

II. Cancer

Defined by the National Cancer Institute (NCI) as a disease in which abnormal cells divide uncontrollably and are able to invade other tissues. There are more than 100 different types of cancer.

Key findings from this chapter:

- The [four most common types of cancer](#) diagnoses in Ottawa County are:
 - 1) Breast
 - 2) Prostate
 - 3) Colorectal
 - 4) Lung

These four cancers represent nearly 54% of all cancer diagnoses in the County (221.2 cases per 100,000 residents in 2009)

Positive/Neutral Trends

- [Diagnosed cancer cases](#) among males in Ottawa County have been consistently lower compared to the State over the last 25 years. In 2009, diagnosed cancer cases among males was nearly 15% lower than the State (475.7 cases per 100,000 county residents compared to 559.6 statewide)
- For much of the last 25 years, Ottawa County has had fewer diagnosed [cases of lung cancer](#) and fewer lung cancer deaths when compared to the adjacent counties and the State. In 2009, Ottawa County had 38% fewer diagnosed cases of lung cancer (40.9 cases per 100,000 county residents compared to 66.8 cases statewide) and 33% fewer lung cancer deaths when compared to the State (35.6 deaths per 100,000 county residents compared to 53.6 statewide)

- [Lung cancer deaths](#) in Ottawa County decreased by 15% during the last 10 years (42.0 deaths per 100,000 down to 35.6). Statewide, lung cancer deaths decreased by 5% during this same time period (56.5 deaths per 100,000 down to 53.6)
- [Diagnosed breast cancer](#) cases in Ottawa County among females age 75 and older decreased by nearly 17% during the last 10 years (481.2 cases per 100,000 down to 400.8 cases per 100,000). In contrast, the diagnosed rate of breast cancer cases increased in Ottawa County among females in the other age groups during the same time period

Negative Trends

- [Diagnosed cancer cases](#) among people under the age of 50 increased by 12% in Ottawa County during the last 10 years (78.5 cases per 100,000 county residents up to 88.0 cases) compared to a 20% increase statewide (81.0 cases per 100,000 up to 97.5)

All Cancer Cases (1985-2009)

Diagnosed Cases by Year (Ottawa County, Adjacent Counties, State)

Year	Diagnosed Cases per 100,000 Population*				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	429.7	421.3	429.0	431.1	451.8
1986	427.3	365.1	447.6	495.4	451.6
1987	439.8	410.8	436.3	492.3	465.5
1988	423.8	406.5	440.8	453.8	468.1
1989	424.0	412.8	487.4	483.1	504.8
1990	447.8	431.3	480.8	485.6	520.1
1991	472.7	444.2	515.9	534.6	551.8
1992	517.8	438.4	521.1	533.4	552.3
1993	468.2	402.3	499.7	534.5	533.0
1994	435.7	399.0	490.9	505.9	511.9
1995	451.5	495.6	454.9	507.0	501.9
1996	421.5	426.7	442.7	525.7	503.1
1997	407.3	449.7	449.4	481.1	510.7
1998	412.1	377.1	456.0	494.2	515.1
1999	442.8	472.6	438.2	550.8	523.0
2000	407.4	480.1	474.3	567.0	520.2
2001	442.5	441.6	478.8	542.7	517.6
2002	488.5	453.7	433.0	587.6	517.7
2003	541.6	466.0	466.1	540.5	512.1
2004	581.0	476.5	385.5	544.2	490.8
2005	436.8	587.1	470.3	554.4	493.4
2006	381.5	699.6	456.8	521.3	488.6
2007	423.6	420.6	493.1	416.5	502.6
2008	423.5	437.1	505.0	453.7	474.9
2009	409.7	413.5	484.0	499.0	468.9

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

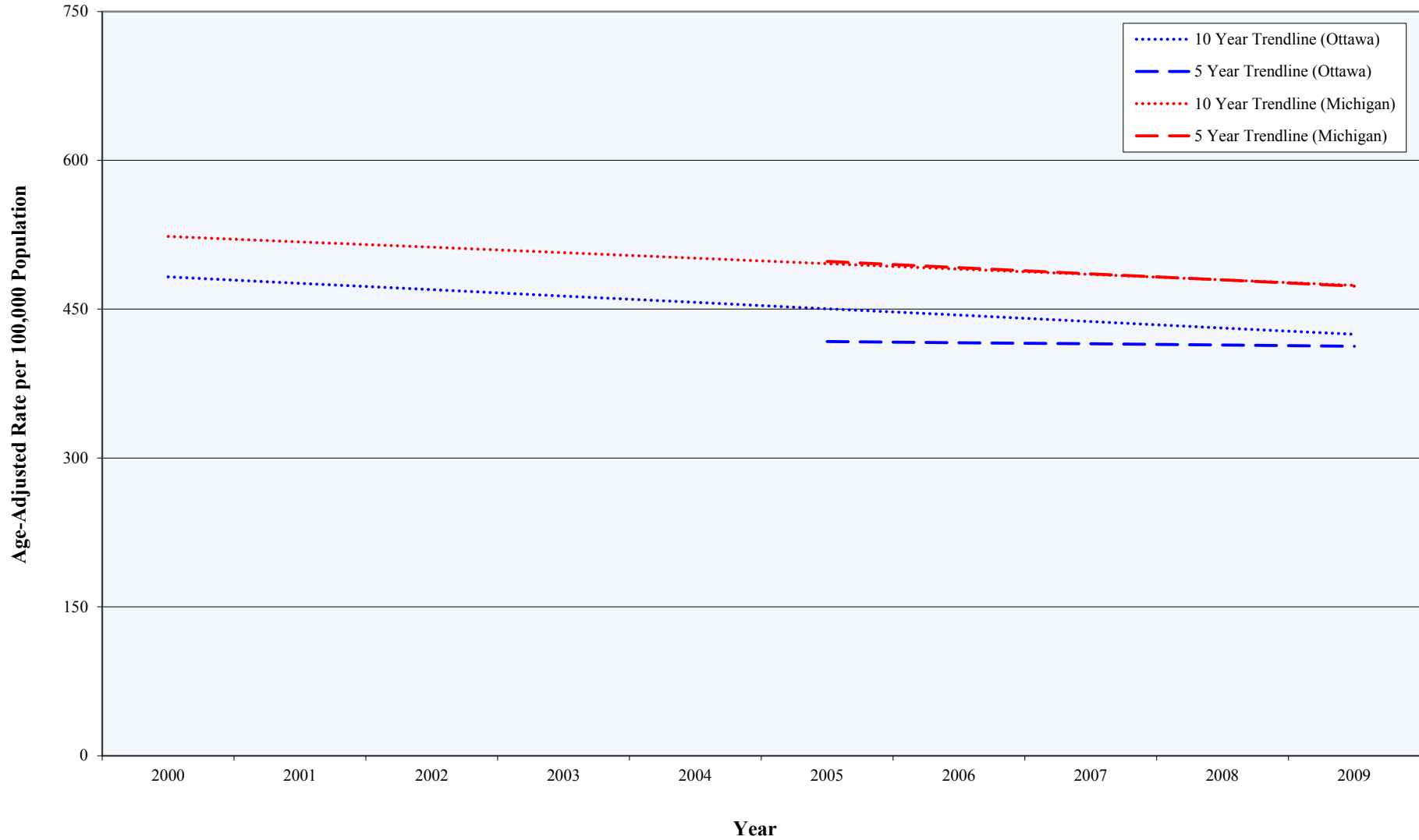
Diagnosed Cancer Cases (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Cancer Cases

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

All Cancer Cases (1985-2009)

Diagnosed Cases by Gender (Ottawa County, Adjacent Counties, State)

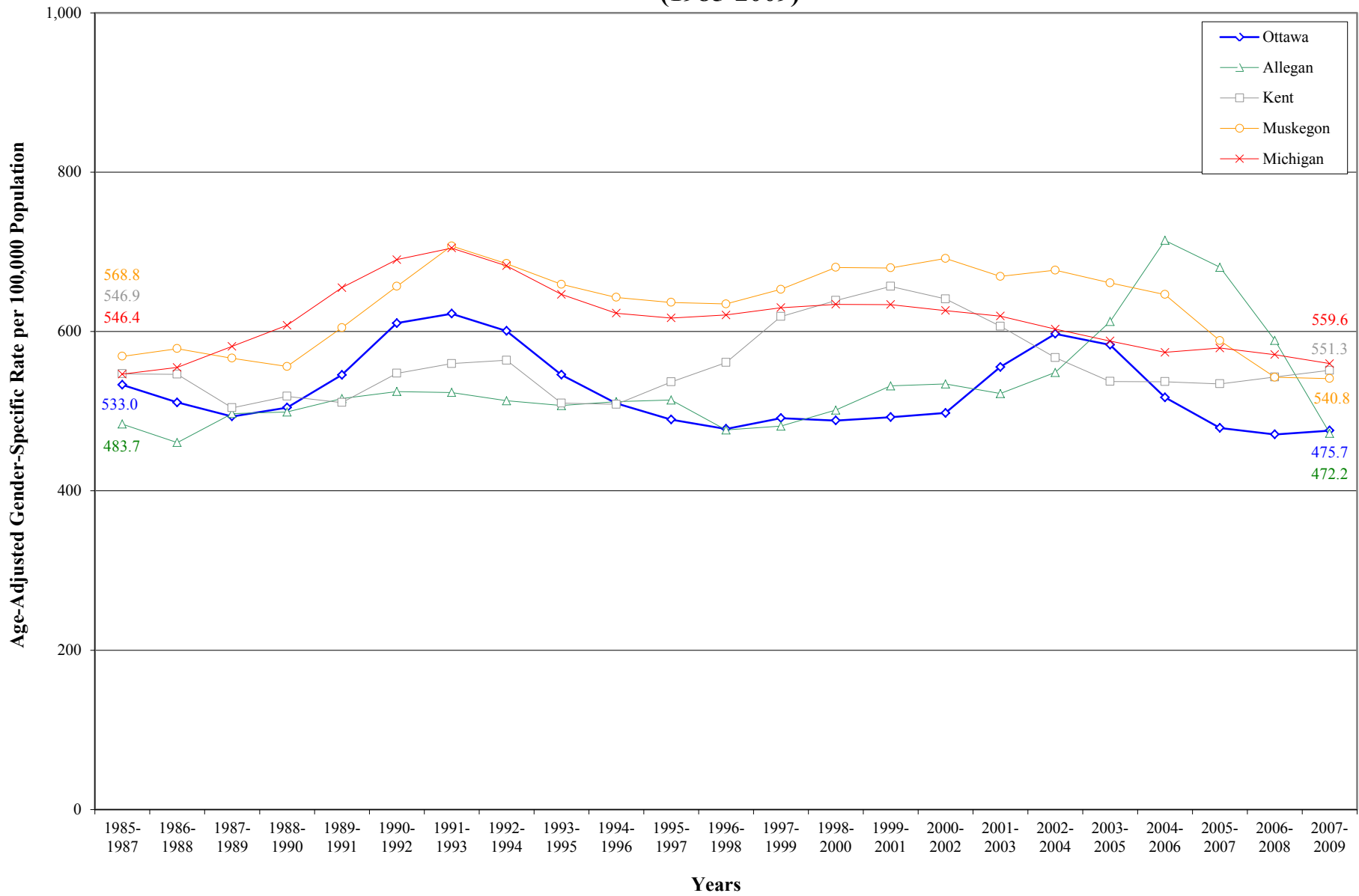
Diagnosed Cases per 100,000 Population*

Year	Male					Female				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	533.0	483.7	546.9	568.8	546.4	381.2	347.8	405.7	422.5	406.4
1986-1988	510.9	460.6	546.3	578.4	554.9	393.4	354.8	400.7	428.0	410.2
1987-1989	493.3	496.9	504.2	566.4	581.3	402.5	357.9	375.7	427.3	422.7
1988-1990	504.5	498.9	518.6	556.0	607.7	395.1	370.8	385.9	432.9	435.8
1989-1991	545.5	515.8	510.8	604.8	655.0	393.0	379.2	385.4	444.5	450.8
1990-1992	610.4	524.7	547.5	656.6	690.2	399.4	385.1	422.0	438.7	452.3
1991-1993	622.4	523.4	559.6	707.3	704.7	399.7	364.4	434.3	429.0	446.8
1992-1994	600.7	513.0	563.9	685.2	682.4	388.2	344.0	447.7	426.7	436.9
1993-1995	545.7	507.1	510.1	659.1	646.5	389.0	385.0	403.0	426.0	432.0
1994-1996	509.7	511.8	508.6	642.8	622.9	388.6	391.2	409.4	434.2	430.9
1995-1997	489.4	513.9	536.7	636.5	617.0	390.6	418.7	414.7	423.0	434.6
1996-1998	477.7	476.4	561.0	634.5	620.7	376.3	374.0	425.5	415.1	439.4
1997-1999	491.2	481.2	618.7	652.9	629.9	379.2	401.2	430.6	418.0	444.1
1998-2000	488.2	501.3	638.9	680.3	634.0	376.0	404.7	433.4	443.2	444.9
1999-2001	492.5	531.7	656.6	679.7	633.8	392.3	421.6	427.8	468.0	444.0
2000-2002	497.7	534.1	640.9	691.7	626.3	415.9	410.2	421.9	477.7	443.9
2001-2003	555.5	522.0	606.6	669.1	619.4	451.8	411.1	404.0	477.9	443.5
2002-2004	597.1	548.6	567.1	676.9	602.9	500.2	407.3	397.5	474.1	438.6
2003-2005	583.2	612.4	537.2	660.9	588.0	478.1	437.5	394.9	469.4	435.7
2004-2006	517.3	714.4	536.9	646.4	573.8	431.4	494.6	397.2	467.2	432.0
2005-2007	479.0	680.5	534.3	588.3	579.2	368.5	482.7	396.0	434.6	435.1
2006-2008	470.8	588.8	542.8	542.5	570.9	368.2	462.1	403.3	406.7	429.3
2007-2009	475.7	472.2	551.3	540.8	559.6	379.8	389.0	407.6	394.9	425.8

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups. Rates are gender-specific and refer to the population of that gender

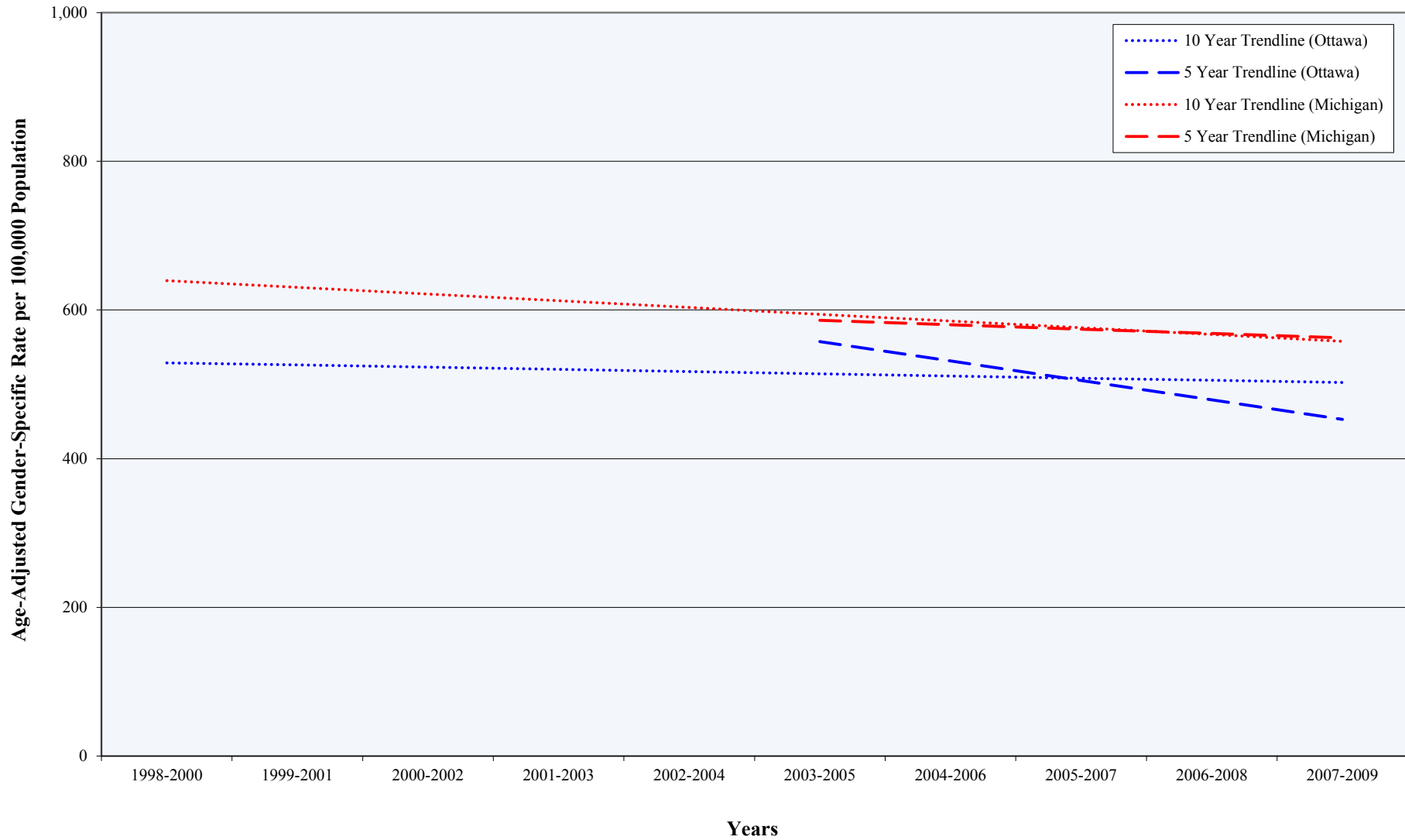
Diagnosed Cancer Cases Among Males (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

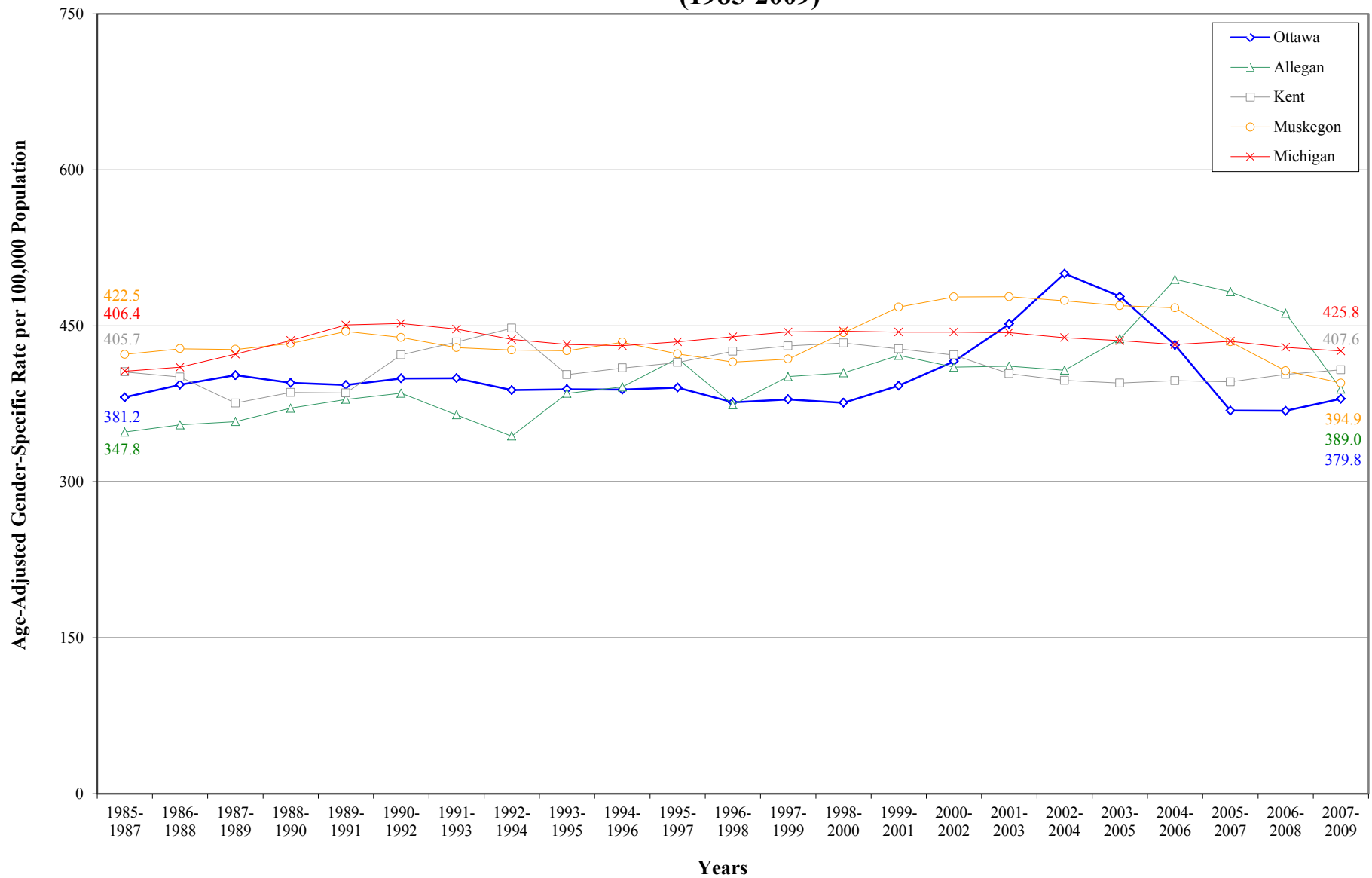
Diagnosed Cancer Cases Among Males

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

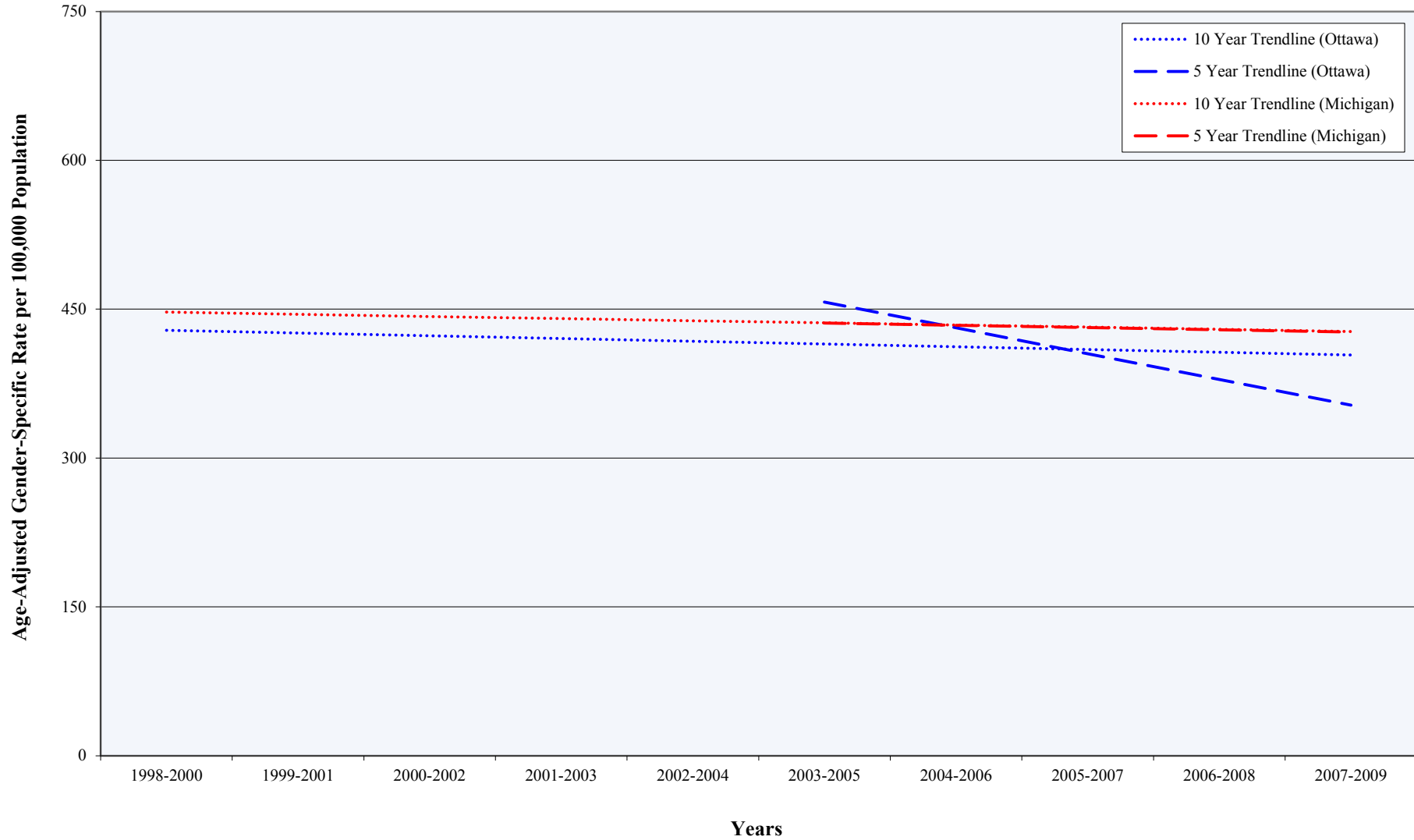
Diagnosed Cancer Cases Among Females (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Cancer Cases Among Females

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

All Cancer Cases (1985-2009)

Diagnosed Cases by Age (Ottawa County, Adjacent Counties, State)

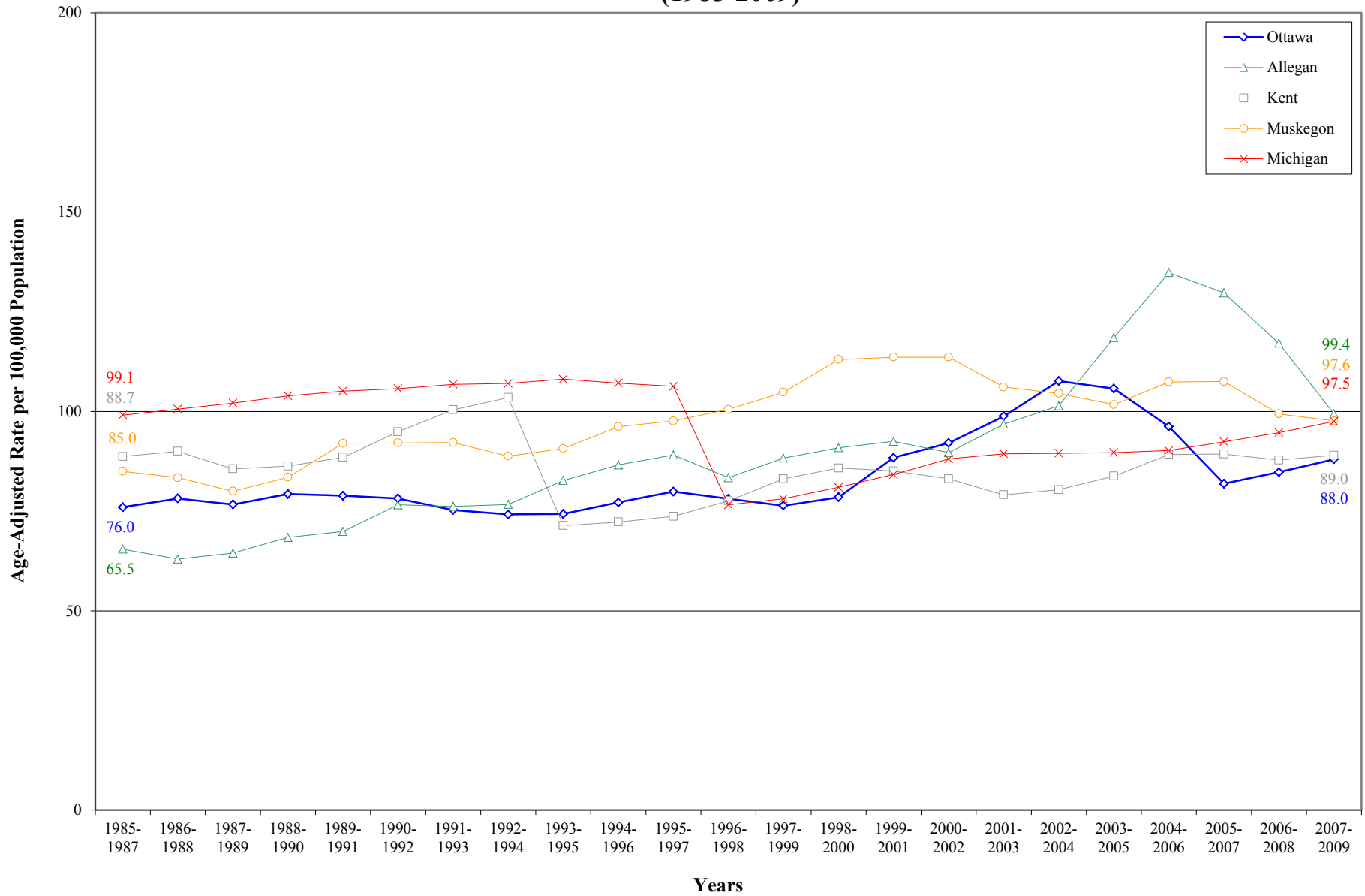
Diagnosed Cases per 100,000 Population*

Year	Under Age 50					Age 50-74					Age 75 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	76.0	65.5	88.7	85.0	99.1	1,058.4	1,089.5	1,165.5	1,330.6	1,355.2	2,412.8	2,021.7	2,220.2	2,193.0	2,586.2
1986-1988	78.2	63.0	90.0	83.4	100.6	1,030.5	1,111.0	1,126.4	1,352.8	1,346.4	2,441.0	1,923.6	2,278.0	2,287.8	2,597.4
1987-1989	76.7	64.5	85.6	80.0	102.1	1,026.0	1,126.9	1,040.3	1,339.6	1,331.7	2,473.5	2,126.8	2,107.7	2,384.3	2,596.3
1988-1990	79.3	68.4	86.3	83.5	103.9	1,036.5	1,121.5	1,047.5	1,263.6	1,309.5	2,485.8	2,228.9	2,255.1	2,597.5	2,589.3
1989-1991	78.9	69.9	88.5	92.0	105.1	1,080.5	1,162.4	1,032.1	1,302.5	1,281.7	2,644.4	2,256.6	2,205.4	2,812.5	2,609.1
1990-1992	78.2	76.6	94.9	92.1	105.7	1,183.8	1,191.0	1,102.9	1,373.2	1,247.2	2,845.1	2,220.3	2,440.5	2,868.5	2,558.7
1991-1993	75.3	76.2	100.4	92.2	106.8	1,217.2	1,183.6	1,121.5	1,434.8	1,207.2	2,854.2	2,098.6	2,478.8	2,932.7	2,541.1
1992-1994	74.2	76.7	103.5	88.8	107.0	1,217.6	1,137.8	1,152.1	1,448.6	1,182.6	2,636.1	2,020.8	2,474.5	2,770.3	2,478.5
1993-1995	74.3	82.7	71.4	90.7	108.1	1,173.4	1,214.7	1,120.2	1,402.5	1,186.6	2,404.4	2,038.2	2,353.7	2,738.5	2,508.3
1994-1996	77.2	86.6	72.3	96.2	107.1	1,138.4	1,222.6	1,134.6	1,409.8	1,174.3	2,234.5	2,045.2	2,375.0	2,562.9	2,454.9
1995-1997	79.9	89.1	73.7	97.6	106.3	1,096.8	1,239.0	1,173.7	1,378.9	1,165.9	2,161.1	2,180.5	2,500.1	2,486.0	2,394.2
1996-1998	78.1	83.4	77.6	100.5	76.6	1,035.7	1,118.2	1,205.7	1,372.1	1,195.5	2,159.8	1,969.3	2,601.7	2,385.0	2,378.3
1997-1999	76.4	88.3	83.1	104.8	78.1	1,055.2	1,151.4	1,255.7	1,363.1	1,214.0	2,196.9	2,015.3	2,797.3	2,464.8	2,424.3
1998-2000	78.5	90.9	85.8	113.0	81.0	1,060.1	1,144.1	1,320.1	1,419.7	1,256.3	2,096.2	2,124.9	2,757.4	2,565.4	2,576.6
1999-2001	88.4	92.5	85.1	113.6	84.2	1,064.6	1,168.8	1,367.5	1,442.0	1,301.8	2,074.2	2,310.5	2,716.9	2,665.2	2,717.4
2000-2002	92.1	89.7	83.1	113.6	88.1	1,093.4	1,098.4	1,376.4	1,469.0	1,370.5	2,159.9	2,471.3	2,570.5	2,708.3	2,923.7
2001-2003	98.8	96.8	79.1	106.1	89.4	1,156.8	1,092.9	1,337.8	1,399.8	1,431.2	2,549.8	2,333.6	2,358.1	2,854.7	2,997.7
2002-2004	107.6	101.4	80.4	104.5	89.5	1,266.5	1,118.6	1,268.9	1,387.3	1,459.0	2,768.1	2,370.6	2,251.6	2,890.0	2,978.7
2003-2005	105.7	118.5	83.8	101.7	89.7	1,216.2	1,246.9	1,213.5	1,328.0	1,439.1	2,672.1	2,430.1	2,146.4	2,929.3	2,820.5
2004-2006	96.2	134.8	89.2	107.4	90.2	1,099.0	1,401.7	1,174.5	1,325.7	1,394.9	2,330.3	2,908.6	2,188.5	2,731.2	2,668.5
2005-2007	81.9	129.7	89.3	107.5	92.4	992.2	1,325.7	1,186.3	1,203.0	1,363.4	2,092.8	2,819.6	2,072.5	2,467.2	2,575.1
2006-2008	84.8	117.1	87.8	99.4	94.7	976.6	1,223.6	1,205.0	1,129.5	1,354.2	2,043.1	2,481.9	2,109.7	2,296.8	2,550.5
2007-2009	88.0	99.4	89.0	97.6	97.5	1,012.7	1,030.0	1,206.7	1,111.3	1,350.8	2,021.8	1,912.0	2,155.6	2,286.5	2,563.7

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Diagnosed cancer rates are age-specific and refer to the population in a specific age group

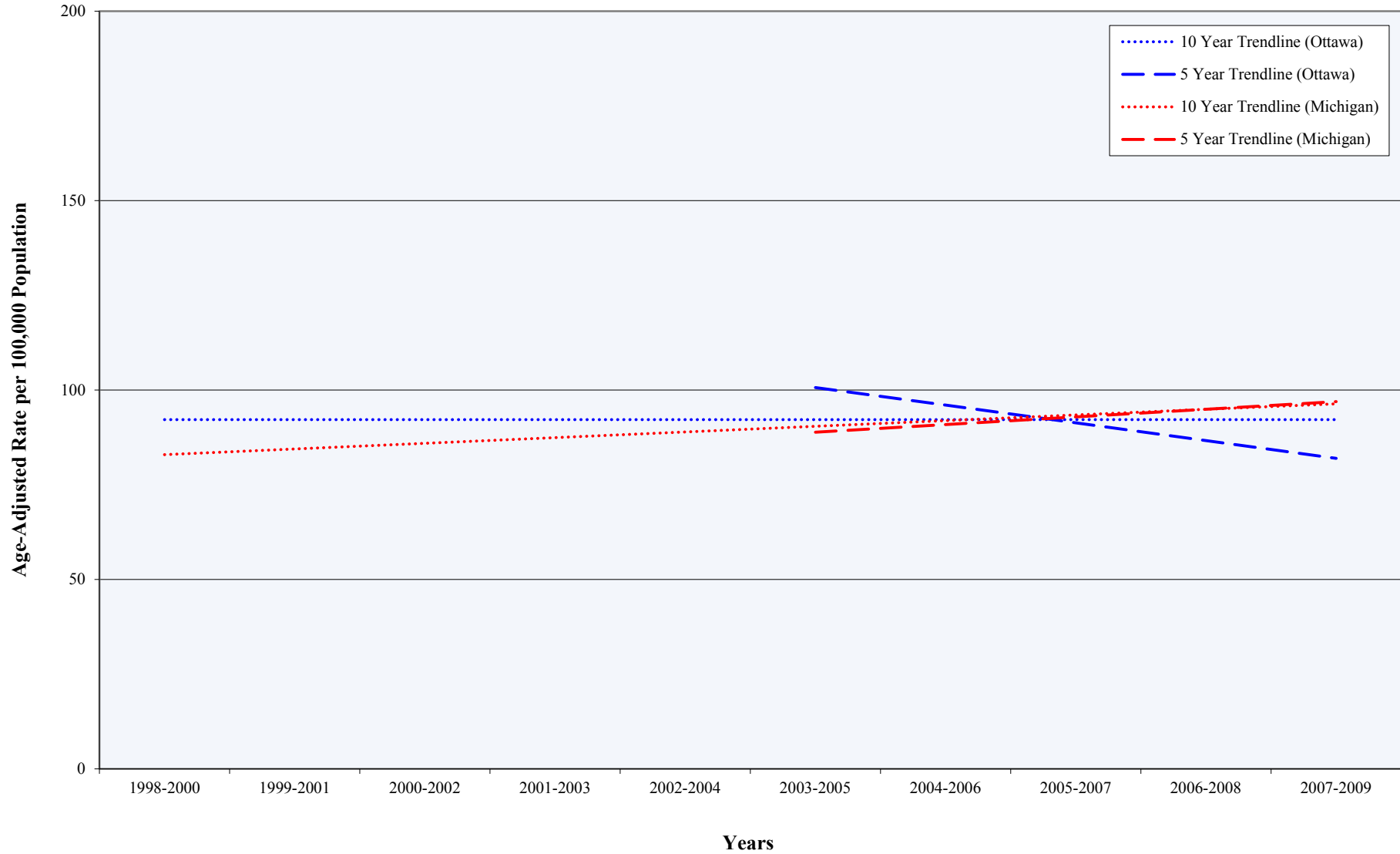
Diagnosed Cancer Cases Among Persons Under Age 50 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

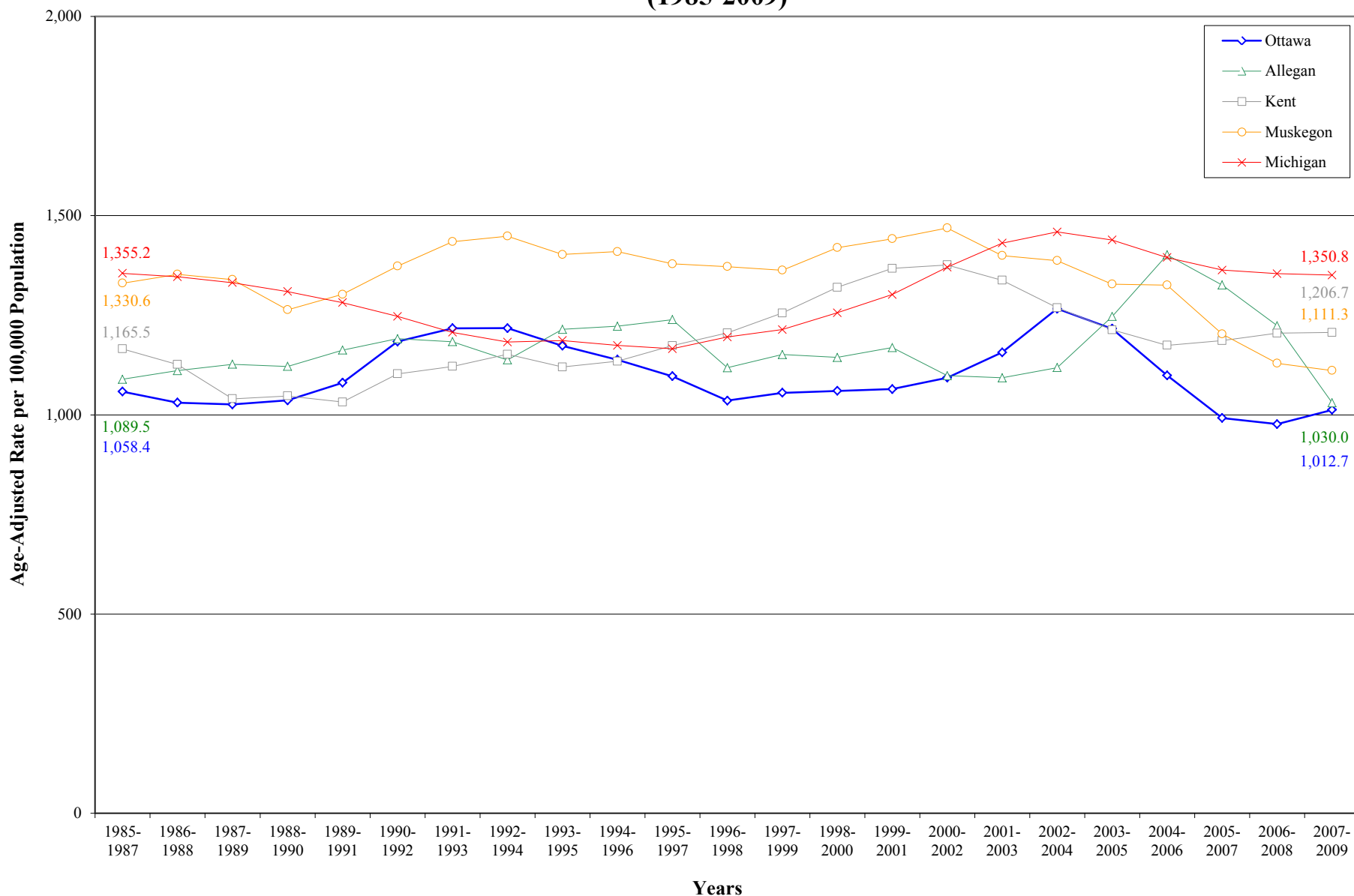
Diagnosed Cancer Cases Among Persons Under Age 50

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

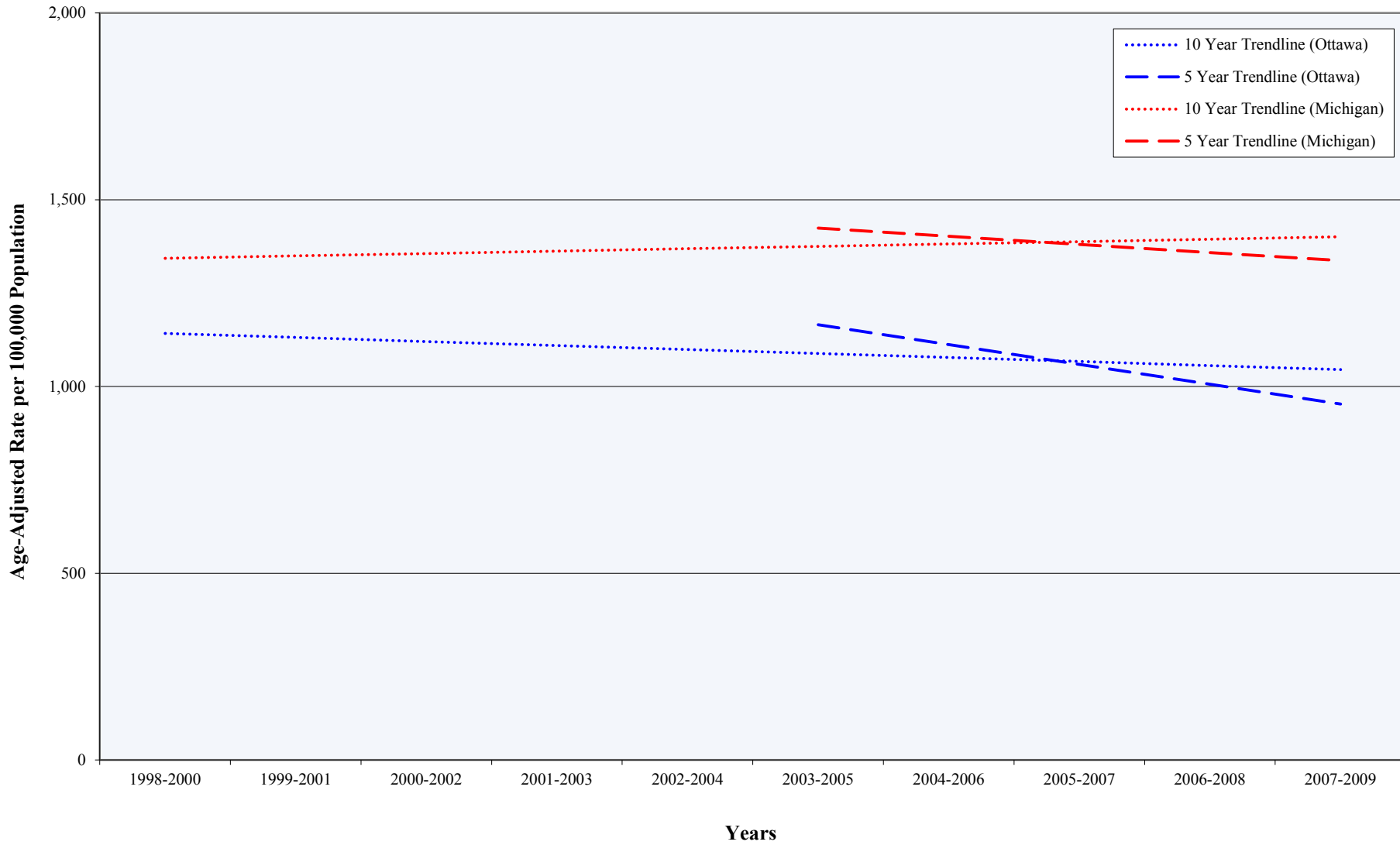
Diagnosed Cancer Cases Among Persons Age 50-74 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

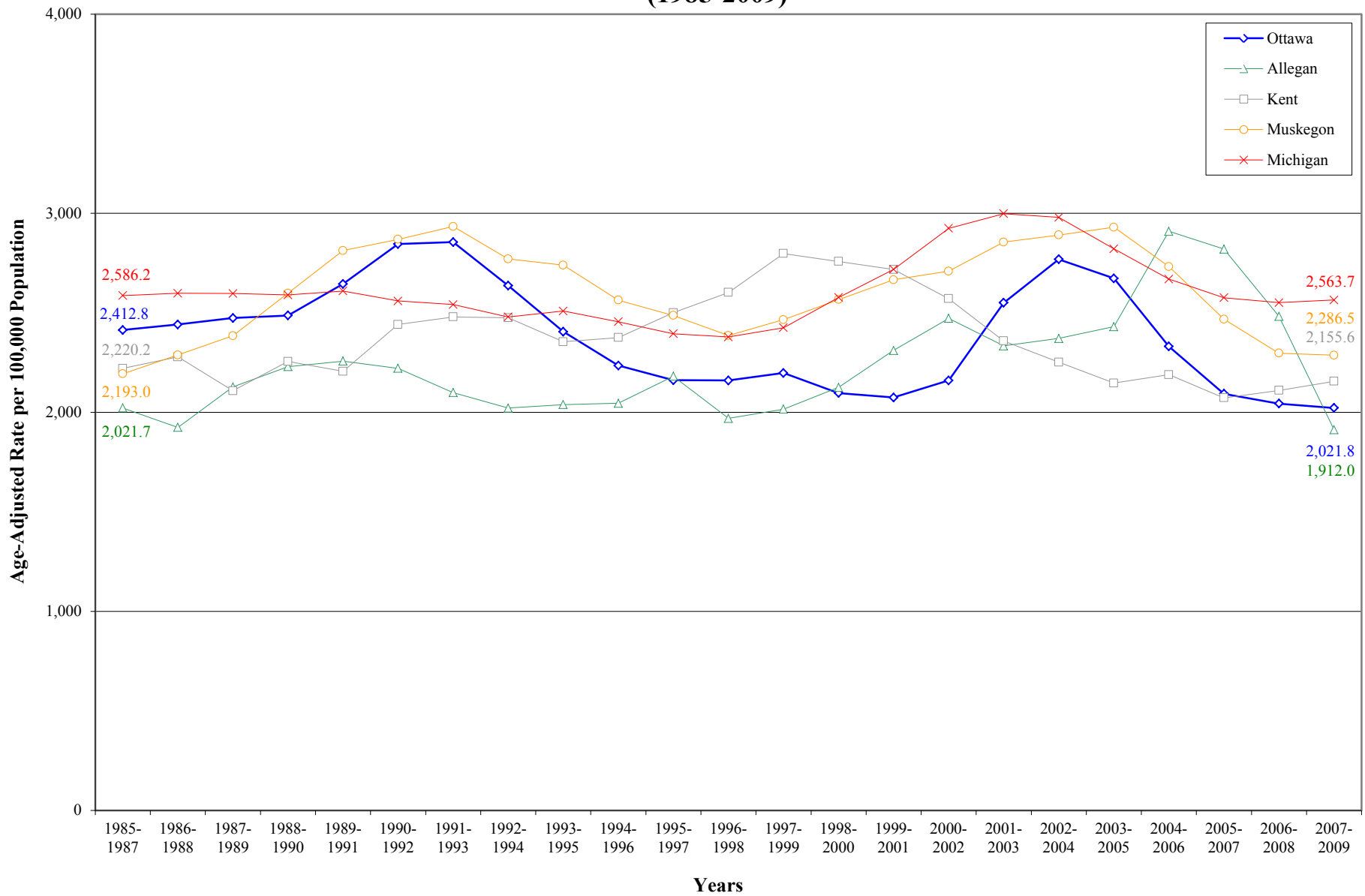
Diagnosed Cancer Cases Among Persons Age 50-74

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

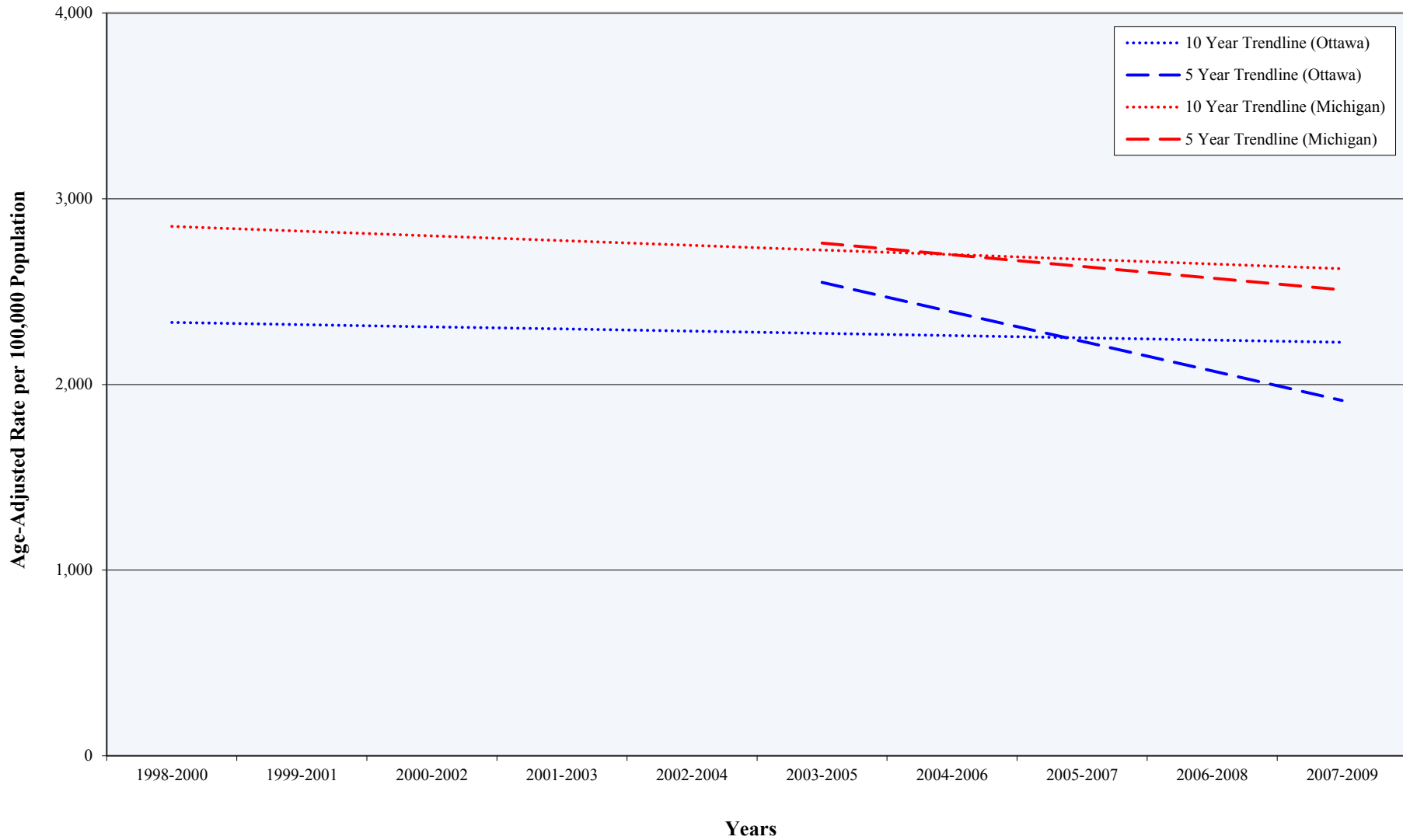
Diagnosed Cancer Cases Among Persons Age 75 and Older (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Cancer Cases Among Persons Age 75 and Older

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

All Cancer Cases (1985-2009) By Stage at Diagnosis (Ottawa County)

Percent of All Diagnosed Cancer Cases

Year	In Situ ¹	Localized ²	Regional ³	Distant ⁴	Unknown ⁵
1985-1989	11.9%	36.8%	16.8%	12.0%	22.5%
1986-1990	11.5%	35.5%	17.1%	12.5%	23.4%
1987-1991	11.3%	38.4%	16.6%	12.3%	21.5%
1988-1992	11.1%	41.2%	16.7%	12.7%	18.3%
1989-1993	10.9%	40.4%	16.2%	12.3%	20.2%
1990-1994	10.4%	40.6%	15.6%	12.1%	21.3%
1991-1995	9.9%	40.9%	15.6%	11.6%	22.0%
1992-1996	9.8%	39.8%	16.1%	12.3%	22.1%
1993-1997	9.2%	37.8%	17.1%	12.6%	23.2%
1994-1998	9.0%	37.8%	16.9%	12.7%	23.6%
1995-1999	9.0%	37.3%	17.8%	13.3%	22.7%
1996-2000	10.1%	37.2%	18.1%	13.1%	21.4%
1997-2001	10.6%	36.1%	18.4%	12.2%	22.7%
1998-2002	11.4%	36.9%	17.6%	12.2%	21.9%
1999-2003	11.9%	38.1%	17.5%	12.5%	20.0%
2000-2004	12.7%	38.4%	17.4%	13.3%	18.2%
2001-2005	12.5%	39.7%	16.8%	13.9%	17.1%
2002-2006	12.7%	40.9%	15.9%	14.8%	15.7%
2003-2007	12.8%	41.0%	16.0%	15.7%	14.5%
2004-2008	12.9%	40.8%	15.9%	16.4%	14.0%
2005-2009	13.5%	40.8%	15.3%	15.9%	14.6%

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

¹ In Situ, or early cancer, is a non-invasive cancer that is diagnosed when the cancer is only present in the layer of cells in which it began

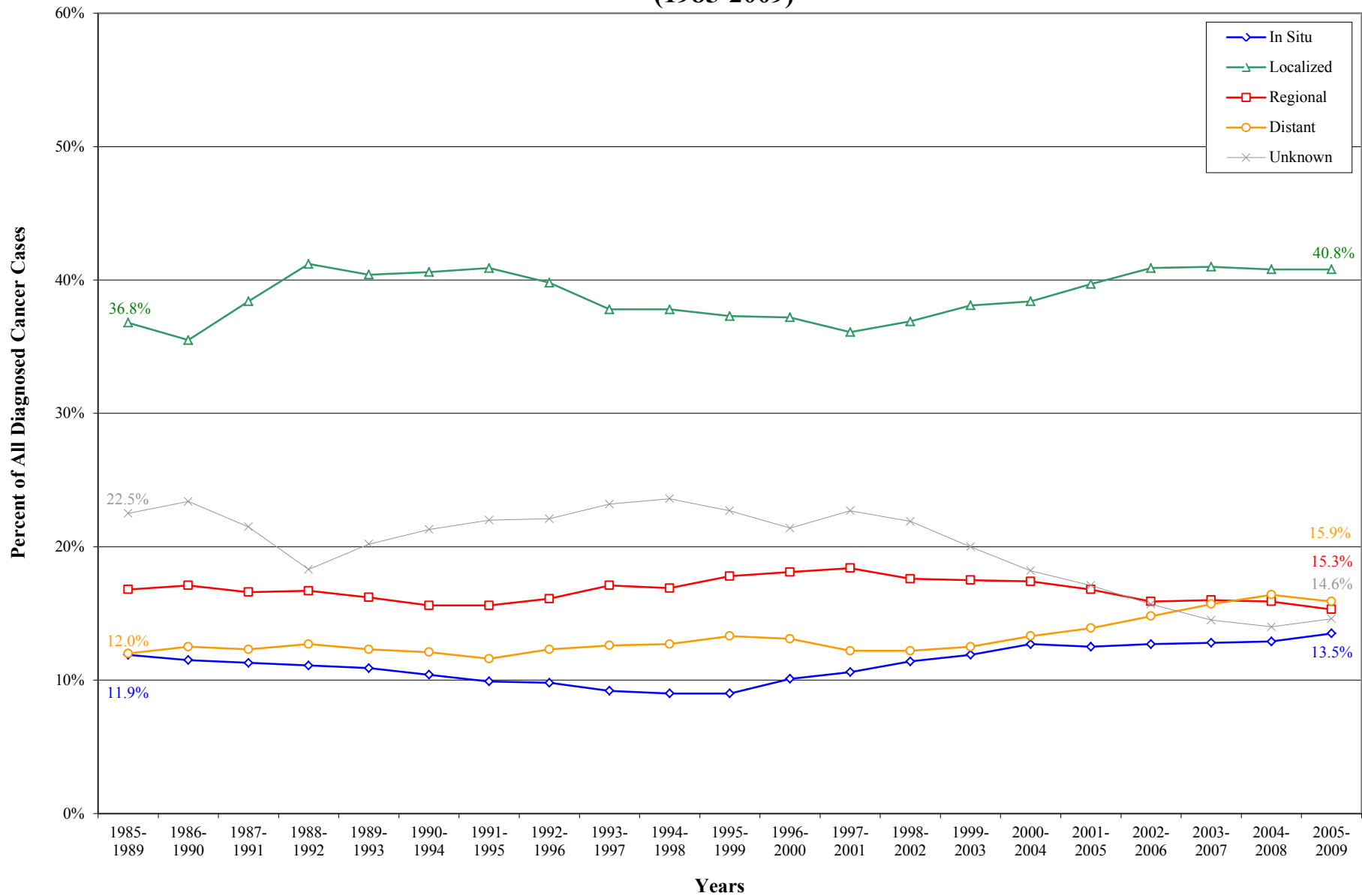
² Localized cancer is invasive but is limited to the organ in which it began, without evidence of spread

³ Regional cancer is invasive and has spread beyond the original site to nearby lymph nodes or organs and tissues

⁴ Distant cancer is invasive and has spread from the original site to distant organs or distant lymph nodes

⁵ Unknown cancer is invasive; however, the exact stage of the cancer is unknown

Ottawa County Cancer Cases by Stage at Diagnosis (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

All Cancer Cases (1985-2009)

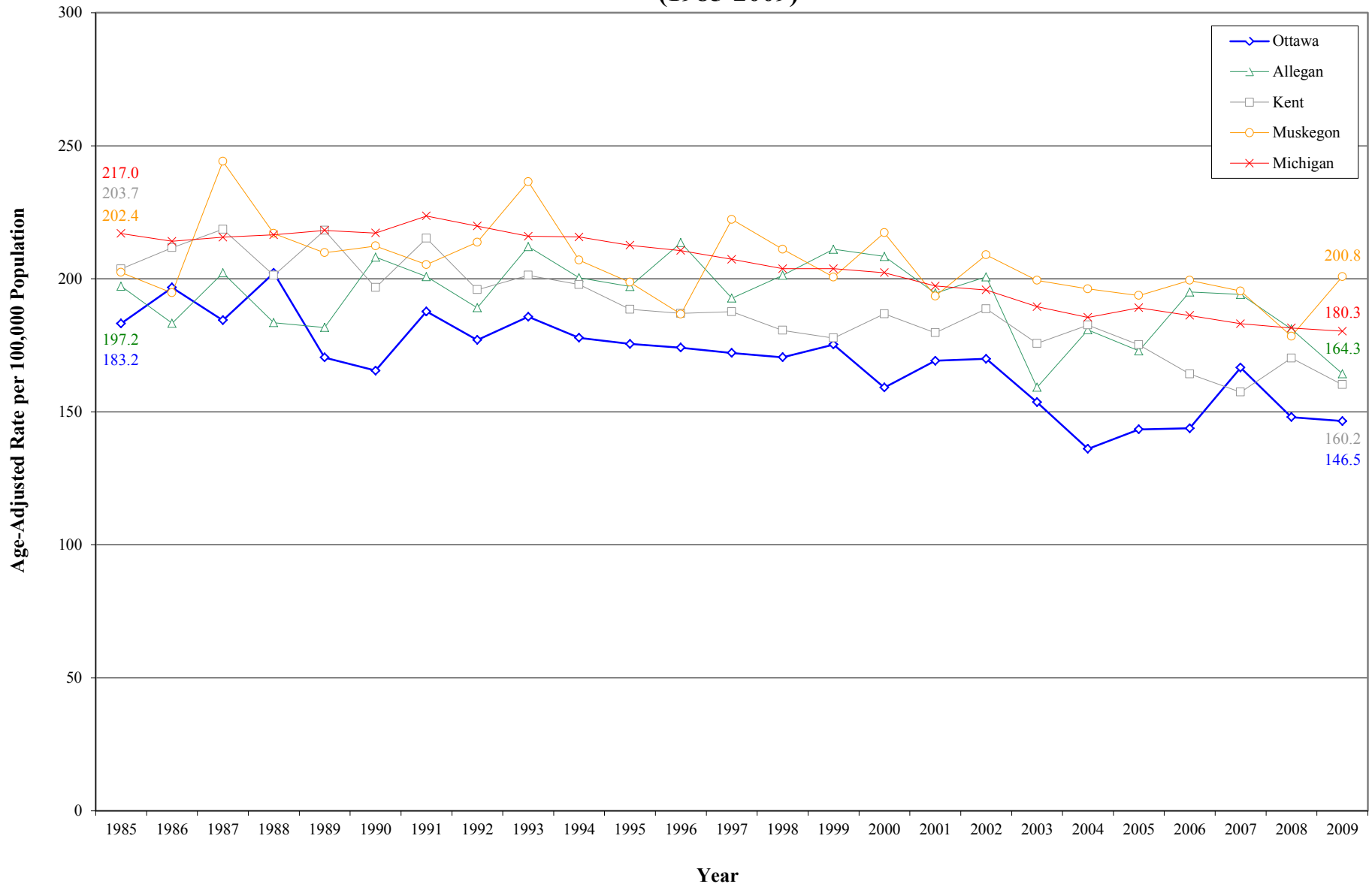
Deaths by Year (Ottawa County, Adjacent Counties, State)

Year	Deaths per 100,000 Population*				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	183.2	197.2	203.7	202.4	217.0
1986	196.7	183.3	211.7	194.7	214.1
1987	184.4	202.2	218.6	244.1	215.6
1988	202.2	183.5	201.3	217.0	216.5
1989	170.4	181.7	218.2	209.8	218.2
1990	165.5	208.1	196.7	212.3	217.2
1991	187.7	200.8	215.2	205.3	223.6
1992	177.0	189.1	195.9	213.7	219.8
1993	185.7	212.1	201.3	236.5	216.0
1994	177.8	200.4	197.8	207.0	215.7
1995	175.5	197.1	188.5	198.7	212.6
1996	174.1	213.6	187.0	186.7	210.6
1997	172.1	192.7	187.6	222.3	207.3
1998	170.5	201.3	180.6	211.1	203.8
1999	175.3	211.1	177.7	200.6	203.8
2000	159.1	208.4	186.8	217.3	202.3
2001	169.2	194.6	179.7	193.5	197.3
2002	169.9	200.7	188.7	209.0	195.8
2003	153.6	159.2	175.7	199.4	189.5
2004	136.1	180.8	182.6	196.2	185.5
2005	143.4	172.9	175.2	193.7	189.1
2006	143.8	195.0	164.2	199.4	186.2
2007	166.6	194.1	157.4	195.4	183.1
2008	148.0	181.1	170.2	178.4	181.5
2009	146.5	164.3	160.2	200.8	180.3

Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

* Death rates are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

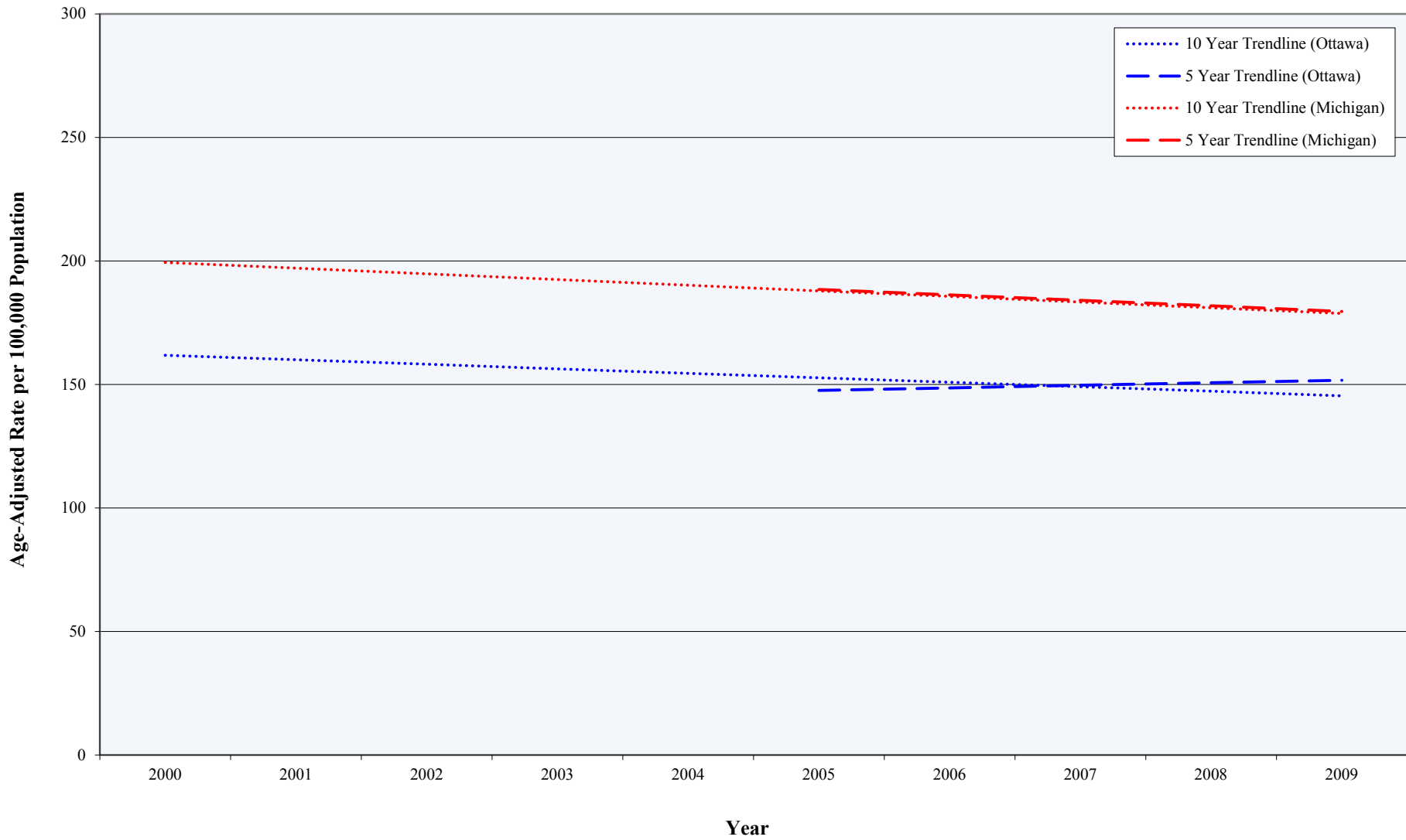
Cancer Deaths (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Cancer Deaths

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Four Leading Cancer Diagnoses (2009)

(Ottawa County, Adjacent Counties, State)

Percent of All Cancer Diagnoses¹

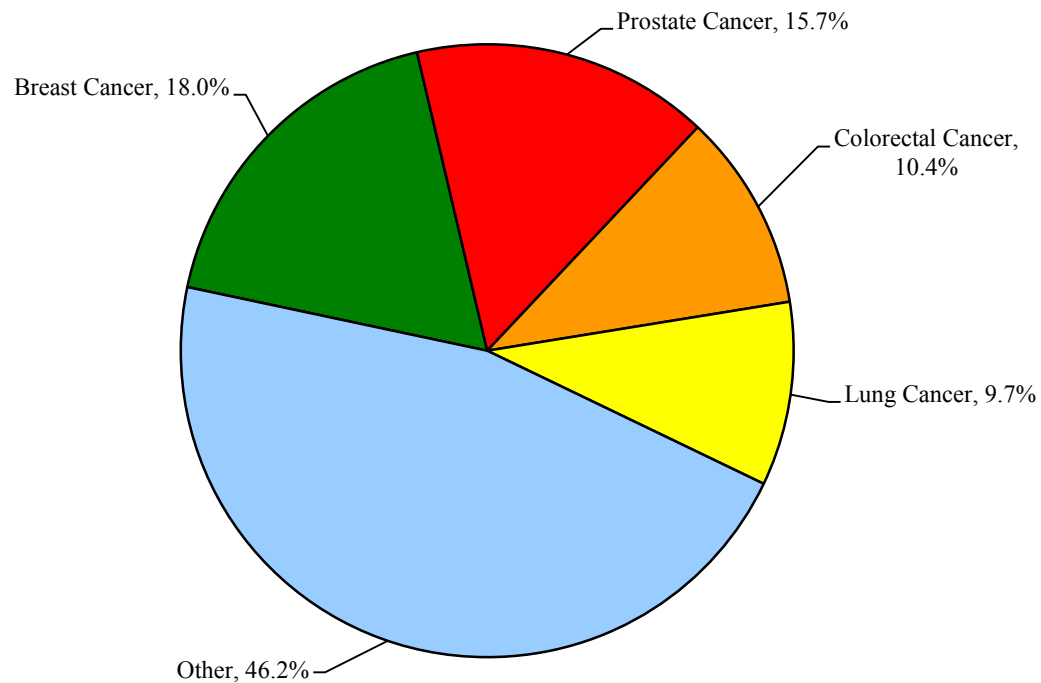
	Breast Cancer	Prostate Cancer	Colorectal Cancer	Lung Cancer	Other ²
Ottawa	18.0%	15.7%	10.4%	9.7%	46.2%
Allegan	15.1%	14.5%	9.5%	13.3%	47.6%
Kent	16.0%	15.2%	7.9%	11.5%	49.4%
Muskegon	14.0%	17.6%	8.6%	14.4%	45.4%
Michigan	13.6%	15.5%	9.2%	14.3%	47.4%

Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

¹ Cancer diagnoses are ranked from most common to least common leading diagnosis in Ottawa County

² Used as a residual to include any other cancer diagnoses that is not specified under the four leading diagnoses

Four Leading Cancer Diagnoses in Ottawa County (2009)



Breast Cancer (1985-2009)

Diagnosed Cases by Year (Ottawa County, Adjacent Counties, State)

Year	Diagnosed Cases per 100,000 Female Population*				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	118.0	110.4	137.6	121.5	122.9
1986	115.7	105.3	145.7	155.2	125.7
1987	168.3	131.0	138.6	150.8	130.3
1988	146.9	112.9	141.2	161.9	132.4
1989	144.1	112.0	144.9	134.1	133.8
1990	120.0	126.7	158.3	151.7	142.6
1991	139.0	148.2	138.5	141.4	141.8
1992	138.9	132.8	147.8	144.2	137.4
1993	138.1	103.0	142.0	129.3	132.6
1994	110.5	92.3	141.0	146.1	129.3
1995	158.6	169.3	135.9	139.1	134.6
1996	118.9	119.9	130.1	153.8	130.1
1997	137.0	120.3	128.3	122.5	134.5
1998	136.6	102.1	135.4	127.1	135.2
1999	138.2	149.3	142.9	139.2	135.6
2000	120.2	128.8	142.6	171.0	135.8
2001	164.7	107.8	144.6	137.3	133.9
2002	150.1	124.9	130.3	160.8	131.2
2003	145.1	117.2	133.1	145.8	125.3
2004	185.3	130.2	109.7	153.1	122.2
2005	114.2	157.7	141.3	118.2	120.5
2006	109.2	188.2	119.8	152.9	119.3
2007	130.1	100.3	135.4	105.1	120.3
2008	126.1	145.0	140.4	100.0	116.2
2009	137.8	118.7	141.8	133.7	119.8

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

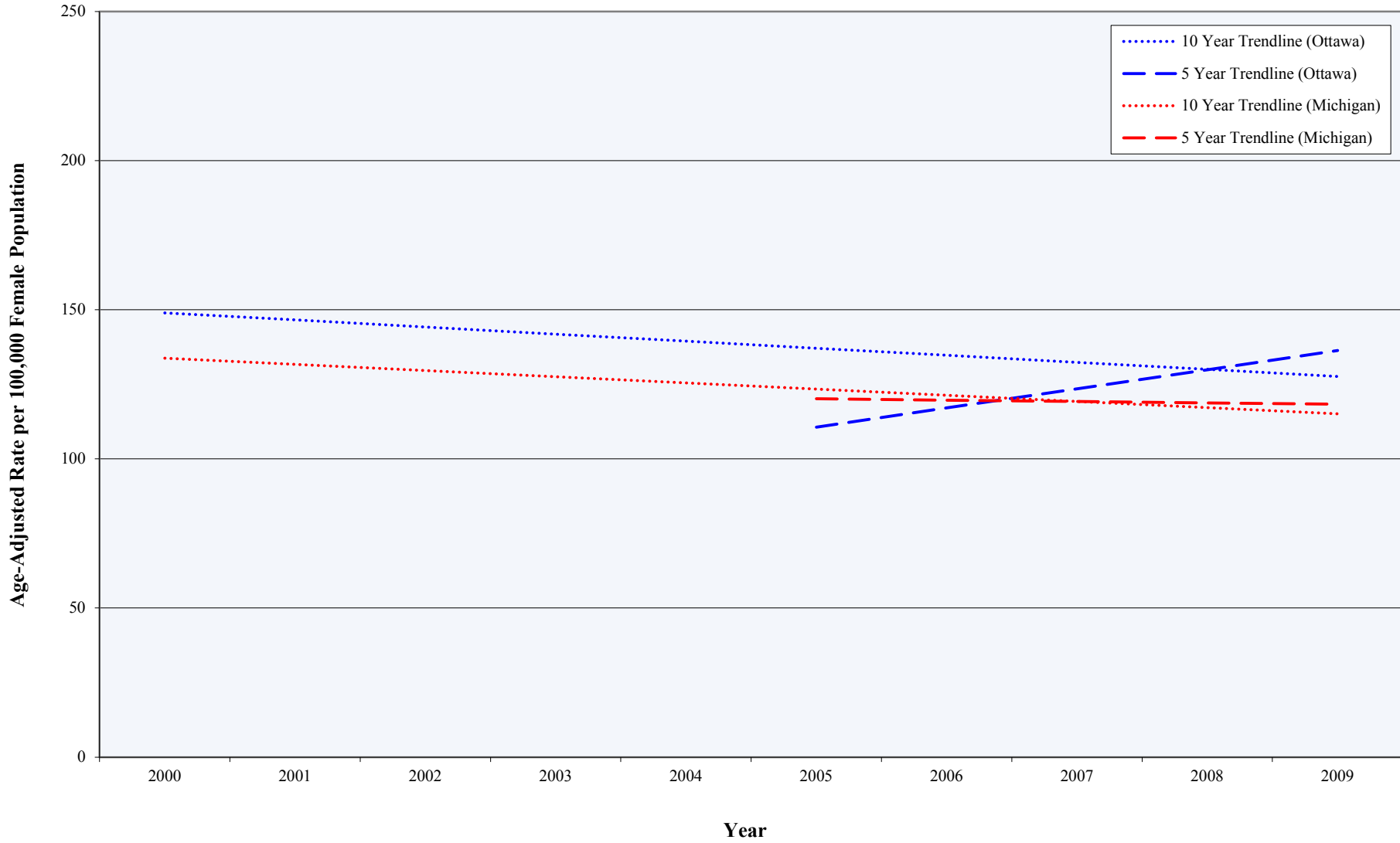
Diagnosed Breast Cancer Cases (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Breast Cancer Cases

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Breast Cancer (1985-2009)

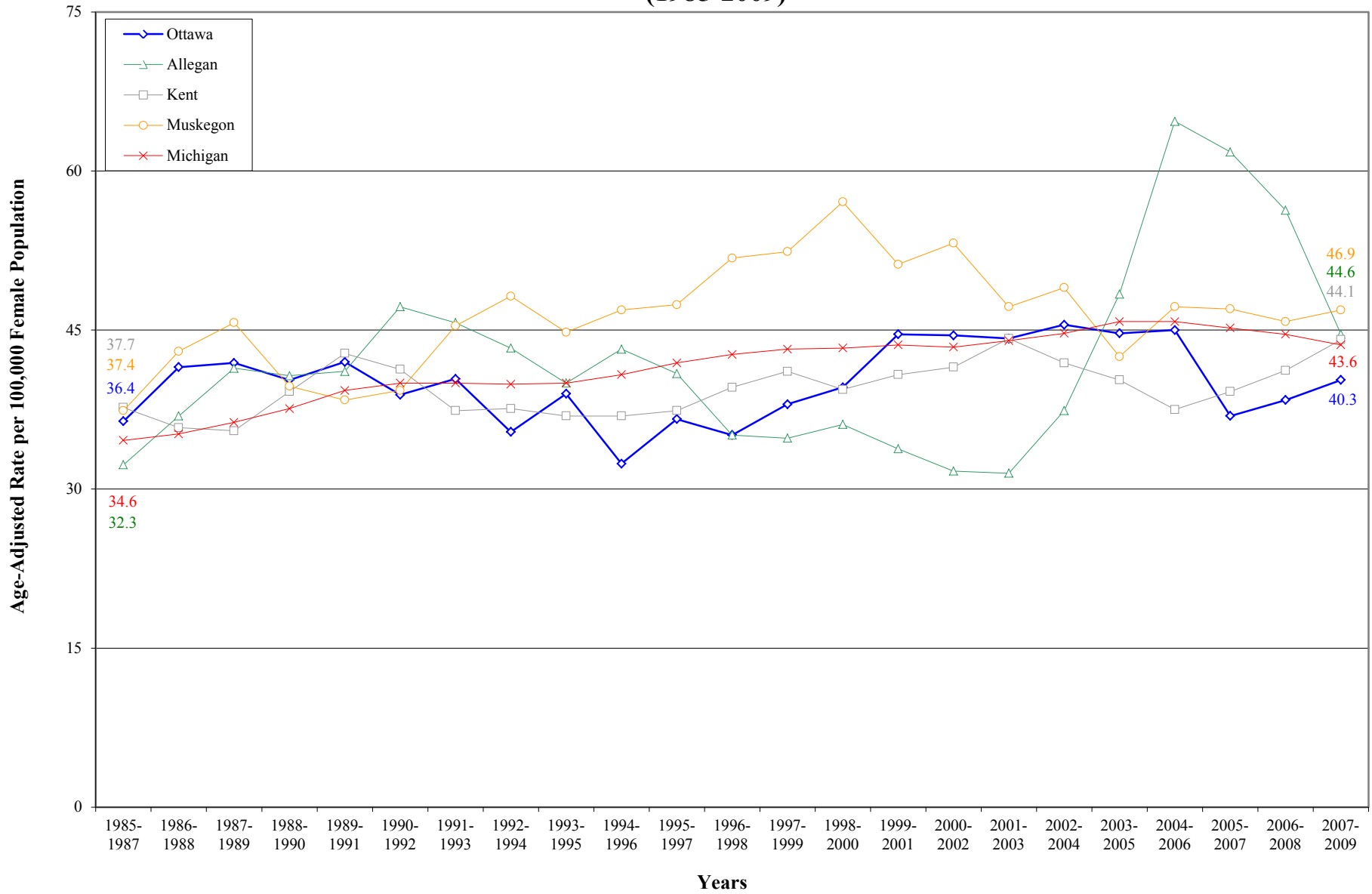
Diagnosed Cases by Age (Ottawa County, Adjacent Counties, State)

Year	Diagnosed Cases per 100,000 Female Population*														
	Under Age 50					Age 50-74					Age 75 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	36.4	32.3	37.7	37.4	34.6	343.3	309.1	352.2	413.7	328.0	460.1	390.9	482.5	364.0	430.5
1986-1988	41.5	36.9	35.8	43.0	35.2	363.6	296.0	360.6	446.7	340.6	480.7	379.6	517.8	401.7	448.3
1987-1989	41.9	41.4	35.5	45.7	36.3	386.6	305.8	361.8	395.9	348.5	532.3	316.9	538.2	448.7	468.1
1988-1990	40.3	40.7	39.2	39.7	37.6	334.7	311.3	368.8	361.2	357.9	523.4	306.9	581.0	655.0	498.4
1989-1991	42.0	41.1	42.8	38.4	39.3	332.3	364.4	364.3	341.2	362.7	490.1	321.0	528.3	644.8	522.9
1990-1992	38.9	47.2	41.3	39.3	40.0	335.6	360.3	392.7	356.0	367.2	503.8	368.4	491.7	658.8	529.1
1991-1993	40.4	45.7	37.4	45.4	40.0	343.6	322.3	398.6	351.0	358.7	553.1	401.0	447.5	491.5	509.7
1992-1994	35.4	43.3	37.6	48.2	39.9	316.9	259.9	397.7	349.7	350.5	554.8	344.6	467.0	489.9	477.5
1993-1995	39.0	40.0	36.9	44.8	40.0	332.0	324.8	382.7	370.3	349.5	564.3	416.3	459.0	417.3	469.3
1994-1996	32.4	43.2	36.9	46.9	40.8	346.4	340.1	360.2	402.2	349.4	483.1	392.2	474.7	417.5	452.3
1995-1997	36.6	40.9	37.4	47.4	41.9	372.1	363.4	347.5	388.1	354.9	480.1	475.9	451.9	349.0	453.6
1996-1998	35.1	35.1	39.6	51.8	42.7	354.8	298.8	339.8	357.9	355.1	451.6	394.2	456.2	349.4	447.4
1997-1999	38.0	34.8	41.1	52.4	43.2	351.6	325.0	362.1	326.9	359.3	527.3	472.1	432.0	374.7	453.7
1998-2000	39.6	36.1	39.4	57.1	43.3	330.7	328.5	388.8	356.3	358.9	481.2	485.0	434.0	469.6	459.5
1999-2001	44.6	33.8	40.8	51.2	43.6	349.4	352.1	395.4	371.3	356.3	496.3	452.5	435.4	537.5	458.8
2000-2002	44.5	31.7	41.5	53.2	43.4	376.0	336.0	374.1	396.3	352.6	469.0	405.0	425.3	544.8	454.9
2001-2003	44.2	31.5	44.2	47.2	44.0	384.6	335.7	346.9	373.6	339.0	556.1	352.8	432.5	559.7	441.9
2002-2004	45.5	37.4	41.9	49.0	44.7	403.5	332.5	307.5	398.3	324.9	590.2	405.2	407.6	538.0	427.5
2003-2005	44.7	48.4	40.3	42.5	45.8	350.7	358.0	320.5	365.5	309.3	584.4	373.8	432.8	490.4	414.7
2004-2006	45.0	64.7	37.5	47.2	45.8	314.3	391.8	311.8	356.8	304.6	508.6	460.5	421.5	473.7	402.9
2005-2007	36.9	61.8	39.2	47.0	45.2	283.8	369.9	337.2	300.6	302.6	436.0	411.9	443.9	412.5	402.3
2006-2008	38.4	56.3	41.2	45.8	44.6	301.7	362.8	317.6	278.5	296.6	408.5	408.3	476.8	413.2	399.6
2007-2009	40.3	44.6	44.1	46.9	43.6	342.3	309.0	334.0	273.6	297.8	400.8	351.6	499.1	340.5	399.7

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Diagnosed cancer rates are age-specific and refer to the population in a specific age group

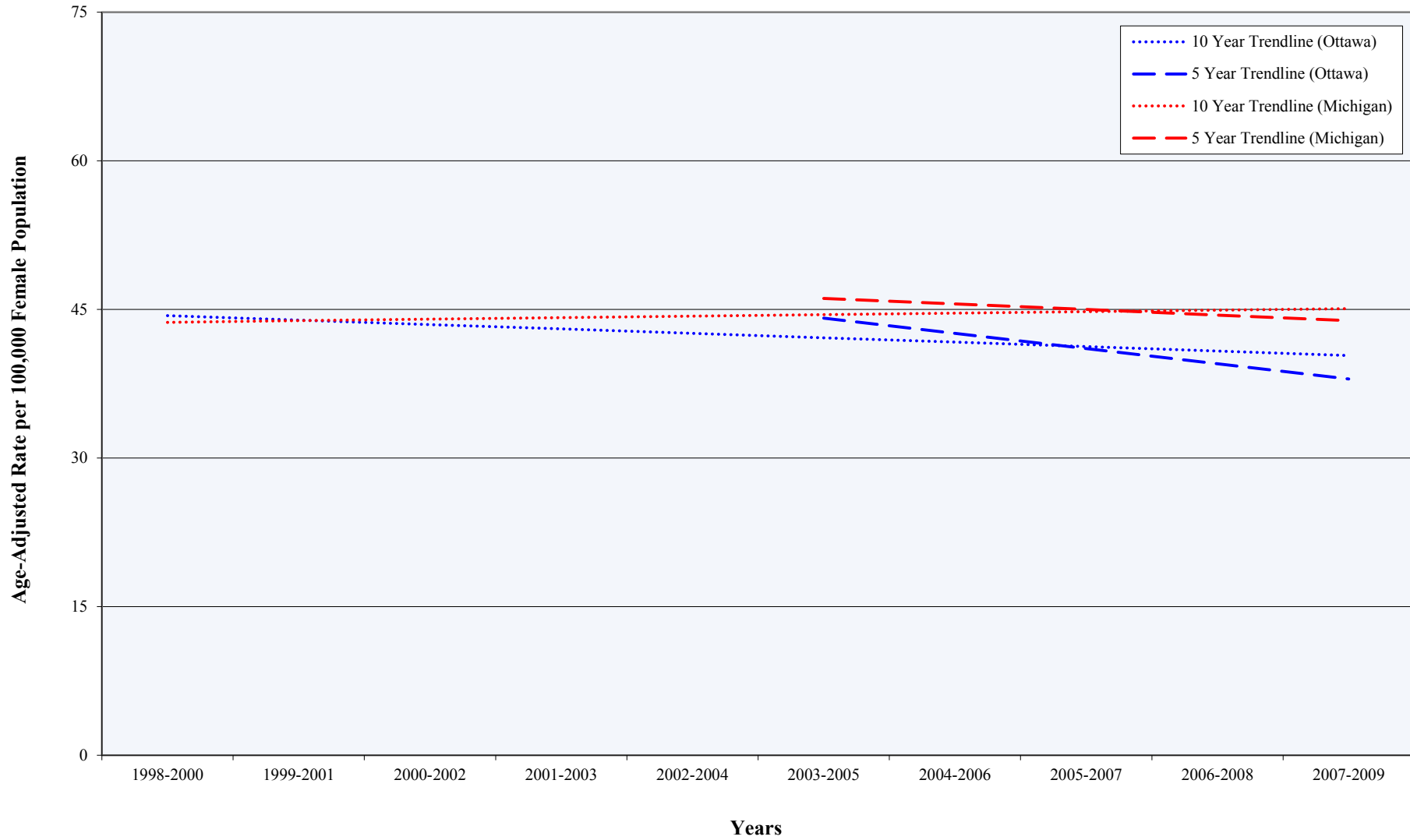
Diagnosed Breast Cancer Cases Among Persons Under Age 50 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

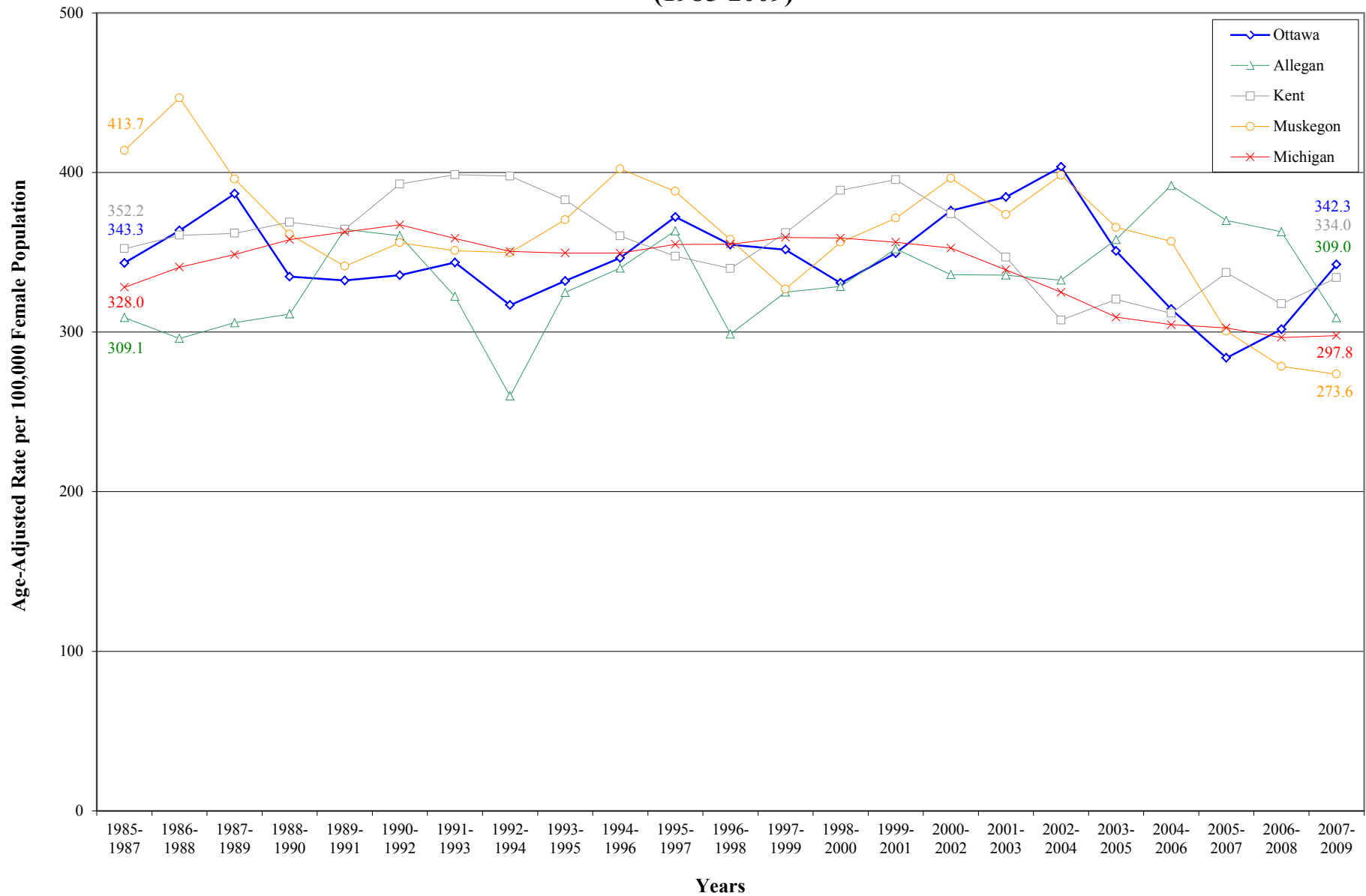
Diagnosed Breast Cancer Cases Among Persons Under Age 50

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

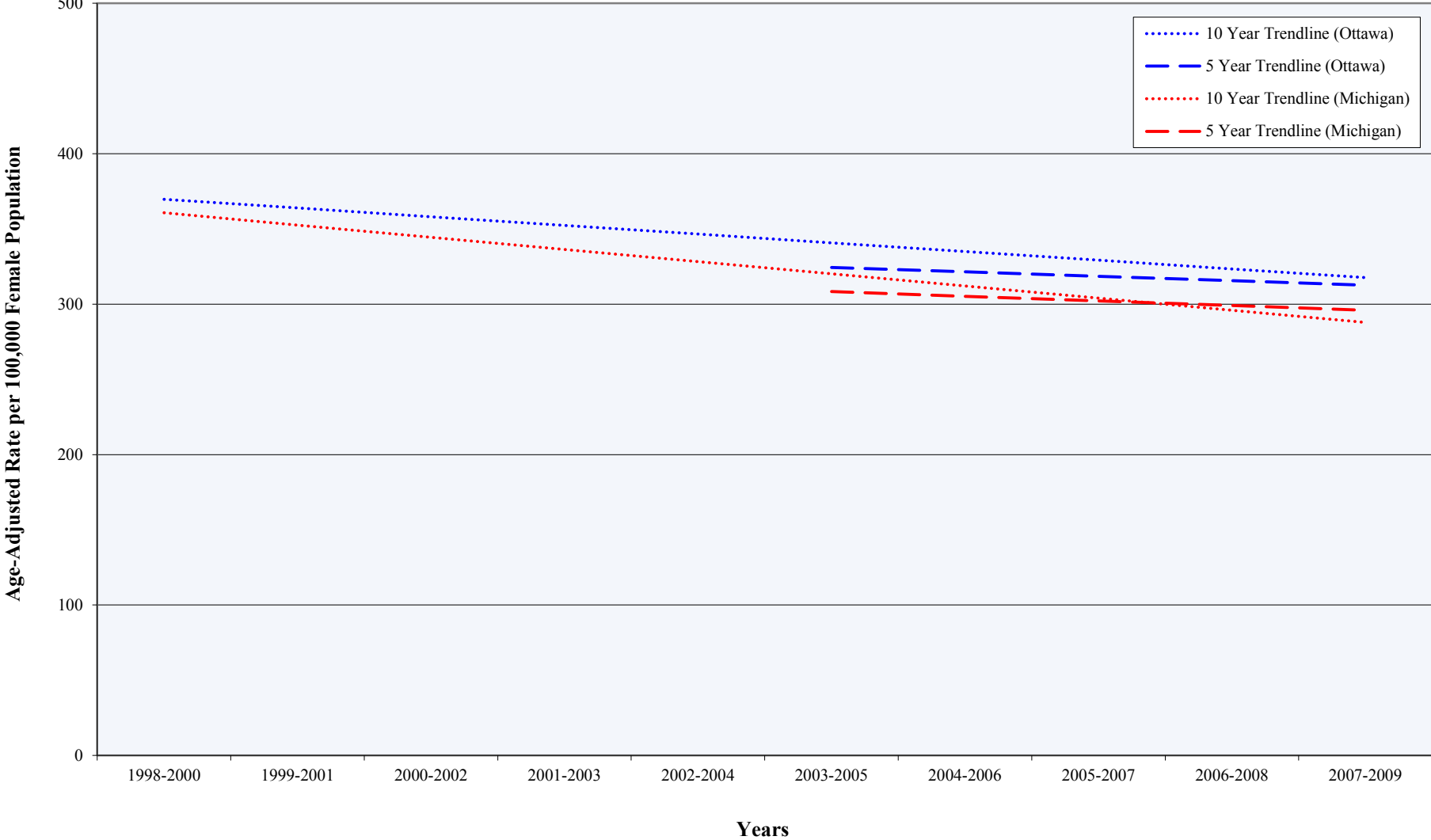
Diagnosed Breast Cancer Cases Among Persons Age 50-74 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

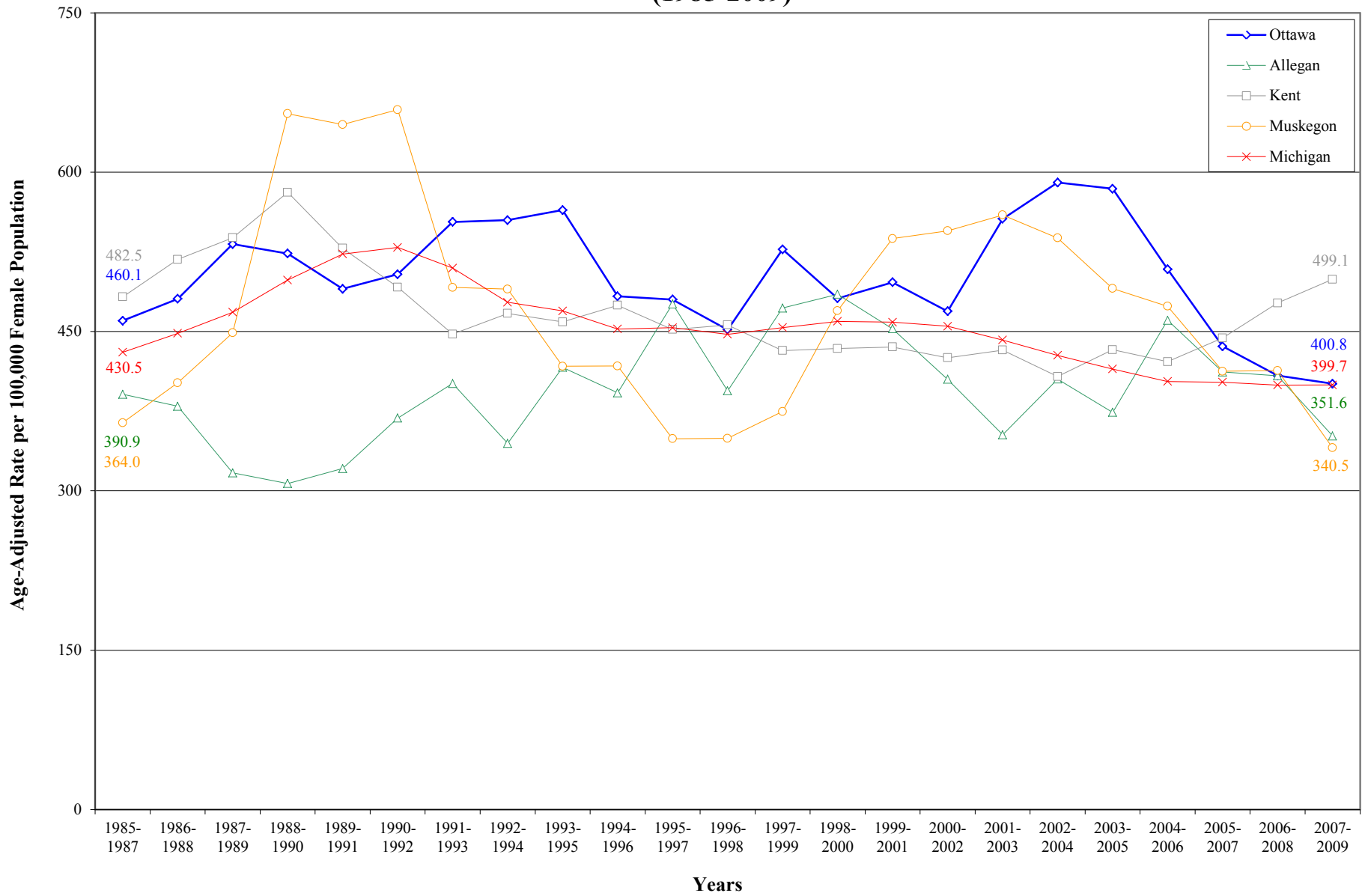
Diagnosed Breast Cancer Cases Among Persons Age 50-74

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

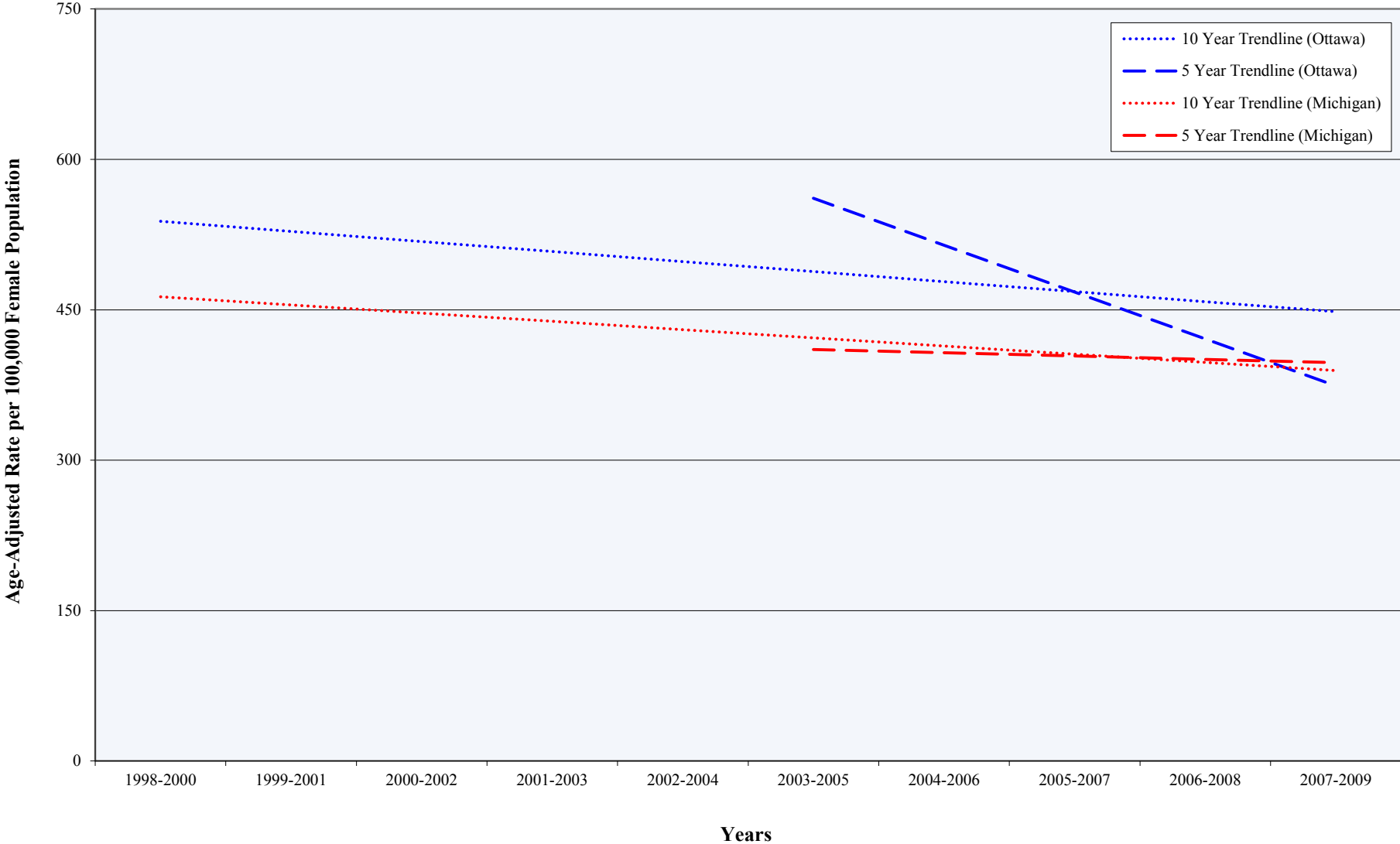
Diagnosed Breast Cancer Cases Among Persons Age 75 and Older (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Breast Cancer Cases Among Persons Age 75 and Older

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Breast Cancer (1985-2009) By Stage at Diagnosis (Ottawa County)

Percent of All Diagnosed Breast Cancer Cases

Year	In Situ ¹	Localized ²	Regional ³	Distant ⁴	Unknown ⁵
1985-1989	10.8%	45.5%	24.1%	2.9%	16.6%
1986-1990	9.9%	46.0%	23.9%	3.2%	17.1%
1987-1991	9.9%	49.8%	22.4%	2.8%	15.0%
1988-1992	8.7%	55.6%	20.5%	2.1%	13.2%
1989-1993	10.2%	55.4%	18.4%	2.6%	13.3%
1990-1994	11.7%	54.8%	17.6%	2.5%	13.4%
1991-1995	13.3%	53.1%	16.7%	2.3%	14.7%
1992-1996	14.8%	50.2%	18.0%	3.1%	13.8%
1993-1997	15.4%	47.6%	18.9%	3.2%	14.8%
1994-1998	16.1%	46.5%	18.4%	3.1%	15.9%
1995-1999	15.6%	46.1%	20.3%	2.9%	15.0%
1996-2000	17.1%	47.3%	20.8%	2.7%	12.2%
1997-2001	17.5%	45.0%	21.6%	2.0%	13.9%
1998-2002	17.7%	46.3%	22.5%	1.9%	11.6%
1999-2003	17.4%	47.0%	24.2%	2.1%	9.3%
2000-2004	19.5%	47.4%	23.2%	2.2%	7.8%
2001-2005	19.6%	46.8%	23.8%	2.0%	7.8%
2002-2006	20.2%	49.0%	23.2%	2.0%	5.6%
2003-2007	22.0%	48.6%	22.2%	2.3%	5.0%
2004-2008	23.4%	48.5%	21.4%	1.9%	4.8%
2005-2009	24.0%	46.7%	21.6%	1.6%	6.1%

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

¹ In Situ, or early cancer, is a non-invasive cancer that is diagnosed when the cancer is only present in the layer of cells in which it began

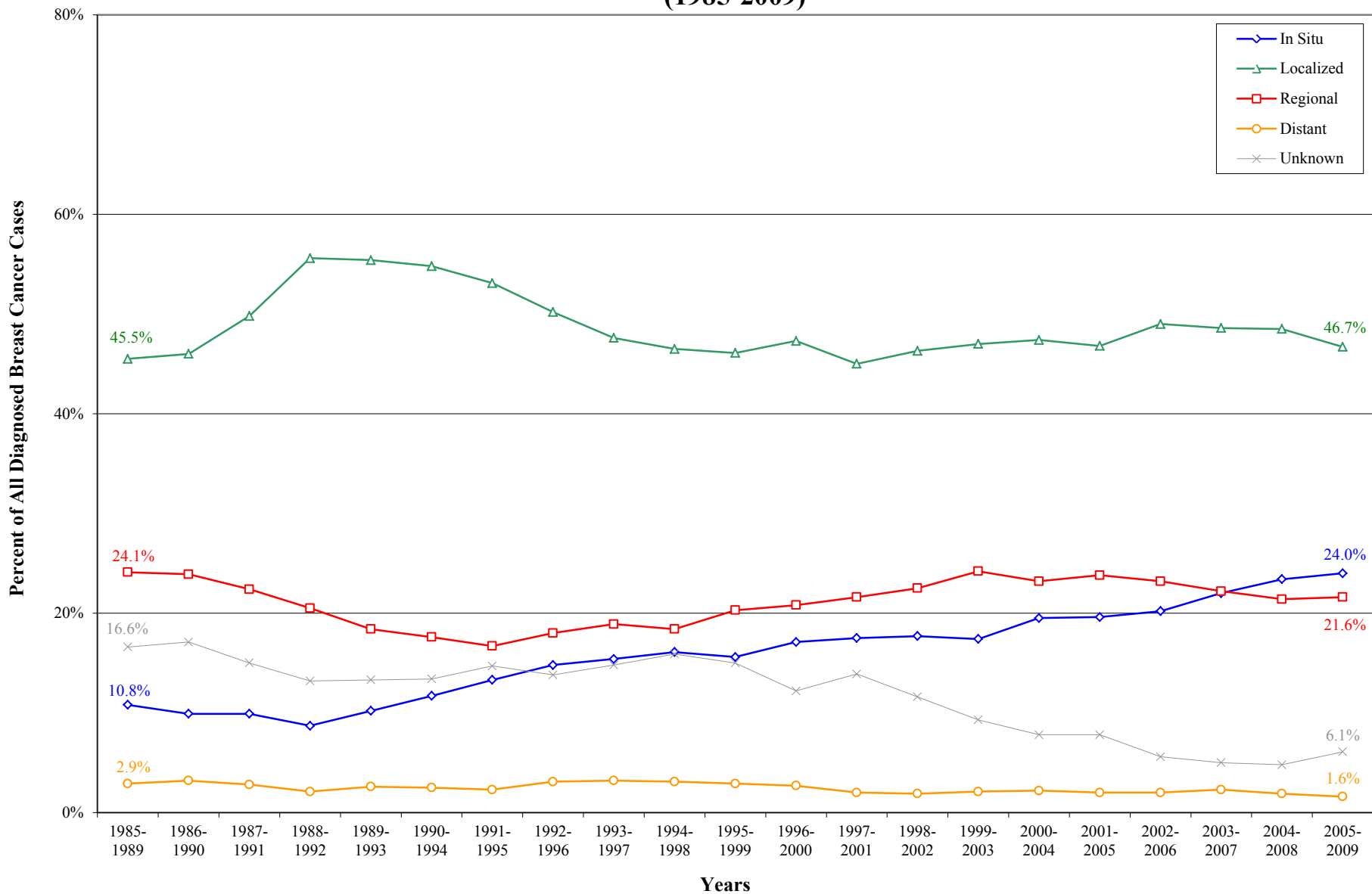
² Localized cancer is invasive but is limited to the organ in which it began, without evidence of spread

³ Regional cancer is invasive and has spread beyond the original site to nearby lymph nodes or organs and tissues

⁴ Distant cancer is invasive and has spread from the original site to distant organs or distant lymph nodes

⁵ Unknown cancer is invasive; however, the exact stage of the cancer is unknown

Ottawa County Breast Cancer Cases by Stage at Diagnosis (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Breast Cancer (1985-2009)

Deaths by Year (Ottawa County, Adjacent Counties, State)

Deaths per 100,000 Female Population*

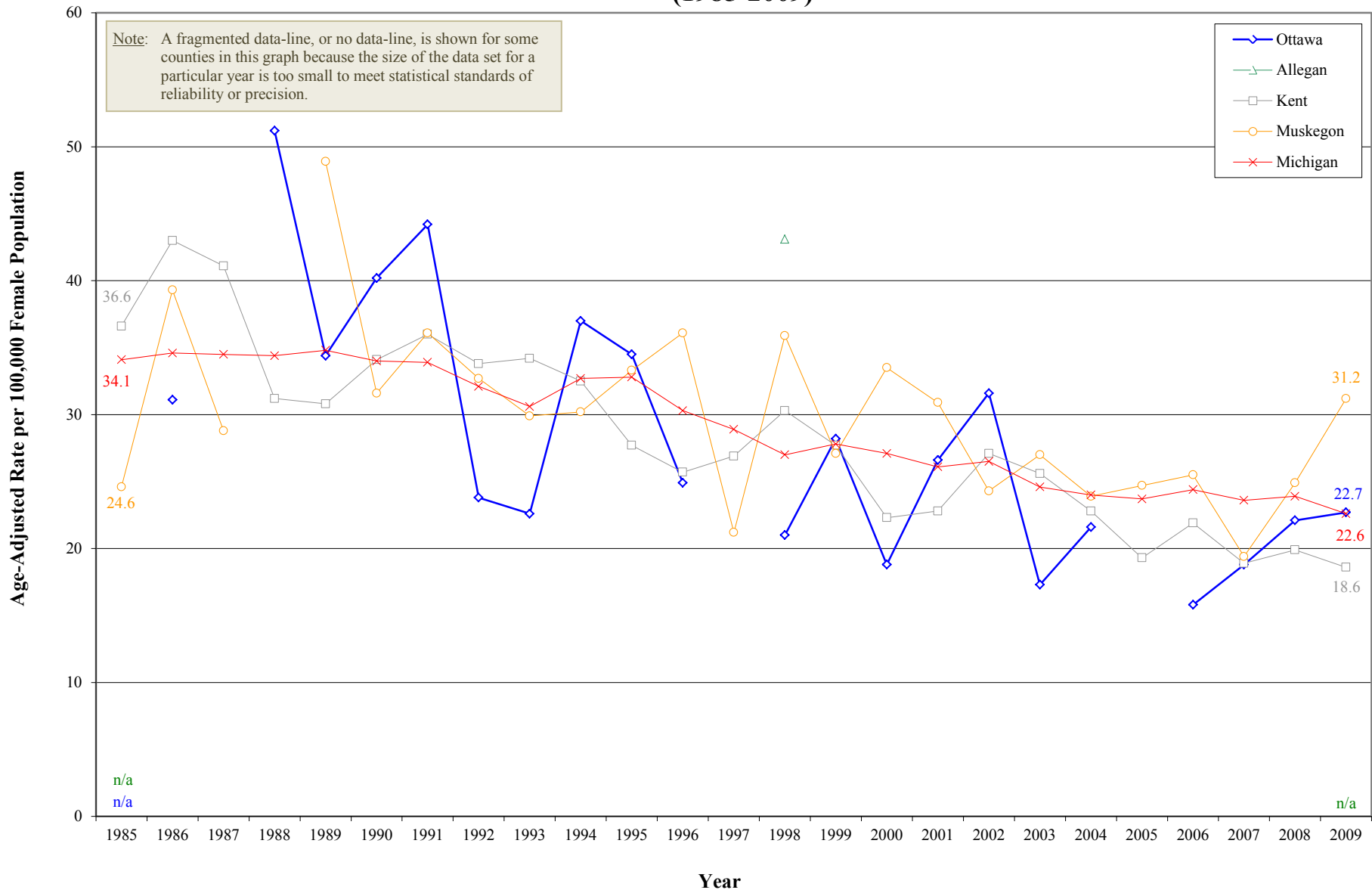
Year	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	**	**	36.6	24.6	34.1
1986	31.1	**	43.0	39.3	34.6
1987	**	**	41.1	28.8	34.5
1988	51.2	**	31.2	**	34.4
1989	34.4	**	30.8	48.9	34.8
1990	40.2	**	34.1	31.6	34.0
1991	44.2	**	36.0	36.1	33.9
1992	23.8	**	33.8	32.7	32.1
1993	22.6	**	34.2	29.9	30.6
1994	37.0	**	32.5	30.2	32.7
1995	34.5	**	27.7	33.3	32.8
1996	24.9	**	25.7	36.1	30.3
1997	**	**	26.9	21.2	28.9
1998	21.0	43.1	30.3	35.9	27.0
1999	28.2	**	27.7	27.1	27.8
2000	18.8	**	22.3	33.5	27.1
2001	26.6	**	22.8	30.9	26.1
2002	31.6	**	27.1	24.3	26.5
2003	17.3	**	25.6	27.0	24.6
2004	21.6	**	22.8	23.9	24.0
2005	**	**	19.3	24.7	23.7
2006	15.8	**	21.9	25.5	24.4
2007	18.8	**	18.9	19.4	23.6
2008	22.1	**	19.9	24.9	23.9
2009	22.7	**	18.6	31.2	22.6

Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

* Death rates are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

** A rate was not calculated because the size of the data set (i.e. number of deaths) was too small to meet statistical standards of reliability or precision

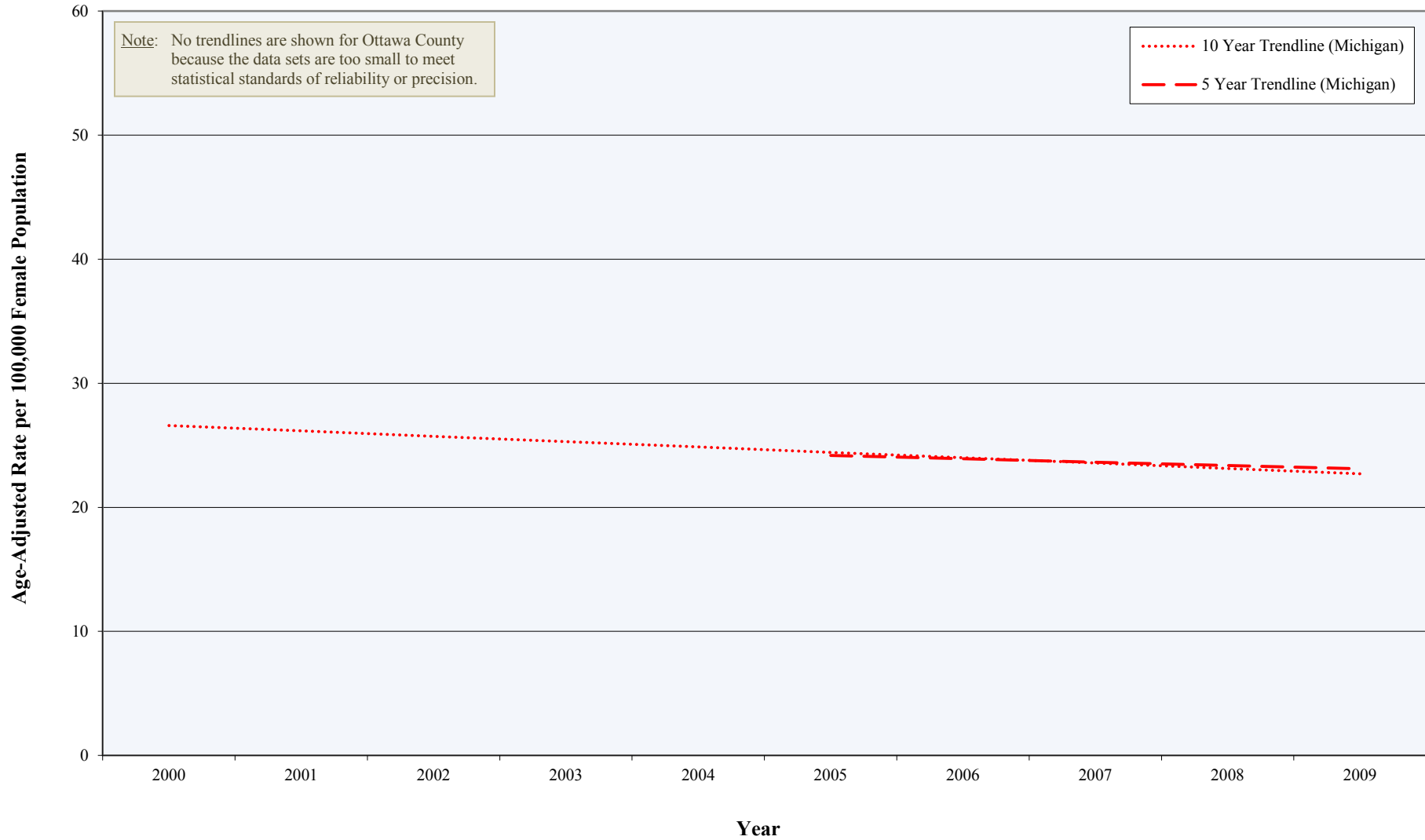
Breast Cancer Deaths (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Breast Cancer Deaths

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Prostate Cancer (1985-2009)

Diagnosed Cases by Year (Ottawa County, Adjacent Counties, State)

Year	Diagnosed Cases per 100,000 Male Population*				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	109.9	161.3	108.1	162.7	114.1
1986	138.4	91.3	132.9	176.6	120.2
1987	164.3	135.1	120.9	150.9	135.6
1988	142.6	116.1	135.5	172.4	140.7
1989	141.3	134.6	158.1	171.7	153.8
1990	174.4	124.4	185.1	146.0	186.6
1991	229.1	162.8	224.9	216.1	239.4
1992	273.3	163.5	263.0	282.3	271.5
1993	222.9	160.5	239.6	243.1	244.6
1994	201.5	160.6	232.7	207.8	204.0
1995	176.1	103.7	188.2	210.7	183.5
1996	145.3	122.7	154.8	201.0	181.9
1997	136.5	123.8	166.5	206.4	191.4
1998	141.3	113.0	158.4	187.6	194.0
1999	168.3	125.2	149.2	227.8	212.5
2000	131.7	173.8	186.1	235.4	207.0
2001	149.7	165.0	205.3	211.1	204.5
2002	227.0	147.6	155.4	257.6	203.8
2003	200.3	128.3	162.2	197.9	182.3
2004	149.4	159.8	162.1	241.8	170.8
2005	173.2	212.7	163.4	204.0	159.8
2006	148.3	241.7	162.2	192.0	167.8
2007	159.3	163.4	165.8	153.9	176.6
2008	163.5	132.7	175.5	159.3	158.0
2009	137.2	117.3	161.6	188.1	152.5

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics 188.1

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

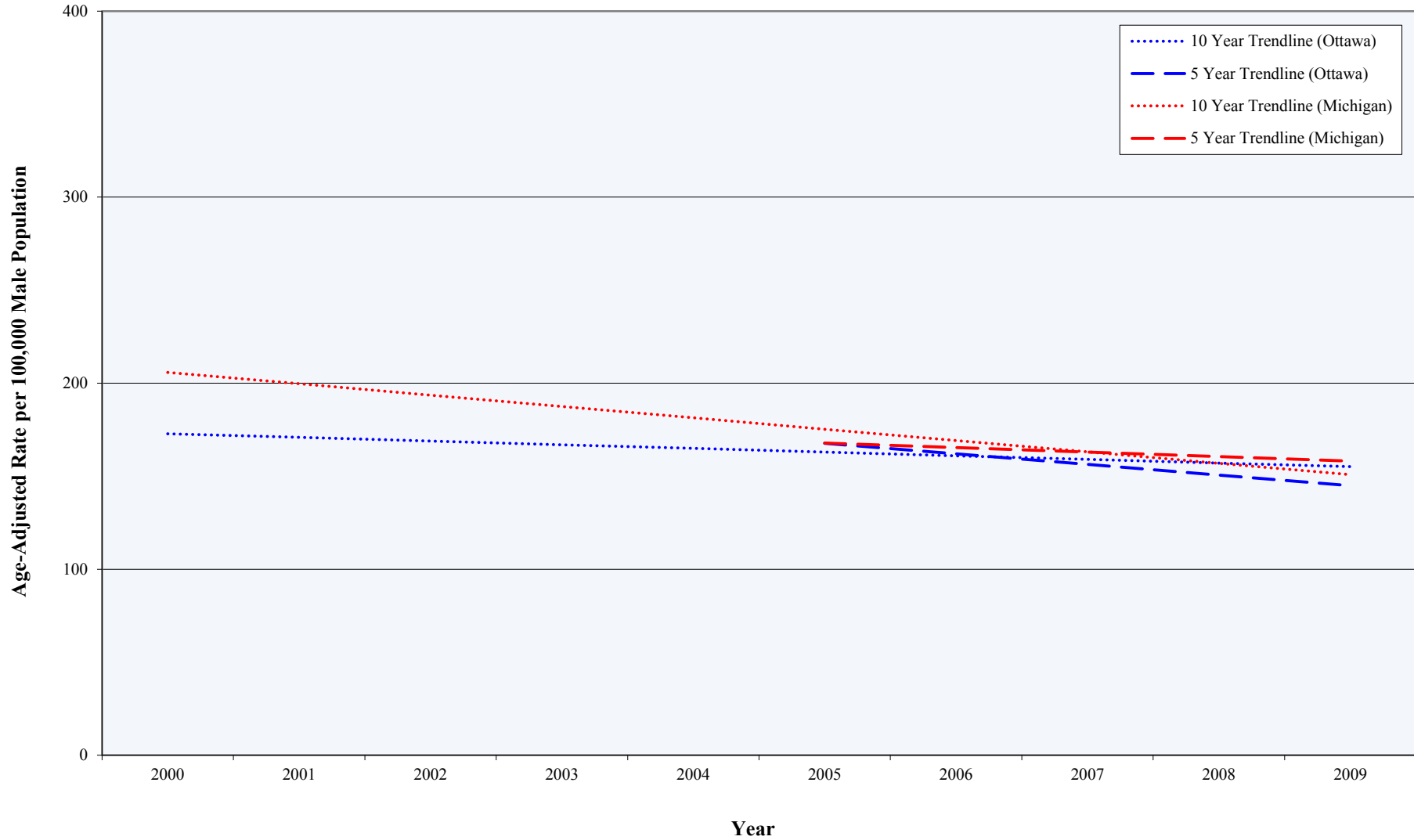
Diagnosed Prostate Cancer Cases (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Prostate Cancer Cases

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Prostate Cancer (1985-2009)

Diagnosed Cases by Age (Ottawa County, Adjacent Counties, State)

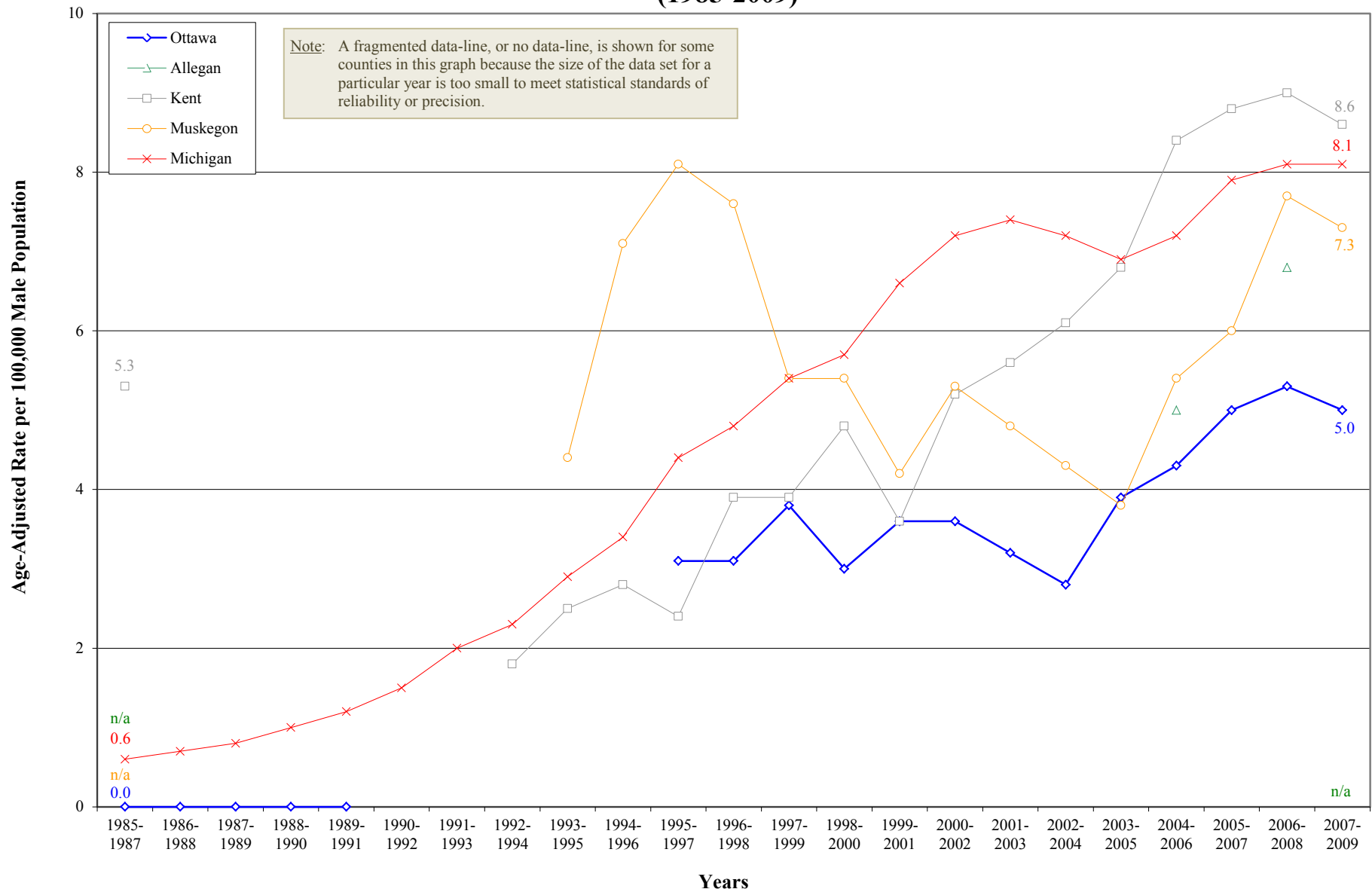
Year	Diagnosed Cases per 100,000 Male Population*														
	Under Age 50					Age 50-74					Age 75 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	0.0	**	5.3	**	0.6	257.7	279.3	555.4	394.1	270.2	1,348.4	1,135.1	835.6	1,353.5	1,083.3
1986-1988	0.0	**	**	**	0.7	267.7	260.8	264.4	404.5	294.9	1,451.6	994.3	1,062.8	1,400.5	1,151.9
1987-1989	0.0	**	**	**	0.8	295.0	317.8	288.3	392.6	323.5	1,359.3	1,028.1	1,142.4	1,460.8	1,244.6
1988-1990	0.0	**	**	**	1.0	306.7	294.9	301.0	375.8	363.7	1,391.1	1,057.9	1,233.2	1,470.6	1,396.8
1989-1991	0.0	**	**	**	1.2	398.8	362.2	341.6	439.1	452.1	1,561.6	1,045.4	1,433.5	1,551.2	1,650.8
1990-1992	**	**	**	**	1.5	529.5	361.8	413.9	536.0	577.2	1,840.6	1,225.2	1,689.6	1,822.1	1,888.8
1991-1993	**	**	**	**	2.0	612.5	459.7	544.4	655.3	658.9	1,790.8	1,128.0	1,864.4	1,964.1	1,923.7
1992-1994	**	**	1.8	**	2.3	622.2	466.2	645.8	678.1	662.0	1,587.8	1,107.3	1,819.6	1,812.3	1,698.4
1993-1995	**	**	2.5	4.4	2.9	567.6	463.3	721.5	674.0	606.0	1,212.6	772.2	1,591.9	1,432.0	1,379.5
1994-1996	**	**	2.8	7.1	3.4	510.9	412.4	697.0	649.7	561.9	1,003.4	694.8	1,216.9	1,241.0	1,166.0
1995-1997	3.1	**	2.4	8.1	4.4	447.4	380.4	644.8	639.2	553.1	843.7	571.6	911.6	1,215.3	1,097.4
1996-1998	3.1	**	3.9	7.6	4.8	398.5	373.4	576.4	617.4	556.9	824.5	613.3	744.4	1,141.6	1,112.3
1997-1999	3.8	**	3.9	5.4	5.4	445.2	381.9	524.0	611.1	580.2	749.4	590.9	744.1	1,267.5	1,159.9
1998-2000	3.0	**	4.8	5.4	5.7	446.2	425.5	499.6	647.0	587.2	704.4	678.9	753.3	1,249.9	1,187.3
1999-2001	3.6	**	3.6	4.2	6.6	469.0	451.1	507.1	661.5	594.4	655.3	818.9	823.3	1,272.1	1,180.1
2000-2002	3.6	**	5.2	5.3	7.2	496.9	446.0	564.8	686.4	587.7	895.7	907.4	813.8	1,312.7	1,133.2
2001-2003	3.2	**	5.6	4.8	7.4	522.1	413.9	536.5	623.1	565.3	1,182.6	773.9	753.6	1,327.5	1,065.6
2002-2004	2.8	**	6.1	4.3	7.2	520.3	425.8	476.2	634.5	537.0	1,161.6	702.0	731.0	1,418.6	978.8
2003-2005	3.9	**	6.8	3.8	6.9	499.1	495.2	470.0	577.3	492.6	929.8	832.4	779.9	1,310.3	902.9
2004-2006	4.3	5.0	8.4	5.4	7.2	484.8	590.6	470.9	589.4	483.3	684.7	1,049.9	734.9	1,195.3	851.2
2005-2007	5.0	**	8.8	6.0	7.9	488.2	577.7	466.5	525.1	492.6	733.6	1,050.9	760.2	980.7	839.5
2006-2008	5.3	6.8	9.0	7.7	8.1	475.4	516.7	487.2	514.8	499.1	746.8	784.1	740.6	763.8	797.2
2007-2009	5.0	**	8.6	7.3	8.1	465.2	425.4	490.6	509.8	494.1	726.1	534.3	730.0	768.4	738.3

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Diagnosed cancer rates are age-specific and refer to the population in a specific age group

** A rate was not calculated because the size of the data set (i.e. number of cases) was too small to meet statistical standards of reliability or precision

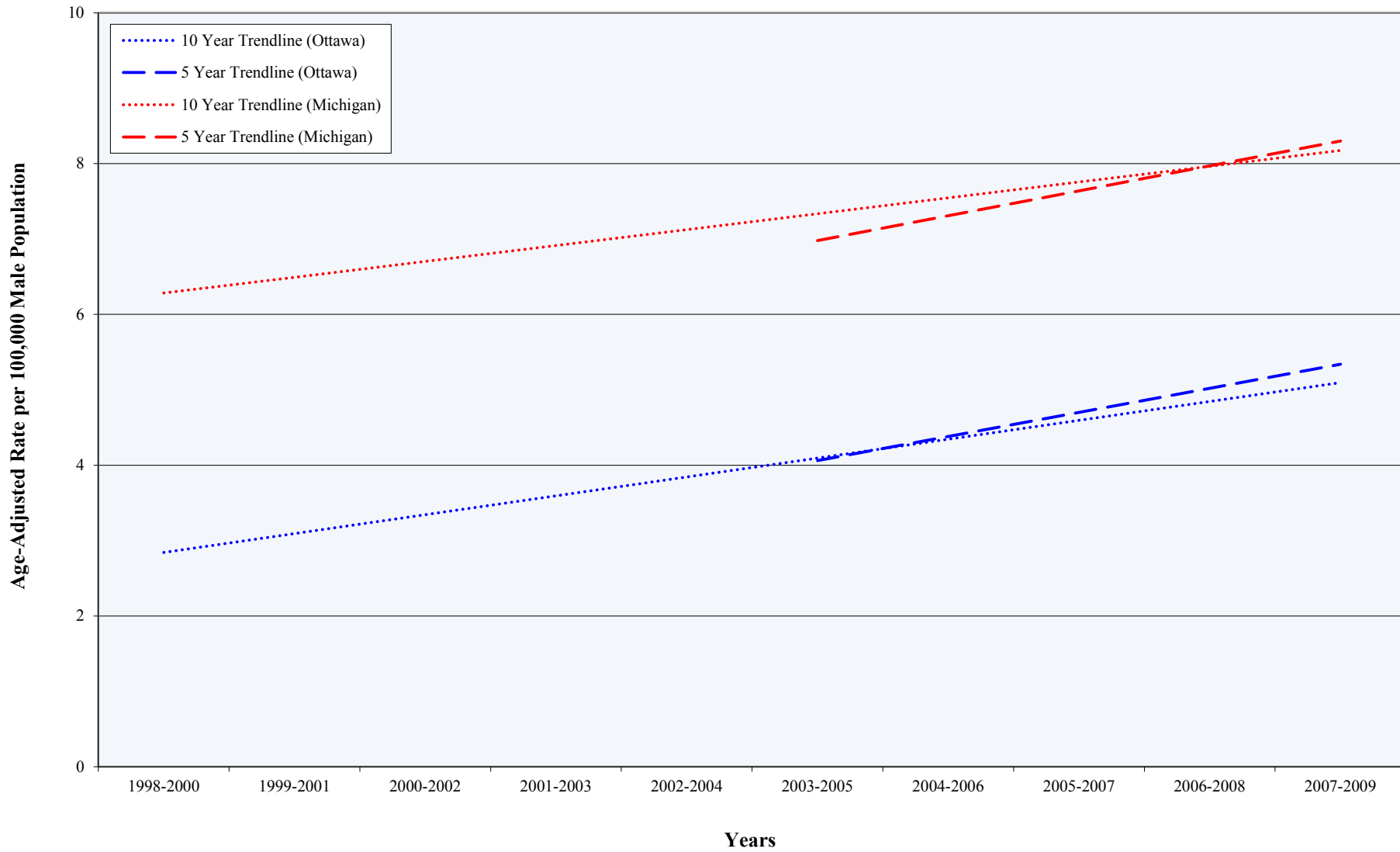
Diagnosed Prostate Cancer Cases Among Persons Under Age 50 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

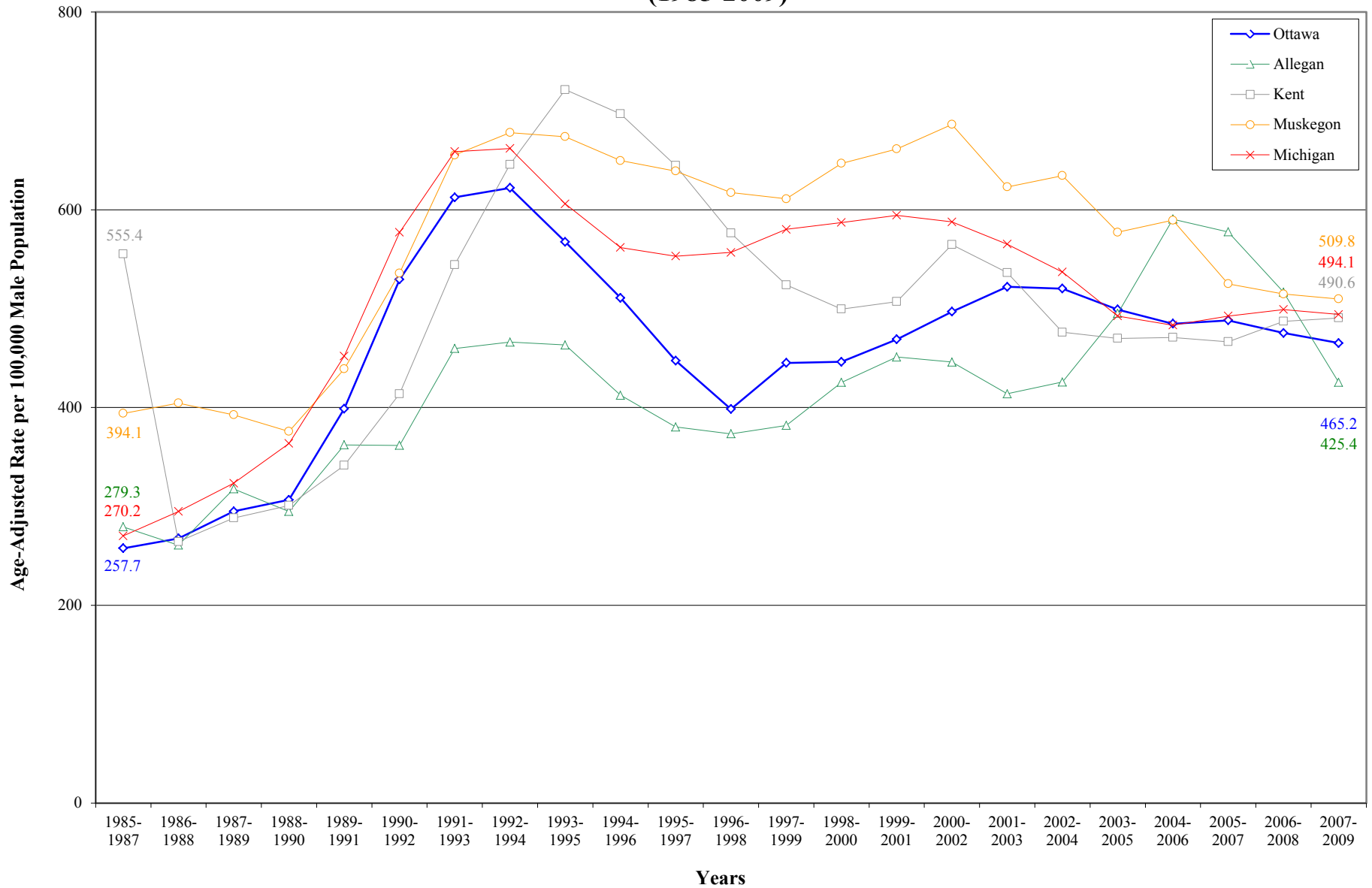
Diagnosed Prostate Cancer Cases Among Persons Under Age 50

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

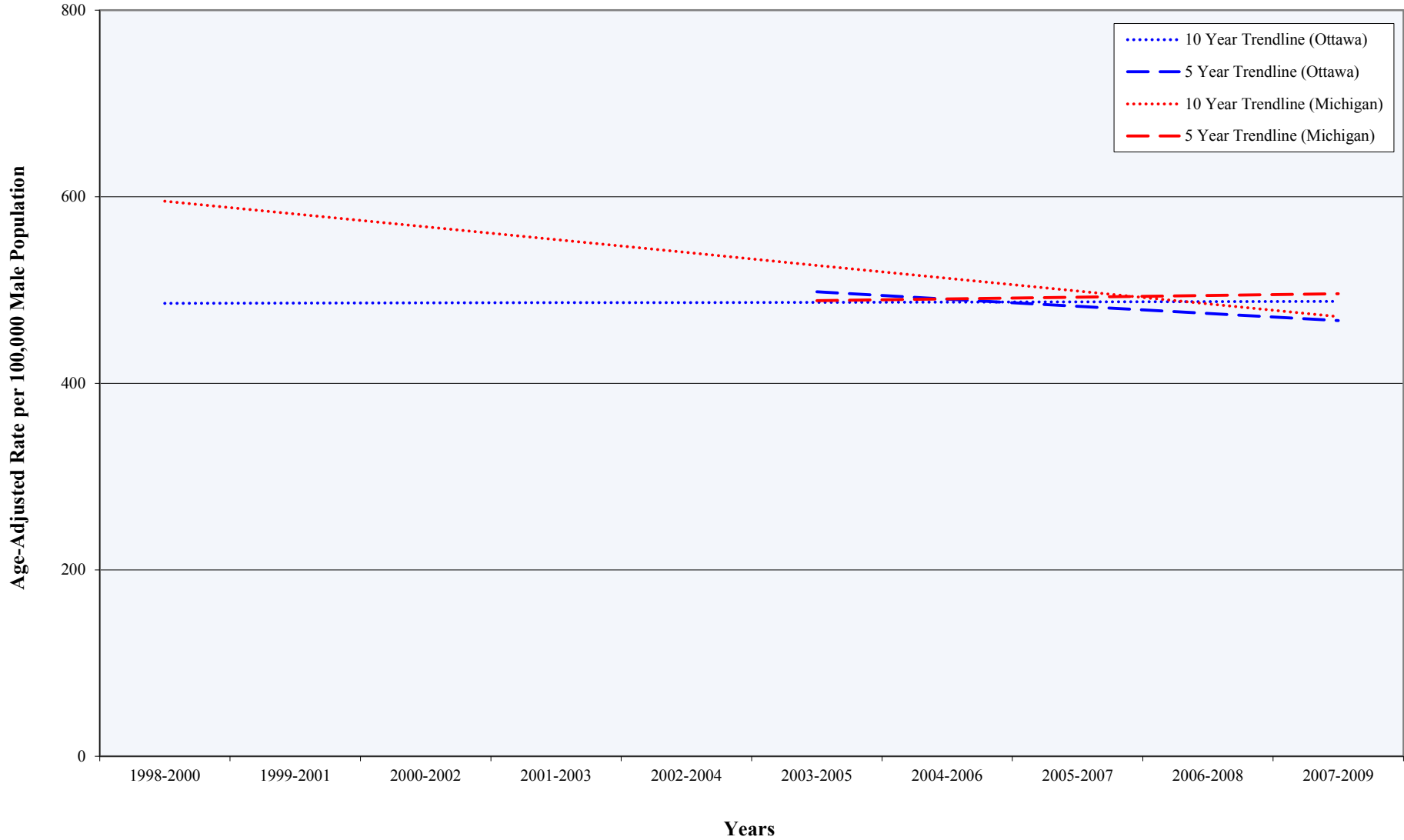
Diagnosed Prostate Cancer Cases Among Persons Age 50-74 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

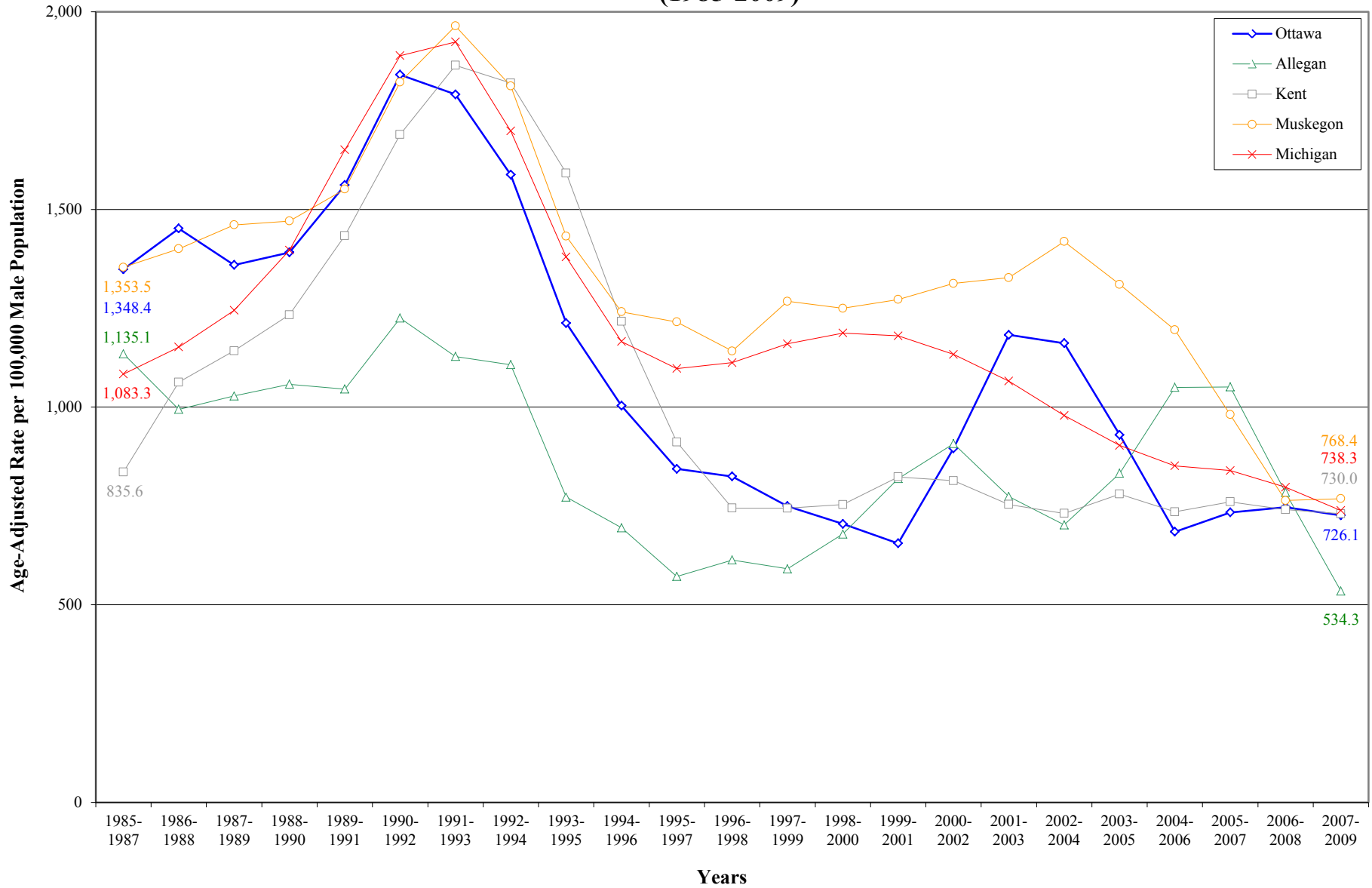
Diagnosed Prostate Cancer Cases Among Persons Age 50-74

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

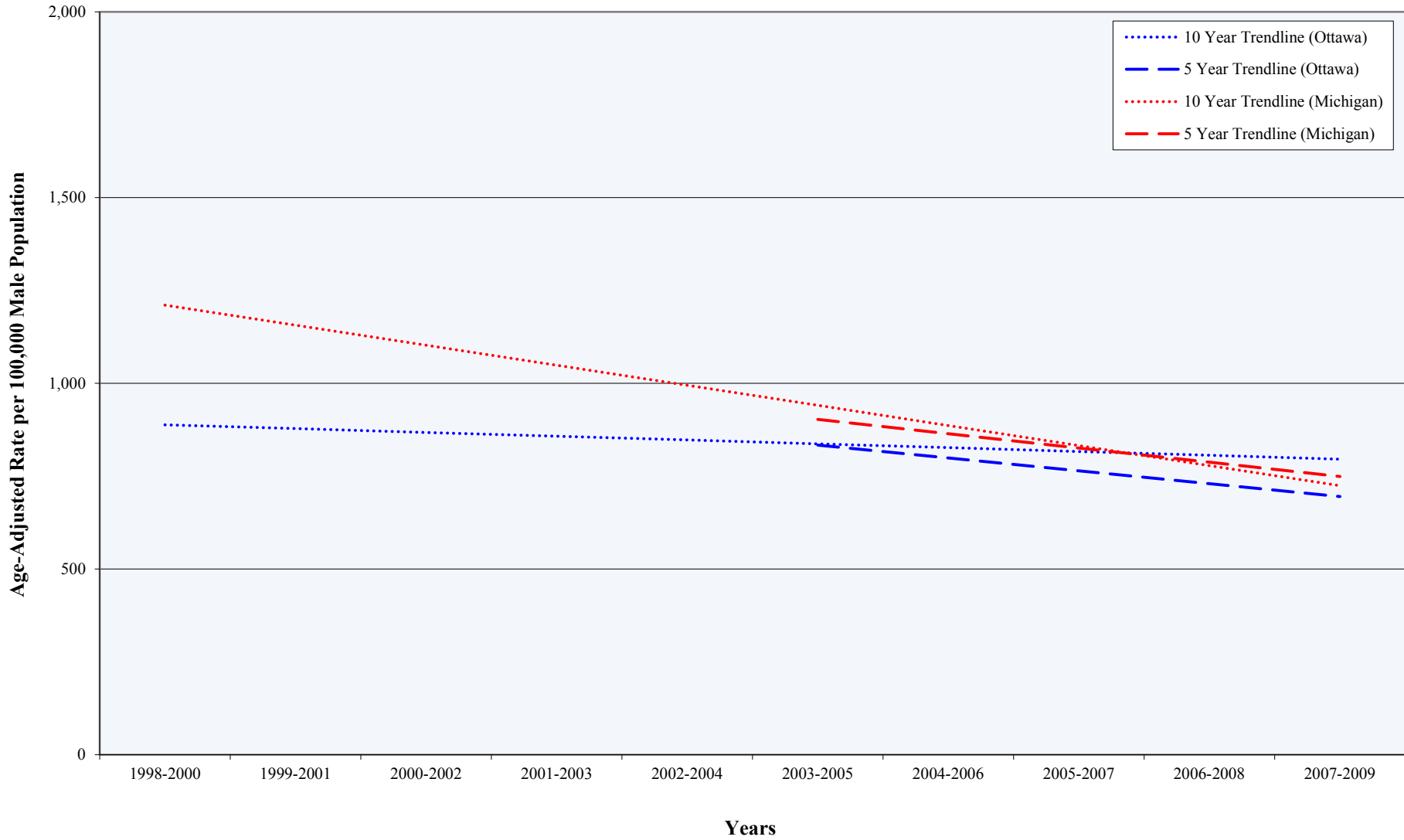
Diagnosed Prostate Cancer Cases Among Persons Age 75 and Older (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Prostate Cancer Cases Among Persons Age 75 and Older

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Prostate Cancer (1985-2009) By Stage at Diagnosis (Ottawa County)

Percent of All Diagnosed Prostate Cancer Cases

Year	In Situ ¹	Localized ²	Regional ³	Distant ⁴	Unknown ⁵
1985-1989	6.2%	61.9%	11.9%	4.1%	15.8%
1986-1990	5.4%	61.4%	13.2%	4.2%	15.8%
1987-1991	3.4%	68.6%	12.4%	5.1%	10.5%
1988-1992	2.2%	68.8%	12.7%	4.6%	11.7%
1989-1993	1.1%	64.4%	12.8%	4.0%	17.7%
1990-1994	1.1%	63.5%	10.9%	3.6%	20.8%
1991-1995	0.9%	61.4%	9.3%	3.8%	24.6%
1992-1996	0.8%	58.3%	9.0%	2.8%	29.0%
1993-1997	0.5%	55.6%	9.2%	2.7%	32.0%
1994-1998	0.5%	57.7%	8.2%	2.5%	31.1%
1995-1999	0.2%	59.0%	8.3%	2.5%	30.0%
1996-2000	0.2%	59.1%	9.7%	1.9%	29.2%
1997-2001	0.0%	56.1%	10.7%	2.1%	31.1%
1998-2002	0.0%	56.3%	8.7%	2.1%	33.0%
1999-2003	0.0%	57.1%	8.7%	2.0%	32.2%
2000-2004	0.0%	57.8%	8.7%	2.0%	31.5%
2001-2005	0.0%	60.7%	7.7%	2.0%	29.7%
2002-2006	0.0%	62.7%	6.8%	1.8%	28.7%
2003-2007	0.0%	65.3%	7.5%	1.7%	25.5%
2004-2008	0.0%	66.0%	7.7%	2.2%	24.1%
2005-2009	0.0%	67.0%	7.5%	2.3%	23.3%

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

¹ In Situ, or early cancer, is a non-invasive cancer that is diagnosed when the cancer is only present in the layer of cells in which it began

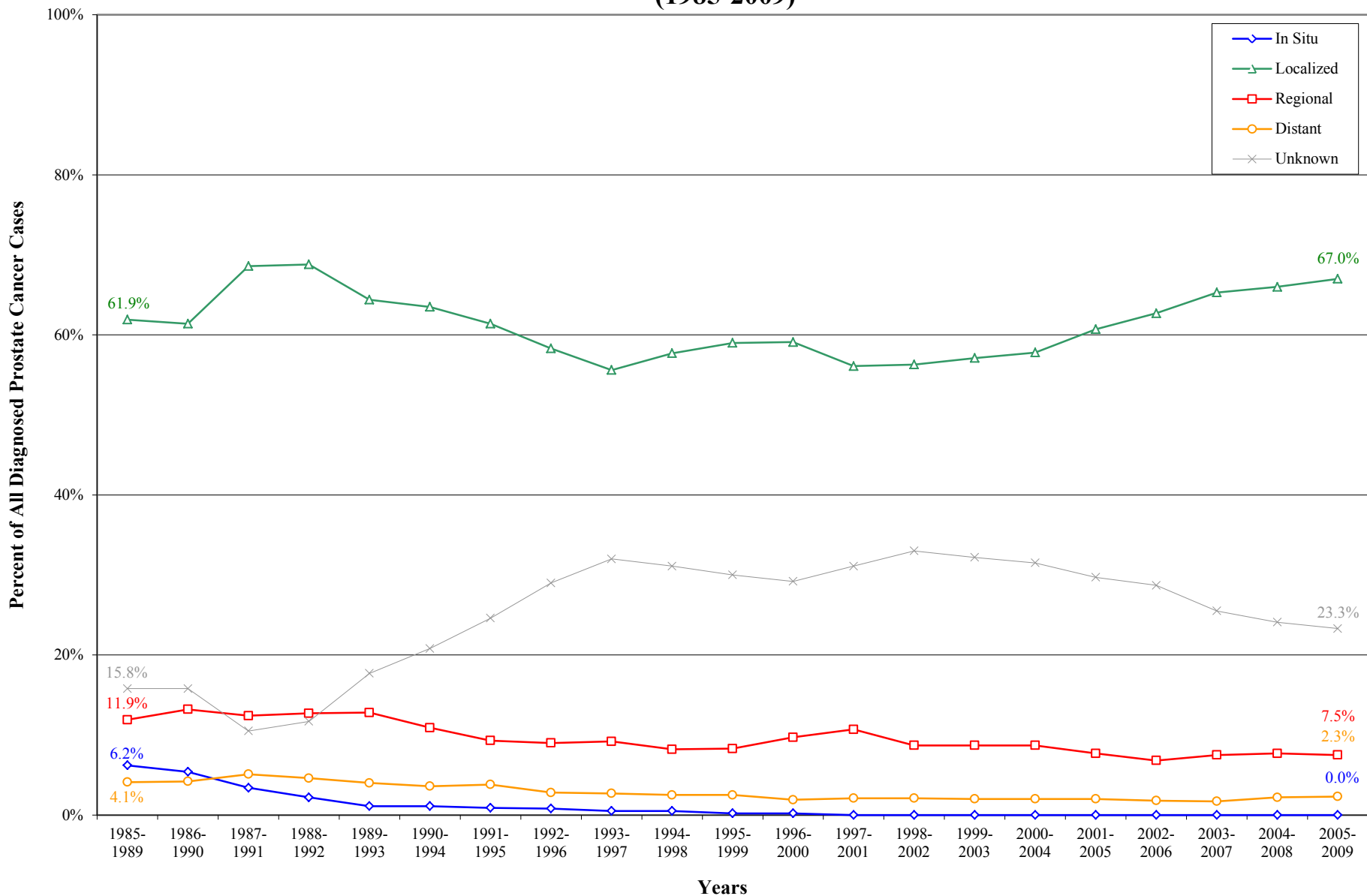
² Localized cancer is invasive but is limited to the organ in which it began, without evidence of spread

³ Regional cancer is invasive and has spread beyond the original site to nearby lymph nodes or organs and tissues

⁴ Distant cancer is invasive and has spread from the original site to distant organs or distant lymph nodes

⁵ Unknown cancer is invasive; however, the exact stage of the cancer is unknown

Ottawa County Prostate Cancer Cases by Stage at Diagnosis (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Prostate Cancer (1985-2009)

Deaths by Year (Ottawa County, Adjacent Counties, State)

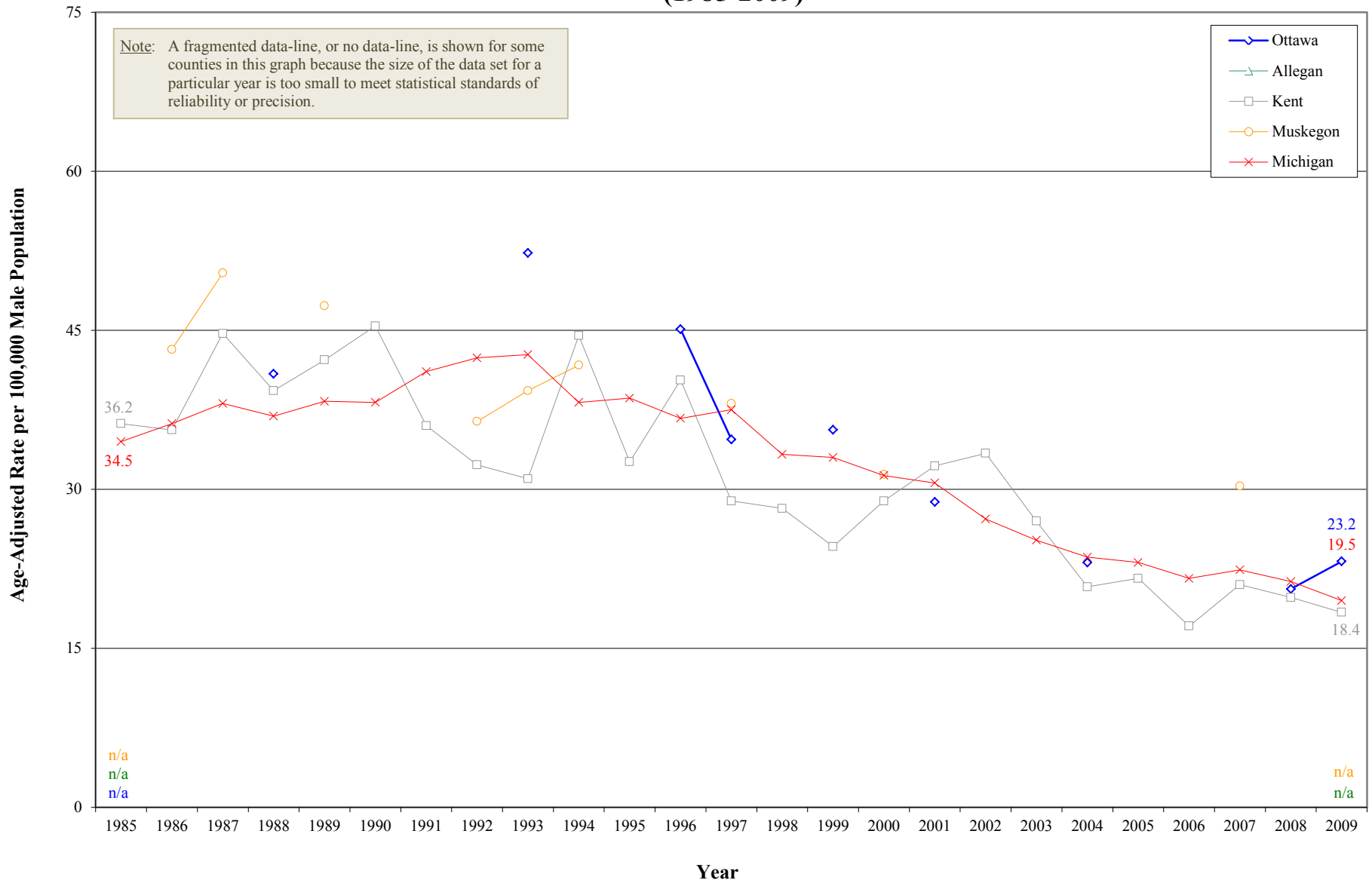
Year	Deaths per 100,000 Male Population*				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	**	**	36.2	**	34.5
1986	**	**	35.6	43.2	36.2
1987	**	**	44.7	50.4	38.1
1988	40.9	**	39.3	**	36.9
1989	**	**	42.2	47.3	38.3
1990	**	**	45.4	**	38.2
1991	**	**	36.0	**	41.1
1992	**	**	32.3	36.4	42.4
1993	52.3	**	31.0	39.3	42.7
1994	**	**	44.5	41.7	38.2
1995	**	**	32.6	**	38.6
1996	45.1	**	40.3	**	36.7
1997	34.7	**	28.9	38.1	37.5
1998	**	**	28.2	**	33.3
1999	35.6	**	24.6	**	33.0
2000	**	**	28.9	31.4	31.3
2001	28.8	**	32.2	**	30.6
2002	**	**	33.4	**	27.2
2003	**	**	27.0	**	25.2
2004	23.1	**	20.8	**	23.6
2005	**	**	21.6	**	23.1
2006	**	**	17.1	**	21.6
2007	**	**	21.0	30.3	22.4
2008	20.6	**	19.8	**	21.3
2009	23.2	**	18.4	**	19.5

Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

* Death rates are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

** A rate was not calculated because the size of the data set (i.e. number of deaths) was too small to meet statistical standards of reliability or precision

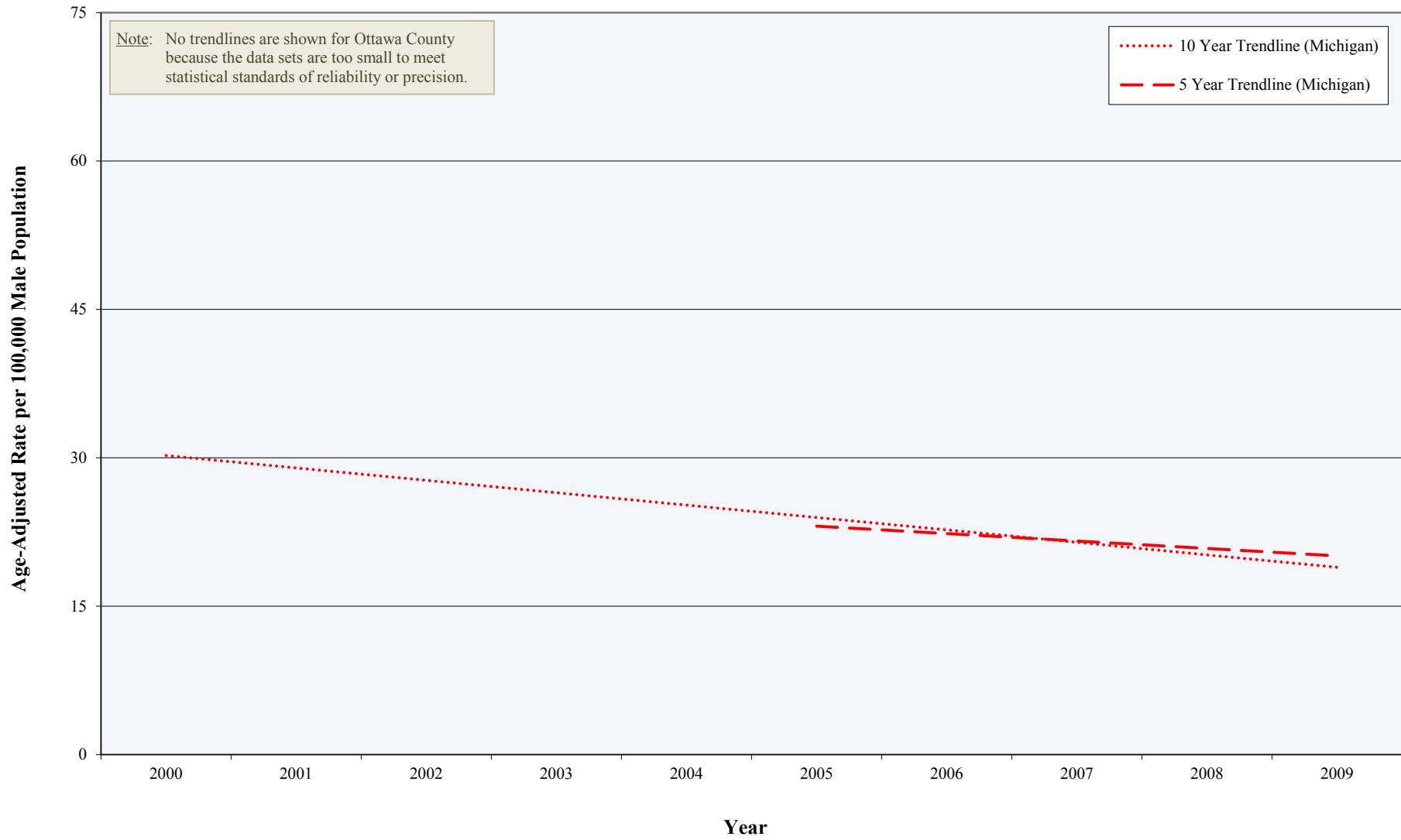
Prostate Cancer Deaths (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Prostate Cancer Deaths

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Colorectal Cancer (1985-2009)

Diagnosed Cases by Year (Ottawa County, Adjacent Counties, State)

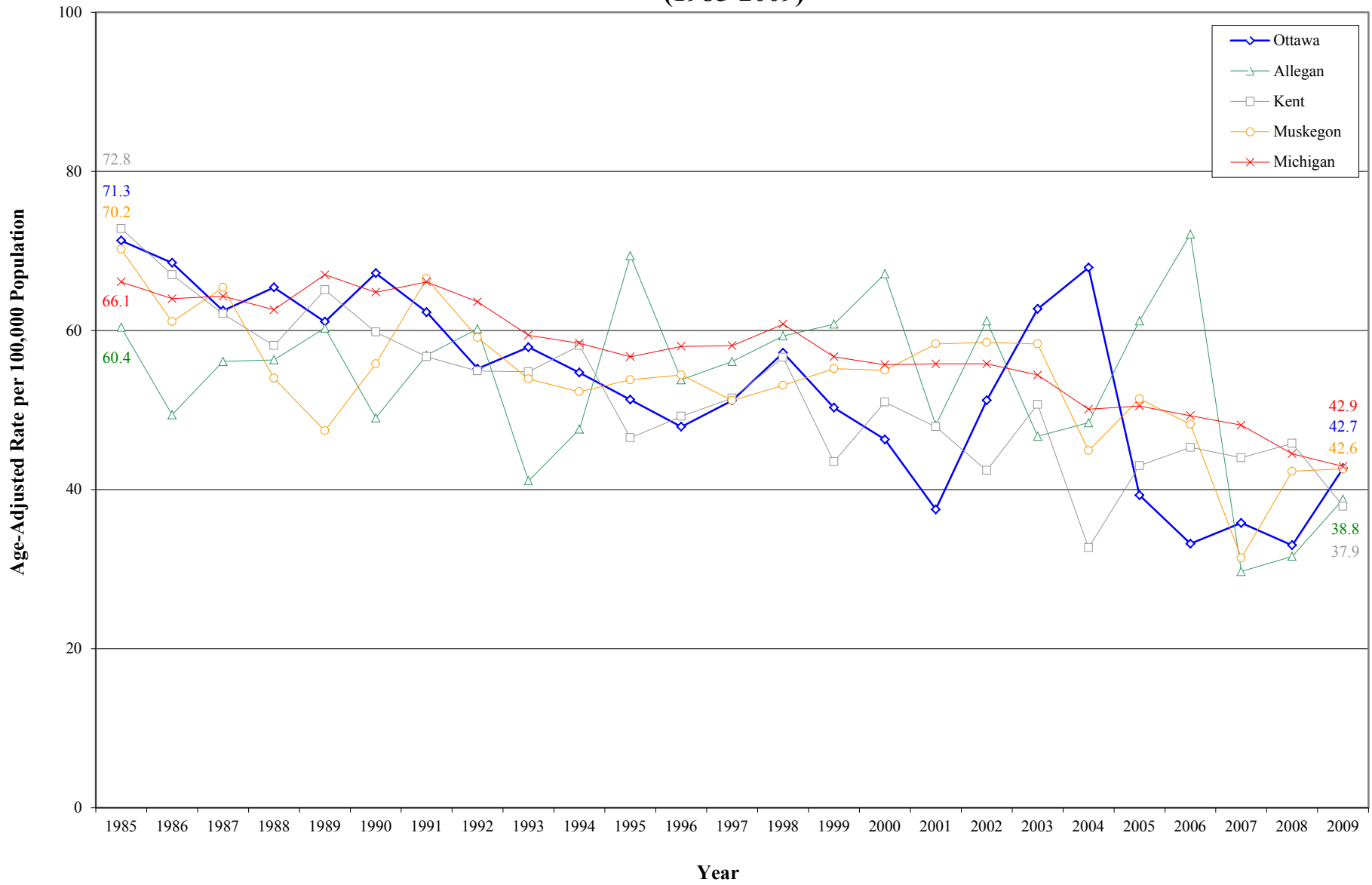
Diagnosed Cases per 100,000 Population*

Year	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	71.3	60.4	72.8	70.2	66.1
1986	68.5	49.4	67.0	61.1	64.0
1987	62.5	56.1	62.1	65.4	64.3
1988	65.4	56.3	58.1	54.0	62.6
1989	61.1	60.3	65.1	47.4	67.0
1990	67.2	49.0	59.8	55.8	64.8
1991	62.3	56.9	56.7	66.5	66.1
1992	55.2	60.2	54.9	59.1	63.6
1993	57.9	41.1	54.8	53.9	59.4
1994	54.7	47.6	58.1	52.3	58.4
1995	51.3	69.4	46.5	53.8	56.7
1996	47.9	53.8	49.2	54.4	58.0
1997	51.2	56.1	51.5	51.2	58.1
1998	57.2	59.3	56.6	53.1	60.8
1999	50.3	60.8	43.5	55.2	56.7
2000	46.3	67.1	51.0	55.0	55.7
2001	37.5	48.1	47.9	58.3	55.8
2002	51.2	61.2	42.4	58.5	55.8
2003	62.7	46.7	50.7	58.3	54.4
2004	67.9	48.4	32.7	44.9	50.1
2005	39.3	61.2	43.0	51.4	50.5
2006	33.2	72.1	45.3	48.2	49.3
2007	35.8	29.7	44.0	31.4	48.1
2008	33.0	31.6	45.8	42.3	44.5
2009	42.7	38.8	37.9	42.6	42.9

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

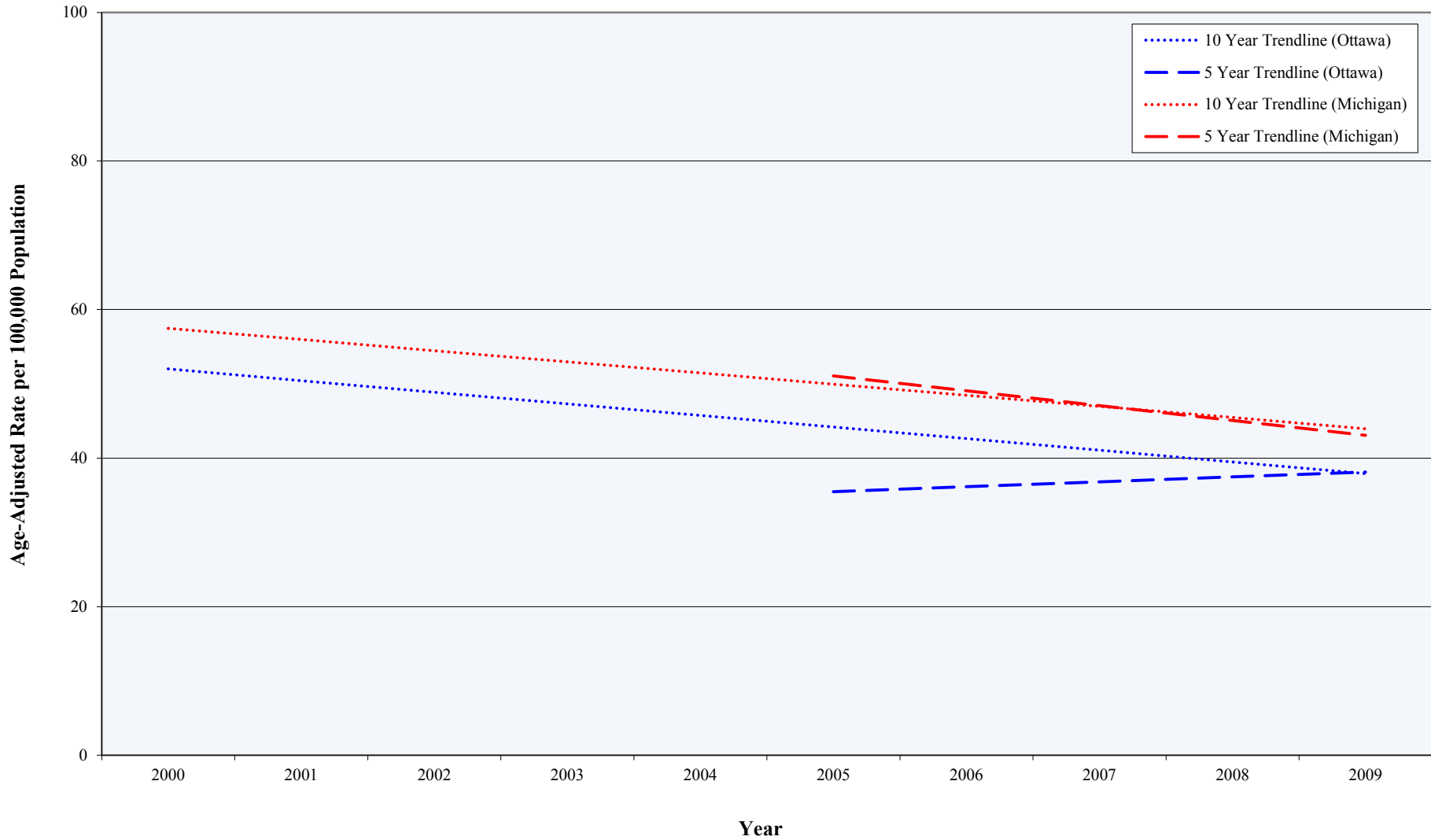
Diagnosed Colorectal Cancer Cases (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Colorectal Cancer Cases

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Colorectal Cancer (1985-2009)

Diagnosed Cases by Gender (Ottawa County, Adjacent Counties, State)

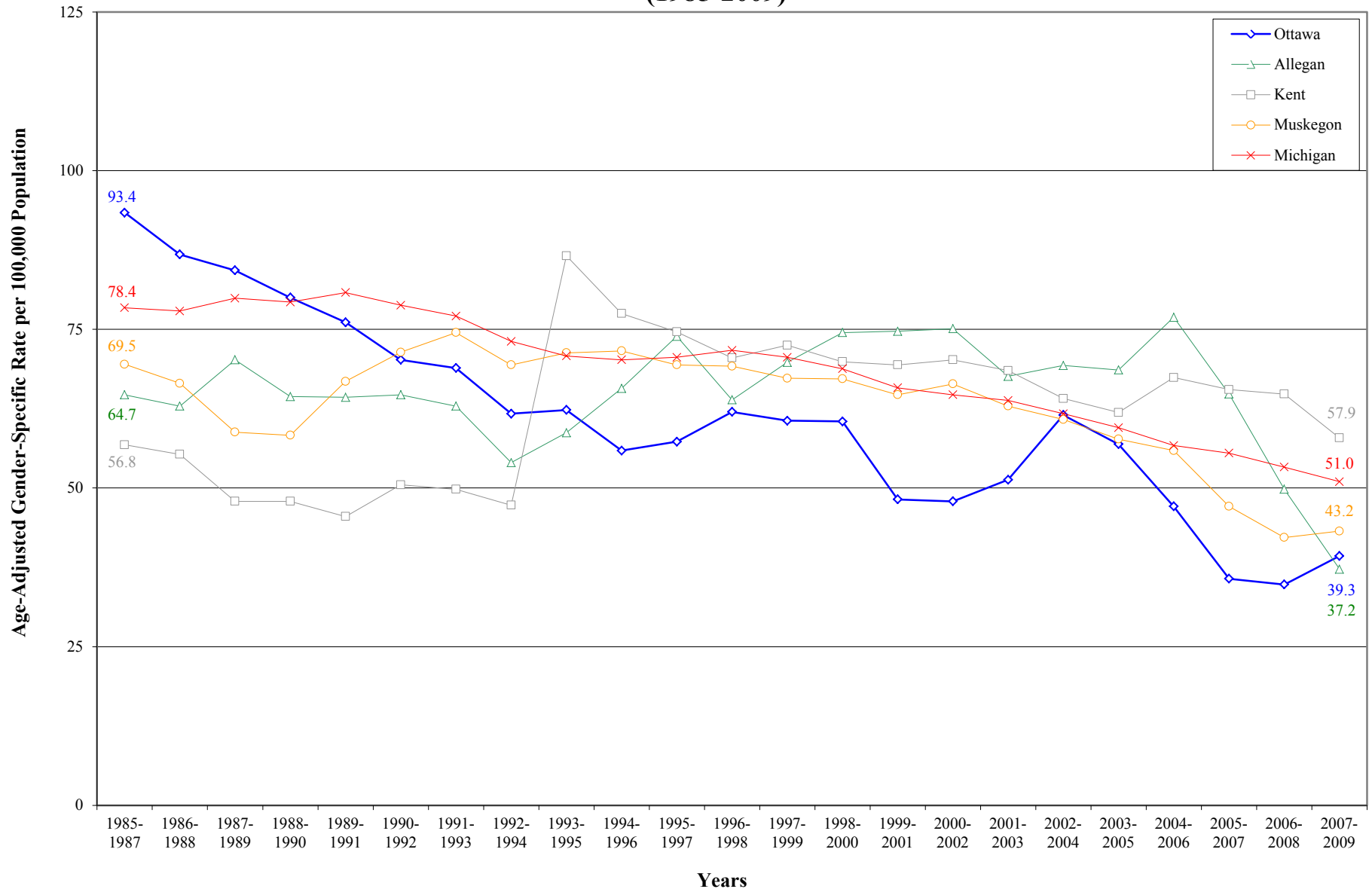
Diagnosed Cases per 100,000 Population*

Year	Male					Female				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	93.4	64.7	56.8	69.5	78.4	49.5	47.4	40.5	63.0	55.6
1986-1988	86.8	62.9	55.3	66.5	77.9	51.4	48.2	41.0	55.7	53.9
1987-1989	84.3	70.2	47.9	58.8	79.9	47.8	48.6	37.3	53.0	54.3
1988-1990	80.0	64.4	47.9	58.3	79.3	52.7	49.5	37.9	47.9	54.8
1989-1991	76.1	64.3	45.5	66.8	80.8	52.4	48.8	36.9	50.5	55.8
1990-1992	70.2	64.7	50.5	71.4	78.8	53.9	47.9	39.7	53.6	55.3
1991-1993	68.9	62.9	49.8	74.5	77.1	50.3	44.9	41.5	49.7	53.2
1992-1994	61.7	54.0	47.3	69.4	73.1	52.4	47.5	38.7	44.8	51.5
1993-1995	62.3	58.7	86.6	71.3	70.8	49.9	50.5	54.5	40.7	49.3
1994-1996	55.9	65.7	77.5	71.6	70.2	48.2	51.5	52.1	40.9	49.0
1995-1997	57.3	73.9	74.6	69.4	70.6	45.6	49.5	52.5	41.6	48.6
1996-1998	62.0	63.9	70.5	69.2	71.7	45.1	50.3	53.4	40.4	50.0
1997-1999	60.6	69.8	72.5	67.3	70.6	47.5	49.6	51.7	42.4	50.0
1998-2000	60.5	74.5	69.9	67.2	68.8	43.9	52.3	48.7	44.8	49.8
1999-2001	48.2	74.7	69.4	64.7	65.8	42.1	46.6	46.7	50.3	48.9
2000-2002	47.9	75.1	70.2	66.4	64.7	42.7	47.9	47.1	50.8	48.9
2001-2003	51.3	67.6	68.5	62.9	63.8	49.6	41.9	42.8	53.7	48.7
2002-2004	61.5	69.3	64.1	60.8	61.7	59.8	39.9	43.3	47.3	46.8
2003-2005	56.9	68.6	61.9	57.7	59.5	56.6	40.1	41.1	45.7	45.5
2004-2006	47.1	76.9	67.4	55.9	56.7	47.2	47.7	43.7	42.2	44.8
2005-2007	35.7	64.8	65.5	47.1	55.5	36.6	44.9	41.3	40.4	44.4
2006-2008	34.8	49.8	64.8	42.2	53.3	33.3	37.9	41.7	39.1	42.5
2007-2009	39.3	37.2	57.9	43.2	51.0	35.6	30.2	40.8	35.0	40.4

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups. Rates are gender-specific and refer to the population of that gender

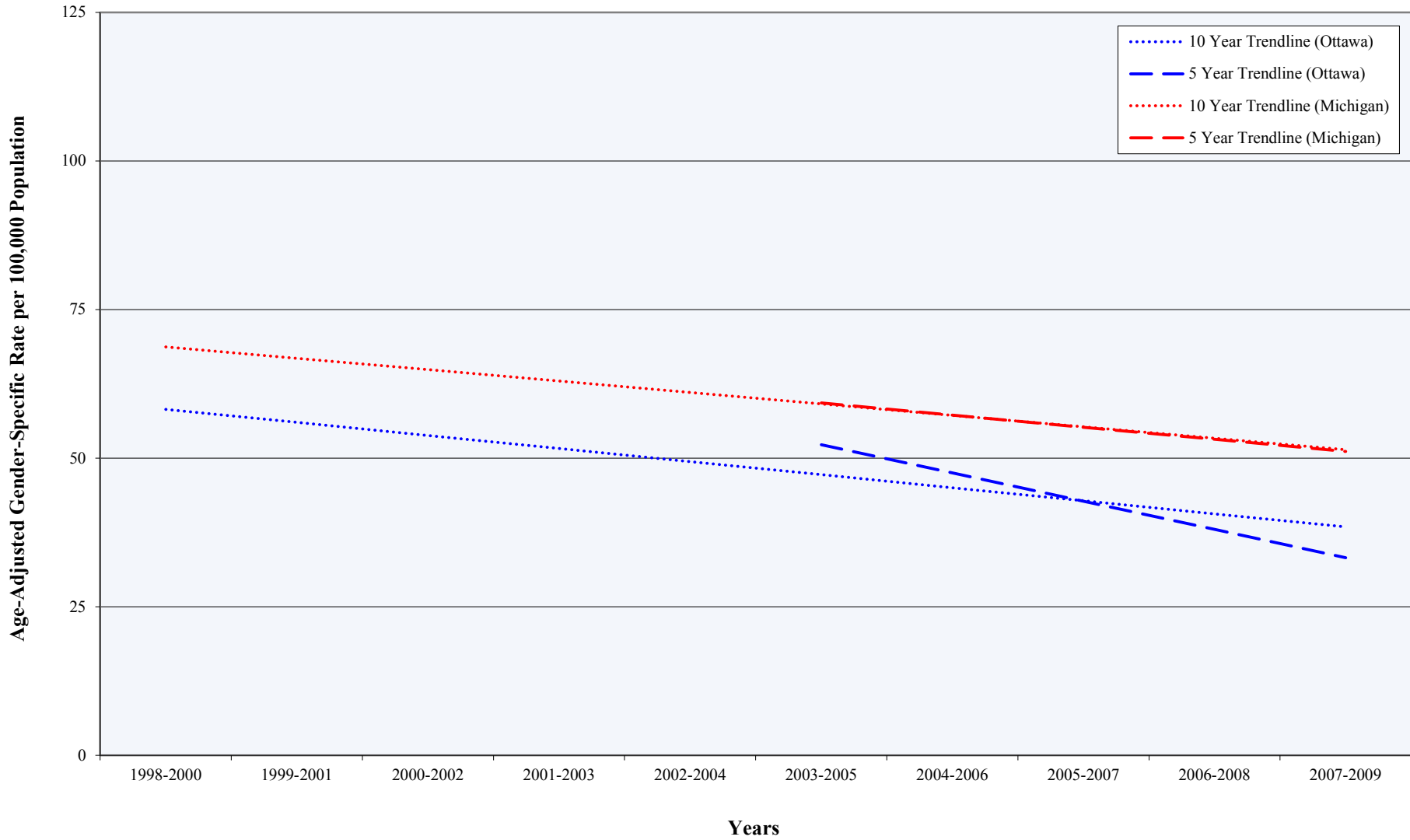
Diagnosed Colorectal Cancer Cases Among Males (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

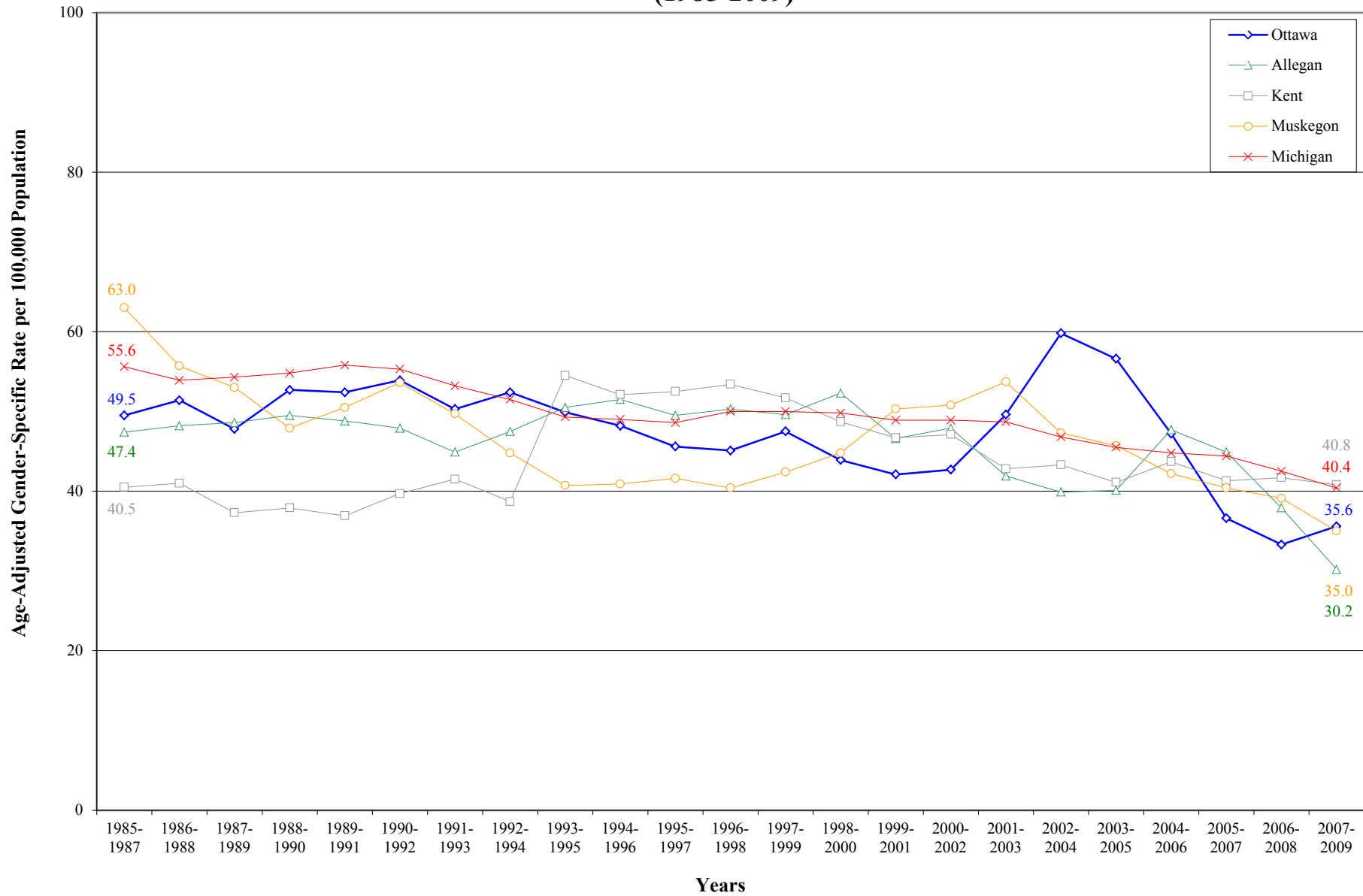
Diagnosed Colorectal Cancer Cases Among Males

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

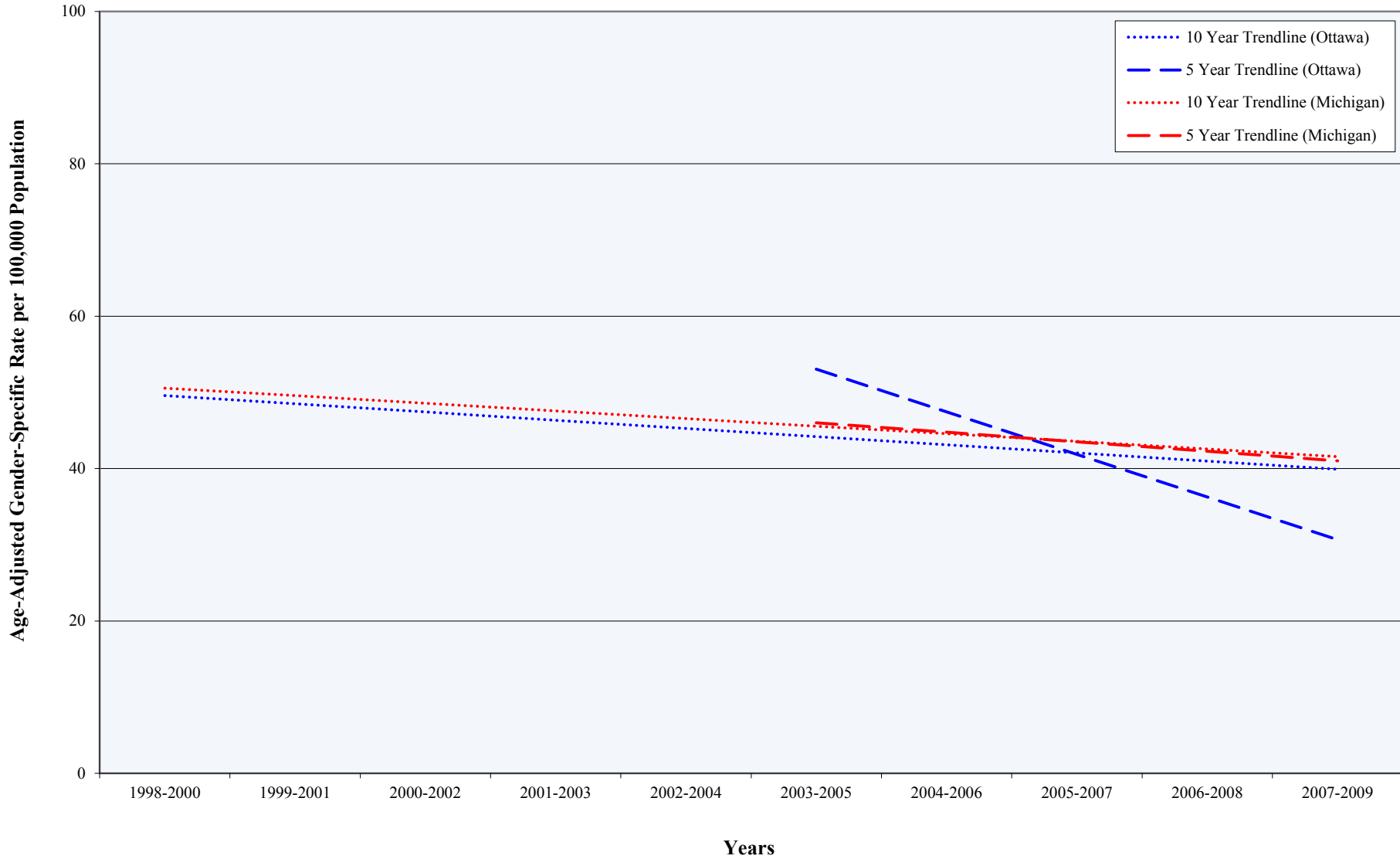
Diagnosed Colorectal Cancer Cases Among Females (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Colorectal Cancer Cases Among Females

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Colorectal Cancer (1985-2009)

Diagnosed Cases by Age (Ottawa County, Adjacent Counties, State)

Diagnosed Cases per 100,000 Population*

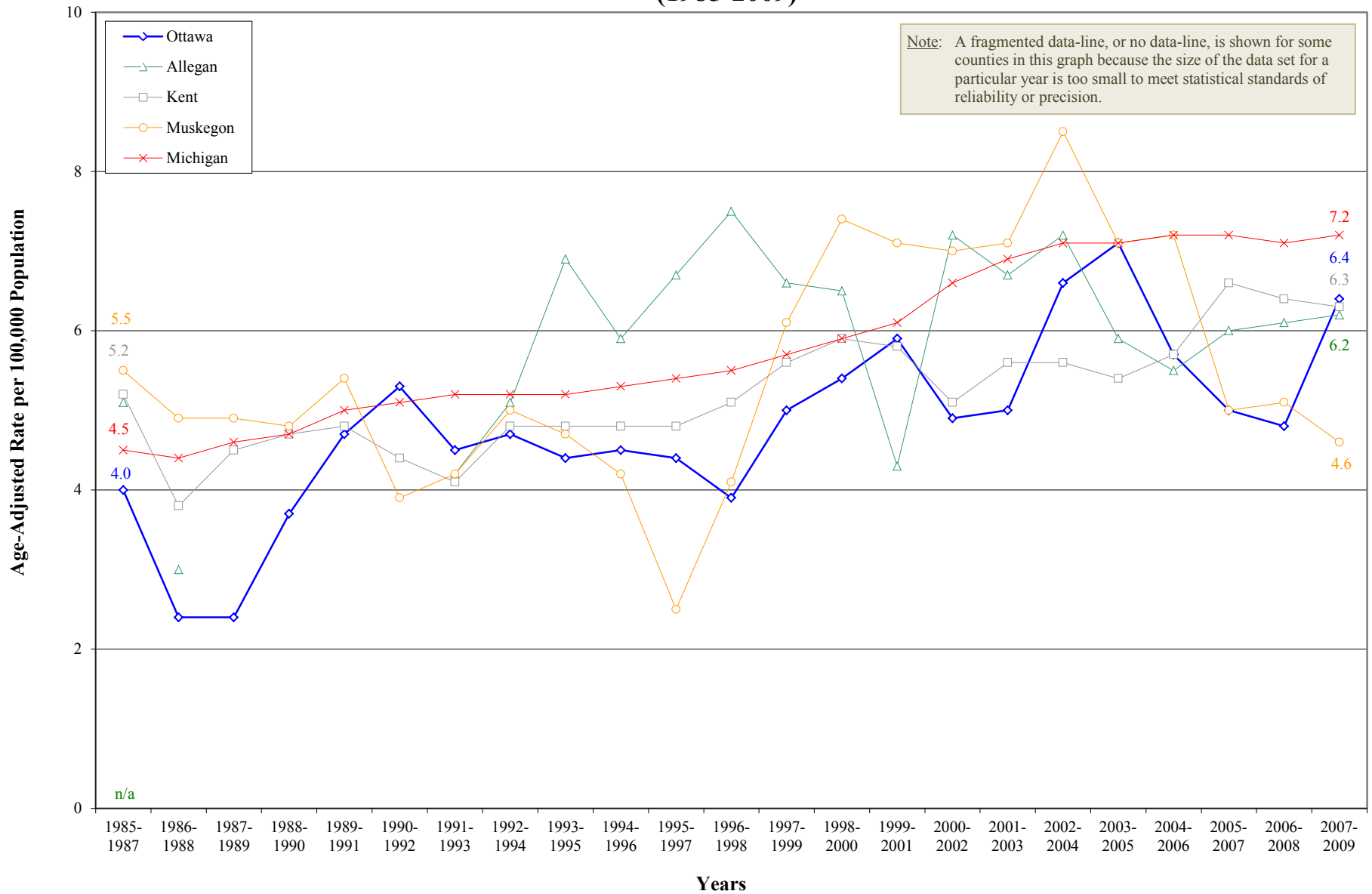
Year	Under Age 50					Age 50-74					Age 75 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	4.0	5.1	5.2	5.5	4.5	182.8	144.5	101.0	175.4	163.3	438.3	363.7	343.2	423.7	448.7
1986-1988	2.4	**	3.8	4.9	4.4	167.9	149.6	165.0	169.1	158.1	483.5	378.1	494.9	370.7	451.1
1987-1989	2.4	**	4.5	4.9	4.6	146.6	162.7	144.5	159.6	160.1	512.8	382.3	472.0	322.9	462.1
1988-1990	3.7	**	4.7	4.8	4.7	143.7	151.8	143.9	147.8	160.1	524.9	377.9	465.5	321.7	466.9
1989-1991	4.7	**	4.8	5.4	5.0	141.8	146.5	153.3	141.8	161.9	499.7	396.0	415.9	407.4	477.4
1990-1992	5.3	**	4.4	3.9	5.1	132.8	148.6	152.5	148.7	159.4	488.9	390.5	420.4	469.8	468.9
1991-1993	4.5	4.2	4.1	4.2	5.2	127.7	136.8	141.1	148.9	154.9	463.5	349.8	406.4	450.3	453.0
1992-1994	4.7	5.1	4.8	5.0	5.2	125.5	130.6	131.1	140.1	149.8	423.9	310.9	405.0	384.4	428.3
1993-1995	4.4	6.9	4.8	4.7	5.2	131.3	146.1	139.2	143.1	143.2	382.8	287.4	391.4	346.7	411.5
1994-1996	4.5	5.9	4.8	4.2	5.3	120.4	159.5	133.0	140.4	141.4	364.4	321.9	365.0	365.6	408.4
1995-1997	4.4	6.7	4.8	2.5	5.4	121.0	159.5	123.0	141.9	140.3	346.4	353.3	368.6	372.4	407.4
1996-1998	3.9	7.5	5.1	4.1	5.5	121.9	134.9	113.9	137.8	142.9	380.0	370.3	352.8	361.7	414.0
1997-1999	5.0	6.6	5.6	6.1	5.7	125.4	142.3	120.2	135.9	140.7	359.5	391.7	376.5	339.0	406.0
1998-2000	5.4	6.5	5.9	7.4	5.9	119.6	148.6	117.5	134.3	136.8	335.7	421.6	343.6	347.3	397.1
1999-2001	5.9	4.3	5.8	7.1	6.1	95.2	138.6	115.8	131.7	129.7	305.9	419.6	344.1	379.0	387.7
2000-2002	4.9	7.2	5.1	7.0	6.6	87.8	114.1	107.2	118.2	126.0	349.2	468.5	331.1	436.4	385.9
2001-2003	5.0	6.7	5.6	7.1	6.9	103.0	99.9	99.4	120.9	124.1	384.6	410.1	340.6	439.2	379.1
2002-2004	6.6	7.2	5.6	8.5	7.1	124.2	100.3	88.5	103.3	119.4	454.2	405.6	293.9	409.0	360.0
2003-2005	7.1	5.9	5.4	7.1	7.1	119.5	109.9	86.6	105.5	115.3	400.6	394.7	302.0	377.0	346.1
2004-2006	5.7	5.5	5.7	7.2	7.2	96.0	122.6	80.7	107.3	110.5	343.7	495.0	294.5	317.1	333.6
2005-2007	5.0	6.0	6.6	5.0	7.2	73.6	110.5	85.8	103.3	108.3	259.5	423.2	325.5	276.5	329.2
2006-2008	4.8	6.1	6.4	5.1	7.1	69.0	93.1	92.0	97.1	102.4	241.1	320.4	320.8	246.2	317.9
2007-2009	6.4	6.2	6.3	4.6	7.2	76.4	85.0	91.5	83.1	98.3	250.1	172.3	283.8	273.4	299.0

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Diagnosed cancer rates are age-specific and refer to the population in a specific age group

** A rate was not calculated because the size of the data set (i.e. number of cases) was too small to meet statistical standards of reliability or precision

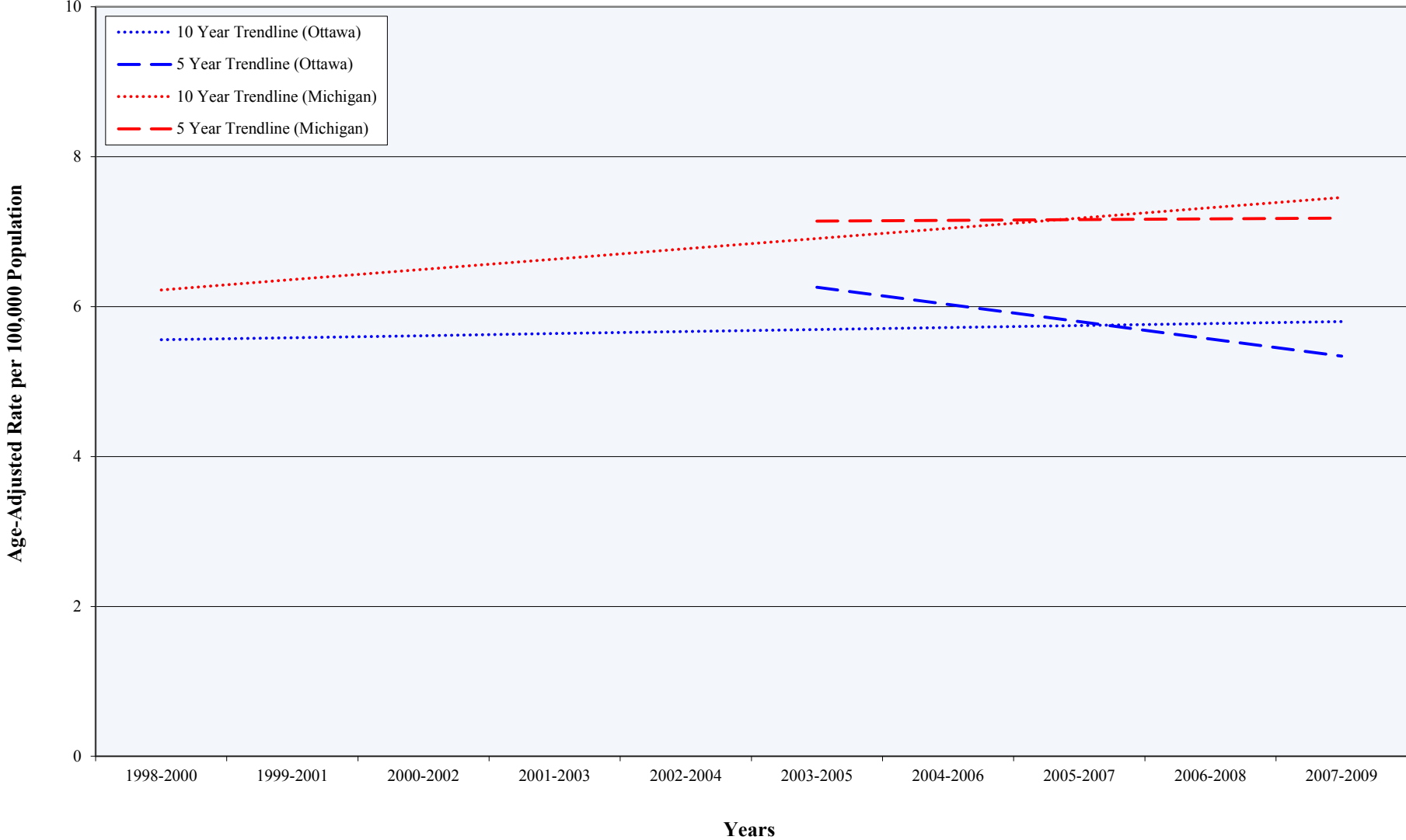
Diagnosed Colorectal Cancer Cases Among Persons Under Age 50 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Colorectal Cancer Cases Among Persons Under Age 50

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

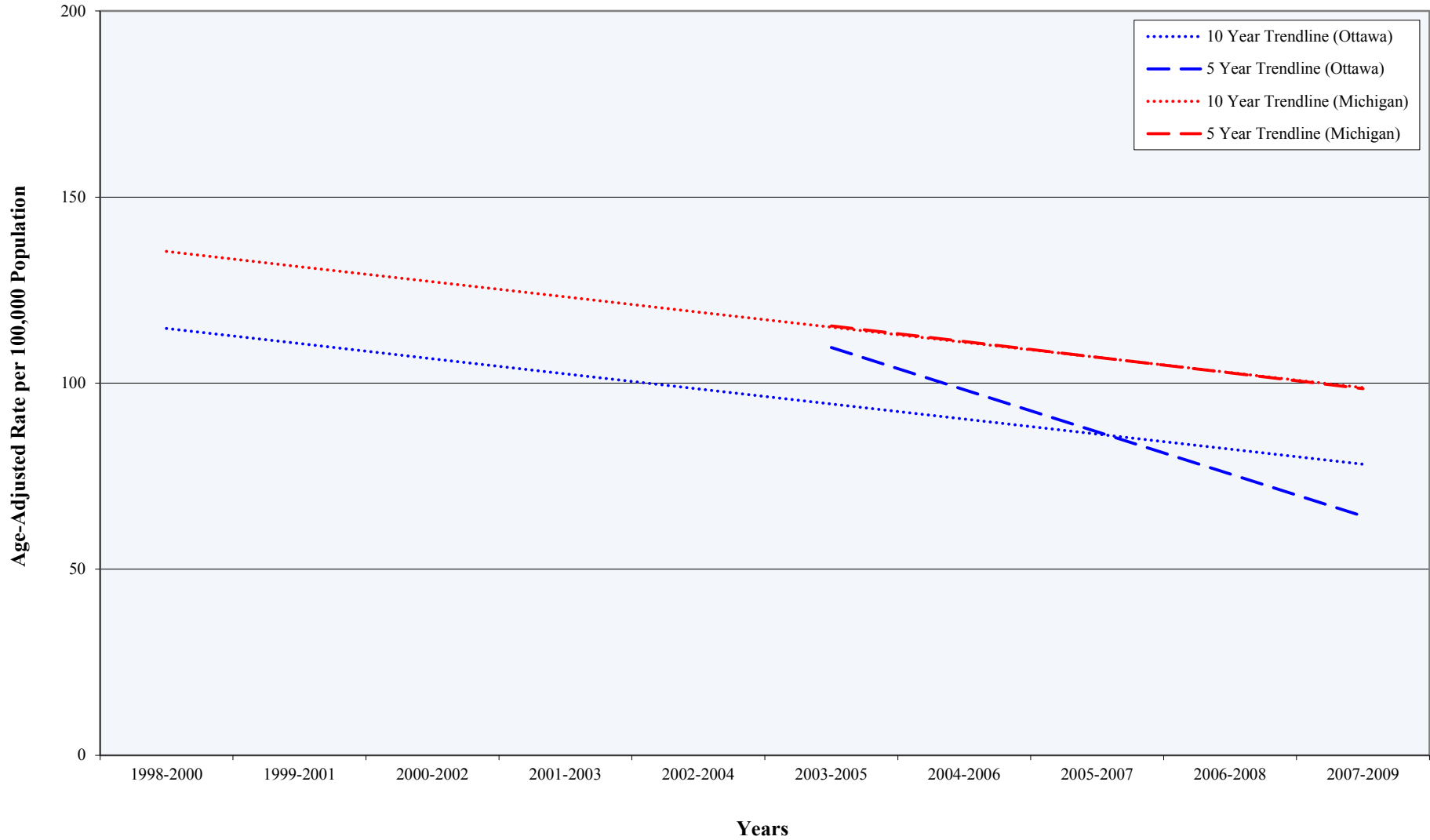
Diagnosed Colorectal Cancer Cases Among Persons Age 50-74 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

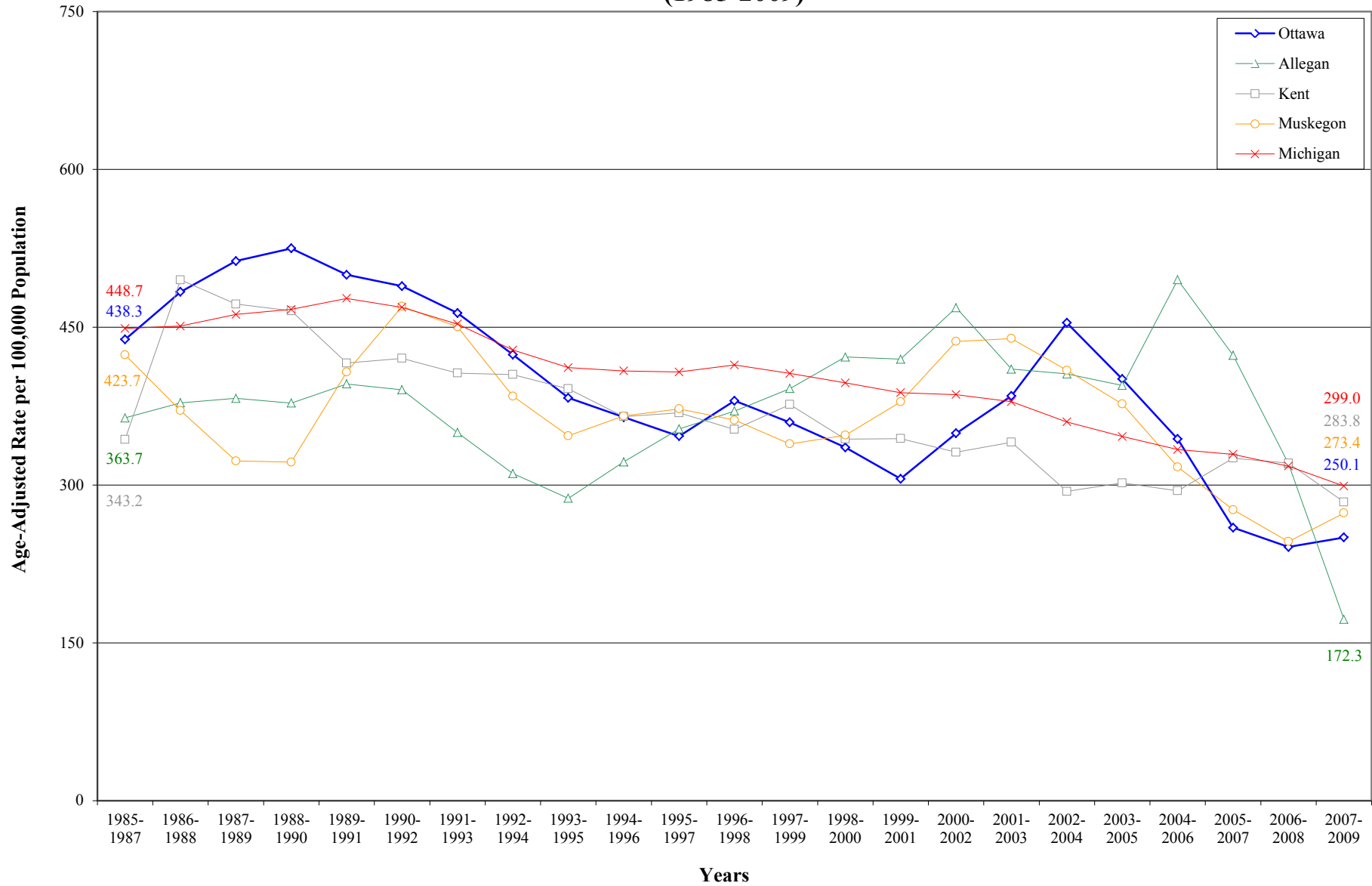
Diagnosed Colorectal Cancer Cases Among Persons Age 50-74

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

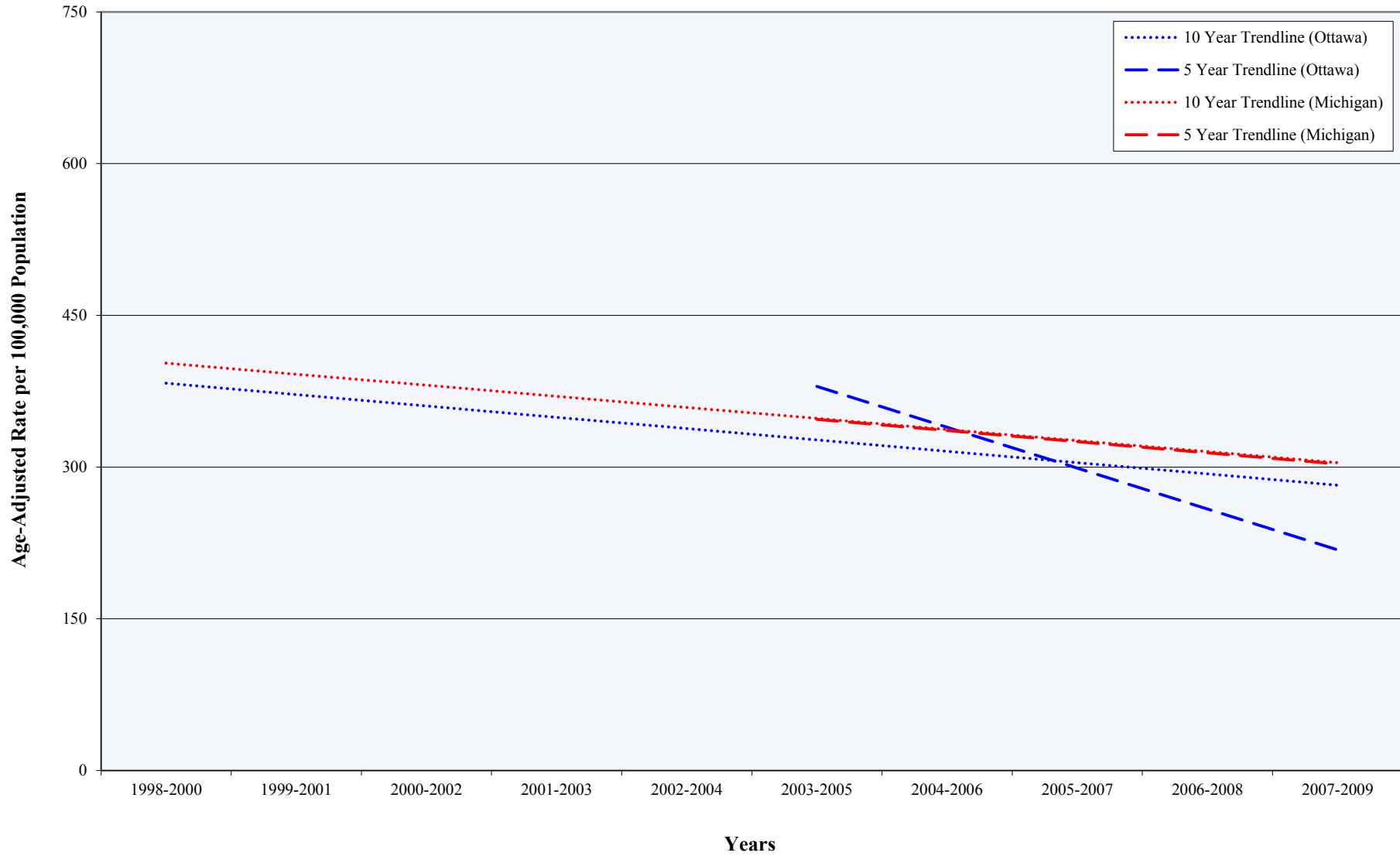
Diagnosed Colorectal Cancer Cases Among Persons Age 75 and Older (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Colorectal Cancer Cases Among Persons Age 75 and Older

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Colorectal Cancer (1985-2009) By Stage at Diagnosis (Ottawa County)

Percent of All Diagnosed Colorectal Cancer Cases

Year	In Situ ¹	Localized ²	Regional ³	Distant ⁴	Unknown ⁵
1985-1989	7.1%	33.8%	31.1%	10.9%	17.0%
1986-1990	6.9%	30.1%	31.8%	11.6%	19.5%
1987-1991	5.9%	31.2%	32.9%	11.5%	18.4%
1988-1992	6.3%	33.3%	34.8%	13.3%	12.3%
1989-1993	6.6%	34.4%	34.6%	11.8%	12.6%
1990-1994	6.4%	35.7%	33.7%	10.9%	13.3%
1991-1995	5.9%	36.6%	34.9%	10.4%	12.3%
1992-1996	6.9%	36.8%	33.4%	10.3%	12.6%
1993-1997	7.5%	32.6%	34.9%	9.6%	15.3%
1994-1998	6.3%	31.3%	32.3%	10.4%	19.6%
1995-1999	6.2%	28.8%	34.0%	11.5%	19.5%
1996-2000	6.2%	30.7%	33.7%	10.8%	18.7%
1997-2001	7.7%	29.8%	34.1%	9.9%	18.5%
1998-2002	7.9%	34.6%	31.5%	10.4%	15.6%
1999-2003	7.5%	37.8%	33.5%	9.1%	12.2%
2000-2004	6.9%	39.3%	32.6%	10.5%	10.7%
2001-2005	6.9%	40.3%	31.0%	10.5%	11.3%
2002-2006	5.3%	42.8%	28.1%	11.5%	12.3%
2003-2007	4.4%	41.8%	29.6%	11.7%	12.5%
2004-2008	4.8%	41.7%	28.3%	14.2%	11.0%
2005-2009	4.1%	44.0%	26.9%	12.2%	12.8%

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

¹ In Situ, or early cancer, is a non-invasive cancer that is diagnosed when the cancer is only present in the layer of cells in which it began

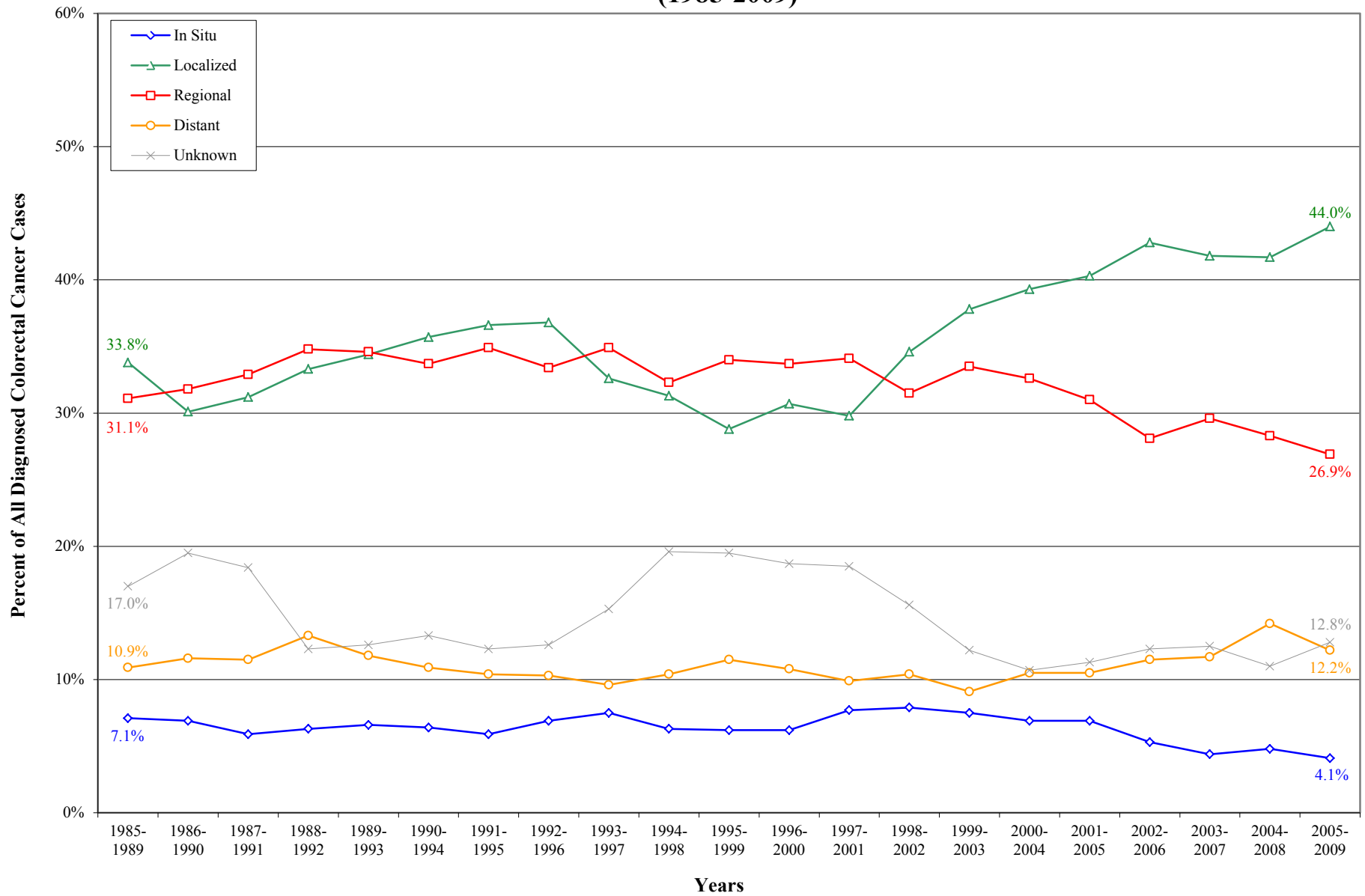
² Localized cancer is invasive but is limited to the organ in which it began, without evidence of spread

³ Regional cancer is invasive and has spread beyond the original site to nearby lymph nodes or organs and tissues

⁴ Distant cancer is invasive and has spread from the original site to distant organs or distant lymph nodes

⁵ Unknown cancer is invasive; however, the exact stage of the cancer is unknown

Ottawa County Colorectal Cancer Cases by Stage at Diagnosis (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Colorectal Cancer (1985-2009)

Deaths by Year (Ottawa County, Adjacent Counties, State)

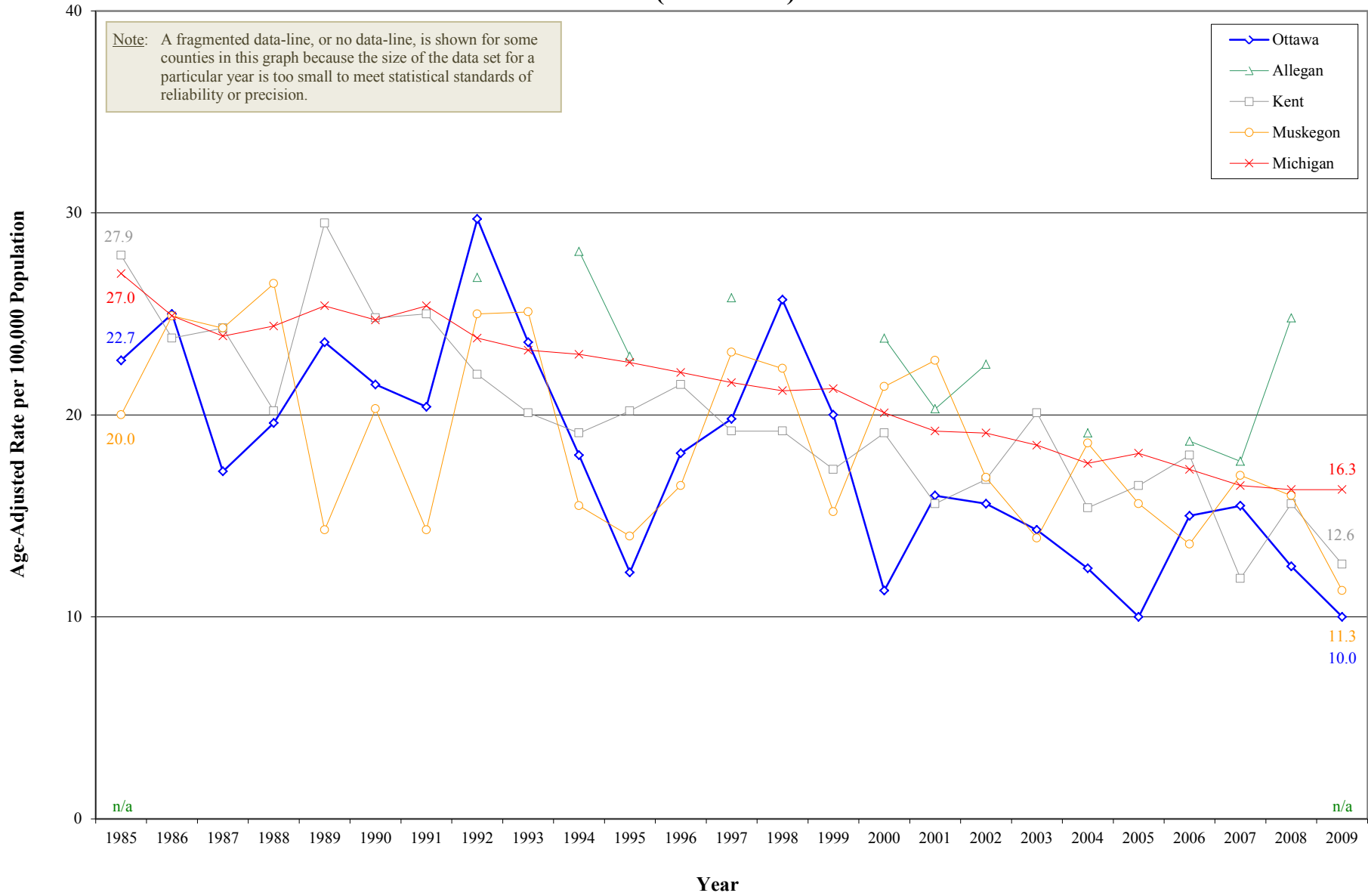
Year	Deaths per 100,000 Population*				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	22.7	**	27.9	20.0	27.0
1986	25.0	**	23.8	24.9	24.9
1987	17.2	**	24.3	24.3	23.9
1988	19.6	**	20.2	26.5	24.4
1989	23.6	**	29.5	14.3	25.4
1990	21.5	**	24.8	20.3	24.7
1991	20.4	**	25.0	14.3	25.4
1992	29.7	26.8	22.0	25.0	23.8
1993	23.6	**	20.1	25.1	23.2
1994	18.0	28.1	19.1	15.5	23.0
1995	12.2	22.9	20.2	14.0	22.6
1996	18.1	**	21.5	16.5	22.1
1997	19.8	25.8	19.2	23.1	21.6
1998	25.7	**	19.2	22.3	21.2
1999	20.0	**	17.3	15.2	21.3
2000	11.3	23.8	19.1	21.4	20.1
2001	16.0	20.3	15.6	22.7	19.2
2002	15.6	22.5	16.8	16.9	19.1
2003	14.3	**	20.1	13.9	18.5
2004	12.4	19.1	15.4	18.6	17.6
2005	10.0	**	16.5	15.6	18.1
2006	15.0	18.7	18.0	13.6	17.3
2007	15.5	17.7	11.9	17.0	16.5
2008	12.5	24.8	15.6	16.0	16.3
2009	10.0	**	12.6	11.3	16.3

Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

* Death rates are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

** A rate was not calculated because the size of the data set (i.e. number of deaths) was too small to meet statistical standards of reliability or precision

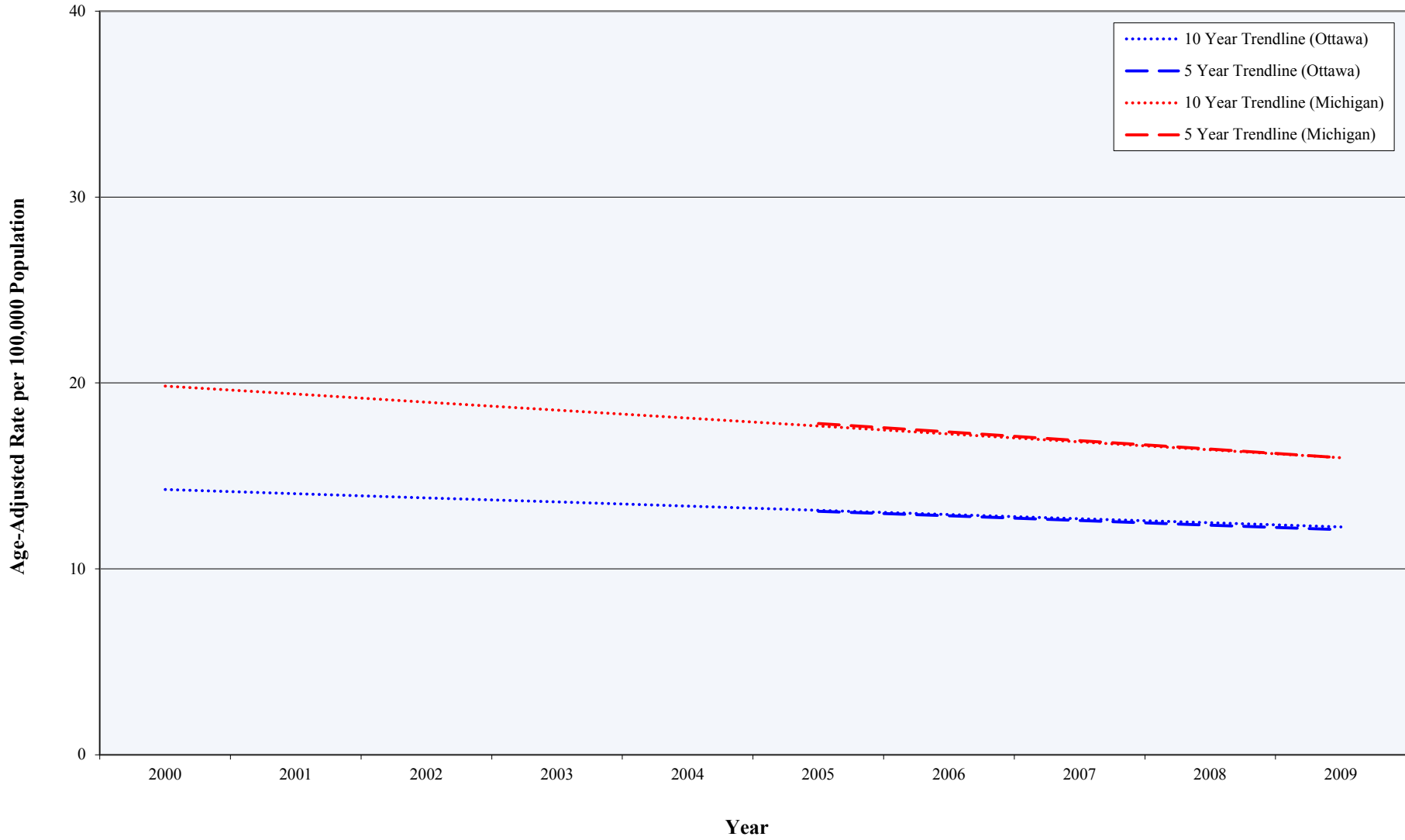
Colorectal Cancer Deaths (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Colorectal Cancer Deaths

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Lung Cancer (1985-2009)

Diagnosed Cases by Year (Ottawa County, Adjacent Counties, State)

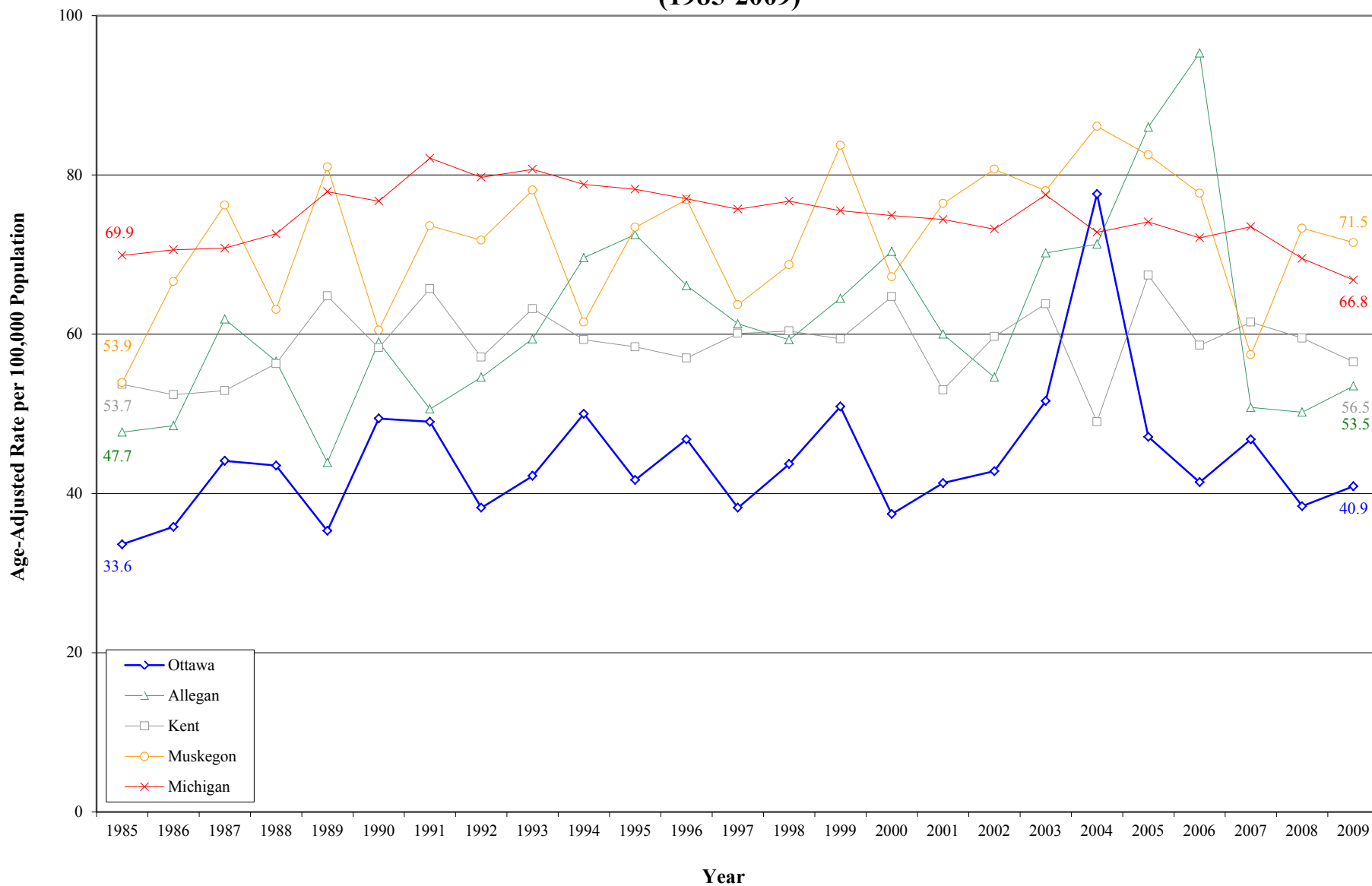
Diagnosed Cases per 100,000 Population*

Year	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	33.6	47.7	53.7	53.9	69.9
1986	35.8	48.5	52.4	66.6	70.6
1987	44.1	61.9	52.9	76.2	70.8
1988	43.5	56.6	56.3	63.1	72.6
1989	35.3	43.9	64.8	81.0	77.9
1990	49.4	59.0	58.3	60.5	76.7
1991	49.0	50.6	65.7	73.6	82.1
1992	38.2	54.6	57.1	71.8	79.7
1993	42.2	59.4	63.2	78.1	80.7
1994	50.0	69.6	59.3	61.5	78.8
1995	41.7	72.5	58.4	73.4	78.2
1996	46.8	66.1	57.0	76.9	77.0
1997	38.2	61.3	60.1	63.7	75.7
1998	43.7	59.3	60.4	68.7	76.7
1999	50.9	64.5	59.4	83.7	75.5
2000	37.4	70.4	64.7	67.2	74.9
2001	41.3	60.0	53.0	76.4	74.4
2002	42.8	54.6	59.7	80.7	73.2
2003	51.6	70.2	63.8	78.0	77.5
2004	77.6	71.3	49.0	86.1	72.8
2005	47.1	86.0	67.4	82.5	74.1
2006	41.4	95.3	58.6	77.7	72.1
2007	46.8	50.8	61.5	57.4	73.5
2008	38.4	50.2	59.5	73.3	69.5
2009	40.9	53.5	56.5	71.5	66.8

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

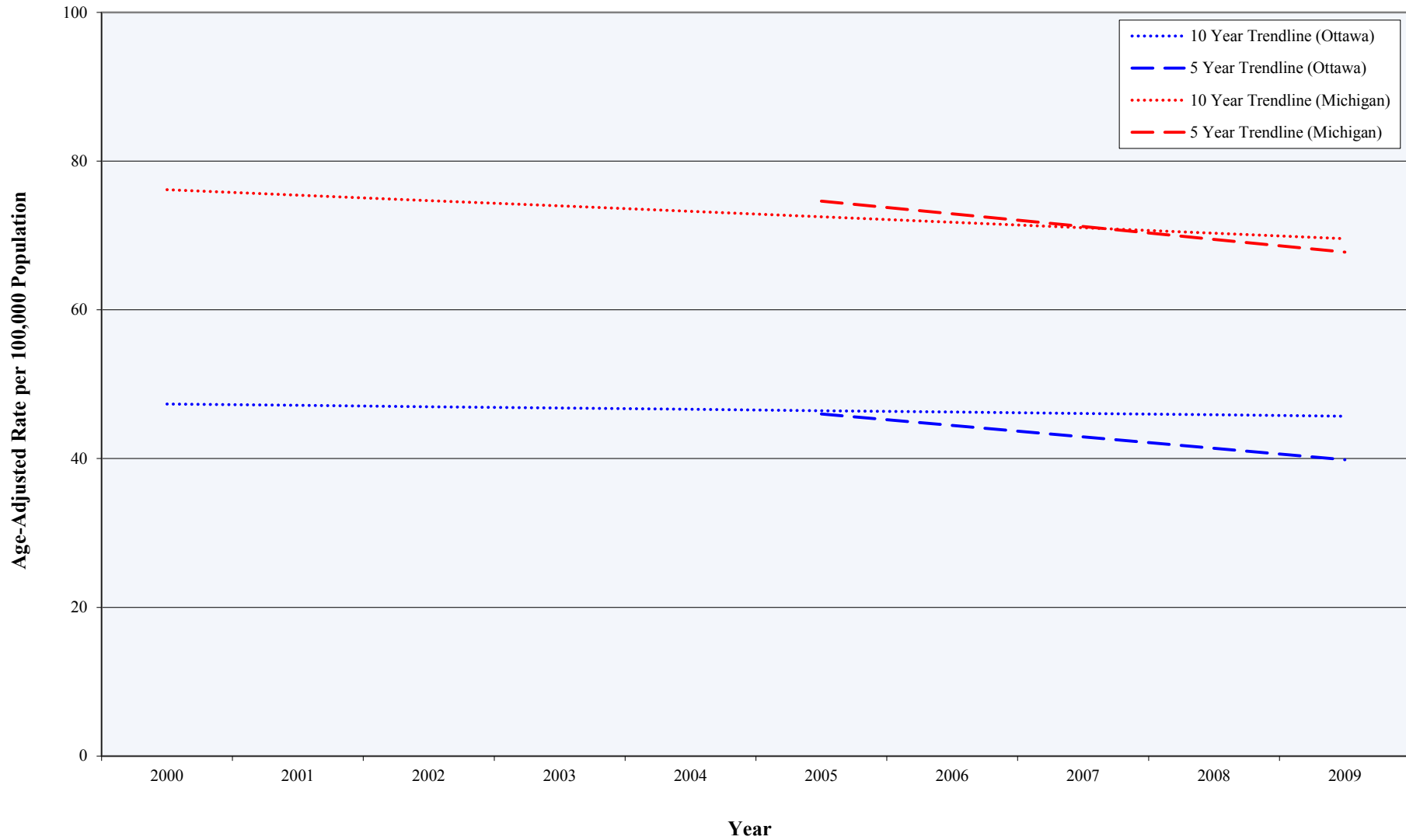
Diagnosed Lung Cancer Cases (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Lung Cancer Cases

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Lung Cancer (1985-2009)

Diagnosed Cases by Gender (Ottawa County, Adjacent Counties, State)

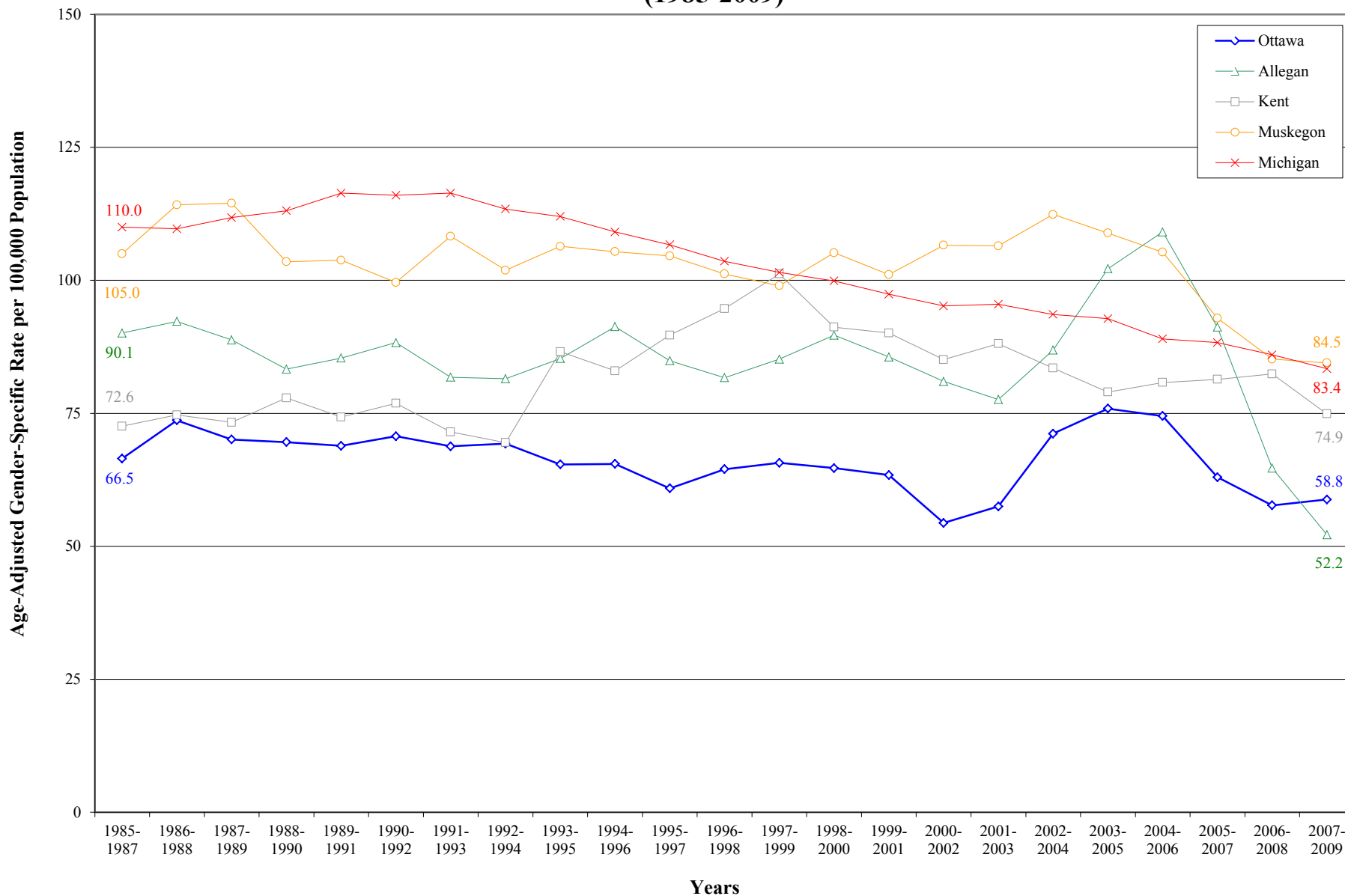
Diagnosed Cases per 100,000 Population*

Year	Male					Female				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	66.5	90.1	72.6	105.0	110.0	16.7	24.9	49.5	37.2	42.3
1986-1988	73.7	92.3	74.7	114.2	109.7	16.1	27.6	47.6	36.4	44.3
1987-1989	70.1	88.8	73.3	114.5	111.8	18.7	27.7	46.0	43.6	47.3
1988-1990	69.6	83.3	77.9	103.5	113.1	22.7	29.4	47.1	43.0	49.8
1989-1991	68.9	85.4	74.3	103.8	116.4	27.2	25.8	47.0	48.9	52.9
1990-1992	70.7	88.3	76.9	99.6	116.0	27.2	28.9	52.7	45.7	54.1
1991-1993	68.8	81.8	71.5	108.3	116.4	24.6	34.8	52.3	49.9	56.1
1992-1994	69.3	81.5	69.5	101.9	113.4	24.9	45.5	52.4	47.7	56.3
1993-1995	65.4	85.3	86.6	106.4	112.0	29.7	54.2	29.8	47.3	56.5
1994-1996	65.5	91.3	83.0	105.4	109.1	32.6	53.5	33.9	47.8	56.4
1995-1997	60.9	84.9	89.7	104.6	106.7	29.6	53.8	36.9	48.6	56.5
1996-1998	64.5	81.7	94.7	101.2	103.6	27.5	47.8	36.6	47.7	57.8
1997-1999	65.7	85.2	101.2	99.0	101.5	28.7	43.9	37.8	53.7	58.5
1998-2000	64.7	89.7	91.2	105.2	99.9	27.9	45.1	39.3	50.4	58.9
1999-2001	63.4	85.6	90.1	101.1	97.4	28.4	49.5	42.4	57.0	59.2
2000-2002	54.4	81.0	85.1	106.6	95.2	30.8	47.3	42.0	49.9	59.2
2001-2003	57.5	77.6	88.1	106.5	95.5	36.8	49.7	41.6	57.4	60.5
2002-2004	71.2	86.9	83.5	112.4	93.6	47.4	48.6	41.7	57.9	60.6
2003-2005	75.9	102.2	79.0	108.9	92.8	45.9	54.7	45.7	62.6	61.7
2004-2006	74.5	109.1	80.8	105.3	89.0	40.7	64.5	45.6	64.4	61.3
2005-2007	63.0	91.2	81.4	92.9	88.3	31.8	65.7	46.4	56.7	62.4
2006-2008	57.7	64.7	82.4	85.2	86.0	30.4	64.6	47.6	57.3	61.3
2007-2009	58.8	52.2	74.9	84.5	83.4	29.1	51.6	48.1	54.1	60.0

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Rates of diagnosed cancer are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups. Rates are gender-specific and refer to the population of that gender

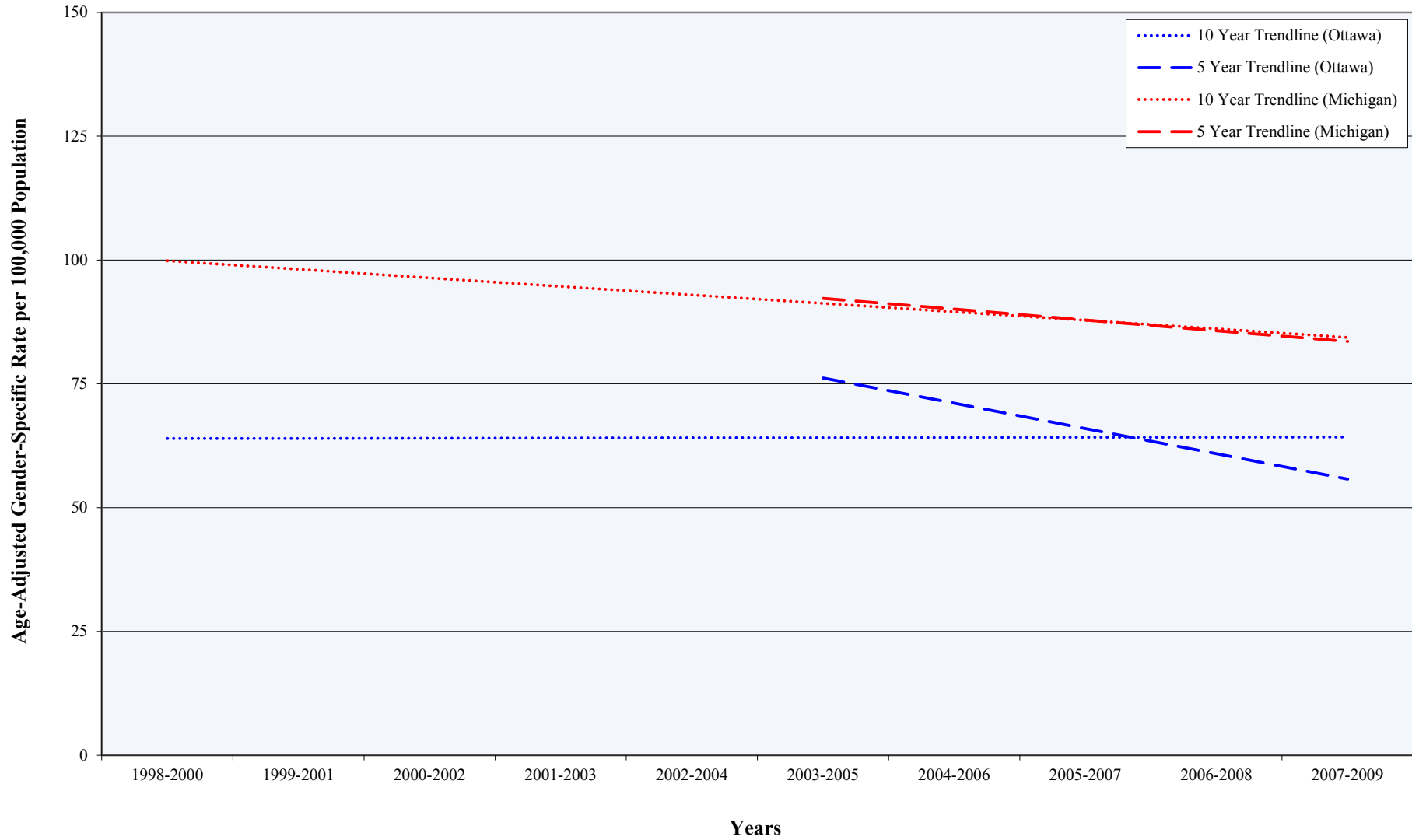
Diagnosed Lung Cancer Cases Among Males (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

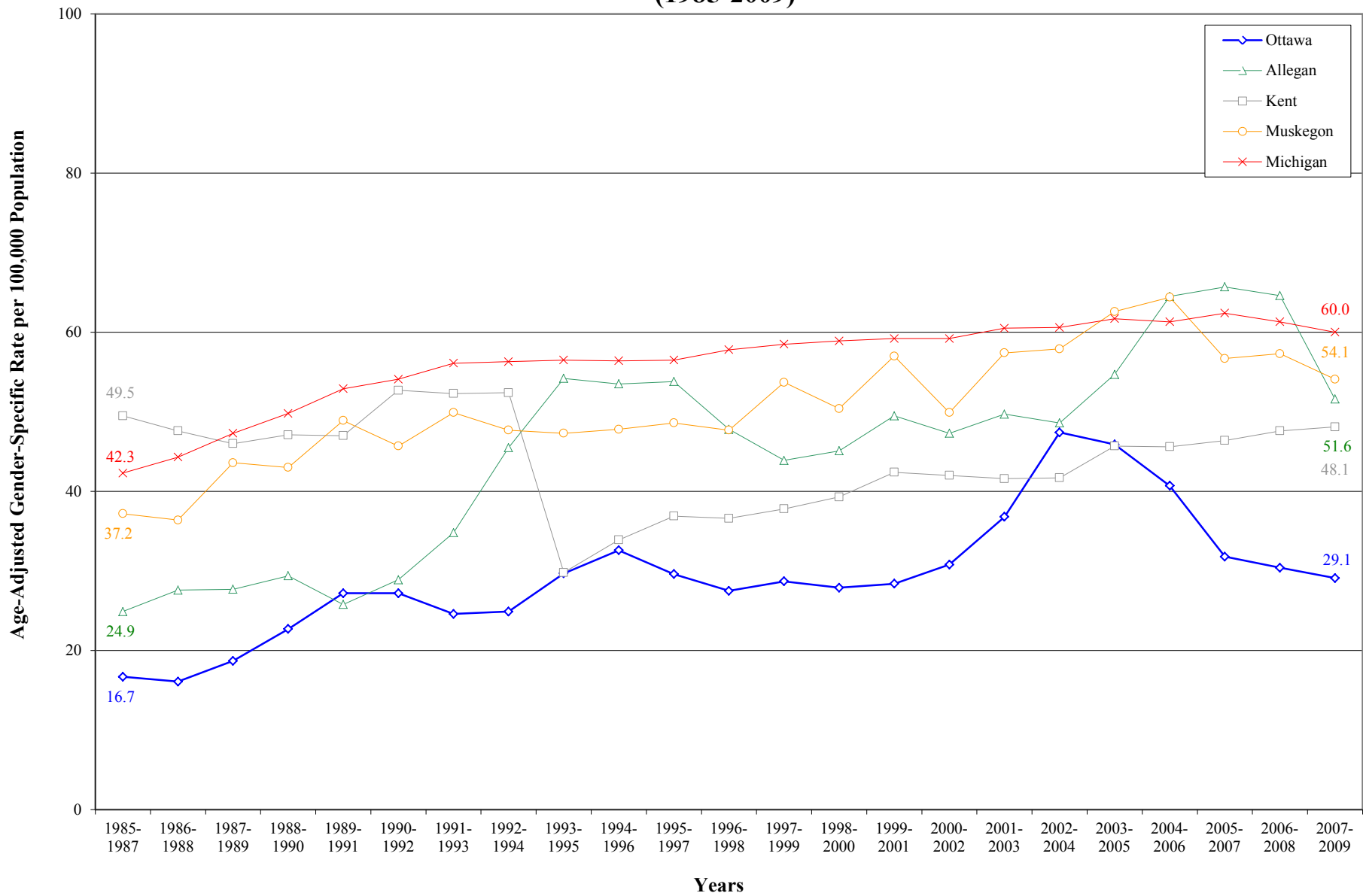
Diagnosed Lung Cancer Cases Among Males

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

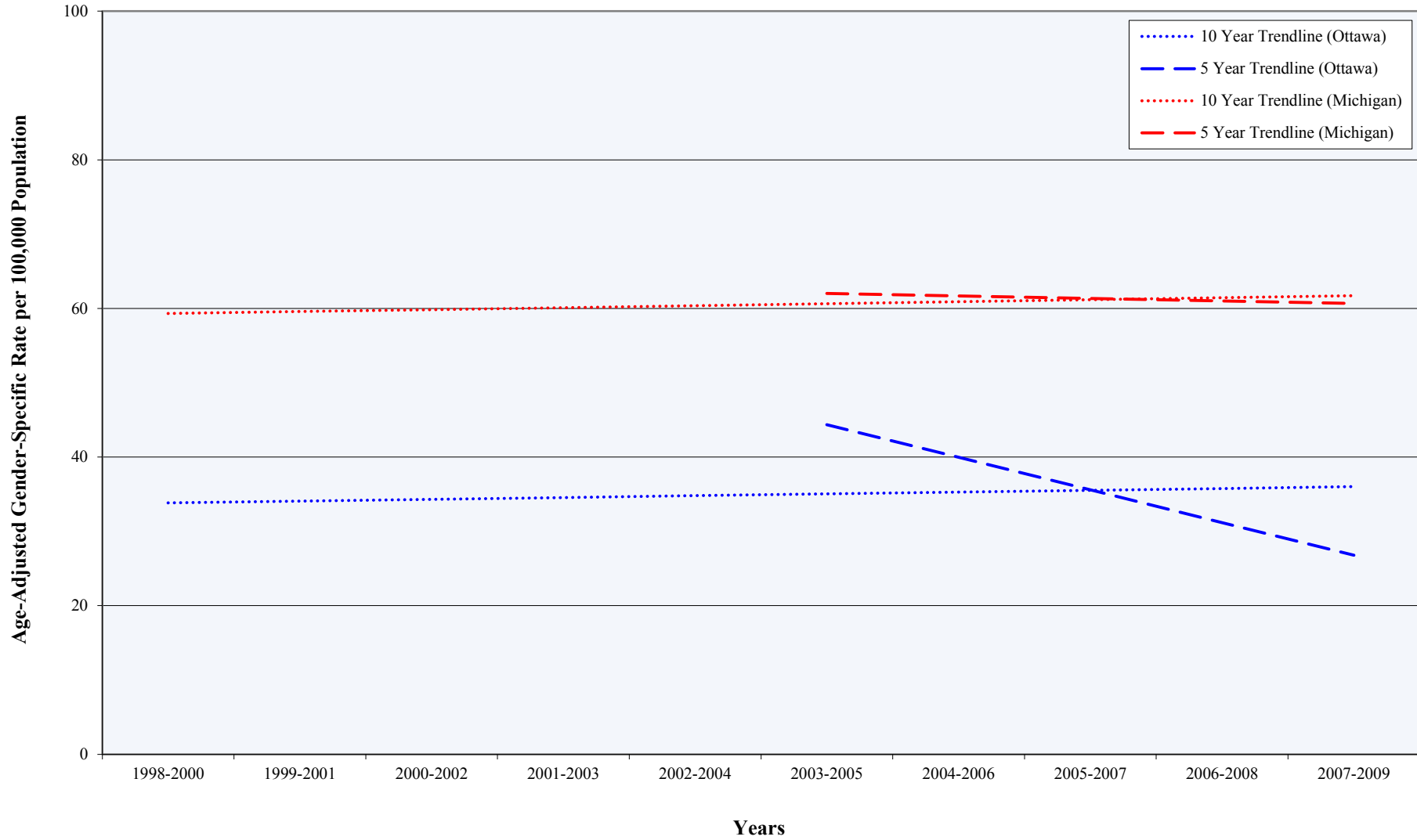
Diagnosed Lung Cancer Cases Among Females (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Lung Cancer Cases Among Females

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Lung Cancer (1985-2009)

Diagnosed Cases by Age (Ottawa County, Adjacent Counties, State)

Diagnosed Cases per 100,000 Population*

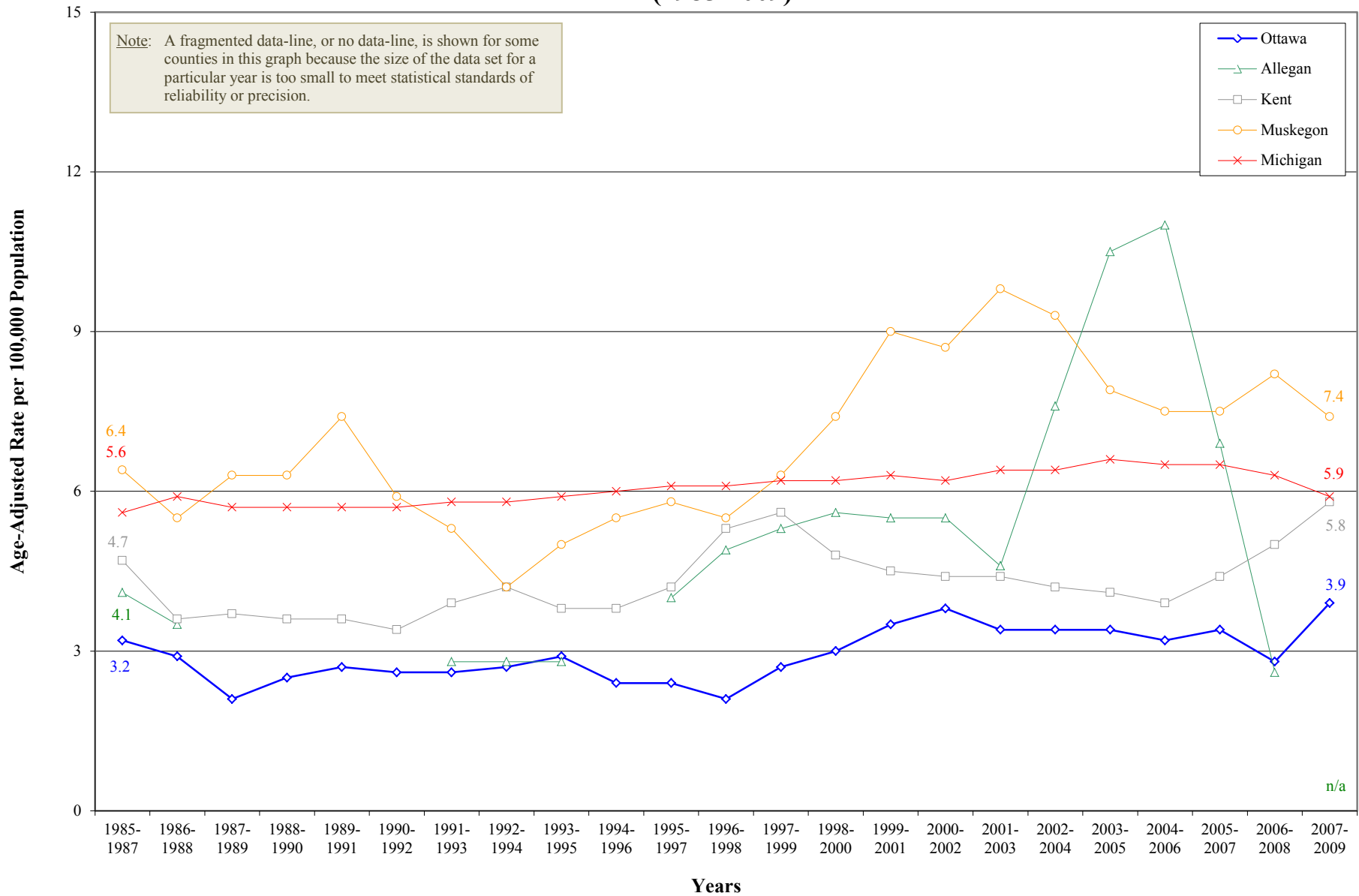
Year	Under Age 50					Age 50-74					Age 75 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1985-1987	3.2	4.1	4.7	6.4	5.6	116.6	178.6	158.9	227.3	230.5	172.3	211.5	318.8	240.3	296.2
1986-1988	2.9	3.5	3.6	5.5	5.9	127.0	185.5	170.4	230.1	232.5	189.6	246.6	237.4	302.5	306.7
1987-1989	2.1	**	3.7	6.3	5.7	133.5	172.6	172.9	254.9	240.2	177.0	294.7	244.3	302.2	329.4
1988-1990	2.5	**	3.6	6.3	5.7	144.7	175.4	196.8	232.2	246.4	169.2	285.4	242.3	301.6	347.5
1989-1991	2.7	**	3.6	7.4	5.7	145.0	173.9	196.1	242.4	255.7	204.1	254.1	279.2	305.5	372.9
1990-1992	2.6	**	3.4	5.9	5.7	146.1	196.9	202.9	242.1	258.3	216.4	224.2	318.1	263.5	379.2
1991-1993	2.6	2.8	3.9	5.3	5.8	136.7	184.3	193.8	256.8	261.9	208.6	251.8	295.9	312.6	386.2
1992-1994	2.7	2.8	4.2	4.2	5.8	143.9	210.8	199.9	246.4	257.6	185.9	277.1	296.4	297.3	381.5
1993-1995	2.9	2.8	3.8	5.0	5.9	139.8	233.8	194.9	228.0	252.5	211.1	300.5	278.5	364.4	386.4
1994-1996	2.4	**	3.8	5.5	6.0	143.3	243.8	194.3	230.7	245.5	230.3	303.0	289.0	344.9	386.5
1995-1997	2.4	4.0	4.2	5.8	6.1	118.3	219.1	184.2	231.3	238.3	250.8	310.6	280.4	345.6	388.4
1996-1998	2.1	4.9	5.3	5.5	6.1	122.7	198.0	178.6	225.8	234.2	247.0	288.0	286.0	329.1	384.4
1997-1999	2.7	5.3	5.6	6.3	6.2	123.8	190.3	178.1	228.7	227.8	252.9	295.2	285.5	332.7	385.3
1998-2000	3.0	5.6	4.8	7.4	6.2	124.4	188.5	184.3	222.3	222.9	230.6	330.4	279.5	347.3	386.3
1999-2001	3.5	5.5	4.5	9.0	6.3	120.3	174.0	188.7	221.3	215.3	218.9	373.6	280.1	363.4	388.6
2000-2002	3.8	5.5	4.4	8.7	6.2	110.5	155.7	168.0	215.7	207.5	205.7	374.8	302.4	359.0	397.2
2001-2003	3.4	4.6	4.4	9.8	6.4	124.8	165.5	148.9	212.7	204.0	231.8	352.4	353.7	408.7	416.5
2002-2004	3.4	7.6	4.2	9.3	6.4	157.5	164.9	146.3	216.0	197.7	304.5	371.3	335.7	448.1	423.8
2003-2005	3.4	10.5	4.1	7.9	6.6	158.1	201.2	145.2	216.0	194.6	311.0	366.5	381.5	472.8	431.0
2004-2006	3.2	11.0	3.9	7.5	6.5	141.2	217.0	141.2	224.3	186.3	312.0	422.7	362.7	433.8	426.2
2005-2007	3.4	6.9	4.4	7.5	6.5	112.2	209.9	152.2	197.1	184.8	257.1	373.7	377.5	366.6	433.0
2006-2008	2.8	2.6	5.0	8.2	6.3	100.8	173.3	143.2	183.5	179.8	260.2	374.7	357.8	360.3	426.9
2007-2009	3.9	**	5.8	7.4	5.9	98.7	140.5	139.8	178.2	176.3	252.4	312.4	353.2	357.6	415.2

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

* Diagnosed cancer rates are age-specific and refer to the population in a specific age group

** A rate was not calculated because the size of the data set (i.e. number of cases) was too small to meet statistical standards of reliability or precision

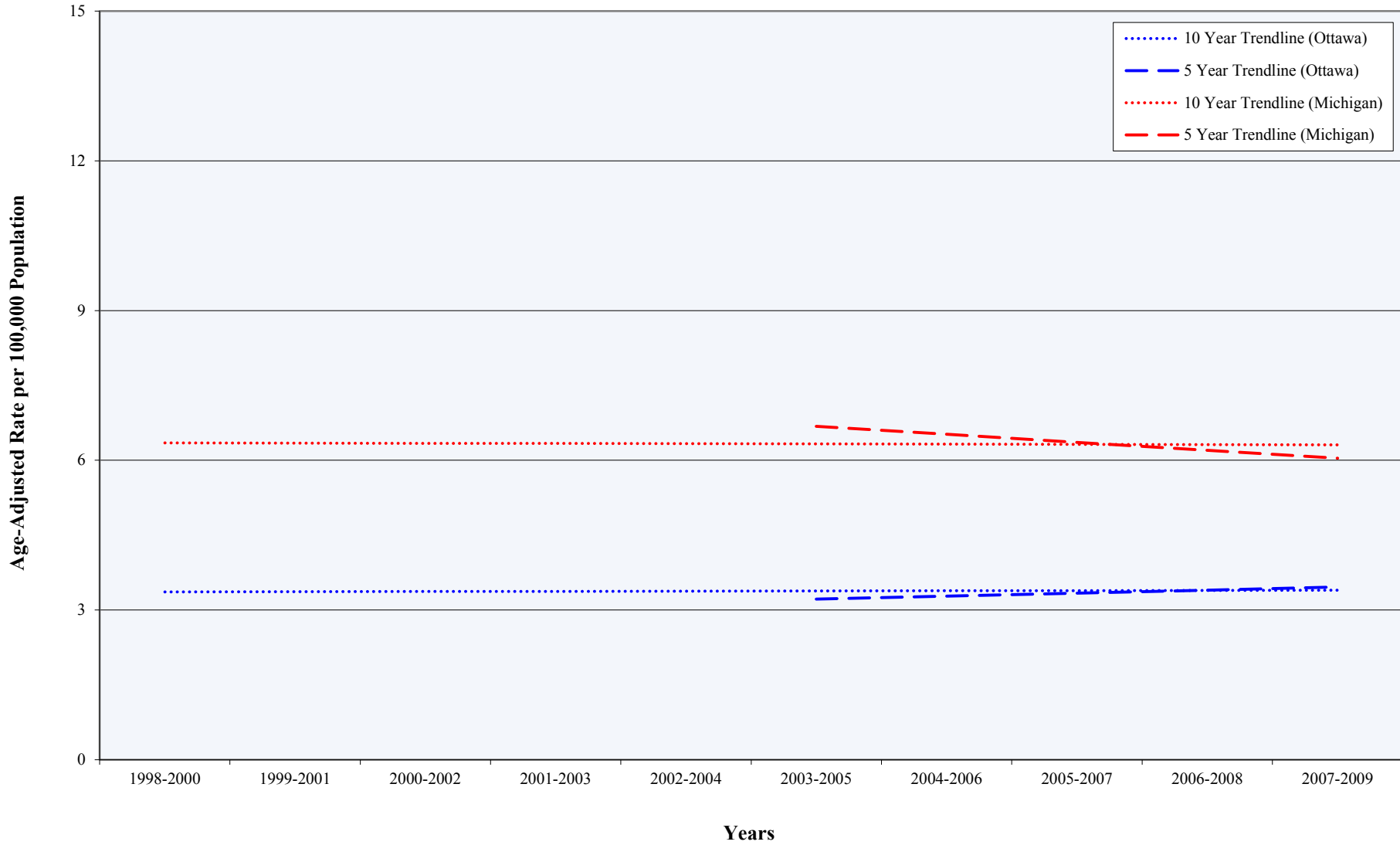
Diagnosed Lung Cancer Cases Among Persons Under Age 50 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

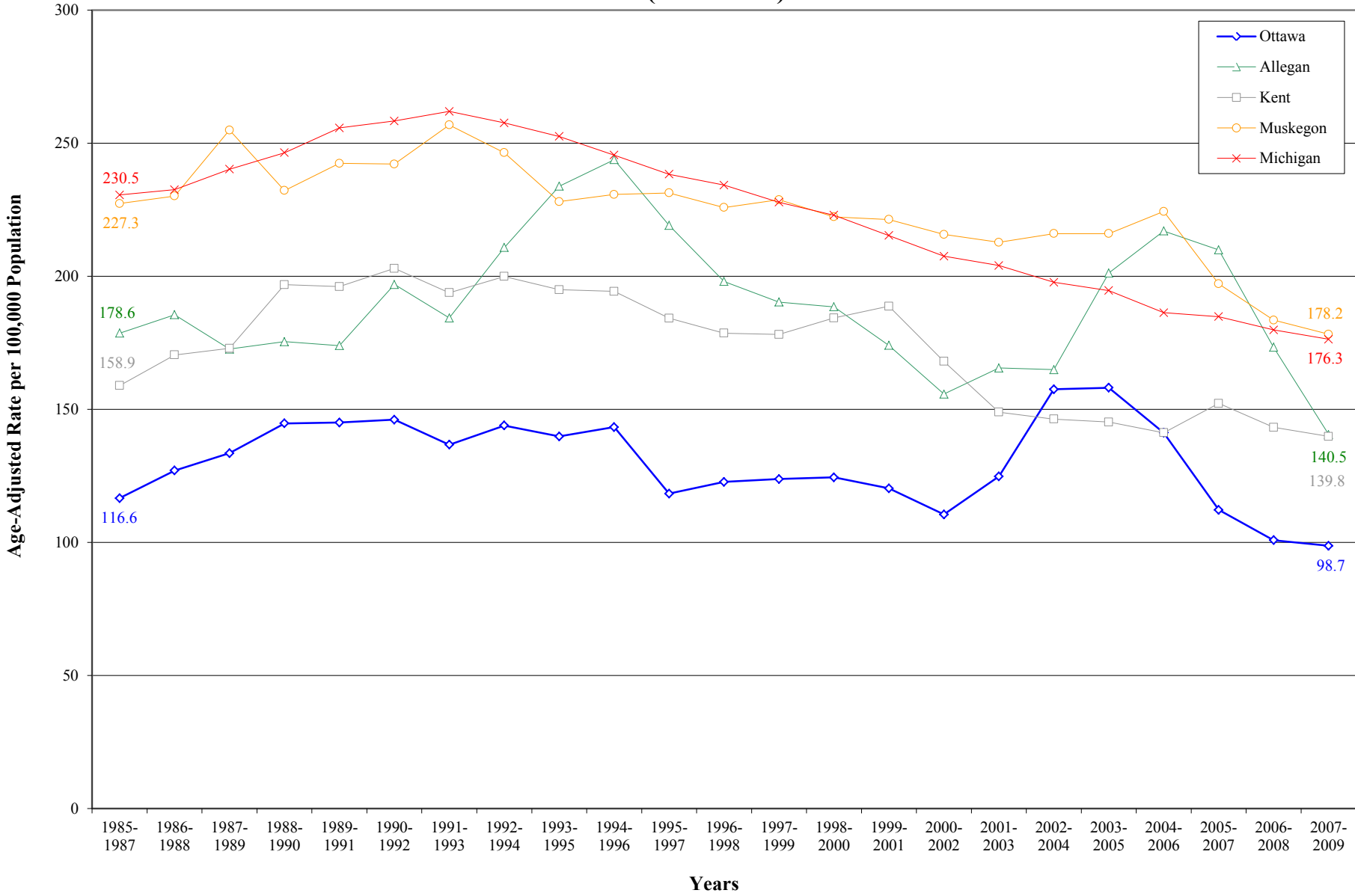
Diagnosed Lung Cancer Cases Among Persons Under Age 50

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

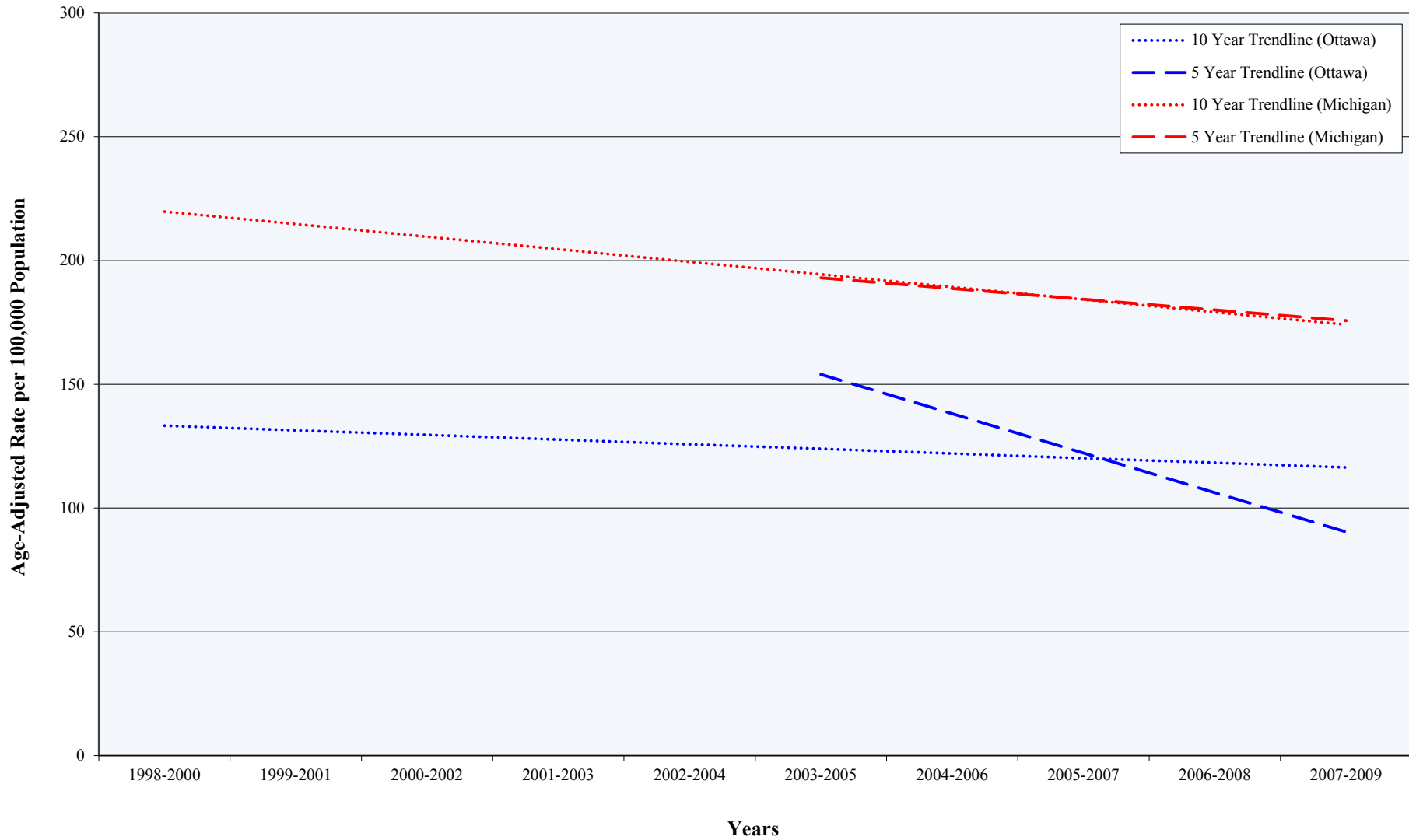
Diagnosed Lung Cancer Cases Among Persons Age 50-74 (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

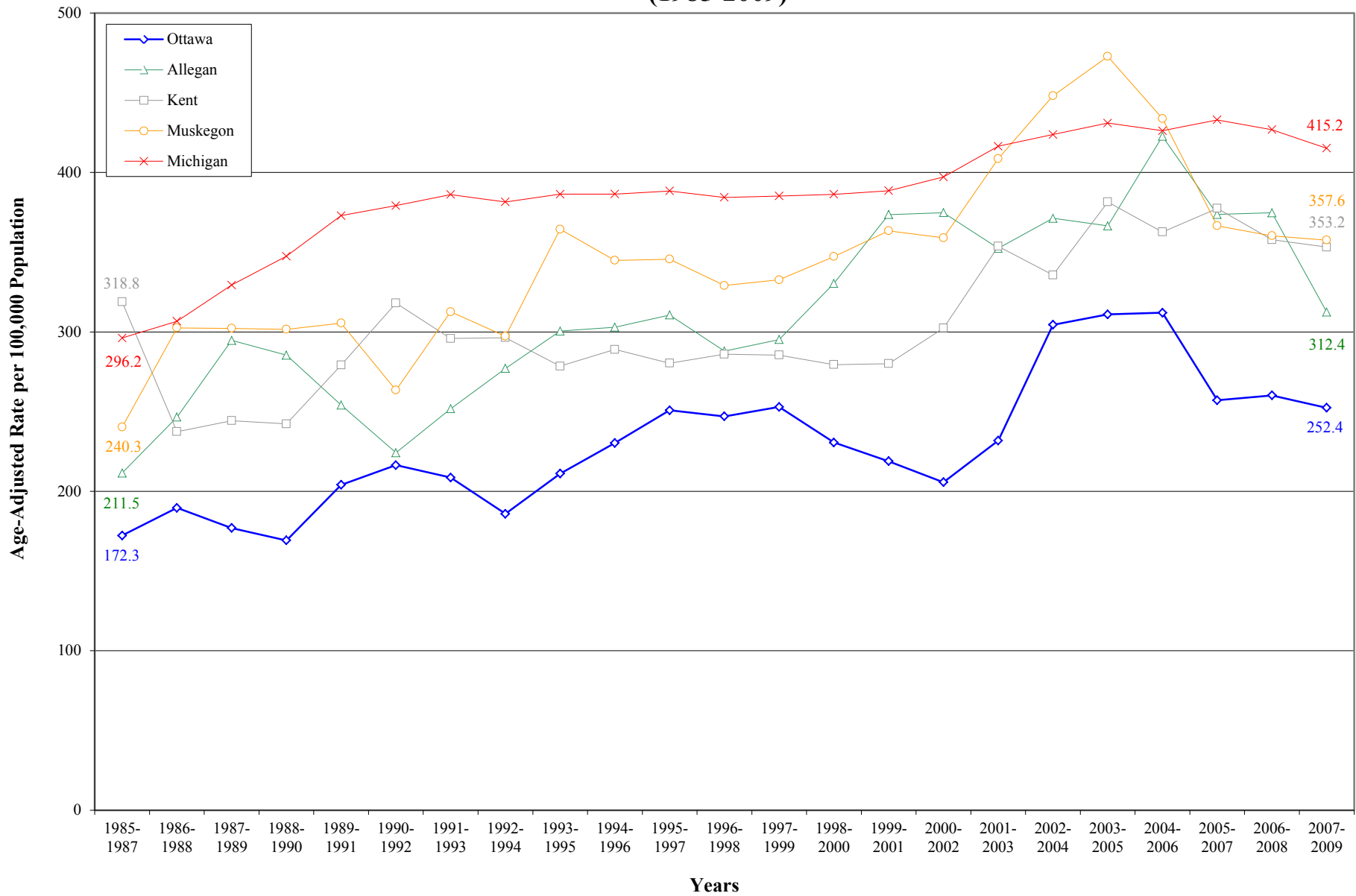
Diagnosed Lung Cancer Cases Among Persons Age 50-74

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

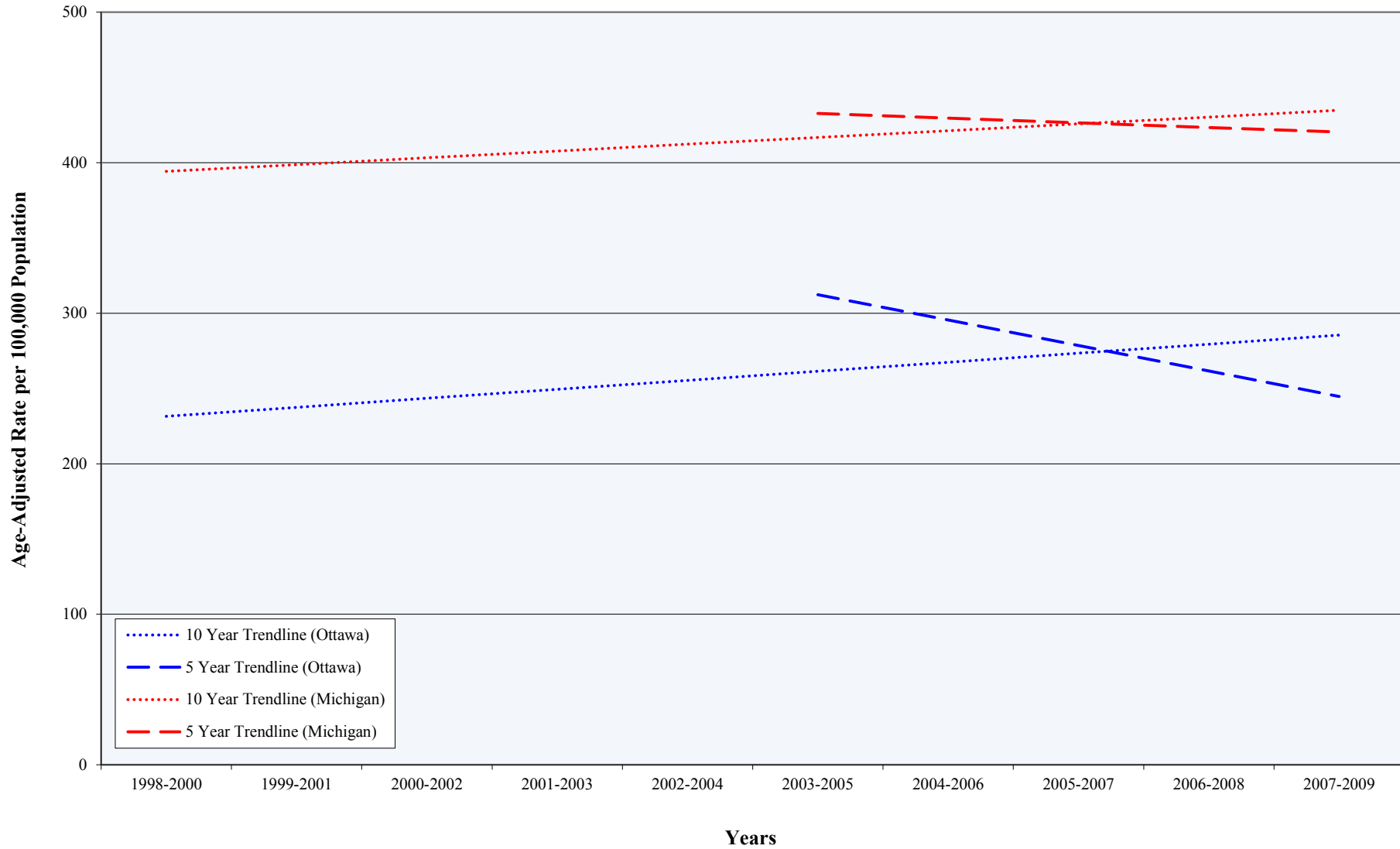
Diagnosed Lung Cancer Cases Among Persons Age 75 and Older (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Diagnosed Lung Cancer Cases Among Persons Age 75 and Older

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Lung Cancer (1985-2009) By Stage at Diagnosis (Ottawa County)

Percent of All Diagnosed Lung Cancer Cases

Year	In Situ ¹	Localized ²	Regional ³	Distant ⁴	Unknown ⁵
1985-1989	1.1%	17.6%	18.0%	24.7%	38.6%
1986-1990	1.0%	17.3%	17.3%	26.8%	37.6%
1987-1991	0.9%	18.9%	18.6%	24.8%	36.8%
1988-1992	0.9%	21.3%	22.5%	25.6%	29.6%
1989-1993	0.6%	20.6%	22.1%	23.9%	32.7%
1990-1994	0.8%	19.6%	23.4%	23.4%	32.8%
1991-1995	0.6%	19.8%	28.5%	19.8%	31.3%
1992-1996	0.3%	17.3%	31.6%	22.5%	28.3%
1993-1997	0.3%	14.1%	32.2%	23.5%	30.0%
1994-1998	0.3%	14.2%	32.9%	23.3%	29.3%
1995-1999	0.0%	14.0%	33.1%	26.6%	26.3%
1996-2000	0.0%	14.1%	31.0%	28.3%	26.6%
1997-2001	0.0%	13.6%	30.4%	28.1%	27.9%
1998-2002	0.2%	14.3%	30.0%	29.7%	25.8%
1999-2003	0.4%	15.1%	29.8%	32.4%	22.3%
2000-2004	0.4%	15.6%	28.6%	35.0%	20.3%
2001-2005	0.4%	17.6%	28.5%	35.1%	18.5%
2002-2006	0.3%	19.2%	27.4%	37.3%	15.7%
2003-2007	0.2%	20.9%	24.6%	40.5%	13.8%
2004-2008	0.0%	20.5%	23.1%	41.7%	14.6%
2005-2009	0.0%	22.5%	21.3%	40.7%	15.4%

Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

¹ In Situ, or early cancer, is a non-invasive cancer that is diagnosed when the cancer is only present in the layer of cells in which it began

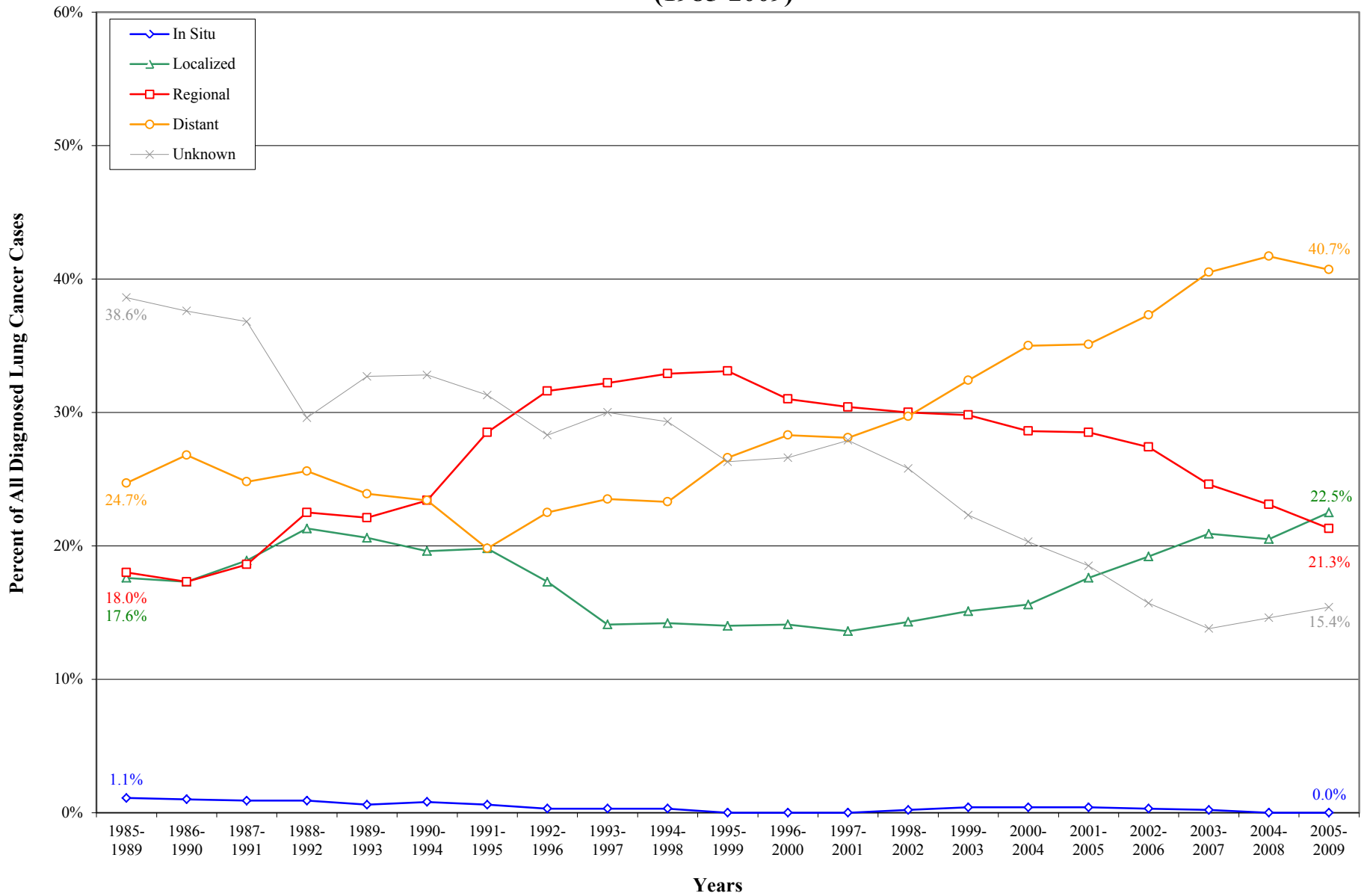
² Localized cancer is invasive but is limited to the organ in which it began, without evidence of spread

³ Regional cancer is invasive and has spread beyond the original site to nearby lymph nodes or organs and tissues

⁴ Distant cancer is invasive and has spread from the original site to distant organs or distant lymph nodes

⁵ Unknown cancer is invasive; however, the exact stage of the cancer is unknown

Ottawa County Lung Cancer Cases by Stage at Diagnosis (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Cancer Incidence File, Division for Vital Records & Health Statistics

Lung Cancer (1985-2009)

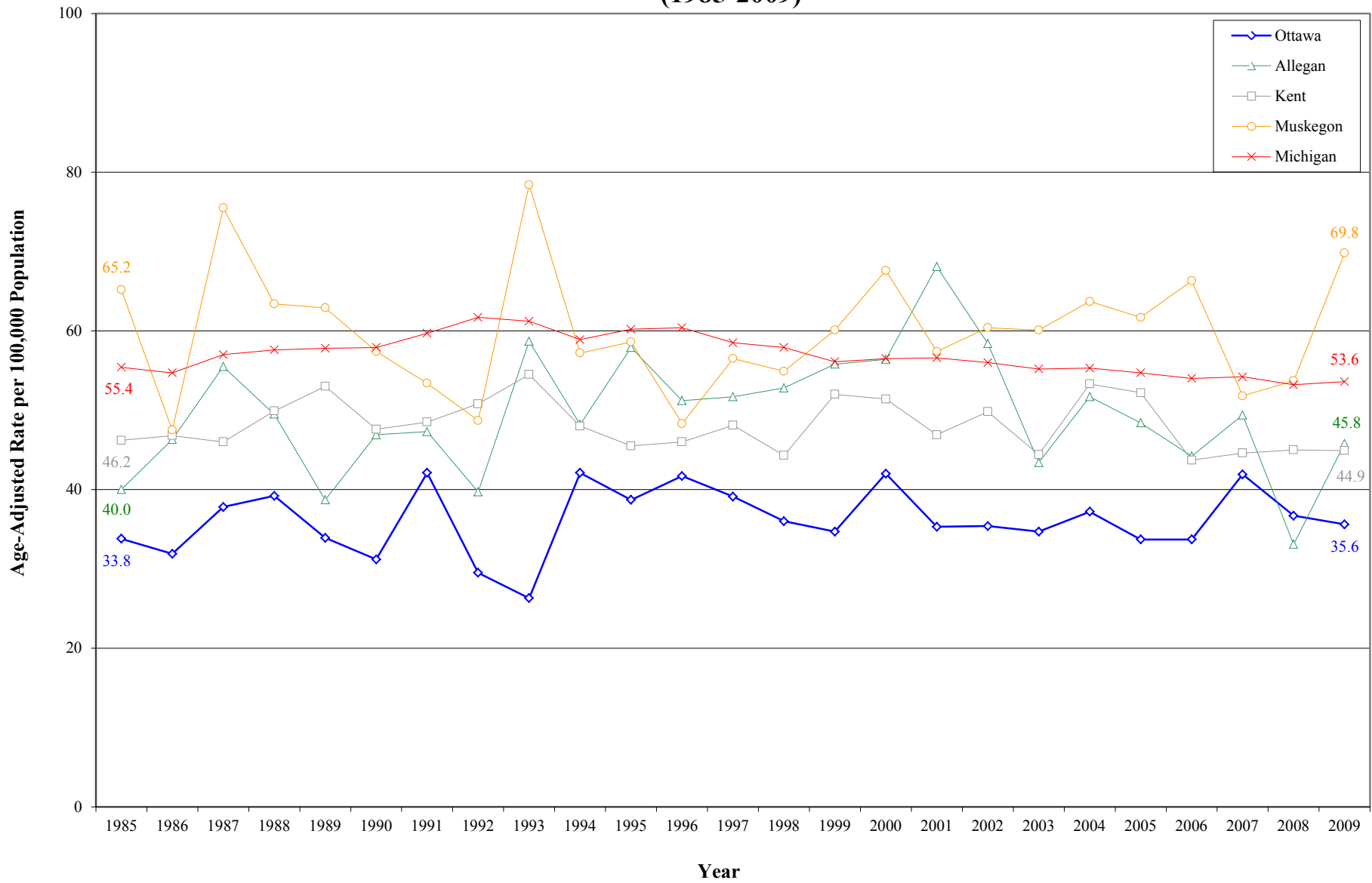
Deaths by Year (Ottawa County, Adjacent Counties, State)

Year	Deaths per 100,000 Population*				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1985	33.8	40.0	46.2	65.2	55.4
1986	31.9	46.3	46.8	47.5	54.7
1987	37.8	55.5	46.0	75.5	57.0
1988	39.2	49.5	49.9	63.4	57.6
1989	33.9	38.7	53.0	62.9	57.8
1990	31.2	46.9	47.6	57.4	57.9
1991	42.1	47.3	48.5	53.4	59.7
1992	29.5	39.7	50.8	48.7	61.7
1993	26.3	58.7	54.5	78.4	61.2
1994	42.1	48.2	48.0	57.2	58.9
1995	38.7	57.9	45.5	58.6	60.2
1996	41.7	51.2	46.0	48.3	60.4
1997	39.1	51.7	48.1	56.5	58.5
1998	36.0	52.8	44.3	54.9	57.9
1999	34.7	55.8	52.0	60.1	56.1
2000	42.0	56.4	51.4	67.6	56.5
2001	35.3	68.1	46.9	57.4	56.6
2002	35.4	58.4	49.8	60.4	56.0
2003	34.7	43.4	44.4	60.1	55.2
2004	37.2	51.7	53.3	63.7	55.3
2005	33.7	48.4	52.2	61.7	54.7
2006	33.7	44.2	43.7	66.3	54.0
2007	41.9	49.4	44.6	51.8	54.2
2008	36.7	33.1	45.0	53.7	53.2
2009	35.6	45.8	44.9	69.8	53.6

Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

* Death rates are age-adjusted (i.e. weighted average) to allow for accurate comparisons to be made among different geographic areas. Age-adjusted rates standardize differences that may exist when one geographic area has a higher proportion of people in younger age groups compared to a different geographic area that has a higher proportion in older age groups

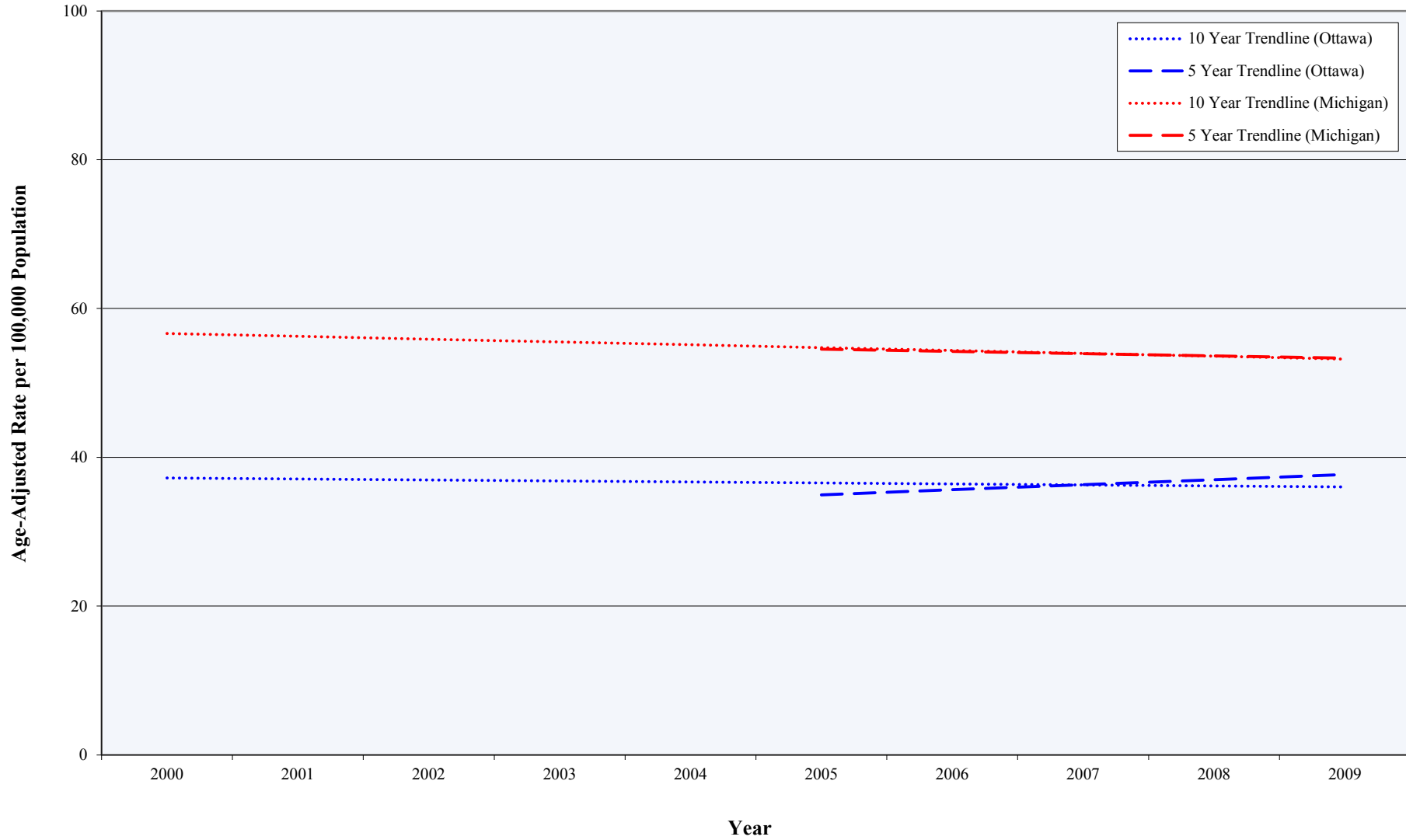
Lung Cancer Deaths (1985-2009)



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics

Lung Cancer Deaths

5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Resident Death Files, Division for Vital Records & Health Statistics