

III. Targeted Cancers

A. Lung and Bronchus Cancer

Incidence (New Cases)

There were 3,406 new lung and bronchus cancer cases (called lung cancer) among Maryland residents in 2002. The 2002 Maryland age-adjusted lung cancer incidence rate is 65.6 per 100,000 population (63.5-67.9, 95% C.I.), which is statistically significantly greater than the 2002 U.S. SEER lung cancer incidence rate of 62.1 per 100,000 population.

Mortality (Deaths)

There were 2,967 lung cancer deaths among Maryland residents in 2002. Lung cancer accounts for 28.5% of all cancer deaths in Maryland and is the leading cause of cancer deaths in both men and women. The 2002 age-adjusted lung cancer mortality rate is 57.3 per 100,000 population (55.2-59.4, 95% C.I.) in Maryland. As with lung cancer incidence, this rate is also statistically significantly greater than the 2002 U.S. SEER mortality rate for lung and bronchus cancer of 54.9 per 100,000 population. Maryland has the 18th highest lung cancer mortality rate among the states and the District of Columbia for the period 1998-2002.

Table 11.
Lung Cancer Incidence and Mortality Rates
by Gender and Race, Maryland and the United States, 2002

<i>Incidence 2002</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>	<i>Whites</i>	<i>Blacks</i>	<i>Other</i>
New Cases (#)	3,406	1,798	1,608	2,599	743	64
Incidence Rate*	65.6	80.2	54.8	66.4	66.6	34.3
U.S. SEER Rate*	62.1	77.8	50.8	62.7	80.1	NA
<i>Mortality 2002</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>	<i>Whites</i>	<i>Blacks</i>	<i>Other</i>
Deaths (#)	2,967	1,634	1,333	2,221	707	39
Mortality Rate*	57.3	74.2	45.0	56.4	64.5	20.8
U.S. SEER Rate*	54.9	73.5	41.5	55.2	62.2	NA

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

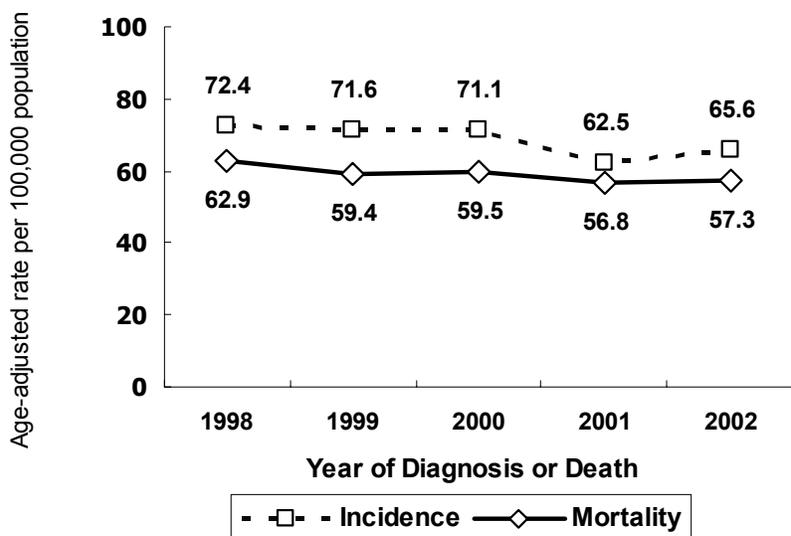
NA: Data were not available

Source: Maryland Cancer Registry, 2002

CDC WONDER, 2002

SEER, National Cancer Institute, 2002

**Lung Cancer Incidence and Mortality Rates
by Year of Diagnosis and Death, Maryland, 1998-2002**



Rates are age-adjusted to 2000 U.S. standard population
Maryland Cancer Registry, 1998-2002
Maryland Division of Health Statistics, 1998-2001
CDC WONDER, 2002

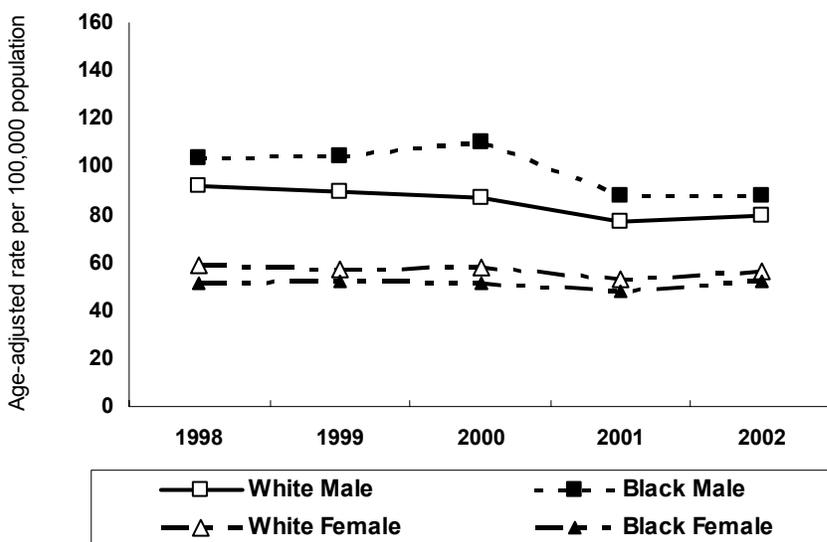
Incidence and Mortality Trends

Lung cancer incidence rates have decreased an average of 3.3% per year from 1998 to 2002 in Maryland.

Lung cancer mortality began to decline in the 1990s. In Maryland, lung cancer death rates have decreased an average of 2.3% per year from 1998 to 2002.

See Appendix I, Tables 1 and 2.

**Lung Cancer Incidence Rates by Race and Gender
Maryland, 1998-2002**



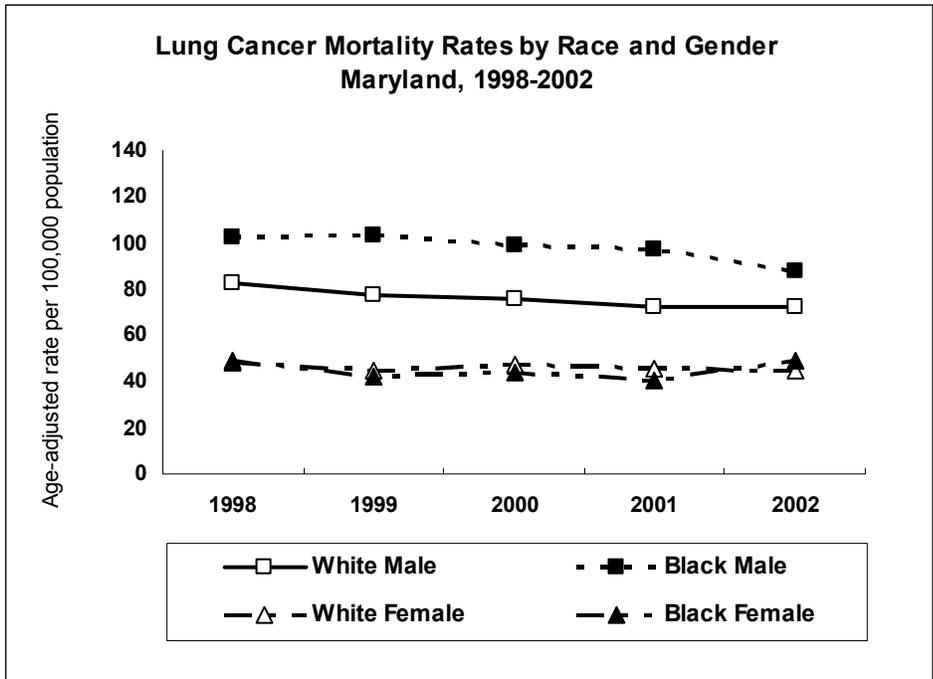
Rates are age-adjusted to 2000 U.S. standard population
Maryland Cancer Registry, 1998-2002

Race and Gender Incidence Trends

Male lung cancer incidence rates exceeded those for females. Black females had the lowest rates, black males the highest.

While all rate groupings are decreasing, the biggest reduction was for black males who have experienced an average decrease of 4.9% per year from 1998 to 2002.

See Appendix I, Table 5.



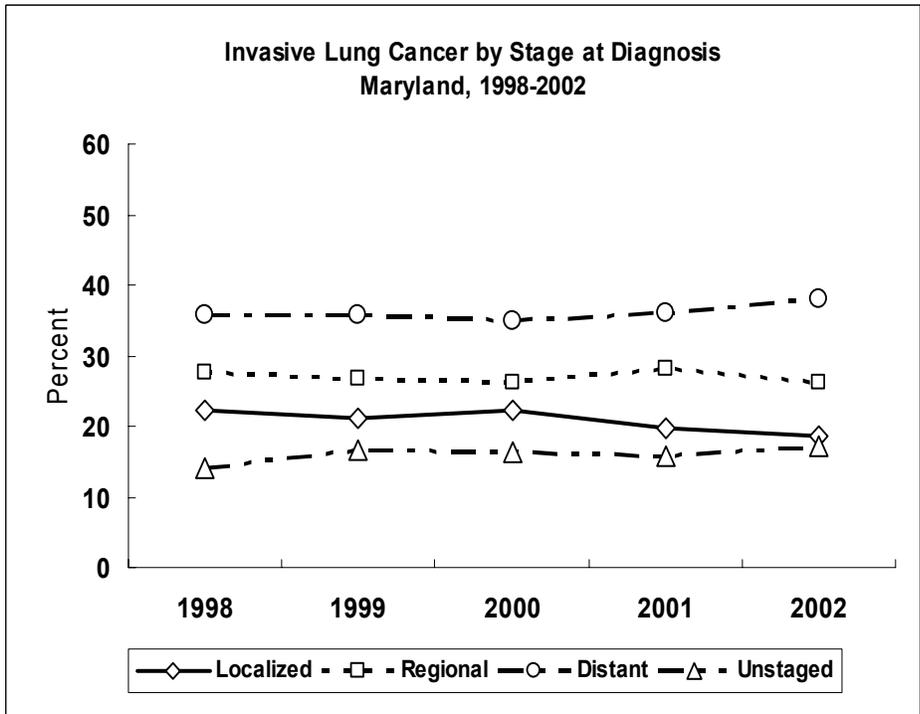
Rates are age-adjusted to 2000 U.S. standard population
 Maryland Division of Health Statistics, 1998-2001
 CDC WONDER, 2002

**Race and Gender
Mortality Trends**

From 1998 to 2002, males consistently had higher mortality rates than females.

Mortality rates for all race and gender groups have been declining with the biggest drop involving black males with an average annual reduction of 3.5% per year.

See Appendix I, Table 6 for the data.

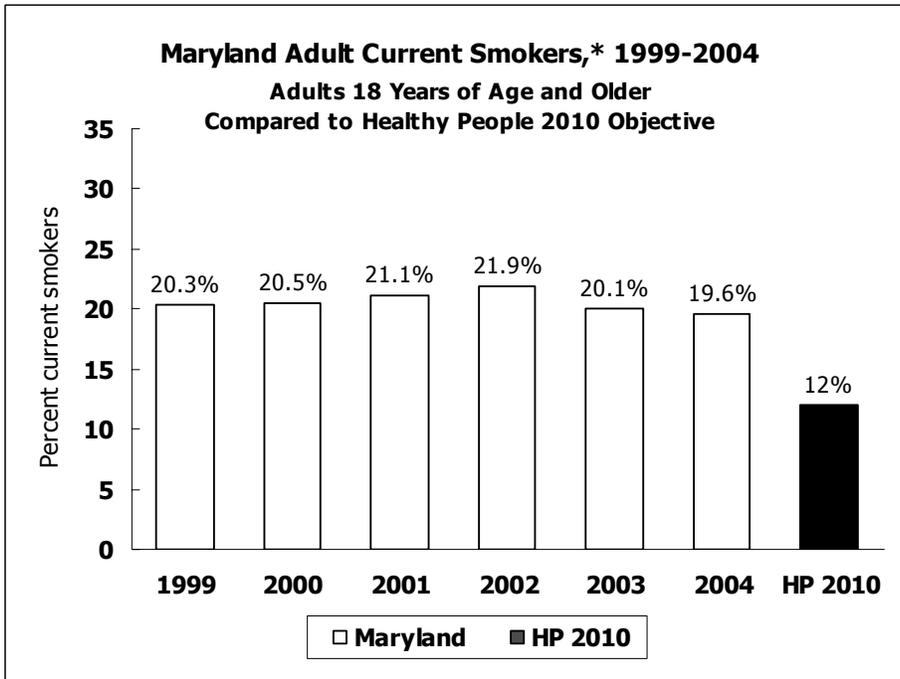


Maryland Cancer Registry, 1998-2002

Stage at Diagnosis

More lung cancer cases are diagnosed at the distant stage than localized or regional stage cancer. In 2002, 37.9% of lung cancer cases were at the distant stage at the time of diagnosis.

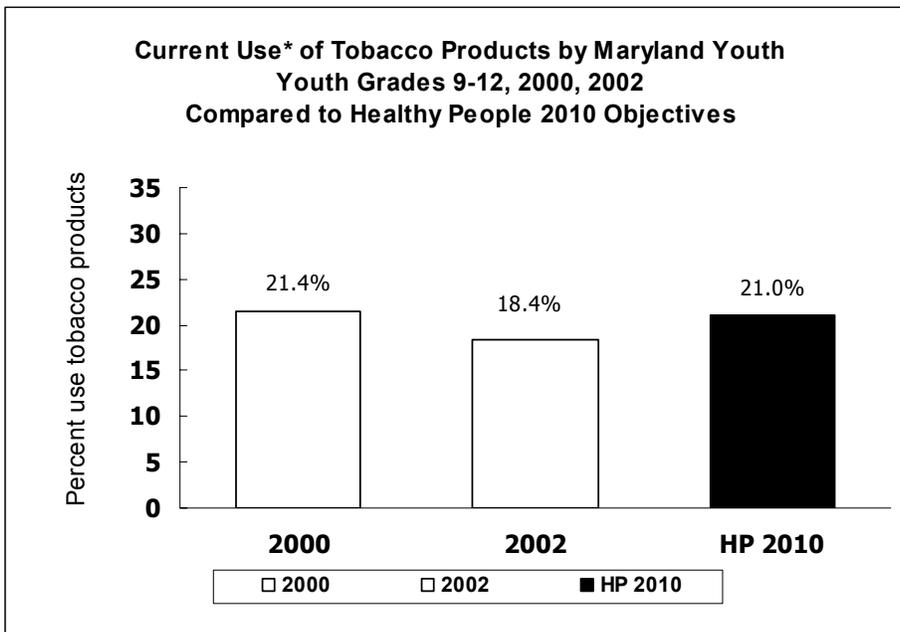
See Appendix J, Table 2 for the data.



* Current Smoker is defined as a person 18 years or older who smokes cigarettes every day or some days
 BRFSS, Maryland DHMH Center for Preventive Health Services, 1999-2004
 Healthy People 2010, U.S. Department of Health and Human Services, 2000

Healthy People 2010 Objectives

The Healthy People 2010 objective is to reduce the percentage of adults (≥ age 18 years) who are current smokers to 12%. The percentage of adult smokers in Maryland has remained relatively stable between 1999 and 2004, with an average annual decline of 0.6% in current smokers.



* Current Use of Tobacco Products is defined as a youth from grades 9-12 who has used any tobacco product, including cigarettes, smokeless or spit tobacco, and other products containing tobacco in the last 30 days
 MYTS, Maryland DHMH Center for Health Promotion, Education, and Tobacco Use Prevention, 2000, 2002

Healthy People 2010 Objectives

For youth, grades 9-12, the Healthy People 2010 tobacco use objective is to reduce the percentage of youth who are current users of tobacco products to 21%.

Based on the Maryland Youth Tobacco Survey (MYTS) in 2002, 18.4% of Maryland youth were current users of tobacco products. In 2002, Maryland achieved the Healthy People 2010 objective. MYTS has not been repeated since 2002.

Public Health Evidence (quoted from National Cancer Institute [NCI], Physician Data Query [PDQ], 2/17/2006 and 4/20/2006; International Agency for Research on Cancer, 2002; and United States Preventive Services Task Force [USPSTF] 5/2004)

Primary Prevention

Cigarette smoking has been established as the primary cause of lung cancer, and tobacco smoking is estimated to cause 90% of lung cancer in males and 78% of lung cancer in females. Cigar and pipe smoking have also been associated, independently, with increased lung cancer risk. Smoking avoidance would result in decreased mortality from primary lung cancers. Long-term sustained smoking cessation results in decreased incidence of lung cancer and of second primary lung tumors. A 30-50% reduction of lung cancer mortality has been noted after 10 years of smoking cessation.

Environmental, or second-hand, tobacco smoke contains the same components as inhaled mainstream smoke at 1% to 10% the concentration, depending on the component. Exposure to radon increases lung cancer incidence and mortality. Considered in total, occupational exposures have been estimated to account for approximately 10% of lung cancers. These carcinogens include asbestos, radon, tar and soot (source of polycyclic aromatic hydrocarbons), arsenic, chromium, and nickel. For many of these workplace carcinogens, cigarette smoking interacts to synergistically increase the risk.

Chemoprevention

High-intensity smokers (one or more packs per day) who take pharmacological doses of beta-carotene supplementation (> 20 mg/day) have an *increased* lung cancer incidence and mortality that is associated with taking the supplement.

Screening

The United States Preventive Services Task Force (USPSTF) concluded that the evidence is insufficient to recommend for or against screening for asymptomatic persons for lung cancer with either low dose computerized tomography (“spiral CT”), chest x-ray, sputum cytology, or a combination of these tests. Because of the invasive nature of diagnostic testing and the possibility of a high number of false-positive tests in certain populations, there is potential for significant harms from screening. Therefore, the USPSTF could not determine the balance between the benefits and harms of screening for lung cancer.

Public Health Intervention for Lung Cancer (CDC Best Practice Guidelines, 8/1999)

- Prevent initiation of tobacco use among youth and young adults
- Promote quitting of tobacco use among youth and adults
- Eliminate non-smoker's exposure to environmental tobacco smoke
- Identify and eliminate tobacco-related health disparities

The CDC Best Practice Guidelines address components of Comprehensive Tobacco Control Programs including:

- **Community-based and statewide programs:**
 - ✓ Adoption of smoke-free laws and policies (e.g., raising the costs of tobacco products, reducing minors access to tobacco products and reducing exposure to environmental smoke)
 - ✓ Individually-focused identification of tobacco use and cessation counseling by medical and dental providers
 - ✓ Effective smoking cessation programs for current tobacco users (individual, telephone, or group counseling)
 - ✓ Nicotine replacement and other pharmacotherapy
 - ✓ Effective community-based tobacco use prevention activities encompassing all sectors of the community (e.g., homes, work sites, places of worship and entertainment, and civic organizations)
- **School-based programs:**
 - ✓ Evidence-based tobacco prevention curricula in schools
 - ✓ Evidence-based tobacco cessation programs for youth in schools
- **Enforcement programs:**
 - ✓ Enforce laws and policies to reduce minors' access to tobacco products
 - ✓ Enforce laws and policies to reduce exposure to environmental tobacco smoke
- **Counter-marketing programs:**
 - ✓ Counter tobacco advertisements
 - ✓ Raise awareness of the dangers of environmental tobacco smoke
 - ✓ Discourage the use of tobacco products and promote smoke-free behavior as the norm
 - ✓ Promote cessation of tobacco use
- **Surveillance and evaluation:**
 - ✓ Monitor tobacco-related behaviors, attitudes, and health outcomes
 - ✓ Evaluate local and state tobacco-related programs
- **Chronic disease:**
 - ✓ Prevent and detect other tobacco-related diseases such as cardiovascular disease and asthma
- **Administration and management:**
 - ✓ Have sufficient staffing and management structures to facilitate coordination of program components and multiple agencies/groups

Table 12.
Number of Lung and Bronchus Cancer Cases
by Jurisdiction, Gender and Race, Maryland, 2002

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	3,406	1,798	1,608	2,599	743	64
Allegany	82	40	42	s	<6	0
Anne Arundel	314	159	155	279	25	10
Baltimore City	587	314	273	s	342	<6
Baltimore County	681	357	324	609	65	7
Calvert	50	26	24	40	10	0
Caroline	25	13	12	s	<6	0
Carroll	85	50	35	s	<6	0
Cecil	44	28	16	41	<6	<6
Charles	43	19	24	36	7	0
Dorchester	44	26	18	s	<6	0
Frederick	118	75	43	108	s	<6
Garrett	22	15	7	22	0	0
Harford	146	77	69	138	s	<6
Howard	116	52	64	94	s	<6
Kent	27	15	12	s	<6	0
Montgomery	327	150	177	263	39	25
Prince George's	293	145	148	140	146	7
Queen Anne's	38	14	24	s	<6	0
Saint Mary's	55	38	17	44	s	<6
Somerset	27	17	10	17	10	0
Talbot	39	23	16	35	<6	<6
Washington	98	52	46	89	9	0
Wicomico	86	50	36	71	15	0
Worcester	59	43	16	s	<6	0
Unknown	0	0	0	0	0	0

s=Number was suppressed to ensure confidentiality of cell in other column

Cells with 5 or fewer non-zero cases are not presented per DHMH/MCR Data Use Policy

Source: Maryland Cancer Registry, 2002

Table 13.
Lung and Bronchus Cancer Age-Adjusted Incidence Rates*
by Jurisdiction, Gender and Race, Maryland, 2002

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	65.6	80.2	54.8	66.4	66.6	34.3
Allegany	85.8	97.4	76.7	83.1	**	0.0
Anne Arundel	69.3	77.5	62.6	70.0	**	101.6
Baltimore City	91.3	119.3	72.1	94.8	89.9	**
Baltimore County	78.3	96.3	65.2	80.9	67.4	**
Calvert	80.7	102.1	**	74.0	**	0.0
Caroline	**	**	**	**	**	0.0
Carroll	57.8	74.7	42.9	58.8	**	0.0
Cecil	52.3	70.6	**	50.8	**	**
Charles	45.9	**	**	48.6	**	0.0
Dorchester	108.7	149.1	**	123.1	**	0.0
Frederick	66.4	94.2	44.6	64.9	**	**
Garrett	**	**	**	**	0.0	0.0
Harford	70.7	82.1	61.0	72.5	**	**
Howard	59.7	58.0	60.9	61.0	**	**
Kent	95.7	**	**	**	**	0.0
Montgomery	37.9	41.4	35.6	37.7	43.5	**
Prince George's	47.4	56.0	41.5	52.2	43.1	**
Queen Anne's	82.3	**	**	79.8	**	0.0
Saint Mary's	78.4	117.5	**	73.9	**	**
Somerset	100.2	**	**	**	**	0.0
Talbot	73.8	**	**	74.9	**	**
Washington	66.7	78.8	56.3	62.7	**	0.0
Wicomico	98.3	134.7	71.2	101.1	**	0.0
Worcester	82.4	129.5	**	85.5	**	0.0

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

** Rates based on cells with 25 or fewer non-zero cases are not presented per DHMH/MCR Data Use Policy

Source: Maryland Cancer Registry, 2002

Table 14.
Number of Lung and Bronchus Cancer Deaths
by Jurisdiction, Gender and Race, Maryland, 2002

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	2,967	1,634	1,333	2,221	707	39
Allegany	66	43	23	66	0	0
Anne Arundel	279	141	138	248	27	4
Baltimore City	543	281	262	214	326	3
Baltimore County	583	324	259	528	51	4
Calvert	44	22	22	38	6	0
Caroline	21	12	9	21	0	0
Carroll	80	45	35	80	0	0
Cecil	51	31	20	48	<6	<6
Charles	53	32	21	43	9	1
Dorchester	32	24	8	26	6	0
Frederick	85	55	30	78	7	0
Garrett	20	12	8	20	0	0
Harford	124	71	53	114	8	2
Howard	74	37	37	64	9	1
Kent	20	10	10	13	7	0
Montgomery	262	127	135	214	33	15
Prince George's	316	177	139	128	181	7
Queen Anne's	27	11	16	24	<6	0
Saint Mary's	46	34	12	38	7	<6
Somerset	24	16	8	18	6	0
Talbot	29	16	13	26	<6	0
Washington	76	40	36	74	2	0
Wicomico	68	39	29	58	10	0
Worcester	44	34	10	40	<6	0

Cells with 5 or fewer non-zero cases where county population is less than 100,000
are not presented per CDC WONDER Data Use Restrictions

Source: CDC WONDER, 2002

Table 15.
Lung and Bronchus Cancer Age-Adjusted Mortality Rates*
by Jurisdiction, Gender and Race, Maryland, 2002

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	57.3	74.2	45.0	56.4	64.5	20.8
Allegany	68.3	104.0	41.9	69.9	0.0	0.0
Anne Arundel	63.0	72.1	56.3	63.8	55.5	54.6
Baltimore City	84.2	108.2	67.9	81.7	87.0	28.5
Baltimore County	66.1	87.9	50.7	68.7	53.6	16.4
Calvert	71.3	96.3	61.3	71.4	72.4	0.0
Caroline	64.7	87.7	48.2	75.8	0.0	0.0
Carroll	54.8	73.3	42.1	56.3	0.0	0.0
Cecil	61.4	79.1	45.6	60.4	**	**
Charles	58.1	82.2	41.6	60.7	49.7	32.6
Dorchester	77.4	142.8	32.7	79.3	67.6	0.0
Frederick	47.9	69.7	30.5	46.7	90.2	0.0
Garrett	54.8	73.0	37.7	55.2	0.0	0.0
Harford	60.5	76.7	46.7	60.6	57.5	41.5
Howard	41.3	51.4	36.6	45.6	29.6	4.8
Kent	68.8	76.6	61.4	52.2	168.9	0.0
Montgomery	30.3	35.5	26.8	30.6	35.1	18.2
Prince George's	51.8	66.4	40.5	47.0	59.1	22.0
Queen Anne's	61.4	55.6	67.6	62.2	**	0.0
Saint Mary's	64.0	101.5	32.6	61.8	73.0	**
Somerset	89.3	130.4	52.8	90.5	92.3	0.0
Talbot	53.5	68.0	43.6	54.1	**	0.0
Washington	50.9	61.0	42.0	51.2	71.1	0.0
Wicomico	76.5	99.9	57.7	81.7	60.0	0.0
Worcester	60.4	103.3	24.9	62.4	**	0.0

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

** Rates based on cells with 5 or fewer non-zero cases where county population is less than 100,000
are not presented per CDC WONDER Data Use Restrictions

Source: CDC WONDER, 2002

Table 16.
Number of Lung and Bronchus Cancer Cases
by Jurisdiction, Gender and Race, Maryland, 1998-2002

Jurisdiction	Total	Gender		Race			
		Males	Females	Whites	Blacks	Other	Unknown
Maryland	17,011	9,250	7,758	13,062	3,659	259	31
Allegany	386	226	160	378	s	0	<6
Anne Arundel	1,601	837	763	1,428	151	s	<6
Baltimore City	2,968	1,617	1,351	1,301	1,644	16	7
Baltimore County	3,184	1,698	1,485	2,848	305	s	<6
Calvert	235	142	93	201	s	<6	0
Caroline	124	70	54	102	s	<6	0
Carroll	419	246	173	406	s	<6	0
Cecil	298	167	131	287	s	<6	0
Charles	303	180	123	241	57	<6	<6
Dorchester	187	107	80	144	43	0	0
Frederick	526	329	197	480	41	<6	<6
Garrett	113	71	42	s	<6	0	0
Harford	715	396	319	670	s	<6	0
Howard	507	246	261	415	79	13	0
Kent	105	55	50	91	14	0	0
Montgomery	1,743	874	868	1,439	192	s	<6
Prince George's	1,654	918	736	838	767	s	<6
Queen Anne's	158	74	84	136	s	<6	0
Saint Mary's	257	153	104	224	29	<6	<6
Somerset	133	78	55	97	36	0	0
Talbot	167	92	75	146	s	<6	0
Washington	506	267	239	481	s	0	<6
Wicomico	380	198	182	311	s	<6	0
Worcester	320	195	125	269	44	<6	<6
Unknown	22	14	8	17	<6	0	<6

s=Number was suppressed to ensure confidentiality of cell in other column

Cells with 5 or fewer non-zero cases are not presented per DHMH/MCR Data Use Policy

Source: Maryland Cancer Registry, 1998-2002

Table 17.
Lung and Bronchus Cancer Age-Adjusted Incidence Rates*
by Jurisdiction, Gender and Race, Maryland, 1998-2002

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	68.0	86.5	54.8	68.6	69.7	33.4
Allegany	78.3	107.5	55.8	78.2	**	0.0
Anne Arundel	74.4	89.0	64.3	75.2	70.0	**
Baltimore City	90.5	122.0	70.0	95.4	87.6	**
Baltimore County	74.5	93.8	60.9	76.1	70.3	29.0
Calvert	80.6	115.6	57.6	80.0	86.5	**
Caroline	78.3	101.1	62.3	75.6	**	**
Carroll	60.5	82.2	44.8	60.4	**	**
Cecil	76.2	94.2	62.8	76.7	**	**
Charles	66.9	89.3	49.7	68.6	62.2	**
Dorchester	92.3	121.2	71.1	90.9	98.3	0.0
Frederick	63.9	91.8	43.0	62.0	109.7	**
Garrett	64.4	90.7	43.2	64.1	**	0.0
Harford	74.0	95.0	59.3	75.2	65.4	**
Howard	58.1	64.6	53.9	59.2	65.4	**
Kent	74.3	87.5	62.2	75.4	**	0.0
Montgomery	42.4	50.1	36.7	43.1	47.0	30.8
Prince George's	56.2	73.7	44.1	62.5	50.5	34.8
Queen Anne's	72.7	71.6	73.7	70.5	**	**
Saint Mary's	74.6	95.6	57.1	77.1	60.1	**
Somerset	99.6	127.0	75.1	97.8	104.7	0.0
Talbot	65.0	81.2	52.9	64.0	**	**
Washington	69.8	84.8	59.3	68.5	**	0.0
Wicomico	88.7	108.8	74.1	90.5	84.7	**
Worcester	93.3	124.3	67.1	90.2	104.0	**

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

** Rates based on cells with 25 or fewer non-zero cases are not presented per DHMH/MCR Data Use Policy

Source: Maryland Cancer Registry, 1998-2002

Table 18.
Number of Lung and Bronchus Cancer Deaths
by Jurisdiction, Gender and Race, Maryland, 1999-2002

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	11,628	6,506	5,122	8,835	2,663	130
Allegany	226	141	85	223	3	0
Anne Arundel	1,072	571	501	959	103	10
Baltimore City	2,131	1,183	948	924	1197	10
Baltimore County	2,210	1,212	998	1,994	205	11
Calvert	170	99	71	147	23	0
Caroline	98	55	43	83	15	0
Carroll	308	174	134	302	6	0
Cecil	215	129	86	205	9	1
Charles	215	122	93	171	39	5
Dorchester	124	78	46	95	29	0
Frederick	332	213	119	302	30	0
Garrett	71	47	24	71	0	0
Harford	468	266	202	433	30	5
Howard	308	169	139	254	46	8
Kent	68	40	28	55	13	0
Montgomery	1,082	556	526	904	128	50
Prince George's	1,299	738	561	629	642	28
Queen Anne's	104	52	52	88	15	1
Saint Mary's	152	99	53	131	20	1
Somerset	85	57	28	64	21	0
Talbot	106	65	41	97	9	0
Washington	347	188	159	340	7	0
Wicomico	250	145	105	204	46	0
Worcester	187	107	80	160	27	0

Source: CDC WONDER, 1999-2002

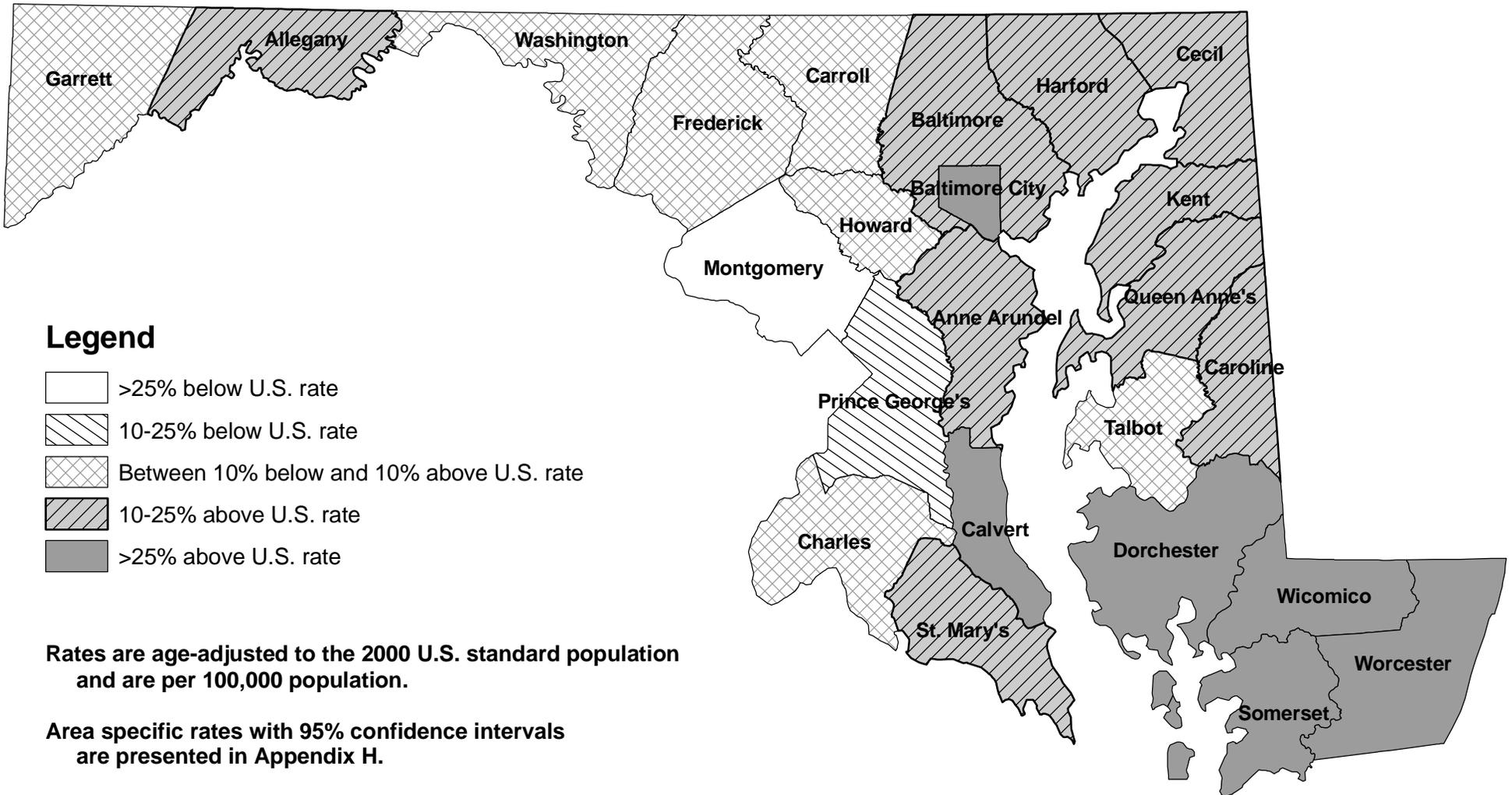
Table 19.
Lung and Bronchus Cancer Age-Adjusted Mortality Rates*
by Jurisdiction, Gender and Race, Maryland, 1999-2002

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	58.1	77.3	44.6	57.6	64.3	21.4
Allegany	57.0	85.6	36.1	57.4	48.6	0.0
Anne Arundel	63.2	78.0	52.7	64.0	60.5	36.1
Baltimore City	81.3	113.1	60.4	83.3	80.4	27.4
Baltimore County	64.0	84.7	49.8	65.7	59.4	15.9
Calvert	71.3	98.7	53.9	71.9	71.4	0.0
Caroline	76.5	100.4	59.1	76.1	83.9	0.0
Carroll	55.8	75.5	42.5	56.3	45.3	0.0
Cecil	67.9	88.7	50.8	67.6	83.6	40.0
Charles	59.9	80.7	45.8	61.7	53.5	42.0
Dorchester	76.0	112.7	50.8	74.1	82.6	0.0
Frederick	50.0	73.5	32.1	48.3	100.6	0.0
Garrett	50.4	74.6	29.9	50.6	0.0	0.0
Harford	60.9	81.0	46.7	61.1	62.7	30.3
Howard	45.0	59.3	36.3	46.0	51.3	19.1
Kent	58.9	80.3	43.3	55.5	79.0	0.0
Montgomery	32.7	40.6	27.1	33.4	39.2	18.6
Prince George's	56.1	76.0	42.5	58.6	55.6	27.3
Queen Anne's	59.6	63.1	56.6	57.1	84.1	1,550.8
Saint Mary's	54.9	77.5	36.2	56.2	51.1	86.2
Somerset	79.2	115.6	48.6	80.4	76.3	0.0
Talbot	50.1	71.9	34.7	52.4	34.4	0.0
Washington	59.2	76.5	47.1	59.7	61.6	0.0
Wicomico	72.3	99.7	53.0	73.4	71.7	0.0
Worcester	66.0	85.0	51.7	64.9	79.0	0.0

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

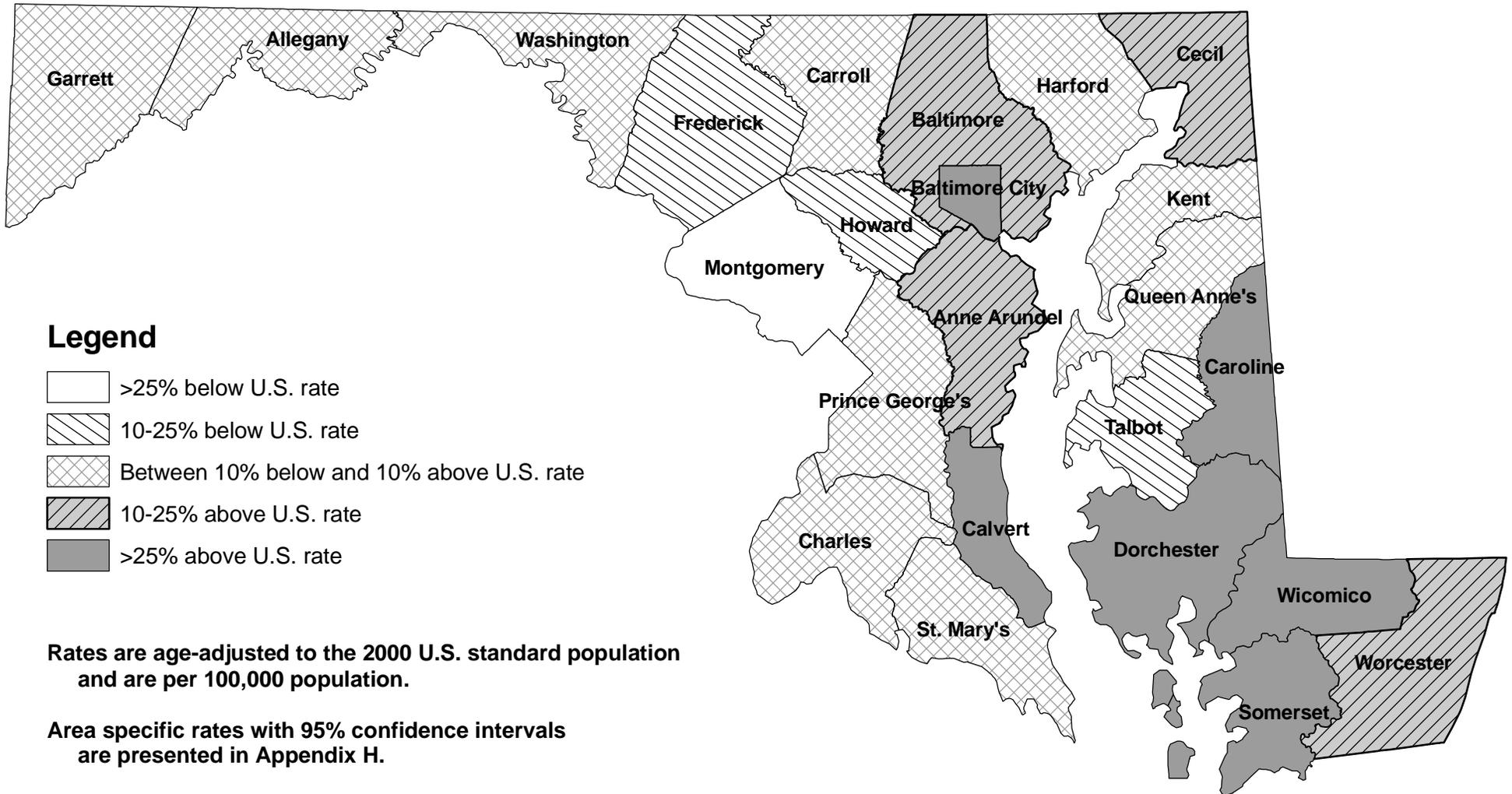
Source: CDC WONDER, 1999-2002

Maryland Lung Cancer Incidence Rates (1998-2002) by Geographical Area: Comparison to U.S. Rate (1998-2002)



Source: Maryland Cancer Registry, 1998-2002

Maryland Lung Cancer Mortality Rates (1999-2002) by Geographical Area: Comparison to U.S. Rate (1998-2002)



Source: CDC WONDER, 1999-2002