CHAPTER 6: CHRONIC DISEASES

Chronic diseases are the leading cause of death and disability. They are generally characterized by multiple risk factors, a long development period, and a prolonged course of illness. The occurrence of chronic diseases generally increases with age. A major challenge for public health professionals is to develop and implement programs that can effectively reduce the risk factors and therefore prevent or postpone the onset of chronic diseases. In this chapter, we examine coronary heart disease, cancer, stroke, COPD, diabetes, and chronic liver disease. In 1996, these diseases accounted for 61% of the total deaths in King County.

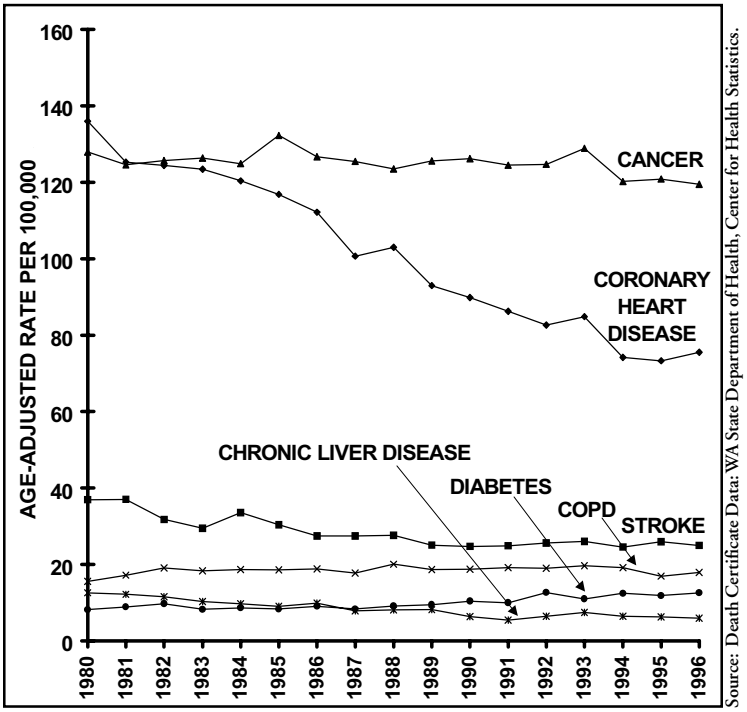
Table 6.1:
Chronic Diseases, Age-Adjusted Death Rate and Number

	King County 1996		Seattle 1996		WA State 1996		U.S. 1996
	Rate	Number	Rate	Number	Rate	Number	Rate
Heart Disease	100.5	3148	107.6	1428	109.2	11794	138.3*
Coronary Heart Disease	75.5	2326	80.0	1045	83.3	8942	102.9*
Cancer	119.5	2892	116.2	1137	121.6	10162	129.1
Lung Cancer	32.6	752	31.5	296	37.2	2946	38.2
Colorectal Cancer	11.8	307	10.8	115	11.5	1029	12.4
Breast Cancer	22.7	271	23.2	108	19.4	785	21.0*
Prostate Cancer	14.0	177	11.0	65	13.9	638	15.5*
Cervical Cancer (94-96 ave.)	1.7	16	2.2	8	2.0	68	1.3
Stroke	25.0	935	24.9	438	28.1	3540	26.5
COPD	18.0	513	18.1	221	20.8	2101	21.0
Diabetes	12.6	318	15.2	141	13.4	1192	13.6
Chronic Liver Diseases	6.0	122	8.6	58	7.1	475	7.5

* Rates are for 1995.

Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Figure 6-1:
Time Trends for Chronic Disease Deaths
King County
1980-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

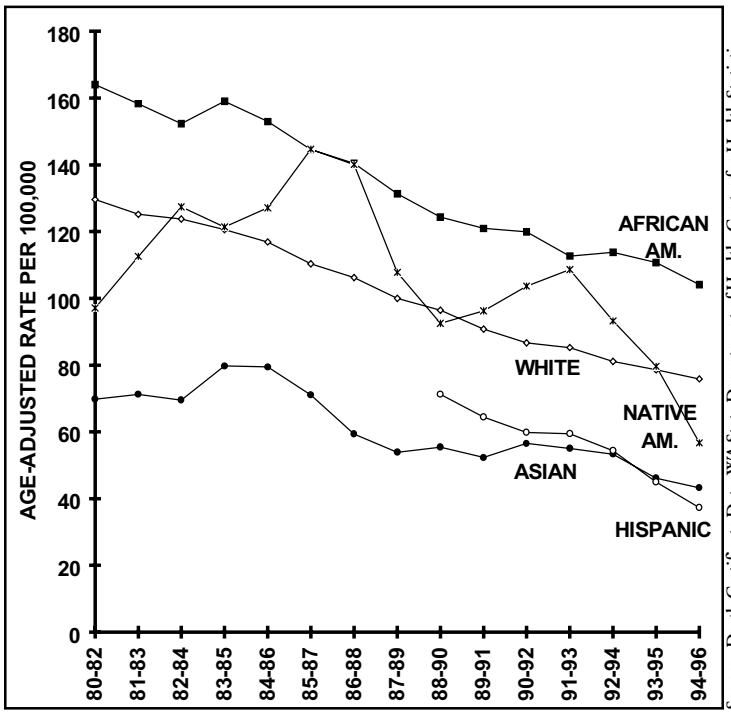
- The age-adjusted death rates in King County for most of the chronic diseases were lower than the state and national rates.
- The declining trends in the death rates from coronary heart disease, stroke, and colorectal cancer leveled off in recent years. Among African Americans, the death rates from stroke and colorectal cancer increased since 1990.
- The death rate from diabetes increased significantly since the mid-80s, especially among African Americans and whites.
- Among the chronic diseases discussed in this chapter, with the exception of chronic liver disease, the age-adjusted death rates for African Americans were significantly higher than the white rates. Native Americans had the highest death rate for chronic liver disease.
- In general, residents of high poverty neighborhoods, residents of Central and South Regions, and residents of Central and Southeast Seattle had higher age-adjusted death rates in the leading chronic diseases.

CORONARY HEART DISEASE

Coronary heart disease (CHD), also known as ischemic heart disease, is characterized by blockage of the arteries supplying the heart with blood. CHD includes heart attack and angina. It accounted for about three-fourths of all deaths from heart disease. Other heart conditions, such as congestive heart failure or sudden cardiac death, are often the result of CHD.

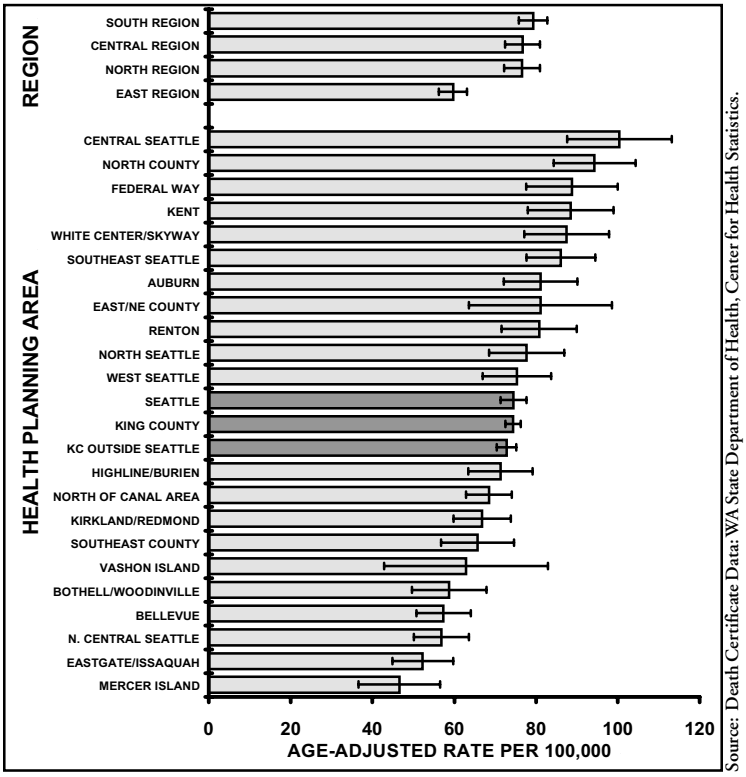
- In 1996, 2,326 King County residents died from CHD.
- 15% of the deaths were under age 65, 20% were age 65 to 74, and 65% were age 75 and over.
- Overall, the age-adjusted CHD death rate for men was 2.3 times the rate for women. However, the male to female ratio in the CHD death rate declines with age. The ratio was 5.6 in the 45 to 54 age group, 2.4 in the 65 to 74 age group, and 1.8 in the 75 to 84 age group.
- More women die from CHD than from breast cancer. Of women under age 75, there were 222 CHD deaths and 176 breast cancer deaths in 1996.
- The age-adjusted CHD death rate declined 41% in King County and 42% in Seattle between 1980 and 1994. However, the declining trend has stopped since 1994 (Figure 6-1).
- Averaged over 1994-1996, the CHD age-adjusted death rate for African Americans (104.1) remained significantly higher than the rate for whites (75.9). The rates for Asians (43.3) and Hispanics (37.3) were lower than the white rate. The rate for Native Americans (56.7) was not significantly different from the white rate.
- The gaps in the age-adjusted CHD death rate between high and low poverty neighborhoods narrowed since the late 1980s due to a sharper decline in the death rate among residents in high poverty neighborhoods.

Figure 6-2:
Coronary Heart Disease, Age-Adjusted Death Rate
By Race/Ethnicity, King County
Three Year Rolling Averages, 1980-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Figure 6-3:
Coronary Heart Disease, Age-Adjusted Death Rate By Region and Health Planning Area, King County Three Year Average, 1994-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

- The age-adjusted death rate for persons living in high poverty neighborhoods (94.6) was significantly higher than the rates for persons living in medium (79.0) and low (63.3) poverty neighborhoods.
- The age-adjusted death rate for residents of East Region (59.7) was significantly lower than the rates for the other three regions.
- The age-adjusted death rates for residents of Central Seattle, North County, Federal Way, Kent, White Center/Skyway, and Southeast Seattle were significantly higher than the county average rate. The rates in Mercer Island, Eastgate/Issaquah, North Central Seattle, Bellevue, and Bothell/ Woodinville were significantly lower than the county rate.

RISK FACTORS AND PREVENTION

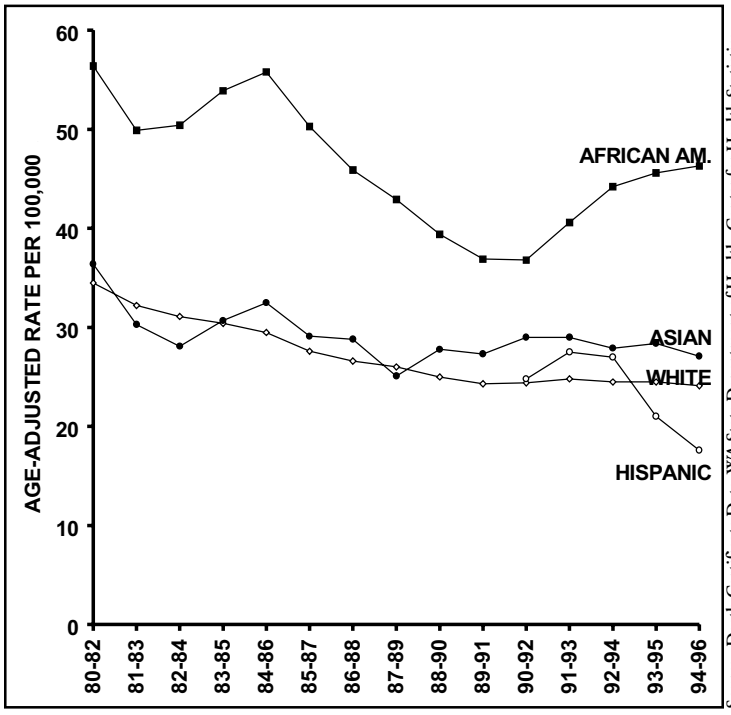
- Cigarette smoking, sedentary lifestyle, obesity, high blood pressure, diabetes, high fat diet, high blood cholesterol, lack of social support, and a stressful demanding job increase the risk of CHD.
- Prevention strategies for CHD include screening to identify and treat high risk individuals and a community based approach which aims to change behaviors and policies for reducing the risk factors at the population level.

STROKE

Stroke or cerebrovascular disease results from an interruption of blood supply to a portion of the brain, either through the blockage or the rupture of the blood vessels to the brain. Stroke may lead to loss of physical, language or intellectual function and tends to result in disability more often than death. While a less common cause of death than CHD, stroke is a major cause of disability.

- In 1996, 935 King County residents died from stroke.
- 8% of the deaths were under age 65, 12% age 65-74, and 80% age 75 and over.
- The age-adjusted death rate of stroke for men was 15% higher than the rate for women.
- The age-adjusted death rate of stroke in King County declined significantly between 1980 and 1990. However, the rate has stopped declining since 1990.
- The age-adjusted death rate for African Americans was significantly higher than the white rate. Also, the African American rate has increased significantly since 1990.

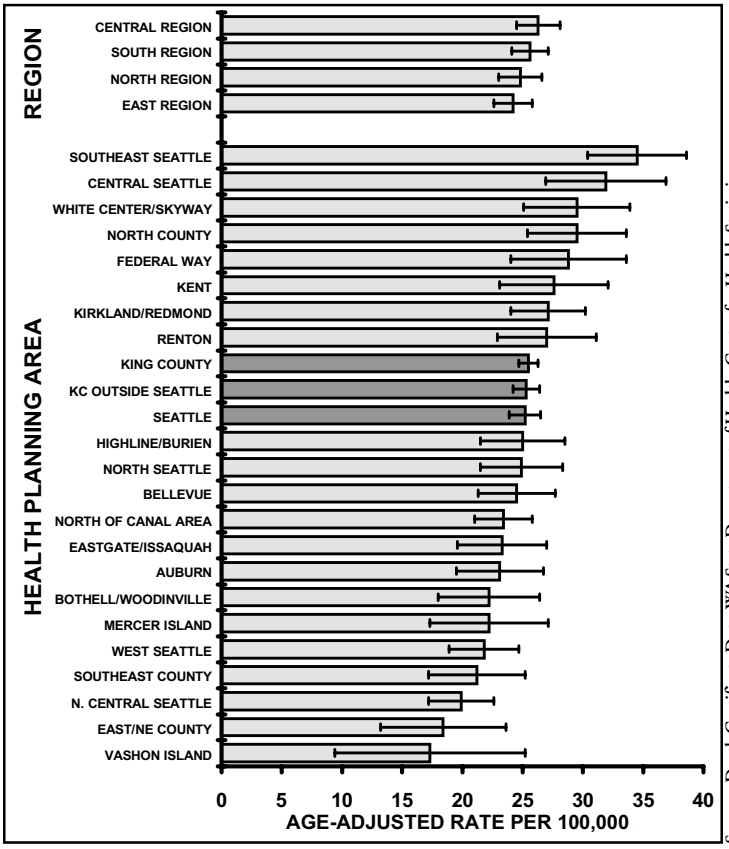
Figure 6-4:
Stroke, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Three Year Rolling Averages, 1980-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Note: Because of small numbers, the trend for Native Americans is not included.

Figure 6-5:
Stroke, Age-Adjusted Death Rates
By Region and Health Planning Area, King County
Five Year Average, 1992-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

- Averaged over 1992-1996, the age-adjusted death rate for residents of high poverty neighborhoods (29.3) was significantly higher than the rate for low poverty neighborhoods (24.1).
- The age-adjusted death rates in Southeast Seattle and Central Seattle were significantly higher than the county average. The rates in East/Northeast County and North Central Seattle were significantly lower than the county rate. There was no significant difference in the age-adjusted death rate among the four health regions.

RISK FACTORS AND PREVENTION

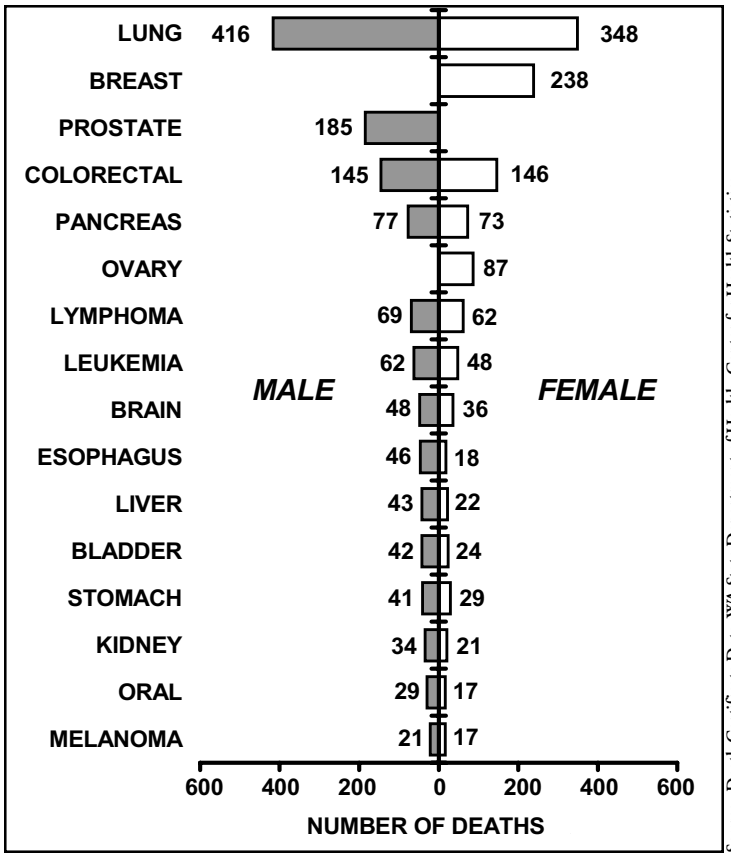
- Stroke shares many of the same risk factors with coronary heart disease, such as hypertension, smoking, and diabetes.
- Control of high blood pressure is the most effective method for preventing a first stroke. Also, recognition of the warning signs of an impending stroke and obtaining prompt treatment are important prevention strategies.

CANCER

Cancer is a diverse group of diseases characterized by a disruption in the orderly growth of cells, caused by a complex interaction of genetic abnormalities and environmental exposures. Please refer to the report, Cancer in King County,[1] for more detailed information.

- Cancer is the second leading cause of death in King County. In 1996, 2,892 King County residents were killed by cancer. In 1994, 6,831 King County residents were diagnosed for invasive cancer.
- The most common types of cancer death include lung cancer, colorectal cancer, breast cancer, prostate cancer, and cancer of the pancreas (Figure 6-6).
- For most cancers, the risk increases with age. However, cervical cancer, ovarian cancer, skin melanoma, Hodgkin's disease, and non-Hodgkin's lymphoma also occur frequently among persons in their 30s and 40s. Leukemia is the most common cancer among children.
- Between 1980 and 1996, the age-adjusted death rate of all cancer deaths in King County stayed flat. Nationally, there was a declining trend between 1990 and 1995 in both the cancer death rate and incidence rate.[2]

Figure 6-6:
Leading Causes of Cancer Death
Number of Deaths Per Year, King County
Three Year Average, 1994-1996

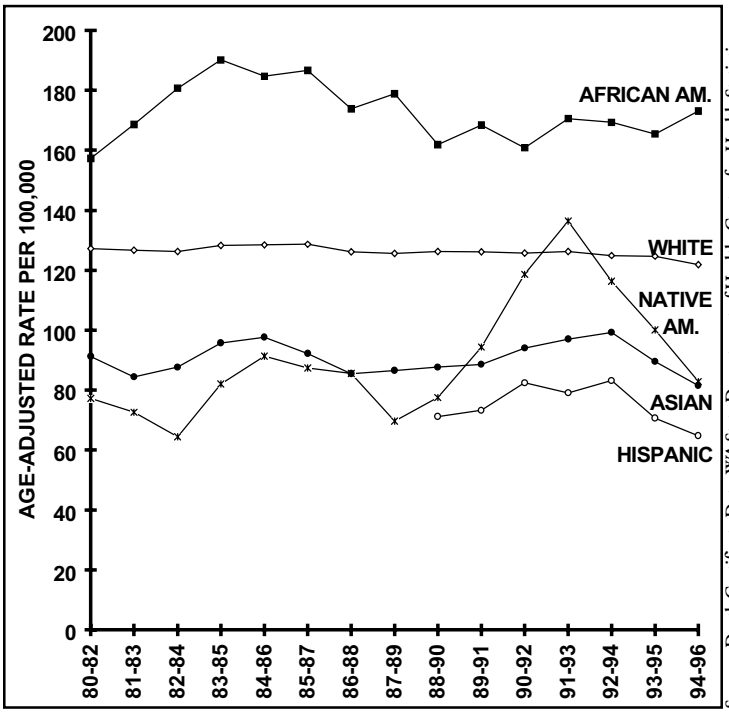


Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

1 Seattle-King County Department of Public Health. Cancer in King County. July 1997.

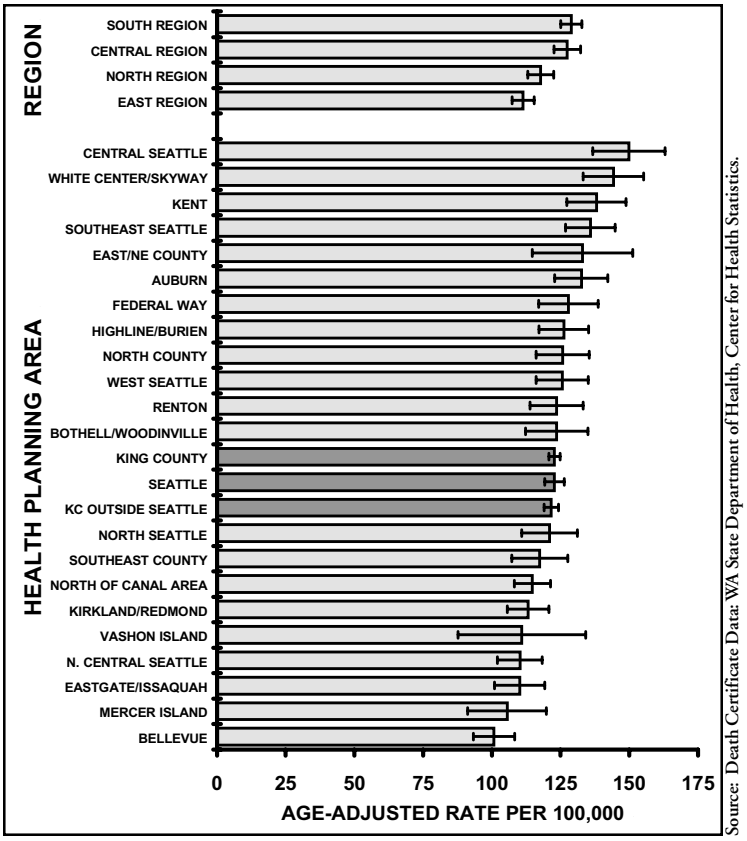
2 Wingo et al. Cancer Incidence and Mortality, 1973-1995. Cancer. 82:1197-207, 1998.

Figure 6-7:
All Cancers, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Three Year Rolling Averages, 1980-1996



- The age-adjusted cancer death rate for African Americans was significantly higher than the white rate. The rates for Native Americans, Asians, and Hispanics were significantly lower than the rate for whites (Figure 6-7).
- The age-adjusted death rates for residents of high poverty (136.1) and medium poverty (126.1) neighborhoods were significantly higher than the rate for residents of low poverty neighborhoods (114.8).
- The gaps in the age-adjusted cancer death rate between high and low poverty neighborhoods narrowed since 1990, because of a declining trend in high poverty neighborhoods and a relatively constant trend in low poverty neighborhoods.

Figure 6-8:
All Cancers, Age-Adjusted Death Rates
By Region and Health Planning Area, King County
Five Year Average, 1992-1996



- The age-adjusted death rates for residents of South (128.9) and Central (127.4) Regions were significantly higher than the rates for North (117.8) and East (111.4) Regions.
- The cancer death rates in Central Seattle, White Center/Skyway, Kent, and Southeast Seattle were significantly higher than the county average rate. Bellevue, Mercer Island, Eastgate/Issaquah, and North Central Seattle had lower than the average rate (Figure 6-8).

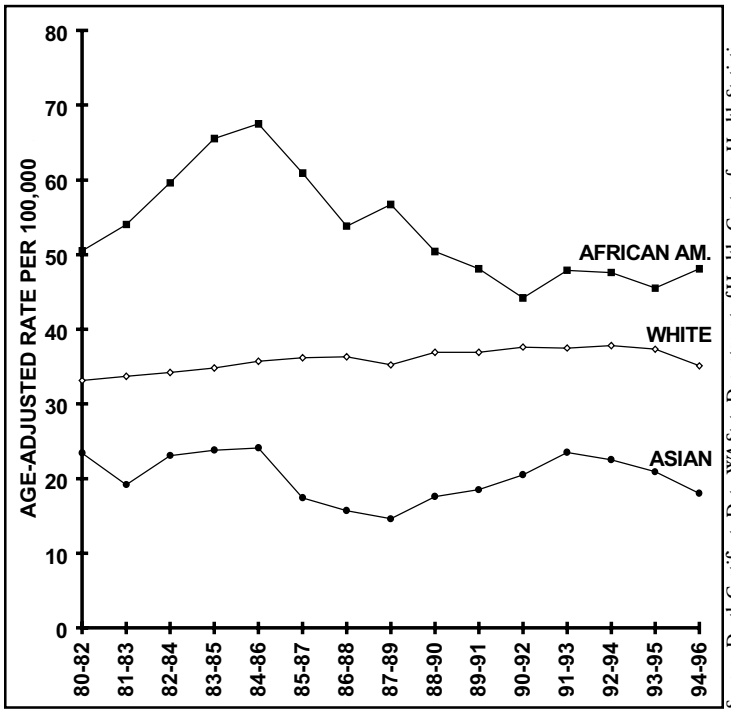
RISK FACTORS AND PREVENTION

- Different cancers may have different risk factors and thus require different preventive measures.

Lung Cancer

- Lung cancer is the leading cause of cancer death.
- In 1996, 752 King County residents died from lung cancer. It accounted for 26% of all cancer deaths.
- In 1994, 922 King County residents were diagnosed with lung cancer.
- The observed 5-year survival rate for lung cancer was 13%.
- Of the 752 lung cancer deaths in 1996, 28% were under age 65, 32% were age 65-74, and 40% were age 75 and over.
- The age-adjusted death rate for African Americans was significantly higher than the rate for whites. The death rate for African Americans, however, declined significantly between 1985 and 1996 (Figure 6-9).
- The age-adjusted lung cancer death rate for males was 1.5 times the rate for females.

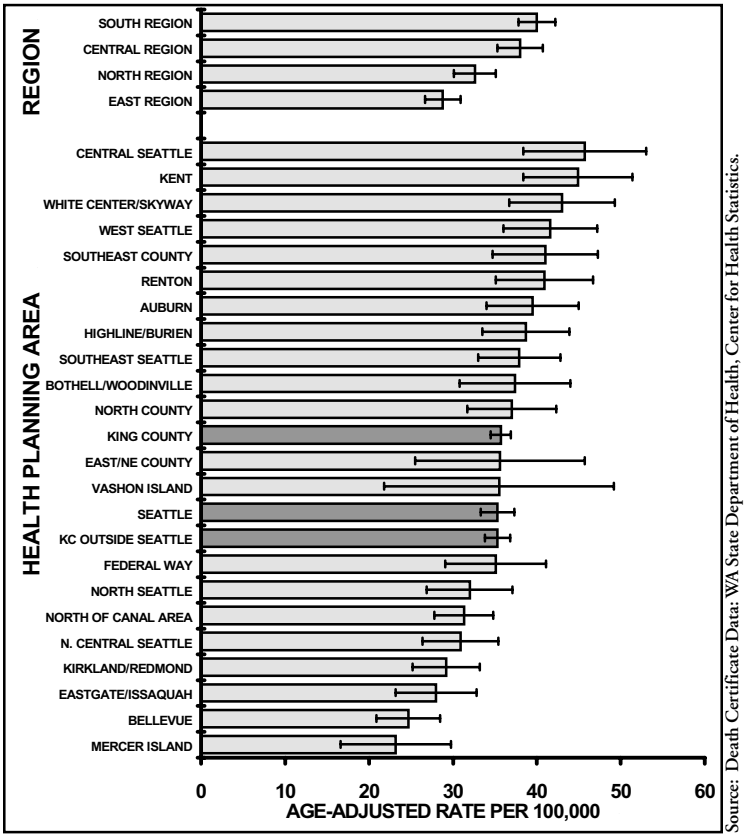
Figure 6-9:
Lung Cancer, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Three Year Rolling Averages, 1980-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Note: Because of small numbers, the trends for Native Americans and Hispanics are not included.

Figure 6-10:
Lung Cancer, Age-Adjusted Deaths
By Region and Health Planning Area, King County
Five Year Average, 1992-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

- The age-adjusted lung cancer death rate for males declined significantly between 1980 and 1996. For females, the rate increased significantly between 1980 and 1990 but became flat since 1990.
- Averaged over 1992-1996, the age-adjusted rates for high (40.8) and medium poverty (38.0) neighborhoods were significantly higher than the rate for low poverty neighborhoods (31.3).
- The age-adjusted death rates for South (40.0) and Central (38.0) Regions were significantly higher than the rates for North (32.6) and East (28.8) Regions (Figure 6-10).
- The age-adjusted death rates in Central Seattle and Kent were significantly higher while the rates in Mercer Island, Bellevue, Eastgate/ Issaquah, and Kirkland/Redmond were significantly lower than the county average rate.

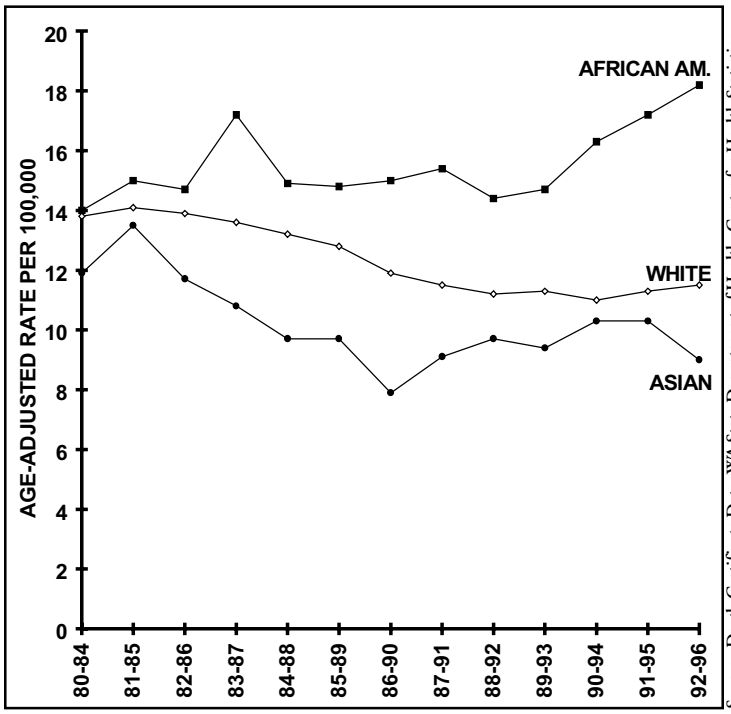
RISK FACTORS AND PREVENTION

- The most significant risk factor for lung cancer is cigarette smoking. It is estimated that 87 percent of lung cancer cases are attributable to cigarette smoking.

Colorectal Cancer

- Colorectal cancer, or cancer of the colon and rectum, is the second leading cause of cancer death in the total population. In King County 1996, there were 307 deaths from colorectal cancer.
- In 1994, 741 King County residents were diagnosed with colorectal cancer.
- The observed 5-year survival rate for invasive colorectal cancer was 49%, ranging from 74% for cancers at the localized stage and 6% at the distant stage.
- The age-adjusted death rate for males was slightly higher than the rate for females.
- Of the 307 deaths in King County, 20% were under age 65, 26% were age 65-74, and 53% were age 75 and over.
- There was a significant declining trend in the death rate for colorectal cancer between 1980 and 1988. Since 1988, however, the death rate had remained at the same level. The incidence rate was also flat between 1990 and 1994. Nationally, the declining trend in the death rate between 1980 and 1995 was continuous.
- The age-adjusted death rate for African Americans was significantly higher than the rate for whites. In addition, the African American rate had increased significantly since 1988 (Figure 6-11).
- The association between the colorectal cancer death rate and poverty level was not statistically significant.
- The was no significant variation in the death rate among the health planning areas or regions.

Figure 6-11:
Colorectal Cancer, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Five Year Rolling Averages, 1980-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Note: The time trend for colorectal cancer in the total population is almost identical to that for whites.
Note: Because of small numbers, the trends for Native Americans and Hispanics are not included.

RISK FACTORS AND PREVENTION

- A family history of colorectal cancer is a significant risk factor for this type of cancer. Other possible risk factors include high-fat/low-vegetable diet, physical inactivity, alcohol consumption, and obesity.
- Early detection through screening has been shown to reduce mortality. Screening techniques include fecal occult blood test (FOBT), and flexible sigmoidoscopy.
- The American Cancer Society recommends that all persons age 50 and older should have a annual FOBT, and a sigmoidoscopy every 3 to 5 years. The US Preventive Health Services recommends annual FOBT, or periodic sigmoidoscopy, or both.
- The American Cancer Society also recommends annual digital rectal exam (DRE) for persons age 40 and older, while others conclude DRE has no value in reducing colorectal cancer mortality.

Rates of FOBT and Sigmoidoscopy Screening

The 1997 Behavioral Risk Factor Survey asked questions regarding colorectal cancer screening using FOBT and sigmoidoscopy. Preliminary data for King County showed that only one-quarter of King County adults age 50 and older received a FOBT screening within the previous 12 months and only one-third received a sigmoidoscopy or proctoscopy exam within the previous five years.

Table 6-2:
Percent Who Had A Fecal Occult Blood Test (FOBT) and Sigmoidoscopy Exam
Among Person Age 50+
King County, 1997

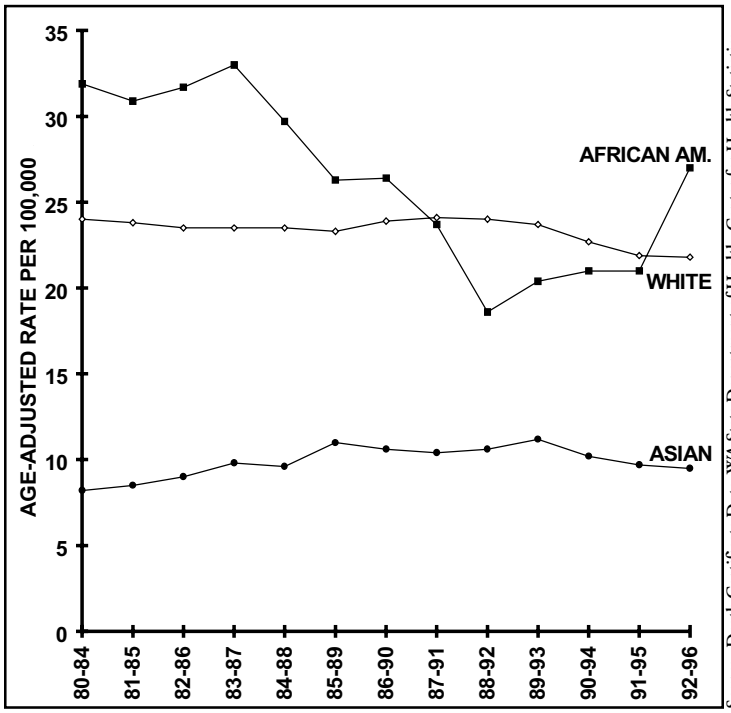
	Sample Size	Had FOBT In The Previous Year		Had Sigmoidoscopy Within The Previous Five Years	
		Rate	(95% C.I.)	Rate	(95% C.I.)
Total:	341	25.3	(20.2, 30.4)	34.2	(28.5, 39.9)
Age:					
50-64	181	22.0	(15.3, 28.6)	32.4	(24.5, 40.3)
65+	170	29.7	(22.0, 37.5)	36.6	(28.3, 44.9)
Sex:					
Male	134	23.3	(15.6, 31.0)	38.5	(29.2, 47.9)
Female	207	27.0	(20.3, 33.6)	30.6	(23.7, 37.5)

Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Female Breast Cancer

- Breast cancer in King County accounted for 19% of cancer deaths among women. In 1996, 271 King County women died from breast cancer.
- In 1994, 1,149 King County women were diagnosed with invasive breast cancer.
- The observed 5-year survival rate for breast cancer was 78%, ranging from 18% for late stage cancer to 95% for local-stage cancer.
- Of the 271 deaths in 1996, 5% were under age 40, 7% were age 40-49, 30% were age 50-64, 22% were age 65-74, and 35% were age 75 or over.
- Between 1980 and 1996 in King County, there was no significant change in the age-adjusted death rate for breast cancer. The age-adjusted incidence rate for invasive breast cancer increased significantly between 1980 and 1987 and stabilized between 1988 and 1994.
- In King County, averaged over 1992-1996, the age-adjusted breast cancer death rate for Asians was significantly lower than the rates for whites and African Americans (Figure 6-12).
- The age-adjusted death rate for breast cancer was not significantly associated with residence poverty level. The incidence rate, however, was higher in upper income areas.
- There was no significant difference in the age-adjusted death rate among the regions or Health Planning Areas during 1992-1996.

Figure 6-12:
Breast Cancer, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Five Year Rolling Averages, 1980-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Note: Because of small numbers, the trends for Native Americans and Hispanics are not included.

RISK FACTORS AND PREVENTION

- Risk factors for breast cancer include first full-term pregnancy after age 30, large doses of chest radiation, never being married, never having children, mother or sister had breast cancer, obesity after menopause, and excessive alcohol consumption.
- High-fat diet, physical inactivity, or estrogen replacements may also play a role in the development of breast cancer.
- Higher socioeconomic status is also associated with a higher incidence of breast cancer; however, low income women may have higher death rates, possibly because of poor access to health care, such as breast cancer screening.
- Early detection and treatment for breast cancer is crucial for reducing breast cancer mortality.

Screening and Early Detection

It is recommended that women age 50 and over should have a clinical breast examination (CBE) once a year and a mammography every 1 to 2 years. The National Cancer Institute and the American Cancer Society also recommend the screening for women age 40 to 49, although screening average risk women in this age group remains controversial.

- In King County 1996, of women age 50 and over, 90% have received a CBE and a mammogram screening at least once in their lives, while 75% have had a CBE and a mammogram within two years.
- Women age 40 to 49 had lower screening rates than women age 50 to 69, indicating different guidelines used by providers.
- Low income women had lower screening rates than women in higher income levels.

Table 6-3:
Breast Cancer Screening Rates
Among King County Women
Three Year Average, 1994-1996

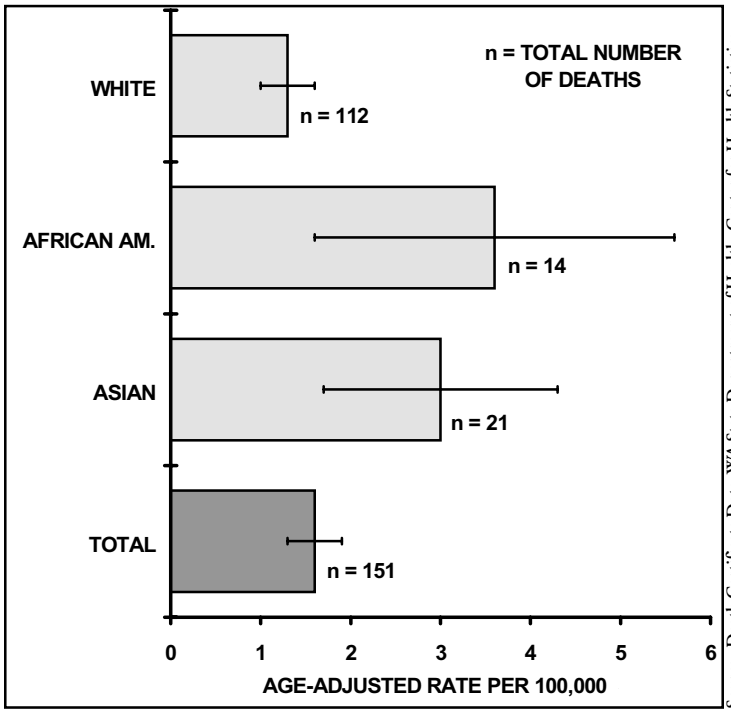
	Sample Size	Ever had a mammogram and CBE		Had a mammogram and CBE in the past 2 years	
		Rate (%)	(95% C.I.)	Rate (%)	(95% C.I.)
Age:					
40+	908	83.1	(80.3, 85.8)	67.2	(63.8, 70.6)
50+	548	87.0	(83.9, 90.2)	74.1	(70.0, 78.1)
40-49	360	77.2	(72.3, 82.0)	57.1	(51.5, 62.8)
50-69	349	89.2	(85.7, 92.7)	78.6	(74.0, 83.2)
70+	199	83.2	(77.2, 89.3)	65.8	(58.1, 73.4)
Annual Household Income (age 50+):					
<$10,000	50	74.6	(59.4, 89.7)	52.4	(33.9, 70.9)
$10,000 - 24,999	142	85.2	(79.1, 91.4)	66.5	(57.8, 75.3)
$25,000 - 34,999	76	87.7	(80.3, 95.0)	74.9	(64.8, 85.0)
$35,000 - 49,000	60	82.7	(70.8, 94.7)	72.0	(58.8, 85.2)
$50,000+	98	92.9	(87.9, 97.8)	86.2	(79.5, 92.9)

Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Cervical Cancer (Cancer of the Uterine Cervix)

- Deaths from cervical cancer are rare, making up about 1% of all cancer deaths in females. However, nearly all deaths from cervical cancer are potentially preventable through screening because this cancer can be detected and treated at an early stage.
- Between 1994 and 1996 in King County, the average number of deaths from cervical cancer was 16 per year.
- In 1994, 74 King County women were diagnosed with invasive cervical cancer.
- For invasive cervical cancer, the observed 5-year survival rate was 72%, ranging from 92% for early stage localized cancer to 10% for late stage distant cancer.
- Of the cervical cancer deaths between 1994 and 1996, 14% were under age 45, 49% were age 45-64, 22% were age 65-74, and 14% were age 75 and over.
- Averaged over ten years (1987-1996) in King County, the age-adjusted cervical cancer death rates for African Americans and Asians were significantly higher than the rate for whites (Figure 6-13).
- Between 1980 and 1996, there was no significant time trend in the cervical cancer death rate.

Figure 6-13:
Cervical Cancer, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Ten Year Average, 1987-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Note: Because of small numbers, the trends for Native Americans and Hispanics are not included.

RISK FACTORS AND PREVENTION

- The risk factors for cervical cancer include multiple sex partners, early age at first intercourse, history of sexually transmitted disease, and cigarette smoking. The cause of cervical cancer has been linked to the human papilloma virus, which is transmitted by sexual intercourse.
- Spermicide and barrier contraceptives (diaphragm and condom) may reduce the risk of cervical cancer by decreasing exposure to infectious agents causing the cancer.
- Routine pelvic examination with Pap smear can detect pre-cancerous cervical lesions, permitting treatment which cures most cases. It is estimated that between 37% and 60% of cervical cancer deaths could be prevented by the use of Pap test at adequate intervals.

Screening and Early Detection

The American Cancer Society, the National Cancer Institute, and the American College of Obstetricians and Gynecologists recommend annual Pap tests starting at age 18 or with sexual activity. After three or more Pap tests with normal findings, the test may be performed less frequently, such as every three years, at the discretion of the physician.

- Among King County women age 18 and over in 1996, 88% had received a Pap test within 3 years.
- African American women had the highest screening rate while Asian women had the lowest.
- Women of low income had lower screening rates than women of higher income levels.

Table 6-4:
Rate of Having Had a Pap Test Within The Previous Three Years
Among King County Women Age 18+ Who Had Intact Uterine Cervix
Three Year Average, 1994-1996

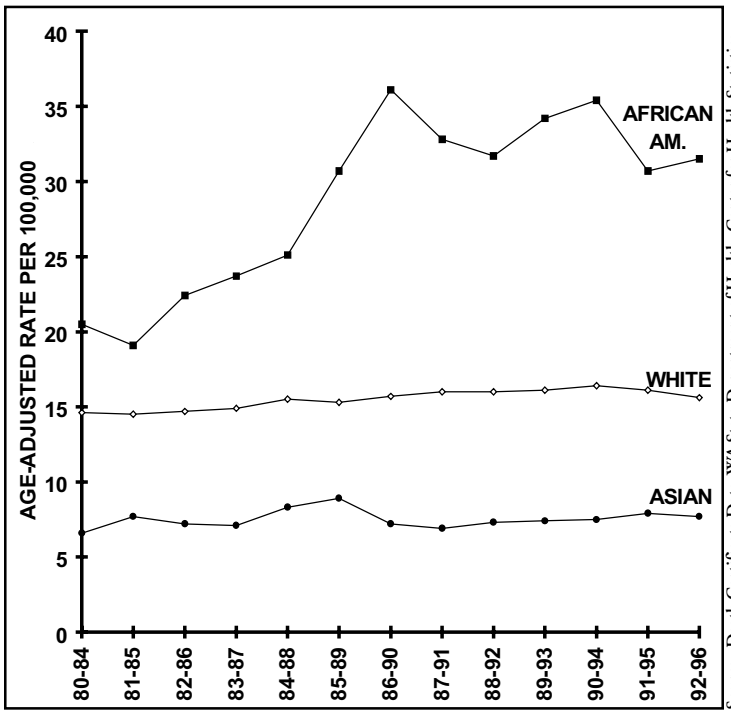
	Sample Size	Rate	(95% C.I.)
Age:			
18-24	135	82.5	(75.6, 89.4)
25-44	721	90.0	(87.6, 92.4)
45-64	293	89.6	(86.2, 93.0)
65+	144	76.7	(69.1, 84.3)
Race/Ethnicity:			
White	1,418	88.1	(86.0, 90.1)
African American	64	95.3	(88.9, 100.0)
Asian	87	75.0	(64.6, 85.4)
Hispanic	59	90.8	(83.3, 98.4)
Annual Household Income:			
<$10,000	73	77.0	(65.1, 88.8)
$10,000 - 24,999	281	82.2	(77.2, 87.2)
$25,000 - 34,999	184	84.4	(78.9, 89.8)
$35,000 - 49,000	241	91.8	(87.8, 95.7)
$50,000+	367	94.7	(92.4, 97.0)

Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Prostate Cancer

- Prostate cancer is the second leading cause of cancer death in men, after lung cancer.
- In 1996, 177 men in King County died from prostate cancer.
- In 1994, 833 King County men were diagnosed for prostate cancer.
- The observed 5-year survival rate for prostate cancer is 78%.
- Of the 177 deaths in 1996, 6% were under age 65, 23% were age 65 to 74, and the remaining 71% were age 75 and over.
- The prostate cancer death rate in King County increased slightly but significantly between 1980 and 1996. Between 1981 and 1991, the prostate cancer incidence rate doubled, probably due to the increase in the use of prostate-specific antigen (PSA) to screen for prostate cancer. The incidence rate has been declining, however, since 1991.
- The age-adjusted death rate for African Americans was significantly higher than the white rate. Also, the death rate increased sharply among African Americans in the mid-80s. The death rate for Asians was significantly lower than rate for whites (Figure 6-14).
- There were no significant differences in the death rate among Regions or Health Planning Areas.

Figure 6-14:
Prostate Cancer, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Five Year Rolling Averages, 1980-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

Note: Because of small numbers, the trends for Native Americans and Hispanics are not included. Also, the trend in the total population is almost identical to that for whites.

RISK FACTORS AND PREVENTION

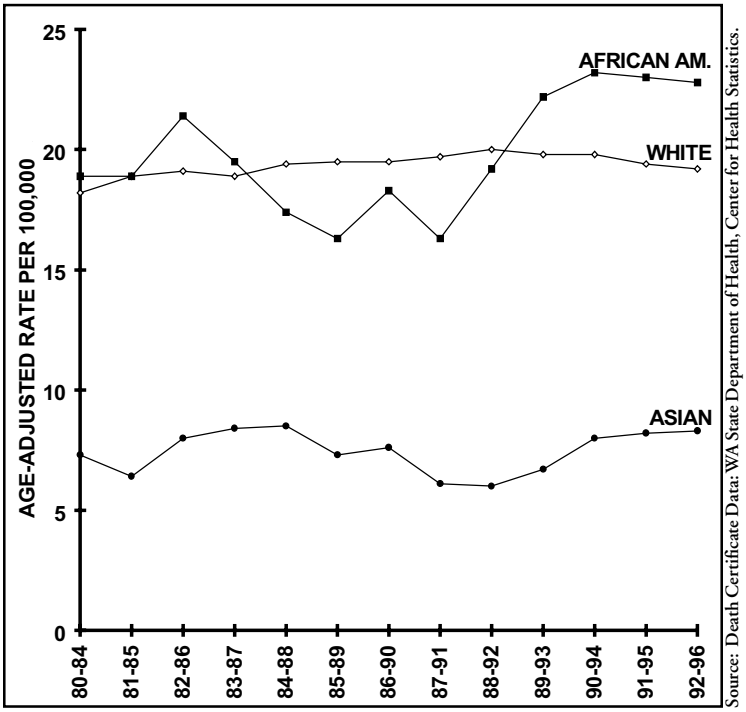
- Suspected risk factors for prostate cancer include high fat diet and male hormones.
- Screening for prostate cancer is currently controversial. There is no conclusive evidence showing that screening with the PSA test or digital rectal exam improves survival.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Chronic Obstructive Pulmonary Disease is usually caused by exposure to tobacco smoke, and in a few cases by occupational exposure to toxic agents. It results in progressive difficulty in breathing. Emphysema and chronic bronchitis are the most common forms of COPD. The condition may lead to death but often cardiovascular disease, infection, or lung cancer cause the death of an individual with COPD.

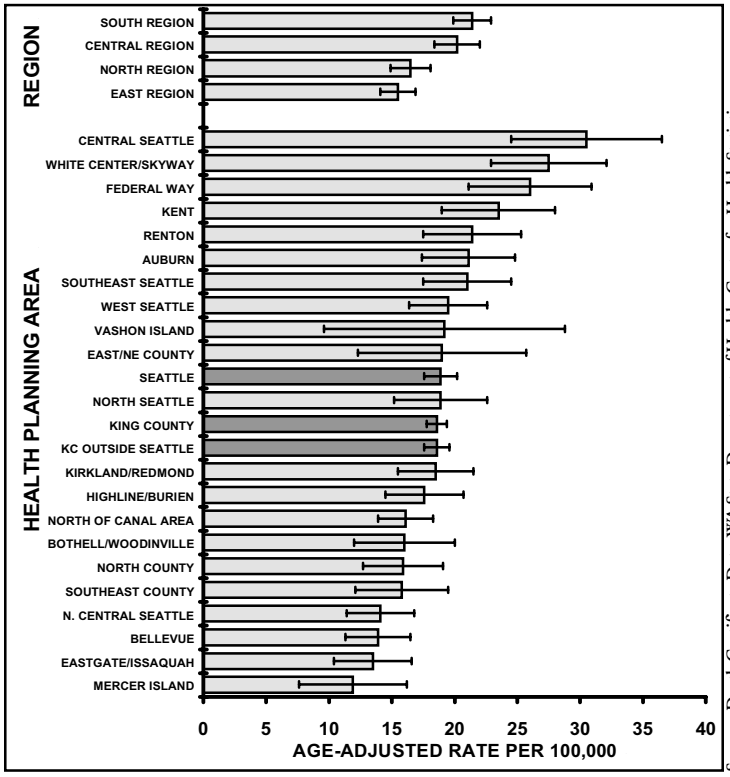
- In 1996, 513 deaths in King County, including 221 in Seattle, were caused by COPD.
- Of the 513 deaths in 1996, 91% were age 65 and over.
- Between 1980 and 1996, there was a significant increasing trend in the age-adjusted COPD death rate mainly due to changes between 1980 and 1988. Since 1988, the rate had stayed relatively flat.
- Averaged over 1992-1996, the age-adjusted COPD death rate for African Americans was significantly higher while the rate for Asians was significantly lower than the rate for whites (Figure 6-15).

Figure 6-15:
COPD, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Five Year Rolling Averages, 1980-1996



Note: Because of small numbers, the trends for Native Americans and Hispanics are not included.

Figure 6-16:
COPD, Age-Adjusted Death Rates
By Region and Health Planning Area, King County
Five Year Average, 1992-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

- The age-adjusted death rates in high and medium poverty neighborhoods (24.3 and 20.2 respectively) were significantly higher than the rate for low poverty neighborhoods (15.2).
- The age-adjusted death rates for residents of South (21.4) and Central (20.2) Regions were significantly higher than the rates for residents of North (16.5) and East (15.5) Regions.
- Among the health planning areas, Central Seattle, White Center/Skyway, and Federal Way had higher than average rate. Mercer Island, Eastgate/ Issaquah, Bellevue, and North Central Seattle had lower than average rate.

RISK FACTORS AND PREVENTION

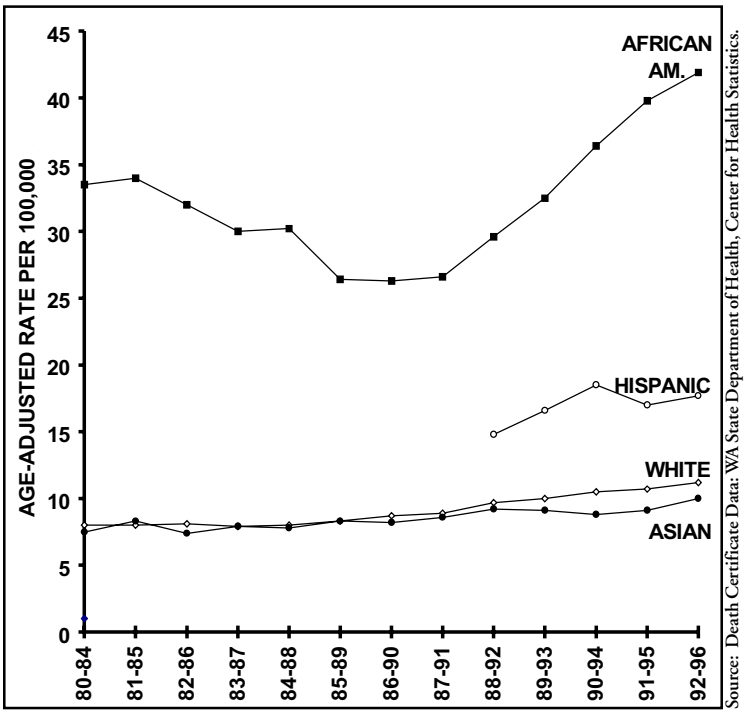
- Almost 90% of all COPD cases are attributable to smoking; therefore, this condition is highly preventable through smoking prevention and cessation.

DIABETES

Diabetes is caused either by a decreased ability to produce the hormone insulin (Type 1) or an impaired response to insulin (Type 2). Of all diabetics, 90% have Type 2 diabetes. All diabetics are at increased risk for complications such as chronic infections of the feet and legs, eye damage, kidney failure, stroke, and heart disease.

- In 1996, diabetes was the seventh leading cause of death.
- In 1996, 318 King County residents died from diabetes as the underlying cause.[3] In addition, there were 552 deaths in which diabetes was a contributing cause. Therefore, the total number of diabetes-related deaths in 1996 was 870.
- Based on the 1996 BRFS, 3.1% of the King County adult population, equivalent to 38,870 individuals, had been told by a physician that they have diabetes.
- The age-adjusted diabetes death rate for males (15.6) was 1.6 times the rate for females (9.8).
- Of the 318 deaths from diabetes, 4% were age 25 to 44, 24% were age 45 to 64, and 72% were age 65 and older.
- The age-adjusted death rate for diabetes increased significantly since the mid-80s, especially among African Americans and whites.
- Averaged over 1992 to 1996, the age-adjusted death rate for African Americans (41.9) was 3.7 times the rate for whites (11.2) (Figure 6-17).

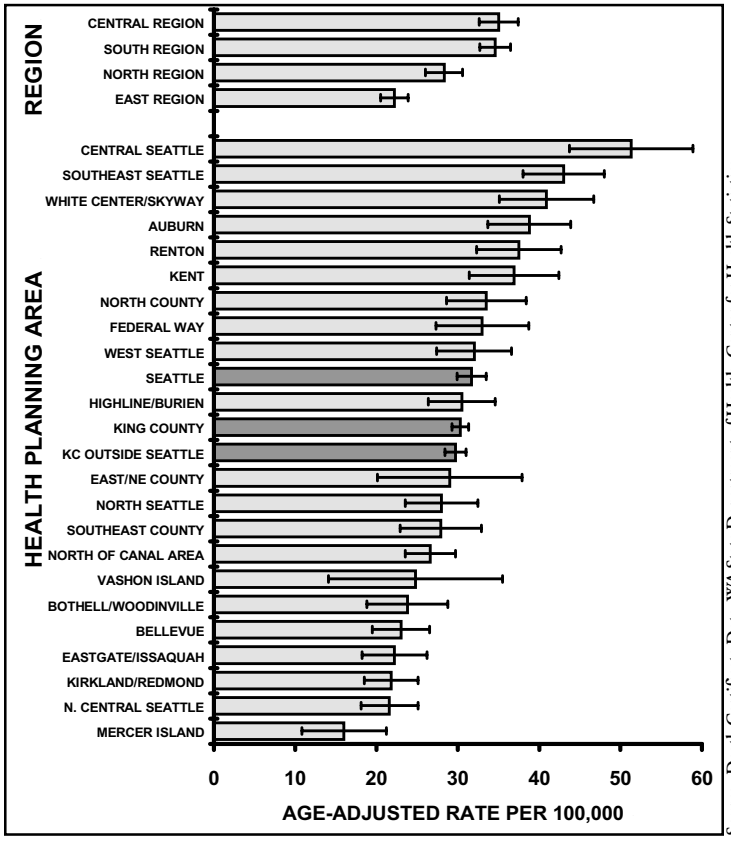
Figure 6-17:
Diabetes Death, Age-Adjusted Rates
By Race/Ethnicity, King County
Five Year Rolling Averages, 1980-1996



Note: Because of small numbers, the trend for Native Americans is not included.

3 The underlying cause of death is a disease or condition which initiated the chain reaction that leads to death.

Figure 6-18:
Diabetes-Related Death, Age-Adjusted Rates
By Region and Health Planning Area, King County
Five Year Average, 1992-1996



Source: Death Certificate Data: WA State Department of Health, Center for Health Statistics.

- The age-adjusted rate for diabetes-related death was significantly associated with residence poverty level. The rates in high, medium, and low poverty neighborhoods were 42.0, 33.4, and 22.1 respectively.
- The age-adjusted rates for diabetes-related death in Central (35.0) and South (34.6) Regions were significantly higher than the rates in North (28.3) and East (22.2) Regions.
- The age-adjusted death rates for diabetes-related death for Central Seattle, Southeast Seattle, White Center/Skyway, Auburn, and Renton were significantly higher than the county rate. Eastside communities and North Central Seattle had lower than average rate (Figure 6-18).
- In 1996, 542 hospital admissions for diabetes in King County were because of ketoacidosis or coma. These are severe complications of poorly controlled diabetes, often associated with inadequate access to care. Between 1988 and 1996, there was a significant declining trend in the age-adjusted hospitalization rate for ketoacidosis or coma.

RISK FACTORS AND PREVENTION

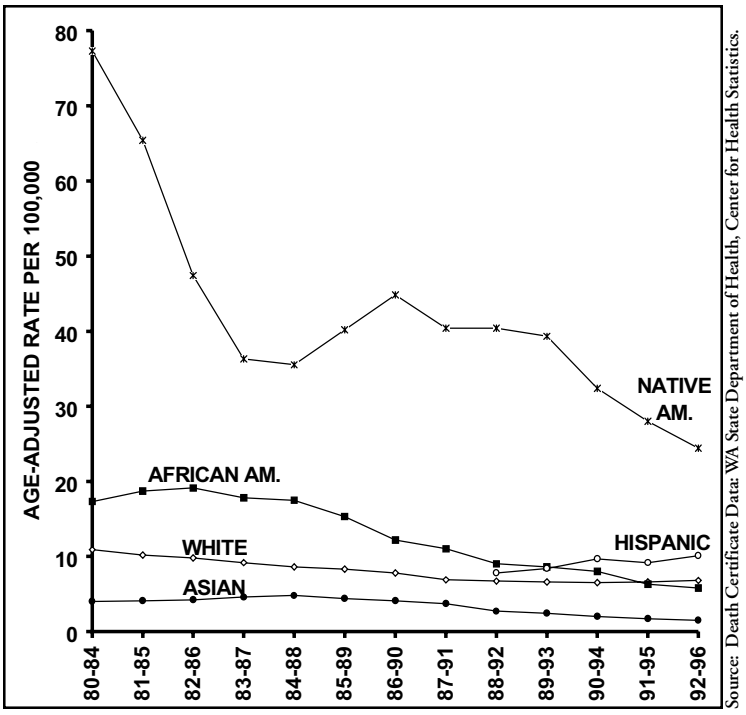
- The health risk factors for Type 2 diabetes include obesity, physical inactivity, cigarette smoking, and high fat/low fiber diet.
- Persons with a family history of diabetes and women who had diabetes during pregnancy also have increased risk.
- Screening for diabetes is recommended for people at high risk for developing diabetes, such as Native Americans, people with a strong family history of diabetes, and people who are obese. Early detection can help to prevent or delay chronic complications.

CHRONIC LIVER DISEASE AND CIRRHOSIS

Cirrhosis, the scarring of the liver, is the final outcome of chronic liver damage most often caused by heavy chronic alcohol consumption and hepatitis. In patients with cirrhosis, the damage to the liver is not reversible. In this report, the terms "chronic liver disease" and "cirrhosis" are used interchangeably. Each of the terms includes all forms of chronic liver disease.

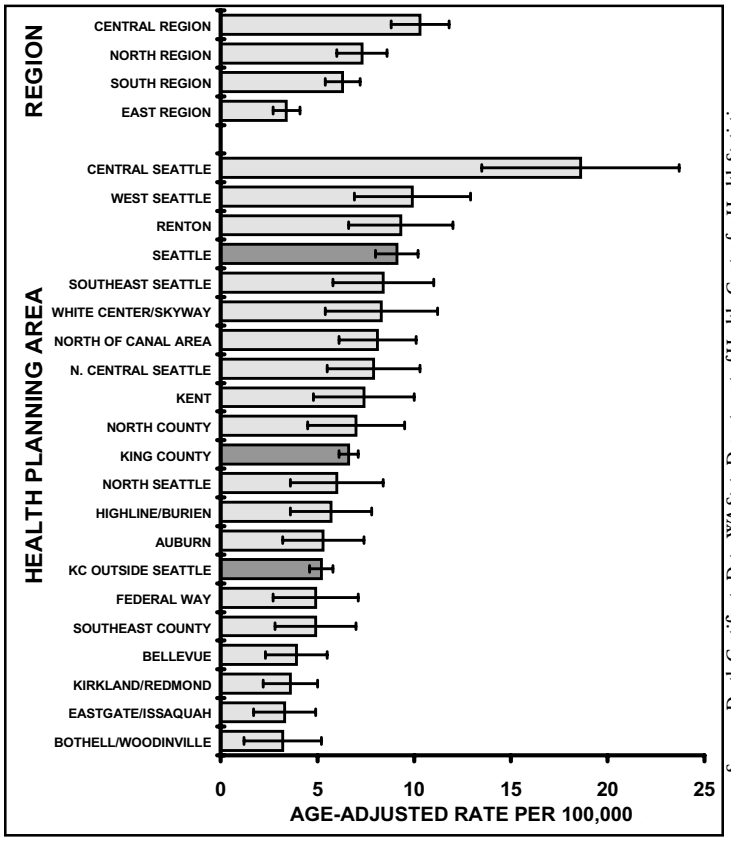
- In 1996, 122 King County residents died from chronic liver disease.
- The age-adjusted death rate for males (8.4) was 2.2 times the rate for females (3.9).
- Chronic liver disease takes place at relatively younger age. Of the 122 deaths in 1996, 19% were age 25-44, 43% were age 45-64, and 38% were age 65 and over.
- Between 1980 and 1996, the age-adjusted death rate for chronic liver disease in King County declined, parallel to the national trend.
- Although the age-adjusted rate for Native Americans declined between 1980 and 1996, it remained significantly higher than the rate for whites. The rate for Asians was significantly lower than the white rate. The rates for African American and Hispanics were similar to the white rate (Figure 6-19).

Figure 6-19:
Chronic Liver Disease, Age-Adjusted Death Rates
By Race/Ethnicity, King County
Five Year Rolling Averages, 1980-1996



- The age-adjusted death rates were 16.6, 7.7, and 3.8 in high, medium, and low poverty neighborhoods respectively, significantly different from each other.
- The age-adjusted death rate was highest in Central (10.3), followed by North (7.3), South (6.3), and East (3.4) Regions.
- The rate in Central Seattle was significantly higher than the county average rate. The rates for Eastside communities were lower than the county rate (Figure 6-20).

Figure 6-20:
Chronic Liver Disease, Age-Adjusted Death Rates By Region and Health Planning Area, King County Five Year Average, 1992-1996



Note: Vashon Island, Mercer Island, and East/Northeast County are not included because of small numbers (<10).

RISK FACTORS AND PREVENTION

- The main cause of chronic liver disease in the United States is heavy alcohol consumption.
- The other important risk factor is hepatitis B, which is often transmitted through sexual contact and injection drug use.
- Hepatitis C is also a leading cause of cirrhosis of the liver.
- Reduction of heavy alcohol consumption and prevention of hepatitis B are the key for reducing the incidence and mortality of cirrhosis.