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## 1999–2001 Cancer Mortality Rates for Asian and Pacific Islander Ethnic Groups with Comparisons to Their 1988–1992 Rates

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### Abstract

We report upper and lower boundary estimates of the 1999–2001 site-specific cancer mortality rates for Asian Indians, Chinese, Filipinos, Koreans, Vietnamese, Native Hawaiians, and Samoans. These rates are for the seven states (California, Hawaii, Illinois, New Jersey, New York, Texas, and Washington) that officially record mortality data for these ethnicities. The rates are based on the 2000 Census, which reports two population counts as follows: persons who identify themselves as belonging to a single ethnic group (which forms the basis for an upper boundary estimate of the rates) and persons who identify themselves as belonging to a single ethnic group or to multiple groups that include the single ethnic group (which forms the basis for a lower boundary estimate for the rates). The top five cancers for each Asian and Pacific Islander ethnic group by gender are reported. In addition, the 1988–1992 cancer mortality rates based on the 1990 Census for Chinese, Filipino, Japanese, and Native Hawaiians are determined. Their 1999–2001 and 1988–1992 rates are compared.

### Keywords

AANCART; Asian American; cancer; Pacific Islander; cancer mortality

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Annual cancer incidence and mortality rates have been determined for five racial/ethnic groups, Whites, African Americans, American Indians/Alaska Natives, Asians and Pacific Islanders (API), and Hispanics since 1990.<sup>1</sup> In addition, the cancer deaths for many API ethnic groups, such as Asian Indians, Chinese, Filipinos, Japanese, Koreans, Vietnamese, Native Hawaiians, and Samoans, are determined every year. However, their cancer mortality rates are determined only once every 10 years. This infrequency is due to a lack of population estimates for these ethnic groups until the federal census is taken, once a decade.

With the 2000 Census reporting of age distributions for API ethnic populations, cancer mortality rates can be reported for these ethnic groups. We will report their 1999–2001 cancer mortality rates, using the 2000 Census data and standardizing to the 2000 United States (U.S.) population. Then we will compare these rates to those based on their 1990 Census data. The 1988–1992 cancer mortality rates for Chinese, Japanese, Filipinos, and Native Hawaiians have been reported, based on the 1990 Census and standardized to the 1970 U.S. population.<sup>2</sup> Unfortunately, there is no way to compare rates standardized to 1970 with rates standardized

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to 2000. Thus, we will recalculate the 1988–1992 rates and standardize these to the 2000 U.S. population. This allows us to determine the change in cancer mortality rates from 1988–1992 to 1999–2001 for a number of API ethnic groups.

## METHODS

In the 2000 Census, people were allowed to indicate if they classify themselves in more than one racial/ethnic group. Thus, in the reporting of the 2000 Census, two population counts are given, one for persons who classified themselves as being from a single ethnicity (“alone” population), and one for persons who indicated that they are of an ethnicity that is either a single ethnic group or part of a multiple racial/ethnic group (“any combination” population).<sup>3</sup> The rates based on the “alone” population form an upper boundary on cancer mortality rates for an ethnicity, whereas rates based on the “any combination” population form a lower boundary on the rates.

The ethnic group for a cancer death is determined from the death certificate. Beginning in 1969, cancer deaths were reported for four API ethnicities, Chinese, Japanese, Filipinos, and Native Hawaiians throughout the U.S. In 1992, seven states (California, Hawaii, Illinois, New Jersey, New York, Texas, Washington), representing the states with the most APIs based on the 1990 Census, allowed death certificates to report additional API ethnicities.

The 2000 Census data allows one to calculate 1999–2001 cancer mortality rates in Asian Indians, Koreans, Vietnamese, Samoans, and others.<sup>4</sup> For Chinese, Filipino, Japanese, and Native Hawaiians, the rates for 1988–1992, based on their 1990 Census populations for the seven states, can be calculated and compared with their 1999–2001 rates.

Using the 1990 Census populations for Chinese, Japanese, Filipino, and Native Hawaiians, their 1988–92 cancer mortality rates were determined, using the 1990 population for this 5-year period, age-adjusted to the 2000 U.S. standard population. Using the 2000 Census populations, the 1999–2001 cancer mortality rates for these groups were calculated with the upper boundary on the rates based on the number of people in the “alone” population and the lower boundary of the rates based on the “any combination” populations. These data were obtained from the Census 2000 Census Summary File two (SF-2) and accessed using American FactFinder on the Census website.<sup>3</sup>

For Asian Indians, Koreans, Vietnamese, and Samoans, their annual number of cancer deaths have been reported since 1992 in only seven states, California, Hawaii, Illinois, New Jersey, New York, Texas, and Washington.<sup>5</sup> These are the seven states with the greatest API populations from the 1990 Census. Using the 2000 Census, the 1999–2001 cancer mortality rates for these groups were determined in the same manner as for the other groups. For Native Hawaiians, the Hawaii (HI) cancer registry counts the 2000 Census “any combination” population of Native Hawaiians as the estimate of the Native Hawaiian population. The upper boundary of the rates for Native Hawaiians were based on the “any combination” population of Native Hawaiians in HI and the other six states’ “alone” populations for Native Hawaiians. For Samoans in HI, the HI cancer registry determined their own estimates of this population. It is intermediate between the “alone” and “any combination” census populations for Samoans in HI. The HI cancer registry estimate of Samoans was used in the determination of the upper boundary on Samoan rates. All rates are age-adjusted to the 2000 standardized U.S. population.

## RESULTS

The 1999–2001 cancer mortality rates, representing seven states (California, Hawaii, Illinois, New Jersey, New York, Texas, and Washington), are reported for Asian Indians, Chinese, Filipinos, Japanese, Koreans, Vietnamese, Native Hawaiians, and Samoans in Table 1. The

rates for each API ethnicity are the first report on their rates based on the 2000 Census for the seven states. Two rates are presented, the upper boundary of the rates using the Census “alone” populations and the lower boundary of the rates, using the “any combination” populations. We report rates that occurred in at least 10 persons of an ethnicity by gender. For comparison, we report the 1988–1992 cancer mortality rates for Chinese, Filipinos, Japanese, and Native Hawaiians in Table 2. Figure 1 shows the cancer mortality rates for all causes of cancer deaths for the periods 1988–1992 and 1999–2001 by gender. The differences in the 1999–2001 and 1988–1992 all cancers mortality rates are plotted. Positive values indicate an increase in rates from 1988–1992 to 1999–2001, whereas negative values indicate a decrease in rates during these periods.

Figure 2 shows differences between 1988–1992 and 1999–2001 site-specific cancer rates for Chinese, Filipinos, Japanese, and Native Hawaiians. Examination of these plots indicates the cancer sites contributing to all cancer mortality rate changes.

The top five site-specific 1999–2001 cancer mortality rates are reported in Figure 3 for each API ethnic group.

## DISCUSSION

We see declines in the 1988–1992 to 1999–2001 all cancers mortality rates for both genders of Whites, Total API, and Chinese. However, there are increases for both genders of Filipinos, Japanese females, and Native Hawaiian females. Thus, the total API pattern masks the effects in specific API ethnic groups.

For Filipinos, the increases are principally due to increases in lung and liver cancers for males and increases in lung, breast, pancreatic, ovarian, and colorectal cancers for females. Furthermore, Filipino females do not have a decline in rates for cervical cancer. For Japanese females, increases are due to lung, pancreatic, and liver cancer. Although the “all cancers” mortality rates for Japanese males has declined from the 1990s to the 2000s, there are increases in pancreatic and liver cancers. For Native Hawaiian females, there are increases in lung, liver, pancreatic, breast, and cervical cancers.

The cancer sites, lung, liver, breast, colorectum, cervix, and prostate have medical interventions that may reduce the risk of cancer death.<sup>6</sup> For lung cancer, there is smoking cessation. For breast cancer, there is mammography and clinical breast examination. For colorectal cancer, there is colorectal cancer screening with fecal occult blood testing, sigmoidoscopy, colonoscopy, and barium scanning. For cervical cancer, there is Papanicolaou smear and human papilloma virus testing. For prostate cancer, there is prostate specific antigen (PSA).<sup>6</sup> For liver cancer, there are hepatitis B vaccinations.<sup>7</sup>

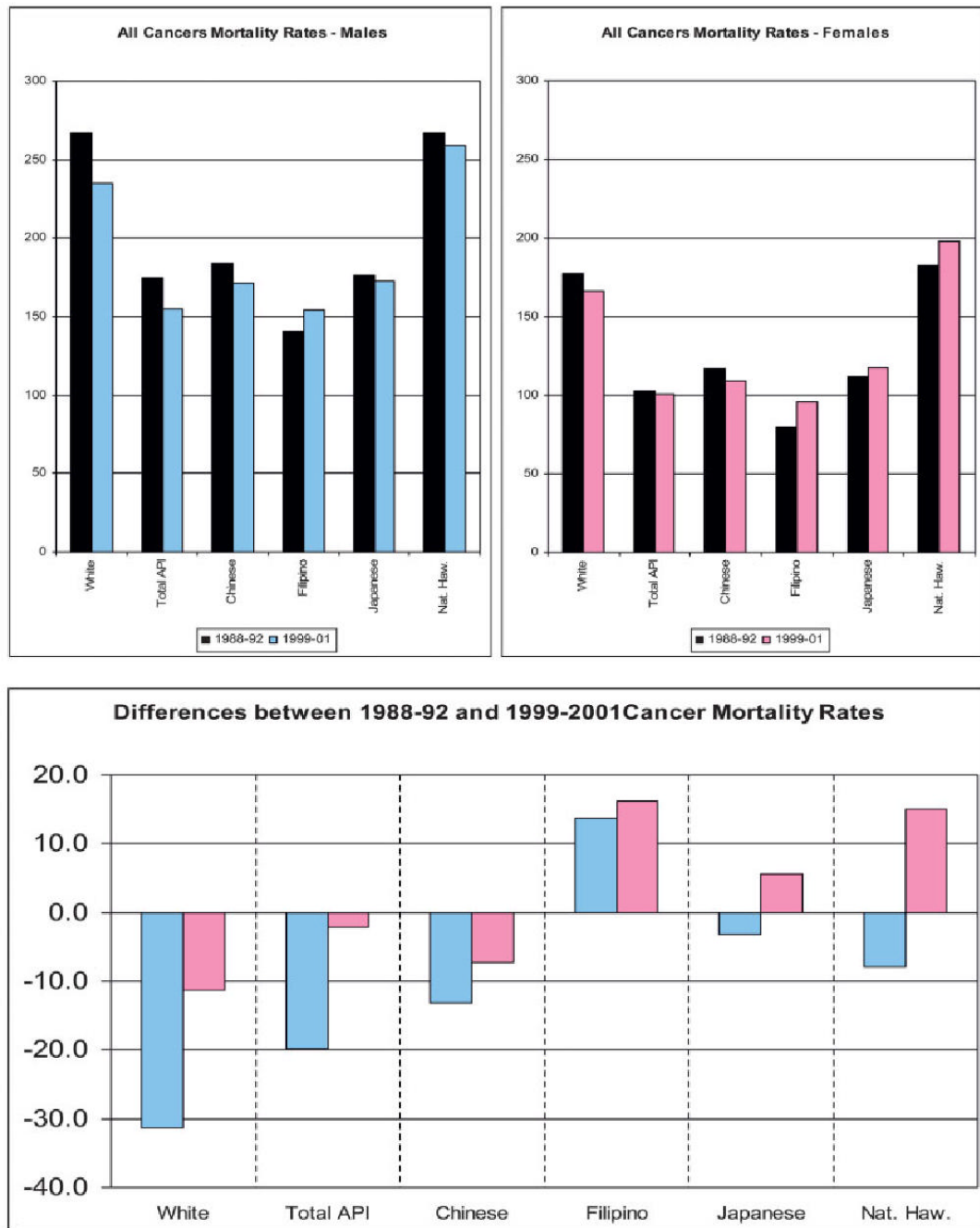
The top five 1999–2001 cancer mortality rates for each API ethnic group by gender are presented in Figure 3. The cancer burdens are unique to each API ethnic group. No group has the same order of the top five cancers. Furthermore, no group has the same order as the total API cancers (except Japanese females). Thus, the total API cancer burden, which is reported annually, does not represent any specific API group, but is a composite of different problems. This speaks to the importance of reporting rates on separate API ethnic groups and the need for cancer prevention and control activities tailored to each group.

Even with this uniqueness, there are several overall themes with regard to cancer prevention and control. The predominant cancer for all API ethnic groups is lung cancer. It is the number one cause of cancer death for each group, except Asian Indian women. For females of most ethnic groups, breast cancer is second. Liver cancer is still a major concern for API groups as well as stomach cancers.

We have presented the cancer mortality rates for API ethnic groups. Hopefully, they will be used to shape the types of cancer prevention and control measures needed for each group. The uniqueness of cancer concerns for each ethnic group represents a challenge to all researchers attempting to serve these communities.

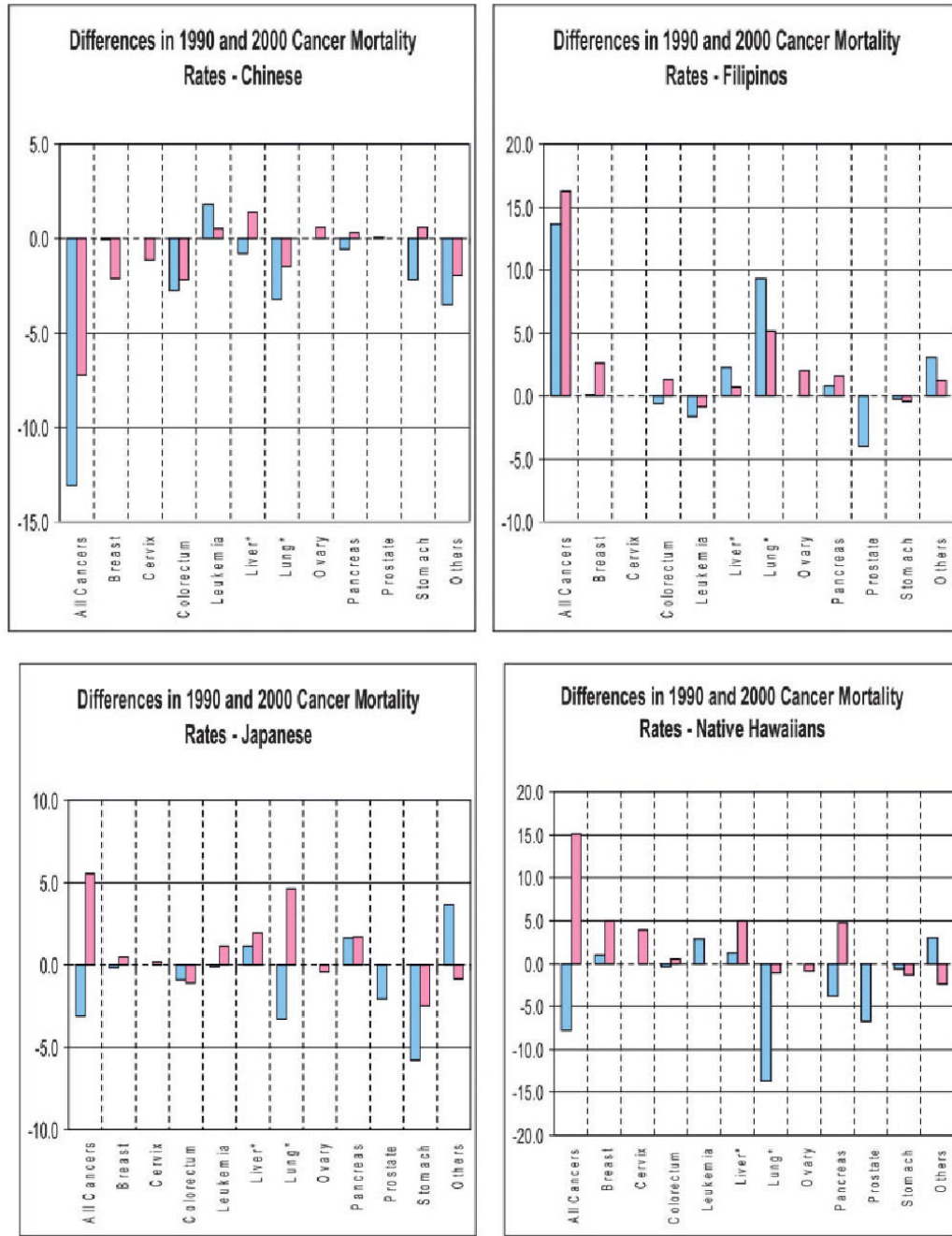
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**FIGURE 1.**

Upper panels report all cancer mortality rates for 1988–1992 (in black) and the upper boundary estimate of the 1999–2001 rates for males (blue, left graph) and for females (pink, right graph). Lower panel is the difference between 1999–2001 and 1988–1992 cancer mortality rates for all cancers. A positive value indicates that the 1999–2001 rate is greater than the 1988–1992 rate. A negative value indicates that the 1999–2001 rate is less than the 1988–1992 rate. Differences in the male rates are in blue, and differences in the female rates are in pink. Total API: Total Asians and Pacific Islanders; Nat Haw: Native Hawaiians.



**FIGURE 2.** Differences between 2000 (1999–2001) and 1990 (1988–1992) site-specific cancer mortality rates for Chinese, Filipinos, Japanese, and Native Hawaiians. A positive value indicates that the 2000 (1999–2001) rate is greater than the 1990 (1988–1992) rate. A negative value indicates that the 2000 (1999–2001) rate is less than the 1990 (1988–1992) rate. Differences in the male rates are in blue, and differences in the female rates are in pink. Liver\*: liver and intrahepatic bile duct; Lung\*: lung and bronchus. Asterisks indicate that Lung\* includes lung and bronchus; Liver\* includes liver and intrahepatic bile duct.



### Top Five 1999-2001 Cancer Mortality Rates

Ethnicity	API	API	Asian Ind	Asian Ind	Chinese	Chinese	Filipino	Filipino	Japanese	Japanese
Gender:	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	Lung*	Lung*	Lung*	Breast	Lung*	Lung*	Lung*	Lung*	Lung*	Lung*
2	Colorectum	Breast	Prostate	Lung*	Liver*	Colorectum	Prostate	Breast	Colorectum	Breast
3	Liver*	Colorectum	Pancreas	Colorectum	Colorectum	Breast	Colorectum	Colorectum	Stomach	Colorectum
4	Prostate	Pancreas	Leukemia	Ovary	Stomach	Stomach	Liver*	Pancreas	Prostate	Pancreas
5	Stomach	Stomach	Liver*	Pancreas	Prostate	Liver*	Non-Hodgn	Ovary	Pancreas	Stomach

Ethnicity	Korean	Korean	Vietnamese	Vietnamese	Nat. Hawai	Nat. Hawai	Samoan	Samoan	White	White
Gender:	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	Lung*	Lung*	Lung*	Lung*	Lung*	Lung*	Lung*	Lung*	Lung*	Lung*
2	Stomach	Stomach	Liver*	Liver*	Colorectum	Breast	Stomach	Breast	Prostate	Breast
3	Liver*	Liver*	Stomach	Colorectum	Prostate	Pancreas	Colorectum	Stomach	Colorectum	Colorectum
4	Colorectum	Colorectum	Colorectum	Breast	Stomach	Colorectum	Liver*	Ovary	Pancreas	Ovary
5	Pancreas	Pancreas	Leukemia	Stomach	Pancreas	Stomach	Prostate	Endomet*	Non-Hodgn	Pancreas

Colored cancer sites represents sites where cancer prevention and control measures are available.

Endomet\* = Corpus and uterus, NOS; Liver\* = liver and intrahepatic bile duct; Lung\* = lung and bronchus; Non-Hodgn = Non-Hodgkin Lymphoma

**FIGURE 3.**  
Top five 1999–2001 cancer mortality rates by ethnicity and gender.

TABLE 1  
 1999–2001 Cancer Mortality Rates for Asian and Pacific Islander Ethnicities for Seven States (CA, HI, IL, NJ, NY, TX, and WA) Based on 2000 Census Populations

	Male				Female			
	Upper boundary Rate	SE	Lower boundary Rate	Deaths	Upper boundary Rate	SE	Lower boundary Rate	Deaths
<b>Asian Indian</b>								
&All cancers	81.7	4.8	71.2	497	66.0	3.5	57.4	477
Brain	3.9	0.8	3.4	37	2.5	0.6	2.2	19
Breast	nr	nr	nr	nr	11.9	1.3	10.4	109
Cervix					2.3	0.6	2.0	17
Colorectum	4.7	1.2	4.1	31	5.4	1.1	4.6	30
Endometrium					1.7	0.5	1.5	13
Esophagus	4.2	1.1	3.7	22	2.9	0.8	2.5	19
Gallbladder	nr	nr	nr	nr	1.7	0.5	1.5	14
Leukemia	5.3	1.2	4.6	47	2.8	0.7	2.4	26
Liver	5.1	1.2	4.4	32	2.8	0.8	2.4	17
Lung	17.4	2.1	15.2	99	5.4	1.0	4.7	37
Myeloma	1.5	0.4	1.4	15	2.5	0.6	2.2	17
Non-Hodgkin	3.4	0.9	3.0	24	2.3	0.6	2.0	16
Oral cavity	3.0	0.9	2.6	21	nr	nr	nr	35
Ovary					4.5	0.9	3.9	35
Pancreas	5.7	1.2	5.0	29	3.7	0.9	3.2	23
Prostate	10.0	2.0	8.6	34				14
Stomach	3.5	0.9	3.1	24	2.2	0.7	1.9	nr
Urinary bladder	3.6	1.2	3.1	11	nr	nr	nr	nr
<b>Chinese</b>								
All cancers	170.9	3.0	159.0	3539	109.5	2.1	101.2	2771
Brain	2.2	0.3	2.0	48	1.8	0.3	1.6	47
Breast	nr	nr	nr	nr	11.9	0.7	10.8	328
Cervix					2.1	0.3	1.9	53
Colorectum	19.0	1.0	17.8	381	12.7	0.7	11.8	313
Endometrium					2.2	0.3	2.0	58
Esophagus	3.8	0.4	3.6	84	0.9	0.2	0.8	21
Gallbladder	0.6	0.2	0.5	12	0.8	0.2	0.7	19
Kidney	3.2	0.4	2.9	67	1.3	0.2	1.2	32
Leukemia	6.5	0.6	6.0	137	3.4	0.4	3.1	87
Liver	20.4	1.0	18.8	460	7.5	0.6	6.9	189
Lung	49.8	1.6	46.5	1011	24.5	1.0	22.7	604
Melanoma	0.5	0.2	0.5	11	nr	nr	nr	nr
Myeloma	1.8	0.3	1.7	37	1.1	0.2	1.0	26
Nasopharynx	4.8	0.4	4.4	126	1.4	0.2	1.3	40
Non-Hodgkin	6.2	0.6	5.8	125	3.9	0.4	3.6	98
Oral cavity	6.3	0.5	5.8	160	2.2	0.3	2.0	59
Ovary					5.4	0.5	5.0	143
Pancreas	8.4	0.7	7.9	173	7.2	0.6	6.7	175
Prostate	10.5	0.8	9.9	175				189
Stomach	12.0	0.8	11.2	251	7.6	0.6	7.0	15
Thyroid	nr	nr	nr	nr	0.6	0.2	0.6	24
Urinary bladder	3.4	0.5	3.2	59	1.1	0.2	1.0	nr
<b>Filipino</b>								
All cancers	154.5	3.3	141.3	2324	95.6	2.2	88.0	2046
Brain	2.8	0.4	2.5	45	1.4	0.3	1.2	29
Breast	nr	nr	nr	nr	16.7	0.9	15.2	401
Cervix					2.9	0.4	2.6	70



	Male				Female			
	Upper boundary Rate	SE	Lower boundary Rate	Deaths	Upper boundary Rate	SE	Lower boundary Rate	Deaths
Colorectum	15.1	1.0	13.8	236	8.8	0.7	8.1	187
Endometrium					2.9	0.4	2.7	66
Esophagus	2.2	0.4	2.0	33	0.7	0.2	0.6	15
Gallbladder	0.7	0.2	0.6	10	0.7	0.2	0.6	14
Kidney	2.5	0.4	2.2	43	1.4	0.3	1.3	31
Leukemia	5.7	0.6	5.0	94	2.6	0.3	2.3	57
Liver	11.6	0.9	10.6	189	3.8	0.5	3.5	73
Lung	46.5	1.8	42.6	708	17.5	1.0	16.2	360
Myeloma	3.0	0.5	2.8	44	2.7	0.4	2.5	53
Nasopharynx	1.3	0.3	1.2	24	0.5	0.1	0.4	10
Non-Hodgkin	9.7	0.8	8.9	142	3.7	0.4	3.5	74
Oral cavity	3.6	0.5	3.3	59	1.3	0.3	1.2	27
Ovary					5.9	0.5	5.4	136
Pancreas	7.1	0.7	6.5	104	6.2	0.6	5.7	121
Prostate	18.6	1.2	17.2	234				
Stomach	4.8	0.6	4.4	74	3.0	0.4	2.8	57
Thyroid	0.8	0.2	0.7	12	0.9	0.2	0.8	18
Urinary bladder	2.0	0.4	1.9	25	0.8	0.2	0.7	13
<b>Japanese</b>								
All cancers	172.8	4.0	161.9	1992	117.6	2.8	109.6	1971
Brain	1.8	0.5	1.4	18	1.2	0.3	1.0	17
Breast					15.5	1.0	14.2	237
Cervix					2.0	0.4	1.8	27
Colorectum	24.9	1.5	23.3	283	15.3	1.0	14.3	253
Endometrium					2.5	0.4	2.3	40
Esophagus	7.0	0.8	6.5	77	1.2	0.3	1.1	21
Kidney	4.1	0.6	3.8	47	1.3	0.3	1.2	21
Leukemia	5.4	0.7	4.9	60	3.8	0.5	3.5	60
Liver	8.9	0.9	8.3	100	6.6	0.6	6.1	119
Lung	38.4	1.8	36.3	461	19.4	1.1	18.4	345
Myeloma	1.3	0.3	1.3	17	1.6	0.3	1.5	28
Non-Hodgkin	6.4	0.8	6.0	75	5.1	0.6	4.7	85
Oral cavity	2.2	0.4	2.0	25	0.8	0.2	0.8	14
Ovary					5.5	0.6	5.1	86
Pancreas	12.9	1.1	12.1	148	10.6	0.8	10.1	190
Prostate	16.2	1.2	15.5	182				
Stomach	18.4	1.3	17.3	211	10.5	0.8	9.9	179
Thyroid	nr	nr	nr	nr	0.6	0.2	0.5	10
Urinary bladder	5.0	0.7	4.8	57	1.2	0.3	1.2	21
<b>Korean</b>								
All cancers	202.9	7.0	194.7	1084	111.5	3.8	107.5	962
Brain	1.4	0.4	1.3	12	1.4	0.4	1.3	13
Breast	nr	nr	nr	nr	7.8	0.8	7.5	90
Cervix					3.0	0.5	2.8	31
Colorectum	18.9	2.2	18.2	94	11.1	1.2	10.7	96
Endometrium					1.6	0.5	1.6	14
Esophagus	3.1	0.8	3.0	19	nr	nr	nr	nr
Gallbladder	2.3	0.7	2.2	11	2.0	0.6	2.0	15
Kidney	3.4	0.8	3.3	19	1.8	0.5	1.8	13
Leukemia	6.0	1.1	5.7	37	2.5	0.5	2.3	24
Liver	24.7	2.2	23.7	158	13.1	1.3	12.7	114
Lung	54.6	3.7	52.4	273	21.0	1.7	20.3	168
Myeloma	nr	nr	nr	nr	1.5	0.5	1.4	11

	Male			Female		
	Upper boundary Rate	Lower boundary Rate	SE	Upper boundary Rate	Lower boundary Rate	SE
Non-Hodgkin	6.2	5.9	1.3	3.3	3.2	0.7
Oral cavity	3.3	3.1	0.8	nr	nr	nr
Ovary	11.1	10.6	1.6	4.6	4.5	0.7
Pancreas	8.4	8.1	1.7	8.2	7.9	1.1
Prostate	32.4	31.1	2.8	15.6	15.0	1.4
Stomach	3.8	3.6	1.0	nr	nr	nr
Urinary bladder	164.9	155.2	6.9	96.2	90.5	4.4
<b>Vietnamese</b>	2.7	2.6	0.8	1.5	1.4	0.5
All cancers	8.5	8.0	1.6	7.5	7.1	1.0
Brain	3.5	3.3	1.1	4.5	4.3	0.8
Breast	3.0	2.8	1.0	7.5	7.1	1.0
Cervix	7.4	7.0	1.6	4.5	4.3	0.9
Colorectum	34.3	32.4	3.0	7.5	7.1	1.2
Endometrium	43.0	40.5	3.5	1.8	1.7	0.5
Esophagus	2.3	2.2	0.7	nr	nr	nr
Kidney	6.0	5.7	1.3	nr	nr	nr
Leukemia	6.2	5.9	1.3	nr	nr	nr
Liver	7.4	7.0	1.4	nr	nr	nr
Lung	6.8	6.4	1.7	nr	nr	nr
Nasopharynx	14.1	13.2	2.1	nr	nr	nr
Non-Hodgkin	2.5	2.4	0.8	nr	nr	nr
Oral cavity	258.9	226.5	11.1	197.7	173.9	8.1
Ovary	nr	nr	nr	33.4	29.2	3.2
Pancreas	26.2	23.0	3.6	7.0	6.1	1.5
Prostate	6.6	5.7	1.6	14.6	12.9	2.2
Stomach	4.5	3.9	1.2	5.8	5.1	1.4
Urinary bladder	10.3	9.0	2.1	nr	nr	nr
<b>Native Hawaiian</b>	82.2	72.1	6.4	nr	nr	nr
6+HI	5.6	4.9	1.6	nr	nr	nr
All cancers	8.8	8.0	1.5	nr	nr	nr
Breast	nr	nr	nr	nr	nr	nr
Cervix	26.2	23.0	3.6	nr	nr	nr
Colorectum	6.6	5.7	1.6	nr	nr	nr
Endometrium	4.5	3.9	1.2	nr	nr	nr
Esophagus	10.3	9.0	2.1	nr	nr	nr
Kidney	10.4	9.1	2.0	nr	nr	nr
Leukemia	82.2	72.1	6.4	nr	nr	nr
Liver	5.6	4.9	1.6	nr	nr	nr
Lung	8.8	7.7	2.0	nr	nr	nr
Myeloma	4.8	4.2	1.3	nr	nr	nr
Non-Hodgkin	10.8	9.4	2.1	nr	nr	nr
Oral cavity	22.8	20.2	4.0	nr	nr	nr
Ovary	16.6	14.5	2.8	nr	nr	nr
Pancreas	286.8	250.8	25.6	6.6	5.8	1.5
Prostate	25.6	25.9	0.8	15.8	13.9	2.3
Stomach	28.6	26.3	9.3	12.1	10.7	2.1
<b>Samoa</b>	29.7	26.3	8.6	19.7	17.4	1.9
6+HI	34.3	28.6	9.5	37.0	32.5	7.1
All cancers	29.7	26.3	8.6	nr	nr	nr
Breast	286.8	250.8	25.6	nr	nr	nr
Cervix	25.6	25.9	0.8	nr	nr	nr
Colorectum	28.6	26.3	9.3	nr	nr	nr
Liver	29.7	26.3	8.6	nr	nr	nr

	Male			Female		
	Upper boundary Rate	SE	Deaths	Upper boundary Rate	SE	Deaths
Lung	80.1	13.0	38	45.4	10.7	18
Stomach	39.7	10.6	14	nr	nr	nr
				38.9	9.7	
				nr	nr	

SE: standard error of rate; nr: not reported in table because of < 10 cases, Brain: brain and other nervous system; Endometrium: corpus and uterus not otherwise specified; Kidney: kidney and renal pelvis; Liver: liver and intrahepatic bile duct; Lung: lung and bronchus; Non-Hodgkin: Non-Hodgkin lymphoma; Oral cavity: oral cavity and pharynx (including nasopharynx). Rates are per 100,000 and age-adjusted to the 2000 U.S. (18 age groups) standard. 95% confidence intervals are Rate ± SE.

**TABLE 2**  
 1988–1992 Cancer Mortality Rates for Seven States (CA, HI, IL, NJ, NY, TX, and WA)—Based on 1990 Census Populations

	Males			Females		
	Rate	SE	Count	Rate	SE	Count
<b>Chinese</b>						
All cancers	184	3.3	3,784	116.7	2.3	2,764
Brain	2.3	0.3	60	1.7	0.3	43
Breast	nr	nr	nr	1.4	0.8	360
Cervix				3.2	0.4	83
Colorectum	21.8	1.2	414	14.9	0.8	333
Endometrium				2.8	0.3	74
Esophagus	5.4	0.6	109	1.0	0.2	22
Gallbladder	1.1	0.2	22	1.2	0.2	28
Hodgkin	1.8	0.3	39	1.1	0.2	28
Kidney	1.1	0.3	21	nr	nr	nr
Leukemia	4.7	0.5	108	2.9	0.3	78
Liver	21.2	1.0	512	6.1	0.5	147
Lung	53.0	1.8	1,063	26.0	1.1	590
Melanoma	nr	nr	nr	0.4	0.1	10
Myeloma	1.4	0.3	30	1.9	0.3	41
Nasopharynx	5.9	0.5	154	1.6	0.3	43
Non-Hodgkin	6.9	0.6	150	3.0	0.4	73
Oral cavity	8.0	0.6	203	2.5	0.3	65
Ovary				4.8	0.4	126
Pancreas	9.0	0.7	176	6.9	0.6	159
Prostate	10.4	0.9	156			160
Stomach	14.2	0.9	283	7.0	0.6	16
Thyroid	nr	nr	nr	0.8	0.2	16
Urinary bladder	2.9	0.5	48	1.5	0.3	30
<b>Filipino</b>						
All cancers	140.8	2.9	2,538	79.4	2.2	1,716
Brain*	1.5	0.3	34	1.8	0.3	43
Breast	nr	nr	nr	14.1	0.8	357
Cervix				2.9	0.4	76
Colorectum	15.7	1.0	279	7.5	0.7	152
Endometrium				1.3	0.2	33
Esophagus	3.0	0.4	53	0.7	0.2	11
Gallbladder	0.7	0.2	11	1.0	0.3	17
Kidney	2.4	0.4	46	0.6	0.2	10
Leukemia	7.3	0.6	147	3.4	0.4	85
Liver	9.4	0.7	180	3.1	0.5	60
Lung	37.2	1.4	680	12.4	0.9	261
Melanoma	0.6	0.2	10	nr	Nr	nr
Myeloma	3.3	0.4	58	1.3	0.2	28
Nasopharynx	2.0	0.3	42	nr	Nr	nr
Non-Hodgkin	6.3	0.6	119	3.8	0.5	75
Oral cavity	3.6	0.4	71	2.4	0.5	38
Ovary				3.9	0.4	93
Pancreas	6.3	0.6	113	4.6	0.6	86
Prostate	22.6	1.2	356			66
Stomach	5.1	0.5	91	3.4	0.5	31
Thyroid	0.6	0.2	11	1.7	0.4	12
Urinary bladder	1.6	0.3	28	0.6	0.2	12
<b>Japanese</b>						
All cancers	175.9	3.7	2,727	112.1	2.4	2,383
Brain	1.4	0.3	26	1.2	0.3	26

	Males			Females		
	Rate	SE	Count	Rate	SE	Count
Breast	nr	nr	nr	15.0	0.9	335
Cervix	25.8	1.4	423	1.8	0.3	39
Colorectum	6.2	0.7	101	16.4	0.9	342
Endometrium	0.6	0.2	10	2.4	0.3	54
Gallbladder	3.1	0.5	49	1.2	0.3	25
Kidney	5.5	0.6	90	1.2	0.2	26
Leukemia	7.8	0.7	129	2.6	0.4	49
Liver	41.7	1.7	681	4.6	0.5	109
Lung	1.3	0.3	21	14.8	0.9	333
Melanoma	6.4	0.7	100	1.0	0.2	20
Non-Hodgkin	2.7	0.4	44	4.9	0.5	102
Oral cavity	11.2	0.9	170	1.2	0.3	26
Ovary	18.3	1.3	229	6.0	0.5	140
Pancreas	24.2	1.4	359	8.9	0.7	182
Prostate	nr	nr	nr	13.0	0.8	259
Stomach	nr	nr	nr	1.0	0.2	18
Thyroid	3.0	0.5	40	1.8	0.3	33
Urinary bladder	266.7	10.6	765	182.7	7.6	643
<b>Native Hawaiian</b>	3.3	1.0	14	3.5	1.1	12
All cancers	nr	nr	nr	28.5	2.9	105
Brain	26.6	3.3	77	3.1	0.9	12
Breast	9.8	2.0	28	14.1	2.3	42
Cervix	3.5	1.0	12	9.1	1.8	29
Colorectum	7.4	1.5	29	nr	nr	nr
Endometrium	9.1	1.8	29	nr	nr	nr
Esophagus	95.9	6.3	275	5.7	1.2	24
Kidney	nr	nr	nr	nr	nr	nr
Leukemia	nr	nr	nr	45.3	3.8	158
Liver	4.1	1.1	14	4.3	1.2	14
Lung	14.6	2.5	40	1.2	0.2	18
Myeloma	29.5	4.2	58	4.8	1.2	18
Non-Hodgkin	17.2	2.8	46	nr	nr	nr
Oral cavity	14.6	2.5	40	7.5	1.5	29
Ovary	29.5	4.2	58	11.0	2.0	34
Pancreas	17.2	2.8	46	13.5	2.1	46
Prostate						
Stomach						

Rates are per 100,000 and age-adjusted to the 2000 U.S. (18 age groups) standard. SE: standard error of rate; nr: not reported as there were less than 10 cancer deaths for site; Brain: brain and other nervous system; Endometrium: corpus and uterus, not otherwise specified; Kidney: kidney and renal pelvis; Liver: liver and intrahepatic bile duct; Lung: lung and bronchus; Non-Hodgkin: Non-Hodgkin lymphoma; Oral cavity: oral cavity and pharynx (including nasopharynx). 95% confidence intervals are Rate ± SE.