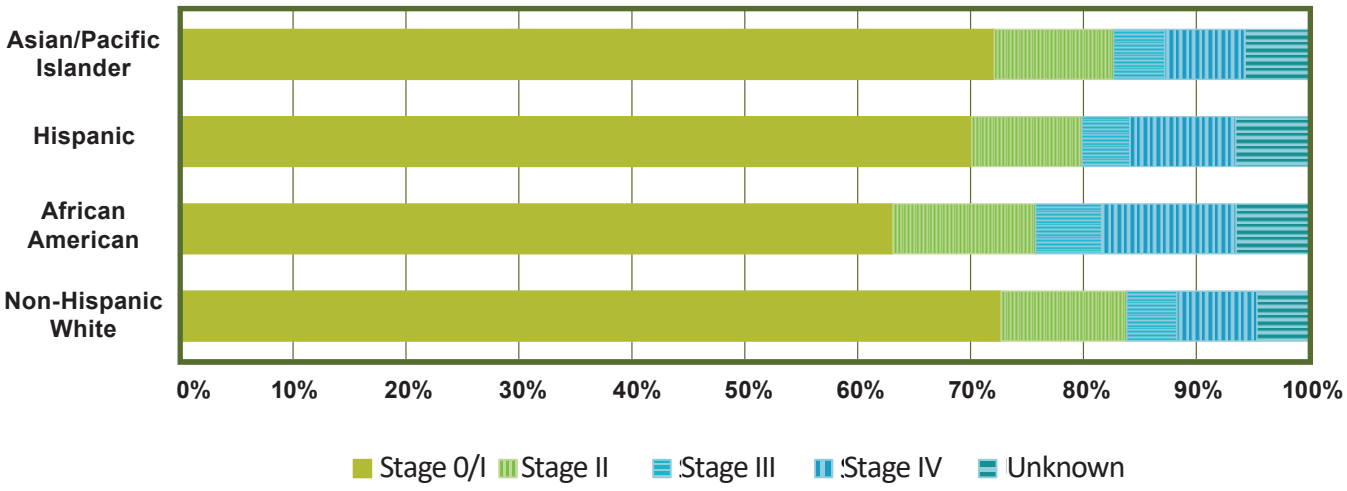
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Urinary Bladder Cancer



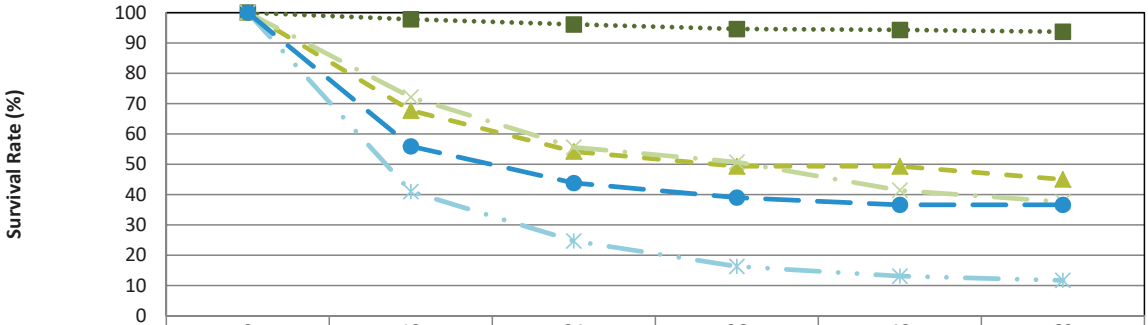
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Urinary Bladder Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Urinary Bladder Cancer by Stage at Diagnosis, Female, California, 2004-2009

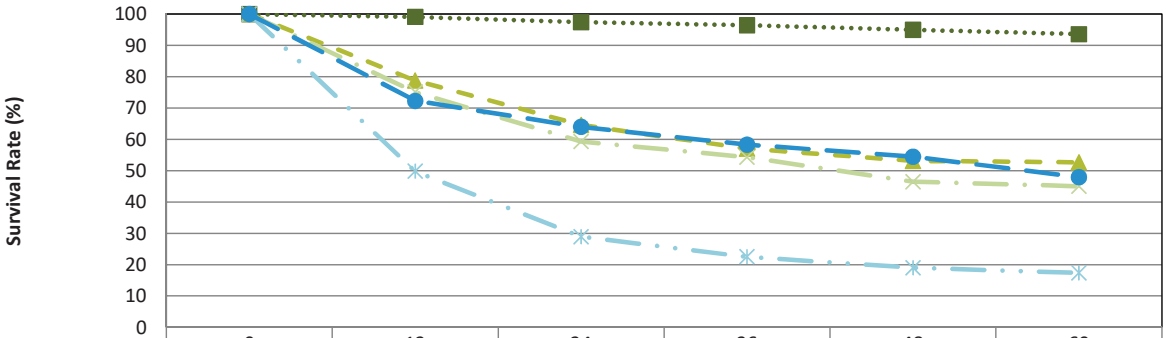


	0	12	24	36	48	60
Stage 0/I	100	97.8	96.1	94.6	94.3	93.7
Stage II	100	67.7	54.2	49.3	49.3	45
Stage III	100	72.1	55.6	50.7	41.4	37.6
Stage IV	100	41	24.7	16.3	13.1	11.7
Unknown	100	55.9	43.8	39	36.6	36.6

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Urinary Bladder Cancer by Stage at Diagnosis, Male, California, 2004-2009



	0	12	24	36	48	60
Stage 0/I	100	99.1	97.4	96.4	95	93.6
Stage II	100	78.8	64.6	57	53.1	52.7
Stage III	100	75.1	59.3	54.3	46.5	45
Stage IV	100	49.8	28.9	22.5	19	17.4
Unknown	100	72.3	64	58.3	54.5	47.9

Months After Diagnosis

Notes: Relative survival compares the survival of men with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

UTERINE CORPUS

Cancer of the uterine corpus is the most common type of gynecologic malignancy. In California, 4,700 women are expected to be diagnosed with uterine cancer in 2012, and an estimated 790 women will die from the disease. Because the majority of uterine cancers are now diagnosed while the tumor is still localized, the disease has a high cure rate.

Anatomically, the uterine corpus is the upper two thirds of the uterus; the cervix is the lower third.

Cancers originating in the uterine corpus (or corpus uteri) are staged based on the extension of the tumor and involvement of lymph nodes or distant organs. The main stage categories for uterine corpus cancer are summarized as follows:

Stage 0:
Carcinoma *in situ*.

Stage I:
Tumor confined to the endometrium (internal layer), or myometrium (the muscular layer of the uterus).

Stage II:
Tumor invades the cervix, but does not extend beyond the uterus.

Stage III:
Tumor extends to the vagina, presence of cancer cells in the peritoneum, or tumor has spread to regional lymph node(s).

Stage IV:
Tumor extends to the bladder, bowel, or spreads to other distant sites.

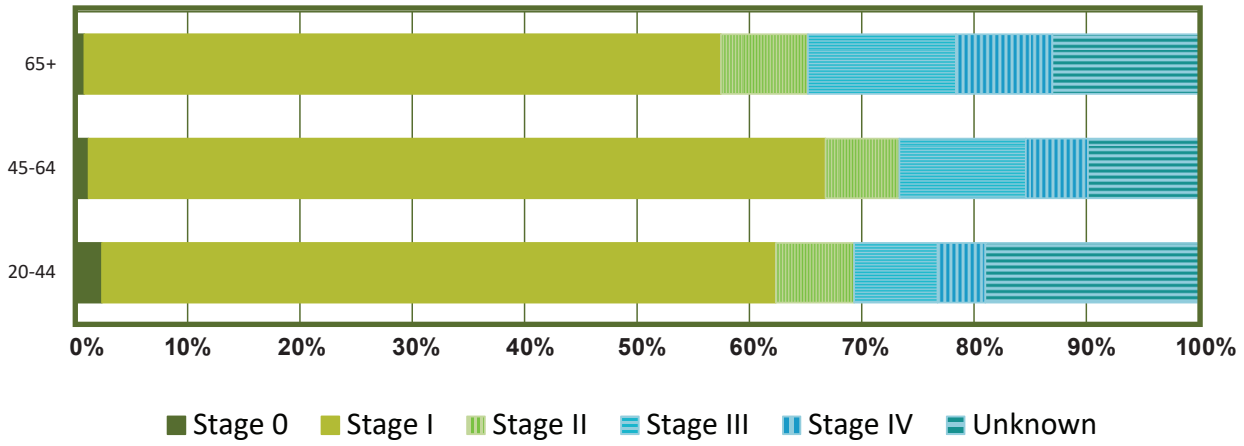
Stages I through IV uterine corpus cancers are further subdivided into stages IA, IB, IC, IIA, IIB, IIIA, IIIB, IIIC, IVA, and IVB; data about these more detailed stages are not included in this report. For additional information on these more detailed stage groups please refer to the AJCC Cancer Staging Manual, 6th edition, 2002 (Springer Science & Business Media Inc., New York, NY).

Number and Percentage of California Adults Age 20 and Older Diagnosed With Uterine Corpus Cancer, by Sex, Age, Race/Ethnicity, and Stage at Diagnosis, 2005-2009

	0		I		II		III		IV		Unknown		All Stages	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Race/Ethnicity:														
Non-Hispanic White	146	1.1	8,871	64.2	918	6.6	1,665	12.1	867	6.3	1,354	9.8	13,821	100.0
African American	16	1.3	573	46.4	88	7.1	154	12.5	132	10.7	272	22.0	1,235	100.0
Hispanic	54	1.4	2,301	58.1	323	8.2	420	10.6	280	7.1	582	14.7	3,960	100.0
Asian/Pacific Islander	15	0.6	1,466	61.1	187	7.8	289	12.0	156	6.5	288	12.0	2,401	100.0
Other/Unknown	11	3.8	155	52.9	21	7.2	18	6.1	12	4.1	76	25.9	293	100.0
All Race/Ethnicities	242	1.1	13,366	61.7	1,537	7.1	2,546	11.8	1,447	6.7	2,572	11.7	21,710	100.0
Age at Diagnosis:														
20-44	40	2.4	1,017	60.0	118	7.0	126	7.4	72	4.3	322	19.0	1,695	100.0
45-64	132	1.2	7,408	65.6	742	6.6	1,272	11.3	625	5.5	1,114	9.9	11,293	100.0
65+	70	0.8	4,941	56.7	677	7.8	1,148	13.2	750	8.6	1,136	13.0	8,722	100.0
All Ages	242	1.1	13,366	61.7	1,537	7.1	2,546	11.8	1,447	6.7	2,572	11.7	21,710	100.0

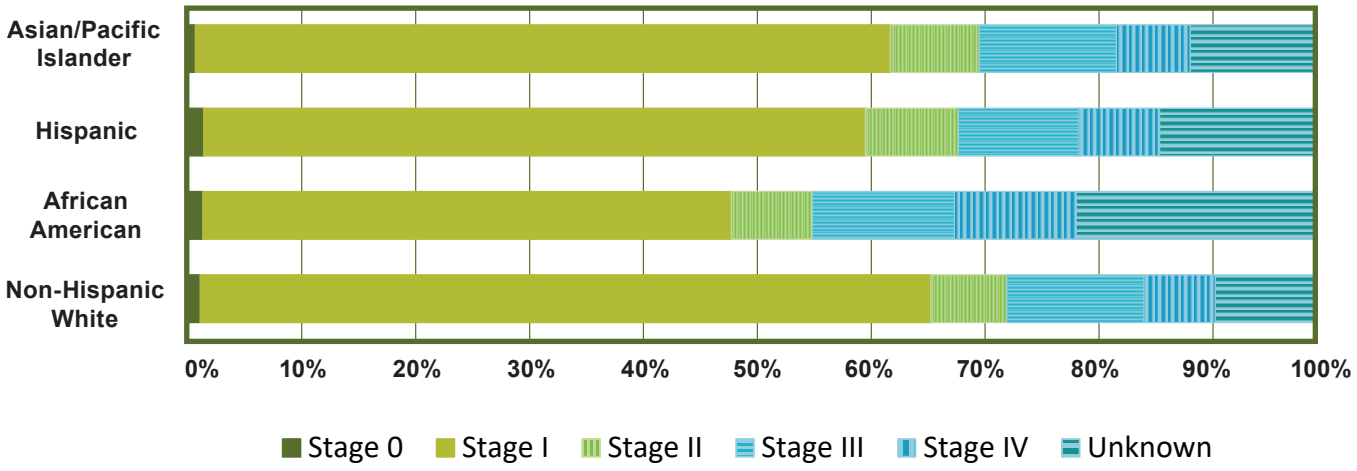
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Age Group, 2005-2009: Uterine Corpus Cancer



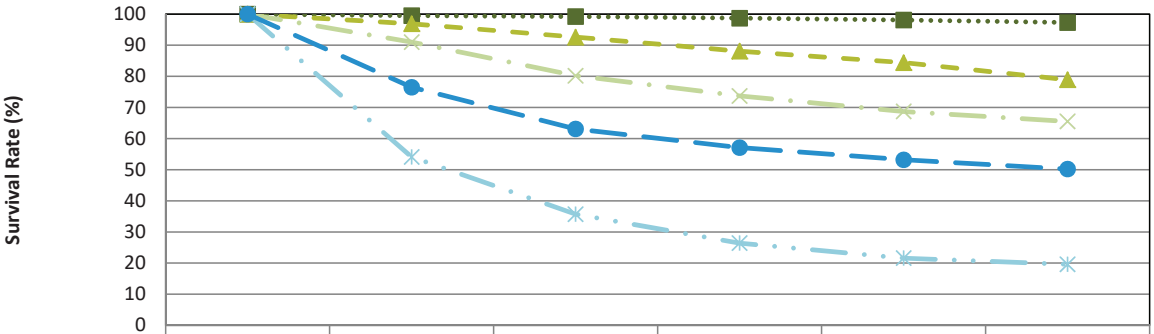
Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Percent of Cancer Cases in California by AJCC Stage at Diagnosis and Race/Ethnicity, 2005-2009: Uterine Corpus Cancer



Note: Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition. Please see the Introduction for a more detailed explanation of the AJCC system.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Five-Year Relative Survival for Uterine Corpus Cancer by Stage at Diagnosis, Female, California, 2004-2009



	0	12	24	36	48	60
Stage I	100	99.5	99.2	98.7	98.1	97.3
Stage II	100	96.9	92.6	88.1	84.4	78.9
Stage III	100	91	80.2	73.7	68.7	65.5
Stage IV	100	54.1	35.7	26.4	21.6	19.6
Unknown	100	76.5	63.1	57.1	53.2	50.2

Months After Diagnosis

Notes: Relative survival compares the survival of women with the disease with those that do not; it represents the likelihood of avoiding death due to a particular cancer. Stage at diagnosis by the American Joint Committee on Cancer (AJCC) Cancer Staging Manual, sixth edition.
Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.