

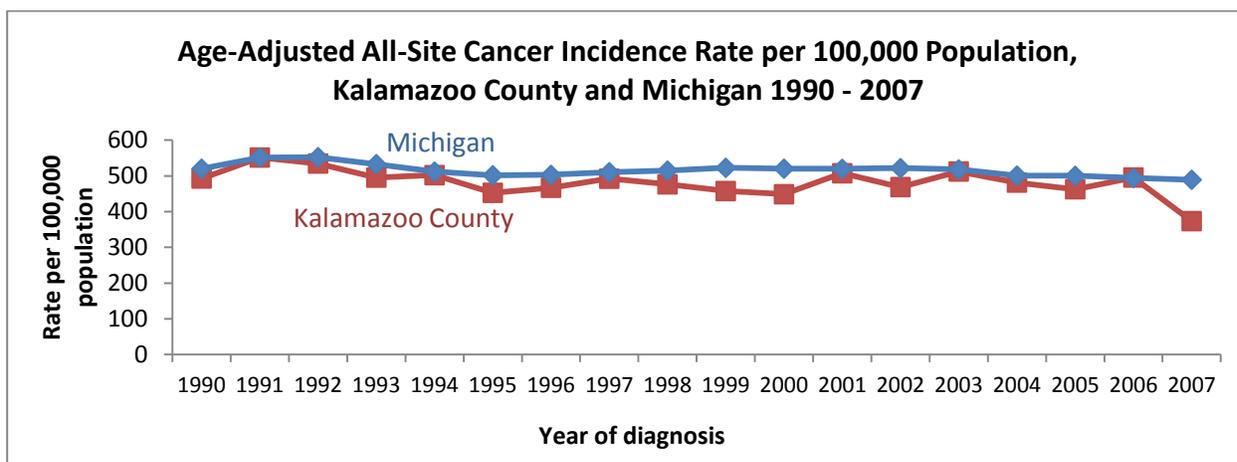
7.1 Cancer

Cancer is not a single disease; it is a diverse group of diseases that are characterized by uncontrolled growth and spread of abnormal cells. Cancers are named according to their primary site (part of the body in which the cancer started) regardless of whether or not cancer has spread to other parts of the body (metastasis). Compliance with cancer screening recommendations can reduce cancer mortality by increasing the proportion of cancer cases that are found at an early stage when cancer is most treatable. This section includes prevalence estimates of cancer screening tests among people in Kalamazoo County.

The risk factors associated with cancer vary by the location and type of cancer. It is estimated that approximately 30% of cancers could be prevented through smoking cessation and an additional 20-35% could be prevented through improved dietary habits such as decreasing the total percentage of calories from fat and by increasing daily consumption of fiber, fruits and vegetables.¹ Other modifiable risk factors can include sexual behavior and sunlight exposure. Older age, race, gender, genetic factors, and some chemical exposures also increase risk of getting some types of cancers. For statistics on modifiable behaviors that can impact someone's risk of getting cancer (including smoking, sun exposure, physical activity and dietary habits) please refer to "Section 4: Lifestyles" and "Section 10: Substance Abuse" of the Health Surveillance Data Book.

7.1.1 All Cancer Sites

The cancer incidence rates for all sites combined have been stable in recent years. Rates in Kalamazoo County have been similar to rates in Michigan since the early 1990s, although the incidence rate in Kalamazoo has been slightly lower than the overall state rate in recent years.

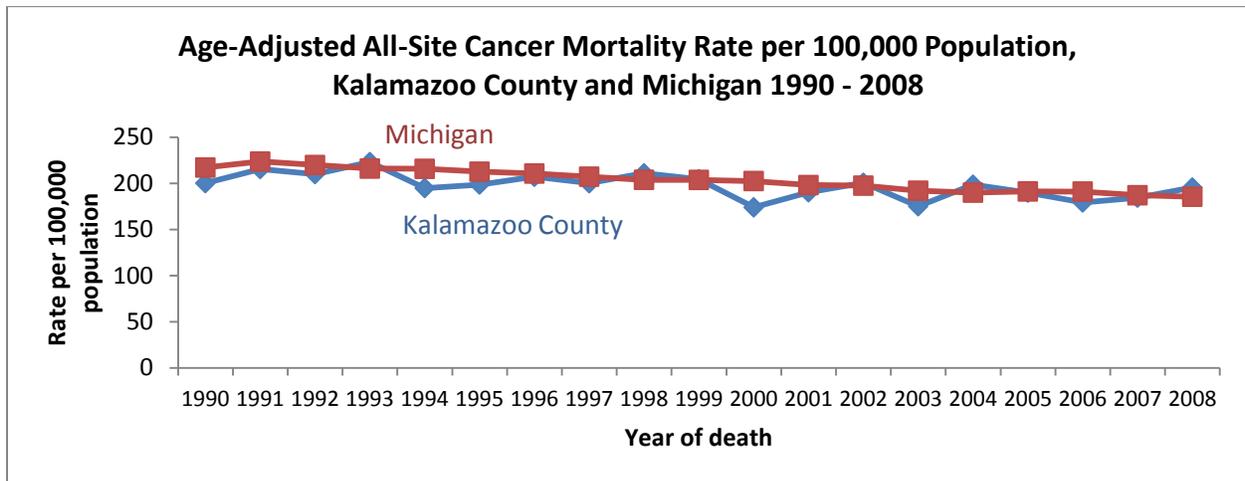


Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (Updated with cases processed through December 30, 2009) Vital Records & Health Statistics Section, Michigan Department of Community Health.

¹ Chronic Disease Epidemiology and Control. Brownson RC, Remington PL, Davis JR Eds.

Mortality rates due to cancer at all sites have been similar in Kalamazoo County and in Michigan over the past 14 years, although rates dropped lower in Kalamazoo County in 1994 and in 2000. In general, rates in the county have followed the same decreasing trend as rates in Michigan.



Rates age-adjusted by direct method to US 2000 standard population

*Comparability Ratio for ICD-9 and ICD-10 coding is 1.01. Ratios close to 1.00 indicate high comparability in rates over time (before 1999 compared to 1999 and later).

Source: Michigan Resident Mortality File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

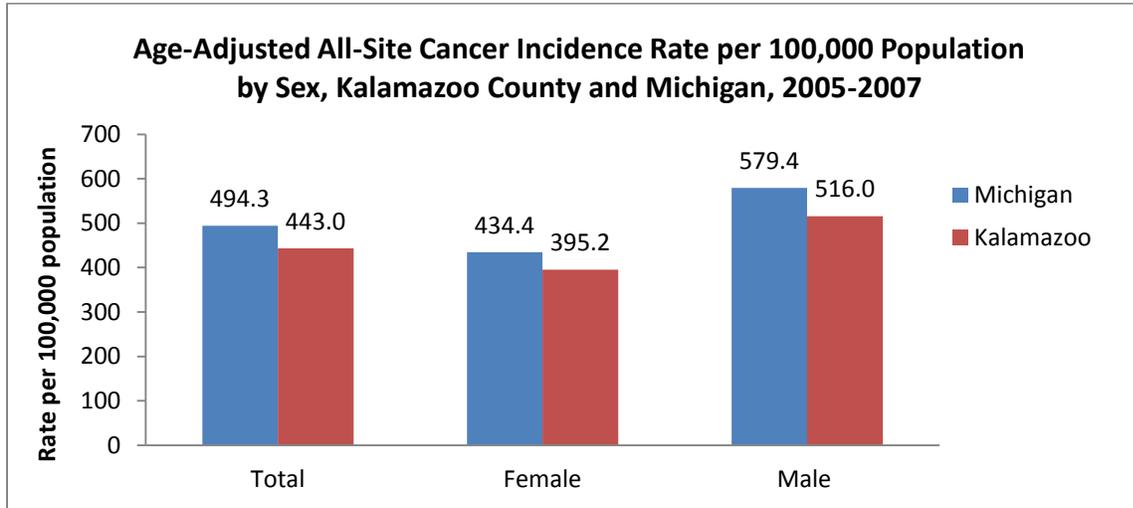
**Age-Adjusted All-Site Invasive Cancer Incidence and Mortality,
Kalamazoo County and Michigan, 1990 - 2008**

Year of Diagnosis or Death	Cases Diagnosed			Deaths		
	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age-Adjusted Rate*	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age-Adjusted Rate*
1990	928	492.7 ±29.3	520.1	371	200.2 ±18.9	217.1
1991	1,046	551.4 ±30.5	551.7	402	215.5 ±19.4	223.6
1992	1,031	534.6 ±30.0	552.3	401	210.0 ±18.8	219.8
1993	972	495.2 ±28.5	532.9	431	223.0 ±19.0	216.0
1994	999	502.0 ±28.8	511.9	381	194.9 ±17.3	215.7
1995	907	452.6 ±27.3	501.7	396	198.7 ±17.9	212.6
1996	948	466.8 ±27.5	502.8	418	207.1 ±18.1	210.6
1997	1,009	492.1 ±28.0	510.3	408	200.1 ±17.5	207.2
1998	984	476.3 ±27.6	514.8	435	210.8 ±18.1	203.8
1999	954	457.6 ±26.9	522.6	426	204.5 ±17.8	203.7
2000	984	448.7 ±26.2	520.1	383	174.0 ±15.7	202.5
2001	1,128	507.3 ±27.5	519.7	423	190.3 ±16.5	198.1
2002	1,064	468.7 ±26.2	521.7	454	200.6 ±16.9	197.5
2003	1,172	512.3 ±27.2	518.0	399	175.2 ±16.0	192.0
2004	1,108	481.3 ±26.5	500.9	463	198.5 ±16.7	189.9
2005	1,074	462.7 ±26.1	500.2	450	189.9 ±16.3	191.2
2006	1,172	495.5 ±26.5	494.1	428	179.3 ±15.8	191.1
2007	905	373.4 ±23.2	489.1	445	184.5 ±15.9	187.1
2008	--	-- --	--	485	195.4 ±16.2	185.5

*Rates per 100,000 population, rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009) and Michigan Resident Death File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

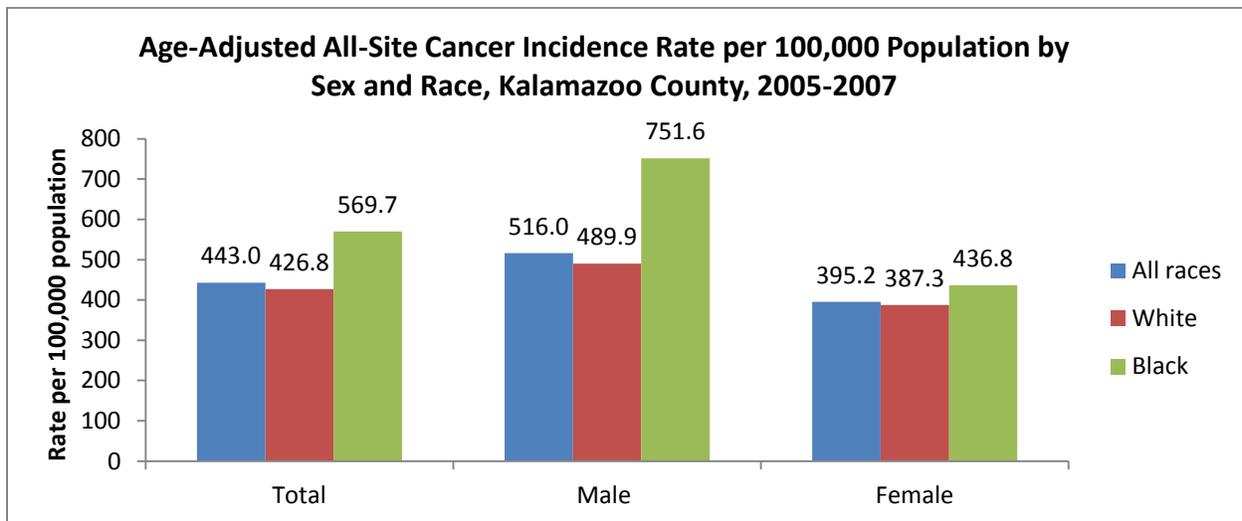
Between 2005 and 2007, the all-sites cancer incidence rates were lower among the total population in Kalamazoo County than among the total population in Michigan. Rates were also lower among males and females in the county than rates among these groups statewide in this time period. Within Kalamazoo County as well as in Michigan, the all-sites cancer incidence rate among males was higher than the rate among females.



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (Updated with cases processed through December 30, 2009) Division for Vital Records and Health Data Development, Michigan Department of Community Health

The greatest racial disparity in all-sites cancer incidence rates between 2005 and 2007 in Kalamazoo County was among males. The incidence rate among black males was 1.5 times higher than the rate among white males. White and black females had approximately the same all-sites cancer incidence rates in this time period.



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (Updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

All-Site Cancer Incidence by Sex and Race, Kalamazoo County and Michigan 2005 – 2007

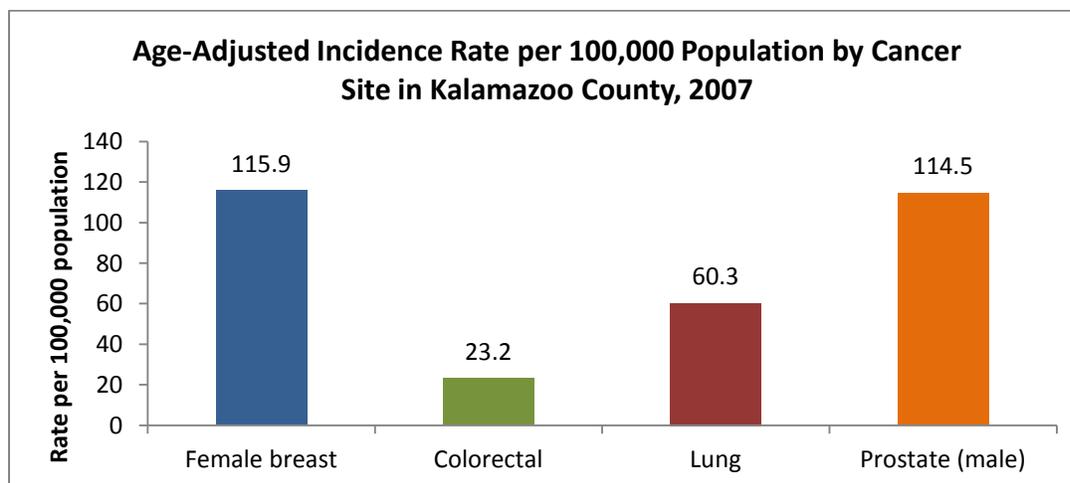
Area	Sex	All Races		White		Black	
		Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI
Kalamazoo County	Total	3,151	443.0 ±14.6	2,793	426.8 ±15.0	261	569.7 ±65.7
	Male	1,588	516.0 ±23.2	1,389	489.9 ±23.6	144	751.6 ±112.4
	Female	1,562	395.2 ±19.0	1,404	387.3 ±19.7	117	436.8 ±76.9
Michigan	Total	157,269	494.3 ±2.3	132,822	480.8 ±2.4	18,927	532.8 ±7.1
	Male	81,922	579.4 ±3.6	68,713	554.8 ±3.8	9,766	663.3 ±12.2
	Female	75,313	434.4 ±3.0	64,080	429.8 ±3.2	9,158	443.8 ±8.6

*Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

Subsequent sections of this report review the available surveillance data on the most commonly diagnosed types of cancers in Kalamazoo County.

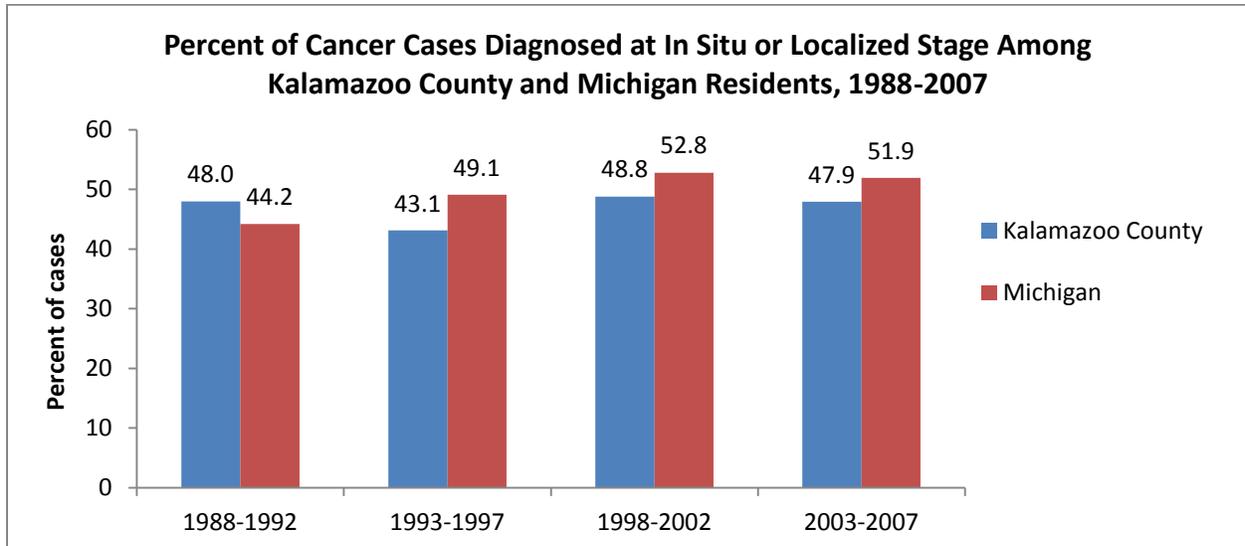
In 2007, female breast cancer was the most frequently diagnosed cancer (149 cases) closely followed by lung cancer (144 cases), then prostate cancer (124 cases) and colorectal cancer (59 cases). Among populations at risk, female breast cancer had the highest incidence rate (rate per female population only) followed by prostate cancer (rate per male population only), then lung cancer (among the total population).



Rates age-adjusted by direct method to US 2000 standard population

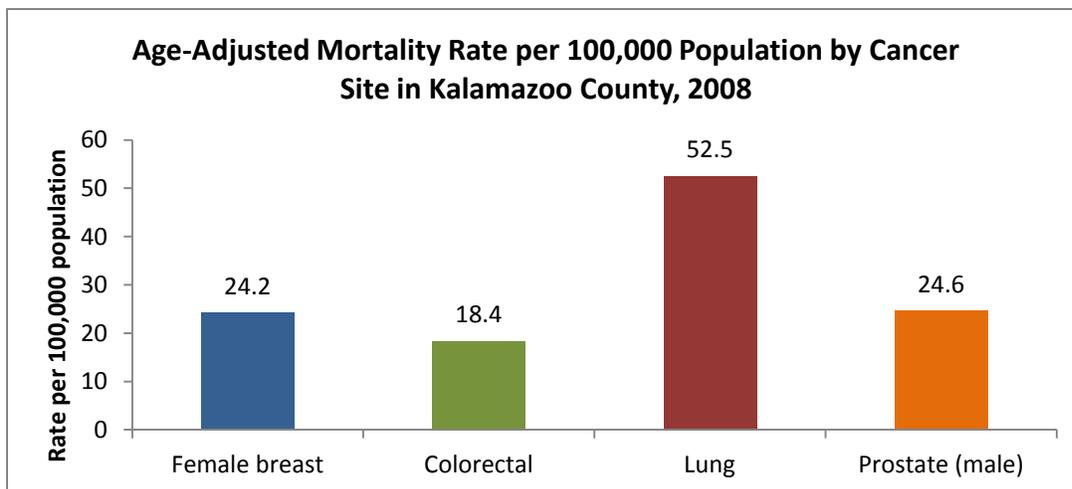
Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

The percent of cancer cases diagnosed at an early stage has decreased slightly in Kalamazoo County from 1998 to 2002 (48.8%) to 2003 to 2007 (47.9%). Despite increasing across the previous three five-year increments, Michigan has also decreased in percentage from 52.8% to 51.9% in these time periods.



Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

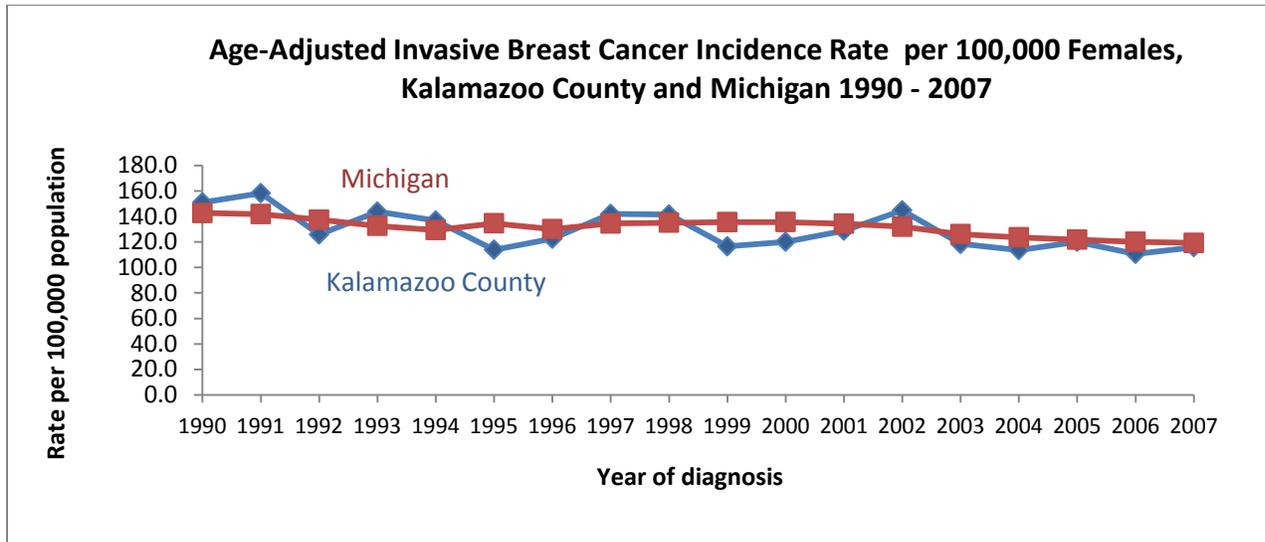
The greatest number of cancer deaths in Kalamazoo County in 2008 was due to lung cancer (131 deaths), followed by colorectal cancer (47 deaths), then female breast cancer (33 deaths), and prostate cancer (24 deaths). Among populations at risk, lung cancer had the highest mortality rate (among the total population) followed by prostate cancer (among men only), then female breast cancer (among women only).



Rates age-adjusted by direct method to US 2000 standard population
 Source: Michigan Resident Mortality File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

7.1.2 Breast Cancer

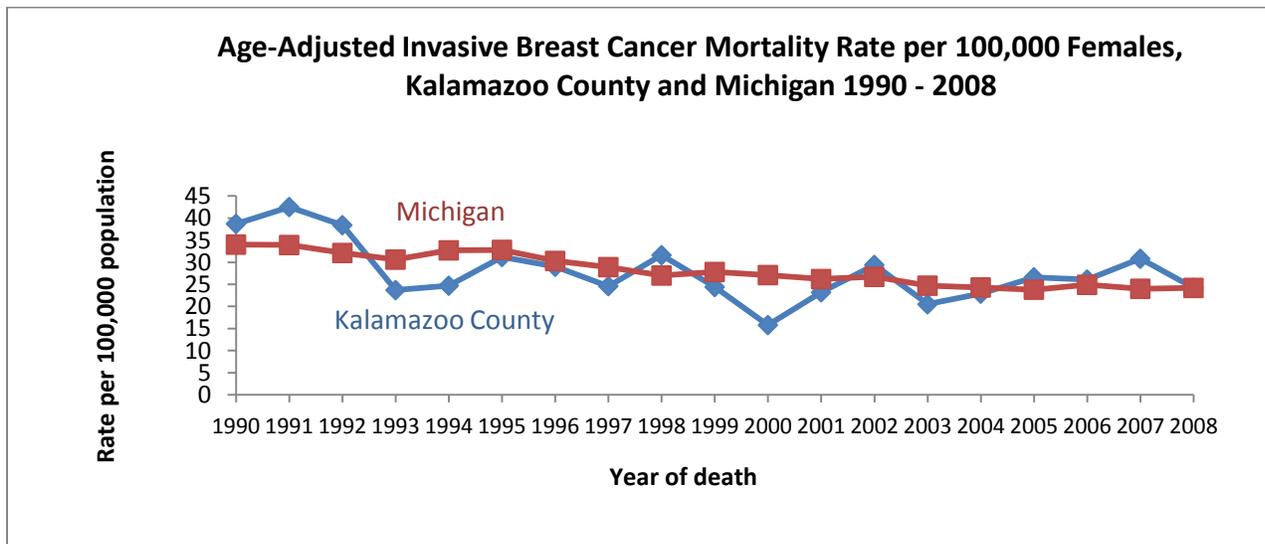
In 2007, breast cancer was the most commonly diagnosed cancer in Kalamazoo County. On average between 2005 and 2007, 149.3 cases were diagnosed among women per year. Breast cancer incidence rates have been stable since 1990 in Kalamazoo County and in Michigan.



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 23, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

In 2008, 33 women died from breast cancer in Kalamazoo County. The mortality rate due to breast cancer in both Michigan and Kalamazoo County has declined overall since the early 1990s. Rates in Kalamazoo County have been similar to the rates in Michigan except for in 2000, when the rate in Kalamazoo County dropped to a level that was significantly lower than the rate in Michigan.



Rates age-adjusted by direct method to US 2000 standard population

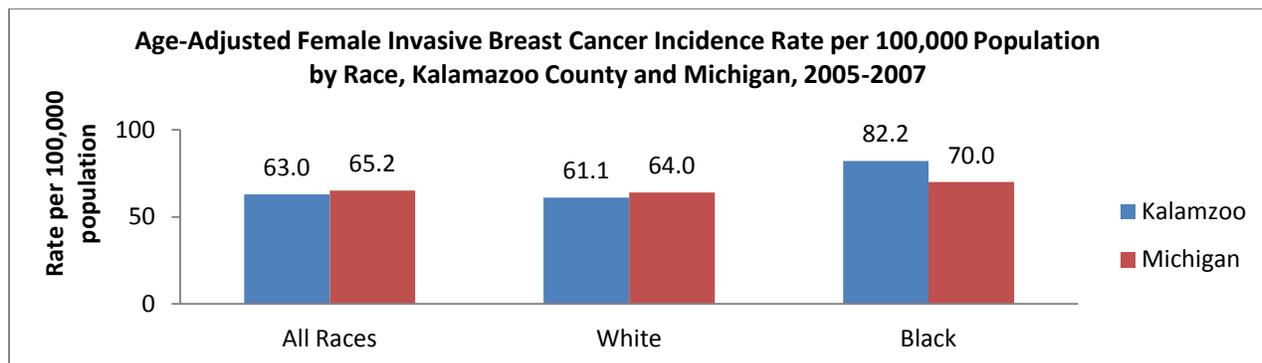
Source: Michigan Resident Mortality File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

**Invasive Female Breast Cancer Incidence and Mortality,
Kalamazoo County and Michigan, 1990 - 2008**

Year of Diagnosis or Death	Cases Diagnosed			Deaths		
	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*
1990	159	151.0 ±23.0	142.6	41	38.7 ±11.3	34.0
1991	169	158.2 ±23.2	141.8	43	42.5 ±12.7	33.9
1992	135	125.8 ±20.8	137.4	43	38.4 ±11.2	32.1
1993	156	143.7 ±22.3	132.6	27	23.7 ±8.7	30.6
1994	149	136.7 ±21.6	129.3	28	24.7 ±8.6	32.7
1995	131	113.9 ±18.9	134.6	36	31.2 ±9.9	32.8
1996	139	122.5 ±20.0	130.0	34	29.0 ±9.3	30.3
1997	161	141.9 ±21.5	134.4	30	24.6 ±8.4	28.9
1998	164	141.4 ±21.1	135.1	38	31.6 ±9.7	27.0
1999	138	116.5 ±18.9	135.5	29	24.4 ±8.8	27.8
2000	144	120.1 ±19.3	135.6	20	15.8 ±6.7	27.1
2001	159	128.8 ±19.6	134.3	30	23.2 ±7.9	26.2
2002	183	144.7 ±20.5	131.9	39	29.4 ±8.8	26.7
2003	150	118.4 ±18.6	126.1	27	20.5 ±7.5	24.7
2004	144	113.6 ±18.3	123.6	31	22.9 ±7.8	24.3
2005	153	120.1 ±18.8	121.8	35	26.6 ±8.8	23.8
2006	146	110.6 ±17.8	120.1	35	26.1 ±8.6	24.9
2007	149	115.9 ±18.5	119.2	43	30.8 ±9.0	24.0
2008	---	---	---	33	24.2 ±8.2	24.2

*Rate per 100,000 female population, rates age-adjusted by direct method to US 2000 standard population
Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009) and Michigan Resident Death File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

In Kalamazoo County between 2005 and 2007, the invasive breast cancer incidence rate was 1.3 times higher among black females than among white females.



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009) Division for Vital Records and Health Data Development, Michigan Department of Community Health.

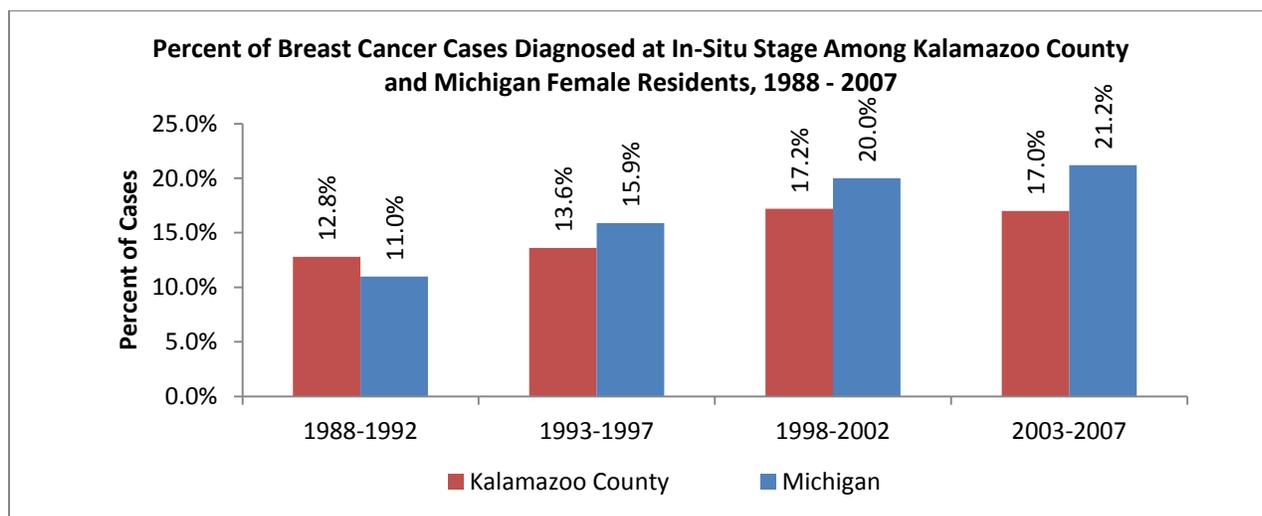
Invasive Female Breast Cancer Incidence by Race, Kalamazoo County and Michigan 2005 – 2007

Area	All Races		White		Black	
	Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI
Kalamazoo County	450	63.0 ±5.7	433	61.1 ±5.9	39	82.2 ±25.2
Michigan	19,277	65.2 ±0.9	15,595	64.0 ±0.9	2346	70.0 ±2.7

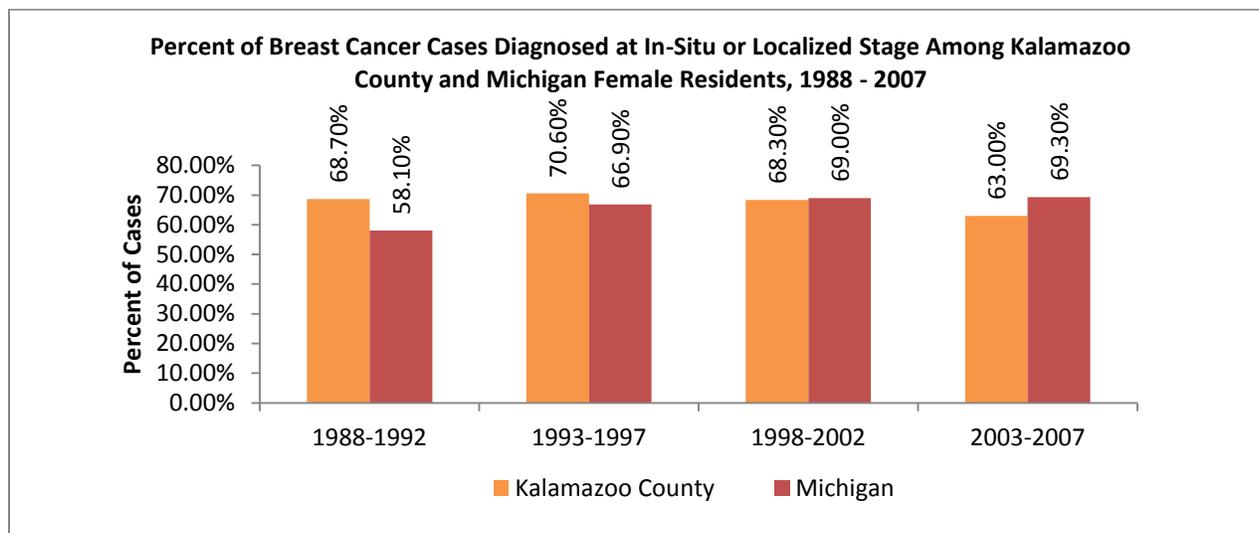
*Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

In Michigan and Kalamazoo County, the percentage of breast cancer cases that have been diagnosed at an early stage has increased since the late 1980s. The early detection rate in the county between 2003 and 2007 was slightly lower than the rate in Michigan.



Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health



Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 29, 2008), Division for Vital Records and Health Data Development, Michigan Department of Community Health

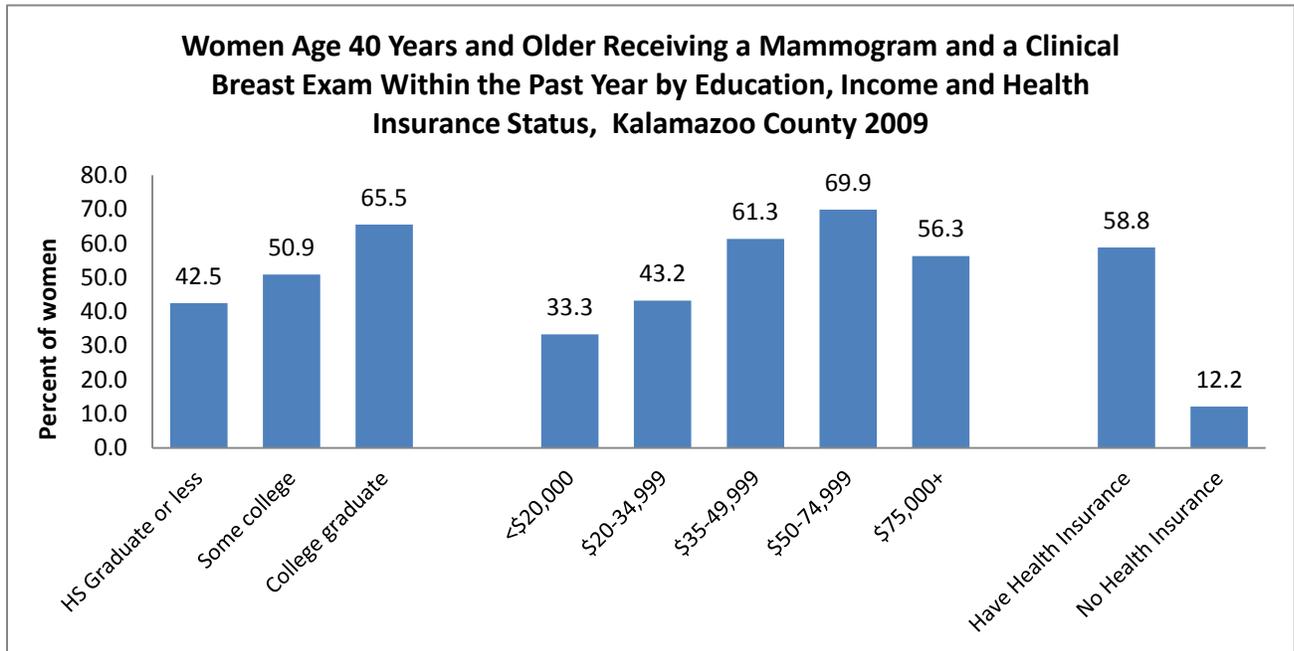
The Healthy People 2020 Goal for breast cancer screening concerns the proportion of women aged 40 years and older who have received breast cancer screening within the preceding two years.

The Michigan Cancer Consortium, the Michigan Department of Community Health, the American Cancer Society, and the American Medical Association recommend that women aged 40 years and older have both a clinical breast exam (CBE) and a mammogram annually. In Kalamazoo County, 52.8%, of women aged 40 years and older had a CBE and mammogram in the previous year. This indicator was statistically unchanged since the 2004 proportion of 50.8% of women aged 40 years and older having had breast cancer screening in the previous year.

Healthy People 2020 Goal
 Increase the proportion of woman aged 40 years and older who have received **breast cancer screening within the past two years to 81.1%.**

In 2000, The American Cancer Society recommended an annual mammogram screening. During this time period 72.2% of those who had reported receiving a mammogram had one within the past year. The proportion of women aged 40 and older with a mammogram in the past year (without the CBE question) was 59.9% in 2009.

In Kalamazoo County in 2009, the proportion of women who had a mammogram and a clinical breast exam within the past year was lowest among women with the lowest incomes and educational levels. The proportion of women meeting this screening recommendation was significantly lower among uninsured women (12.2%) compared to those with insurance (58.8%).



Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

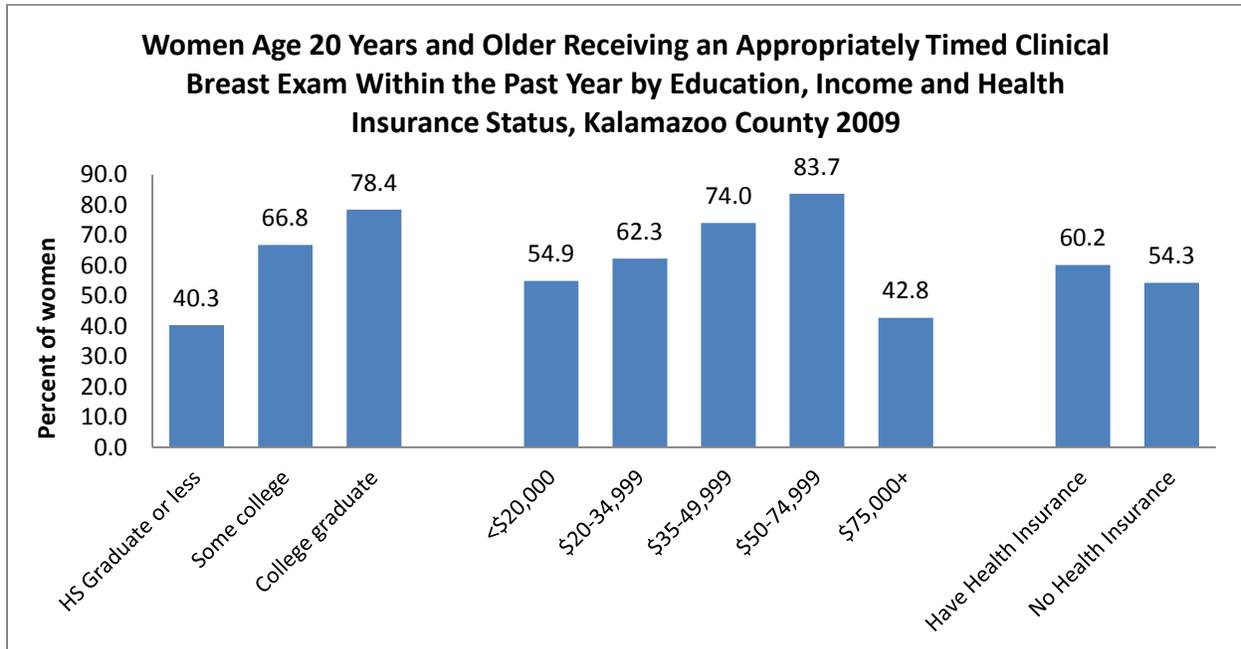
**Mammography Indicators among Women Aged 40 Years and Older,
Kalamazoo County 2009**

	Ever Had a Mammogram ^a		Had a Mammogram in Past Year ^b		Had a Clinical Breast Exam & a Mammogram in Past Year ^c	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Total	89.8	(77.4 - 95.8)	59.9	(50.0 - 69.0)	52.8	(43.4 - 62.1)
Age						
40-49 years	80.9	(55.8 - 93.4)	50.0	(32.3 - 67.7)	39.3	(24.3 - 56.6)
50-59 years	98.1	(88.5 - 99.7)	66.0	(51.5 - 77.9)	64.1	(49.6 - 76.3)
60-69 years	80.0	(35.2 - 96.7)	56.3	(30.9 - 78.8)	53.5	(29.5 - 76.0)
70+ years	97.0	(89.1 - 99.2)	69.0	(53.6 - 81.1)	45.1	(32.5 - 58.3)
Race						
White non-Hispanic	89.5	(75.4 - 96.0)	60.4	(49.7 - 70.3)	52.8	(42.5 - 62.8)
Black non-Hispanic	88.2	(65.3 - 96.8)	61.7	(36.2 - 82.1)	60.1	(35.1 - 80.8)
Education						
HS Graduate or less	74.8	(48.4 - 90.4)	49.9	(32.7 - 67.2)	42.5	(27.0 - 59.5)
Some college	95.8	(87.3 - 98.7)	57.7	(41.3 - 72.5)	50.9	(35.1 - 66.5)
College graduate	98.7	(91.9 - 99.8)	72.5	(59.3 - 82.7)	65.5	(52.0 - 76.8)
Income						
LT \$20K	72.1	(32.7 - 93.2)	48.8	(24.0 - 74.2)	33.3	(15.9 - 56.9)
\$20-34,999K	71.4	(36.3 - 91.6)	47.0	(25.1 - 70.2)	43.2	(22.3 - 66.8)
\$35-49,999K	99.5	(97.6 - 99.9)	63.3	(39.7 - 81.9)	61.3	(38.1 - 80.2)
\$50-74,999K	97.5	(86.0 - 99.6)	76.0	(56.3 - 88.6)	69.9	(49.4 - 84.7)
\$75K+	100.0	(100.0 - 100.0)	60.6	(40.3 - 77.8)	56.3	(37.0 - 73.9)
City/Out-County						
City of Kalamazoo	95.1	(88.1 - 98.0)	66.6	(53.6 - 77.5)	60.4	(47.2 - 72.3)
Rest of County	87.6	(70.2 - 95.5)	57.0	(44.4 - 68.7)	49.6	(37.8 - 61.4)
Within City of Kalamazoo						
White in City	97.0	(89.7 - 99.2)	73.2	(58.9 - 83.9)	64.7	(49.5 - 77.4)
Black in City	87.9	(64.2 - 96.7)	60.5	(34.5 - 81.6)	59.7	(34.0 - 81.0)
Health Insurance						
Have Health Insurance	94.0	(81.0 - 98.3)	66.5	(56.6 - 75.2)	58.8	(49.0 - 67.9)
No Health Insurance	61.0	(25.6 - 87.7)	13.7	(4.2 - 36.6)	12.2	(3.4 - 35.3)
Note: Data included diagnostic tests.						
Among women aged 40 years and older, the proportion who:						
^a reported ever having a mammogram.						
^b reported having a mammogram in the past year.						
^c had both a clinical breast exam and mammogram in the previous year.						

Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

A clinical breast exam is recommended by the Michigan Cancer Consortium, the Michigan Department of Community Health, the American Cancer Society, and the American Medical Association for all women aged 20 years and older (one every three years for women aged 20 to 39 years, and once per year for women aged 40 years and older).

In Kalamazoo County in 2009, the proportion of women who had a CBE within the recommended time frame was 59.7%. Rates increased among women with more education and with higher income levels. Having health insurance or not was less of a factor for having had appropriately timed CBEs.



Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

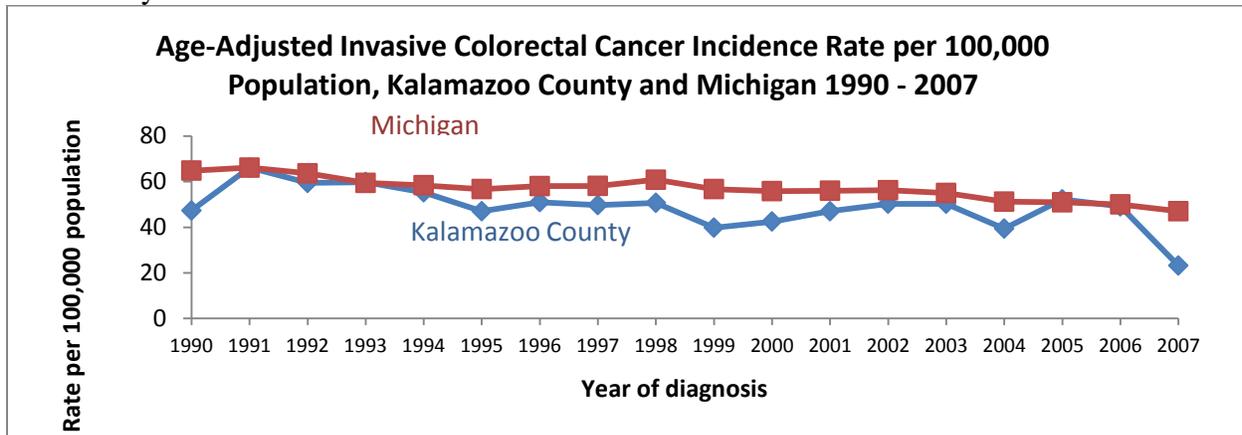
Clinical Breast Exam Indicators Among Women Aged 20 Years and Older

	Ever Had a Clinical Breast Exam ^a		Had Appropriately Timed Clinical Breast Exam ^b	
	%	95% C.I.	%	95% C.I.
Total	94.2	(86.5 - 97.6)	59.7	(42.4 - 74.8)
Age				
20-29 years	92.4	(62.1 - 98.9)	30.8	(8.7 - 67.4)
30-39 years	93.3	(68.4 - 98.9)	89.5	(68.2 - 97.1)
40-49 years	85.5	(56.5 - 96.4)	53.6	(35.1 - 71.2)
50-59 years	99.8	(99.6 - 99.9)	76.0	(63.5 - 85.2)
60-69 years	99.9	(99.7 - 100.0)	76.7	(56.7 - 89.2)
70+ years	92.4	(84.6 - 96.4)	54.4	(40.4 - 67.8)
Race				
White non-Hispanic	93.5	(84.5 - 97.4)	57.7	(38.9 - 74.6)
Black non-Hispanic	97.9	(95.2 - 99.1)	88.9	(78.2 - 94.7)
Education				
HS Graduate or less	90.1	(65.9 - 97.7)	40.3	(16.9 - 69.2)
Some college	93.7	(81.4 - 98.0)	66.8	(49.6 - 80.4)
College graduate	98.5	(94.7 - 99.6)	78.4	(68.1 - 86.0)
Income				
< \$20,000	89.0	(67.7 - 96.9)	54.9	(32.5 - 75.4)
\$20-34,999	84.4	(43.8 - 97.4)	62.3	(38.1 - 81.5)
\$35-49,999	89.5	(59.6 - 98.0)	74.0	(50.3 - 88.9)
\$50-74,999	98.4	(88.9 - 99.8)	83.7	(67.9 - 92.6)
\$75,000+	99.0	(92.9 - 99.9)	42.8	(17.1 - 73.0)
City/Out-County				
City of Kalamazoo	97.7	(94.1 - 99.1)	81.7	(72.6 - 88.3)
Rest of County	92.4	(80.7 - 97.2)	51.3	(31.8 - 70.4)
Within City of Kalamazoo				
White in City	97.3	(91.0 - 99.2)	79.1	(67.2 - 87.5)
Black in City	98.1	(95.7 - 99.2)	89.2	(77.7 - 95.2)
Health Insurance				
Have Health Insurance	96.2	(91.0 - 98.4)	60.2	(41.2 - 76.7)
No Health Insurance	79.5	(38.2 - 96.1)	54.3	(27.2 - 79.0)
Among women aged 20 years and older, the proportion who:				
^a reported ever having a clinical breast exam.				
^b reported having a clinical breast exam in the past three years for women aged 20-39 years and within the previous year for women aged 40 years and older.				

7.1.3 Colorectal Cancer

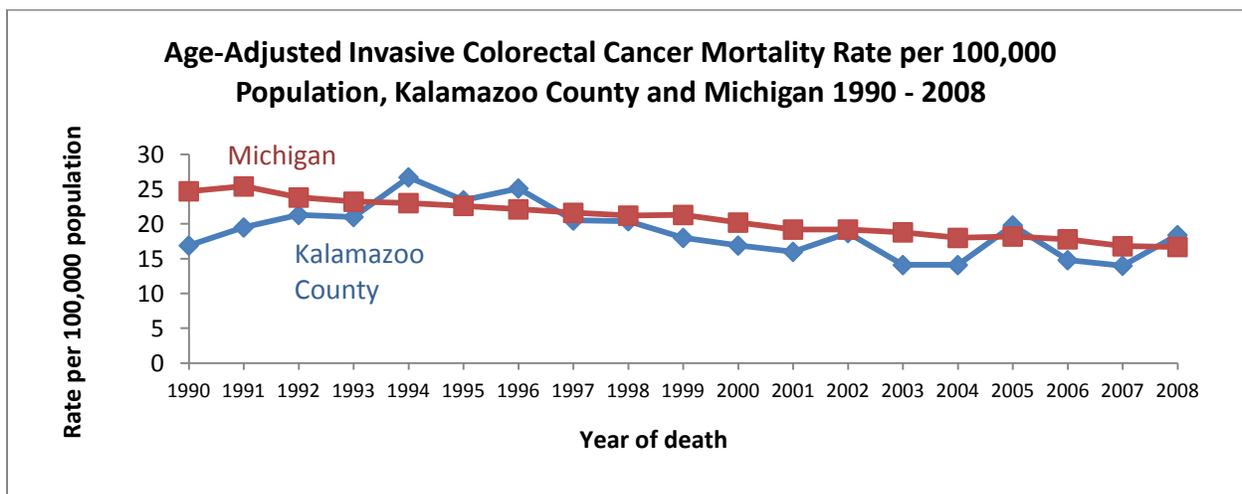
Colorectal cancer was the fourth most commonly diagnosed cancer in Kalamazoo County between 2004 and 2006. During this time period, an average of 61 women and 34 men were diagnosed with colorectal cancer per year.

Colorectal cancer incidence rates have been declining in Michigan since the early 1990s. Kalamazoo County rates have followed a similar trend, and have been slightly lower than Michigan rates most years since the mid-1990s.



Rates age-adjusted by direct method to US 2000 standard population
 Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

In 2007, 34 men and women died due to colorectal cancer in Kalamazoo County. Mortality rates in Michigan have been declining since the early 1990s, but the trend in Kalamazoo County has been different. In the county, mortality rates increased in the early 1990s and were higher than Michigan rates in the mid-1990s. Subsequent to this increase, rates in Kalamazoo County have followed a decline similar to Michigan rates, and mortality rates in the county have been similar to rates in the state in recent years.



Rates age-adjusted by direct method to US 2000 standard population
 Source: Michigan Resident Mortality File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

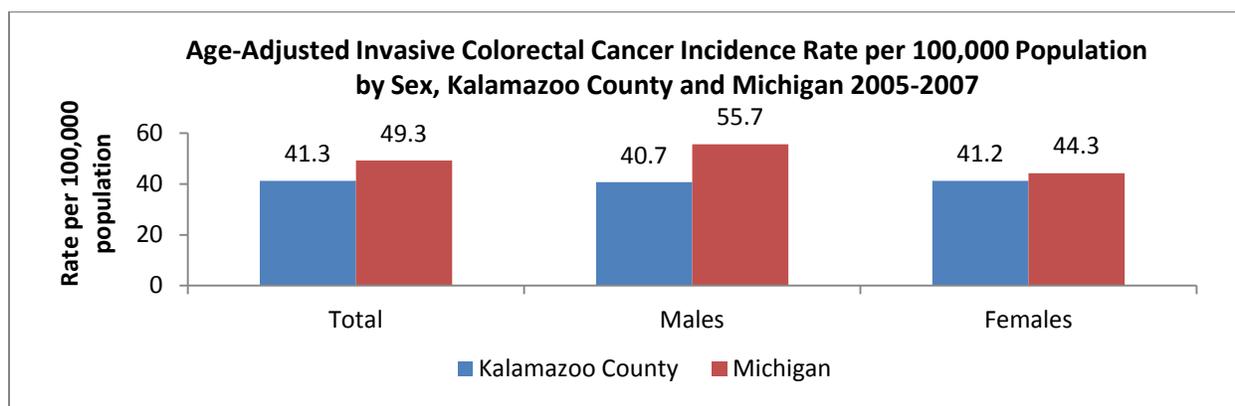
**Invasive Colorectal Cancer Incidence and Mortality,
Kalamazoo County and Michigan, 1990 - 2008**

Year of Diagnosis or Death	Cases Diagnosed			Deaths		
	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*
1990	89	47.3 ±9.3	64.8	31	16.9 ±5.7	24.7
1991	121	66.1 ±10.6	66.1	36	19.5 ±5.8	25.4
1992	113	59.4 ±10.1	63.6	40	21.3 ±6.1	23.8
1993	115	59.8 ±9.8	59.4	40	21.0 ±5.5	23.2
1994	108	55.3 ±9.8	58.4	52	26.7 ±6.0	23.0
1995	93	47.0 ±9.0	56.7	46	23.4 ±5.9	22.6
1996	102	51.0 ±9.1	58.0	50	25.1 ±6.2	22.1
1997	101	49.7 ±9.0	58.1	42	20.5 ±5.7	21.6
1998	104	50.7 ±9.2	60.8	42	20.4 ±5.4	21.2
1999	84	39.8 ±7.9	56.7	38	18.0 ±5.1	21.3
2000	93	42.5 ±8.1	55.8	37	16.9 ±4.9	20.2
2001	105	47.0 ±8.4	56.0	36	16.0 ±4.8	19.2
2002	113	50.3 ±8.7	56.2	42	18.7 ±5.2	19.2
2003	113	50.3 ±8.7	55.0	32	14.1 ±4.5	18.8
2004	90	39.4 ±7.7	51.2	33	14.1 ±4.4	18.0
2005	125	52.2 ±8.7	50.9	49	19.8 ±4.7	18.2
2006	115	49.1 ±8.4	50.0	35	14.8 ±4.5	17.8
2007	59	23.2 ±5.5	47.0	34	14.0 ±4.5	16.8
2008	---	---	---	47	18.4 ±4.7	16.7

*Rate per 100,000 population, rates age-adjusted by direct method to US 2000 standard population

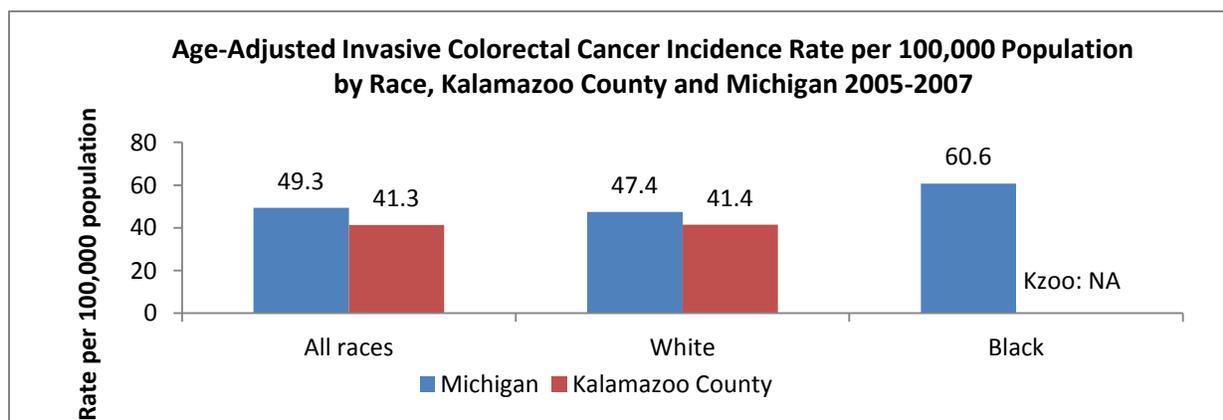
Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), and Michigan Resident Death File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

Between 2005 and 2007, the colorectal cancer incidence rate in Kalamazoo County was similar among women and men.



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Mortality File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

Colorectal Cancer Incidence by Sex and Race, Kalamazoo County and Michigan 2005 – 2007

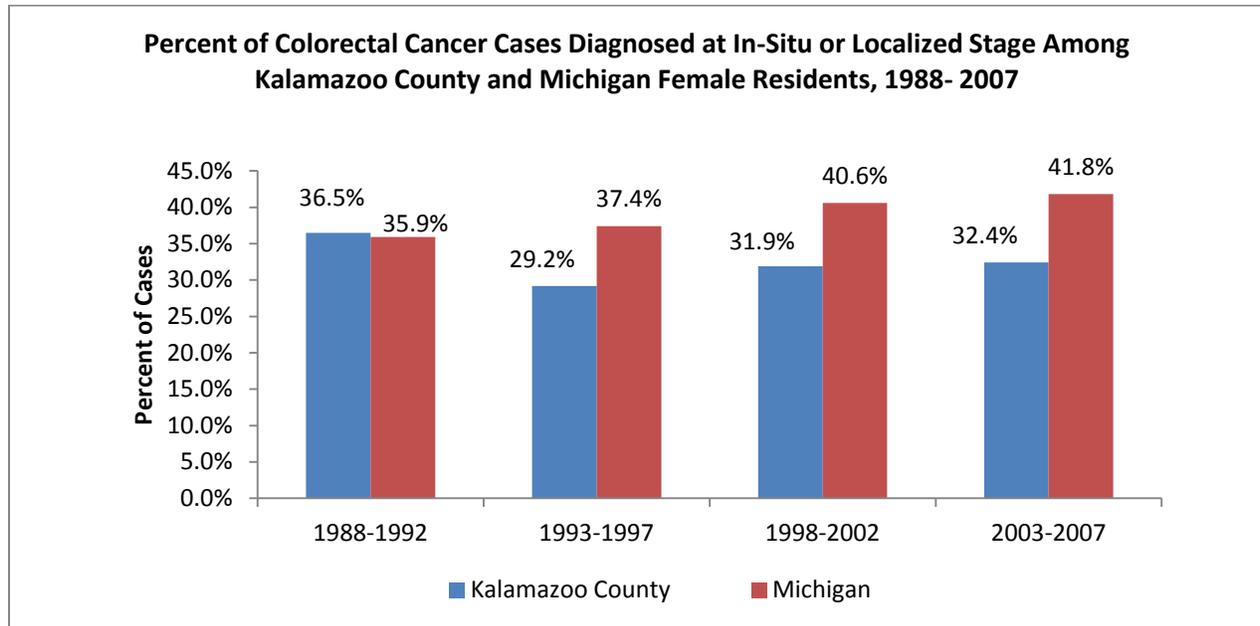
Area	Sex	All Races		White		Black	
		Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI
Kalamazoo County	Total	299	41.3 ±4.4	277	41.4 ±4.6	18	**
	Male	126	40.7 ±6.5	114	39.8 ±6.8	8	**
	Female	173	41.2 ±5.9	163	41.9 ±6.2	10	**
Michigan	Total	15,709	49.3 ±0.7	13,231	47.4 ±0.8	2,112	60.6 ±2.5
	Male	7,745	55.7 ±1.2	6,549	53.6 ±1.2	996	69.0 ±4.1
	Female	7,960	44.3 ±0.9	6,678	42.6 ±1.0	1,116	54.9 ±3.1

*Rates age-adjusted by direct method to US 2000 standard population

**Rate not calculated when there were fewer than 20 cases.

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

While 41.8% of colorectal cancer cases in Michigan were detected at an early stage between 2005 and 2007, only 32.4% of colorectal cancer cases in Kalamazoo County were found early in this time period. The early detection rate in the county between 2005 and 2007 was lower than the early detection rate in the late 1980s (36.5% between 1988 and 1992), and this detection rate has not improved noticeably since the early 1990s.



Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

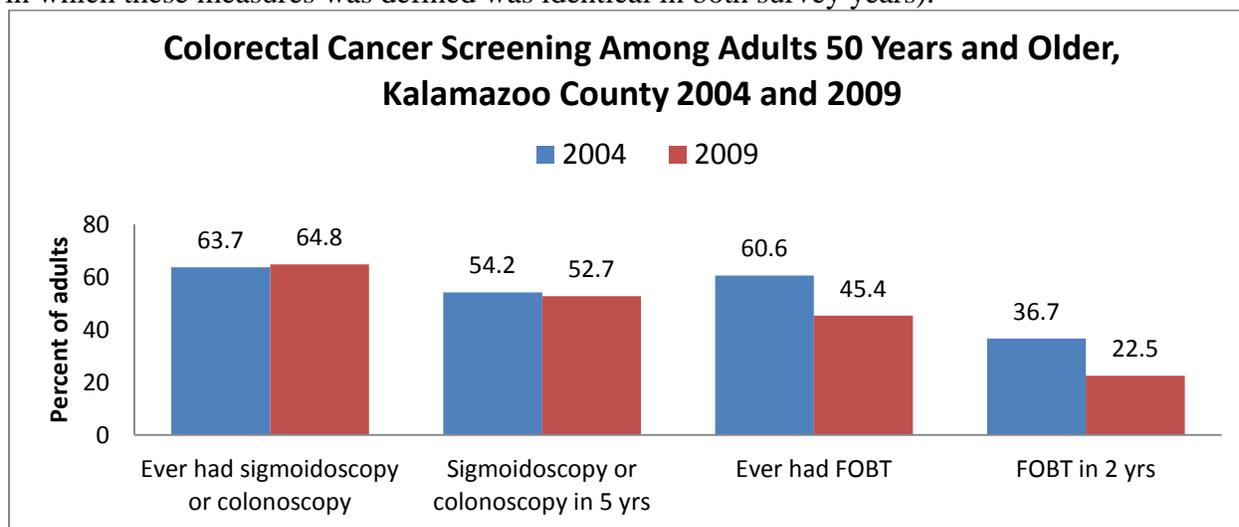
Fecal occult blood tests, sigmoidoscopy, colonoscopy, double-contrast barium enema, and Computed tomographic colonography (CT scan of colon and rectum) are screening tests that can detect colorectal cancer at an early stage. One Healthy People 2020 Objective is to increase the proportion of adults aged 50 to 75 years who have received a colorectal cancer screening based on the most recent guidelines to 70.5%.

Healthy People 2020 Goals
 Increase the proportion of adults aged 50 to 75 years who have received a colorectal cancer screening based on the most recent guidelines to 70.5%.

In Kalamazoo County in 2009, 22.5% of adults aged 50 years and older had an FOBT in the previous two years (45.4% had ever had one); 64.8% had ever had a sigmoidoscopy or colonoscopy and 57.8% had a sigmoidoscopy in the past five years or a colonoscopy in the past 10 years. In Michigan in 2010, 70.9% of adults reported ever having had a sigmoidoscopy or colonoscopy, and 66.4% reported that they had a sigmoidoscopy in the past five years or a colonoscopy in the past 10 years.

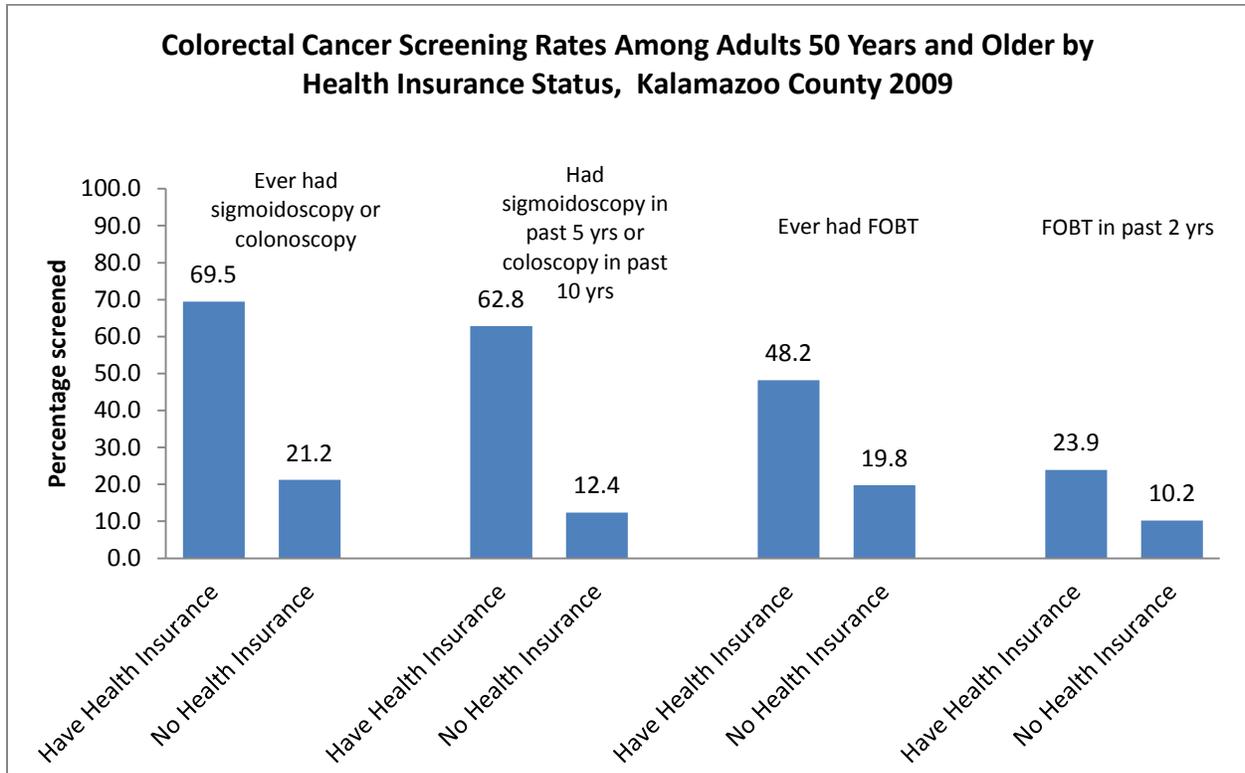
In Kalamazoo County, sigmoidoscopy/colonoscopy colorectal cancer screening rates were similar in 2004 and 2009. Appropriately-timed sigmoidoscopy or colonoscopy was defined differently during these two data collection periods: in 2004, the indicator used was “sigmoidoscopy or colonoscopy in the past five years”; in 2009, the indicator was “sigmoidoscopy in the past five years or colonoscopy in the past ten years”. The table below shows a screening estimate for 2009 that is defined identically to the way the estimate was calculated in 2004 (sigmoidoscopy or colonoscopy in the past five years).

The FOBT estimated screening rates were significantly lower in 2009 compared with 2004 (the way in which these measures was defined was identical in both survey years).



Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

In Kalamazoo County, the prevalence of FOBT screening within two years and of having a sigmoidoscopy within the past five years or a colonoscopy within the past ten years was not largely influenced by income, but having health insurance increased the likelihood of having received screening.



Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

**Colorectal Cancer Screening (Blood Stool Test) Among Adults Aged 50 and Older,
Kalamazoo County 2009**

	Ever Had Blood Stool Test ^a		Had Blood Stool Test in Past 2 Years ^b	
	%	95% C.I.	%	95% C.I.
Total	45.4	(37.6 - 53.5)	22.5	(16.6 - 29.7)
Age				
50-59 years	40.9	(30.6 - 52.2)	21.7	(13.7 - 32.6)
60-69 years	55.4	(38.0 - 71.5)	25.2	(15.5 - 38.2)
70 years +	53.9	(42.8 - 64.6)	23.8	(16.3 - 33.3)
Gender				
Male	50.7	(38.4 - 62.9)	22.8	(14.4 - 34.2)
Female	42.1	(32.3 - 52.4)	22.3	(14.8 - 32.1)
Race				
White non-Hispanic	46.4	(37.8 - 55.2)	22.4	(16.1 - 30.4)
Black non-Hispanic	41.1	(20.8 - 65.0)	18.2	(6.9 - 39.7)
Education				
HS Graduate or less	39.1	(27.0 - 52.7)	14.5	(8.2 - 24.5)
Some college	52.8	(37.0 - 68.1)	33.9	(20.3 - 50.8)
College graduate	46.8	(35.0 - 59.0)	22.0	(13.8 - 33.4)
Income				
<\$20,000	31.9	(15.2 - 55.0)	18.5	(7.4 - 39.3)
\$20-34,999	54.4	(36.3 - 71.4)	38.3	(22.1 - 57.7)
\$35-49,999	52.3	(32.3 - 71.6)	17.0	(7.6 - 33.7)
\$50-74,999	54.1	(34.0 - 73.0)	42.1	(22.9 - 64.0)
\$75,000+	48.3	(32.0 - 65.0)	13.0	(7.1 - 22.5)
City/Out-County				
City of Kalamazoo	42.7	(30.1 - 56.4)	28.8	(17.6 - 43.5)
Rest of County	46.5	(36.9 - 56.3)	20.1	(13.7 - 28.4)
Within City of Kalamazoo				
White in City	43.1	(28.1 - 59.5)	29.1	(15.6 - 47.6)
Black in City	39.5	(17.6 - 66.7)	21.5	(7.5 - 48.0)
Health Insurance				
Have Health Insurance	48.2	(39.9 - 56.6)	23.9	(17.6 - 31.5)
No Health Insurance	19.8	(5.2 - 52.4)	10.2	(1.5 - 45.3)
<p>Among those aged 50 years and older, the proportion who: ^a reported 'Yes' to the question, "A blood stool test is a test that may use a special kit at home to determine whether the stool contains blood. Have you ever had this test using a home kit?" ^b had a blood stool test within the past two years using a home kit.</p>				

Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

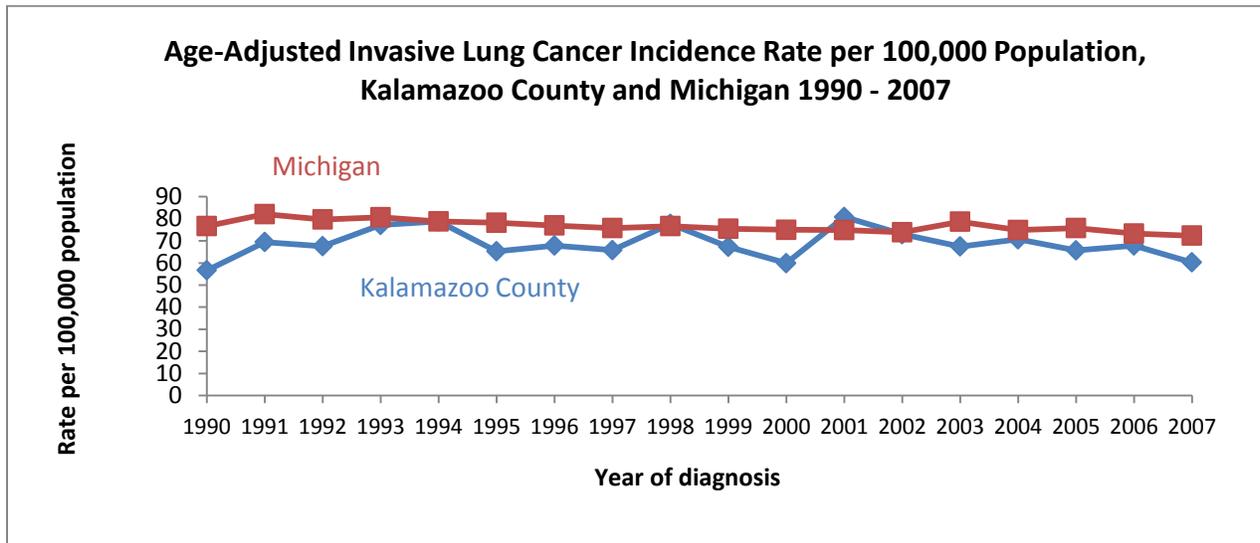
**Colorectal Cancer Screening (Sigmoidoscopy/Colonoscopy) Among Adults
Aged 50 and Older, Kalamazoo County 2009**

	Ever Had a Sigmoidoscopy or Colonoscopy ^a		Had a Sigmoidoscopy in the Past 5 Years or Colonoscopy in Past 10 Years ^b	
	%	95% C.I.	%	95% C.I.
Total	64.8	(56.2 - 72.5)	57.8	(49.2 - 66.0)
Age				
50-59 years	61.5	(50.3 - 71.6)	53.4	(42.3 - 64.2)
60-69 years	68.5	(47.6 - 83.9)	63.1	(43.7 - 79.1)
70 years +	69.8	(56.9 - 80.1)	66.1	(53.3 - 76.9)
Gender				
Male	64.0	(50.9 - 75.3)	55.6	(42.6 - 67.9)
Female	65.3	(53.7 - 75.3)	59.2	(47.8 - 69.8)
Race				
White non-Hispanic	64.4	(54.8 - 72.9)	56.4	(47.1 - 65.4)
Black non-Hispanic	78.8	(58.3 - 90.8)	78.1	(57.1 - 90.5)
Education				
HS Graduate or less	56.3	(41.8 - 69.8)	49.1	(35.5 - 62.9)
Some college	64.6	(47.2 - 78.8)	54.1	(37.6 - 69.7)
College graduate	75.0	(63.1 - 84.1)	71.3	(59.3 - 80.9)
Income				
<\$20,000	40.1	(20.6 - 63.4)	38.6	(19.6 - 61.9)
\$20-34,999	65.7	(45.3 - 81.6)	64.0	(43.6 - 80.3)
\$35-49,999	65.1	(43.3 - 82.0)	48.1	(28.8 - 68.0)
\$50-74,999	86.5	(66.9 - 95.3)	72.5	(47.9 - 88.3)
\$75,000+	70.4	(51.5 - 84.2)	62.3	(43.6 - 78.0)
City/Out-County				
City of Kalamazoo	63.4	(49.6 - 75.3)	61.4	(47.3 - 73.7)
Rest of County	65.3	(54.5 - 74.7)	56.5	(46.0 - 66.5)
Within City of Kalamazoo				
White in City	62.5	(45.6 - 76.8)	60.0	(43.0 - 74.9)
Black in City	73.3	(48.7 - 88.8)	72.2	(46.9 - 88.4)
Health Insurance				
Have Health Insurance	69.5	(60.6 - 77.1)	62.8	(53.7 - 71.1)
No Health Insurance	21.2	(7.7 - 46.6)	12.4	(3.6 - 35.3)
<p>Among those aged 50 years and older, the proportion who: ^a reported 'Yes' to the question, "Sigmoidoscopy and colonoscopy are exams in which a tub is inserted in the rectum to view the colon for signs of cancer or other health problems. Have you ever had either of these exams?" ^b had a sigmoidoscopy within the past five years or a colonoscopy within the past 10 years.</p>				

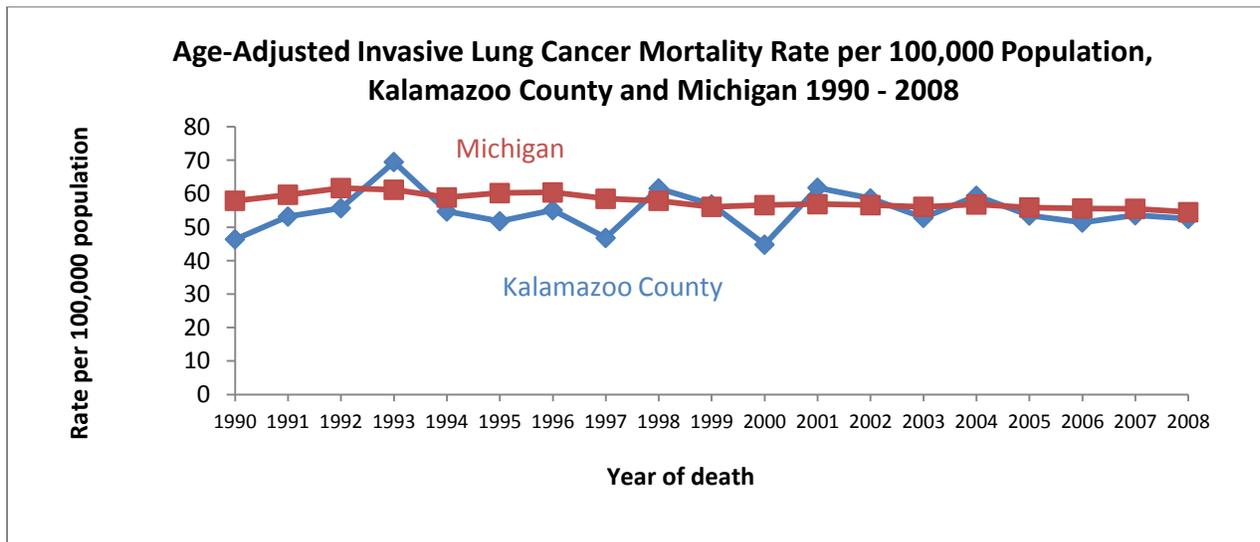
Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

7.1.4 Lung Cancer

Between 2005 and 2007, an average of 150 new cases of lung cancer per year were diagnosed (an average of 80 men and 70 women per year). Since the early 1990s, incidence and mortality rates in Kalamazoo County and in Michigan have been fairly stable overall, but in recent years (2001-2007) the incidence rate has been declining in Kalamazoo County. Incidence and mortality rates in Kalamazoo County have been similar to rates in Michigan.



Rates age-adjusted by direct method to US 2000 standard population
 Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health



Rates age-adjusted by direct method to US 2000 standard population
 Source: Michigan Resident Mortality File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

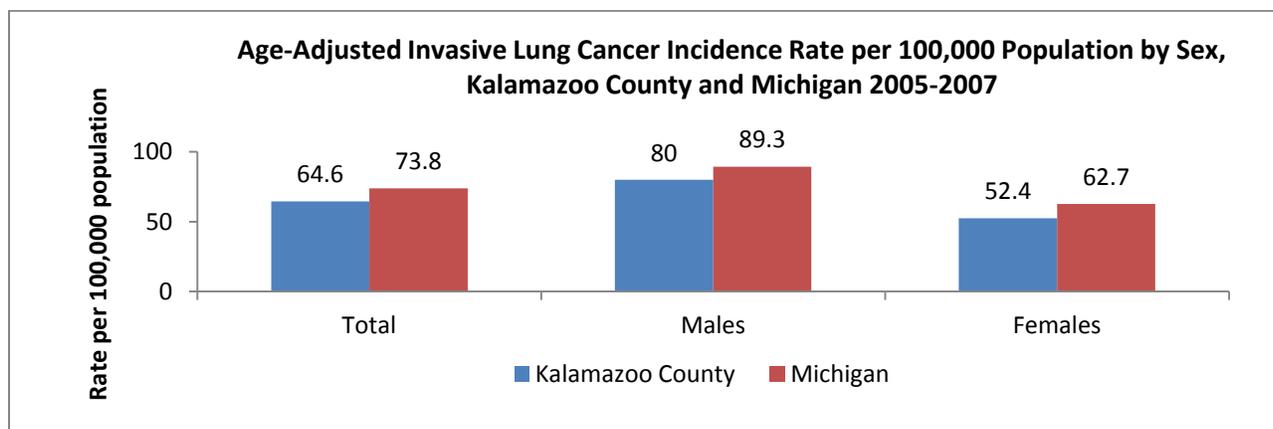
**Invasive Lung Cancer Incidence and Mortality,
Kalamazoo County and Michigan, 1990 - 2007**

Year of Diagnosis or Death	Cases Diagnosed			Deaths		
	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*
1990	106	56.7 ±10.6	76.7	88	46.4 ±9.4	57.9
1991	131	69.5 ±11.7	82.1	100	53.2 ±10.1	59.7
1992	130	67.6 ±11.0	79.7	107	55.7 ±9.8	61.7
1993	150	77.2 ±11.6	80.7	135	69.5 ±10.9	61.2
1994	155	78.8 ±12.0	78.8	108	54.7 ±9.7	58.9
1995	128	65.3 ±10.8	78.2	103	51.8 ±9.4	60.2
1996	136	67.9 ±10.8	77.0	111	55.1 ±9.5	60.4
1997	134	65.8 ±10.7	75.8	95	46.8 ±9.0	58.5
1998	158	77.7 ±11.7	76.7	126	61.6 ±10.2	57.9
1999	138	67.3 ±10.8	75.5	117	56.8 ±9.8	56.1
2000	130	59.9 ±10.0	75.0	97	44.8 ±8.7	56.6
2001	178	80.8 ±11.3	74.9	137	61.8 ±9.8	56.9
2002	164	73.0 ±10.6	73.9	131	58.6 ±9.5	56.6
2003	154	67.5 ±10.2	78.7	120	52.8 ±9.1	56.1
2004	158	70.7 ±10.7	74.9	134	59.4 ±9.7	56.8
2005	148	65.7 ±10.4	75.8	124	53.5 ±9.2	55.9
2006	157	67.9 ±10.4	73.3	119	51.4 ±9.0	55.6
2007	144	60.3 ±9.6	72.4	127	53.6 ±9.1	55.5
2008	---	---	---	131	52.5 ±8.7	54.5

*Rate per 100,000 population, rates age-adjusted by direct method to US 2000 standard population

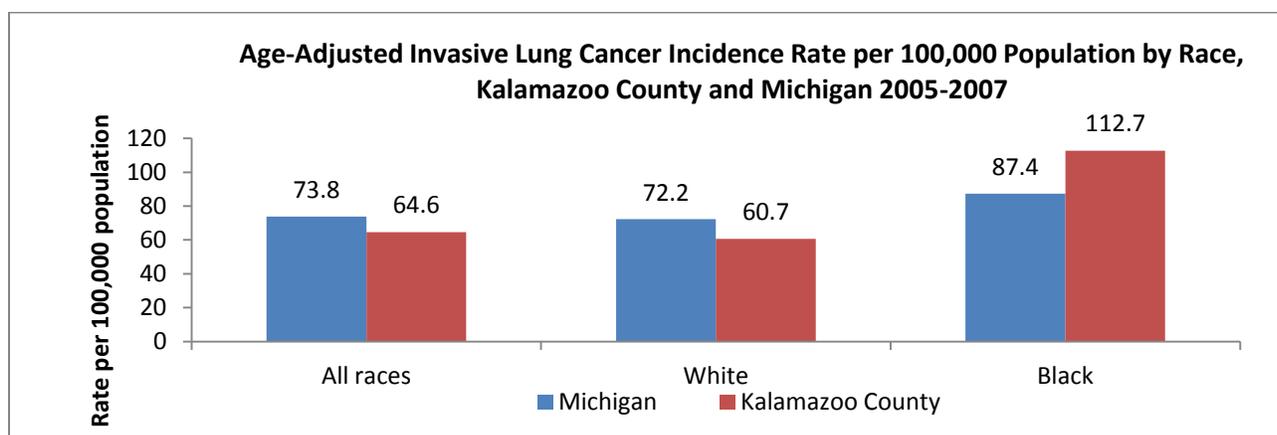
Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009) and Michigan Resident Death File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

Between 2005 and 2007, the lung cancer incidence rate among men in Kalamazoo County was 1.5 times higher than the rate among women. The rate among the black population was 1.8 times higher than the rate among the white population; in comparison, the rate disparity by race was less in Michigan (incidence among the black population was only 1.2 times higher than among the white population in Michigan).



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 23, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

Lung Cancer Incidence by Sex and Race, Kalamazoo County and Michigan 2005 – 2007

Area	Sex	All Races		White		Black	
		Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI
Kalamazoo County	Total	449	64.6 ±5.8	392	60.7 ±5.9	48	112.7 ±32.4
	Male	239	80.0 ±9.9	204	74.3 ±9.9	31	156.5 ±56.9
	Female	209	52.4 ±7.0	188	50.6 ±7.1	17	**
Michigan	Total	23,243	73.8 ±0.9	19,911	72.2 ±1.0	3,003	87.4 ±3.1
	Male	12,329	89.3 ±1.5	10,556	86.8 ±1.6	1,589	112.2 ±5.4
	Female	10,911	62.7 ±1.2	9,353	61.8 ±1.2	1,414	70.6 ±3.6

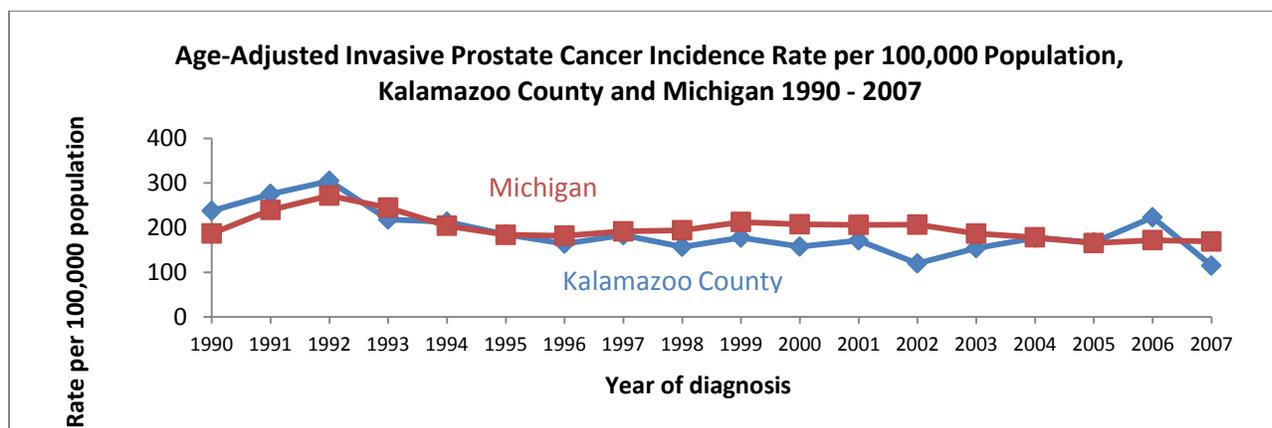
*Rates age-adjusted by direct method to US 2000 standard population

**Rate not calculated when there were fewer than 20 cases.

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

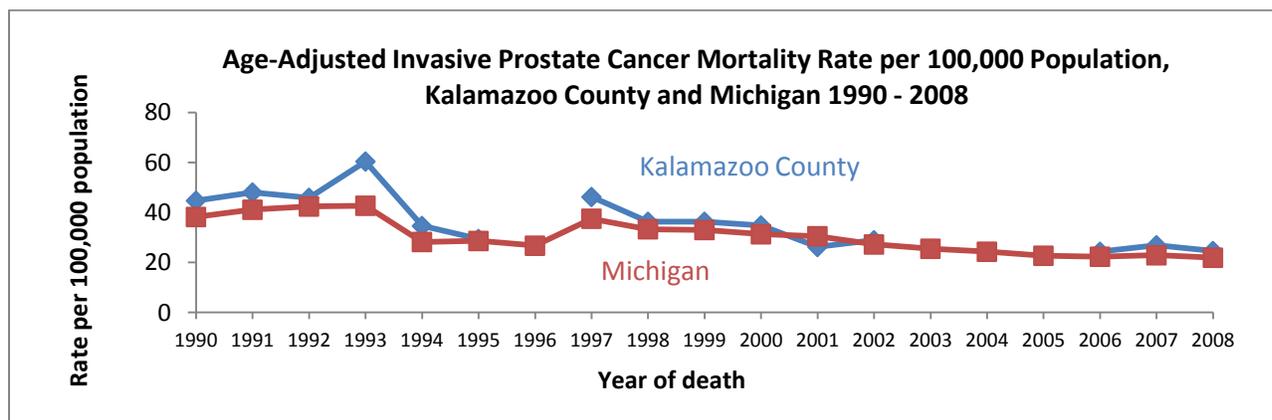
7.1.5 Prostate Cancer

Prostate cancer was the most frequently diagnosed cancer between 2005 and 2007 in Kalamazoo County. An average 174 cases per year were diagnosed among men in this time period. Prostate cancer incidence and mortality rates in Kalamazoo County have followed similar trends as rates in Michigan since 1990, with the exception of a dip in incidence in 2002 and a spike in mortality in Kalamazoo in 1993. The increase in incidence in the early 1990s both in Michigan and in Kalamazoo County can be attributed to the introduction of prostate-specific antigen testing as a screening and early detection tool in this time period.² Mortality rates appear to be gradually declining since the late 1990s.



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health



Rates age-adjusted by direct method to US 2000 standard population

*No points are shown for 1996, 2003, 2004 or 2005 because there were fewer than 20 cases and so a rate was not calculated.

Source: Michigan Resident Mortality File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

² The prostate-specific antigen test or PSA test detects whether a substance is present in the blood that would indicate an increased likelihood that a man may have prostate cancer. The test does not confirm prostate cancer, but may indicate the need for further testing to determine if a man has prostate cancer. (American Cancer Society) Because widespread use of this test began in the early 1990s, many prostate cancers were detected that may have gone undiagnosed indefinitely, causing the incidence rate to appear to rise around this time.

**Invasive Prostate Cancer Incidence and Mortality,
Kalamazoo County and Michigan, 1990 - 2008**

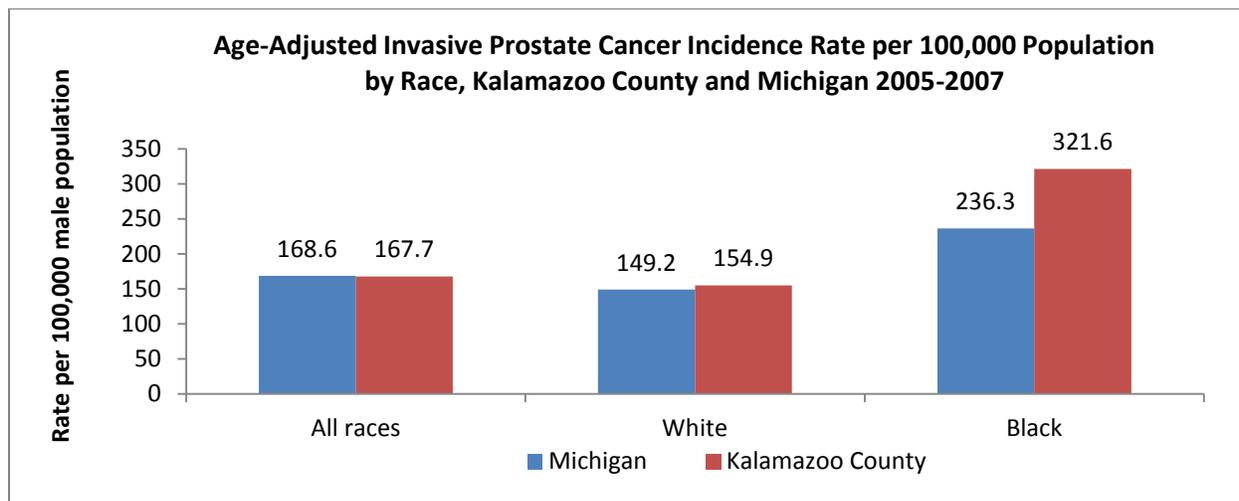
Year of Diagnosis or Death	Cases Diagnosed			Deaths		
	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*	Number	Kalamazoo County Age-Adjusted Rate* +/- 95% CI	Michigan Age- Adjusted Rate*
1990	166	237.4±32.5	186.6	28	44.7±14.2	38.2
1991	198	275.4±33.3	239.4	29	48.0±12.7	41.1
1992	231	304.6±35.6	271.5	28	45.9±12.3	42.4
1993	173	217.9±30.3	244.6	37	60.4±14.5	42.7
1994	170	213.0±29.3	204.0	22	34.6±9.4	38.2
1995	149	184.7±27.9	183.6	21	29.4±10.8	38.6
1996	135	163.8±25.9	181.9	17	**	36.7
1997	151	182.8±26.6	191.3	31	46.2±11.5	37.5
1998	130	156.9±24.6	193.9	24	36.3±9.8	33.3
1999	149	177.4±27.0	212.4	26	36.3±11.1	33.0
2000	146	157.3±24.0	207.3	26	34.8±8.7	31.3
2001	161	171.1±24.8	205.9	21	26.2±8.4	30.5
2002	114	119.7±20.8	206.4	23	28.9±8.2	27.2
2003	148	153.8±23.1	186.3	17	**	25.5
2004	179	177.0±25.1	178.0	19	**	24.3
2005	164	166.8±24.6	165.1	19	**	22.7
2006	233	223.0±27.6	171.8	22	24.3±8.2	22.3
2007	124	114.5±19.7	168.7	25	26.9±9.1	22.9
2008	---	---	---	24	24.6±8.9	21.9

*Rate per 100,000 male population, rates age-adjusted by direct method to US 2000 standard population

**Rate was not calculated because there were fewer than 20 cases.

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 23, 2009) and Michigan Resident Death File, Division for Vital Records and Health Data Development, Michigan Department of Community Health

In Kalamazoo County between 2005 and 2007, black men were 2.1 times more likely to be diagnosed with prostate cancer than white men in Kalamazoo County.



Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

Prostate Cancer Incidence by Race, Kalamazoo County and Michigan 2005 – 2007

Area	All Races		White		Black	
	Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI	Number	Age-Adjusted Rate* +/- 95% CI
Kalamazoo County	521	167.7 ±14.0	445	154.9 ±14.0	58	321.6 ±78.9
Michigan	24,284	168.6 ±2.0	18,923	149.2 ±2.1	3,445	236.3 ±7.7

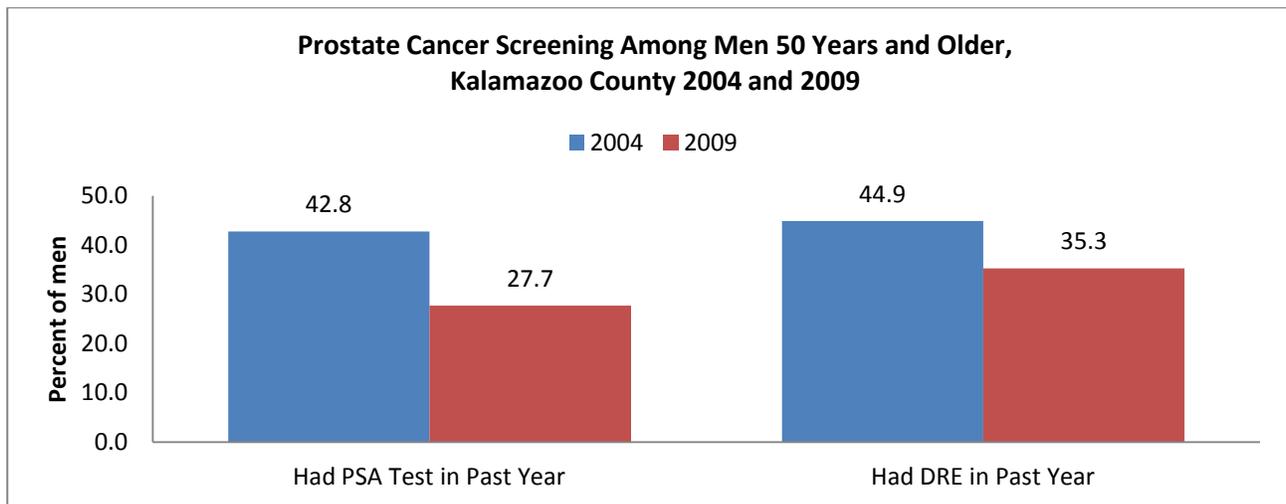
*Rates age-adjusted by direct method to US 2000 standard population

Source: Michigan Resident Cancer Incidence File (updated with cases processed through December 30, 2009), Division for Vital Records and Health Data Development, Michigan Department of Community Health

Digital rectal exam (DRE) and prostate-specific antigen (PSA) blood test screenings for prostate cancer are recommended by the American Cancer Society for men aged 50 years and older who have at least a ten-year life expectancy, and some men should be tested sooner than age 50 if they are at increased risk for prostate cancer.³

In Kalamazoo County in 2009, 27.7% of men aged 50 years and older had a PSA test in the past year, and 35.3% had a DRE in the past year. Both of these screening rates among men 50 years and older were lower than rates in Michigan in 2010: 56.5% of men reported a PSA in the past year and 52.0% of men reported a DRE in the past year.

Prostate cancer screening rates have declined since 2004, but the difference was not statistically significant.



Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

white men were less likely than black men to have ever had a PSA test, and older men were more likely to have had a PSA test in the past year and to have had a DRE in the past year.

³ American Cancer Society

Prostate Cancer Screening Among Men Aged 50 Years and Older, Kalamazoo County 2009

	Ever had PSA Test ^a		Had PSA Test in Past Year ^b		Ever had a DRE ^c		Had DRE in Past Year ^d	
	%	95% C.I.	%	95% C.I.	%	95% C.I.	%	95% C.I.
Total	45.9	(35.1 - 57.2)	27.7	(19.2 - 38.2)	76.2	(64.9 - 84.7)	35.3	(25.5 - 46.5)
Age								
50-59 years	54.1	(36.4 - 70.8)	38.2	(23.3 - 55.5)	80.1	(59.9 - 91.6)	38.1	(23.6 - 55.1)
60 years +	94.3	(86.7 - 97.6)	72.4	(59.5 - 82.4)	98.3	(93.3 - 99.6)	57.8	(42.3 - 72.0)
Race								
White non-Hispanic	44.6	(33.0 - 56.8)	27.7	(19.2 - 38.2)	74.5	(62.0 - 83.9)	33.7	(23.3 - 46.0)
Black non-Hispanic	54.7	(25.1 - 81.3)	34.7	(11.7 - 68.0)	87.0	(65.4 - 95.9)	22.9	(9.5 - 45.6)
Education								
HS Graduate or Less	37.9	(22.5 - 56.3)	21.5	(11.3 - 37.0)	77.2	(58.7 - 88.9)	15.3	(7.7 - 28.1)
Some College or More	50.5	(36.6 - 64.3)	33.9	(23.0 - 46.9)	75.6	(60.7 - 86.2)	46.6	(33.2 - 60.4)
Income								
<\$35,000	43.9	(26.6 - 62.8)	29.6	(16.2 - 47.7)	65.3	(42.7 - 82.6)	35.9	(18.3 - 58.2)
\$35,000+	41.4	(28.4 - 55.8)	25.1	(16.0 - 37.2)	78.9	(64.6 - 88.5)	36.2	(24.0 - 50.4)
City/Out-County								
City of Kalamazoo	38.9	(23.0 - 57.4)	31.3	(17.2 - 50.0)	69.1	(46.1 - 85.4)	41.4	(22.5 - 63.3)
Rest of County	48.1	(34.9 - 61.6)	28.9	(19.4 - 40.6)	78.5	(65.2 - 87.7)	33.3	(22.6 - 46.2)
Within City of Kalamazoo								
White in City	36.5	(18.9 - 58.6)	26.9	(12.4 - 48.9)	64.0	(36.8 - 84.4)	40.7	(18.5 - 67.5)
Black in City	27.0	(11.1 - 52.2)	23.7	(9.5 - 47.8)	79.4	(49.4 - 93.8)	24.7	(9.8 - 49.6)
Health Insurance								
Have Health Insurance	50.8	(38.6 - 62.9)	33.3	(23.9 - 44.3)	81.5	(70.3 - 89.1)	39.8	(28.9 - 51.9)
No Health Insurance	12.8	(4.1 - 33.8)	3.1	(0.5 - 17.4)	36.7	(14.4 - 66.6)	1.1	(0.2 - 5.9)

Note: Men who had been diagnosed with prostate cancer were excluded from these estimates.

Among men aged 50 years and older, the proportion who reported:

^a ever having a prostate-specific antigen (PSA) test.

^b having a PSA test in the past year.

^c ever having a digital rectal exam.

^d having a digital rectal exam in the past year.

Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

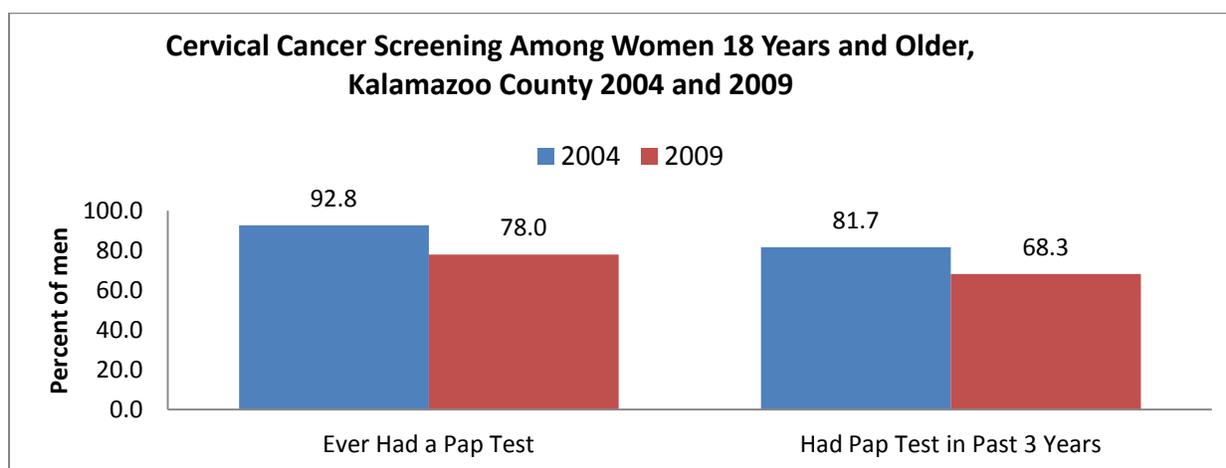
7.1.6 Cervical Cancer

Current guidelines for cervical cancer screening recommend cervical cancer screening should begin within three years after the onset of sexual intercourse, or at least by 21 years of age. Conventional Pap tests should be performed yearly while Liquid Based Cytology should be performed every other year. After three subsequent normal tests or the age of 30, testing frequency can be reduced to once every two to three years (at the discretion of the physician). Pap tests can detect pre-cancers and human papilloma virus (HPV), a risk factor for cervical cancer.

Current screening criteria states individuals over the age of 21 should receive a form of cervical cancer screening. The cervical cancer screening indicator used by both the CDC and the Michigan Department of Community Health examine screening practices for women as young as 18 (due to not being able to establish a point when the respondents have become sexually active), and analyze for screening within the past three years (since a history of normal test results versus abnormal results are not assessed by the survey which collects this data).

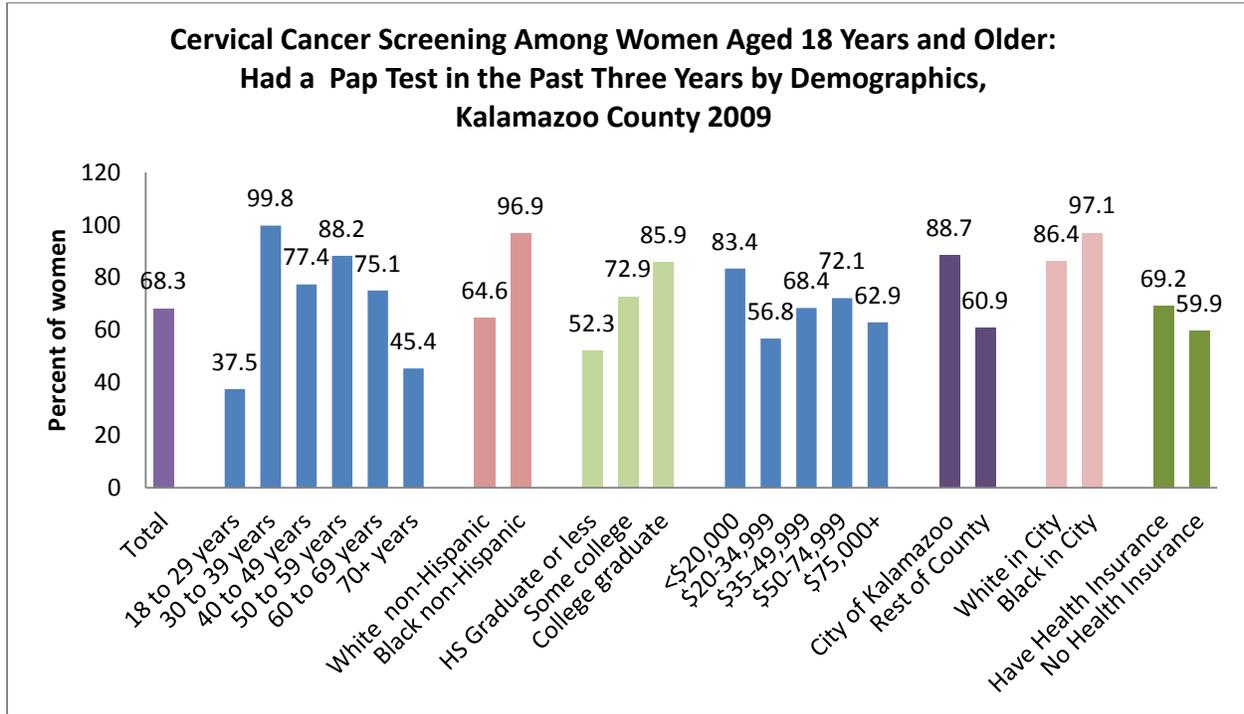
Compared with women in Michigan overall, cervical cancer screening rates were lower among Kalamazoo County women for ever having had a Pap test (78.0% of Kalamazoo women compared with 93.6% of Michigan women) and for having had Pap test in the past three years (68.3% of Kalamazoo women compared with 77.7% of Michigan women). These differences, however, were not statistically significant.

Between 2004 and 2009, the percentage of Kalamazoo County women meeting these two screening indicators decreased, but the decrease was not statistically significant.



Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

The percentage of Kalamazoo County women who received a Pap test within three years increased with educational level and decreased with age (with the exception of lower screening rates among women 18 to 29 years old). Black, non-Hispanic women were screened at a higher rate than white, non-Hispanic women; women at the lowest income level had the highest screening rate, and women in the City of Kalamazoo were screened at a higher rate than women outside of the city. Health insurance status had a minimal impact on screening rates.



Source: Kalamazoo County 2009 Behavioral Risk Factor Survey

**Cervical Cancer Screening Among Females Aged 18 Years and Older,
Kalamazoo County 2009**

	Ever Had a Pap Test ^a		Had Appropriately Timed Pap Test ^b	
	%	95% C.I.	%	95% C.I.
Total	78.0	(51.9 - 92.1)	68.3	(47.9 - 83.5)
Age				
18 to 29 years	38.4	(12.7 - 72.8)	37.5	(12.4 - 71.8)
30 to 39 years	99.8	(98.8 - 100.0)	99.8	(98.8 - 100.0)
40 to 49 years	86.8	(55.9 - 97.2)	77.4	(52.5 - 91.4)
50 to 59 years	99.9	(99.7 - 100.0)	88.2	(77.3 - 94.3)
60 to 69 years	100.0	(0.0 - 100.0)	75.1	(55.0 - 88.1)
70+ years	92.0	(82.3 - 96.6)	45.4	(32.8 - 58.7)
Race				
White non-Hispanic	74.8	(47.3 - 90.7)	64.6	(43.1 - 81.5)
Black non-Hispanic	99.5	(98.1 - 99.9)	96.9	(93.3 - 98.6)
Education				
HS Graduate or less	60.8	(21.9 - 89.6)	52.3	(20.7 - 82.1)
Some college	80.9	(53.1 - 94.1)	72.9	(50.1 - 87.8)
College graduate	98.7	(94.6 - 99.7)	85.9	(76.8 - 91.8)
Income				
LT \$20K	98.4	(91.6 - 99.7)	83.4	(65.7 - 92.9)
\$20-34,999K	68.9	(33.9 - 90.5)	56.8	(30.2 - 80.0)
\$35-49,999K	90.9	(57.8 - 98.6)	68.4	(46.1 - 84.5)
\$50-74,999K	74.8	(30.4 - 95.3)	72.1	(31.1 - 93.7)
\$75K+	64.8	(20.3 - 93.0)	62.9	(20.5 - 91.7)
City/Out-County				
City of Kalamazoo	98.1	(94.9 - 99.3)	88.7	(81.6 - 93.2)
Rest of County	70.5	(41.2 - 89.1)	60.9	(37.6 - 80.1)
Within City of Kalamazoo				
White in City	97.3	(92.3 - 99.1)	86.4	(77.4 - 92.1)
Black in City	99.4	(98.0 - 99.8)	97.1	(93.4 - 98.8)
Health Insurance				
Have Health Insurance	77.9	(49.1 - 92.8)	69.2	(46.3 - 85.4)
No Health Insurance	78.5	(38.4 - 95.5)	59.9	(31.0 - 83.3)
Note: Data included diagnostic tests. Among women aged 18 years and older, the proportion who: ^a reported ever having a Pap test. ^b had a Pap test within the previous three years.				

Source: Kalamazoo County 2009 Behavioral Risk Factor Survey