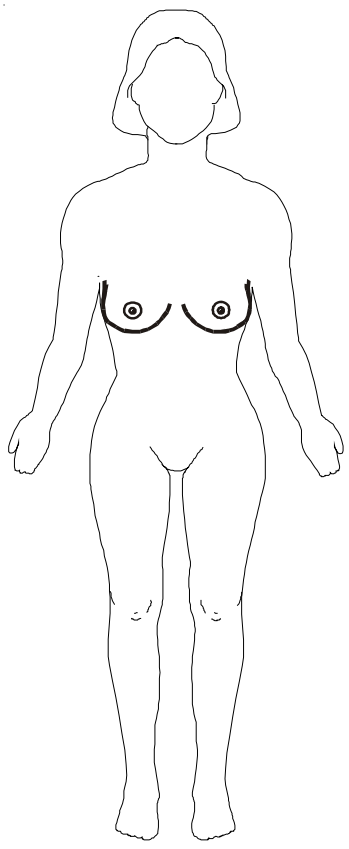


Chapter 3

Cancer of the Female Breast

Cancer of the Female Breast

Incidence and Mortality by Year

West Virginia Females 1993 – 2001

	Female			
Year	New Cases	Incid. Rate	Deaths	Mort. Rate
1993	1,249	114.6	328	29.8
1994	1,220	110.7	326	28.8
1995	1,280	114.6	323	28.0
1996	1,319	119.4	327	28.7
1997	1,298	116.4	331	28.4
1998	1,380	122.6	346	29.6
1999	1,411	125.0	274	24.0
2000	1,322	117.2	317	27.0
2001	1,311	114.4	306	25.7

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

Table 3.1

Overview

- Cancer of the breast was the most commonly diagnosed cancer among West Virginia women (almost twice as common during 1997-2001 as any other malignancy) (Figure 1.4). Each year from 1993 through 2001, approximately 1,300 West Virginia women were diagnosed with breast cancer (Table 3.1).

- The incidence of female breast cancer increased markedly with age. Compared to women aged 25-44, those 45-64 were over four times more likely to be diagnosed with breast cancer and those 65+ years of age over seven times more likely (Figure 3.3).

- Of the 1997-2001 West Virginia female breast cancer cases, two-thirds were diagnosed at an early stage (15% in situ and 53% local). Older women were diagnosed at an earlier stage of disease (68% of those aged 65+ and 68% of those aged 45-64) than were younger women (60% of those aged 25-44) (Figure 3.5).

- Twenty-seven percent (27%) of white women were diagnosed with regional or distant disease during 1997-2001, compared to 35% of non-white women (Figure 3.6).

- Approximately 320 West Virginia women died of breast cancer each year from 1993 through 2001 (Table 2.1). From 1997 to 2001, cancer of the breast was the leading cause of cancer-related deaths among West Virginia women aged 25 to 44 years. For West Virginia women aged 45 to 64 years, it was the second leading cause of cancer mortality (second only to lung cancer) (Table 1.3).

- State-specific age-adjusted data during 1996-2000 for female breast cancer ranked West Virginia 19th in breast cancer mortality (Appendix B).

Risk Factors

- A personal history of breast cancer or certain family histories of breast cancer increase risk. A history of early menarche, late menopause, no pregnancies or a first pregnancy after the age of 30, consumption of two or more drinks of alcohol per day, and obesity are associated with increased risk. Use of tamoxifen by women at high risk of breast cancer appears to decrease their risk. This cancer is more common among those with higher education and socioeconomic status.

- Although a causal role for dietary factors has not been firmly established, international variability in breast cancer incidence rates suggests dietary factors may play a role in development of this disease. Other factors currently under study include pesticides and other chemical exposures, physical inactivity, alcohol intake, and weight gain.

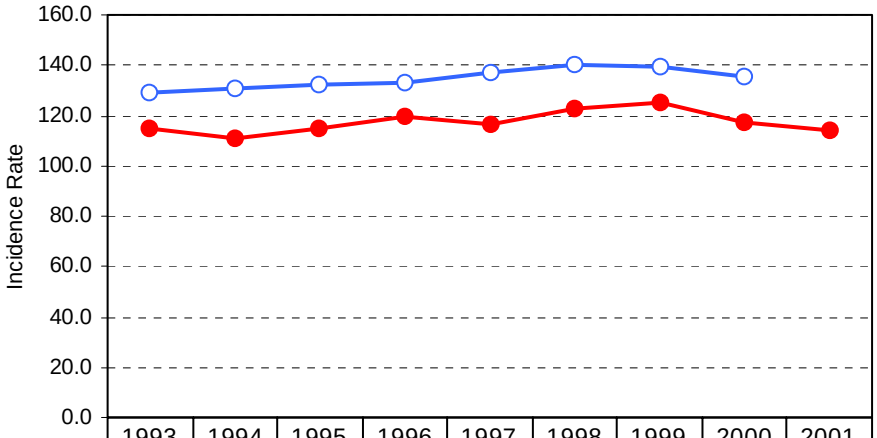
Prevention

- Currently, the best method of reducing breast cancer mortality is through early detection of disease. While there is some debate about when screening should commence, the current American Cancer Society recommendation is to screen all women 40 years and older on an annual basis (ACS, 2003a).

Cancer of the Female Breast

Incidence Rates*, Age-Adjusted

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



	1993	1994	1995	1996	1997	1998	1999	2000	2001
WV Females	114.6	110.7	114.6	119.4	116.4	122.6	125.0	117.2	114.4
US Females	129.0	130.6	132.2	133.2	137.1	140.3	139.6	135.1	

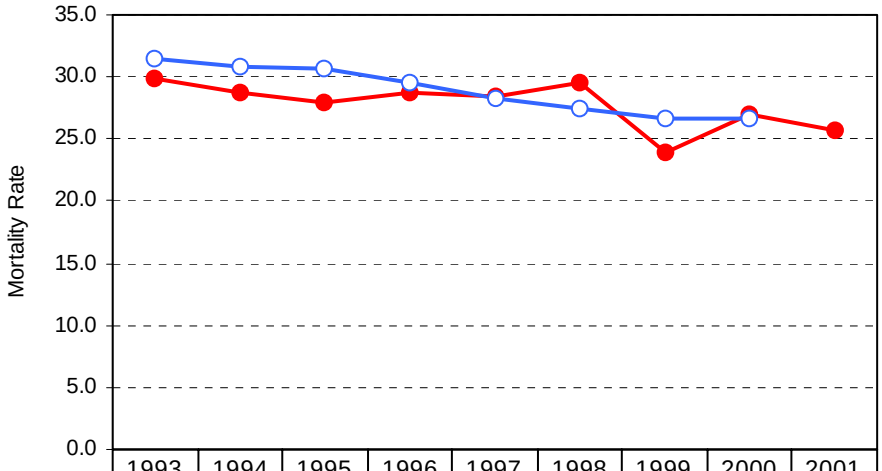
Figure 3.1

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

Cancer of the Female Breast

Mortality Rates*, Age-Adjusted

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



	1993	1994	1995	1996	1997	1998	1999	2000	2001
WV Females	29.8	28.8	28.0	28.7	28.4	29.6	24.0	27.0	25.7
US Females	31.4	30.9	30.6	29.5	28.2	27.5	26.6	26.7	

Figure 3.2

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

Cancer of the Female Breast

Incidence Rates*, Age-Specific

West Virginia Females 1997 - 2001

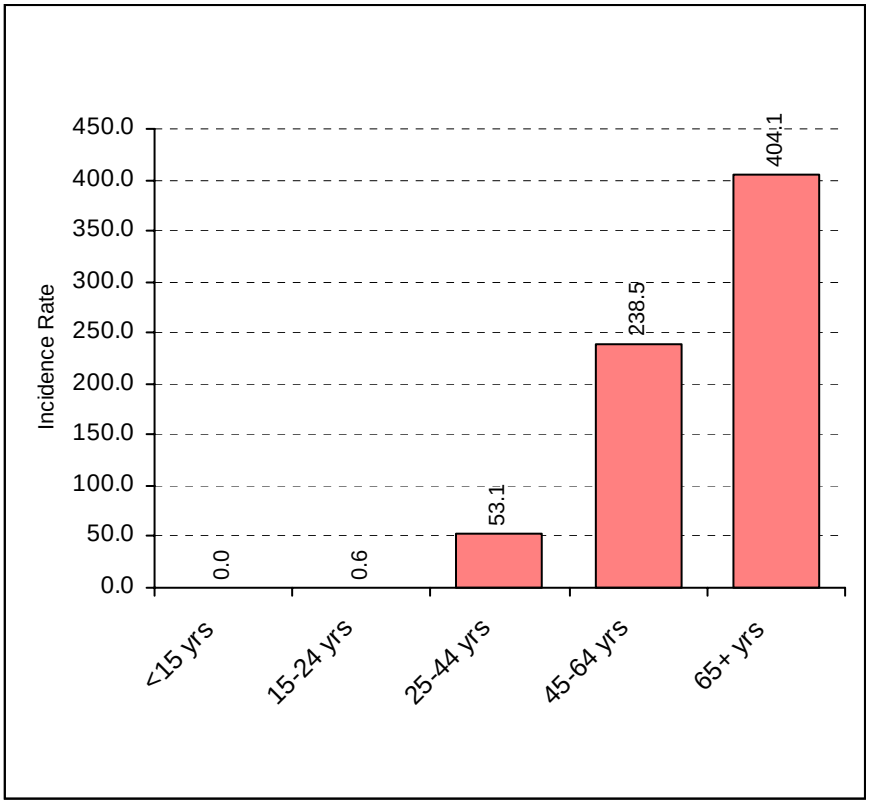


Figure 3.3

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

Cancer of the Female Breast

Stage of Disease at Diagnosis

West Virginia Females 1997 - 2001

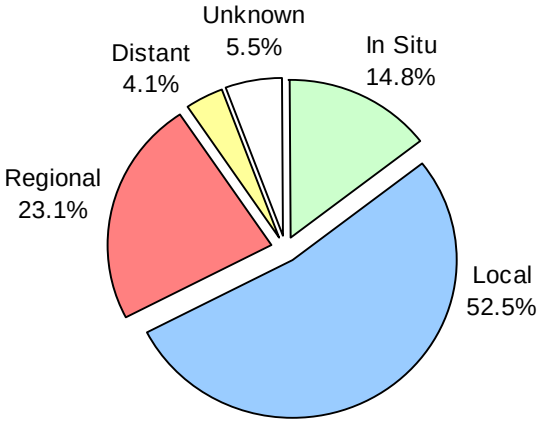


Figure 3.4

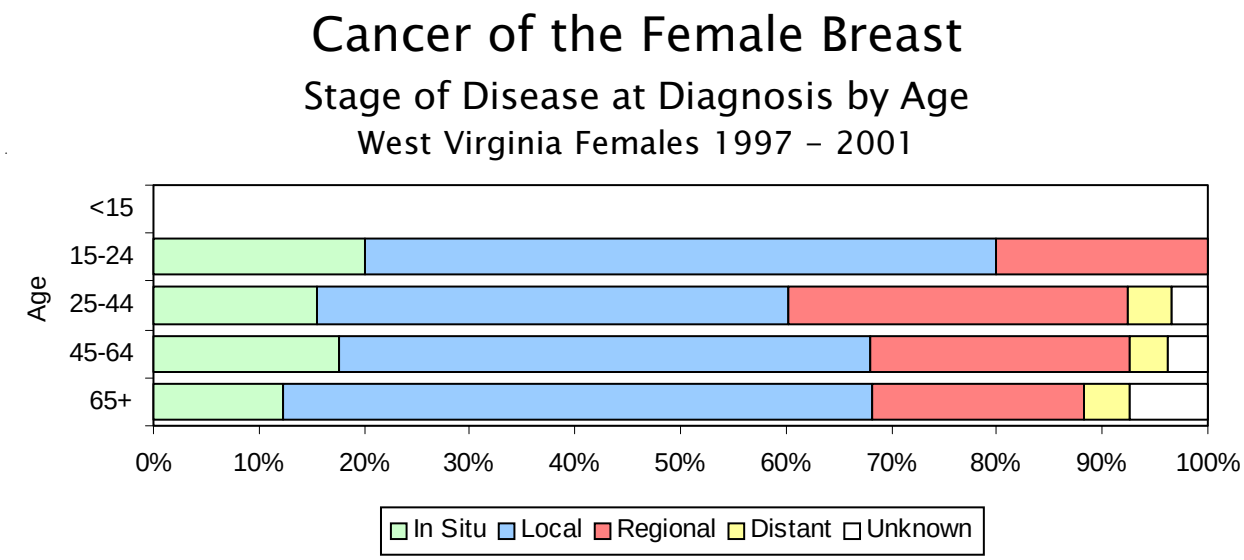
Cancer of the Female Breast

Most Frequent Histologies

West Virginia Females 1997 - 2001

ICD-O Code	Histology	% of Invasive Cases
850	Duct Cell Carcinoma	69.1
852	Lobular Carcinoma	15.9
848	Mucinous Adenocarcinoma	3.0
801	Carcinoma	2.4
800	Malignant Neoplasm	1.8
851	Medullary Carcinoma	1.6
814	Adenocarcinoma	1.5
821	Tubular Adenocarcinoma	1.5

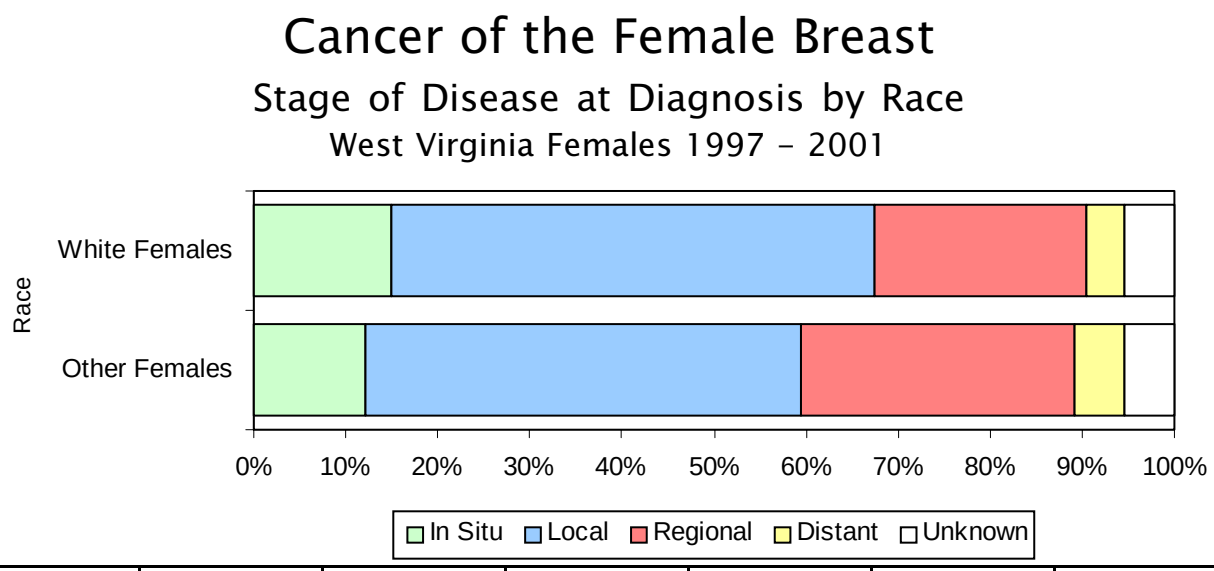
Table 3.2



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%	0	0.0%	0	0.0%
15-24	~		~		~		0	0.0%	0	0.0%	5	100.0%
25-44	~		~		~		34	4.2%	27	3.4%	801	100.0%
45-64	580	17.6%	1,654	50.3%	809	24.6%	122	3.7%	123	3.7%	3,288	100.0%
65+	464	12.2%	2,129	56.1%	757	19.9%	166	4.4%	282	7.4%	3,798	100.0%
Total	1,169	14.8%	4,144	52.5%	1,825	23.1%	322	4.1%	432	5.5%	7,892	100.0%

Figure 3.5

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



Race/Sex	In Situ #	In Situ %	Local #	Local %	Regional #	Regional %	Distant #	Distant %	Unknown #	Unknown %	Total #	Total %
White Females	1,140	14.9%	4,031	52.7%	1,754	22.9%	309	4.0%	419	5.5%	7,653	100.0%
Other Females	29	12.1%	113	47.3%	71	29.7%	13	5.4%	13	5.4%	239	100.0%
Total	1,169	14.8%	4,144	52.5%	1,825	23.1%	322	4.1%	432	5.5%	7,892	100.0%

Figure 3.6

Total may not add to 100% due to rounding.

Taking a Closer Look

Q Has the relationship between **race** and **stage at diagnosis** changed over time in West Virginia?

A Although race-based disparities in stage at diagnosis for female breast cancer still exist in West Virginia, they have lessened over time.

Cancer of the Female Breast

Average Percentage of Female Breast Cancers Diagnosed at In Situ or Local Stage, West Virginia Females, 1993 – 2001

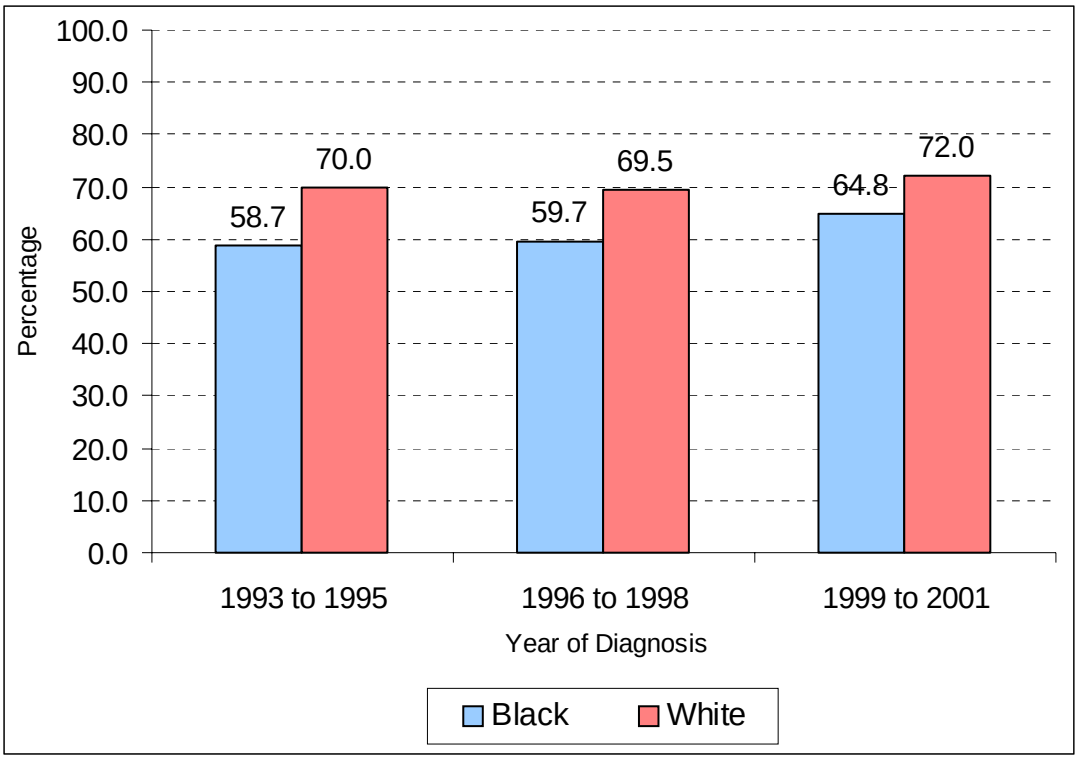
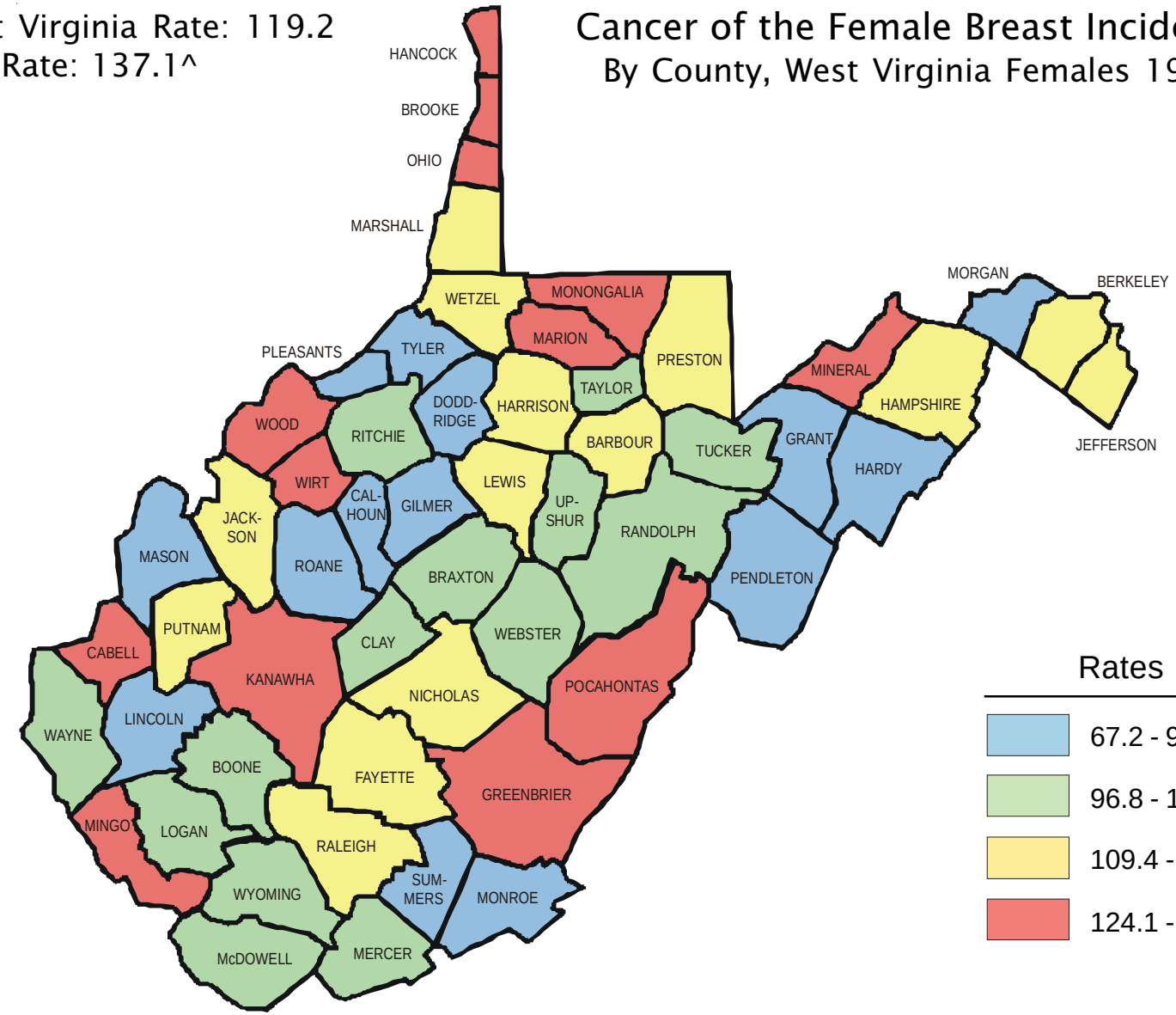
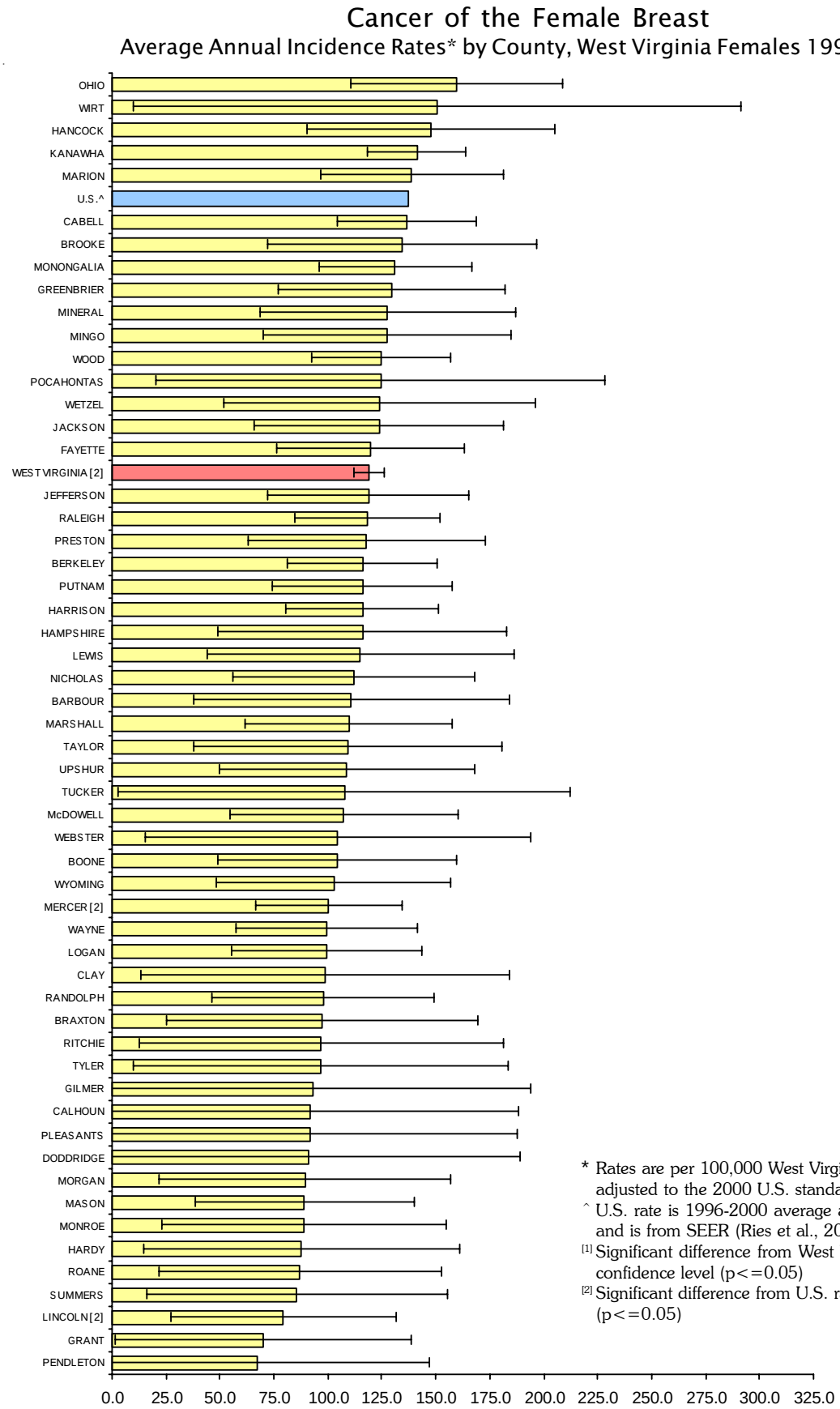


Figure 3.7



* Five-year average annual rate per 100,000 West Virginia females, 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 3.3 for individual county rates and measures of statistical significance.

Figure 3.8



* Rates are per 100,000 West Virginia females 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 3.9

Cancer of the Female Breast

Average Annual Incidence Rates* by County, West Virginia Females 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	51	110.8	No	No	MINGO	102	127.6	No	No
BERKELEY	219	116.1	No	No	MONONGALIA	249	131.3	No	No
BOONE	80	104.7	No	No	MONROE	42	88.9	No	No
BRAXTON	43	97.6	No	No	MORGAN	43	89.4	No	No
BROOKE	120	134.5	No	No	NICHOLAS	93	111.8	No	No
CABELL	409	136.7	No	No	OHIO	266	159.7	No	No
CALHOUN	23	92.1	No	No	PENDLETON	18	67.2	No	No
CLAY	28	98.8	No	No	PLEASANTS	22	91.7	No	No
DODDRIDGE	19	91.4	No	No	POCAHONTAS	37	124.5	No	No
FAYETTE	185	119.6	No	No	PRESTON	104	118.0	No	No
GILMER	20	93.5	No	No	PUTNAM	161	116.0	No	No
GRANT	25	69.9	No	No	RALEIGH	299	118.5	No	No
GREENBRIER	151	129.8	No	No	RANDOLPH	86	97.9	No	No
HAMPSHIRE	68	116.0	No	No	RITCHIE	32	96.9	No	No
HANCOCK	172	147.8	No	No	ROANE	42	87.0	No	No
HARDY	33	87.8	No	No	SUMMERS	44	85.7	No	No
HARRISON	261	116.0	No	No	TAYLOR	55	109.3	No	No
JACKSON	107	123.7	No	No	TUCKER	29	107.6	No	No
JEFFERSON	129	118.9	No	No	TYLER	29	96.7	No	No
KANAWHA	938	141.2	No	No	UPSHUR	73	108.9	No	No
LEWIS	64	115.1	No	No	WAYNE	128	99.5	No	No
LINCOLN	49	79.2	No	**YES**	WEBSTER	32	104.7	No	No
LOGAN	117	99.5	No	No	WETZEL	70	124.0	No	No
MARION	275	139.0	No	No	WIRT	24	150.6	No	No
MARSHALL	132	109.7	No	No	WOOD	350	124.6	No	No
MASON	71	89.1	No	No	WYOMING	79	102.7	No	No
McDOWELL	97	107.4	No	No					
MERCER	218	100.4	No	**YES**	WEST VIRGINIA	6,722	119.2		**YES**
MINERAL	109	127.8	No	No	U.S.^		137.1		

* Rates are per 100,000 West Virginia females 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 3.3