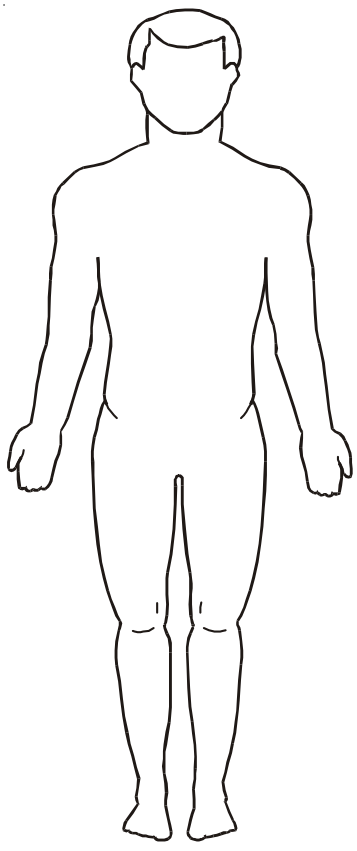
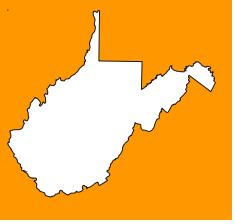
All Cancer Sites Combined





Chapter 1

All Cancer Sites Combined

Incidence and Mortality by Sex and Year

West Virginia Residents 1993 – 2001

	Male				Female				Total			
Year	New Cases	Incid. Rate	Deaths	Mort. Rate	New Cases	Incid. Rate	Deaths	Mort. Rate	New Cases	Incid. Rate	Deaths	Mort. Rate
1993	4,746	553.1	2,459	296.5	4,451	393.8	2,270	194.7	9,197	451.7	4,729	234.4
1994	4,774	550.0	2,512	300.1	4,555	401.9	2,204	186.2	9,329	455.7	4,716	230.3
1995	4,748	543.0	2,500	292.9	4,737	412.8	2,239	188.5	9,485	460.2	4,739	229.7
1996	4,869	552.4	2,398	281.5	4,802	421.8	2,284	191.0	9,671	469.0	4,682	225.9
1997	5,241	589.6	2,517	294.8	5,038	440.0	2,249	187.6	10,279	496.3	4,766	229.1
1998	5,290	590.5	2,480	285.3	5,002	432.7	2,252	187.4	10,292	492.9	4,732	225.9
1999	5,290	583.8	2,503	287.3	5,091	441.0	2,234	185.3	10,381	494.7	4,737	224.4
2000	5,328	582.6	2,433	278.4	5,009	431.2	2,307	188.6	10,337	489.3	4,740	223.3
2001	5,339	575.4	2,396	273.0	4,904	419.9	2,284	187.7	10,243	482.0	4,680	221.3

Number of new cases excludes in situ cases in all except urinary bladder. ***Table 1.1***
Rates are per 100,000 West Virginia residents and are age-adjusted to the 2000 U.S. standard population.

Overview

Incidence

- Each year 1993 through 2001, over 9,000 West Virginians were diagnosed with cancer (Table 1.1).

- For West Virginia males during 1997-2001, the most commonly diagnosed primary cancer was cancer of the prostate (average annual age-adjusted rate of 149.5 per 100,000 men). The second leading contributor to cancer incidence among men was cancer of the lung and bronchus (124.6 per 100,000 men). Cancer of the colon and rectum was the third leading primary cancer site (71.1 per 100,000 men) (Figure 1.3).

- For West Virginia women during 1997-2001, the most commonly diagnosed primary cancer was cancer of the breast (average annual age-adjusted rate of 119.2 per 100,000 women). As with men, cancer of the lung and bronchus was the second leading contributor to cancer incidence among women (68.9 per 100,000 women), and cancer of the colon and rectum was the third (52.8 per 100,000 women) (Figure 1.4).

- While some cancers occurred in childhood or early adulthood, the highest incidence occurred in individuals over the age of 45. The incidence of most types of cancer increased with increasing age.

Mortality

- Cancer is the second leading cause of death in West Virginia, second only to heart disease, and results in the greatest number of years of potential life lost.

- Among males in West Virginia during 1997-2001, the leading cause of cancer-related mortality was cancer of the lung and bronchus, causing well over three times more cancer deaths than any other site (average annual age-adjusted mortality rate of 103.5 per 100,000). Cancer of the prostate ranked a distant second in cancer-related mortality (29.1 per 100,000) and cancer of the colon and rectum third (26.9 per 100,000) (Figure 1.3).

- Similarly, among West Virginia women during 1997-2001, cancer of the lung was the leading cause of cancer-related mortality (average annual age-adjusted mortality rate of 52.8 per 100,000 women), almost twice that of any other site. The second leading cause for women was cancer of the breast (26.9 per 100,000 women). Cancer of the colon and rectum ranked third (19.9 per 100,000 women) (Figure 1.4).

- For all cancers, mortality was 12% higher in West Virginia men compared to U.S. men during 1996-2000. Among women, mortality from all cancers was 11% higher in West Virginia compared to the U.S. during 1996-2000 (Appendix B). Both of these differences were statistically significant ($p <= 0.0002$) (Appendix B).

- Excess deaths due to lung and bronchial cancer account for most of the discrepancy between West Virginia and U.S. all-site cancer mortality rates. The remaining elevation is attributable to higher-than-average mortality rates for cervical, colon and rectum, kidney, laryngeal, brain (in women), and urinary bladder cancers, as well as leukemias, multiple myeloma (in men), and melanomas (Appendix B).

Risk Factors

- Tobacco use accounts for 87% of lung cancers (ACS, 2003a). Tobacco use is also associated with cancer of the larynx, oral cavity and pharynx, esophagus, bladder, kidney and renal pelvis, cervix, pancreas, and certain leukemias.

- Diets high in fat and low in fiber are associated with increased risk of cancer of the colon and rectum, uterus, prostate, and breast.

- Heavy alcohol use, especially when combined with use of tobacco products, is associated with increased risks of cancer of the oral cavity, throat, esophagus, and liver.

- Other risk factors include certain environmental or occupational exposures, as well as family and personal health histories.

Prevention

- Quitting smoking substantially decreases the risk of lung, laryngeal, esophageal, oral, pancreatic, bladder, and cervical cancers.

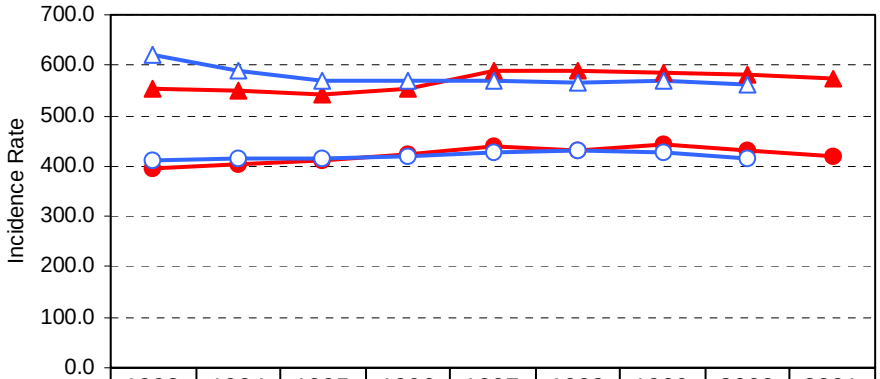
- Other lifestyle changes that are likely to significantly reduce cancer risk include:
  a) eating five or more servings of vegetables and fruits each day;
  b) choosing whole grains in preference to processed (refined) grains and sugar;
  c) limiting consumption of red meats, especially high fat and processed meats;
  d) choosing foods that help maintain a healthy weight;
  e) adopting a physically active lifestyle; and
  f) limiting intake of alcoholic beverages.

- Finally, regular physician visits are important to assure that appropriate cancer screenings (Pap smears, mammograms, etc.) are performed.

All Cancer Sites Combined

Incidence Rates*, Age-Adjusted

West Virginia Residents 1993 - 2001, U.S. Residents 1993 - 2000



	1993	1994	1995	1996	1997	1998	1999	2000	2001
WV Males	553.1	550.0	543.0	552.4	589.6	590.5	583.8	582.6	575.4
US Males	620.6	587.9	568.7	568.2	570.5	566.0	569.1	560.2	
WV Females	393.8	401.9	412.8	421.8	440.0	432.7	441.0	431.2	419.9
US Females	410.2	415.2	416.1	418.7	428.3	432.5	426.3	413.8	

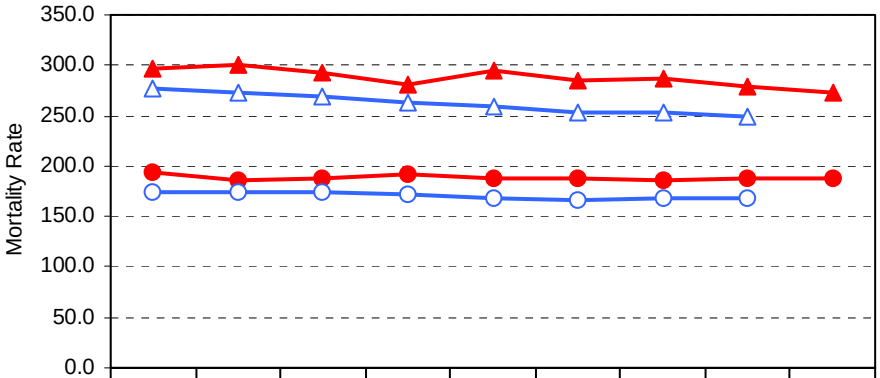
Figure 1.1

*Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.
U.S. rates are from SEER (Ries et al., 2003).

All Cancer Sites Combined

Mortality Rates*, Age-Adjusted

West Virginia Residents 1993 - 2001, U.S. Residents 1993 - 2000



	1993	1994	1995	1996	1997	1998	1999	2000	2001
WV Males	296.5	300.1	292.9	281.5	294.8	285.3	287.3	278.4	273.0
US Males	275.9	272.1	268.5	263.7	258.1	253.6	252.8	249.8	
WV Females	194.7	186.2	188.5	191.0	187.6	187.4	185.3	188.6	187.7
US Females	174.5	174.1	173.4	171.2	169.0	166.9	167.2	167.3	

Figure 1.2

*Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.
U.S. rates are from SEER (Ries et al., 2003).

Highest Cancer Incidence Rates* for West Virginia by Gender and Age 1997 – 2001

Gender	Age in Years				
	Less than 15	15 to 24	25 to 44	45 to 64	65 and older
Male	Brain & ONS: 3.4 Leukemias: 3.4 Non-Hodgkin's Lymphoma: 1.2 Hodgkin's Disease: 0.8 Kidney & Renal Pelvis: 0.8	Hodgkin's Disease: 5.0 Testis: 5.0 Leukemias: 3.3 Brain & ONS: 2.5 Melanoma of the Skin: 2.3	Melanoma of the Skin: 11.8 Testis: 11.1 Lung & Bronchus: 11.0 Colorectal: 8.7 Non-Hodgkin's Lymphoma: 6.9	Prostate: 172.2 Lung & Bronchus: 165.4 Colorectal: 88.2 Urinary Bladder: 41.4 Oral Cavity & Pharynx: 34.1	Prostate: 878.1 Lung & Bronchus: 670.1 Colorectal: 375.5 Urinary Bladder: 233.9 Non-Hodgkin's Lymphoma: 96.7
Female	Leukemias: 4.0 Brain & ONS: 3.0 Non-Hodgkin's Lymphoma: 0.6	Thyroid: 5.2 Hodgkin's Disease: 4.4 Melanoma of the Skin: 3.4 Ovary: 1.9 Cervix Uteri: 1.8	Breast: 53.1 Cervix Uteri: 19.1 Thyroid: 14.4 Melanoma of the Skin: 14.3 Uterus: 9.4	Breast: 238.5 Lung & Bronchus: 104.8 Colorectal: 70.0 Uterus: 61.8 Ovary: 29.1	Breast: 404.1 Lung & Bronchus: 345.8 Colorectal: 282.7 Uterus: 90.8 Non-Hodgkin's Lymphoma: 74.7

*Rates are five-year average annual age-specific incidence per 100,000 population. The five highest age-specific rates for 23 primary cancer sites are presented for each population subgroup; however, rates based on fewer than five cases are excluded.

Table 1.2

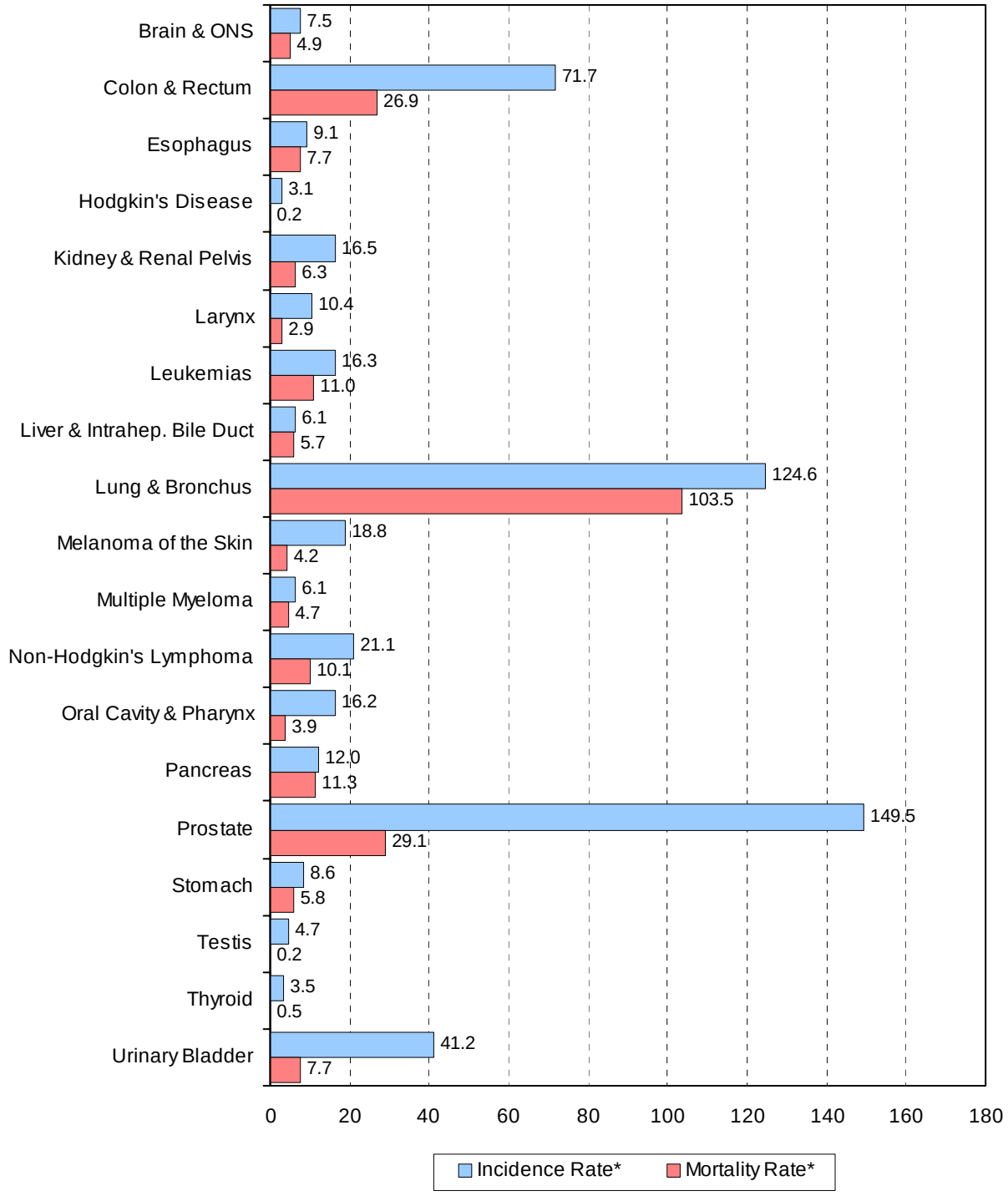
Highest Cancer Mortality Rates* for West Virginia by Gender and Age 1997 – 2001

Gender	Age in Years				
	Less than 15	15 to 24	25 to 44	45 to 64	65 and older
Male	Leukemias: 1.2 Brain & ONS: 0.7	Leukemias: 1.4 Brain & ONS: 0.8	Lung & Bronchus: 7.2 Colorectal: 3.1 Non-Hodgkin's Lymphoma: 2.4 Leukemias: 2.2 Melanoma of the Skin: 1.8	Lung & Bronchus: 117.9 Colorectal: 25.9 Pancreas: 14.1 Non-Hodgkin's Lymphoma: 11.3 Leukemias: 10.0	Lung & Bronchus: 583.1 Prostate: 186.6 Colorectal: 146.3 Pancreas: 58.2 Leukemias: 56.4
Female	Leukemias: 0.6	Leukemias: 1.3	Breast: 8.6 Lung & Bronchus: 5.2 Cervix Uteri: 3.6 Colorectal: 2.8 Brain & ONS: 1.9	Lung & Bronchus: 70.2 Breast: 44.8 Colorectal: 18.9 Ovary: 15.5 Pancreas: 9.0	Lung & Bronchus: 284.2 Colorectal: 120.3 Breast: 115.8 Ovary: 46.8 Non-Hodgkin's Lymphoma: 42.4 Pancreas: 42.4

*Rates are five-year average annual age-specific mortality per 100,000 population. The five highest age-specific rates for 23 primary cancer sites are presented for each population subgroup; however, rates based on fewer than five deaths are excluded.

Table 1.3

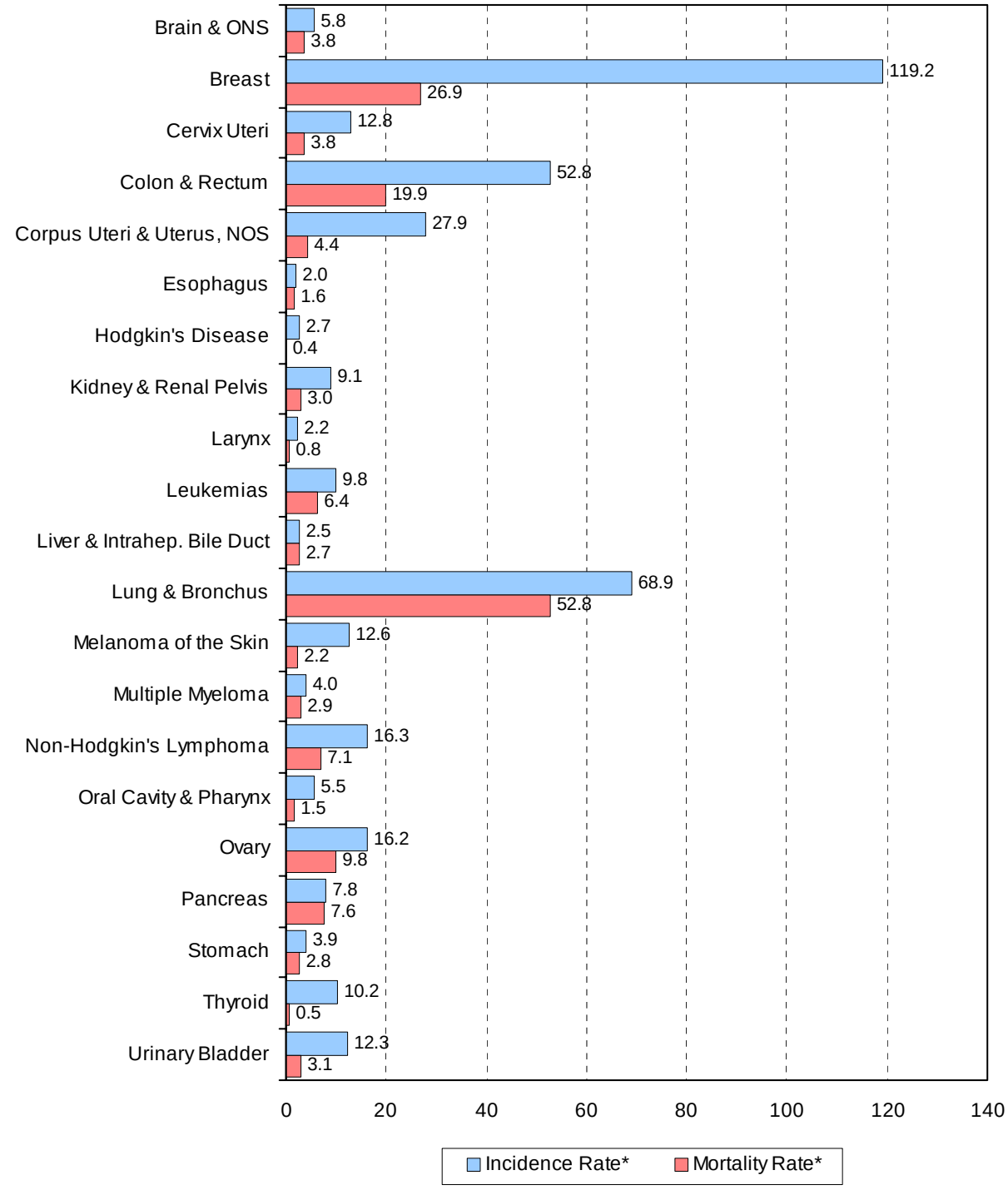
Burden of Cancer Among West Virginia Males
1997 – 2001



* Five-year average annual rate per 100,000 West Virginia males, age-adjusted to the 2000 U.S. population. Incidence rates exclude basal and squamous cell skin cancers and in situ carcinomas except bladder.

Figure 1.3

Burden of Cancer Among West Virginia Females
1997 - 2001



* Five-year average annual rate per 100,000 West Virginia females, age-adjusted to the 2000 U.S. population. Incidence rates exclude basal and squamous cell skin cancers and in situ carcinomas except bladder.

Figure 1.4