

## B. Colon and Rectum Cancer

### Incidence (New Cases)

Cancer of the colon or rectum is often referred to as colorectal cancer. There were 2,665 new cases of colorectal cancer diagnosed among Maryland residents in 2001. Colorectal cancer cases represent 11.6% of 2001 new cancers. The age-adjusted colorectal cancer incidence rate in Maryland for 2001 is 52.5 per 100,000 population (50.6-54.6, 95% C.I.) which is similar to the 2001 U.S. SEER age-adjusted colorectal cancer incidence rate of 51.8 per 100,000 population.

### Mortality (Deaths)

A total of 1,079 persons died of colorectal cancer in 2001 in Maryland. Colorectal cancer accounts for 10.6% of all cancer deaths and is the second leading cause of cancer deaths in Maryland. The age-adjusted colorectal cancer mortality rate in Maryland is 21.6 per 100,000 population (20.3-23.0, 95% C.I.). This rate is statistically significantly higher than the 2001 U.S. colorectal cancer mortality rate of 20.0 per 100,000 population. Maryland has the 5<sup>th</sup> highest colorectal cancer mortality rate for the period 1997-2001 among the states and the District of Columbia for the period 1997-2001.

**Table 20.**  
**Colorectal 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 (#)	2,665	1,278	1,385	1,987	541	90
Incidence Rate*	52.5	59.2	47.4	51.5	51.8	50.0
U.S. SEER Rate*	51.8	60.6	44.8	51.1	61.4	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 (#)	1,079	526	553	776	278	25
MD Mortality Rate*	21.6	26.0	18.7	20.1	28.4	**
U.S. Mortality Rate*	20.0	24.2	17.0	19.5	27.6	NA

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

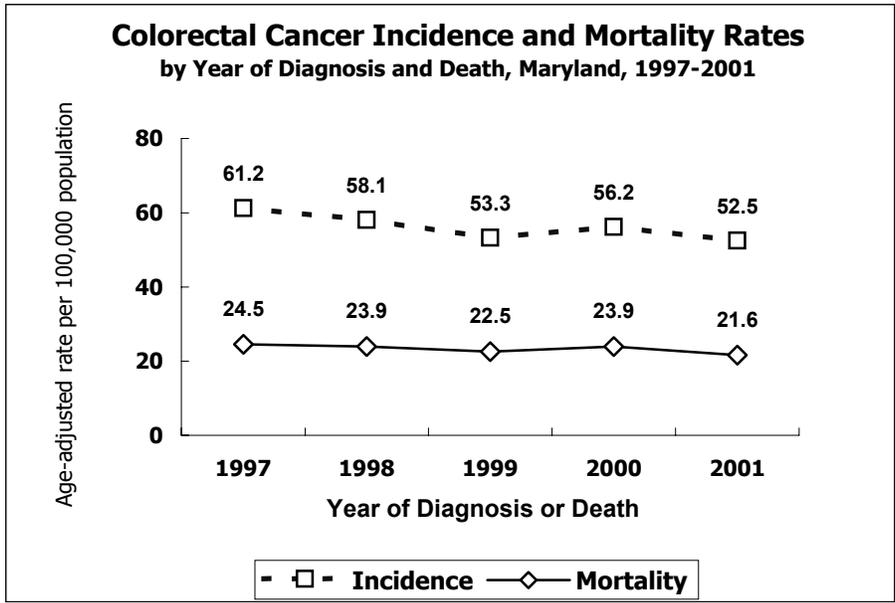
\*\* Rates based on cells with 25 or fewer non-zero cases are not presented per DHMH/MCR Data Use Policy

NA: Data were not available

Source: Maryland Cancer Registry, 2001

Maryland Division of Health Statistics, 2001

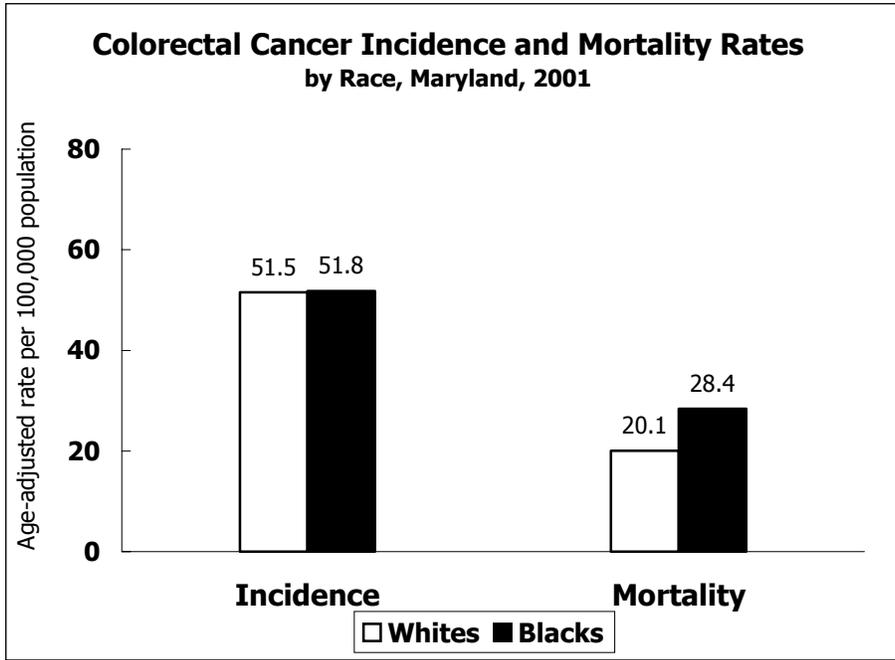
SEER, National Cancer Institute, 2001



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

**Trends**

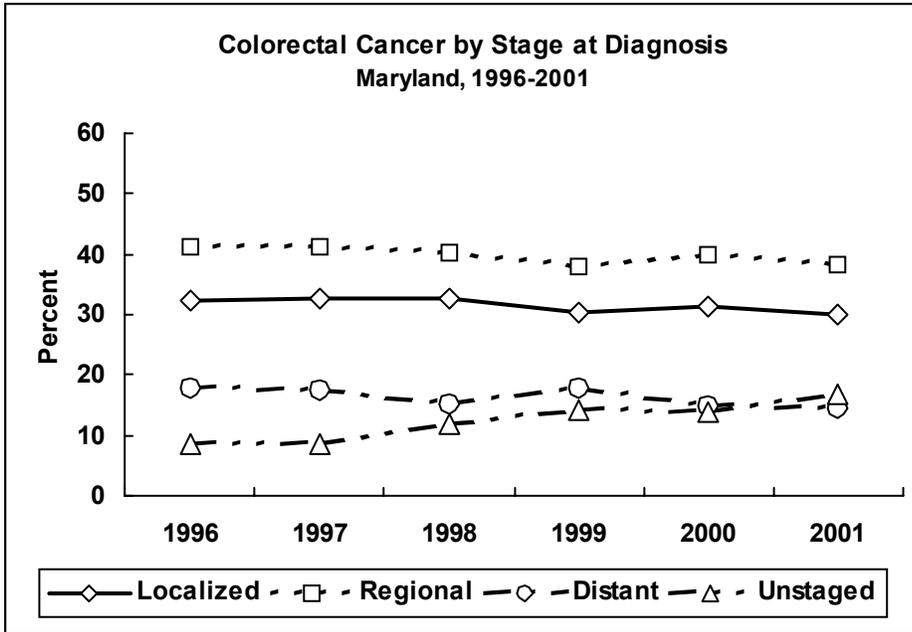
Both incidence and mortality rates for colorectal cancer have been declining. Incidence rates dropped an average of 3.3% per year from 1997 to 2001, and mortality rates dropped an average of 2.5% per year.



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

**Race-Specific Rates**

Although blacks have similar colorectal cancer incidence rates compared to whites, they have statistically significantly higher colorectal cancer mortality rates than whites.

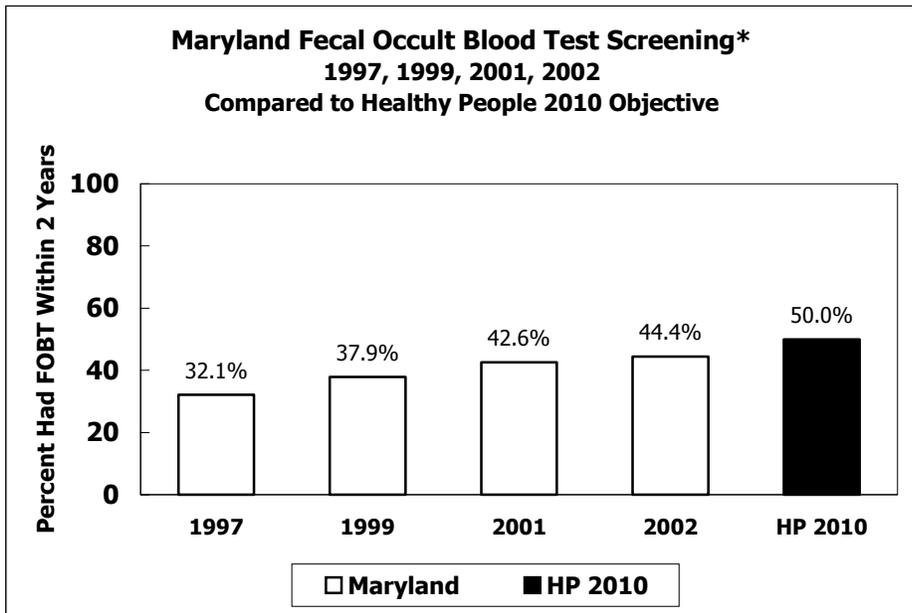


Maryland Cancer Registry, 1996-2001

**Stage at Diagnosis**

In 2001, 30.1% of colorectal cancers were diagnosed at the localized (early) stage in Maryland, compared with 32.4% in 1996.

The percent of unstaged colorectal cancer has increased from 8.6% in 1996 to 16.9% in 2001.

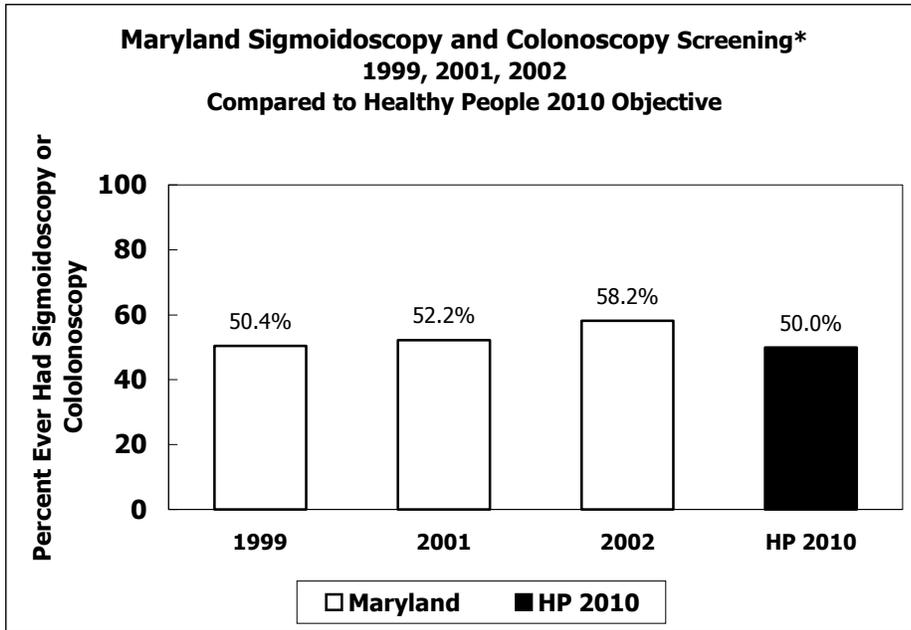


**Healthy People 2010 Objectives**

One Healthy People 2010 objective for colorectal cancer is to increase to 50% the proportion of adults 50 years and older who received a fecal occult blood test (FOBT) in the preceding 2 years.

\* Adults 50 years of age and older having FOBT within the preceding 2 years  
 BRFSS, Maryland DHMH Office of Surveillance and Assessment, 1997, 1999, 2001  
 Maryland Cancer Survey, DHMH Center for Cancer Surveillance and Control, 2002  
 Healthy People 2010, U.S. Department of Health and Human Services, 2000

Since 1997, there has been an increasing trend of FOBT use. Of Maryland adults 50 years and older surveyed in 2002, 44.4% reported having had a home test kit for FOBT within the preceding 2 years.



**Healthy People 2010 Objectives**

The second Healthy People 2010 objective for colorectal cancer is to increase to 50% the proportion of adults 50 years and older who *ever* received a sigmoidoscopy or colonoscopy.

\* Adults 50 years of age and older ever having had sigmoidoscopy or colonoscopy  
 BRFSS, Maryland DHMH Office of Surveillance and Assessment, 1997, 1999, 2001  
 Maryland Cancer Survey, DHMH Center for Cancer Surveillance and Control, 2002  
 Healthy People 2010, U.S. Department of Health and Human Services, 2000

In the 2002 Maryland Cancer Survey, 58.2% of Maryland adults age 50 and older reported having *ever* had a sigmoidoscopy or colonoscopy, continuing a steady increase that, in 1999, 2001, and 2002, exceeded the Healthy People 2010 objective.

**Public Health Evidence (quoted from NCI, PDQ, 5/26/2004 and 7/13/2004 and the USPSTF 7/2002)**

**Screening**

The United States Preventive Services Task Force (USPSTF) strongly recommends that clinicians screen men and women 50 years of age and older for colorectal cancer. The USPSTF found fair to good evidence that several screening methods (e.g., fecal occult blood testing [FOBT], sigmoidoscopy, colonoscopy, double contrast barium enema [DCBE]) are effective in reducing mortality from colorectal cancer. They concluded that the benefits from screening substantially outweigh potential harms, but the quality of evidence, magnitude of benefit and potential harms vary with each method. They found that there were insufficient data to determine which strategy is best in terms of the balance of benefits and potential harms or cost-effectiveness. The USPSTF found insufficient evidence that newer technologies, such as computer tomographic colography (“virtual colonoscopy”), are effective in improving health outcome.

**Prevention**

Studies suggest that colorectal cancer results from complex interactions between inherited susceptibility and environmental factors. It is hypothesized that adenomatous polyps (adenomas) are precursors for the vast majority of colorectal cancers. Colonoscopy with removal of adenomas may reduce the risk of colorectal cancer. Epidemiological, experimental (animal), and clinical studies suggest that diets high in total fat, protein, calories, alcohol, and meat (both red and white meat) and low in calcium and folate are associated with an increased incidence of colorectal cancer. Cereal fiber supplementation and diets low in fat and high in fiber, fruits, and vegetables, however, do not reduce the rate of adenoma recurrence over a 3-year to 4-year period. Cigarette smoking is associated with an increased tendency to form adenomas and to develop colorectal cancer.

**Chemoprevention**

Nonsteroidal anti-inflammatory drugs (NSAIDs) including proxicam, sulindac, and aspirin may prevent adenoma formation or cause adenomatous polyps to regress in individuals with prior colorectal cancer or adenomatous polyps and in the setting of familial adenomatous polyposis. The potential for the use of NSAIDs as a primary prevention measure is being studied. However, there are several unresolved issues that mitigate against making general recommendations for their use. These include a paucity of knowledge about the proper dose and duration of these agents, and concern about whether the potential preventive benefits such as a reduction in the frequency or intensity of screening or surveillance could counterbalance such long-term risks as gastrointestinal ulceration and hemorrhagic stroke for the average-risk individual.

**Public Health Intervention for Colorectal Cancer (DHMH Colorectal Cancer Medical Advisory Committee)**

Early detection of colorectal cancer:

- For those at average risk, screen with colonoscopy, or with FOBT (three samples) and flexible sigmoidoscopy.
- For those unable or unwilling to undergo colonoscopy or sigmoidoscopy—FOBT (three samples) is an alternative initial screening method.
- DCBE is reserved as an alternative for situations where the patient and the provider discuss and determine that DCBE is indicated for the individual.

**Table 21.**  
**Number of Colorectal Cancer Cases**  
**by Jurisdiction, Gender and Race, Maryland, 2001**

Jurisdiction	Total	Gender		Race			
		Males	Females	Whites	Blacks	Other	Unknown
Maryland	2,665	1,278	1,385	1,987	541	90	47
Allegany	55	23	32	s	<6	0	0
Anne Arundel	241	124	117	205	31	<6	<6
Baltimore City	347	148	198	176	163	s	<6
Baltimore County	521	248	273	422	73	13	13
Calvert	36	15	20	30	<6	0	<6
Caroline	28	18	10	s	<6	0	0
Carroll	85	37	48	79	<6	<6	0
Cecil	44	18	26	44	0	0	0
Charles	46	26	20	31	s	<6	<6
Dorchester	25	11	14	18	7	0	0
Frederick	109	58	51	99	<6	<6	<6
Garrett	17	6	11	17	0	0	0
Harford	106	51	55	92	9	<6	<6
Howard	92	43	49	64	21	7	0
Kent	14	<6	s	s	<6	0	0
Montgomery	336	171	165	250	37	34	15
Prince George's	259	121	138	107	131	12	9
Queen Anne's	25	11	14	22	<6	0	<6
Saint Mary's	46	25	21	39	7	0	0
Somerset	11	s	<6	s	<6	0	0
Talbot	38	21	17	s	<6	0	0
Washington	85	38	47	s	<6	0	0
Wicomico	53	23	30	42	11	0	0
Worcester	46	30	16	33	7	6	0
Unknown	0	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, 2001

**Table 22.**  
**Colorectal Cancer Age-Adjusted Incidence Rates\***  
**by Jurisdiction, Gender and Race, Maryland, 2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	52.5	59.2	47.4	51.5	51.8	50.0
Allegany	57.4	**	59.7	57.7	**	0.0
Anne Arundel	55.9	64.8	48.9	54.1	72.4	**
Baltimore City	52.6	57.7	49.1	63.7	44.7	**
Baltimore County	60.4	67.9	54.2	56.1	80.1	**
Calvert	60.6	**	**	61.1	**	0.0
Caroline	88.3	**	**	**	**	0.0
Carroll	60.2	65.0	59.3	57.6	**	**
Cecil	55.0	**	59.5	57.2	0.0	0.0
Charles	50.8	57.4	**	41.7	**	**
Dorchester	**	**	**	**	**	0.0
Frederick	64.9	79.9	53.8	62.9	**	**
Garrett	**	**	**	**	0.0	0.0
Harford	55.2	60.9	50.6	52.0	**	**
Howard	48.5	47.7	46.6	42.8	**	**
Kent	**	**	**	**	**	0.0
Montgomery	38.9	47.3	33.5	36.1	44.8	39.8
Prince George's	42.9	47.2	39.6	40.7	40.2	**
Queen Anne's	**	**	**	**	**	0.0
Saint Mary's	64.2	**	**	63.8	**	0.0
Somerset	**	**	**	**	**	0.0
Talbot	71.8	**	**	70.9	**	0.0
Washington	57.5	58.9	53.4	57.7	**	0.0
Wicomico	61.4	**	56.7	60.1	**	0.0
Worcester	68.7	96.4	**	55.5	**	**

\* 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 23.**  
**Number of Colorectal Cancer Deaths**  
**by Jurisdiction, Gender and Race, Maryland, 2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	1,079	526	553	776	278	25
Allegany	14	8	6	s	<6	0
Anne Arundel	74	39	35	61	s	<6
Baltimore City	165	78	87	61	104	0
Baltimore County	207	91	116	179	s	<6
Calvert	13	s	<6	s	<6	0
Caroline	9	s	<6	s	<6	0
Carroll	36	15	21	s	<6	0
Cecil	25	11	14	25	0	0
Charles	22	14	8	16	<6	<6
Dorchester	11	s	<6	s	<6	0
Frederick	41	20	21	35	6	0
Garrett	6	<6	<6	6	0	0
Harford	41	17	24	s	<6	0
Howard	32	13	19	26	<6	<6
Kent	<6	<6	<6	<6	<6	0
Montgomery	130	70	60	105	16	9
Prince George's	142	72	70	58	78	6
Queen Anne's	11	<6	s	s	<6	0
Saint Mary's	16	10	6	s	<6	0
Somerset	<6	<6	<6	<6	<6	0
Talbot	7	<6	s	s	<6	0
Washington	31	19	12	s	<6	0
Wicomico	23	10	13	17	6	0
Worcester	15	9	6	s	<6	0

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Source: Maryland Division of Health Statistics, 2001

**Table 24.**  
**Colorectal Cancer Age-Adjusted Mortality Rates\***  
**by Jurisdiction, Gender and Race, Maryland, 2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Others
Maryland	21.6	26.0	18.7	20.1	28.4	**
Allegany	**	**	**	**	**	0.0
Anne Arundel	17.8	22.1	15.0	16.3	**	**
Baltimore City	24.8	30.9	21.2	21.0	29.2	0.0
Baltimore County	23.8	26.1	21.8	23.4	**	**
Calvert	**	**	**	**	**	0.0
Caroline	**	**	**	**	**	0.0
Carroll	25.0	**	**	23.7	**	0.0
Cecil	**	**	**	**	0.0	0.0
Charles	**	**	**	**	**	**
Dorchester	**	**	**	**	**	0.0
Frederick	24.8	**	**	22.7	**	0.0
Garrett	**	**	**	**	0.0	0.0
Harford	22.8	**	**	24.2	**	0.0
Howard	20.0	**	**	19.9	**	**
Kent	**	**	**	**	**	0.0
Montgomery	15.3	20.2	12.1	15.2	**	**
Prince George's	24.7	31.0	20.8	21.8	26.2	**
Queen Anne's	**	**	**	**	**	0.0
Saint Mary's	**	**	**	**	**	0.0
Somerset	**	**	**	**	**	0.0
Talbot	**	**	**	**	**	0.0
Washington	21.0	**	**	20.8	**	0.0
Wicomico	**	**	**	**	**	0.0
Worcester	**	**	**	**	**	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 25.  
Number of Colorectal Cancer Cases  
by Jurisdiction, Gender and Race, Maryland, 1997-2001**

Jurisdiction	Total	Gender		Race			
		Males	Females	Whites	Blacks	Others	Unknown
Maryland	13,536	6,688	6,845	10,048	2,873	383	232
Allegany	317	146	171	308	s	0	<6
Anne Arundel	1,113	574	539	934	129	17	33
Baltimore City	1,972	878	1,093	956	985	17	14
Baltimore County	2,491	1,220	1,271	2,118	303	35	35
Calvert	165	89	75	136	24	<6	<6
Caroline	121	67	54	105	16	0	0
Carroll	380	187	193	366	9	<6	<6
Cecil	210	113	97	201	s	<6	<6
Charles	228	114	114	167	51	<6	s
Dorchester	143	70	73	113	s	0	<6
Frederick	496	266	230	443	36	7	10
Garrett	95	45	50	s	0	0	<6
Harford	507	269	238	442	57	<6	<6
Howard	403	190	213	306	64	25	8
Kent	63	26	37	53	10	0	0
Montgomery	1,768	891	877	1,345	197	185	41
Prince George's	1,579	763	815	719	768	57	35
Queen Anne's	127	63	64	107	s	0	<6
Saint Mary's	230	121	109	186	39	<6	<6
Somerset	84	55	29	69	s	<6	0
Talbot	158	87	71	127	s	0	<6
Washington	429	209	220	416	s	<6	0
Wicomico	208	94	114	170	s	<6	0
Worcester	194	116	78	146	31	s	<6
Unknown	55	35	20	21	<6	s	23

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Source: Maryland Cancer Registry, 1997-2001

**Table 26.**  
**Colorectal Cancer Age-Adjusted Incidence Rates\***  
**by Jurisdiction, Gender and Race, Maryland, 1997-2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Others
Maryland	55.7	65.5	48.5	53.6	58.6	50.0
Allegany	63.5	71.2	58.1	63.0	**	0.0
Anne Arundel	53.7	63.7	46.7	51.3	60.9	**
Baltimore City	59.3	67.7	54.2	64.2	54.6	**
Baltimore County	58.9	69.7	50.7	56.5	74.5	43.7
Calvert	58.5	72.7	47.3	56.2	**	**
Caroline	76.7	96.6	60.0	77.6	**	0.0
Carroll	56.8	68.1	48.9	56.2	**	**
Cecil	56.0	65.2	47.8	56.0	**	**
Charles	54.5	59.3	49.4	50.7	63.7	**
Dorchester	71.0	83.5	62.8	70.8	68.1	0.0
Frederick	62.7	78.1	51.4	59.9	97.5	**
Garrett	55.6	58.9	51.8	55.2	0.0	0.0
Harford	55.7	69.3	46.3	52.9	95.9	**
Howard	47.9	52.6	44.1	44.7	63.2	**
Kent	45.0	43.3	47.0	44.6	**	0.0
Montgomery	43.5	53.0	36.9	40.5	50.4	49.6
Prince George's	57.4	66.4	51.1	54.7	57.1	50.7
Queen Anne's	62.9	69.8	58.3	60.8	**	0.0
Saint Mary's	69.4	77.3	62.2	66.2	85.4	**
Somerset	63.3	95.4	37.6	69.2	**	**
Talbot	62.7	78.9	51.3	57.1	99.3	0.0
Washington	59.7	67.5	52.3	59.5	**	**
Wicomico	49.9	51.7	45.8	50.6	44.8	**
Worcester	58.8	76.3	43.9	50.9	74.0	**

\* 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, 1997-2001

**Table 27.**  
**Number of Colorectal Cancer Deaths**  
**by Jurisdiction, Gender and Race, Maryland, 1997-2001**

Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	5,505	2,680	2,825	4,017	1,389	99
Allegany	131	68	63	s	<6	0
Anne Arundel	427	227	200	362	57	8
Baltimore City	957	437	520	395	556	6
Baltimore County	1,014	474	540	896	106	12
Calvert	68	35	33	52	s	<6
Caroline	48	24	24	41	7	0
Carroll	155	67	88	149	<6	<6
Cecil	85	42	43	79	<6	<6
Charles	108	60	48	83	s	<6
Dorchester	54	32	22	39	15	0
Frederick	185	93	92	167	s	<6
Garrett	45	22	23	45	0	0
Harford	190	93	97	169	s	<6
Howard	150	73	77	123	21	6
Kent	23	12	11	17	6	0
Montgomery	648	317	331	526	78	44
Prince George's	679	332	347	300	365	14
Queen Anne's	42	14	28	32	10	0
Saint Mary's	79	44	35	66	s	<6
Somerset	29	18	11	21	8	0
Talbot	59	36	23	40	19	0
Washington	157	77	80	s	<6	0
Wicomico	91	39	52	67	24	0
Worcester	81	44	37	67	14	0

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Source: Maryland Division of Health Statistics, 1997-2001

**Table 28.**  
**Colorectal Cancer Age-Adjusted Mortality Rates\***  
**by Jurisdiction, Gender and Race, Maryland, 1997-2001**

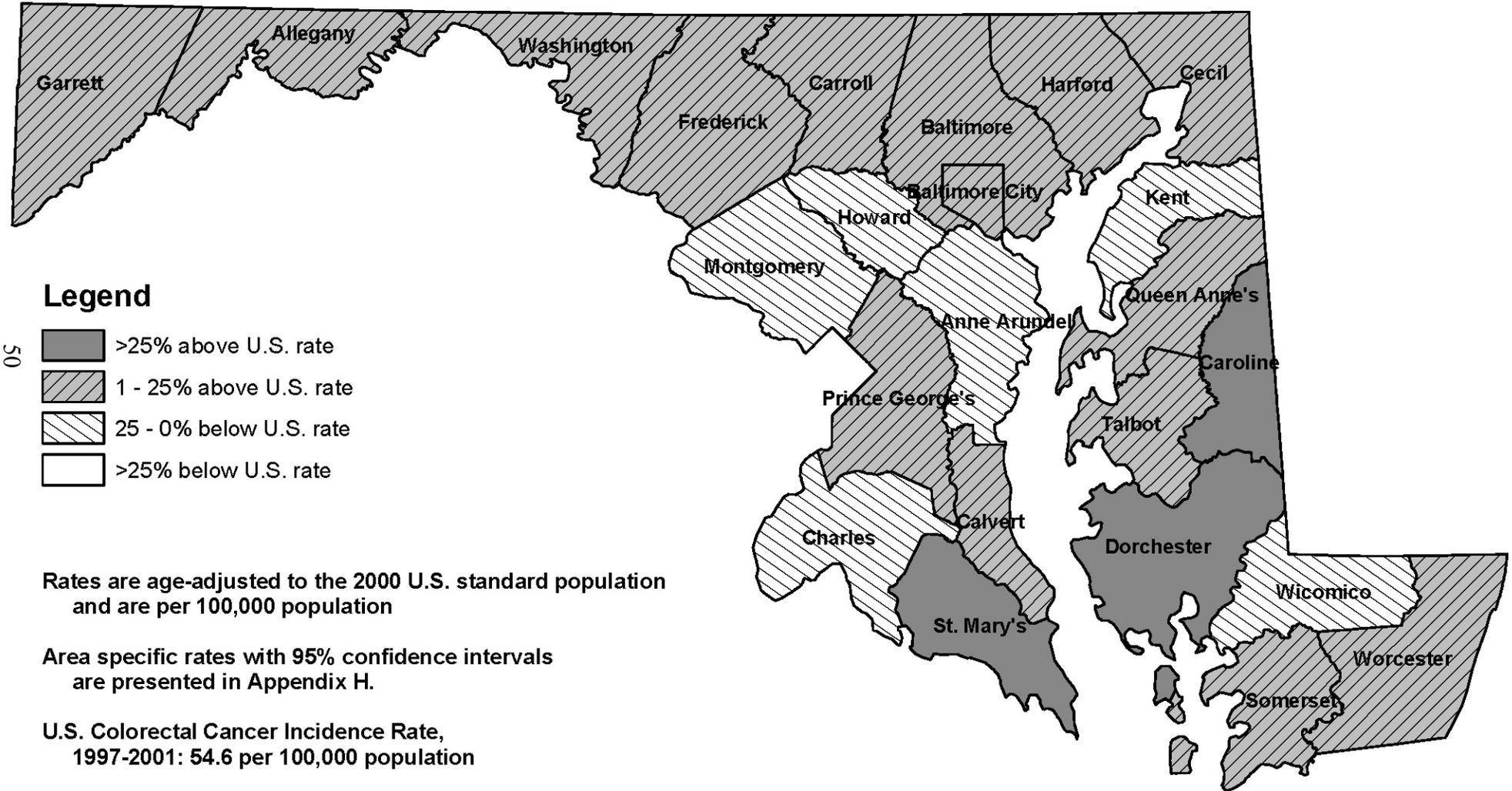
Jurisdiction	Total	Gender		Race		
		Males	Females	Whites	Blacks	Other
Maryland	23.1	27.8	19.8	21.6	30.0	14.8
Allegany	25.5	35.2	19.6	25.2	**	0.0
Anne Arundel	21.8	27.2	17.8	21.0	29.0	**
Baltimore City	28.8	34.4	25.2	25.5	31.6	**
Baltimore County	23.8	28.2	20.8	23.4	29.1	**
Calvert	25.6	33.0	21.0	23.3	**	**
Caroline	30.4	**	**	30.2	**	0.0
Carroll	23.2	25.5	21.7	23.0	**	**
Cecil	24.1	26.1	21.8	23.4	**	**
Charles	27.7	34.8	21.5	27.0	**	**
Dorchester	26.1	39.4	**	24.4	**	0.0
Frederick	24.1	30.5	20.5	23.1	**	**
Garrett	26.3	**	**	26.3	0.0	0.0
Harford	22.1	26.6	19.4	21.5	**	**
Howard	19.5	23.6	16.9	19.6	**	**
Kent	**	**	**	**	**	0.0
Montgomery	16.1	19.6	13.6	15.8	21.3	13.5
Prince George's	26.1	31.0	22.6	23.3	29.7	**
Queen Anne's	21.2	**	25.1	18.5	**	0.0
Saint Mary's	24.8	30.3	20.0	24.6	**	**
Somerset	21.9	**	**	**	**	0.0
Talbot	23.2	33.4	**	17.9	**	0.0
Washington	21.8	26.1	18.6	21.9	**	0.0
Wicomico	22.1	22.4	20.6	20.2	**	0.0
Worcester	25.2	31.3	20.2	24.3	**	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

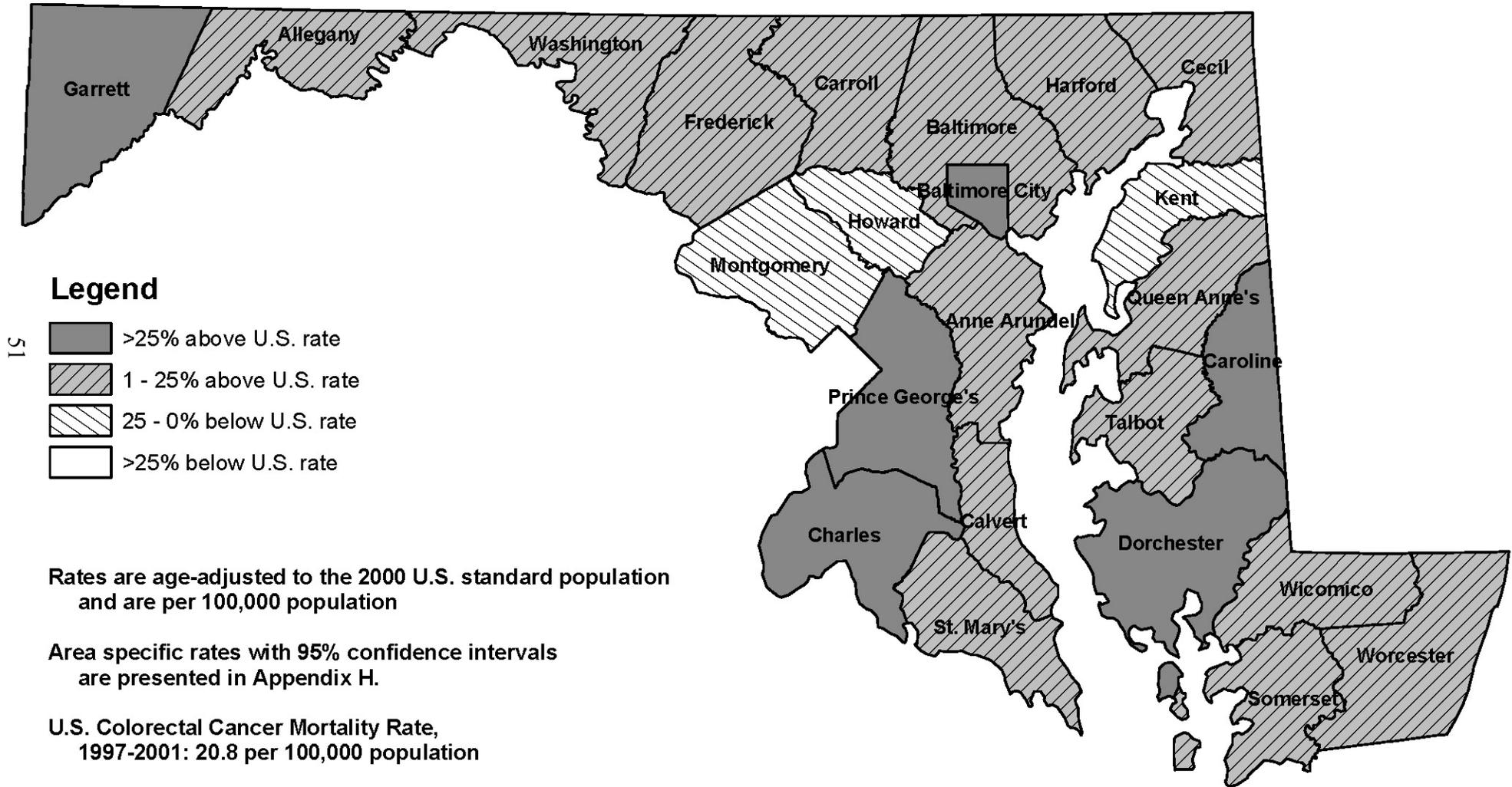
Source: Maryland Division of Health Statistics, 1997-2001

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



Source: Maryland Cancer Registry, 1997-2001

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



Source: Maryland Division of Health Statistics, 1997-2001