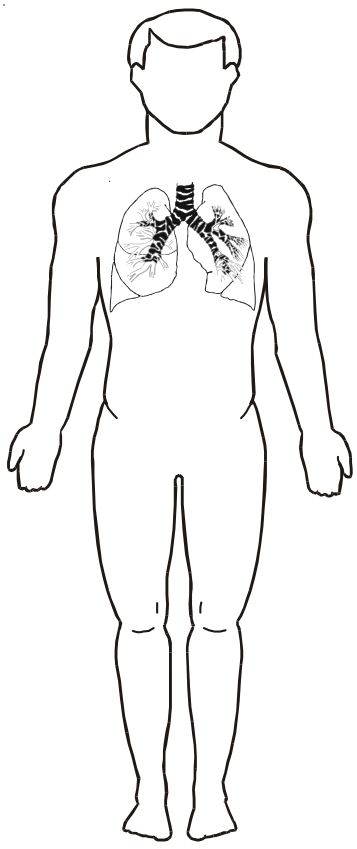
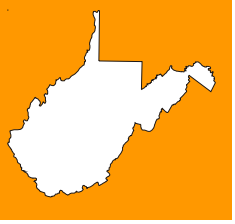
Cancer of the Lung & Bronchus





Chapter 13

Cancer of the Lung & Bronchus

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	1,029	116.4	929	107.9	696	59.2	618	52.6	1,725	82.8	1,547	75.2
1994	1,088	122.3	958	109.5	717	60.5	585	49.2	1,805	85.8	1,543	74.1
1995	1,116	125.4	935	106.1	702	58.7	582	48.9	1,818	86.2	1,517	72.3
1996	1,101	122.5	904	102.6	794	66.6	591	48.9	1,895	89.5	1,495	70.6
1997	1,200	132.8	953	108.4	810	68.2	631	52.6	2,010	95.0	1,584	74.9
1998	1,156	127.6	978	109.0	836	69.6	615	50.8	1,992	93.3	1,593	74.9
1999	1,175	126.9	929	103.0	833	69.5	648	53.6	2,008	93.7	1,577	73.8
2000	1,121	121.7	937	103.5	813	67.1	633	51.6	1,934	89.7	1,570	73.2
2001	1,070	114.3	865	95.5	854	70.2	682	55.8	1,924	88.9	1,547	72.5

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

Table 13.1

Overview

- Each year from 1993 through 2001, approximately 1,900 West Virginians were diagnosed with cancer of the lung and bronchus, making this the state's most commonly diagnosed cancer. This cancer accounted for almost one in every five invasive cancers diagnosed in West Virginia residents (Tables 1.1 and 13.1).

- During 1997-2001, cancer of the lung and bronchus occurred almost twice as often among West Virginia men as among West Virginia women (124.6 per 100,000 West Virginia men and 68.9 per 100,000 West Virginia women) (Figures 1.3 and 1.4).

- The highest incidence of lung cancer in West Virginia during 1997-2001 occurred in the southwestern region of the state (Figure 13.7). These same counties have some of the highest prevalences of current cigarette smoking reported in the West Virginia Behavorial Risk Factor Surveillance System survey (WVBRFSS, 2001).

- In 1997-2001, cancer of the lung and bronchus remained the leading cause of cancer-related death in West Virginia for both men and women. Cancer of the lung and bronchus accounted for approximately one of every three deaths due to cancer in West Virginia (Tables 1.1 and 13.1).

- State-specific data during 1996-2000 rank West Virginia fifth highest for men and third highest for women in age-adjusted mortality for cancer of the lung and bronchus among the 50 states and the District of Columbia. West Virginia mortality rates for both men and women were over 25% higher than national rates. Lung and bronchial cancers are the primary contributor to West Virginia's higher-than-U.S.-average all-site cancer mortality (Appendix B).

Risk Factors

- Smoking is the most important risk factor for cancer of the lung and bronchus.

- Other risk factors include exposure to arsenic, certain organic chemicals, asbestos, radon, radiation, and environmental tobacco smoke.

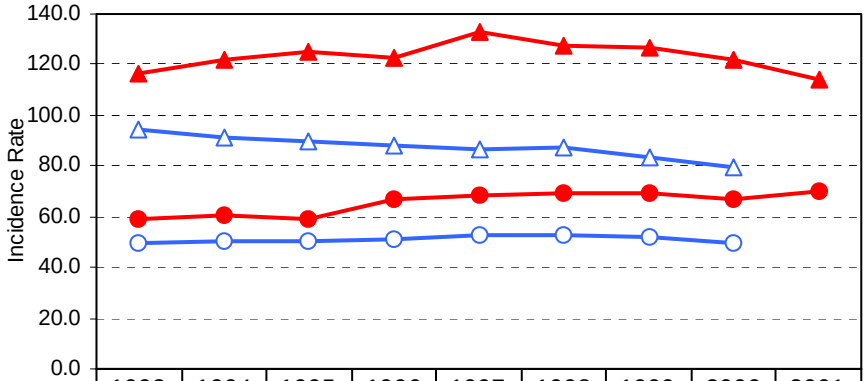
Prevention

- Quitting smoking substantially reduces the risk of lung cancer.

Cancer of the Lung & Bronchus

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	116.4	122.3	125.4	122.5	132.8	127.6	126.9	121.7	114.3
US Males	94.1	91.1	90.0	87.9	86.3	87.6	83.5	79.8	
WV Females	59.2	60.5	58.7	66.6	68.2	69.6	69.5	67.1	70.2
US Females	49.2	50.6	50.3	51.1	52.5	52.8	51.8	49.8	

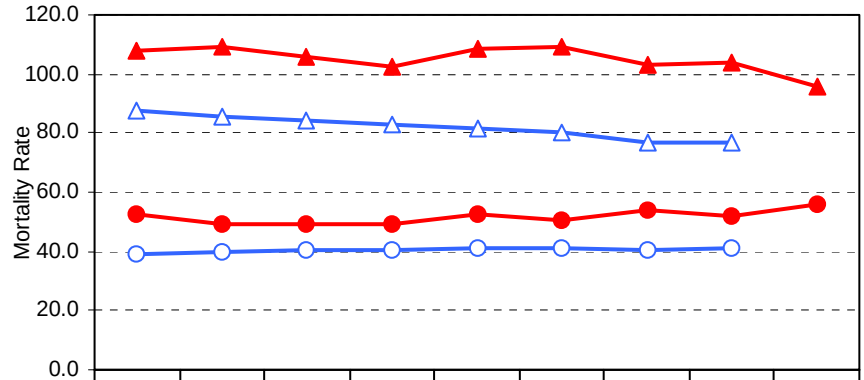
*Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.
U.S. rates are from SEER (Ries et al., 2003).

Figure 13.1

Cancer of the Lung & Bronchus

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	107.9	109.5	106.1	102.6	108.4	109.0	103.0	103.5	95.5
US Males	87.6	85.7	84.4	82.8	81.3	79.9	77.0	76.9	
WV Females	52.6	49.2	48.9	48.9	52.6	50.8	53.6	51.6	55.8
US Females	39.3	39.6	40.3	40.4	40.8	41.0	40.2	41.2	

*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).

Figure 13.2

Cancer of the Lung & Bronchus

Incidence Rates*, Age-Specific

West Virginia Residents 1997 - 2001

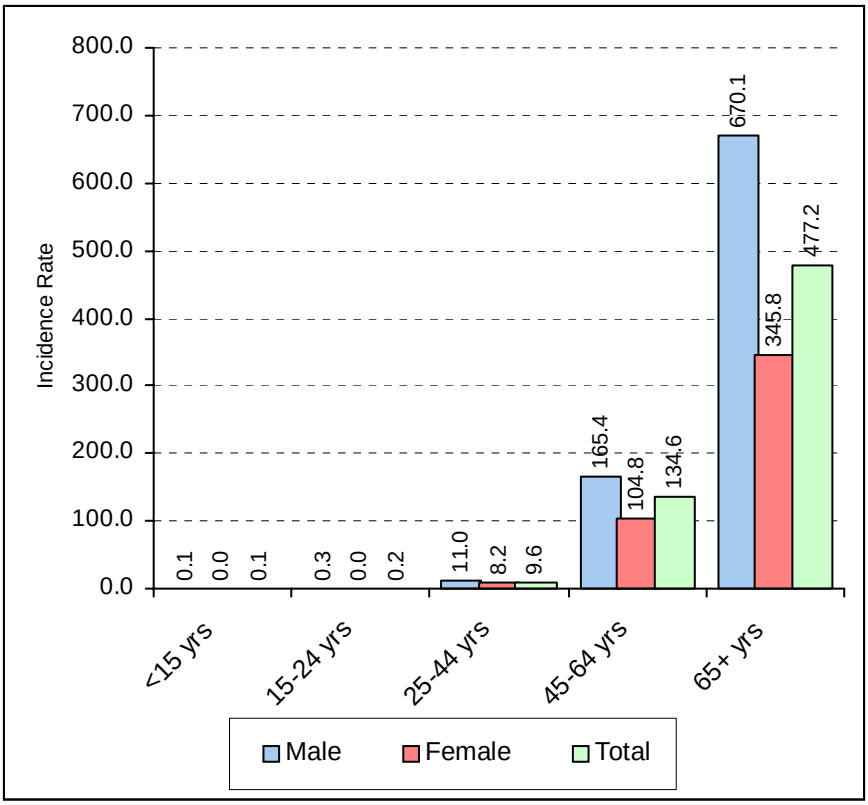


Figure 13.3

*Five-year average annual rate per 100,000 West Virginia residents

Cancer of the Lung & Bronchus

Most Frequent Histologies

West Virginia Residents 1997 - 2001

ICD-O Code	Histology	% of Invasive Cases
807	Squamous Cell Carcinoma	23.6
814	Adenocarcinoma	21.1
801	Carcinoma	19.8
804	Small Cell Carcinoma	18.5
800	Malignant Neoplasm	10.4
825	Alveolar Carcinoma	2.6
824	Carcinoid Tumor	1.2

Table 13.2

Cancer of the Lung & Bronchus

Stage of Disease at Diagnosis

West Virginia Residents 1997 - 2001

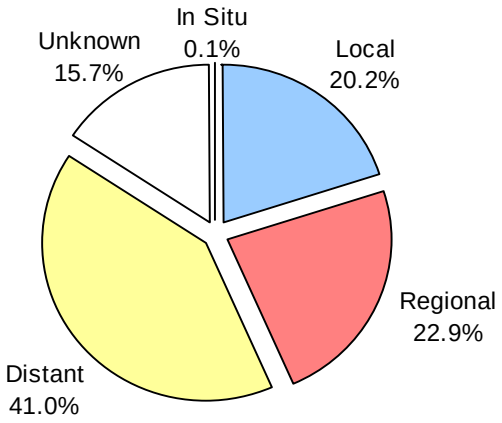
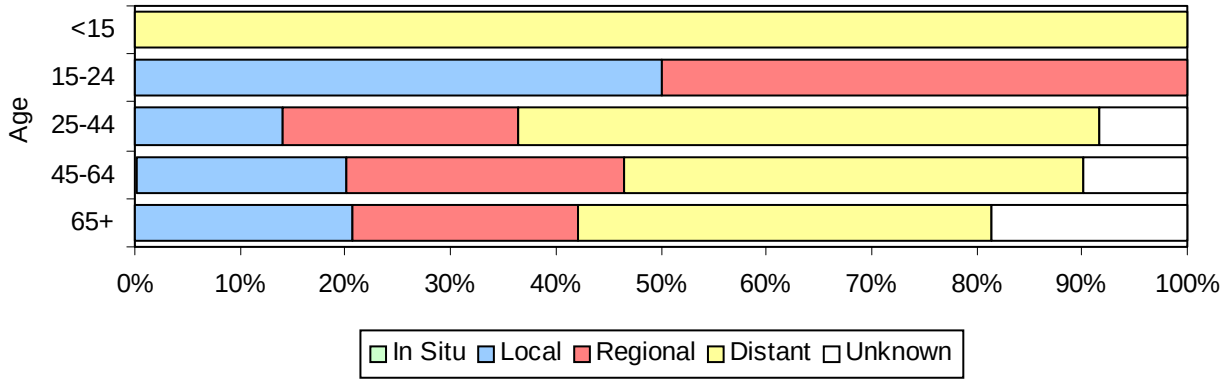


Figure 13.4

Cancer of the Lung & Bronchus

Stage of Disease at Diagnosis by Age

West Virginia Residents 1997 - 2001



Age	In Situ #	In Situ %	Local #	Local %	Regional #	Regional %	Distant #	Distant %	Unknown #	Unknown %	Total #	Total %
<15	0	0.0%	0	0.0%	0	0.0%	~		0	0.0%	~	100.0%
15-24	0	0.0%	~		~		0	0.0%	0	0.0%	~	100.0%
25-44	0	0.0%	~		~		~		20	8.3%	241	100.0%
45-64	6	0.2%	600	19.9%	793	26.3%	1,320	43.8%	295	9.8%	3,014	100.0%
65+	5	0.1%	1,362	20.6%	1,417	21.4%	2,601	39.3%	1,236	18.7%	6,621	100.0%
Total	11	0.1%	1,997	20.2%	2,265	22.9%	4,055	41.0%	1,551	15.7%	9,879	100.0%

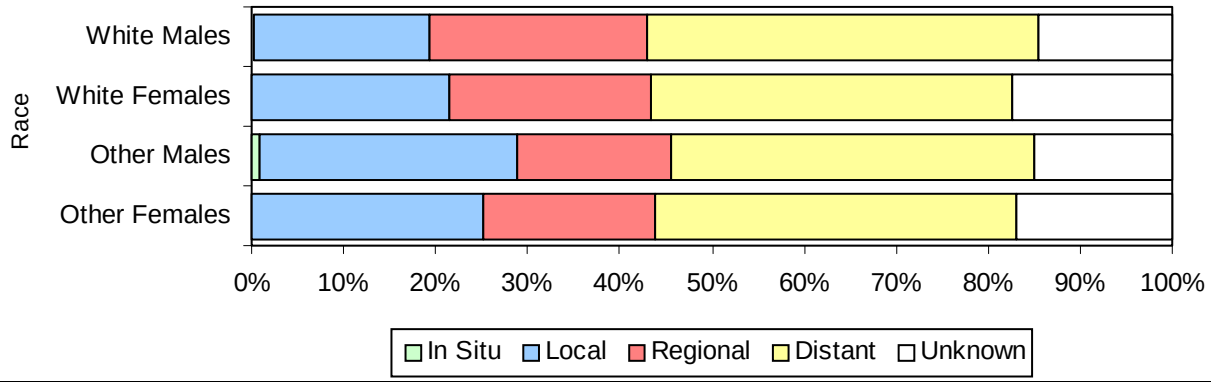
~ Suppressed due to small cell size
Total may not add to 100% due to rounding.

Figure 13.5

Cancer of the Lung & Bronchus

Stage of Disease at Diagnosis by Race and Sex

West Virginia Residents 1997 - 2001



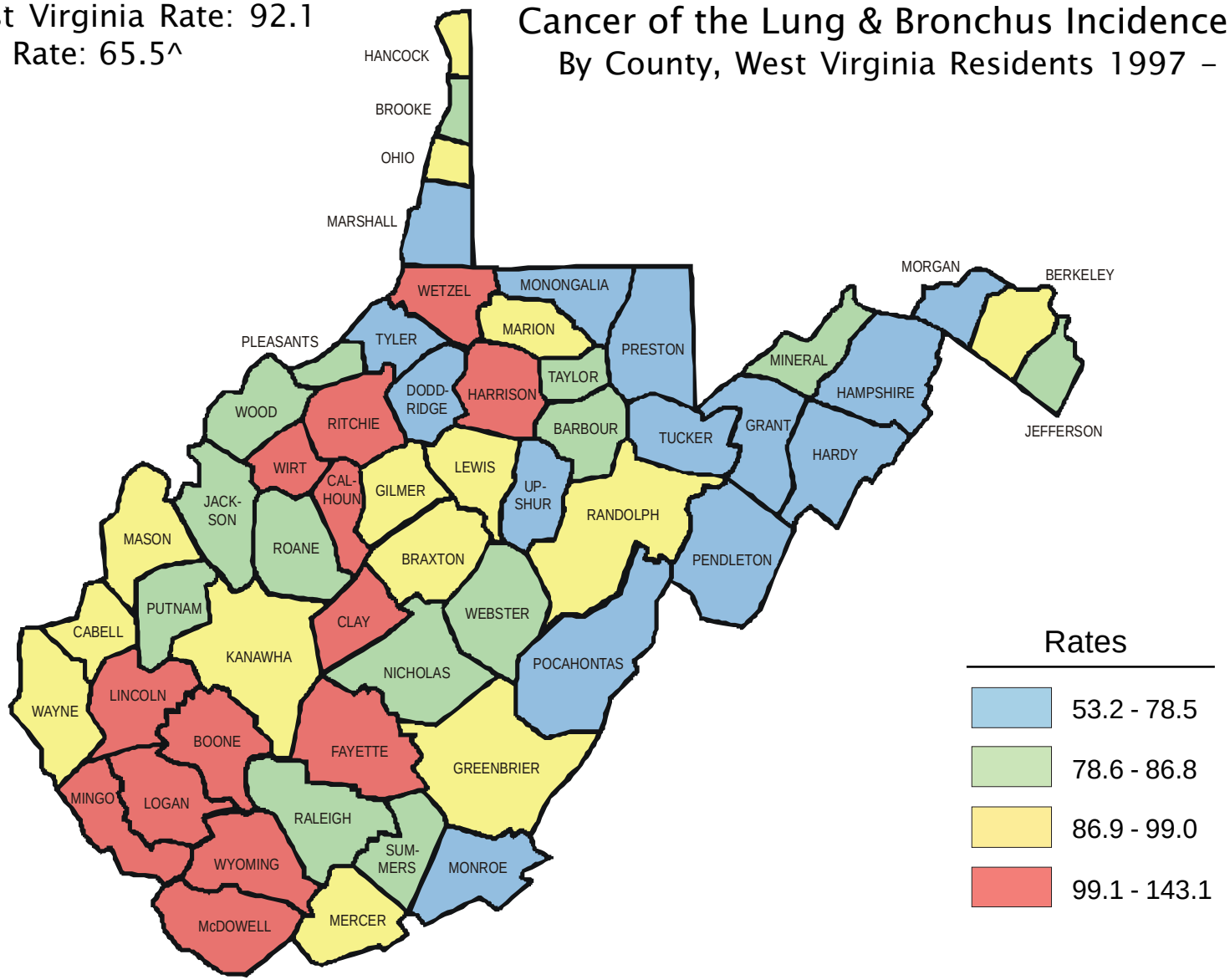
Race/Sex	In Situ #	In Situ %	Local #	Local %	Regional #	Regional %	Distant #	Distant %	Unknown #	Unknown %	Total #	Total %
White Males	8	0.1%	1,071	19.1%	1,336	23.8%	2,379	42.4%	816	14.5%	5,610	100.0%
White Females	~		865	21.4%	889	22.0%	1,586	39.2%	~		4,041	100.0%
Other Males	~		34	28.1%	20	16.5%	48	39.7%	~		121	100.0%
Other Females	0	0.0%	27	25.2%	20	18.7%	42	39.3%	18	16.8%	107	100.0%
Total	11	0.1%	1,997	20.2%	2,265	22.9%	4,055	41.0%	1,551	15.7%	9,879	100.0%

~ Suppressed due to small cell size
Total may not add to 100% due to rounding.

Figure 13.6

West Virginia Rate: 92.1
U.S. Rate: 65.5^

Cancer of the Lung & Bronchus Incidence Rates*
By County, West Virginia Residents 1997 – 2001

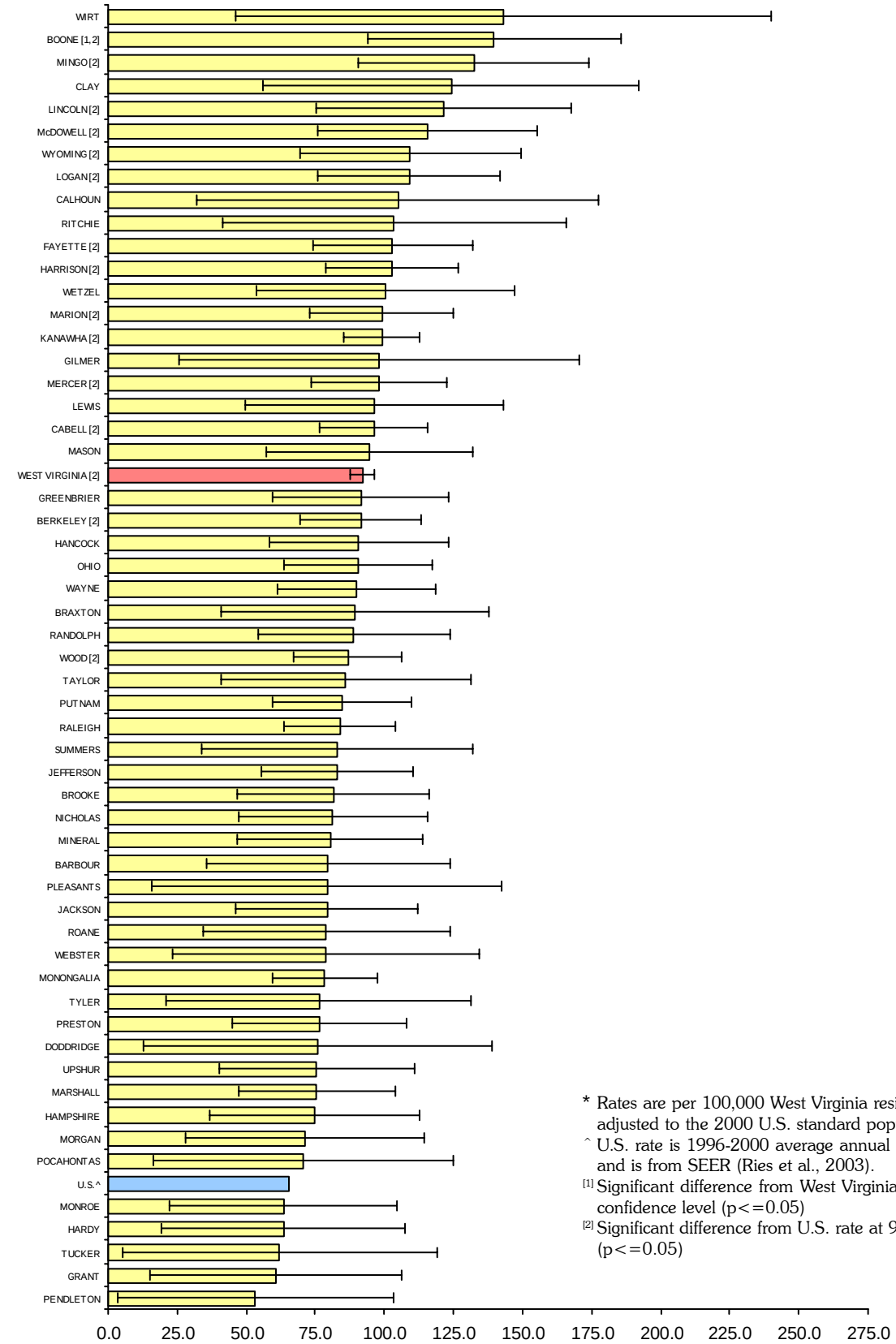


* Five-year average annual rate per 100,000 West Virginia residents, age-adjusted to the 2000 U.S. standard population.
^ U.S. rate is 1996-2000 average annual age-adjusted rate and is from SEER (Ries et al., 2003).
Refer to Table 13.3 for individual county rates and measures of statistical significance.

Figure 13.7

Cancer of the Lung & Bronchus

Average Annual Incidence Rates* by County, West Virginia Residents 1997 – 2001



* Rates are per 100,000 West Virginia residents and are age-adjusted to the 2000 U.S. standard population.

^ U.S. rate is 1996-2000 average annual age-adjusted rate and is from SEER (Ries et al., 2003).

[1] Significant difference from West Virginia rate at 95% confidence level ($p<=0.05$)

[2] Significant difference from U.S. rate at 95% confidence level ($p<=0.05$)

Figure 13.8

Cancer of the Lung & Bronchus

Average Annual Incidence Rates* by County, West Virginia Residents 1997 - 2001

COUNTY	1997-2001 TOTAL CASES	5-YR AVG. ANN. RATE	Significant Difference+ WV	Significant Difference+ U.S.	COUNTY	1997-2001 TOTAL CASES	5-YR AVG. ANN. RATE	Significant Difference+ WV	Significant Difference+ U.S.
BARBOUR	75	79.6	No	No	MINGO	193	132.3	No	**YES**
BERKELEY	325	91.5	No	**YES**	MONONGALIA	274	78.5	No	No
BOONE	193	139.7	**YES**	**YES**	MONROE	56	63.4	No	No
BRAXTON	78	89.2	No	No	MORGAN	67	71.1	No	No
BROOKE	140	81.5	No	No	NICHOLAS	128	81.4	No	No
CABELL	559	96.1	No	**YES**	OHIO	295	90.5	No	No
CALHOUN	50	104.9	No	No	PENDLETON	29	53.2	No	No
CLAY	69	124.1	No	No	PLEASANTS	35	79.3	No	No
DODDRIDGE	33	76.0	No	No	POCAHONTAS	42	70.6	No	No
FAYETTE	303	103.0	No	**YES**	PRESTON	131	76.2	No	No
GILMER	41	98.1	No	No	PUTNAM	207	84.6	No	No
GRANT	41	60.6	No	No	RALEIGH	396	84.0	No	No
GREENBRIER	214	91.5	No	No	RANDOLPH	149	88.9	No	No
HAMPSHIRE	86	74.9	No	No	RITCHIE	65	103.4	No	No
HANCOCK	205	90.7	No	No	ROANE	71	79.1	No	No
HARDY	47	63.4	No	No	SUMMERS	79	82.9	No	No
HARRISON	445	102.8	No	**YES**	TAYLOR	84	86.1	No	No
JACKSON	131	79.3	No	No	TUCKER	31	62.1	No	No
JEFFERSON	165	82.8	No	No	TYLER	47	76.3	No	No
KANAWHA	1,241	99.0	No	**YES**	UPSHUR	100	75.6	No	No
LEWIS	101	96.2	No	No	WAYNE	222	89.9	No	No
LINCOLN	142	121.5	No	**YES**	WEBSTER	46	78.7	No	No
LOGAN	237	108.9	No	**YES**	WETZEL	113	100.4	No	No
MARION	373	99.0	No	**YES**	WIRT	44	143.1	No	No
MARSHALL	169	75.6	No	No	WOOD	463	86.8	No	**YES**
MASON	148	94.8	No	No	WYOMING	161	109.4	No	**YES**
McDOWELL	196	115.6	No	**YES**					
MERCER	402	98.0	No	**YES**	WEST VIRGINIA	9,868	92.1		**YES**
MINERAL	131	80.3	No	No	U.S.^		65.5		

* Rates are per 100,000 West Virginia residents and are age-adjusted to the 2000 U.S. standard population.

^ U.S. rate is 1996-2000 average annual age-adjusted rate and is from SEER (Ries *et al.*, 2003).

+ Difference between county rate and West Virginia rate, and county rate and U.S. rate, is tested for statistical significance at the 95% confidence level ($p<=0.05$).

Table 13.3