

### III. Targeted Cancers

#### A. Lung and Bronchus Cancer

##### Incidence (New Cases)

There were 3,190 new lung and bronchus cancer cases (called lung cancer) among Maryland residents in 2001. Lung cancer represents 13.8% of new cancers diagnosed in Maryland in 2001. The 2001 Maryland age-adjusted lung cancer incidence rate is 62.5 per 100,000 population (60.4-64.7, 95% C.I.) which is similar to (not statistically significantly different from) the 2001 U.S. SEER lung cancer incidence rate of 61.2 per 100,000 population.

##### Mortality (Deaths)

There were 2,858 lung cancer deaths among Maryland residents in 2001. Lung cancer accounts for 28.1% of all cancer deaths in Maryland and is the leading cause of cancer deaths in both men and women. The 2001 age-adjusted lung cancer mortality rate is 56.8 per 100,000 population (54.7-58.9, 95% C.I.) in Maryland. This rate is similar to the 2001 U.S. mortality rate for lung and bronchus cancer of 55.2 per 100,000 population. Maryland has the 18<sup>th</sup> highest lung cancer mortality rate among the states and the District of Columbia for the period 1997-2001.

**Table 11.**  
**Lung Cancer Incidence and Mortality Rates**  
**by Gender and Race, Maryland and the United States, 2001**

<i>Incidence 2001</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>	<i>Whites</i>	<i>Blacks</i>	<i>Other</i>
New Cases (#)	3,190	1,713	1,477	2,433	694	50
Incidence Rate*	62.5	78.3	51.2	63.1	63.6	27.7
U.S. SEER Rate*	61.2	77.7	49.1	62.1	76.9	NA
<i>Mortality 2001</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>	<i>Whites</i>	<i>Blacks</i>	<i>Other</i>
MD Deaths (#)	2,858	1,598	1,260	2,177	649	32
MD Mortality Rate*	56.8	75.2	43.7	56.6	62.7	20.8
U.S. Mortality Rate*	55.2	75.1	40.9	55.5	62.6	NA

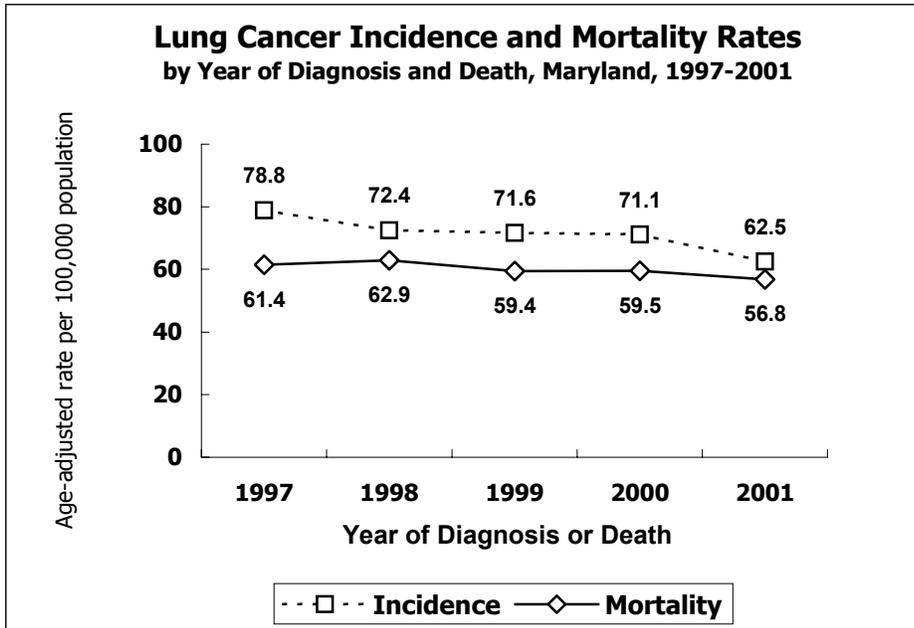
\* Rates are per 100,000 and are age-adjusted to 2000 U.S. standard population

NA: Data were not available

Source: Maryland Cancer Registry, 2001

Maryland Division of Health Statistics, 2001

SEER, National Cancer Institute, 2001

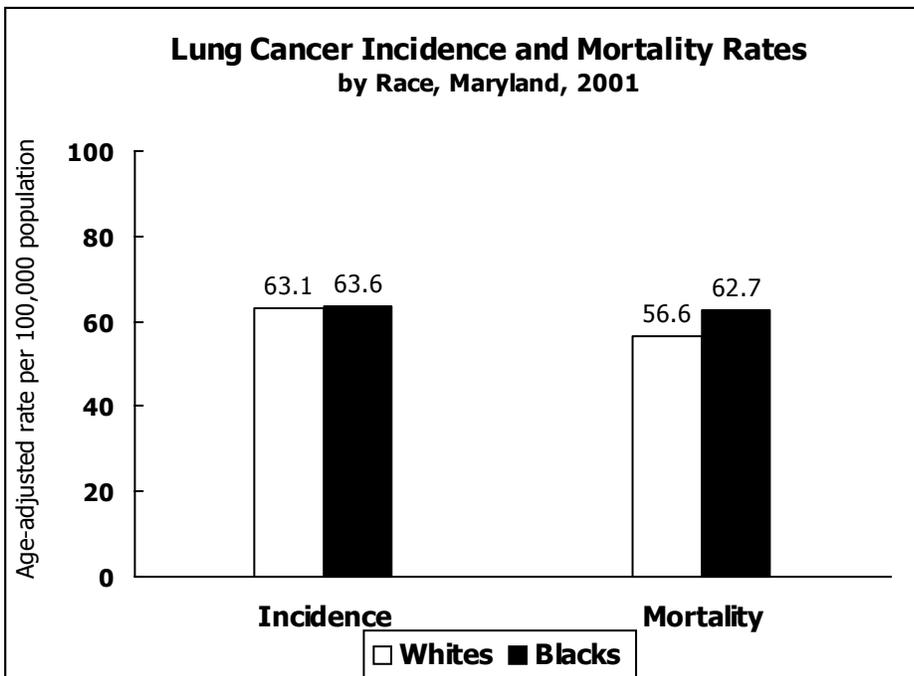


### Trends

Lung cancer incidence rates have decreased an average of 4.7% per year from 1997 to 2001 in Maryland.

Lung cancer mortality began to decline in the 1990's. In Maryland, lung cancer death rates have decreased an average of 2.1% per year from 1997 to 2001.

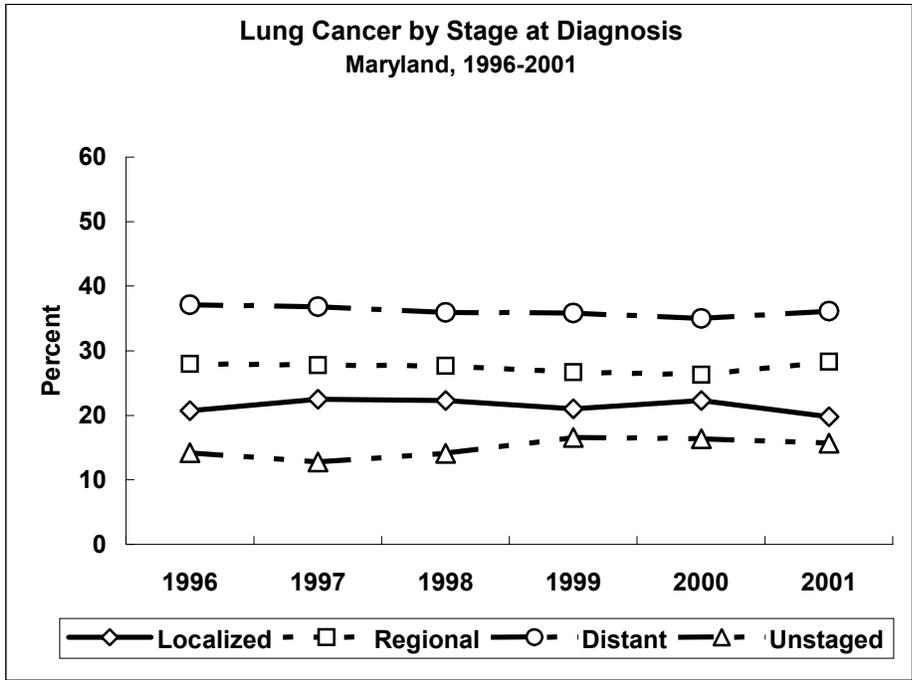
Rates are age-adjusted to 2000 U.S. standard population  
 Maryland Cancer Registry, 1997-2001  
 Maryland Division of Health Statistics, 1997-2001



### Race-Specific Rates

Lung cancer incidence and mortality rates are similar among whites and blacks in Maryland.

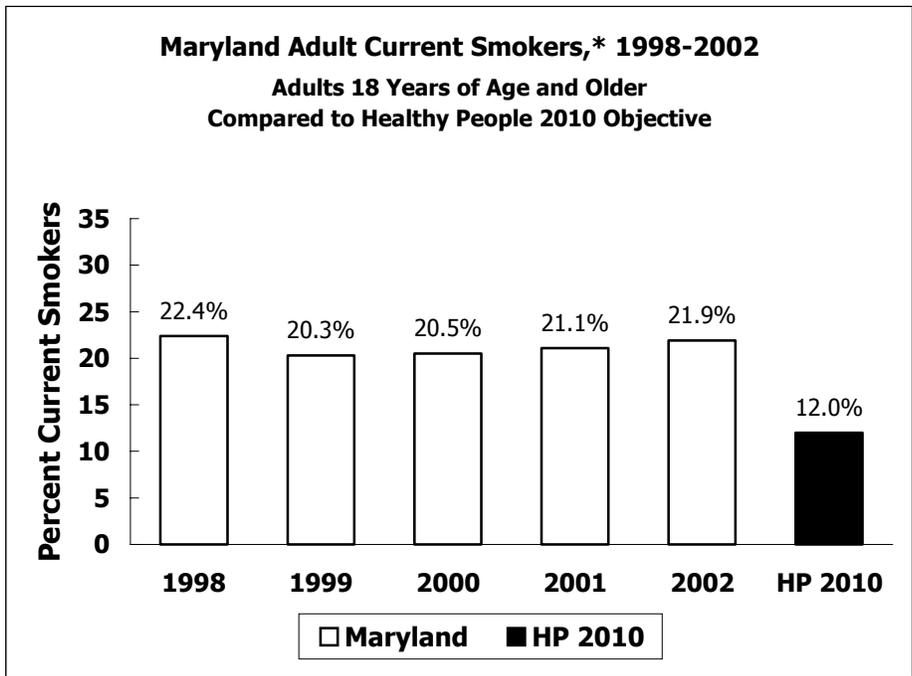
Rates are age-adjusted to 2000 U.S. standard population  
 Maryland Cancer Registry, 2001  
 Maryland Division of Health Statistics, 2001



Maryland Cancer Registry, 1996-2001

**Stage at Diagnosis**

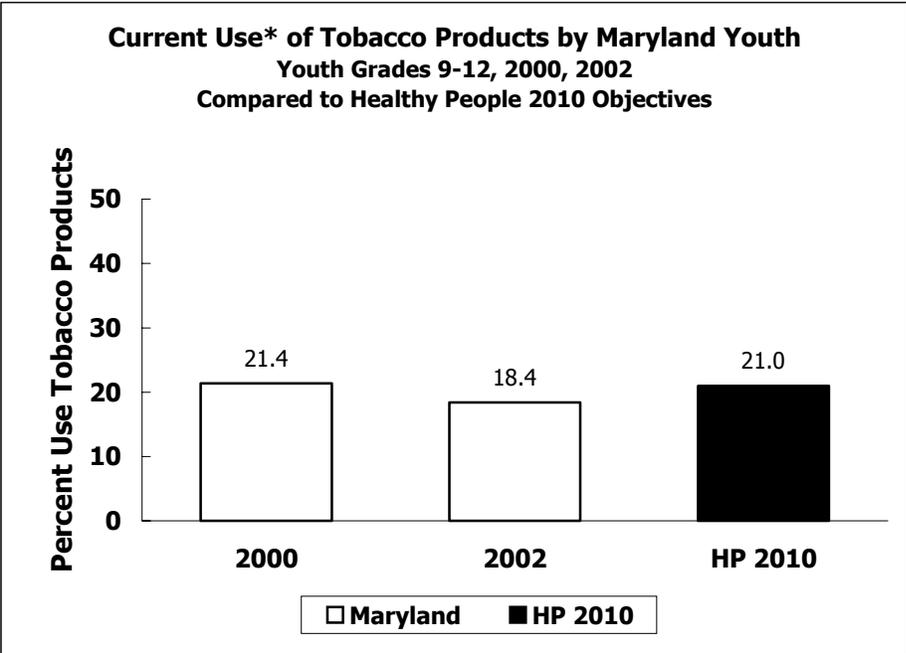
The majority of lung cancer cases are diagnosed at the distant stage. In 2001, 36.1% of lung cancer cases were diagnosed at the distant stage.



**Healthy People 2010 Objectives**

The Healthy People 2010 objective is to reduce the percentage of adults (≥18 years) who are current smokers to 12%. The percent of adult smokers in Maryland has remained relatively stable since 1998.

\* Current Smoker is defined as a person 18 years and older who smokes cigarettes every day or some days  
 BRFSS, Maryland DHMH Office of Surveillance and Assessment, 1998-2002  
 Healthy People 2010, U.S. Department of Health and Human Services, 2000



**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 21.0%.

Based on the Maryland Youth Tobacco Survey (MYTS), 18.4% of Maryland youth currently use tobacco products, so Maryland has surpassed the Healthy People 2010 objective.

\* 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, DHMH Center for Health Promotion, Education, and Tobacco Use Prevention, 2000, 2002

**Public Health Evidence (quoted from National Cancer Institute [NCI], Physician Data Query [PDQ], 2/20/2004 and 7/13/2004 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 with increased lung cancer risk. Smoking avoidance and cessation would result in decreased mortality from primary lung cancers. A 30-50% reduction of lung cancer mortality has been noted after 10 years of smoking cessation. Long-term smoking avoidance results in decreased incidence of second primary lung tumors.

Environmental, or second-hand, tobacco smoke contains the same components as inhaled mainstream smoke, in lower concentrations. Environmental smoke is also implicated in causing lung cancer. Other risk factors for lung cancer include asbestos and radon exposure; asbestos exposure combined with smoking increases the risk of lung cancer more than either exposure alone.

**Chemoprevention**

Pharmacological doses of beta-carotene supplementation (> 20 mg/day) *increase* lung cancer incidence and mortality among relatively high-intensity smokers (one or more packs per day).

**Screening**

The United States Preventive Services Task Force (USPSTF) concludes 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, 2001**

Jurisdiction	Total	Gender		Race			
		Males	Females	Whites	Blacks	Other	Unknown
Maryland	3,190	1,713	1,477	2,433	694	50	13
Allegany	76	43	33	76	0	0	0
Anne Arundel	307	159	148	281	s	<6	0
Baltimore City	570	300	270	s	327	0	<6
Baltimore County	592	320	272	522	62	s	<6
Calvert	46	30	16	s	<6	0	0
Caroline	21	13	8	s	<6	0	0
Carroll	76	43	33	76	0	0	0
Cecil	55	32	23	s	<6	0	0
Charles	65	46	19	48	s	<6	<6
Dorchester	30	14	16	20	10	0	0
Frederick	99	65	34	91	s	<6	0
Garrett	22	14	8	22	0	0	0
Harford	145	82	63	132	s	<6	0
Howard	80	36	44	58	s	<6	0
Kent	19	10	9	s	<6	0	0
Montgomery	306	143	163	255	30	s	<6
Prince George's	279	151	128	132	136	s	<6
Queen Anne's	32	16	16	26	<6	<6	0
Saint Mary's	40	21	19	36	<6	0	<6
Somerset	27	15	12	s	<6	0	0
Talbot	37	19	18	31	6	0	0
Washington	112	64	48	107	<6	0	<6
Wicomico	83	38	45	70	s	<6	0
Worcester	70	38	32	59	8	<6	<6
Unknown	<6	<6	0	0	<6	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, 2001

**Table 13.**  
**Lung and Bronchus Cancer Age-Adjusted Incidence Rates\***  
**by Jurisdiction, Gender and Race, Maryland, 2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	62.5	78.3	51.2	63.1	63.6	27.7
Allegany	76.9	102.2	59.2	78.6	0.0	0.0
Anne Arundel	69.3	84.1	60.4	72.0	**	**
Baltimore City	87.2	113.1	70.3	87.9	85.7	0.0
Baltimore County	69.1	86.8	55.9	70.7	70.2	**
Calvert	77.8	124.1	**	83.0	**	0.0
Caroline	**	**	**	**	**	0.0
Carroll	53.4	72.8	41.5	55.0	0.0	0.0
Cecil	68.5	86.3	**	70.4	**	0.0
Charles	69.2	113.9	**	66.4	**	**
Dorchester	74.1	**	**	**	**	0.0
Frederick	58.4	87.5	36.0	56.9	**	**
Garrett	**	**	0.0	**	0.0	0.0
Harford	72.0	94.4	56.1	71.1	**	**
Howard	43.9	47.7	43.3	40.8	**	**
Kent	**	**	**	**	**	0.0
Montgomery	36.0	38.4	33.4	37.3	33.0	**
Prince George's	46.6	59.2	37.8	48.6	45.7	**
Queen Anne's	72.7	**	**	65.6	**	**
Saint Mary's	55.0	**	**	58.9	**	0.0
Somerset	99.6	**	**	**	**	0.0
Talbot	74.2	**	**	68.3	**	0.0
Washington	76.8	100.7	60.9	75.7	**	0.0
Wicomico	95.2	100.1	91.2	100.4	**	**
Worcester	99.5	119.6	87.3	96.7	**	**

\* 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, 2001

**Table 14.**  
**Number of Lung and Bronchus Cancer Deaths**  
**by Jurisdiction, Gender and Race, Maryland, 2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	2,858	1,598	1,260	2,177	649	32
Allegany	40	23	17	40	0	0
Anne Arundel	270	148	122	251	s	<6
Baltimore City	487	266	221	s	284	<6
Baltimore County	570	302	268	500	s	<6
Calvert	36	20	16	s	<6	0
Caroline	25	15	10	s	<6	0
Carroll	77	45	32	s	<6	0
Cecil	58	34	24	s	<6	0
Charles	53	33	20	38	s	<6
Dorchester	30	18	12	22	8	0
Frederick	76	46	30	69	7	0
Garrett	21	s	s	21	0	0
Harford	116	71	45	108	8	0
Howard	82	54	28	62	s	<6
Kent	23	12	11	s	<6	0
Montgomery	272	139	133	229	30	13
Prince George's	307	176	131	146	155	6
Queen Anne's	23	13	10	18	<6	<6
Saint Mary's	36	22	14	s	<6	0
Somerset	16	s	<6	s	<6	0
Talbot	30	17	13	s	<6	0
Washington	87	48	39	s	<6	0
Wicomico	68	45	23	57	11	0
Worcester	55	25	30	46	9	0

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Source: Maryland Division of Health Statistics, 2001

**Table 15.  
Lung and Bronchus Cancer Age-Adjusted Mortality Rates\*  
by Jurisdiction, Gender and Race, Maryland, 2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	56.8	75.2	43.7	56.6	62.7	20.8
Allegany	39.5	**	**	40.3	0.0	0.0
Anne Arundel	63.9	82.7	51.0	67.2	**	**
Baltimore City	74.3	101.1	56.7	74.1	75.0	**
Baltimore County	66.0	83.8	53.3	66.2	79.6	**
Calvert	61.4	**	**	66.1	**	0.0
Caroline	**	**	**	**	**	0.0
Carroll	56.0	80.3	40.3	56.8	**	0.0
Cecil	74.1	99.0	**	73.2	**	0.0
Charles	59.0	90.3	**	54.7	**	**
Dorchester	72.6	**	**	**	**	0.0
Frederick	45.5	65.5	32.0	44.0	**	0.0
Garrett	**	**	**	**	0.0	0.0
Harford	59.5	86.9	41.0	59.8	**	0.0
Howard	46.7	72.0	29.2	43.7	**	**
Kent	**	**	**	**	**	0.0
Montgomery	32.6	39.1	27.1	33.8	36.7	**
Prince George's	53.2	71.3	40.3	54.5	55.4	**
Queen Anne's	**	**	**	**	**	**
Saint Mary's	51.1	**	**	57.5	**	0.0
Somerset	**	**	**	**	**	0.0
Talbot	56.6	**	**	62.2	**	0.0
Washington	59.2	78.6	46.8	59.6	**	0.0
Wicomico	78.3	123.2	**	81.7	**	0.0
Worcester	77.8	**	78.2	76.1	**	0.0

\* Rates are per 100,000 and 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 Division of Health Statistics, 2001

**Table 16.  
Number of Lung and Bronchus Cancer Cases  
by Jurisdiction, Gender and Race, Maryland, 1997-2001**

Jurisdiction	Total	Gender		Race			
		Males	Females	Whites	Blacks	Others	Unknown
Maryland	17,288	9,526	7,759	13,323	3,674	249	42
Allegany	392	232	160	384	<6	<6	<6
Anne Arundel	1,671	889	781	1,483	172	s	<6
Baltimore City	3,055	1,678	1,377	1,400	1,629	18	8
Baltimore County	3,182	1,706	1,475	2,832	318	s	<6
Calvert	229	141	88	197	s	<6	0
Caroline	128	74	54	105	s	<6	0
Carroll	426	261	165	410	s	<6	0
Cecil	318	180	138	307	s	<6	0
Charles	329	202	127	260	63	<6	<6
Dorchester	178	107	71	134	44	0	0
Frederick	500	319	181	455	39	<6	<6
Garrett	108	69	39	s	<6	0	0
Harford	708	391	317	664	s	<6	0
Howard	483	242	241	397	72	s	<6
Kent	108	59	49	93	s	<6	0
Montgomery	1,815	919	895	1,517	190	102	6
Prince George's	1,743	998	745	912	779	45	7
Queen Anne's	157	85	72	137	s	<6	0
Saint Mary's	256	145	111	226	27	<6	<6
Somerset	138	86	52	101	s	<6	0
Talbot	162	86	76	142	s	<6	0
Washington	511	273	238	494	s	0	<6
Wicomico	356	184	172	291	s	<6	0
Worcester	307	181	126	253	47	<6	<6
Unknown	28	19	9	22	<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, 1997-2001

**Table 17.**  
**Lung and Bronchus Cancer Age-Adjusted Incidence Rates\***  
**by Jurisdiction, Gender and Race, Maryland, 1997-2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Others
Maryland	70.4	91.0	55.7	70.8	72.4	34.8
Allegany	78.2	109.8	54.5	78.2	**	**
Anne Arundel	79.5	97.5	67.2	80.0	82.1	**
Baltimore City	92.3	126.2	70.7	99.1	87.4	**
Baltimore County	75.2	95.6	60.9	75.8	76.9	29.0
Calvert	80.1	114.6	56.1	80.4	81.3	**
Caroline	81.2	107.7	62.9	78.0	**	**
Carroll	63.4	91.7	44.0	62.8	**	**
Cecil	83.8	104.6	67.9	84.5	**	**
Charles	75.5	105.6	53.1	76.7	71.7	**
Dorchester	87.4	120.7	63.8	84.2	100.2	0.0
Frederick	63.0	93.4	40.6	60.9	110.3	**
Garrett	62.5	91.0	41.4	62.2	**	0.0
Harford	75.8	98.5	60.6	77.1	66.6	**
Howard	58.4	67.8	52.3	59.4	62.9	**
Kent	77.2	94.8	61.1	78.0	**	**
Montgomery	45.2	53.8	38.8	46.4	48.0	31.2
Prince George's	60.9	82.1	46.0	67.6	55.3	40.1
Queen Anne's	73.4	82.5	64.4	72.4	**	**
Saint Mary's	75.2	91.9	61.8	78.8	56.1	**
Somerset	104.0	144.2	71.5	102.7	102.1	**
Talbot	63.5	77.2	53.0	62.8	**	**
Washington	71.1	88.0	59.5	70.8	**	0.0
Wicomico	84.2	103.3	70.9	85.7	80.9	**
Worcester	91.4	118.3	68.9	87.1	111.6	**

\* 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, 1997-2001

**Table 18.**  
**Number of Lung and Bronchus Cancer Deaths**  
**by Jurisdiction, Gender and Race, Maryland, 1997-2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	14,438	8,204	6,234	11,050	3,246	142
Allegany	302	185	117	295	7	0
Anne Arundel	1,355	757	598	1,216	130	9
Baltimore City	2,697	1,571	1,126	1,182	1,505	10
Baltimore County	2,688	1,462	1,226	2,437	239	12
Calvert	192	110	82	165	s	<6
Caroline	121	73	48	99	22	0
Carroll	356	210	146	348	8	0
Cecil	269	163	106	258	11	0
Charles	293	162	131	236	51	6
Dorchester	136	87	49	101	35	0
Frederick	417	283	134	382	s	<6
Garrett	92	62	30	92	0	0
Harford	559	319	240	519	s	<6
Howard	409	223	186	335	64	10
Kent	83	52	31	74	9	0
Montgomery	1,417	730	687	1,204	157	56
Prince George's	1,556	890	666	806	719	31
Queen Anne's	129	69	60	104	s	<6
Saint Mary's	169	105	64	148	s	<6
Somerset	109	73	36	77	32	0
Talbot	117	73	44	103	14	0
Washington	428	235	193	422	6	0
Wicomico	315	180	135	256	59	0
Worcester	229	130	99	191	38	0

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Source: Maryland Division of Health Statistics, 1997-2001

**Table 19.**  
**Lung and Bronchus Cancer Age-Adjusted Mortality Rates\***  
**by Jurisdiction, Gender and Race, Maryland, 1997-2001**

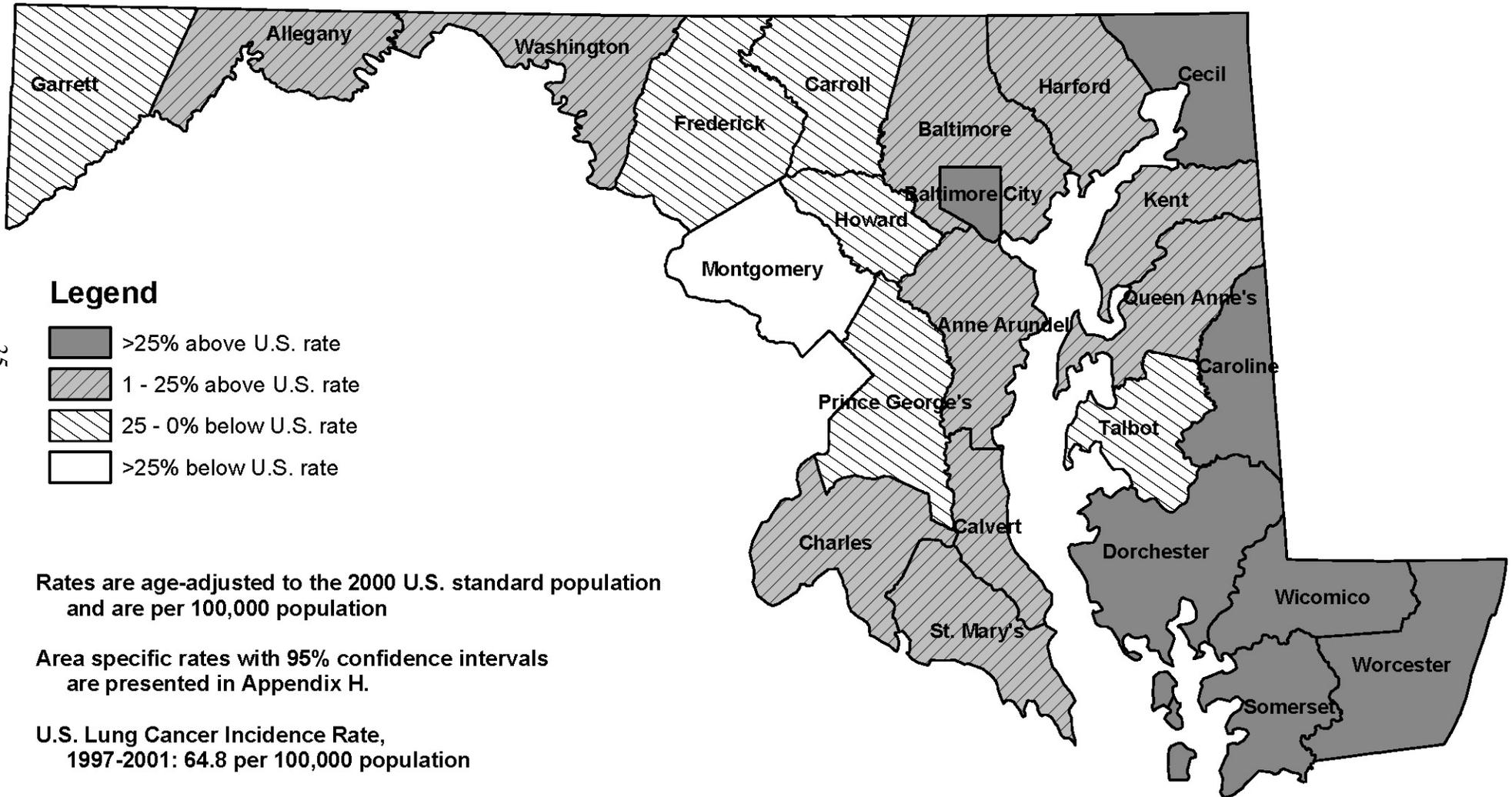
Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	59.4	80.8	44.6	58.8	66.2	22.1
Allegany	59.7	89.4	39.0	59.3	**	0.0
Anne Arundel	66.4	87.2	52.2	67.3	66.5	**
Baltimore City	81.2	119.1	56.7	81.7	81.2	**
Baltimore County	63.1	83.4	49.5	64.4	60.4	**
Calvert	67.6	86.3	53.1	68.0	66.2	**
Caroline	76.8	107.0	54.2	73.6	**	0.0
Carroll	53.6	76.3	38.3	53.8	**	0.0
Cecil	71.7	97.9	52.2	71.8	**	0.0
Charles	69.9	91.0	56.0	71.9	61.8	**
Dorchester	67.0	99.4	43.9	62.9	80.9	0.0
Frederick	53.0	84.5	30.1	51.5	93.0	**
Garrett	52.8	80.3	31.4	53.0	0.0	0.0
Harford	61.0	83.9	46.1	61.3	64.6	**
Howard	51.2	66.8	41.1	51.1	64.4	**
Kent	60.3	87.6	41.4	63.6	**	0.0
Montgomery	35.6	44.3	29.4	36.7	42.1	18.6
Prince George's	56.3	77.8	42.2	59.8	55.6	28.7
Queen Anne's	60.9	67.5	53.9	55.5	**	**
Saint Mary's	50.8	69.9	35.9	53.0	**	**
Somerset	82.0	125.7	49.6	77.9	94.7	0.0
Talbot	45.3	66.8	29.7	45.8	**	0.0
Washington	59.3	78.2	46.3	60.0	**	0.0
Wicomico	74.8	102.8	55.8	75.7	74.3	0.0
Worcester	66.4	83.6	52.7	63.9	88.3	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 Division of Health Statistics, 1997-2001

# Maryland Lung Cancer Incidence Rates by Geographical Area: Comparison to U.S. Rates, 1997-2001



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Source: Maryland Cancer Registry, 1997-2001

# Maryland Lung Cancer Mortality Rates by Geographical Area: Comparison to U.S. Rates, 1997-2001

