Patterns of Cancer Among Asians and Pacific Islanders in Illinois

Incidence, 1993-1997
Mortality, 1992-1998

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Prepared by

Therese A. Dolecek, Ph.D.
Senior Cancer Epidemiologist

Tiefu Shen, M.D., Ph.D.
Division Chief

Illinois Department of Public Health
Division of Epidemiologic Studies

Miriam B. Rodin, M.D., Ph.D.
Assistant Professor
University of Chicago
Department of Medicine

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Executive Summary

A preliminary evaluation of Illinois' cancer incidence for 1993 to 1997 and cancer mortality for 1992 to 1998 was conducted to describe patterns of cancer among Asians and Pacific Islanders residing in the state. Overall, Asians and Pacific Islanders had lower cancer incidence and mortality than whites in Illinois. Proportionately, the cancer incidence counts and cancer deaths for Asians and Pacific Islanders were less than would be expected for the groups' representation in the total population for Illinois.

However, certain cancers, including liver and intrahepatic bile duct, nasopharynx, stomach and thyroid, were observed to be higher among the combined Asians and Pacific Islanders in Illinois. Cancer sites contributing most to the cancer burden for all Illinoisans also were observed to prevail among Asians and Pacific Islanders. These included colon and rectum, and lung and bronchus for both sexes, prostate for males, and breast for females.

The evaluation was limited by problems associated with both numerators and denominators for Asians and Pacific Islanders in Illinois. Comparisons with national data clearly indicated an undercount of Asians and Pacific Islanders on both the Illinois State Cancer Registry database and on Illinois death certificates. Reliable population data are not available for Asian and Pacific Islander subgroups, thus, precluding any calculation of rates for specific subgroups of interest.

These findings indicate the need to study approaches to better identify Asian and Pacific Islanders on the cancer registry database and on Illinois death certificate data files. An improved numerator in combination with upcoming population data from the year 2000 decennial census will allow a more comprehensive evaluation of cancer among Illinois' Asians and Pacific Islanders.

Introduction

Asians and Pacific Islanders represent an important and diverse cultural group in the United States (U.S.). The aggregate classification, Asians and Pacific Islanders, is often used to identify the country's third largest minority. However, the practice is perhaps an oversimplification because the race group is composed of numerous subgroups, each differing in language, religion, lifestyle, diet and health behaviors. Major Asian subgroups include Asian Indian, Cambodian, Chinese, Filipino, Hmong, Japanese, Korean, Laotian, Thai and Vietnamese. Other Asian subgroups are Bangladeshi, Burmese, Indonesian, Malayan, Pakistani and Sri Lankan. Pacific Islanders are of Polynesian, Melanesian and Micronesian backgrounds. The Polynesian subgroup is the largest of the three and includes Hawaiians, Samoans, Tongans and Tahitians. The next largest subgroup, Micronesians, is primarily Guamanian (or Chamorros), but Mariana Islanders, Marshall Islanders and Palauans also are included in the subgroup. The largest Melanesian subgroup population is Fijian.[1-3]

The number of Asians and Pacific Islanders in the U.S. increased from 1.5 million in 1970 to 3.7 million in 1980 to 7.3 million in 1990. This growth rate is approximately 20 times the rate of non-Hispanic whites, six times that of blacks and twice the growth of Hispanics. The dramatic population increases are the consequence of increased immigration from China, India, Korea, the Phillippines and other Asian and Pacific Island areas following the adoption of the Immigration Act of 1965. In addition, part of the growth between 1970 and 1990 may be explained by the inclusion of more race classifications on the census form questionnaire and by improvements in data collection and processing procedures during the 1990 decennial census. Such growth is projected to continue well into the new century.[1-4]

Approximately two-thirds of U.S. Asians and Pacific Islanders live in just five states: California, New York, Hawaii, Texas and Illinois.[1] In Illinois, Asians and Pacific Islanders increased from 1.5 percent of the total population in 1980 to 2.5 percent in 1990 and to an estimated 3.3 percent as projected in the 1998 intercensal estimate by the U.S. Bureau of the Census.[5-7] It is apparent that the population dynamics observed at the national level also are evident for the Asian and Pacific Islander populations residing in Illinois.

Table 1 shows the 1990 population for Illinois by race distribution. As shown, Asians and Pacific Islanders numbered 284,944 or approximately 2.5 percent of Illinois' population. Table 1A presents a closer look at Illinois' 1990 Asian and Pacific Islander populations. The largest proportions among Asian subgroup populations were Filipino (24 percent), Asian Indian (22 percent), Chinese (18 percent), Korean (15 percent) and Japanese (8 percent). Other Asian subgroups residing in Illinois at the time of the 1990 census were Vietnamese, Cambodian, Hmong, Laotian, other Asian and Thai. The largest proportions of Pacific Islander subgroups in Illinois were Guamanian (45 percent), Hawaiian (38 percent) and Samoan (11 percent) with some presence of Tongan, other Polynesian and other Micronesian.

It is interesting to note that, proportionately, Asian and Pacific Islander subgroups in Illinois differ slightly from the national picture. Nationally, the largest proportion of Asian Americans in1990 were Chinese (24 percent) and, Filipino (20 percent) followed by Japanese (12 percent), Asian Indian (11.8 percent) and Korean (11.6 percent). Also, Hawaiians were the largest Pacific Islander group, representing 58 percent of the total Pacific Islander population, with the next largest subgroups being Samoans (17 percent) and Guamanians (14 percent). A relatively larger representation of Filipinos and Asian Indians is apparent in the Illinois population compared with the nation. Likewise, Guamanians predominate the Pacific Islander population in the state rather than the Hawaiian subgroup. Nationally, Asians represent about 95 percent and Pacific Islanders make up the remaining 5 percent of the total American Asian and Pacific Islander population. The corresponding proportions for Illinois are 99 percent Asian and 1 percent Pacific Islander.[1,3]

An evaluation of cancer incidence and mortality was conducted for Illinois' Asian and Pacific Islander populations to characterize patterns of the disease among the group and its subgroups. To date, only a preliminary examination of mortality patterns among Asian Indian, Chinese, Filipino, Japanese, Korean and Vietnamese for years 1992 to 1994 was conducted by the Department's Division of Epidemiologic Studies.[8] Additional evaluative information was needed for the planning and implementation of public health programs and surveillance activities aimed at meeting the health care needs of Illinois' Asians and Pacific Islanders. This report, *Patterns of Cancer Among Asians and Pacific Islanders in Illinois, Incidence 1993-1997, Mortality 1992-1998,* presents findings from this evaluation.

Table 1. Illinois Population, 1990 Distribution by Race		
Race	**count**	**percent**
White	8,957,923	78.4
Black	1,690,855	14.8
American Indian, Eskimo, or Aleut		0.2
American Indian	23,357	
Eskimo	358	
Aleut	362	
Asian or Pacific Islander		2.5
Asian		
Chinese	49,773	
Filipino	67,383	
Japanese	22,150	
Asian Indian	62,810	
Korean	41,436	
Vietnamese	9,329	
Cambodian	2,686	
Hmong	424	
Laotian	4,274	
Thai	5,343	
Other Asian	16,929	
Pacific Islander		
Polynesian		
Hawaiian	925	
Samoan	260	
Tongan	9	
Other Polynesian	33	
Micronesian	0	
Guamanian	1,083	
Other Micronesian	17	
Melanesian	0	
Pacific Islander, not specified	80	
Other Races	472,803	4.1
All Races	11,430,602	100.0
SOURCE: U.S. Bureau of the Census		

Table 1A. Asians and Pacific Islanders Illinois, 1990		
Race	**count**	**percent**
Filipino	67,383	23.8
Asian Indian	62,810	22.2
Chinese	49,773	17.6
Korean	41,436	14.7
Japanese	22,150	7.8
Other Asian	16,929	6.0
Vietnamese	9,329	3.3
Thai	5,343	1.9
Laotian	4,274	1.5
Cambodian	2,686	1.0
Hmong	424	0.2
Total Asian	282,537	100.0
Guamanian	1,083	45.0
Hawaiian	925	38.4
Samoan	260	10.8
Pacific Islander, not specified	80	3.3
Other Polynesian	33	1.4
Other Micronesian	17	0.7
Tongan	9	0.4
Melanesian	0	0.0
Micronesian	0	0.0
Total Pacific Islander	2,407	100.0
SOURCE: U.S. Bureau of the Census		

Methods

Evaluation Overview

This report evaluates cancer incidence from 1993 to 1997 and cancer mortality from 1992 to 1998, the most current race-specific data available for Asians and Pacific Islanders in Illinois. Cancer data for Illinois' white population are used as a reference or comparison group. Frequencies for cancer incidence and deaths from all sites combined were first examined. Then, occurrences were ranked for the top 10 sites and were compared with national data. Average annual age-adjusted rate comparisons were made only for the aggregate Asian and Pacific Islander group with whites in Illinois and then with available national data. It was not possible to calculate rates for any Asian or Pacific Islander subgroups due to the lack of current denominator data for the time periods under study.

Cancer Cases

Cancer incidence data are from the Illinois Department of Public Health, Division of Epidemiologic Studies, Illinois State Cancer Registry (ISCR), the only source of population-based cancer incidence data for the state. Newly diagnosed cancer cases are reported to ISCR by health care facilities and other cancer registries inside and outside of the state where Illinois residents are diagnosed and treated for cancer. The database files used for this evaluation reflect the status of ISCR as of December 1999. The *International Classification of Diseases for Oncology* (ICD-O-2) codes and the major and minor cancer site groups of the National Cancer Institute (NCI) Surveillance, Epidemiology and End Results (SEER) program were used to define cancer sites.[9-11]

Cancer Deaths

The Illinois Department of Public Health's death master files for years 1992 to 1998 were the source of cancer mortality data for this report. The underlying cause of death on Illinois death certificates was used to identify cancer deaths. The *International Classification of Diseases* (ICD-9) codes for underlying cause of death were converted to SEER major and minor cancer site groups to define the cancer sites presented in this report.[10, 12]

National Cancer Incidence and Mortality Data

SEER data for 1993 to 1997, the same time period as the Illinois data, were analyzed and were compared with results from analyses of Illinois cancer incidence.[13] Likewise, National Center for Health Statistics (NCHS), U.S. cancer mortality data from the multiple cause of death public use data files were evaluated to compare with analyses of Illinois cancer mortality.[14] U.S. cancer mortality data for 1993 to 1997 were compared with the Illinois cancer death data for 1992 to 1998.

Race Classifications

Table 2 shows race codes for sources of cancer incidence and mortality data used for this evaluation. Since detailed race classifications for Asians and Pacific Islanders were not implemented on the ISCR cancer incidence report form until 1993, the time period for cancer incidence under evaluation could only include 1993 to 1997. Presently, the ISCR race classifications are identical to those used in SEER cancer registry operations. However, the detailed race classifications were in effect much earlier in SEER than in ISCR, although a number of specific Asian and Pacific Islander subgroups were added to SEER cancer incidence reporting in the 1990s as shown in Table 2.

Prior to 1992, race classifications on Illinois death files included whites, blacks, American Indian, Chinese, Hawaiian, Japanese, Filipino, other Asian or Pacific Islander and other non-white race. In 1992, Illinois added five additional Asian and Pacific Islander subgroups: Asian Indian, Guamanian, Korean, Samoan and Vietnamese. Therefore, cancer mortality patterns for Asians and Pacific Islanders are presented for 1992 to 1998 in this report. Illinois has separate race codes for "other non-white" and "unknown" that are not present on the NCHS public use death files. NCHS allocates deaths from these categories proportionately across all race categories shown in Table 2.[14] This procedure was not used for Illinois data because only a small number of deaths were classified as "other non-white" or "unknown" and would, therefore, not bias any comparative evaluations between Illinois and national cancer death patterns.

Although an effort was made to preserve as much detail as possible in the description of cancer among Asians and Pacific Islanders for this report, it was necessary to collapse some of the specific race groups into larger groups for site-specific evaluations because numbers were too small to otherwise be meaningful. For ISCR cancer incidence, Hmong, Kampuchean, Laotian, Thai and Vietnamese were collapsed into the Southeast Asian subgroup. The countries of origin for these race groups are similar in climate and diet. Although there is substantial linguistic diversity, there is a common core of culture, custom and exposure history. A Pacific Islander group was created by including cases with race reported as Chamorran, Fiji Islander, Guamanian (NOS), Hawaiian, Melanesian (NOS (not otherwise specified)), Micronesian (NOS), New Guinean, Pacific Islander (NOS), Polynesian (NOS), Somoan, Tahitian and Tongan. Thus, cancer incidence is presented for the following groups: whites, all Asians and Pacific Islanders, Asian Indian/Pakistani, Chinese, Filipino, Japanese, Korean, other Asian, Pacific Islanders and Southeast Asian. SEER cancer incidence data were regrouped to parallel Illinois in this evaluation.

Cancer deaths in Illinois are presented for race-specific classifications including whites, all Asians and Pacific Islanders, Asian Indian/Pakistani, Chinese, Filipino, Hawaiian, Japanese, Korean, other Asian and Vietnamese. The numbers of deaths for Hawaiian and Vietnamese were very small and those data should be reviewed cautiously but were included anyway for descriptive purposes. Groups comparable to those for Illinois were established using the NCHS data for U.S. cancer mortality.

Table 2.
Race Codes for Sources of Cancer Incidence and Mortality Data for
Evaluation of Patterns of Cancer among Asians and Pacific Islanders in Illinois

Illinois State Cancer Registry (ISCR) (1986-1997)	Surveillance, Epidemiology and End Results Program (SEER) (1973-1997)	Illinois Death Master Files (1989-1998)	National Center for Health Statistics (NCHS), Public Use Death Files (1993-1997)
01 - White	01 - White	A - Asian Indian (1992+)	01- White
02 - Black	02 - Black	G - Guamanian (1992+)	02 - Black
03 - American Indian/ Eskimo/Aleut (1993+)	03 - American Indian/Eskimo/Aleut	K - Korean (1992+)	03 - American Indian/Aleut/Eskimo
04 - Chinese (1993+)	04 - Chinese	S - Samoan (1992+)	04 - Chinese
05 - Japanese (1993+)	05 - Japanese	V - Vietnamese (1992+)	05 - Japanese
06 - Filipino (1993+)	06 - Filipino	O - Other Asian	06 - Hawaiian (includes Part-Hawaiian)
07 - Hawaiian (1993+)	07 - Hawaiian	1 - White	07 - Filipino
08 - Korean (1993+)	08 - Korean	2 - Black	18 - Asian Indian/Pakistani
09 - Asian Indian/Pakistani (1993+)	09 - Asian Indian/Pakistani	3 - American Indian	28 - Korean
10 - Vietnamese (1993+)	10 - Vietnamese	4 - Chinese	38 - Samoan
11 - Laotian (1993+)	11 - Laotian	5 - Japanese	48 - Vietnamese
12 - Hmong (1993+)	12 - Hmong	6 - Hawaiian	58 - Guamanian
13 - Kampuchean (1993+)	13 - Kampuchean	7 - Other Non-White	68 - Other Asian or Pacific Islander
14 - Thai (1993+)	14 - Thai (1994+)	8 - Filipino	
20 - Micronesian, NOS (1993+)	20 - Micronesian, NOS (1991+)	9 - Unknown	
21 - Chamorran (1993+)	21 - Chamorran (1991+)		
22 - Guamanian, NOS (1993+)	22 - Guamanian, NOS		
25 - Polynesian, NOS (1993+)	25 - Polynesian, NOS (1991+)		
26 - Tahitian (1993+)	26 - Tahitian		
27 - Somoan (1993+)	27 - Somoan		
28 - Tongan (1993+)	28 - Tongan (1991+)		
30 - Melanesian, NOS (1993+)	30 - Melanesian, NOS (1991+)		
31 - Fiji Islander (1993+)	31 - Fiji Islander		
32 - New Guinean (1993+)	32 - New Guinean (1991+)		
96 - Other Asian (1993+)	96 - Other Asian (1991+)		
97 - Pacific Islander, NOS (1993+)	97 - Pacific Islander, NOS (1991+)		
98 - Other	98 - Other		
99 - Unknown	99 - Unknown		
NOS - not otherwise specified			
SOURCES: Illinois Department of Public Health; National Cancer Institute; National Center for Health Statistics			

Analysis

The SEER Stat software package (version 3.0), developed by Information Management Services Inc. for the National Cancer Institute, was used to calculate frequencies, percentages and average annual age-adjusted cancer incidence and mortality rates. Frequency counts are presented with percentage of total cases or total deaths for specific sites. Rates are expressed per 100,000 population and are age-adjusted by the direct method to the 1970 U.S. standard million population. Rates are presented with standard errors. The formulas for rate calculations are displayed in the Appendix.

Due to the lack of intercensal population estimates for specific Asian and Pacific Islander subgroups, it was necessary to limit subgroup evaluations to observed frequencies for reported cancer incidence cases and deaths. However, intercensal population estimates were available for combined Asians and Pacific Islanders in Illinois through the U.S. Bureau of the Census and cancer incidence and mortality rates were calculated for the respective time periods under evaluation. Population estimates used as denominators for rate calculations were the most current for Illinois' resident populations from the U.S. Bureau of the Census.[7]

Results

Cancer Incidence

All Sites Combined Invasive Cancer Incidence

Figure 1 presents counts and percentage distribution by major race groups for all sites combined invasive cancer incidence cases that were diagnosed during 1993 to 1997 in Illinois. As shown, 3,008 cases of 271,204 cases, or 1.1 percent, were among Asians and Pacific Islanders. Proportionately, cancer incidence among Asians and Pacific Islanders in Illinois was less than their representation in the total Illinois population (2.5 percent in 1990). A detailed distribution for all sites combined invasive cancer incidence by Asian and Pacific Islander subgroup is shown in Figure 2. The largest number of cases was observed for Filipinos followed by Asian Indian/Pakistani; Chinese; Korean; and Japanese, respectively. These rankings parallel the subgroup distribution in the total Illinois population. Notably, a large proportion of cancer incidence was classified as "other Asian," not specified. The remaining Asian and Pacific Islander subgroups contributed small numbers of cases to the overall cancer incidence burden for the race group.

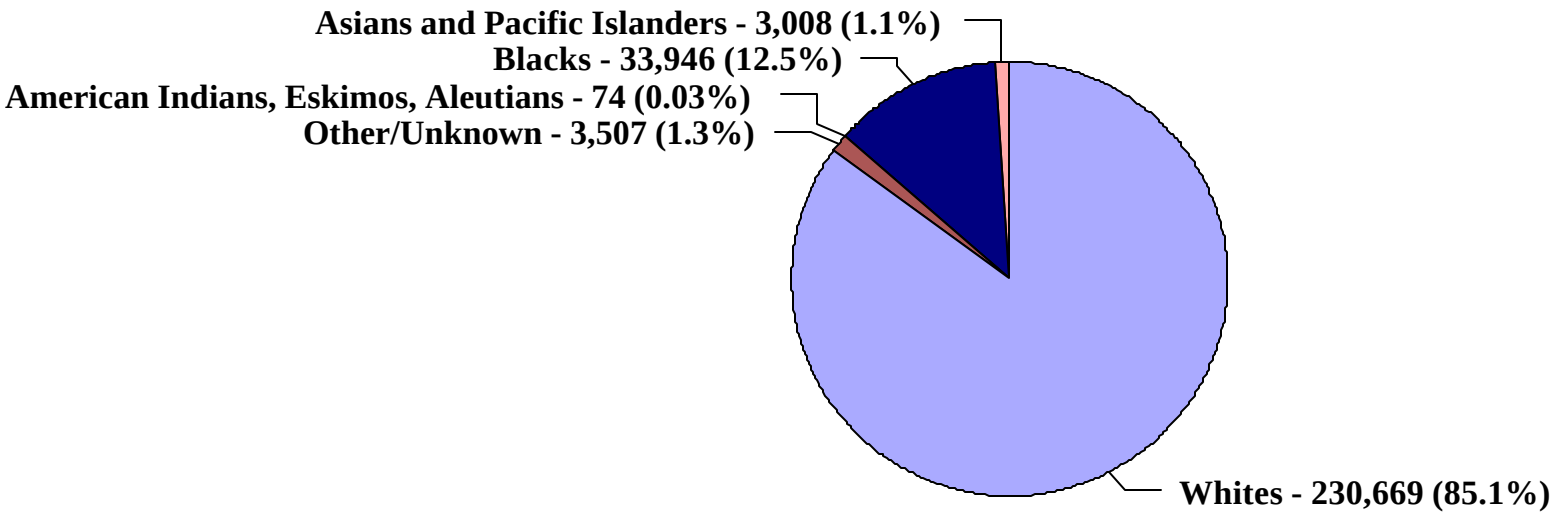
Table 3 displays the distribution for all sites combined invasive cancer incidence cases for Asians and Pacific Islander by sex during 1993 to 1997. Filipino females had the greatest number of invasive cancer incidence cases followed by Asian Indian/Pakistani males; Filipino males; Asian Indian/Pakistani females; and Chinese males. This pattern is reflective of their Illinois population distribution. Chinese males ranked higher for total cancer incidence than Chinese females in Asian and Pacific Islander subgroup comparisons. Conversely, Korean females ranked higher than their male counterparts in Illinois. For males, no cancer incidence cases were reported for Guamanian (NOS), Chamorran, Tahitian, Melanesian (NOS), Fiji Islander, Somoan, Hmong, or Tongan in Illinois. For females, cancer was not reported to ISCR for Guamanian (NOS), Tahitian, Fiji Islander, New Guinean, Somoan or Tongan races.

Distributions by Age at Diagnosis

Table 4 shows the distribution for all sites combined invasive cancer incidence by age at diagnosis for Asian and Pacific Islander subgroups compared with whites in Illinois during 1993 to 1997. In general, the Asian and Pacific Islander subgroups were observed to have proportionately more cancer cases diagnosed in the less than 65 years of age group than whites in Illinois. Only the Japanese subgroup presented an age distribution similar to whites. That is, like whites, more than 60 percent of cases were among individuals 65 years of age or older at the time of diagnosis. This observation was apparent for both sexes, males and females.

Figure 1.
All Sites Combined Invasive Cancer Incidence Cases by Race
Illinois, 1993-1997

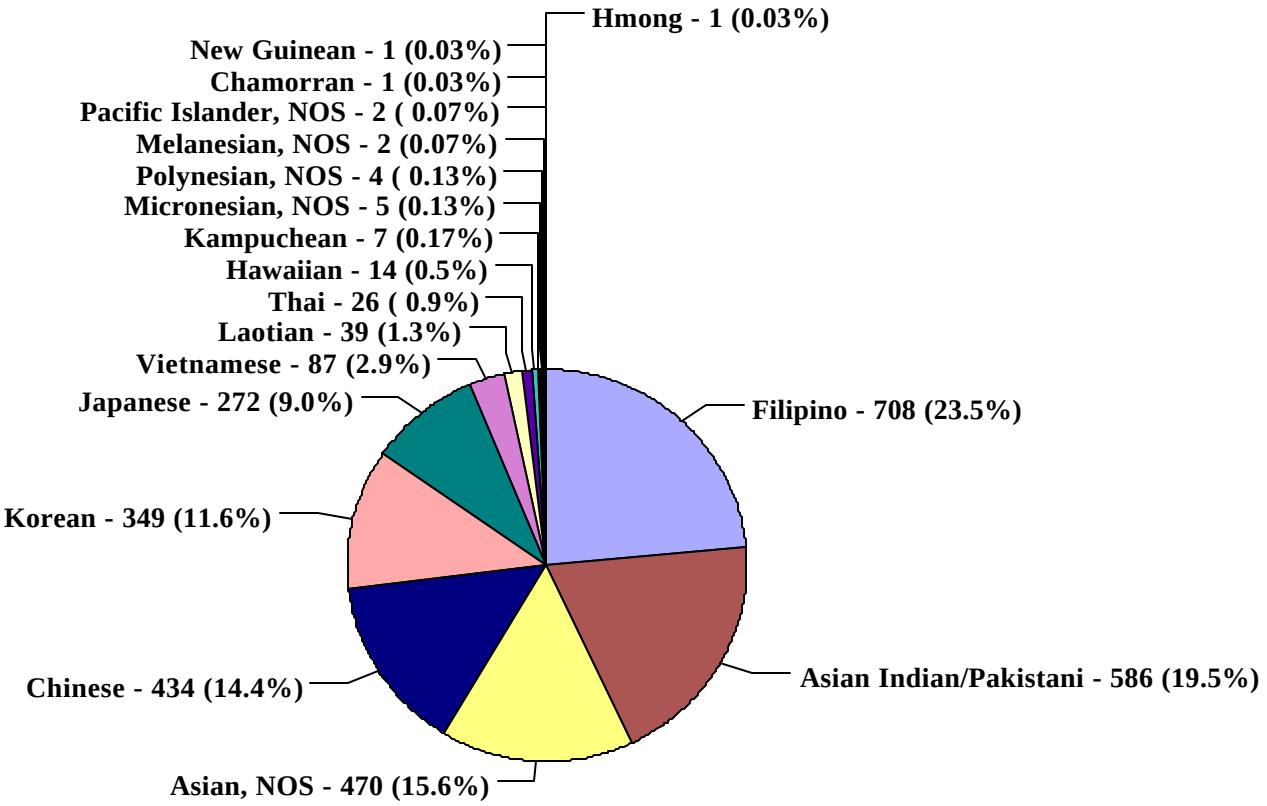
Total Cases = 271,204



SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Figure 2.
Distribution of Invasive Cancer Cases among Asian and Pacific Islander Subgroups
All Sites Combined, Both Sexes, Illinois, 1993-1997

Total Cases = 3,008



NOS - not otherwise specified
SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Table 3.
Distribution of Invasive Cancer Incidence Counts from All Sites Combined for Asian Pacific Islanders (API) Subgroups by Sex and Rank
Illinois, 1993-1997

Males			Females		
API Subgroup	**Count**	**Percent**	**API Subgroup**	**Count**	**Percent**
Asian Indian/Pakistani	304	21.3	Filipino	415	26.2
Filipino	293	20.6	Asian Indian/Pakistani	282	17.8
Chinese	241	16.9	Other Asian	264	16.7
Other Asian	206	14.5	Korean	193	12.2
Korean	156	11.0	Chinese	193	12.2
Japanese	131	9.2	Japanese	141	8.9
Vietnamese	48	3.4	Vietnamese	39	2.5
Laotian	18	1.3	Laotian	21	1.3
Thai	13	0.9	Thai	13	0.8
Hawaiian	7	0.5	Hawaiian	7	0.4
Kampuchean	2	0.1	Kampuchean	5	0.3
Micronesian, NOS	2	0.1	Micronesian, NOS	3	0.2
Polynesian, NOS	1	0.1	Polynesian, NOS	3	0.2
New Guinean	1	0.1	Melanesian, NOS	2	0.1
Pacific Islander, NOS	1	0.1	Chamorran	1	0.1
Guamanian, NOS	0	0.0	Pacific Islander, NOS	1	0.1
Chamorran	0	0.0	Hmong	1	0.1
Tahitian	0	0.0	Guamanian, NOS	0	0.0
Melanesian, NOS	0	0.0	Tahitian	0	0.0
Fijo Islander	0	0.0	Fijo Islander	0	0.0
Somoan	0	0.0	New Guinean	0	0.0
Hmong	0	0.0	Somoan	0	0.0
Tongan	0	0.0	Tongan	0	0.0
All Asians and Pacific Islanders	1,424	100.0	All Asians and Pacific Islanders	1,584	100.0

NOS - not otherwise specified

Source: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Table 4.
Age-specific Distribution of Invasive Cancer Incidence Cases for All Sites Combined
Whites and Asian Pacific Islander (API) Subgroups by Sex, Illinois, 1993-1997

	Both Sexes									
	Whites	**All API**	**Chinese**	**Japanese**	**Filipino**	**Korean**	**Asian Indian/ Pakistani**	**Southeast Asian**	**Pacific Islander**	**Other Asian**
Count	230,669	3,008	434	272	708	349	586	160	29	470
Age Group										
< 65	37.3%	58.5%	46.1%	32.0%	65.5%	55.0%	69.3%	67.5%	51.7%	61.3%
65+	62.7%	41.5%	53.9%	68.0%	34.5%	45.0%	30.7%	32.5%	48.3%	38.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Males									
	Whites	**All API**	**Chinese**	**Japanese**	**Filipino**	**Korean**	**Asian Indian/ Pakistani**	**Southeast Asian**	**Pacific Islander**	**Other Asian**
Count	115,586	1,424	241	131	293	156	304	81	12	206
Age Group										
< 65	34.7%	50.1%	40.2%	24.4%	53.2%	51.3%	62.8%	65.4%	25.0%	49.5%
65+	65.3%	49.9%	59.8%	75.6%	46.8%	48.7%	37.2%	34.6%	75.0%	50.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Female									
	Whites	**All API**	**Chinese**	**Japanese**	**Filipino**	**Korean**	**Asian Indian/ Pakistani**	**Southeast Asian**	**Pacific Islander**	**Other Asian**
Count	115,083	1,584	193	141	415	193	282	79	17	264
Age Group										
< 65	39.8%	66.0%	53.4%	39.0%	74.2%	58.0%	76.2%	69.6%	70.6%	70.4%
65+	60.2%	34.0%	46.6%	61.0%	25.8%	42.0%	23.8%	30.4%	29.4%	29.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Commonly Diagnosed Cancers

Tables 5, 6 and 7 display the top 10 most commonly diagnosed cancers for Asians and Pacific Islanders and whites by sex in Illinois for 1993 to 1997. For both sexes (Table 5), common sites among combined Asian and Pacific Islander, Chinese, Korean and Southeast Asian subgroups but less common for whites include stomach, thyroid and liver and intrahepatic bile duct. Stomach, and liver and intrahepatic bile duct appeared among the top 10 sites for Japanese; thyroid and liver and intrahepatic bile duct for Filipino and other Asian; thyroid for Asian Indian/Pakistani; and, thyroid and stomach for Pacific Islanders. It should be noted that the most frequently observed cancers diagnosed in the white population (lung and bronchus, breast, prostate, colon and rectum, and non-Hodgkin's lymphomas) also were observed to occur across combined and specific Asian and Pacific Islander subgroups.

Nasopharyneal cancer appeared among the top 10 sites for only Chinese and Southeast Asian males in Illinois (Table 6). Although stomach, and liver and intrahepatic bile duct cancers were commonly diagnosed among Asian and Pacific Islander males, thyroid cancer did not appear among the top 10 cancers for any male subgroup.

Thyroid cancer occurred among all Asian and Pacific Islander subgroups of females with the exception of the Japanese (Table 7). Stomach cancer was apparent among commonly diagnosed sites for females in the all Asians and Pacific Islanders group, Chinese, Japanese, Filipino, Korean, Pacific Islander, and other Asian subgroups. Only Korean females had diagnoses of liver and intrahepatic bile duct cancers among the top 10 sites. Invasive cancer of the cervix was among top sites for all Asian and Pacific Islander subgroups with the exception of Pacific Islanders probably due to the small number of cases for the subgroup. Corpus and uterus (NOS), cases were evident among the top sites for all subgroups under evaluation except Japanese and Korean females.

Tables 5A, 6A and 7A parallel Tables 5, 6 and 7 using SEER cancer incidence data for 1993 to 1997. All top 10 sites were the same for Filipino and Korean females in both SEER and Illinois cancer incidence data. Only the lowest frequency site differed for males in these two race groups. In general, the patterns of cancer among Asians and Pacific Islanders in SEER were consistent with those observed for Illinois. Cancers of the liver and intrahepatic bile duct, stomach and thyroid were present among the most common sites for Asians and Pacific Islanders but not for whites. Thyroid cancer only commonly occurred among females and nasopharynx was most often observed among Chinese and Southeast Asian males. Liver and intrahepatic bile duct cancer appeared among the top 10 sites for SEER females in the all Asians and Pacific Islanders group, Chinese, Korean, Japanese and Southeast Asian subgroups but only among Korean females in Illinois.

Table 5.
Top 10 Most Commonly Diagnosed Cancers Among Whites and Asian and Pacific Islander (API) Subgroups, Both Sexes, Illinois, 1993-1997

Whitess	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	230,669		All Sites	3,008	
Lung and Bronchus	35,331	15.3	Breast (invasive)	496	16.5
Breast (invasive)	35,114	15.2	Colon and Rectum	385	12.8
Prostate	31,175	13.5	Lung and Bronchus	325	10.8
Colon and Rectum	29,075	12.6	Prostate	255	8.5
Urinary Bladder	11,077	4.8	Stomach	154	5.1
Non-Hodgkin's Lymphomas	9,263	4.0	Non-Hodgkin's Lymphomas	127	4.2
Corpus and Uterus, NOS	7,145	3.1	Thyroid	110	3.7
Leukemias	6,026	2.6	Liver and Intrahepatic Bile Duct	108	3.6
Kidney and Renal Pelvis#	5,712	2.5	Leukemias#	91	3.0
Pancreas#	5,315	2.3	Urinary Bladder#	81	2.7
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	708		All Sites Combined	586	
Breast (invasive)	171	24.2	Breast (invasive)	97	16.6
Prostate	79	11.2	Prostate	65	11.1
Colon and Rectum	78	11.0	Lung and Bronchus	48	8.2
Lung and Bronchus	74	10.5	Colon and Rectum	47	8.0
Non-Hodgkin's Lymphomas	29	4.1	Leukemias	38	6.5
Thyroid	28	4.0	Thyroid#	26	4.4
Cervix (invasive)#	25	3.5	Oral Cavity excl Nasopharynx	25	4.3
Corpus and Uterus, NOS	25	3.5	Non-Hodgkin's Lymphomas	25	4.3
Ovary#	21	3.0	Brain and Other Nervous System	17	2.9
Liver and Intrahepatic Bile Duct	16	2.3	Ovary	17	2.9
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	434		All Sites Combined	349	
Lung and Bronchus	64	14.7	Stomach	47	13.5
Colon and Rectum	64	14.7	Colon and Rectum	45	12.9
Breast (invasive)	45	10.4	Lung and Bronchus	40	11.5
Stomach	40	9.2	Breast (invasive)	40	11.5
Prostate	29	6.7	Liver and Intrahepatic Bile Duct	20	5.7
Liver and Intrahepatic Bile Duct	28	6.5	Thyroid#	15	4.3
Nasopharynx	16	3.7	Kidney and Renal Pelvis#	13	3.7
Non-Hodgkin's Lymphomas	13	3.0	Non-Hodgkin's Lymphomas	13	3.7
Thyroid#	13	3.0	Urinary Bladder	13	3.7
Corpus and Uterus, NOS	13	3.0	Pancreas	12	3.4
Japanese	**Count**	**%**	**Southeast Asian**	**Count**	**%**
All Sites Combined	272		All Sites Combined	160	
Colon and Rectum	62	22.8	Colon and Rectum	23	14.4
Breast (invasive)	35	12.9	Lung and Bronchus	22	13.8
Lung and Bronchus	35	12.9	Breast (invasive)	16	10.0
Prostate	23	8.5	Non-Hodgkin's Lymphomas	12	7.5
Stomach	21	7.7	Cervix (invasive)	8	5.0
Non-Hodgkin's Lymphomas	14	5.1	Prostate	8	5.0
Urinary Bladder	10	3.7	Liver and Intrahepatic Bile Duct	7	4.4
Pancreas	9	3.3	Stomach	6	3.8
Liver and Intrahepatic Bile Duct	8	2.9	Thyroid	6	3.8
Kidney and Renal Pelvis#	7	2.6	Oral Cavity excl Nasopharynx#	5	3.1
Pacific Islanders	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	29		All Sites Combined	470	
Colon and Rectum	8	27.6	Breast (invasive)	89	18.9
Lung and Bronchus	4	13.8	Colon and Rectum	58	12.3
Breast (invasive)	3	10.3	Prostate	40	8.5
Corpus and Uterus, NOS	2	6.9	Lung and Bronchus	38	8.1
Ovary#	2	6.9	Non-Hodgkin's Lymphomas	21	4.5
Multiple Myeloma#	2	6.9	Liver and Intrahepatic Bile Duct	17	3.6
Thyroid#	2	6.9	Urinary Bladder	17	3.6
Stomach	1	3.4	Thyroid	17	3.6
Brain and Other Nervous System#	1	3.4	Pancreas#	16	3.4
Kidney and Renal Pelvis#	1	3.4	Kidney and Renal Pelvis#	15	3.2

NOS - not otherwise specified # Site not among top 10 sites for SEER cancer incidence, 1993-1997

SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Table 6.
Top 10 Most Commonly Diagnosed Cancers Among Whites and Asian and Pacific Islander (API) Subgroups, Males, Illinois, 1993-1997

Whitess	Count	%	All API	Count	%
All Sites Combined	115,586		All Sites	1,424	
Prostate	31,175	27.0	Prostate	255	17.9
Lung and Bronchus	20,723	17.9	Colon and Rectum	214	15.0
Colon and Rectum	14,191	12.3	Lung and Bronchus	207	14.5
Urinary Bladder	8,056	7.0	Liver and Intrahepatic Bile Duct	83	5.8
Non-Hodgkin's Lymphomas	4,743	4.1	Stomach	81	5.7
Kidney and Renal Pelvis	3,382	2.9	Non-Hodgkin's Lymphomas	63	4.4
Leukemias	3,325	2.9	Urinary Bladder	56	3.9
Oral Cavity excl Nasopharynx	3,141	2.7	Leukemias	45	3.2
Melanomas of the Skin	2,827	2.4	Kidney and Renal Pelvis#	43	3.0
Pancreas	2,530	2.2	Oral Cavity excl Nasopharynx#	42	2.9
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	293		All Sites Combined	304	
Prostate	79	27.0	Prostate	65	21.4
Lung and Bronchus	50	17.1	Lung and Bronchus	34	11.2
Colon and Rectum	45	15.4	Colon and Rectum	34	11.2
Liver and Intrahepatic Bile Duct	14	4.8	Non-Hodgkin's Lymphomas	20	6.6
Kidney and Renal Pelvis	13	4.4	Leukemias	20	6.6
Non-Hodgkin's Lymphomas	9	3.1	Oral Cavity excl Nasopharynx	18	5.9
Urinary Bladder	7	2.4	Brain and Other Nervous System	11	3.6
Stomach	7	2.4	Urinary Bladder	11	3.6
Pancreas	6	2.0	Liver and Intrahepatic Bile Duct#	8	2.6
Oral Cavity excl Nasopharynx#	6	2.0	Hodgkin's Disease#	8	2.6
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	241		All Sites Combined	156	
Lung and Bronchus	44	18.3	Lung and Bronchus	29	18.6
Colon and Rectum	33	13.7	Stomach	27	17.3
Prostate	29	12.0	Colon and Rectum	21	13.5
Liver and Intrahepatic Bile Duct	26	10.8	Urinary Bladder	13	8.3
Stomach	20	8.3	Liver and Intrahepatic Bile Duct	12	7.7
Nasopharynx	12	5.0	Prostate	11	7.1
Leukemias	8	3.3	Kidney and Renal Pelvis	6	3.8
Pancreas	7	2.9	Leukemias	6	3.8
Non-Hodgkin's Lymphomas	7	2.9	Pancreas	5	3.2
Brain and Other Nervous System#	5	2.1	Non-Hodgkin's Lymphomas	5	3.2
Japanese	**Count**	**%**	**Southeast Asian**	**Count**	**%**
All Sites Combined	131		All Sites Combined	81	
Colon and Rectum	32	24.4	Lung and Bronchus	20	24.7
Prostate	23	17.6	Colon and Rectum	12	14.8
Stomach	13	9.9	Prostate	8	9.9
Lung and Bronchus	12	9.2	Non-Hodgkin's Lymphomas	8	9.9
Liver and Intrahepatic Bile Duct	6	4.6	Liver and Intrahepatic Bile Duct	5	6.2
Pancreas	6	4.6	Pancreas#	4	4.9
Urinary Bladder	6	4.6	Stomach	4	4.9
Non-Hodgkin's Lymphomas	5	3.8	Oral Cavity excl Nasopharynx	3	3.7
Esophagus#	5	3.8	Nasopharynx	3	3.7
Oral Cavity excl Nasopharynx	5	3.8	Soft Tissue including Heart#	2	2.5
Pacific Islanders	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	12		All Sites Combined	206	
Colon and Rectum	5	41.7	Prostate	40	19.4
Lung and Bronchus	3	25.0	Colon and Rectum	32	15.5
Multiple Myeloma#	2	16.7	Lung and Bronchus	15	7.3
Leukemias	1	8.3	Urinary Bladder	14	6.8
Kidney and Renal Pelvis#	1	8.3	Liver and Intrahepatic Bile Duct	12	5.8
			Kidney and Renal Pelvis	9	4.4
			Non-Hodgkin's Lymphomas	9	4.4
			Pancreas#	7	3.4
			Multiple Myeloma#	7	3.4
			Brain and Other Nervous System#	6	2.9

NOS - not otherwise specified # Site not among top 10 sites for SEER Cancer Incidence, 1993-1997

SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Table 7.
Top 10 Most Commonly Diagnosed Cancers Among Whites and Asian and Pacific Islander (API) Subgroups, Females, Illinois, 1993-1997

Whites	Count	%	All API	Count	%
All Sites Combined	115,083		All Sites Combined	1,584	
Breast (invasive)	34,652	30.1	Breast (invasive)	490	30.9
Colon and Rectum	14,884	12.9	Colon and Rectum	171	10.8
Lung and Bronchus	14,608	12.7	Lung and Bronchus	118	7.4
Corpus and Uterus, NOS	7,145	6.2	Thyroid	91	5.7
Ovary	4,688	4.1	Cervix (invasive)	78	4.9
Non-Hodgkin's Lymphomas	4,520	3.9	Corpus and Uterus, NOS#	77	4.9
Urinary Bladder	3,021	2.6	Stomach	73	4.6
Pancreas	2,785	2.4	Ovary	72	4.5
Leukemias#	2,701	2.3	Non-Hodgkin's Lymphomas	64	4.0
Cervix (invasive)#	2,594	2.3	Leukemias#	46	2.9
Filipina	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	415		All Sites Combined	282	
Breast (invasive)	171	41.2	Breast (invasive)	95	33.7
Colon and Rectum	33	8.0	Thyroid	19	6.7
Cervix (invasive)	25	6.0	Leukemias	18	6.4
Corpus and Uterus, NOS#	25	6.0	Ovary	17	6.0
Thyroid	24	5.8	Corpus and Uterus, NOS	16	5.7
Lung and Bronchus	24	5.8	Lung and Bronchus	14	5.0
Ovary	21	5.1	Colon and Rectum	13	4.6
Non-Hodgkin's Lymphomas	20	4.8	Cervix (invasive)	11	3.9
Leukemias	9	2.2	Oral Cavity excl Nasopharynx#	7	2.5
Stomach	8	1.9	Esophagus#	6	2.1
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	193		All Sites Combined	193	
Breast (invasive)	43	22.3	Breast (invasive)	40	20.7
Colon and Rectum	31	16.1	Colon and Rectum	24	12.4
Stomach	20	10.4	Stomach	20	10.4
Lung and Bronchus	20	10.4	Thyroid	14	7.3
Corpus and Uterus, NOS	13	6.7	Lung and Bronchus	11	5.7
Thyroid	11	5.7	Cervix (invasive)	10	5.2
Cervix (invasive)	9	4.7	Ovary	8	4.1
Non-Hodgkin's Lymphomas	6	3.1	Non-Hodgkin's Lymphomas	8	4.1
Urinary Bladder#	5	2.6	Liver and Intrahepatic Bile Duct	8	4.1
Pancreas#	4	2.1	Pancreas	7	3.6
Japanese	**Count**	**%**	**Southeast Asian**	**Count**	**%**
All Sites Combined	141		All Sites Combined	79	
Breast (invasive)	35	24.8	Breast (invasive)	16	20.3
Colon and Rectum	30	21.3	Colon and Rectum	11	13.9
Lung and Bronchus	23	16.3	Cervix (invasive)	8	10.1
Non-Hodgkin's Lymphomas	9	6.4	Thyroid	5	6.3
Stomach	8	5.7	Corpus and Uterus, NOS#	5	6.3
Ovary	4	2.8	Non-Hodgkin's Lymphomas	4	5.1
Urinary Bladder#	4	2.8	Ovary#	3	3.8
Cervix (invasive)#	3	2.1	Leukemias	3	3.8
Pancreas	3	2.1	Bones and Joints#	2	2.5
Leukemias#	3	2.1	Lung and Bronchus	2	2.5
Pacific Islanders	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	17		All Sites Combined	264	
Breast (invasive)	3	17.6	Breast (invasive)	87	33.0
Colon and Rectum	3	17.6	Colon and Rectum	26	9.8
Corpus and Uterus, NOS	2	11.8	Lung and Bronchus	23	8.7
Ovary	2	11.8	Ovary	15	5.7
Thyroid	2	11.8	Thyroid	13	4.9
Stomach	1	5.9	Cervix (invasive)	12	4.5
Lung and Bronchus	1	5.9	Non-Hodgkin's Lymphomas	12	4.5
Urinary Bladder#	1	5.9	Pancreas#	9	3.4
Brain and Other Nervous System#	1	5.9	Stomach	8	3.0
All Other Sites#	1	5.9	Corpus and Uterus, NOS	7	2.7

NOS - not otherwise specified # Site not among top 10 sites for SEER cancer incidence, 1993-1997

SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Table 5A.
Top 10 Most Commonly Diagnosed Cancers Among Whites and Asian and Pacific Islander (API) Subgroups, Both Sexes, SEER, 1993-1997

Whites	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	633,010		All Sites Combined	47,968	
Breast (invasive)	97,399	15.4	Breast (invasive)	7,334	15.3
Prostate	94,309	14.9	Colon and Rectum	6,362	13.3
Lung and Bronchus	85,642	13.5	Prostate	5,863	12.2
Colon and Rectum	71,074	11.2	Lung and Bronchus	5,831	12.2
Urinary Bladder	28,897	4.6	Stomach	2,492	5.2
Non-Hodgkin's Lymphomas	26,602	4.2	Non-Hodgkin's Lymphomas	1,916	4.0
Melanomas of the Skin#	23,709	3.7	Liver and Intrahepatic Bile Duct	1,916	4.0
Corpus and Uterus, NOS	18,672	2.9	Corpus and Uterus, NOS#	1,378	2.9
Leukemias	16,798	2.7	Thyroid	1,238	2.6
Oral Cavity excl Nasopharynx#	14,477	2.3	Pancreas#	1,226	2.6
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	10,834		All Sites Combined	1,334	
Prostate	1,763	16.3	Breast (invasive)	253	19.0
Breast (invasive)	1,747	16.1	Prostate	210	15.7
Lung and Bronchus	1,403	12.9	Colon and Rectum	98	7.3
Colon and Rectum	1,141	10.5	Non-Hodgkin's Lymphomas	82	6.1
Non-Hodgkin's Lymphomas	518	4.8	Lung and Bronchus	68	5.1
Thyroid	418	3.9	Leukemias	55	4.1
Corpus and Uterus, NOS	330	3.0	Oral Cavity excl Nasopharynx	45	3.4
Leukemias#	319	2.9	Ovary	44	3.3
Liver and Intrahepatic Bile Duct	293	2.7	Brain and Other Nervous System	41	3.1
Stomach#	279	2.6	Urinary Bladder#	40	3.0
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	11,355		All Sites Combined	3,306	
Colon and Rectum	1,689	14.9	Stomach	434	13.1
Breast (invasive)	1,537	13.5	Colon and Rectum	395	11.9
Lung and Bronchus	1,508	13.3	Lung and Bronchus	387	11.7
Prostate	1,257	11.1	Breast (invasive)	353	10.7
Liver and Intrahepatic Bile Duct	599	5.3	Liver and Intrahepatic Bile Duct	263	8.0
Stomach	524	4.6	Prostate#	185	5.6
Non-Hodgkin's Lymphomas	422	3.7	Cervix (invasive)#	133	4.0
Urinary Bladder#	334	2.9	Urinary Bladder	104	3.1
Nasopharynx	308	2.7	Pancreas	100	3.0
Corpus and Uterus, NOS	274	2.4	Non-Hodgkin's Lymphomas	99	3.0
Japanese	**Count**	**%**	**Southeast Asian**	**Count**	**%**
All Sites Combined	12,314		All Sites Combined	3,294	
Colon and Rectum	2,169	17.6	Lung and Bronchus	424	12.9
Breast (invasive)	2,040	16.6	Breast (invasive)	404	12.3
Prostate	1,732	14.1	Colon and Rectum	316	9.6
Lung and Bronchus	1,296	10.5	Liver and Intrahepatic Bile Duct	312	9.5
Stomach	826	6.7	Cervix (invasive)	200	6.1
Non-Hodgkin's Lymphomas	447	3.6	Stomach	189	5.7
Pancreas	403	3.3	Prostate	156	4.7
Urinary Bladder	393	3.2	Non-Hodgkin's Lymphomas	156	4.7
Corpus and Uterus, NOS#	373	3.0	Thyroid	117	3.6
Liver and Intrahepatic Bile Duct	280	2.3	Leukemias#	102	3.1
Pacific Islanders	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	893		All Sites Combined	1,448	
Breast (invasive)	118	13.2	Breast (invasive)	308	21.3
Lung and Bronchus	111	12.4	Prostate	175	12.1
Prostate#	98	11.0	Colon and Rectum	171	11.8
Colon and Rectum	66	7.4	Lung and Bronchus	115	7.9
Corpus and Uterus, NOS	62	6.9	Corpus and Uterus, NOS	60	4.1
Stomach	54	6.0	Thyroid	58	4.0
Liver and Intrahepatic Bile Duct#	41	4.6	Non-Hodgkin's Lymphomas	55	3.8
Cervix (invasive)#	38	4.3	Cervix (invasive)#	49	3.4
Non-Hodgkin's Lymphomas#	30	3.4	Leukemias#	48	3.3
Leukemias#	29	3.2	Urinary Bladder	40	2.8

NOS - not otherwise specified # Site not among top 10 sites for Illinois cancer incidence, 1993-1997

SOURCE: SEER Cancer Incidence Public Use Database, 1973-1997, August 1999 Submission

Table 6A.
Top 10 Most Commonly Diagnosed Cancers Among Whites and Asian and Pacific Islander (API) Subgroups, Males, SEER, 1993-1997

Whites	Count	%	All API	Count	%
All Sites Combined	323,424		All Sites Combined	24,297	
Prostate	94,309	29.2	Prostate	5,863	24.1
Lung and Bronchus	47,639	14.7	Lung and Bronchus	3,746	15.4
Colon and Rectum	35,674	11.0	Colon and Rectum	3,521	14.5
Urinary Bladder	21,388	6.6	Stomach	1,480	6.1
Non-Hodgkin's Lymphomas	14,984	4.6	Liver and Intrahepatic Bile Duct	1,317	5.4
Melanomas of the Skin	13,259	4.1	Non-Hodgkin's Lymphomas	1,048	4.3
Oral Cavity excl Nasopharynx	9,619	3.0	Urinary Bladder	914	3.8
Leukemias	9,539	2.9	Pancreas#	670	2.8
Kidney and Renal Pelvis	8,734	2.7	Leukemias	658	2.7
Pancreas	6,743	2.1	Kidney and Renal Pelvis	550	2.3
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	5,706		All Sites Combined	683	
Prostate	1,763	30.9	Prostate	210	30.7
Lung and Bronchus	1,020	17.9	Colon and Rectum	58	8.5
Colon and Rectum	652	11.4	Non-Hodgkin's Lymphomas	50	7.3
Non-Hodgkin's Lymphomas	286	5.0	Lung and Bronchus	40	5.9
Liver and Intrahepatic Bile Duct	221	3.9	Leukemias	33	4.8
Stomach	176	3.1	Oral Cavity excl Nasopharynx	33	4.8
Leukemias#	174	3.0	Urinary Bladder	32	4.7
Pancreas	152	2.7	Brain and Other Nervous System	25	3.7
Urinary Bladder	143	2.5	Stomach#	21	3.1
Kidney and Renal Pelvis	135	2.4	Kidney and Renal Pelvis	20	2.9
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	5,890		All Sites Combined	1,607	
Prostate	1,257	21.3	Stomach	258	16.1
Colon and Rectum	933	15.8	Lung and Bronchus	253	15.7
Lung and Bronchus	906	15.4	Colon and Rectum	204	12.7
Liver and Intrahepatic Bile Duct	438	7.4	Prostate	185	11.5
Stomach	296	5.0	Liver and Intrahepatic Bile Duct	148	9.2
Non-Hodgkin's Lymphomas	241	4.1	Urinary Bladder	84	5.2
Urinary Bladder#	237	4.0	Pancreas	49	3.0
Nasopharynx	219	3.7	Non-Hodgkin's Lymphomas	49	3.0
Pancreas	157	2.7	Oral Cavity excl Nasopharynx#	40	2.5
Leukemias	155	2.6	Kidney and Renal Pelvis	35	2.2
Japanese	**Count**	**%**	**Southeast Asian**	**Count**	**%**
All Sites Combined	6,315		All Sites Combined	1,623	
Prostate	1,732	27.4	Lung and Bronchus	296	18.2
Colon and Rectum	1,197	19.0	Liver and Intrahepatic Bile Duct	234	14.4
Lung and Bronchus	797	12.6	Colon and Rectum	175	10.8
Stomach	506	8.0	Prostate	156	9.6
Urinary Bladder	294	4.7	Stomach	106	6.5
Non-Hodgkin's Lymphomas	234	3.7	Non-Hodgkin's Lymphomas	93	5.7
Pancreas	206	3.3	Nasopharynx	60	3.7
Liver and Intrahepatic Bile Duct	158	2.5	Leukemias#	51	3.1
Kidney and Renal Pelvis#	148	2.3	Urinary Bladder#	48	3.0
Oral Cavity excl Nasopharynx	134	2.1	Oral Cavity excl Nasopharynx	46	2.8
Pacific Islanders	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	415		All Sites Combined	566	
Prostate#	98	23.6	Prostate	175	30.9
Lung and Bronchus	69	16.6	Colon and Rectum	72	12.7
Colon and Rectum	44	10.6	Lung and Bronchus	57	10.1
Liver and Intrahepatic Bile Duct#	32	7.7	Leukemias#	29	5.1
Stomach#	27	6.5	Urinary Bladder	29	5.1
Leukemias	16	3.9	Liver and Intrahepatic Bile Duct	22	3.9
Non-Hodgkin's Lymphomas#	14	3.4	Non-Hodgkin's Lymphomas	22	3.9
Brain and Other Nervous System#	12	2.9	Stomach#	18	3.2
Oral Cavity excl Nasopharynx#	11	2.7	Oral Cavity excl Nasopharynx	17	3.0
Pancreas#	11	2.7	Kidney and Renal Pelvis	14	2.5

NOS - not otherwise specified # Site not among top 10 sites for Illinois cancer incidence, 1993-1997

SOURCE: SEER Cancer Incidence Public Use Database, 1973-1997, August 1999 Submission

Table 7A.
Top 10 Most Commonly Diagnosed Cancers Among Whites and Asian and Pacific Islander (API) Subgroups, Females, SEER, 1993-1997

Whites	Count	%	All API	Count	%
All Sites Combined	309,586		All Sites Combined	23,671	
Breast (invasive)	96,751	31.3	Breast (invasive)	7,288	30.8
Lung and Bronchus	38,003	12.3	Colon and Rectum	2,841	12.0
Colon and Rectum	35,400	11.4	Lung and Bronchus	2,085	8.8
Corpus and Uterus, NOS	18,672	6.0	Corpus and Uterus, NOS#	1,378	5.8
Ovary	12,955	4.2	Ovary	1,047	4.4
Non-Hodgkin's Lymphomas	11,618	3.8	Cervix (invasive)	1,038	4.4
Melanomas of the Skin#	10,450	3.4	Stomach	1,012	4.3
Urinary Bladder	7,509	2.4	Thyroid	973	4.1
Pancreas	7,361	2.4	Non-Hodgkin's Lymphomas	868	3.7
Leukemias	7,259	2.3	Liver and Intrahepatic Bile Duct#	599	2.5
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	5,128		All Sites Combined	651	
Breast (invasive)	1,739	33.9	Breast (invasive)	249	38.2
Colon and Rectum	489	9.5	Ovary	44	6.8
Lung and Bronchus	383	7.5	Colon and Rectum	40	6.1
Corpus and Uterus, NOS#	330	6.4	Corpus and Uterus, NOS	34	5.2
Thyroid	327	6.4	Non-Hodgkin's Lymphomas	32	4.9
Ovary	241	4.7	Thyroid	31	4.8
Cervix (invasive)	233	4.5	Lung and Bronchus	28	4.3
Non-Hodgkin's Lymphomas	232	4.5	Leukemias	22	3.4
Leukemias	145	2.8	Cervix (invasive)	18	2.8
Stomach	103	2.0	Brain and Other Nervous System#	16	2.5
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	5,465		All Sites Combined	1,699	
Breast (invasive)	1,526	27.9	Breast (invasive)	351	20.7
Colon and Rectum	756	13.8	Colon and Rectum	191	11.2
Lung and Bronchus	602	11.0	Stomach	176	10.4
Corpus and Uterus, NOS	274	5.0	Lung and Bronchus	134	7.9
Ovary#	253	4.6	Cervix (invasive)	133	7.8
Stomach	228	4.2	Liver and Intrahepatic Bile Duct	115	6.8
Cervix (invasive)	202	3.7	Thyroid	81	4.8
Thyroid	190	3.5	Ovary	73	4.3
Non-Hodgkin's Lymphomas	181	3.3	Pancreas	51	3.0
Liver and Intrahepatic Bile Duct#	161	2.9	Non-Hodgkin's Lymphomas	50	2.9
Japanese	**Count**	**%**	**Southeast Asian**	**Count**	**%**
All Sites Combined	5,999		All Sites Combined	1,671	
Breast (invasive)	2,029	33.8	Breast (invasive)	400	23.9
Colon and Rectum	972	16.2	Cervix (invasive)	200	12.0
Lung and Bronchus	499	8.3	Colon and Rectum	141	8.4
Corpus and Uterus, NOS#	373	6.2	Lung and Bronchus	128	7.7
Stomach	320	5.3	Thyroid	95	5.7
Ovary	219	3.7	Ovary	87	5.2
Non-Hodgkin's Lymphomas	213	3.6	Stomach#	83	5.0
Pancreas	197	3.3	Liver and Intrahepatic Bile Duct#	78	4.7
Thyroid#	123	2.1	Non-Hodgkin's Lymphomas	63	3.8
Liver and Intrahepatic Bile Duct#	122	2.0	Leukemias	51	3.1
Pacific Islanders	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	478		All Sites Combined	882	
Breast (invasive)	117	24.5	Breast (invasive)	307	34.8
Corpus and Uterus, NOS	62	13.0	Colon and Rectum	99	11.2
Lung and Bronchus	42	8.8	Corpus and Uterus, NOS	60	6.8
Cervix (invasive)	38	7.9	Lung and Bronchus	58	6.6
Stomach	27	5.6	Thyroid	50	5.7
Ovary	25	5.2	Cervix (invasive)	49	5.6
Colon and Rectum	22	4.6	Ovary	35	4.0
Non-Hodgkin's Lymphomas#	16	3.3	Non-Hodgkin's Lymphomas	33	3.7
Thyroid	16	3.3	Leukemias#	19	2.2
Leukemias#	13	2.7	Stomach	18	2.0

NOS - not otherwise specified # Site not among top 10 sites for Illinois cancer incidence, 1993-1997

SOURCE: SEER Cancer Incidence Public Use Database, 1973-1997, August 1999 Submission

Stage of Disease at Diagnosis for Selected Cancer Sites

Table 8 presents stage of disease at diagnosis for cancers of the female breast, invasive cervix, prostate, and colon and rectum (both sexes) for cases diagnosed during 1993 to 1997. Small numbers of cases for most Asian and Pacific Islander subgroups limit the ability to meaningfully interpret these data. In addition, findings for stage distribution comparisons between whites and the aggregate Asian and Pacific Islander group were inconsistent. Only breast cancer in the *in situ* stage was diagnosed more frequently among Asians and Pacific Islanders than whites in Illinois. However, relatively more cases were diagnosed in the local stage for whites than Asians and Pacific Islanders for invasive breast cancer among Illinois women. Also notable was that more local stage invasive cervical cancer was diagnosed among white females than Asian and Pacific Islander females. The proportionate distributions for stage of disease at diagnosis for prostate and colorectal cancer seemed to be similar for both race groups.

Incidence Rate Comparisons for All Asians and Pacific Islanders vs. Whites in Illinois

Table 9 presents cancer incidence comparisons for Asians and Pacific Islanders with whites in Illinois for both sexes, for males and for females during the 1993 to 1997 time period. As shown, all sites combined average annual age-adjusted incidence rates for Asians and Pacific Islanders were significantly lower than their white counterparts for both sexes, for males and for females. Significantly higher site-specific incidence rates were apparent for whites of both sexes compared with their Asian and Pacific Islander counterparts for oral cavity excluding nasopharynx, colon and rectum, pancreas, larynx, lung and bronchus, soft tissue including heart, melanomas of the skin, invasive breast, urinary bladder, kidney and renal pelvis, brain and other nervous system, Hodgkin's disease, non-Hodgkin's lymphomas and leukemias. For Illinois males, whites had significantly higher average annual age-adjusted incidence rates than Asians and Pacific Islanders for oral cavity excluding nasopharynx, esophagus, colon and rectum, larynx, lung and bronchus, soft tissue including heart, melanomas of the skin, prostate, testis, urinary bladder, kidney and renal pelvis, brain and other nervous system, non-Hodgkin's lymphomas and leukemias. Average annual age-adjusted cancer incidence rates for oral cavity excluding nasopharynx; colon and rectum; pancreas; lung and bronchus; melanomas of the skin; invasive breast; corpus and uterus (NOS); ovary; urinary bladder; kidney and renal pelvis; brain and other nervous system; Hodgkin's disease; non-Hodgkin's lymphomas and leukemias were significantly higher among Illinois white females than their Asian and Pacific Islander counterparts.

However, for nasopharynx, stomach, and liver and intrahepatic bile duct, average annual age-adjusted cancer incidence rates were significantly higher for Asians and Pacific Islanders than those for whites across all gender classifications in Illinois. Thyroid cancer incidence rates were higher (although not statistically significant) among Asian and Pacific Islander females compared with white females in Illinois.

Table 8.
Distribution by Stage of Disease at Diagnosis for Selected Cancer Incidence Sites
Whites and Asian Pacific Islander (API) Subgroups, Illinois, 1993-1997

	Whites	All API	Chinese	Japanese	Filipino	Korean	Asian Indian/ Pakistani	Southeast Asian	Pacific Islander	Other Asian
	Breast (Females)									
Count	39,809	591	52	43	206	45	110	22	3	110
in situ	13.0%	17.1%	17.3%	18.6%	17.0%	11.1%	13.6%	27.3%	0.0%	20.9%
Localized	52.6%	45.2%	50.0%	51.2%	45.6%	44.4%	43.6%	45.4%	66.7%	40.9%
Regional	24.6%	29.1%	26.9%	25.6%	29.6%	28.9%	32.7%	18.2%	33.3%	29.1%
Distant	4.7%	4.6%	0.0%	4.6%	3.9%	6.7%	7.3%	0.0%	0.0%	5.4%
Unknown	5.2%	4.1%	5.8%	0.0%	3.9%	8.9%	2.7%	9.1%	0.0%	3.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Invasive Breast (Females)									
Count	34,652	490	43	35	171	40	95	16	3	87
Localized	60.4%	54.5%	60.5%	62.9%	55.0%	50.0%	50.5%	62.5%	66.7%	51.7%
Regional	28.2%	35.1%	32.6%	31.4%	35.7%	32.5%	37.9%	25.0%	33.3%	36.8%
Distant	5.4%	5.5%	0.0%	5.7%	4.7%	7.5%	8.4%	0.0%	0.0%	6.9%
Unknown	6.0%	4.9%	7.0%	0.0%	4.7%	10.0%	3.2%	12.5%	0.0%	4.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Invasive Cervix									
Count	2,594	78	9	3	25	10	11	8	0	12
Localized	54.8%	46.2%	44.4%	33.3%	52.0%	60.0%	63.6%	25.0%	0.0%	25.0%
Regional	31.7%	44.9%	55.6%	66.7%	28.0%	40.0%	36.4%	75.0%	0.0%	58.3%
Distant	7.0%	5.1%	0.0%	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	8.3%
Unknown	6.5%	3.8%	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	8.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Prostate									
Count	31,175	255	29	23	79	11	65	8	0	40
Localized	68.3%	67.4%	51.7%	69.6%	67.1%	72.7%	72.3%	75.0%	0.0%	67.5%
Regional	13.4%	16.9%	17.2%	26.1%	15.2%	9.1%	12.3%	12.5%	0.0%	25.0%
Distant	6.4%	6.3%	6.9%	0.0%	10.1%	9.1%	7.7%	0.0%	0.0%	0.0%
Unknown	11.8%	9.4%	24.1%	4.4%	7.6%	9.1%	7.7%	12.5%	0.0%	7.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Colon and Rectum (Both Sexes)									
Count	29,075	385	64	62	78	45	47	23	8	58
Localized	31.3%	30.1%	21.9%	29.0%	39.7%	15.6%	31.9%	39.1%	50.0%	31.0%
Regional	43.0%	46.0%	40.6%	51.6%	38.5%	71.1%	51.1%	39.1%	25.0%	37.9%
Distant	17.1%	16.1%	26.6%	12.9%	15.4%	6.7%	8.5%	17.4%	12.5%	22.4%
Unknown	8.5%	7.8%	10.9%	6.4%	6.4%	6.7%	8.5%	4.4%	12.5%	8.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Table 9.
Average Annual Age-adjusted Rates for Invasive Cancer Incidence
All Asians and Pacific Islanders (API) and Whites, Illinois, 1993-1997

	Both Sexes						Males						Females					
	API			Whites			API			Whites			API			Whites		
Site	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE
All Sites	3,008	210.6	4.01	230,669	387.6*	0.83	1,424	241.1	6.72	115,586	451.2*	1.34	1,584	191.6	5.00	115,083	347.0*	1.08
Oral Cavity excl Nasopharynx	60	4.1	0.55	4,709	8.3*	0.12	42	6.7	1.09	3,141	12.5*	0.23	18	2.0	0.50	1,568	4.8*	0.13
Nasopharynx	39	2.3*	0.40	229	0.4	0.03	27	3.6*	0.76	160	0.6	0.05	12	1.2*	0.37	69	0.2	0.03
Esophagus	32	2.6	0.47	2,229	3.8	0.08	19	3.6	0.84	1,691	6.7*	0.16	13	1.9	0.53	538	1.5	0.07
Stomach	154	11.3*	0.94	3,697	5.8	0.10	81	13.6*	1.59	2,272	8.8	0.19	73	9.5*	1.15	1,425	3.7	0.10
Colon and Rectum	385	29.0	1.53	29,075	45.9*	0.28	214	36.4	2.61	14,191	54.8*	0.46	171	23.0	1.81	14,884	39.2*	0.34
Liver and Intrahepatic Bile Duct	108	8.1*	0.80	1,846	3.1	0.07	83	13.6*	1.56	1,164	4.6	0.14	25	3.6*	0.73	682	1.9	0.08
Gallbladder	14	1.0	0.28	709	1.1	0.04	6	0.9	0.39	194	0.7	0.05	8	1.1	0.39	515	1.4	0.07
Pancreas	73	5.8	0.70	5,315	8.5*	0.12	40	7.9	1.29	2,530	9.9	0.20	33	4.4	0.79	2,785	7.4*	0.15
Larynx	29	2.1	0.41	2,441	4.4*	0.09	24	4.0	0.85	1,919	7.7*	0.18	5	0.7	0.30	522	1.8	0.08
Lung and Bronchus;p	325	25.7	1.46	35,331	60.2*	0.33	207	38.1	2.73	20,723	81.4*	0.57	118	16.2	1.52	14,608	44.6*	0.39
Bones and Joints	16	1.0	0.27	425	0.9	0.04	8	1.1	0.38	227	0.9	0.06	8	1.0	0.36	198	0.8	0.06
Soft Tissue including Heart	24	1.3	0.27	1,404	2.5*	0.07	12	1.2	0.36	801	3.0*	0.11	12	1.3	0.38	603	2.0	0.09
Melanomas of the Skin	13	0.8	0.23	5,096	8.8*	0.13	5	0.7	0.32	2,827	10.8*	0.21	8	0.9	0.34	2,269	7.3*	0.16
Breast (invasive)	496	29.8	1.41	35,114	59.9*	0.33	6	0.7	0.33	462	1.8	0.08	490	55.0	2.58	34,652	109.0*	0.61
Cervix (invasive)	-	-	-	-	-	-	-	-	-	-	-	-	78	8.8	1.05	2,594	8.5	0.17
Corpus and Uterus, NOS	-	-	-	-	-	-	-	-	-	-	-	-	77	9.4	1.10	7,145	23.1*	0.28
Ovary	-	-	-	-	-	-	-	-	-	-	-	-	72	7.5	0.92	4,688	15.1*	0.23
Prostate	-	-	-	-	-	-	255	50.2	3.21	31,175	122.4*	0.70	-	-	-	-	-	-
Testis	-	-	-	-	-	-	15	1.4	0.38	1,375	4.8*	0.13	-	-	-	-	-	-
Urinary Bladder	81	6.0	0.69	11,077	17.9*	0.18	56	9.2	1.29	8,056	31.1*	0.35	25	3.4	0.71	3,021	8.2*	0.16
Kidney and Renal Pelvis	70	5.2	0.64	5,712	9.9*	0.13	43	7.1	1.13	3,382	13.4*	0.23	27	3.6	0.71	2,330	7.1*	0.15
Brain and Other Nervous System	47	2.7	0.42	3,294	6.1*	0.11	30	3.8	0.74	1,845	7.4*	0.18	17	1.9	0.48	1,449	5.0*	0.14
Thyroid	110	5.8	0.59	2,840	5.0	0.10	19	2.1	0.51	730	2.8	0.10	91	9.0	0.99	2,110	7.2	0.16
Hodgkin's Disease	23	1.3	0.28	1,406	2.7*	0.08	15	1.8	0.48	761	3.0	0.11	8	0.8	0.31	645	2.4*	0.10
Non-Hodgkin's Lymphomas	127	9.2	0.85	9,263	15.4*	0.17	63	10.0	1.36	4,743	18.1*	0.27	64	8.5	1.10	4,520	13.0*	0.21
Multiple Myeloma	42	3.2	0.50	2,399	3.9	0.08	29	5.0	0.97	1,220	4.7	0.14	13	1.8	0.50	1,179	3.3	0.10
Leukemias	91	5.6	0.62	6,026	10.3*	0.14	45	6.0	0.97	3,325	13.2*	0.23	46	5.3	0.82	2,701	8.1*	0.17
All Other Sites	152	10.6	0.91	14,055	22.6*	0.20	80	12.3	1.48	6,672	25.7*	0.32	72	9.3	1.14	7,383	20.3*	0.25

NOS - not otherwise specified
Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard million population.
*The rate is significantly greater for the race group in the respective comparison $p<0.05$. SE - standard error

SOURCE: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999

Incidence Rate Comparisons for All Asians and Pacific Islanders - Illinois vs. SEER

Table 10 displays average annual age-adjusted cancer incidence rates (1993-1997) for Asians and Pacific Islanders in Illinois and SEER for both sexes, for males and for females. In general, rates for Asians and Pacific Islanders in Illinois were consistently about one-third lower than those in SEER areas. For both sexes, the differences were statistically significant for all sites combined, stomach, colon and rectum, liver and intrahepatic bile duct, and invasive breast. Significant differences between Illinois and SEER Asian and Pacific Islander males were observed for all sites combined, stomach, lung and bronchus, and prostate. All sites combined, colon and rectum, liver and intrahepatic bile duct, lung and bronchus, invasive breast, corpus and uterus (NOS), and ovary were significantly lower for Illinois' Asian and Pacific Islander females compared with their SEER counterparts. It also should be noted that, in general, cancer incidence rates are higher for Asian and Pacific Islander males than females, consistent with the gender differences observed among whites in Illinois as well as SEER.

Table 10.
Average Annual Age-adjusted Rates for Invasive Cancer Incidence
All Asians and Pacific Islanders, Illinois vs. SEER, 1993-1997

	Both Sexes						Males						Females					
	Illinois			SEER			Illinois			SEER			Illinois			SEER		
Site	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE	Count	Rate	SE
All Sites	3,008	210.6	4.01	49,144	280.0*	1.28	1,424	241.1	6.72	24,900	324.0*	2.07	1,584	191.6	5.00	24,244	248.7*	1.62
Oral Cavity excl Nasopharynx	60	4.1	0.55	841	4.8	0.17	42	6.7	1.09	546	7.0	0.30	18	2.0	0.50	295	3.1	0.18
Nasopharynx	39	2.3	0.40	596	3.1	0.13	27	3.6	0.76	417	4.7	0.24	12	1.2	0.37	179	1.7	0.13
Esophagus	32	2.6	0.47	422	2.5	0.12	19	3.6	0.84	341	4.6	0.25	13	1.9	0.53	81	0.9	0.10
Stomach	154	11.3	0.94	2,527	14.5*	0.29	81	13.6	1.59	1,500	19.6*	0.51	73	9.5	1.15	1,027	10.5	0.33
Colon and Rectum	385	29.0	1.53	6,476	37.7*	0.47	214	36.4	2.61	3,581	47.1	0.79	171	23.0	1.81	2,895	30.3*	0.57
Liver and Intrahepatic Bile Duct	108	8.1	0.80	1,938	11.2*	0.26	83	13.6	1.56	1,334	17.1	0.47	25	3.6	0.73	604	6.3*	0.26
Gallbladder	14	1.0	0.28	216	1.2	0.09	6	0.9	0.39	86	1.1	0.12	8	1.1	0.39	130	1.4	0.12
Pancreas	73	5.8	0.70	1,246	7.3	0.21	40	7.9	1.29	682	9.1	0.35	33	4.4	0.79	564	5.9	0.25
Larynx	29	2.1	0.41	276	1.6	0.10	24	4.0	0.85	238	3.2	0.21	5	0.7	0.30	38	0.4	0.07
Lung and Bronchus	325	25.7	1.46	5,917	34.7*	0.45	207	38.1	2.73	3,806	50.6*	0.82	118	16.2	1.52	2,111	22.3*	0.49
Bones and Joints	16	1.0	0.27	113	0.7	0.06	8	1.1	0.38	66	0.8	0.10	8	1.0	0.36	47	0.5	0.08
Soft Tissue including Heart	24	1.3	0.27	334	1.8	0.10	12	1.2	0.36	176	2.1	0.16	12	1.3	0.38	158	1.6	0.13
Melanomas of the Skin	13	0.8	0.23	208	1.1	0.08	5	0.7	0.32	115	1.4	0.13	8	0.9	0.34	93	0.9	0.10
Breast (invasive)	496	29.8	1.41	7,529	41.6*	0.49	6	0.7	0.33	48	0.6	0.09	490	55.0	2.58	7,481	76.1*	0.89
Cervix (invasive)	-	-	-	-	-	-	-	-	-	-	-	-	78	8.8	1.05	1,060	10.4	0.33
Corpus and Uterus, NOS	-	-	-	-	-	-	-	-	-	-	-	-	77	9.4	1.10	1,415	14.6*	0.40
Ovary	-	-	-	-	-	-	-	-	-	-	-	-	72	7.5	0.92	1,074	10.8*	0.34
Prostate	-	-	-	-	-	-	255	50.2	3.21	6,007	80.9*	1.05	-	-	-	-	-	-
Testis	-	-	-	-	-	-	15	1.4	0.38	200	1.8	0.13	-	-	-	-	-	-
Urinary Bladder	81	6.0	0.69	1,276	7.5	0.21	56	9.2	1.29	953	12.7	0.41	25	3.4	0.71	323	3.4	0.19
Kidney and Renal Pelvis	70	5.2	0.64	881	5.1	0.17	43	7.1	1.13	574	7.4	0.31	27	3.6	0.71	307	3.2	0.19
Brain and Other Nervous System	47	2.7	0.42	604	3.4	0.14	30	3.8	0.74	326	3.9	0.22	17	1.9	0.48	278	3.0	0.19
Thyroid	110	5.8	0.59	1,285	6.5	0.19	19	2.1	0.51	272	3.1	0.20	91	9.0	0.99	1,013	9.5	0.31
Hodgkin's Disease	23	1.3	0.28	159	0.8	0.07	15	1.8	0.48	85	1.0	0.11	8	0.8	0.31	74	0.7	0.09
Non-Hodgkin's Lymphomas	127	9.2	0.85	1,970	11.1	0.25	63	10.0	1.36	1,076	13.4	0.41	64	8.5	1.10	894	9.3	0.32
Multiple Myeloma	42	3.2	0.50	475	2.8	0.13	29	5.0	0.97	271	3.5	0.22	13	1.8	0.50	204	2.2	0.15
Leukemias	91	5.6	0.62	1,220	7.0	0.20	45	6.0	0.97	687	8.5	0.33	46	5.3	0.82	533	5.7	0.25
All Other Sites	152	10.6	0.91	2,879	16.2*	0.31	80	12.3	1.48	1,513	18.8*	0.49	72	9.3	1.14	1,366	14.0*	0.38

NOS - not otherwise specified SE - standard error
Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard million population.

*The rate is significantly greater for the race group in the respective comparison $p<0.05$.

SOURCES: Illinois Department of Public Health, Illinois State Cancer Registry, December 1999; and National Cancer Institute, Surveillance, Epidemiology, End Results Program (SEER) Public Use Data Files, August 1999 Submission, April 2000

Cancer Mortality

All Sites Combined Cancer Mortality

Figure 3 displays counts and percent distribution by major race groups for all cancer deaths occurring among Illinois residents during 1992 to 1998. As shown, only 1,387 deaths of 173, 678 total cancer deaths, or 0.8 percent, were among Illinois' Asians and Pacific Islanders, again substantially lower than their representation within the total Illinois population. A detailed distribution for all sites combined invasive cancer incidence by Asian and Pacific Islander subgroup is shown in Figure 4. The distribution of cancer deaths among Asian and Pacific Islander subgroups, unlike the cancer incidence profile, was less reflective of their population distribution. For cancer mortality, the Chinese subgroup had the largest number of deaths followed by Korean; Filipino; Japanese; Asian Indian/Pakistani; Vietnamese; and Hawaiian. Like cancer incidence among Asians and Pacific Islanders , a large number of cancer deaths were classified as "other Asian" and included no other specification.

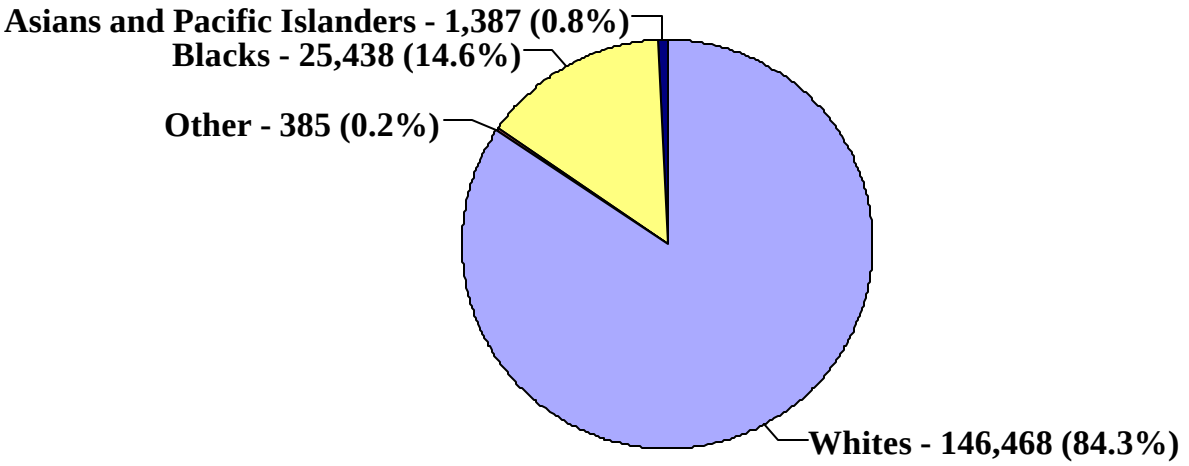
Table 11 shows the distribution of cancer deaths by descending rank for specific Asian and Pacific Islander subgroup and by sex. Chinese males have the most cancer deaths among Asians and Pacific Islander male subgroups followed by Korean; Filipino; other Asian; Asian Indian/Pakistani; Japanese; Vietnamese; and Hawaiian. For Asian and Pacific Islander females, approximately 60 percent of cancer deaths were distributed evenly among Filipino, Chinese and Korean females in Illinois. The next greatest proportion of cancer deaths occurred among Japanese females, then other Asian; Asian Indian/Pakistani; Vietnamese; and Hawaiian females. No cancer deaths were recorded for Guamanian or Samoan males or females during 1992 to 1998 in Illinois.

Distribution by Age at Death from Cancer

Table 12 shows the distribution of cancer deaths by age for Asian and Pacific Islander subgroups compared with whites in Illinois during 1992 to 1998. The same general pattern observed for age at diagnosis of cancer is apparent when evaluating age at cancer death. This pattern was consistent across most subgroups where sufficient numbers were available to be analyzed. In general, the Asian and Pacific Islander subgroups were observed to have proportionately more cancer deaths in the younger age group (less than 65 years) than whites in Illinois. Only the Japanese subgroup presented an age at death distribution profile similar to whites. Like whites, more than 70 percent of deaths from cancer occurred among Japanese ages 65 or greater for both sexes, males and females.

Figure 3.
Cancer Deaths by Race, Both Sexes
Illinois, 1992-1998

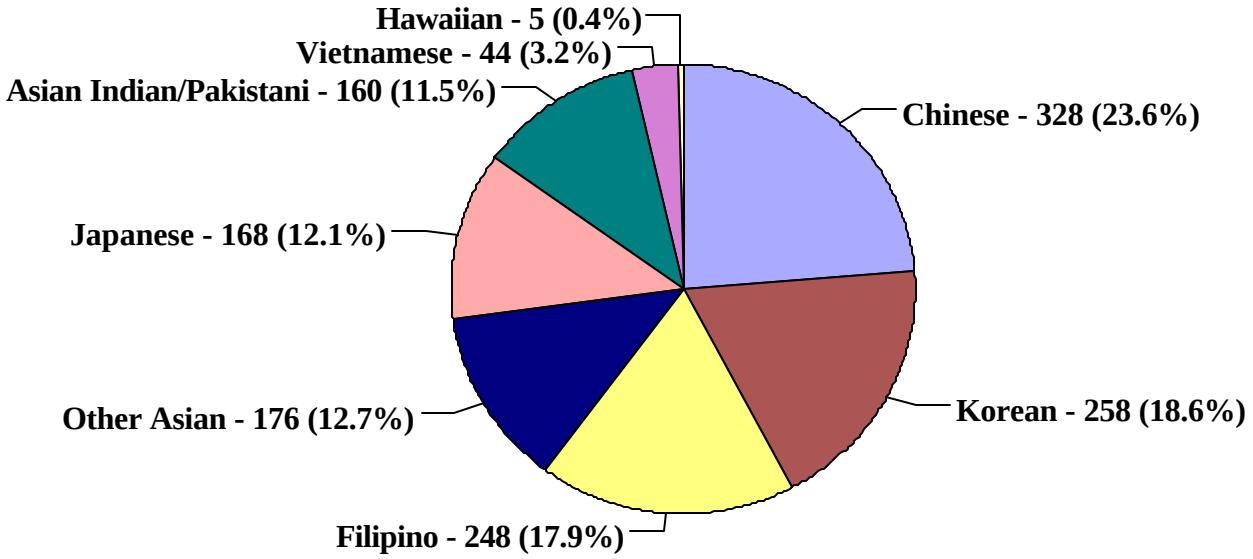
Total Cancer Deaths = 173,678



SOURCE: Illinois Department of Public Health, Death Master Files, 1992-1998

Figure 4.
Cancer Deaths Among Asian and Pacific Islander Subgroups, Both Sexes
Illinois, 1992-1998

Total Cancer Deaths = 1,387



SOURCE: Illinois Department of Public Health, Death Master Files, 1992-1998

Table 11.
Cancer Deaths from All Sites Combined by Sex
Ranked for Asian Pacific Islander (API) Subgroups
Illinois, 1992-1998

Males			Females		
API Subgroup	**Count**	**Percent**	**API Subgroup**	**Count**	**Percent**
Chinese	202	27.3	Filipino	133	20.5
Korean	133	18.0	Chinese	126	19.4
Filipino	115	15.6	Korean	125	19.3
Other Asian	100	13.5	Japanese	91	14.0
Asian Indian/Pakistani	85	11.5	Other Asian	76	11.7
Japanese	77	10.4	Asian Indian/Pakistani	75	11.6
Vietnamese	26	3.5	Vietnamese	18	2.8
Hawaiian	1	0.1	Hawaiian	4	0.6
Guamanian, NOS	0	0.0	Guamanian, NOS	0	0.0
Samoan	0	0.0	Samoan	0	0.0
All Asians and Pacific Islanders	739	100.0	All Asians and Pacific Islanders	648	100.0

SOURCE: Illinois Department of Public Health, Death Master Files, 1992-1998

Table 12.
Age-specific Distribution of Cancer Deaths
Whites and Asian Pacific Islander (API) Subgroups by Sex
Illinois, 1992-1998

	Both Sexes									
	Whites	**All API**	**Chinese**	**Japanese**	**Filipino**	**Korean**	**Asian Indian/ Pakistani**	**Southeast Asian**	**Pacific Islander**	**Other Asian**
Count	146,468	1,387	328	168	248	258	160	44	5	176
Age Group										
< 65	27.3%	44.0%	34.8%	22.0%	54.0%	41.9%	53.8%	68.2%	0.0%	58.0%
65+	72.7%	56.0%	65.2%	78.0%	46.0%	58.1%	46.2%	31.8%	100.0%	42.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Males									
	Whites	**All API**	**Chinese**	**Japanese**	**Filipino**	**Korean**	**Asian Indian/ Pakistani**	**Southeast Asian**	**Pacific Islander**	**Other Asian**
Count	74,888	739	202	77	115	133	85	26	1	100
Age Group										
< 65	27.4%	43.98%	34.2%	16.9%	47.8%	48.9%	54.1%	69.2%	0.0%	59.0%
65+	72.6%	56.02%	65.8%	83.1%	52.2%	51.1%	45.9%	30.8%	100.0%	41.0%
Total	100.0%	100.00%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Female									
	Whites	**All API**	**Chinese**	**Japanese**	**Filipino**	**Korean**	**Asian Indian/ Pakistani**	**Southeast Asian**	**Pacific Islander**	**Other Asian**
Count	71,580	648	126	91	133	125	75	18	4	76
Age Group										
< 65	27.2%	44.1%	35.7%	26.4%	59.4%	34.4%	53.3%	66.7%	0.0%	56.6%
65+	72.8%	55.9%	64.3%	73.6%	40.6%	65.6%	46.7%	33.3%	100.0%	43.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Illinois Department of Public Health, Death Master Files, 1992-1998

Common Sites of Cancer Death

Tables 13, 14 and 15 display the top 10 most common sites for cancer death for Asians and Pacific Islanders and whites by sex in Illinois for 1992 to 1998. The general site-specific cancer mortality patterns are similar to those observed for cancer incidence in Illinois (Tables 5, 6 and 7). For both sexes (Table 13), liver and intrahepatic bile duct cancer deaths appeared among the top 10 sites for all Asians and Pacific Islanders and subgroups with the exception of Hawaiian (due to small number of cancer deaths) but did not for Illinois whites. Nasopharynx was among the top 10 sites for cancer death in Illinois in Chinese and Vietnamese subgroups in both sexes (Table 13), in Chinese and other Asian males (Table 14) and in Vietnamese females (Table 15). Stomach cancer death also appeared consistently among the top 10 sites for both sexes, for males and for females, in the all Asians and Pacific Islanders group as well as Chinese, Korean, Japanese, Vietnamese and other Asian subgroups. In addition, stomach cancer death appeared among the top 10 for Filipino males and Asian Indian/Pakistani females. It should be noted that stomach was the No. 1 site for cancer death among Koreans in Illinois during 1992 to 1998. Deaths from cervical cancer appeared among the top 10 sites for all Asians and Pacific Islanders, Filipino, Asian Indian/Pakistani, Korean, Japanese and Vietnamese females but was not ranked among the top 10 for white females in Illinois. The most common cancer death sites among the Illinois white population also ranked high for the combined Asians and Pacific Islanders as well as Asian and Pacific Islander subgroups. These sites include lung and bronchus, colon and rectum, breast, prostate, pancreas, non-Hodgkin's lymphomas, leukemias and ovary.

Tables 13A, 14A and 15A were prepared using U.S. cancer mortality data for 1993 to 1997. The national information may be compared and contrasted with results presented in Tables 13, 14 and 15 for Illinois. The same top 10 sites were observed for U.S. and Illinois cancer mortality for all Asians and Pacific Islanders, both sexes and females. In general, the U.S. cancer mortality patterns among Asians and Pacific Islanders were consistent with those observed for Illinois. Death from cancer of the liver and intrahepatic bile duct was present among the most common sites for Asians and Pacific Islander subgroups but not for whites nationally or in Illinois. Stomach cancer death appeared among the top 10 sites in the national data for white and the Asian and Pacific Islander combined groups as well as all Asian and Pacific Islander subgroups with the exception of Asian Indian/Pakistani males. Nationally, nasopharyngeal cancer deaths were among the top 10 sites only for Chinese and Vietnamese males. Like Illinois, cervical cancer deaths were among the top 10 sites for all Asians and Pacific Islanders, Filipino, Korean and Vietnamese subgroups of U.S. females.

Table 13.
Top 10 Most Common Sites of Cancer Death
Whites and Asian and Pacific Islander (API) Subgroups, Both Sexes, Illinois, 1992-1998

Whites	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	146,468		All Sites	1,387	
Lung and Bronchus	40,449	27.6	Lung and Bronchus	271	19.5
Colon and Rectum	16,907	11.5	Colon and Rectum	146	10.5
Breast	12,649	8.6	Liver and Intrahepatic Bile Duct	133	9.6
Prostate	8,502	5.8	Stomach	124	8.9
Pancreas	7,385	5.0	Breast	105	7.6
Non-Hodgkin's Lymphomas	6,198	4.2	Pancreas	85	6.1
Leukemias	5,841	4.0	Leukemias	60	4.3
Ovary	3,945	2.7	Non-Hodgkin's Lymphomas	48	3.5
Stomach	3,394	2.3	Prostate	41	3.0
Brain and Nervous System	3,274	2.2	Ovary	34	2.5
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	248		All Sites Combined	160	
Lung and Bronchus	53	21.4	Breast	20	12.5
Breast	30	12.1	Lung and Bronchus	18	11.2
Colon and Rectum	24	9.7	Leukemias	12	7.5
Prostate	15	6.0	Liver and Intrahepatic Bile Duct	12	7.5
Pancreas	12	4.8	Pancreas	9	5.6
Non-Hodgkin's Lymphomas	11	4.4	Esophagus#	8	5.0
Liver and Intrahepatic Bile Duct	11	4.4	Colon and Rectum	8	5.0
Leukemias	10	4.0	Prostate	7	4.4
Ovary	9	3.6	Multiple Myeloma	6	3.8
Cervix#	8	3.2	Cervix#	5	3.1
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	328		All Sites Combined	258	
Lung and Bronchus	81	24.7	Stomach	54	20.9
Colon and Rectum	45	13.7	Lung and Bronchus	51	19.8
Liver and Intrahepatic Bile Duct	41	12.5	Liver and Intrahepatic Bile Duct	39	15.1
Stomach	29	8.8	Colon and Rectum	22	8.5
Pancreas	16	4.9	Pancreas	17	6.6
Nasopharynx	11	3.4	Breast	12	4.7
Breast	10	3.0	Leukemias	9	3.5
Multiple Myeloma#	9	2.7	Gallbladder#	6	2.3
Ovary#	9	2.7	Multiple Myeloma#	6	2.3
Non-Hodgkin's Lymphomas	9	2.7	Kidney and Renal Pelvis#	6	2.3
Japanese	**Count**	**%**	**Vietnamese**	**Count**	**%**
All Sites Combined	168		All Sites Combined	44	
Lung and Bronchus	30	17.9	Lung and Bronchus	8	18.2
Colon and Rectum	23	13.7	Liver and Intrahepatic Bile Duct	5	11.4
Stomach	22	13.1	Colon and Rectum	4	9.1
Breast	15	8.9	Pancreas	4	9.1
Liver and Intrahepatic Bile Duct	10	6.0	Non-Hodgkin's Lymphomas	2	4.5
Pancreas	9	5.4	Stomach	2	4.5
Non-Hodgkin's Lymphomas	8	4.8	Corpus and Uterus, NOS#	2	4.5
Leukemias	7	4.2	Oral Cavity excl Nasopharynx	2	4.5
Prostate	7	4.2	Breast	2	4.5
Esophagus#	6	3.6	Nasopharynx#	1	2.3
Hawaiian	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	5		All Sites Combined	176	
Lung and Bronchus	2	40.0	Lung and Bronchus	28	15.9
Colon and Rectum	1	20.0	Colon and Rectum	19	10.8
Stomach	1	20.0	Pancreas	18	10.2
Leukemias	1	20.0	Breast	16	9.1
			Liver and Intrahepatic Bile Duct	15	8.5
			Leukemias	13	7.4
			Non-Hodgkin's Lymphomas	9	5.1
			Stomach	6	3.4
			Prostate	6	3.4
			Brain and Nervous System#	4	2.3

NOS - not otherwise specified # Site not among top 10 sites for U.S. cancer mortality, 1993-1997

SOURCE: Illinois Department of Public Health, Death Master Files 1992-1998

Table 14.
Top 10 Most Common Sites of Cancer Death
Whites and Asian and Pacific Islander (API) Subgroups, Males, Illinois, 1992-1998

Whites	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	74,888		All Sites	739	
Lung and Bronchus	24,291	32.4	Lung and Bronchus	171	23.1
Prostate	8,502	11.4	Liver and Intrahepatic Bile Duct	91	12.3
Colon and Rectum	8,376	11.2	Colon and Rectum	76	10.3
Pancreas	3,499	4.7	Stomach	70	9.5
Leukemias	3,205	4.3	Pancreas	48	6.5
Non-Hodgkin's Lymphomas	3,092	4.1	Prostate	41	5.5
Esophagus	2,298	3.1	Leukemias	34	4.6
Urinary Bladder	2,211	3.0	Non-Hodgkin's Lymphomas	30	4.1
Stomach	1,953	2.6	Esophagus	19	2.6
Kidney and Renal Pelvis#	1,913	2.6	Multiple Myeloma#	18	2.4
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	115		All Sites Combined	85	
Lung and Bronchus	36	31.3	Lung and Bronchus	14	16.5
Prostate	15	13.0	Leukemias	11	12.9
Colon and Rectum	11	9.6	Prostate	7	8.2
Liver and Intrahepatic Bile Duct	8	7.0	Liver and Intrahepatic Bile Duct	7	8.2
Non-Hodgkin's Lymphomas	7	6.1	Pancreas	6	7.1
Pancreas	6	5.2	Colon and Rectum	5	5.9
Kidney and Renal Pelvis	5	4.3	Esophagus	4	4.7
Leukemias	4	3.5	Multiple Myeloma#	4	4.7
Stomach	3	2.6	Oral Cavity excl Nasopharynx	3	3.5
Soft Tissue including Heart#	3	2.6	Non-Hodgkin's Lymphomas	3	3.5
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	202		All Sites Combined	133	
Lung and Bronchus	56	27.7	Stomach	33	24.8
Liver and Intrahepatic Bile Duct	31	15.3	Lung and Bronchus	31	23.3
Colon and Rectum	29	14.4	Liver and Intrahepatic Bile Duct	23	17.3
Stomach	13	6.4	Colon and Rectum	9	6.8
Pancreas	12	5.9	Pancreas	8	6.0
Nasopharynx	9	4.5	Multiple Myeloma#	4	3.0
Multiple Myeloma#	6	3.0	Leukemias	3	2.3
Non-Hodgkin's Lymphomas	6	3.0	Esophagus	3	2.3
Leukemias	5	2.5	Kidney and Renal Pelvis	3	2.3
Esophagus#	5	2.5	Gallbladder#	2	1.5
Japanese	**Count**	**%**	**Vietnamese**	**Count**	**%**
All Sites Combined	77		All Sites Combined	26	
Stomach	13	16.9	Lung and Bronchus	8	30.8
Lung and Bronchus	12	15.6	Liver and Intrahepatic Bile Duct	4	15.4
Colon and Rectum	10	13.0	Oral Cavity excl Nasopharynx	2	7.7
Prostate	7	9.1	Non-Hodgkin's Lymphomas	2	7.7
Esophagus	5	6.5	Stomach	1	3.8
Non-Hodgkin's Lymphomas	5	6.5	Pancreas	1	3.8
Pancreas	4	5.2	Melanomas of the Skin#	1	3.8
Liver and Intrahepatic Bile Duct	4	5.2	Colon and Rectum	1	3.8
Soft Tissue including Heart#	4	5.2	Soft Tissue including Heart#	1	3.8
Leukemias	3	3.9	Brain and Nervous System#	1	3.8
Hawaiian	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	1		All Sites Combined	100	
Leukemias	1	100.0	Lung and Bronchus	14	14.0
			Liver and Intrahepatic Bile Duct	14	14.0
			Pancreas	11	11.0
			Colon and Rectum	11	11.0
			Leukemias	7	7.0
			Non-Hodgkin's Lymphomas	6	6.0
			Prostate	6	6.0
			Stomach	5	5.0
			Kidney and Renal Pelvis#	4	4.0
			Nasopharynx#	3	3.0

NOS - not otherwise specified # Site not among top 10 sites for U.S. cancer mortality, 1993-1997

SOURCE: Illinois Department of Public Health, Death Master Files, 1992-1998

Table 15.
Top 10 Most Common Sites of Cancer Death
Whites and Asian and Pacific Islander (API) Subgroups, Females, Illinois, 1992-1998

Whites	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	71,580		All Sites	648	
Lung and Bronchus	16,158	22.6	Breast	104	16.0
Breast	12,557	17.5	Lung and Bronchus	100	15.4
Colon and Rectum	8,531	11.9	Colon and Rectum	70	10.8
Ovary	3,945	5.5	Stomach	54	8.3
Pancreas	3,886	5.4	Liver and Intrahepatic Bile Duct	42	6.5
Non-Hodgkin's Lymphomas	3,106	4.3	Pancreas	37	5.7
Leukemias	2,636	3.7	Ovary	34	5.2
Corpus and Uterus, NOS	1,798	2.5	Leukemias	26	4.0
Brain and Nervous System	1,457	2.0	Cervix	21	3.2
Stomach	1,441	2.0	Non-Hodgkin's Lymphomas	18	2.8
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	133		All Sites Combined	75	
Breast	30	22.6	Breast	19	25.3
Lung and Bronchus	17	12.8	Cervix	5	6.7
Colon and Rectum	13	9.8	Ovary	5	6.7
Ovary	9	6.8	Liver and Intrahepatic Bile Duct	5	6.7
Cervix	8	6.0	Lung and Bronchus	4	5.3
Pancreas	6	4.5	Esophagus	4	5.3
Leukemias	6	4.5	Colon and Rectum	3	4.0
Corpus and Uterus, NOS#	6	4.5	Pancreas	3	4.0
Non-Hodgkin's Lymphomas	4	3.0	Corpus and Uterus, NOS#	3	4.0
Multiple Myeloma#	3	2.3	Stomach	2	2.7
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	126		All Sites Combined	125	
Lung and Bronchus	25	19.8	Stomach	21	16.8
Colon and Rectum	16	12.7	Lung and Bronchus	20	16.0
Stomach	16	12.7	Liver and Intrahepatic Bile Duct	16	12.8
Breast	10	7.9	Colon and Rectum	13	10.4
Liver and Intrahepatic Bile Duct	10	7.9	Breast	12	9.6
Ovary	9	7.1	Pancreas	9	7.2
Pancreas	4	3.2	Leukemias	6	4.8
Oral Cavity excl Nasopharynx	3	2.4	Ovary	4	3.2
Leukemias	3	2.4	Gallbladder#	4	3.2
Multiple Myeloma#	3	2.4	Cervix	3	2.4
Japanese	**Count**	**%**	**Vietnamese**	**Count**	**%**
All Sites Combined	91		All Sites Combined	18	
Lung and Bronchus	18	19.8	Colon and Rectum	3	16.7
Breast	15	16.5	Pancreas	3	16.7
Colon and Rectum	13	14.3	Corpus and Uterus, NOS#	2	11.1
Stomach	9	9.9	Breast	2	11.1
Liver and Intrahepatic Bile Duct	6	6.6	Liver and Intrahepatic Bile Duct	1	5.6
Pancreas	5	5.5	Nasopharynx#	1	5.6
Leukemias	4	4.4	Cervix	1	5.6
Non-Hodgkin's Lymphomas	3	3.3	Stomach	1	5.6
Ovary	3	3.3	Thyroid#	1	5.6
Cervix#	2	2.2			
Hawaiian	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	4		All Sites Combined	76	
Lung and Bronchus	2	50.0	Breast	16	21.1
Colon and Rectum	1	25.0	Lung and Bronchus	14	18.4
Stomach	1	25.0	Colon and Rectum	8	10.5
			Pancreas	7	9.2
			Leukemias	6	7.9
			Ovary	4	5.3
			Non-Hodgkin's Lymphomas	3	3.9
			Brain and Nervous System#	2	2.6
			Stomach	1	1.3
			Liver and Intrahepatic Bile Duct	1	1.3

NOS - not otherwise specified # Site not among top 10 sites for U.S. cancer mortality, 1993-1997

SOURCE: Illinois Department of Public Health, Death Master Files, 1992-1998

Table 13A.
Top 10 Most Common Sites of Cancer Death
Whites and Asian and Pacific Islander (API) Subgroups, Both Sexes, U.S., 1993-1997

Whites	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	2,334,520		All Sites Combined	36,560	
Lung and Bronchus	665,212	28.5	Lung and Bronchus	8,017	21.9
Colon and Rectum	249,551	10.7	Colon and Rectum	3,753	10.3
Breast	188,553	8.1	Liver and Intrahepatic Bile Duct	3,373	9.2
Prostate	141,327	6.1	Stomach	2,900	7.9
Pancreas	116,609	5.0	Breast	2,448	6.7
Non-Hodgkin's Lymphomas	102,265	4.4	Pancreas	2,031	5.6
Leukemias	90,595	3.9	Non-Hodgkin's Lymphomas	1,473	4.0
Ovary	60,199	2.6	Leukemias	1,427	3.9
Brain and Other Nervous System	56,803	2.4	Prostate	1,408	3.9
Stomach	53,086	2.3	Ovary	845	2.3
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	6,607		All Sites Combined	1,047	
Lung and Bronchus	1,519	23.0	Lung and Bronchus	139	13.3
Colon and Rectum	620	9.4	Breast	120	11.5
Breast	583	8.8	Pancreas	69	6.6
Prostate	436	6.6	Colon and Rectum	67	6.4
Liver and Intrahepatic Bile Duct	371	5.6	Leukemias	62	5.9
Pancreas	345	5.2	Liver and Intrahepatic Bile Duct	54	5.2
Leukemias	333	5.0	Ovary	48	4.6
Non-Hodgkin's Lymphomas	330	5.0	Prostate	48	4.6
Stomach#	252	3.8	Non-Hodgkin's Lymphomas#	48	4.6
Ovary	156	2.4	Stomach#	46	4.4
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	9,676		All Sites Combined	2,643	
Lung and Bronchus	2,387	24.7	Lung and Bronchus	503	19.0
Colon and Rectum	1,164	12.0	Stomach	447	16.9
Liver and Intrahepatic Bile Duct	1,017	10.5	Liver and Intrahepatic Bile Duct	395	14.9
Stomach	674	7.0	Colon and Rectum	211	8.0
Breast	558	5.8	Pancreas	176	6.7
Pancreas	470	4.9	Breast	99	3.7
Non-Hodgkin's Lymphomas	348	3.6	Leukemias	86	3.3
Leukemias#	333	3.4	Non-Hodgkin's Lymphomas#	70	2.6
Prostate#	298	3.1	Ovary#	62	2.3
Nasopharynx	252	2.6	Cervix#	44	1.7
Japanese	**Count**	**%**	**Vietnamese**	**Count**	**%**
All Sites Combined	6,749		All Sites Combined	1,732	
Lung and Bronchus	1,389	20.6	Lung and Bronchus	394	22.7
Colon and Rectum	957	14.2	Liver and Intrahepatic Bile Duct	317	18.3
Stomach	770	11.4	Stomach	133	7.7
Pancreas	469	6.9	Colon and Rectum	115	6.6
Breast	409	6.1	Breast	87	5.0
Liver and Intrahepatic Bile Duct	354	5.2	Non-Hodgkin's Lymphomas	79	4.6
Prostate	317	4.7	Pancreas	73	4.2
Non-Hodgkin's Lymphomas	285	4.2	Leukemias	59	3.4
Leukemias	200	3.0	Cervix#	48	2.8
Ovary#	150	2.2	Brain and Other Nervous System#	45	2.6
Hawaiian	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	1,706		All Sites Combined	6,400	
Lung and Bronchus	505	29.6	Lung and Bronchus	1,181	18.5
Breast#	151	8.9	Liver and Intrahepatic Bile Duct	792	12.4
Colon and Rectum	150	8.8	Stomach	485	7.6
Pancreas#	97	5.7	Colon and Rectum	469	7.3
Stomach	93	5.5	Breast	441	6.9
Liver and Intrahepatic Bile Duct	73	4.3	Pancreas	332	5.2
Prostate#	69	4.0	Leukemias	305	4.8
Non-Hodgkin's Lymphomas	60	3.5	Non-Hodgkin's Lymphomas	253	4.0
Leukemias	49	2.9	Cervix#	194	3.0
Esophagus#	44	2.6	Prostate	186	2.9

NOS - not otherwise specified # Site not among top 10 sites for Illinois cancer mortality, 1992-1998

SOURCE: National Center for Health Statistics, Public Use Cause of Death Files, 1993-1997

Table 14A.
Top 10 Most Common Sites of Cancer Death
Whites and Asian and Pacific Islander (API) Subgroups, Males, U.S., 1993-1997

Whites	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	1,216,045		All Sites Combined	19,702	
Lung and Bronchus	399,959	32.9	Lung and Bronchus	5,079	25.8
Prostate	141,327	11.6	Liver and Intrahepatic Bile Duct	2,346	11.9
Colon and Rectum	123,690	10.2	Colon and Rectum	1,981	10.1
Pancreas	56,346	4.6	Stomach	1,635	8.3
Non-Hodgkin's Lymphomas	52,628	4.3	Prostate	1,408	7.1
Leukemias	50,292	4.1	Pancreas	1,055	5.4
Urinary Bladder	35,169	2.9	Non-Hodgkin's Lymphomas	847	4.3
Esophagus	33,792	2.8	Leukemias	782	4.0
Stomach	31,557	2.6	Esophagus	469	2.4
Brain and Other Nervous System#	30,952	2.5	Brain and Other Nervous System#	367	1.9
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	3,744		All Sites Combined	535	
Lung and Bronchus	1,095	29.2	Lung and Bronchus	92	17.2
Prostate	436	11.6	Prostate	48	9.0
Colon and Rectum	367	9.8	Leukemias	42	7.9
Liver and Intrahepatic Bile Duct	265	7.1	Colon and Rectum	41	7.7
Non-Hodgkin's Lymphomas	210	5.6	Liver and Intrahepatic Bile Duct	37	6.9
Pancreas	194	5.2	Pancreas	36	6.7
Leukemias	186	5.0	Non-Hodgkin's Lymphomas	25	4.7
Stomach	141	3.8	Brain and Other Nervous System#	23	4.3
Kidney and Renal Pelvis	83	2.2	Oral Cavity excl Nasopharynx	22	4.1
Multiple Myeloma#	74	2.0	Esophagus	21	3.9
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	5,410		All Sites Combined	1,417	
Lung and Bronchus	1,489	27.5	Lung and Bronchus	337	23.8
Liver and Intrahepatic Bile Duct	746	13.8	Stomach	262	18.5
Colon and Rectum	603	11.1	Liver and Intrahepatic Bile Duct	247	17.4
Stomach	392	7.2	Colon and Rectum	110	7.8
Prostate#	298	5.5	Pancreas	76	5.4
Pancreas	272	5.0	Leukemias	39	2.8
Non-Hodgkin's Lymphomas	199	3.7	Prostate#	34	2.4
Nasopharynx	190	3.5	Non-Hodgkin's Lymphomas#	33	2.3
Leukemias	188	3.5	Esophagus	28	2.0
Esophagus#	136	2.5	Kidney and Renal Pelvis	26	1.8
Japanese	**Count**	**%**	**Vietnamese**	**Count**	**%**
All Sites Combined	3,387		All Sites Combined	1,013	
Lung and Bronchus	777	22.9	Lung and Bronchus	270	26.7
Colon and Rectum	490	14.5	Liver and Intrahepatic Bile Duct	240	23.7
Stomach	434	12.8	Stomach	78	7.7
Prostate	317	9.4	Non-Hodgkin's Lymphomas	52	5.1
Pancreas	228	6.7	Colon and Rectum	52	5.1
Liver and Intrahepatic Bile Duct	172	5.1	Pancreas	37	3.7
Non-Hodgkin's Lymphomas	149	4.4	Leukemias#	31	3.1
Leukemias	109	3.2	Brain and Other Nervous System#	28	2.8
Esophagus	97	2.9	Nasopharynx#	24	2.4
Kidney and Renal Pelvis#	75	2.2	Oral Cavity excl Nasopharynx	23	2.3
Hawaiian	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	896		All Sites Combined	3,300	
Lung and Bronchus#	302	33.7	Lung and Bronchus	717	21.7
Colon and Rectum#	84	9.4	Liver and Intrahepatic Bile Duct	584	17.7
Prostate#	69	7.7	Stomach	251	7.6
Stomach#	56	6.2	Colon and Rectum	234	7.1
Liver and Intrahepatic Bile Duct#	55	6.1	Prostate	186	5.6
Pancreas#	45	5.0	Pancreas	167	5.1
Esophagus#	37	4.1	Leukemias	162	4.9
Non-Hodgkin's Lymphomas#	31	3.5	Non-Hodgkin's Lymphomas	148	4.5
Leukemias	25	2.8	Brain and Other Nervous System#	87	2.6
Oral Cavity excl Nasopharynx#	19	2.1	Esophagus#	76	2.3

NOS - not otherwise specified # Site not among top 10 sites for Illinois cancer mortality, 1992-1998

SOURCE: National Center for Health Statistics, Public Use Cause of Death Files, 1993-1997

Table 15A.
Top 10 Most Common Sites of Cancer Death
Whites and Asian and Pacific Islander (API) Subgroups, Females, U.S., 1993-1997

Whites	**Count**	**%**	**All API**	**Count**	**%**
All Sites Combined	1,118,475		All Sites Combined	16,858	
Lung and Bronchus	265,253	23.7	Lung and Bronchus	2,938	17.4
Breast	187,060	16.7	Breast	2,437	14.5
Colon and Rectum	125,861	11.3	Colon and Rectum	1,772	10.5
Pancreas	60,263	5.4	Stomach	1,265	7.5
Ovary	60,199	5.4	Liver and Intrahepatic Bile Duct	1,027	6.1
Non-Hodgkin's Lymphomas	49,637	4.4	Pancreas	976	5.8
Leukemias	40,303	3.6	Ovary	845	5.0
Corpus and Uterus, NOS	25,914	2.3	Leukemias	645	3.8
Brain and Other Nervous System	25,851	2.3	Non-Hodgkin's Lymphomas	626	3.7
Stomach	21,529	1.9	Cervix	595	3.5
Filipino	**Count**	**%**	**Asian Indian/Pakistani**	**Count**	**%**
All Sites Combined	2,863		All Sites Combined	512	
Breast	579	20.2	Breast	118	23.0
Lung and Bronchus	424	14.8	Ovary	48	9.4
Colon and Rectum	253	8.8	Lung and Bronchus	47	9.2
Ovary	156	5.4	Pancreas	33	6.4
Pancreas	151	5.3	Colon and Rectum	26	5.1
Leukemias	147	5.1	Stomach	25	4.9
Non-Hodgkin's Lymphomas	120	4.2	Non-Hodgkin's Lymphomas#	23	4.5
Cervix	119	4.2	Leukemias#	20	3.9
Stomach#	111	3.9	Liver and Intrahepatic Bile Duct	17	3.3
Liver and Intrahepatic Bile Duct#	106	3.7	Esophagus	17	3.3
Chinese	**Count**	**%**	**Korean**	**Count**	**%**
All Sites Combined	4,266		All Sites Combined	1,226	
Lung and Bronchus	898	21.1	Stomach	185	15.1
Colon and Rectum	561	13.2	Lung and Bronchus	166	13.5
Breast	557	13.1	Liver and Intrahepatic Bile Duct	148	12.1
Stomach	282	6.6	Colon and Rectum	101	8.2
Liver and Intrahepatic Bile Duct	271	6.4	Pancreas	100	8.2
Ovary	202	4.7	Breast	99	8.1
Pancreas	198	4.6	Ovary	62	5.1
Non-Hodgkin's Lymphomas	149	3.5	Leukemias	47	3.8
Leukemias	145	3.4	Cervix	44	3.6
Cervix#	101	2.4	Non-Hodgkin's Lymphomas#	37	3.0
Japanese	**Count**	**%**	**Vietnamese**	**Count**	**%**
All Sites Combined	3,362		All Sites Combined	719	
Lung and Bronchus	612	18.2	Lung and Bronchus#	124	17.2
Colon and Rectum	467	13.9	Breast	87	12.1
Breast	408	12.1	Liver and Intrahepatic Bile Duct	77	10.7
Stomach	336	10.0	Colon and Rectum	63	8.8
Pancreas	241	7.2	Stomach	55	7.6
Liver and Intrahepatic Bile Duct	182	5.4	Cervix	48	6.7
Ovary	150	4.5	Pancreas	36	5.0
Non-Hodgkin's Lymphomas	136	4.0	Leukemias#	28	3.9
Leukemias	91	2.7	Non-Hodgkin's Lymphomas#	27	3.8
Corpus and Uterus, NOS#	78	2.3	Ovary#	25	3.5
Hawaiian	**Count**	**%**	**Other Asian**	**Count**	**%**
All Sites Combined	810		All Sites Combined	3,100	
Lung and Bronchus	203	25.1	Lung and Bronchus	464	15.0
Breast#	149	18.4	Breast	440	14.2
Colon and Rectum	66	8.1	Colon and Rectum	235	7.6
Pancreas#	52	6.4	Stomach	234	7.5
Ovary#	38	4.7	Liver and Intrahepatic Bile Duct	208	6.7
Stomach	37	4.6	Cervix#	194	6.3
Non-Hodgkin's Lymphomas#	29	3.6	Pancreas	165	5.3
Leukemias#	24	3.0	Ovary	164	5.3
Corpus and Uterus, NOS#	22	2.7	Leukemias	143	4.6
Multiple Myeloma#	19	2.3	Non-Hodgkin's Lymphomas	105	3.4

NOS - not otherwise specified # Site not among top 10 sites for Illinois cancer mortality, 1992-1998

SOURCE: National Center for Health Statistics, Public Use Cause of Death Files, 1993-1997

Mortality Rate Comparisons for All Asians and Pacific Islanders vs. Whites in Illinois

Tables 16 shows cancer mortality for all Asians and Pacific Islanders and whites in Illinois among both sexes and among males and females over the time period 1992 to 1998. All sites combined average annual age-adjusted mortality rates for Asians and Pacific Islanders were observed to be significantly lower than their white counterparts across all gender classifications. Sites with average annual age-adjusted mortality rates that were significantly lower were oral cavity excluding nasopharynx, esophagus, colon and rectum, pancreas, lung and bronchus, melanomas of the skin, breast, urinary bladder, kidney and renal pelvis, brain and other nervous system, non-Hodgkin's lymphomas, multiple myeloma and leukemias for both sexes; oral cavity excluding nasopharynx, esophagus, colon and rectum, pancreas, lung and bronchus, melanomas of the skin, prostate, urinary bladder, kidney and renal pelvis, brain and other nervous system, non-Hodgkin's lymphomas and leukemias for males; and colon and rectum, pancreas, lung and bronchus, melanomas of the skin, breast, corpus and uterus (NOS), ovary, kidney and renal pelvis, brain and other nervous system, non-Hodgkin's lymphomas, multiple myeloma and leukemias for females. Conversely, for nasopharynx, stomach, and liver and intrahepatic bile duct, average annual age-adjusted cancer mortality rates were higher for Asians and Pacific Islanders than those for whites in Illinois in analyses for both sexes and for males. However, only cancer mortality rates for stomach and for liver and intrahepatic bile duct were significantly higher for Asian and Pacific Islander females than their white counterparts in Illinois. Although for many sites Asians and Pacific Islanders generally had lower mortality rates from cancer than whites, the most common sites-- breast, colon and rectum, lung and bronchus, prostate and non-Hodgkin's lymphomas-- were those also observed for whites in Illinois.

Mortality Rate Comparisons for All Asians and Pacific Islanders, Illinois vs. U.S.

Table 17 presents a cancer mortality comparison for Asians and Pacific Islanders in Illinois (1992-1998) with those nationally (1993-1997). The average annual age-adjusted cancer mortality rates were substantially lower for Illinois' Asians and Pacific Islanders than those calculated for all Asians and Pacific Islanders in the country. Like the national comparison for cancer incidence, the Illinois mortality rates were about one-third lower than those observed for the nation. For both sexes, the differences were statistically significant for all sites combined, colon and rectum, liver and intrahepatic bile duct, breast, brain and other nervous system, and non-Hodgkin's lymphomas. Significant differences between Illinois and U.S. Asian and Pacific Islander males were observed for all sites combined, colon and rectum, lung and bronchus, prostate, urinary bladder and Hodgkin's disease. All sites combined, lung and bronchus, breast, and brain and other nervous system were significantly lower for Illinois' Asian and Pacific Islander females compared with all U.S. Asians and Pacific Islander females. Overall, Asian and Pacific Islander males had higher cancer mortality rates than their female counterparts in Illinois as well as nationally, like the gender difference observed for whites.

Table 16.
Average Annual Age-adjusted Cancer Mortality Rates
All Asians and Pacific Islanders (API) and Whites, Illinois, 1992-1998

	Both Sexes						Males						Females					
	API			Whites			API			Whites			API			Whites		
Site	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**
All Sites	1,387	76.1	2.11	146,468	166.8*	0.45	739	94.7	3.63	74,888	206.1*	0.76	648	62.2	2.51	71,580	141.1*	0.56
Oral Cavity excl Nasopharynx	16	0.8	0.20	1,758	2.1*	0.05	10	1.0	0.34	1,204	3.4*	0.10	6	0.5	0.23	554	1.1	0.05
Nasopharynx	17	0.8*	0.20	153	0.2	0.02	12	1.3*	0.39	95	0.3	0.03	5	0.4	0.20	58	0.1	0.02
Esophagus	29	1.7	0.32	3,004	3.6*	0.07	19	2.6	0.61	2,298	6.5*	0.14	10	1.0	0.34	706	1.4	0.05
Stomach	124	6.8*	0.63	3,394	3.7	0.07	70	9.0*	1.12	1,953	5.3	0.12	54	5.2*	0.73	1,441	2.6	0.07
Colon and Rectum	146	8.2	0.70	16,907	18.2*	0.15	76	10.0	1.19	8,376	22.9*	0.25	70	6.9	0.84	8,531	14.9*	0.17
Liver and Intrahepatic Bile Duct	133	7.2*	0.64	2,930	3.4	0.06	91	11.0*	1.21	1,707	4.8	0.12	42	4.1*	0.65	1,223	2.3	0.07
Gallbladder	12	0.7	0.21	687	0.7	0.03	3	0.3	0.19	170	0.5	0.04	9	1.0	0.32	517	1.0	0.05
Pancreas	85	4.9	0.55	7,385	8.3*	0.10	48	6.3	0.95	3,499	9.7*	0.17	37	3.8	0.64	3,886	7.1*	0.12
Larynx	7	0.4	0.17	1,009	1.2	0.04	6	0.9	0.37	802	2.3	0.08	1	0.1	0.11	207	0.4	0.03
Lung and Bronchus	271	15.7	0.97	40,449	48.2*	0.25	171	22.9	1.80	24,291	67.8*	0.44	100	10.0	1.02	16,158	34.1*	0.28
Bones and Joints	4	0.2	0.08	388	0.5	0.03	3	0.3	0.15	200	0.6	0.04	1	0.1	0.07	188	0.4	0.03
Soft Tissue including Heart	15	0.7	0.19	901	1.1	0.04	10	1.0	0.34	440	1.2	0.06	5	0.5	0.23	461	1.0	0.05
Melanomas of the Skin	9	0.4	0.15	1,862	2.2*	0.05	5	0.5	0.24	1,143	3.1*	0.09	4	0.4	0.18	719	1.5*	0.06
Breast	105	4.8	0.49	12,649	14.6*	0.13	1	0.1	0.07	92	0.3	0.03	104	8.7	0.89	12,557	26.1*	0.25
Cervix	-	-	-	-	-	-	-	-	-	-	-	-	21	1.8	0.42	1,014	2.3	0.08
Corpus and Uterus, NOS	-	-	-	-	-	-	-	-	-	-	-	-	16	1.6	0.39	1,798	3.5*	0.09
Ovary	-	-	-	-	-	-	-	-	-	-	-	-	34	3.1	0.54	3,945	8.2*	0.14
Prostate	-	-	-	-	-	-	41	6.4	1.01	8,502	22.3*	0.24	-	-	-	-	-	-
Testis	-	-	-	-	-	-	0	0.0		81	0.2	0.02	-	-	-	-	-	-
Urinary Bladder	12	0.7	0.21	3,216	3.3*	0.06	5	0.6	0.30	2,211	5.9*	0.13	7	0.8	0.29	1,005	1.6	0.05
Kidney and Renal Pelvis	24	1.4	0.28	3,199	3.8*	0.07	17	2.2	0.55	1,913	5.4*	0.12	7	0.7	0.27	1,286	2.5*	0.08
Brain and Other Nervous System	21	1.0	0.23	3,274	4.1*	0.07	15	1.6	0.43	1,817	5.1*	0.12	6	0.6	0.23	1,457	3.3*	0.09
Thyroid	7	0.4	0.16	330	0.4	0.02	2	0.2	0.16	125	0.4	0.03	5	0.6	0.24	205	0.4	0.03
Hodgkin's Disease	7	0.4	0.14	373	0.4	0.02	5	0.6	0.27	206	0.6	0.04	2	0.2	0.13	167	0.3	0.03
Non-Hodgkin's Lymphomas	48	2.8	0.41	6,198	6.9*	0.09	30	3.9	0.75	3,092	8.4*	0.15	18	1.9	0.45	3,106	5.8*	0.11
Multiple Myeloma	29	1.6	0.31	2,429	2.7*	0.06	18	2.4	0.57	1,155	3.2	0.09	11	1.1	0.34	1,274	2.4*	0.07
Leukemias	60	2.9	0.40	5,841	6.6*	0.09	34	3.5	0.66	3,205	8.8*	0.16	26	2.4	0.49	2,636	5.0*	0.11
All Other Sites	94	5.4	0.57	12,792	14.3*	0.13	47	6.0	0.92	6,311	17.4*	0.22	47	4.8	0.71	6,481	12.0*	0.16

NOS - not otherwise specified SE - standard error
Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard million population.
*The rate is significantly greater for the race group in the respective comparison $p<0.05$.

Source: Illinois Department of Public Health, Death Master Files, 1992-1998

Table 17.
Average Annual Age-adjusted Cancer Mortality Rates
All Asians and Pacific Islanders Illinois, 1992-1998 vs. U.S., 1993-1997

	Both Sexes						Males						Females					
	Illinois			U.S.			Illinois			U.S.			Illinois			U.S.		
Site	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**	**Count**	**Rate**	**SE**
All Sites	1,387	76.1	2.11	36,560	102.8*	0.55	739	94.7	3.63	19,702	127.4*	0.93	648	62.2	2.51	16,858	84.0*	0.66
Oral Cavity excl Nasopharynx	16	0.8	0.20	388	1.1	0.06	10	1.0	0.34	254	1.6	0.10	6	0.5	0.23	134	0.7	0.06
Nasopharynx	17	0.8	0.20	487	1.2	0.06	12	1.3	0.39	363	1.9	0.10	5	0.4	0.20	124	0.6	0.05
Esophagus	29	1.7	0.32	611	1.8	0.07	19	2.6	0.61	469	3.1	0.15	10	1.0	0.34	142	0.8	0.06
Stomach	124	6.8	0.63	2,900	8.3	0.16	70	9.0	1.12	1,635	10.8	0.27	54	5.2	0.73	1,265	6.3	0.18
Colon and Rectum	146	8.2	0.70	3,753	10.8*	0.18	76	10.0	1.19	1,981	13.0*	0.30	70	6.9	0.84	1,772	9.0	0.22
Liver and Intrahepatic Bile Duct	133	7.2	0.64	3,373	9.2*	0.16	91	11.0	1.21	2,346	14.1	0.30	42	4.1	0.65	1,027	5.3	0.17
Gallbladder	12	0.7	0.21	245	0.7	0.05	3	0.3	0.19	82	0.6	0.06	9	1.0	0.32	163	0.9	0.07
Pancreas	85	4.9	0.55	2,031	6.0	0.13	48	6.3	0.95	1,055	7.0	0.22	37	3.8	0.64	976	5.1	0.17
Larynx	7	0.4	0.17	135	0.4	0.03	6	0.9	0.37	116	0.8	0.07	1	0.1	0.11	19	0.1	0.02
Lung and Bronchus	271	15.7	0.97	8,017	23.4*	0.26	171	22.9	1.80	5,079	34.0*	0.48	100	10.0	1.02	2,938	15.2*	0.28
Bones and Joints	4	0.2	0.08	101	0.2	0.02	3	0.3	0.15	59	0.3	0.04	1	0.1	0.07	42	0.2	0.03
Soft Tissue including Heart	15	0.7	0.19	375	1.0	0.05	10	1.0	0.34	190	1.0	0.08	5	0.5	0.23	185	0.9	0.07
Melanomas of the Skin	9	0.4	0.15	127	0.4	0.03	5	0.5	0.24	60	0.4	0.05	4	0.4	0.18	67	0.3	0.04
Breast	105	4.8	0.49	2,448	6.1*	0.13	1	0.1	0.07	11	0.1	0.02	104	8.7	0.89	2,437	11.2*	0.23
Cervix	-	-	-	-	-	-	-	-	-	-	-	-	21	1.8	0.42	595	2.7	0.11
Corpus and Uterus, NOS	-	-	-	-	-	-	-	-	-	-	-	-	16	1.6	0.39	348	1.8	0.10
Ovary	-	-	-	-	-	-	-	-	-	-	-	-	34	3.1	0.54	845	4.1	0.14
Prostate	-	-	-	-	-	-	41	6.4	1.01	1,408	10.3*	0.27	-	-	-	-	-	-
Testis	-	-	-	-	-	-	0	0.0		19	0.1	0.02	-	-	-	-	-	-
Urinary Bladder	12	0.7	0.21	417	1.3	0.06	5	0.6	0.30	271	1.9*	0.12	7	0.8	0.29	146	0.8	0.07
Kidney and Renal Pelvis	24	1.4	0.28	541	1.5	0.07	17	2.2	0.55	364	2.3	0.12	7	0.7	0.27	177	0.9	0.07
Brain and Other Nervous System	21	1.0	0.23	707	1.8*	0.07	15	1.6	0.43	367	2.0	0.11	6	0.6	0.23	340	1.6*	0.09
Thyroid	7	0.4	0.16	174	0.5	0.04	2	0.2	0.16	56	0.4	0.05	5	0.6	0.24	118	0.6	0.06
Hodgkin's Disease	7	0.4	0.14	66	0.2	0.02	5	0.6	0.27	45	0.2	0.04	2	0.2	0.13	21	0.1	0.02
Non-Hodgkin's Lymphomas	48	2.8	0.41	1,473	4.1*	0.11	30	3.9	0.75	847	5.3	0.19	18	1.9	0.45	626	3.2	0.13
Multiple Myeloma	29	1.6	0.31	499	1.5	0.07	18	2.4	0.57	278	1.8	0.11	11	1.1	0.34	221	1.2	0.08
Leukemias	60	2.9	0.40	1,427	3.7	0.10	34	3.5	0.66	782	4.6	0.17	26	2.4	0.49	645	3.0	0.12
All Other Sites	94	5.4	0.57	3,050	8.6*	0.16	47	6.0	0.92	1,565	10.0*	0.26	47	4.8	0.71	1,485	7.5*	0.20

NOS - not otherwise specified SE - standard error
Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard million population.
*The rate is significantly greater for the race group in the respective comparison $p<0.05$.

SOURCE: Illinois Department of Public Health, Death Master Files, 1992-1998; and National Center for Health Statistics, Public Use Death Data Files, 1993-1997

Discussion

First, it must be emphasized that any interpretation of Illinois' cancer incidence and cancer mortality data for Asians and Pacific Islanders should be made cautiously because of the small numbers of cases and deaths for the race groups of interest. Moreover, the lack of reliable denominators for Asian and Pacific Islander subgroups eliminated the ability to calculate age-adjusted rates and standard errors that would, at least, allow an informed estimate of imprecision associated with observed incidence and mortality for those subgroups. Population data were only available for the combined Asian and Pacific Islander group making rate calculations and comparisons possible for just the aggregate group. For subgroup comparisons, the absolute cancer incidence and mortality data by relative ranking of sites were examined and these results must be viewed cautiously due to unknown degrees of error and bias with the approach.

An additional factor limiting the interpretation of Illinois' Asian and Pacific Islander cancer incidence and mortality data relates to the race coding of cancer cases and deaths. The classification system and its adoption were discussed in methods. A more extensive discussion of the problems associated with Asian and Pacific Islander classification in cancer registries and on death certificate data has recently been undertaken elsewhere.[15] As discussed, race in a medical record of a living patient is generally based on the patient's statement. Race on death certificates is frequently filled out by a third party who may or may not have ever seen the decedent or the family. Both are prone to procedural classification error during collection. In addition, findings from a linkage study matching more than 100,000 Medicare and Medicaid records showed the worst relative agreement for individuals classified as Asian among seven race/ethnic groups.[16]

The fact that a substantial number of Illinois cancer cases and deaths were classified as "other Asian" suggests difficulty by reporting sources when documenting specific race for Asian and Pacific Islander subgroups. Even more suggestive of a misclassification problem in Illinois are the observed lower cancer incidence and mortality rates for combined Asians and Pacific Islanders when compared with national data. Such differences were not observed for whites. Given that the ISCR database exceeds 95 percent completeness for years 1993 to 1997,[17] it is likely that cancer cases that are really Asian and Pacific Islander races are being misclassified among other race categories, especially "other race" and "unknown." The same problem may well exist for vital record documentation in the state. In addition, terminally ill Asian patients change residence and die in a state or country different from the place of diagnosis resulting in a severe underestimation of mortality.[15]

Reclassification approaches have been reported that use Asian and Pacific Islander surnames and birthplaces to identify individuals belonging to specific race groups for a variety of reasons.[18-21] The findings from the Illinois evaluation indicate a need to evaluate a new approach to achieve more accurate cancer data on Asians and Pacific Islanders. Such work successfully improved Hispanic identification on ISCR and Illinois death certificate data.[22,23]

Despite the limitations just described, the overall patterns of cancer among Asians and Pacific Islanders residing in Illinois do resemble those observed nationally and internationally for the aggregate race group and its respective subgroups.[24-27] Generally, Asians and Pacific Islanders experience lower cancer incidence and mortality than do whites or blacks in the U.S. and the evaluation of Illinois cancer incidence and mortality data did, indeed, demonstrate lower rates for Illinois' Asian and Pacific Islander populations. Proportionately, Asian and Pacific Islander cancer incidence and mortality were less than the group's representation in the total Illinois population.

However, relatively higher rates of "signature" malignancies for Asians and Pacific Islanders than for whites were observed in the Illinois data. Nasopharyngeal carcinoma among Chinese and Southeast Asian males was evident in the Illinois cancer data. Liver and intrahepatic bile duct cancer also emerged as one of the most common sites across most Asian and Pacific Islander gender subgroups. Likewise, the occurrence of stomach cancer was excessive among most Asian and Pacific Islander subgroups and even ranked as the No. 1 cause of death for Koreans. Relatively higher morbidity and mortality due to thyroid cancer were evident among many Asian subgroup females, a phenomenon that has yet to be convincingly explained. Common cancer sites targeted for cancer prevention and control by state and national agencies, including lung and bronchus, colon and rectum, breast, cervix and prostate, also were shown to contribute substantially to the overall cancer burden for Asians and Pacific Islanders.

Greater proportions of cancer cases and cancer deaths were observed in the younger age category for most Asian and Pacific Islander subgroups than whites. Remarkably, less than half to a third of all cases occur among elderly in most Asian and Pacific Islander subgroups. This could reflect the relative youth of the migrant populations. An exception was the Japanese where, as with whites, larger proportions of cancer cases and deaths were apparent among the more than 65 years of age group. A careful examination of the population structure did, indeed, reveal a higher proportion of persons over 65 years age for the Japanese subgroup, thus explaining the higher proportions of cancer cases and deaths within this age category.

The ranking of cancer incidence from all sites combined by subgroup also reflects the population distribution of Asian and Pacific Islander subgroups in the Illinois population. However, the cancer mortality profile suggests a disproportionately greater presence of death from cancer among Chinese and Koreans than would be expected from their representation in the Illinois population.

The stage of disease at the time of cancer diagnosis relates to participation in screening and other preventive health care programs. Interestingly, the higher breast cancer *in situ* diagnosis for Asian and Pacific Islander females suggests that breast cancer screening programs are reaching these women. It is known that mammography usage is highly and directly correlated with *in situ* diagnoses. In Illinois, the Breast and Cervical Cancer Program targets low-income

women and considerable program activities have been implemented in the Uptown area of Chicago where many low-income Asians, especially Southeast Asian women, live. Despite a higher proportion of breast cancer *in situ* diagnoses, stage of disease at cancer diagnosis was not uniformly better for invasive breast cancer or for other selected cancer sites. Invasive breast cancer was diagnosed more often in later stages among Asian and Pacific Islander females in Illinois. Although it was not possible to examine the cancer incidence data by birthplace, one report indicates more late stage breast cancer diagnoses among foreign-born Asian and Pacific Islander females.[28] Equally disturbing was the observation of more late stage invasive cervical cancer among Asian and Pacific Islander females implying less Pap test utilization and perhaps access to medical care.

Currently, national cancer incidence data for comparison are drawn from SEER. The three reporting locales include areas with large Asian and Pacific Islander populations: California, Hawaii and Seattle-Puget Sound. However, other large Asian population centers-- Illinois, New York and Texas--do not report to SEER. The differences in Asian population composition by country of origin, social class, age structure and recency of immigration would all be expected to affect cancer incidence either directly or indirectly through life style exposures. Therefore, differences between the Illinois data and SEER data may, to some extent, reflect real differences in the Asian and Pacific Islander populations by state.

There are some reasons to believe that the Illinois data may, in fact, be different from the SEER data. First, the Illinois Asian immigrant population has included larger proportionate numbers of the Korean and Asian Indian/Pakistani subgroups, especially in Cook and the collar counties. Second, the large communities of Chinese, Filipinos and Japanese in Illinois may represent a mixture of long-stay immigrants, internal migrants from primary settlement areas in Hawaii and the West Coast as well as recent immigrants from Asia. The proportions are currently unknown, but cancer risk, incidence and mortality have been shown to be related to generation and migration status.[29]

Patterns of cancer among Asian and Pacific Islander subgroups suggest differential risk consistent with immigrant effects. For example, the most acculturated of the Asian groups, that is, in terms of adopting American life style risk factors, are the Filipinos and Japanese, for whom some of the shifts in life style factors may have preceded migration. Thus, the similarity in patterns of these two groups to whites could reflect changing risk profiles. By comparison, groups with limited opportunity to acculturate, such as recently arrived Vietnamese and Southeast Asians, have patterns that diverge from those for whites. However, the example of thyroid cancer, which appears excessive among Asians and Pacific Islander females in Illinois suggests that there may be as yet unrecognized environmental or genetic susceptibilities.

Conclusion

An awareness of the patterns of cancer among Asians and Pacific Islanders in Illinois has implications for the quality of screening, diagnosis and treatment of the disease for this important race group. The findings from the present evaluation represent a step toward a better understanding of the cancer burden for the race group and its subgroups in Illinois. Future research to study approaches toward improvement of Asian and Pacific Islander identification on the ISCR database and on Illinois death certificates is needed. The population data from the year 2000 census will produce reliable denominator data to expand the study of cancer among Asians and Pacific Islanders in Illinois.

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Appendix

Formulas for Rates

Algorithms for Rates

Crude Rate

A crude rate is the number of cases per 100,000 in a given population.

$$cruderate = \frac{count}{population} \times 100{,}000$$

Age-Adjusted Rate

An age-adjusted rate is a weighted average of crude rates, where the crude rates are calculated for different age groups and the weights are the proportions of persons in the corresponding age groups of a standard population. Several sets of standard populations are included in SEER*Stat. These include the total U.S. populations (1940, 1950, 1960, 1970, 1980, and 1990), an estimate of the U.S. 2000 population, 1991 Canadian population, and the world population. The age-adjusted rate for an age group comprised of the ages x through y is calculated using the following formula:

$$aarate_{x-y} = \sum_{i=x}^{y} \left[\left(\frac{count_i}{pop_i} \right) \times 100{,}000 \times \left(\frac{stdmil_i}{\sum_{j=x}^{y} stdmil_j} \right) \right]$$

where counti is the number of cases for the ith age group, popi is the relevant population for the same age group, and stdmili is the standard population for the same age group.

Standard Error for a Crude Rate

This calculation assumes that the cancer counts have Poisson distributions.

$$SE_{crude} = \frac{\sqrt{count}}{population} \times 100{,}000$$

Standard Error for an Age-Adjusted Rate

This calculation assumes that the cancer counts have Poisson distributions. Suppose that the age-adjusted rate is comprised of age groups x through y.

$$SE_{AArate} = \left[\sum_{i=x}^{y} \left(\frac{stdmil_i}{\sum_{j=x}^{y} stdmil_j} \right)^2 \times \left(\frac{count_i}{population_i^2} \right) \right]^{1/2} \times 100{,}000$$

Crude Rate Confidence Intervals

The endpoints of a p ? 100% confidence interval are calculated as:

$$CI_{low} = \frac{\left(\frac{1}{2} \left(ChiInv\left(\frac{p}{2}, 2 \times count \right) \right) \right)}{population} \times 100{,}000$$

$$CI_{high} = \frac{\left(\frac{1}{2} \left(ChiInv\left(1 - \frac{p}{2}, 2 \times (count + 1) \right) \right) \right)}{population} \times 100{,}000$$

where Chi Inv(p,r) is the inverse of the chi-squared distribution function evaluated at p and with r degrees of freedom, and we define Chi Inv (p,0) = 0.

Although the normal approximation may be used with the standard errors to obtain confidence intervals when the count is large, we use the above exact method that holds even with small counts (see Johnson and Kotz, 1969, or Fay and Feuer, 1997). When the count is large the 2 methods produce similar results.

Age-Adjusted Rate Confidence Intervals

Suppose that the age-adjusted rate is comprised of age groups x through y, and let:

$$w_i = \frac{stdmil_i}{\left(pop_i \times \sum_{j=x}^{y} stdmil_j \right)}$$

$$w_m = \max\left(w_i \right)$$

$$v = \sum_{i=x}^{y} \left(w_i^2 \times count_i \right)$$

The endpoints of a p x 100% confidence interval are calculated as:

$$CI_{low} = \left(\frac{v}{2 \times rate} \right) \times \left(ChiInv\left(\frac{p}{2}, \frac{\left(2 \times rate^2 \right)}{v} \right) \right) \times 100{,}000$$

$$CI_{high} = \left(\frac{v + w_m^2}{2\left(rate + w_m \right)} \right) \times \left(ChiInv\left(1 - \frac{p}{2}, \frac{2\left(rate + w_m \right)^2}{\left(v + w_m^2 \right)} \right) \right) \times 100{,}000$$

This method for calculating the confidence interval was developed in Fay and Feuer (1997). The method produces similar confidence limits to the standard normal approximation when the counts are large and the population being studied is similar to the standard population. In other cases, the above method is more likely to ensure proper coverage.

Note

The rate used in the above formulas is not per 100,000 population.

For additional copies or more information, please contact

Illinois Department of Public Health

Division of Epidemiologic Studies

605 W. Jefferson St.

Springfield, IL 62761

217-785-1873

TTY (hearing impaired use only) 800-547-0466

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