

Chapter 2

**Cancer of the
Brain & Other Nervous System**



Cancer of the Brain & Other Nervous System

Incidence and Mortality by Sex and Year

West Virginia Residents 1993 – 2001

Year	Male				Female				Total			
	New Cases	Incid. Rate	Deaths	Mort. Rate	New Cases	Incid. Rate	Deaths	Mort. Rate	New Cases	Incid. Rate	Deaths	Mort. Rate
1993	58	6.7	45	5.2	62	5.8	47	4.2	120	6.3	92	4.6
1994	82	9.3	62	7.2	60	5.5	47	4.1	142	7.2	109	5.5
1995	69	7.6	46	5.2	73	7.1	56	5.0	142	7.4	102	5.2
1996	62	6.9	52	5.7	71	6.5	57	5.1	133	6.7	109	5.5
1997	69	7.7	41	4.4	67	6.3	50	4.5	136	6.9	91	4.5
1998	62	7.0	40	4.7	59	5.5	48	4.2	121	6.2	88	4.4
1999	70	7.8	48	5.2	63	6.0	39	3.4	133	6.8	87	4.2
2000	67	7.2	38	4.2	60	5.6	40	3.5	127	6.4	78	3.8
2001	72	7.8	56	6.0	61	5.7	37	3.4	133	6.6	93	4.6

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

Table 2.1

Overview

- Each year from 1993 through 2001, approximately 120-150 West Virginians were diagnosed with primary cancers of the brain and other nervous system (ONS). Eighty to 110 died each year from this disease (Table 2.1).
- Although brain and ONS cancers occurred at all ages and in both sexes, incidence generally increased with age (Figure 2.3) and was higher in males than in females (Figure 2.1).
- Because many other cancers are rare at young ages, cancer of the brain and ONS was the first and fourth largest contributor to cancer incidence among West Virginia males aged less than 15 years and 15-24 years, respectively, and the second largest contributor to cancer incidence among West Virginia females less than 15 years of age in 1997-2001 (Table 1.2).
- Although nearly two-thirds of the 1997-2001 cases were diagnosed with local disease (Figure 2.4), staging of brain cancers remains problematic and does not have the same prognostic significance as does staging for other sites.
- A recent National Cancer Institute study suggests that the reported rise in brain tumors among U.S. children over the past two decades is most likely due to better diagnosis and reporting rather than a true increase in cases (Rodrigues, 1998).

Risk Factors

- Little is known about the etiology of most brain and other nervous system tumors.

Prevention

- No clearly effective methods of prevention or screening are currently available; however, many new technologies provide improved diagnostic and treatment options.

Cancer of the Brain & Other Nervous System

Incidence Rates*, Age-Adjusted

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

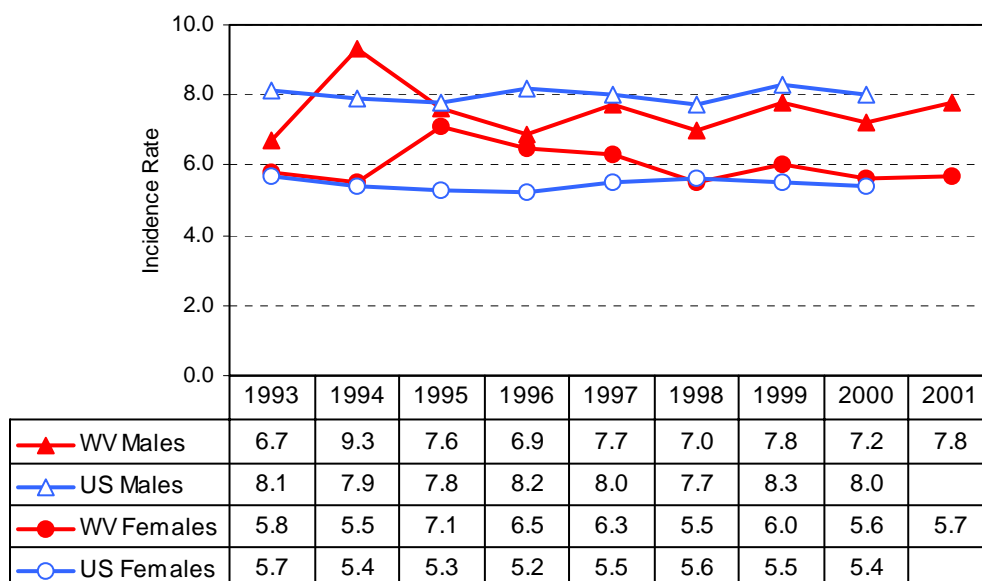


Figure 2.1

*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).

Cancer of the Brain & Other Nervous System

Mortality Rates*, Age-Adjusted

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

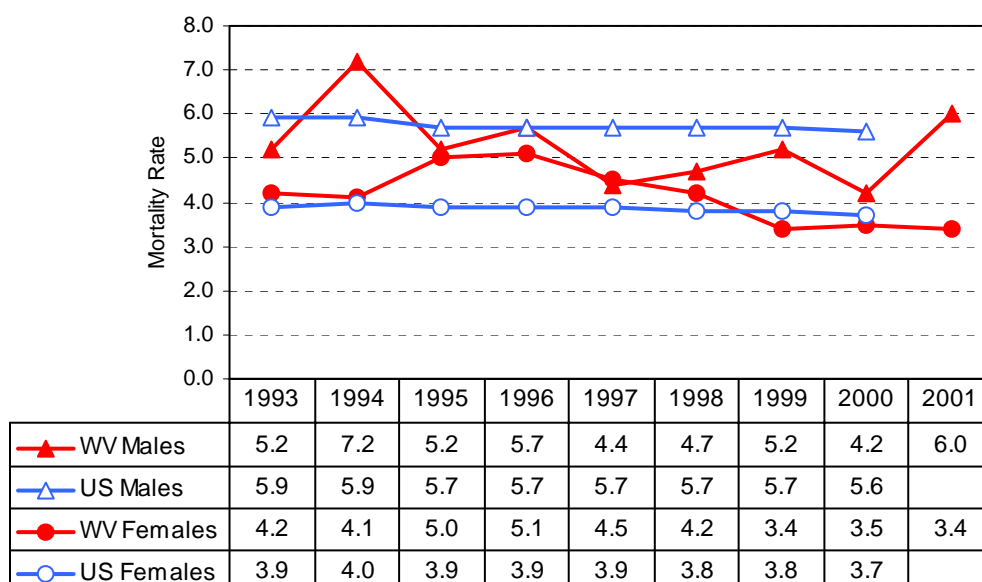


Figure 2.2

*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).

Cancer of the Brain & Other Nervous System

Incidence Rates*, Age-Specific
West Virginia Residents 1997 – 2001

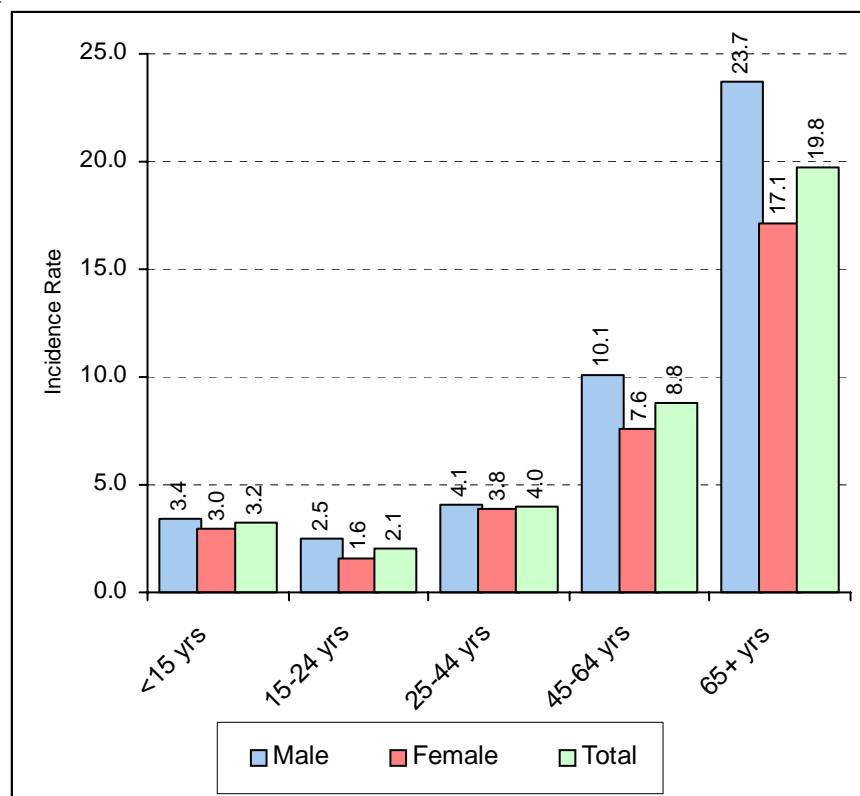


Figure 2.3

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

Cancer of the Brain &
Other Nervous System
Most Frequent Histologies
West Virginia Residents 1997 – 2001

ICD-O Code	Histology	% of Invasive Cases
944	Glioblastoma	49.4
940	Astrocytoma	14.8
938	Glioma	7.1
945	Oligodendroglioma	6.9
942	Astrocytoma, Fibrillary or Pilocytic	6.3
800	Malignant Neoplasm	5.8
947	Medulloblastoma	3.5
939	Choroid Plexus Papilloma or Ependymoma	2.8
953	Meningioma	1.7

Table 2.2

Cancer of the Brain &
Other Nervous System
Stage of Disease at Diagnosis
West Virginia Residents 1997 – 2001

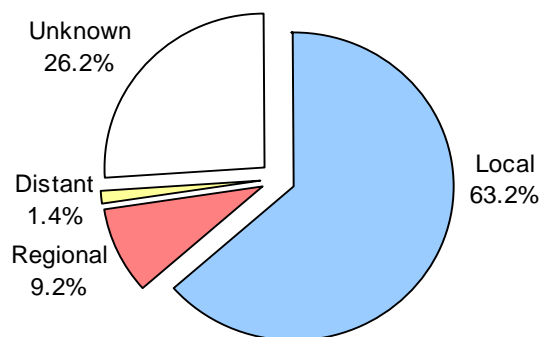
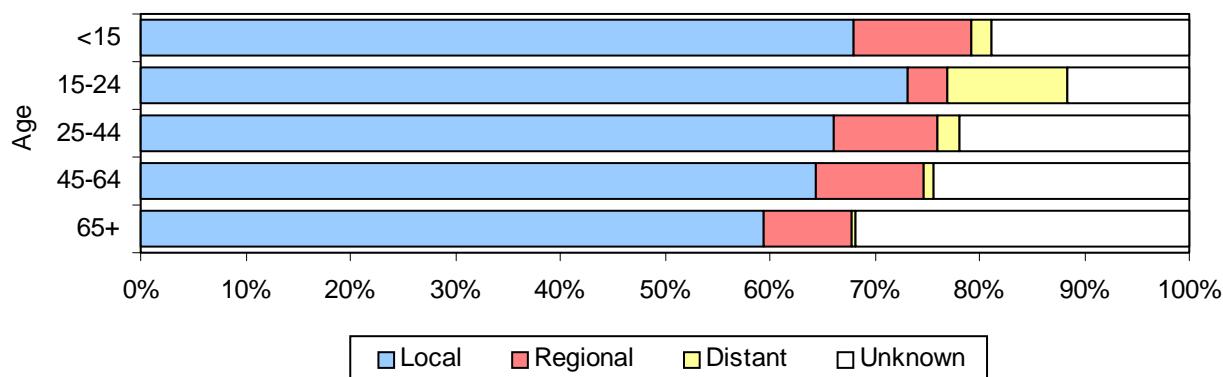


Figure 2.4

Cancer of the Brain & Other Nervous System

Stage of Disease at Diagnosis by Age

West Virginia Residents 1997 – 2001



Age	In Situ		Local		Regional		Distant		Unknown		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
<15	N/A		36	67.9%	6	11.3%	~		~		53	100.0%
15-24	N/A		19	73.1%	~		~		~		26	100.0%
25-44	N/A		66	66.0%	~		~		22	22.0%	100	100.0%
45-64	N/A		127	64.5%	~		~		48	24.4%	197	100.0%
65+	N/A		163	59.5%	~		~		87	31.8%	274	100.0%
Total	N/A		411	63.2%	60	9.2%	9	1.4%	170	26.2%	650	100.0%

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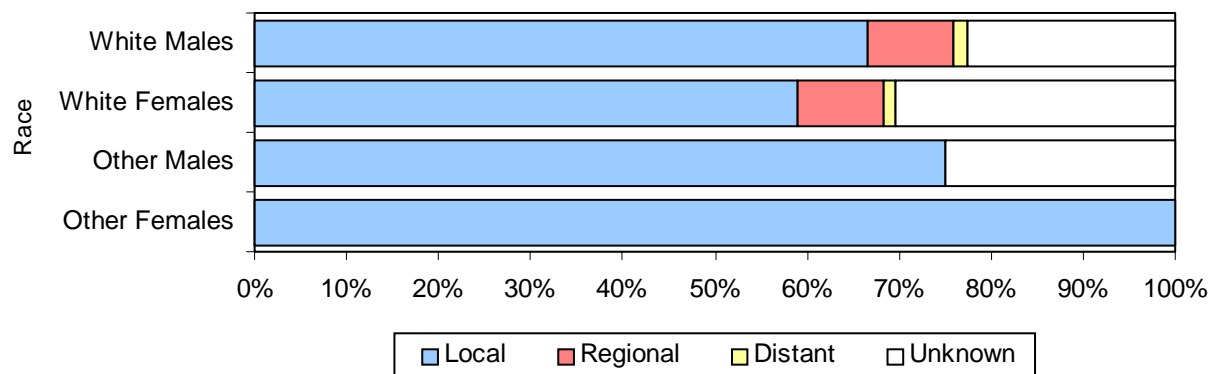
Total may not add to 100% due to rounding.

Figure 2.5

Cancer of the Brain & Other Nervous System

Stage of Disease at Diagnosis by Race and Sex

West Virginia Residents 1997 – 2001



Race/Sex	In Situ		Local		Regional		Distant		Unknown		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
White Males	N/A		224	66.7%	31	9.2%	5	1.5%	76	22.6%	336	100.0%
White Females	N/A		181	59.0%	29	9.4%	4	1.3%	93	30.3%	307	100.0%
Other Males	N/A		~		0	0.0%	0	0.0%	~		~	100.0%
Other Females	N/A		~		0	0.0%	0	0.0%	~		~	100.0%
Total	N/A		411	63.2%	60	9.2%	9	1.4%	170	26.2%	650	100.0%

~ Suppressed due to small cell size

Total may not add to 100% due to rounding.

Figure 2.6