

# III. Preventable Hospitalizations

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Hospitalizations for conditions where timely and effective ambulatory (outpatient) care can decrease hospitalizations (inpatient or overnight stays) by preventing onset of an illness or condition, controlling an acute episode of an illness or managing a chronic disease or condition. High rates of preventable hospitalizations in a community may be an indicator of a lack or failure of prevention efforts, a primary care resource shortage, poor performance of primary health care delivery systems, or other factors that create barriers to obtaining timely and effective care.

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*Key findings from this chapter:*

- The [ten leading causes of preventable hospitalizations](#) in Ottawa County are:

- |                                  |   |
|----------------------------------|---|
| 1) Bacterial Pneumonia           | 6) Diabetes                                 |
| 2) Congestive Heart Failure      | 7) Asthma                                   |
| 3) Kidney/Urinary Infections     | 8) Grand Mal and Other Epileptic Conditions |
| 4) Cellulitis                    | 9) Dehydration                              |
| 5) Chronic Obstructive Pulmonary | 10) Gastroenteritis                         |

## **Positive/Neutral Trends**

- Ottawa County's [preventable hospitalization rate](#) was 54% lower than the State in 2009 (123.1 hospitalizations per 10,000 residents compared to 268.2 statewide). Furthermore, Ottawa County has had the lowest rate of preventable hospitalizations when compared to the adjacent counties and the State over the last 17 years
- [Cellulitis](#) (bacterial infection of the skin) hospitalizations among people age 65 and older decreased by 16% in Ottawa County during the last 10 years (211.8 hospitalizations per 100,000 down to 176.7). The statewide hospitalization rate among people age 65 and older increased by 21% during the same time period (294.0 hospitalizations per 100,000 up to 356.0)
- [Chronic obstructive pulmonary](#) hospitalizations in Ottawa County decreased by 8% during the last 10 years (76.6 hospitalizations per 100,000 down to 70.3) while the statewide rate increased 15% during this same time period (217.6 hospitalizations per 100,000 up to 251.5)

- [Asthma](#) hospitalizations in Ottawa County declined by 39% during the last 10 years (73.6 hospitalizations per 100,000 down to 44.8) while the statewide rate increased by nearly 5% (154.9 hospitalizations per 100,000 up to 162.1)

## **Negative Trends**

- Hospitalizations for [bacterial pneumonia](#) among people under the age of 18 increased by 22% in Ottawa County during the last 10 years (113.7 hospitalizations per 100,000 up to 139.2) while statewide there was a 9% decrease (199.2 hospitalizations per 100,000 down to 180.7)
- [Congestive heart failure](#) hospitalizations among people under the age of 45 increased by nearly 47% in Ottawa County during the last 10 years (4.9 hospitalizations per 100,000 up to 7.2) while statewide there was a 19% increase (24.3 hospitalizations per 100,000 up to 28.9)
- [Diabetes](#) hospitalizations among people under the age of 45 increased 10% in Ottawa County during the last 10 years (31.0 hospitalizations per 100,000 up to 34.2) and by 26% statewide (69.4 hospitalizations per 100,000 up to 87.8)
- Hospitalizations for [grand mal and other epileptic conditions](#) (seizures) increased by 170% in Ottawa County over the last 10 years (10.0 hospitalizations per 100,000 county residents up to 27.0). Statewide the increase was 194% (21.6 hospitalizations per 100,000 up to 63.5)

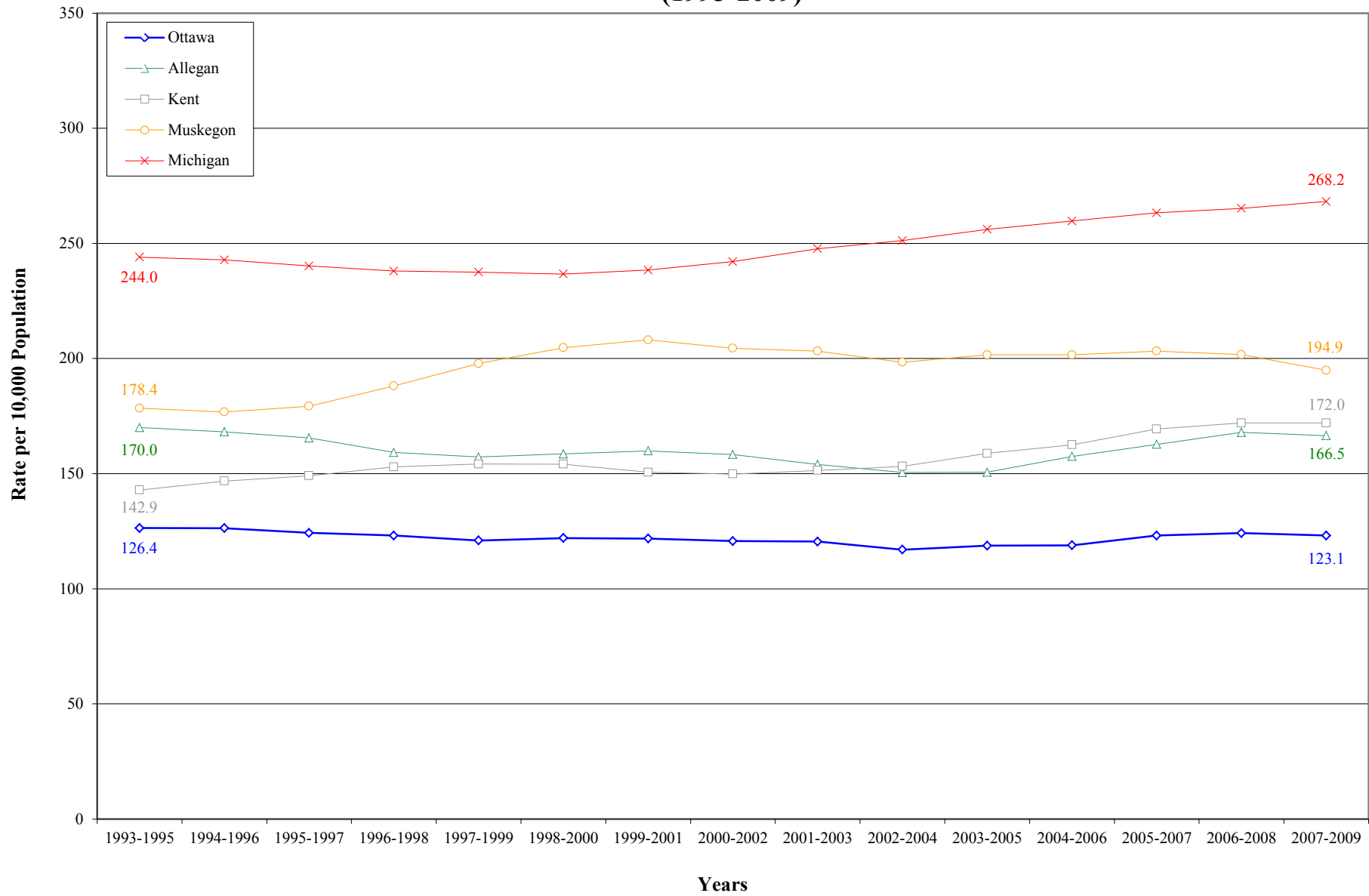
## All Preventable Hospitalizations (1993-2009)

**By Year** (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 10,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	126.4	170.0	142.9	178.4	244.0
1994-1996	126.3	168.2	146.8	176.8	242.8
1995-1997	124.3	165.5	149.1	179.3	240.2
1996-1998	123.1	159.2	152.9	188.1	238.0
1997-1999	121.0	157.2	154.2	197.8	237.5
1998-2000	122.0	158.6	154.1	204.7	236.7
1999-2001	121.8	159.9	150.6	208.1	238.4
2000-2002	120.7	158.3	149.8	204.5	242.1
2001-2003	120.5	154.0	151.4	203.2	247.7
2002-2004	117.0	150.5	153.2	198.4	251.2
2003-2005	118.7	150.6	158.8	201.6	256.1
2004-2006	118.9	157.5	162.5	201.6	259.7
2005-2007	123.1	162.7	169.4	203.2	263.3
2006-2008	124.2	167.9	172.0	201.7	265.2
2007-2009	123.1	166.5	172.0	194.9	268.2

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

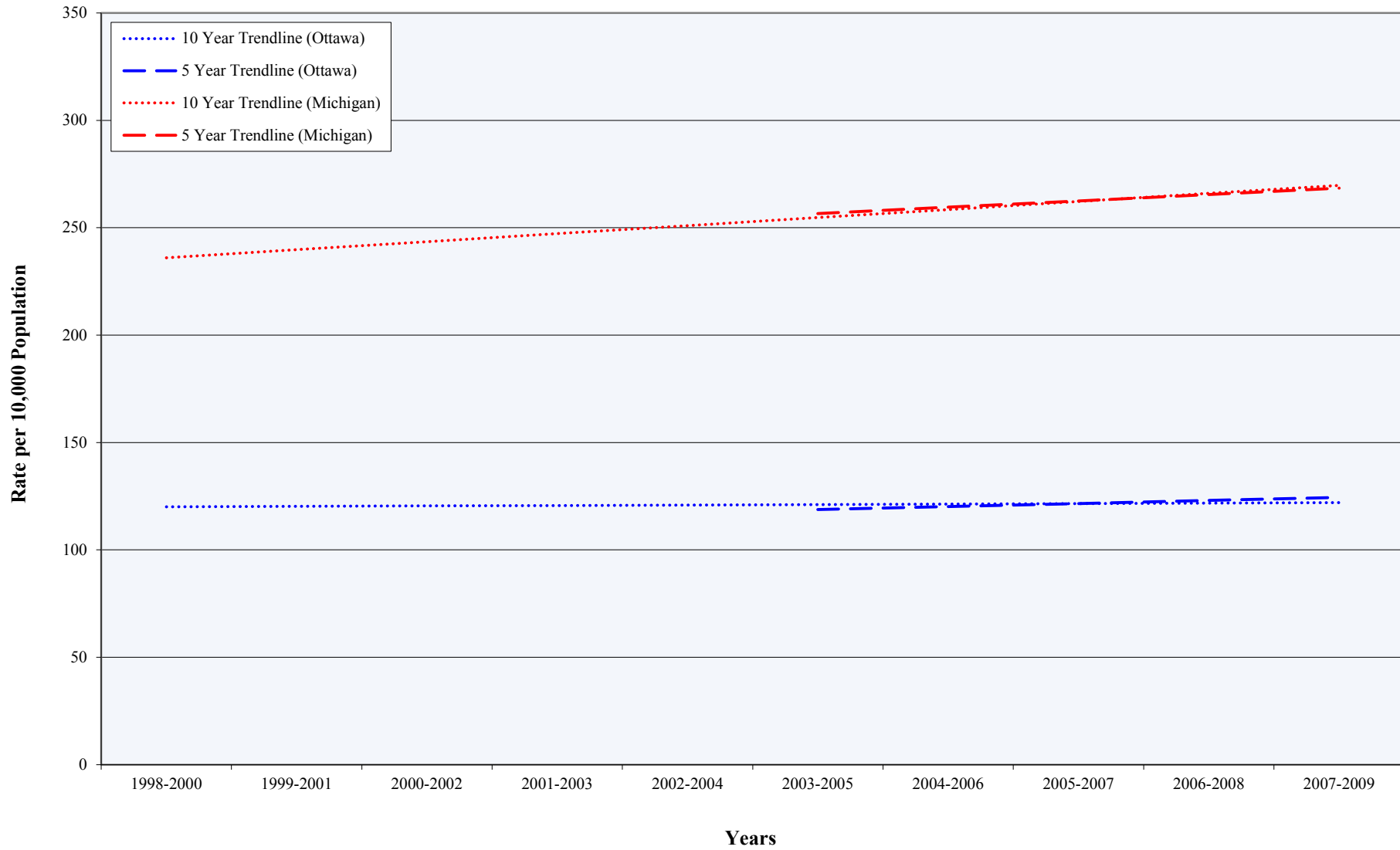
## All Preventable Hospitalizations (1993-2009)



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

# All Preventable Hospitalizations

## 5 and 10 Year Trends



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

## All Preventable Hospitalizations (1993-2009)

**By Age** (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 10,000 Population*									
	Under Age 18					Age 18-44				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	81.0	79.4	87.7	99.2	131.2	42.2	57.7	56.2	69.0	96.3
1994-1996	78.8	78.2	91.1	95.2	128.5	42.3	56.0	56.3	68.9	96.3
1995-1997	76.3	78.7	94.0	93.8	125.5	39.0	56.1	56.8	66.9	93.6
1996-1998	69.1	72.2	91.8	83.1	114.6	37.9	52.3	57.9	65.7	90.5
1997-1999	63.9	71.6	89.1	82.4	107.5	34.6	48.7	57.3	66.1	87.1
1998-2000	58.3	68.1	82.9	79.9	100.9	34.5	47.6	56.6	67.3	84.8
1999-2001	60.4	70.3	83.4	85.5	102.3	33.7	47.6	52.4	70.8	83.7
2000-2002	59.2	65.8	81.0	79.7	101.3	34.0	49.0	52.4	71.6	85.0
2001-2003	59.8	67.6	79.0	84.9	102.6	33.8	52.3	52.7	71.6	87.0
2002-2004	53.5	62.3	72.9	83.0	99.5	33.1	52.4	54.2	69.5	88.3
2003-2005	56.7	62.3	73.0	94.1	103.0	33.0	51.6	56.7	70.0	89.8
2004-2006	57.3	61.7	70.9	90.5	102.6	32.8	49.0	60.1	69.2	91.3
2005-2007	61.5	64.9	73.8	96.6	102.6	33.6	50.6	65.9	69.2	93.0
2006-2008	57.1	64.0	72.1	89.5	97.7	33.9	52.2	67.2	69.7	94.3
2007-2009	58.0	60.8	72.7	88.7	97.1	34.0	52.0	65.7	69.3	96.4

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

## All Preventable Hospitalizations (1993-2009)

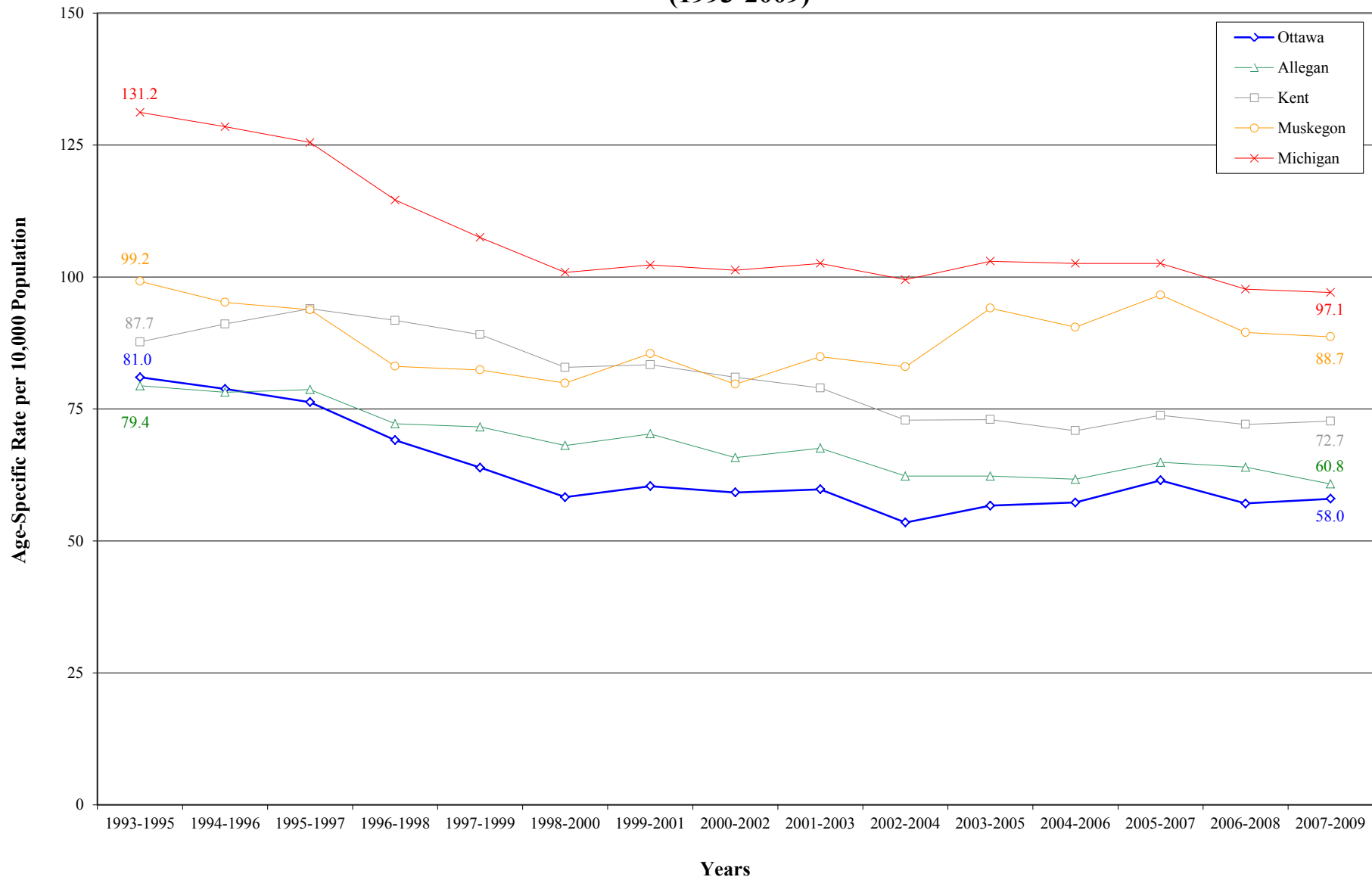
**By Age** (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 10,000 Population*									
	Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	112.6	165.6	144.8	183.5	256.9	624.8	796.2	626.3	661.4	963.4
1994-1996	112.6	165.6	145.9	172.8	251.2	627.1	790.1	650.7	672.2	961.4
1995-1997	110.4	154.9	146.4	177.6	242.9	631.9	785.3	663.7	691.3	964.1
1996-1998	108.1	150.4	148.1	185.2	238.9	648.5	769.7	698.7	773.0	982.5
1997-1999	110.3	145.9	149.5	198.7	236.2	652.7	776.9	722.5	828.3	1,005.2
1998-2000	110.6	147.9	150.1	210.0	235.4	679.1	798.1	741.9	865.6	1,017.3
1999-2001	109.3	151.6	146.8	211.5	235.2	677.7	795.3	732.3	868.4	1,026.5
2000-2002	107.4	149.9	146.2	209.6	237.5	667.4	788.1	732.6	852.7	1,043.4
2001-2003	106.3	145.4	148.4	202.3	242.1	658.2	739.0	745.1	843.0	1,064.1
2002-2004	102.6	136.6	151.8	199.8	246.4	642.7	730.6	759.9	817.3	1,078.2
2003-2005	101.1	138.9	158.2	199.0	250.9	644.6	719.3	783.6	815.8	1,085.8
2004-2006	101.2	148.3	161.8	199.6	253.7	636.5	761.0	796.6	821.4	1,091.6
2005-2007	102.8	152.8	169.2	201.2	255.5	648.8	770.4	811.0	810.9	1,094.9
2006-2008	103.3	154.0	172.8	201.4	256.4	653.1	788.3	816.1	802.0	1,090.4
2007-2009	99.5	153.6	178.4	196.9	259.4	630.4	751.6	791.6	742.0	1,073.4

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

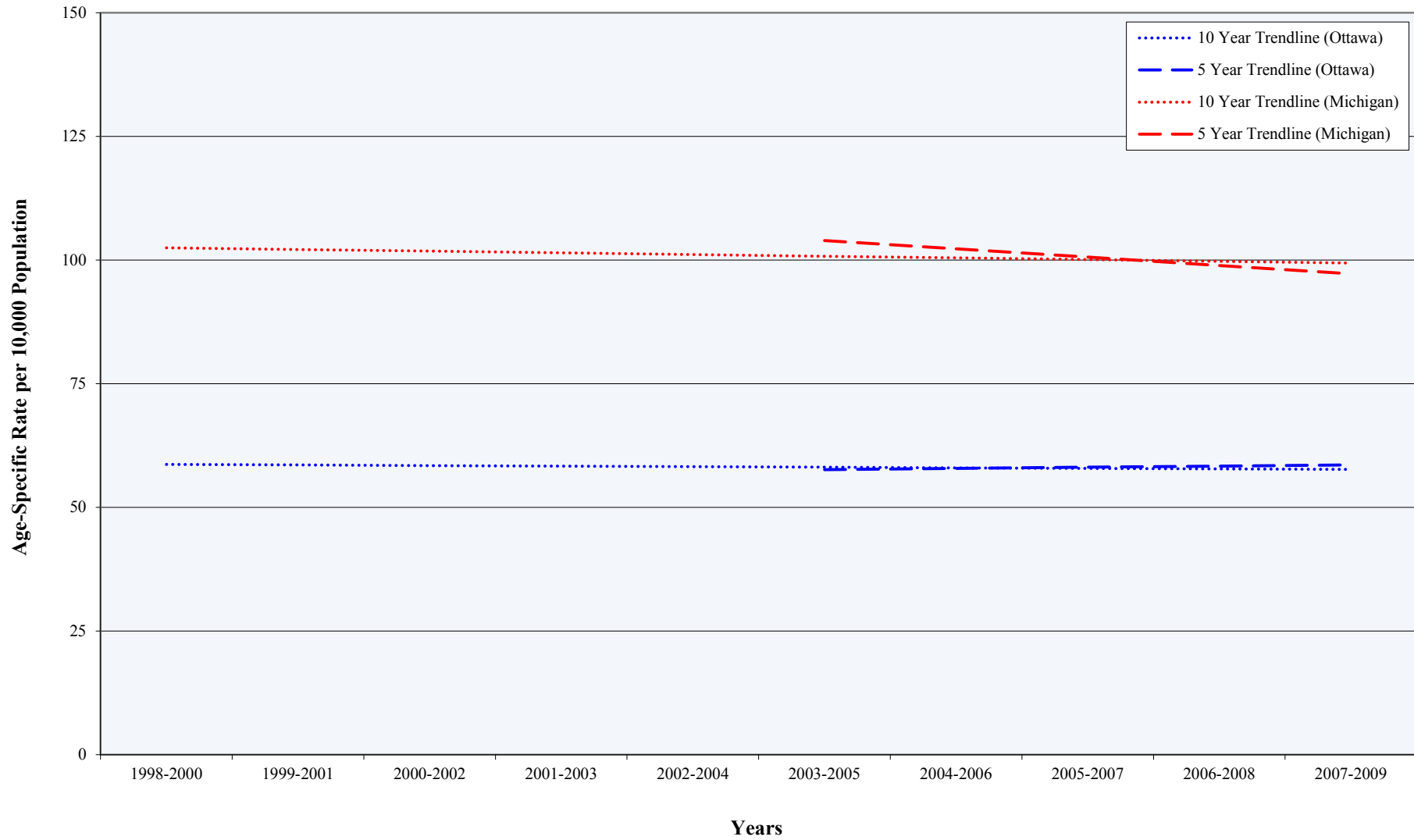
## All Preventable Hospitalizations Among Persons Under Age 18 (1993-2009)



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

# All Preventable Hospitalizations Among Persons Under Age 18

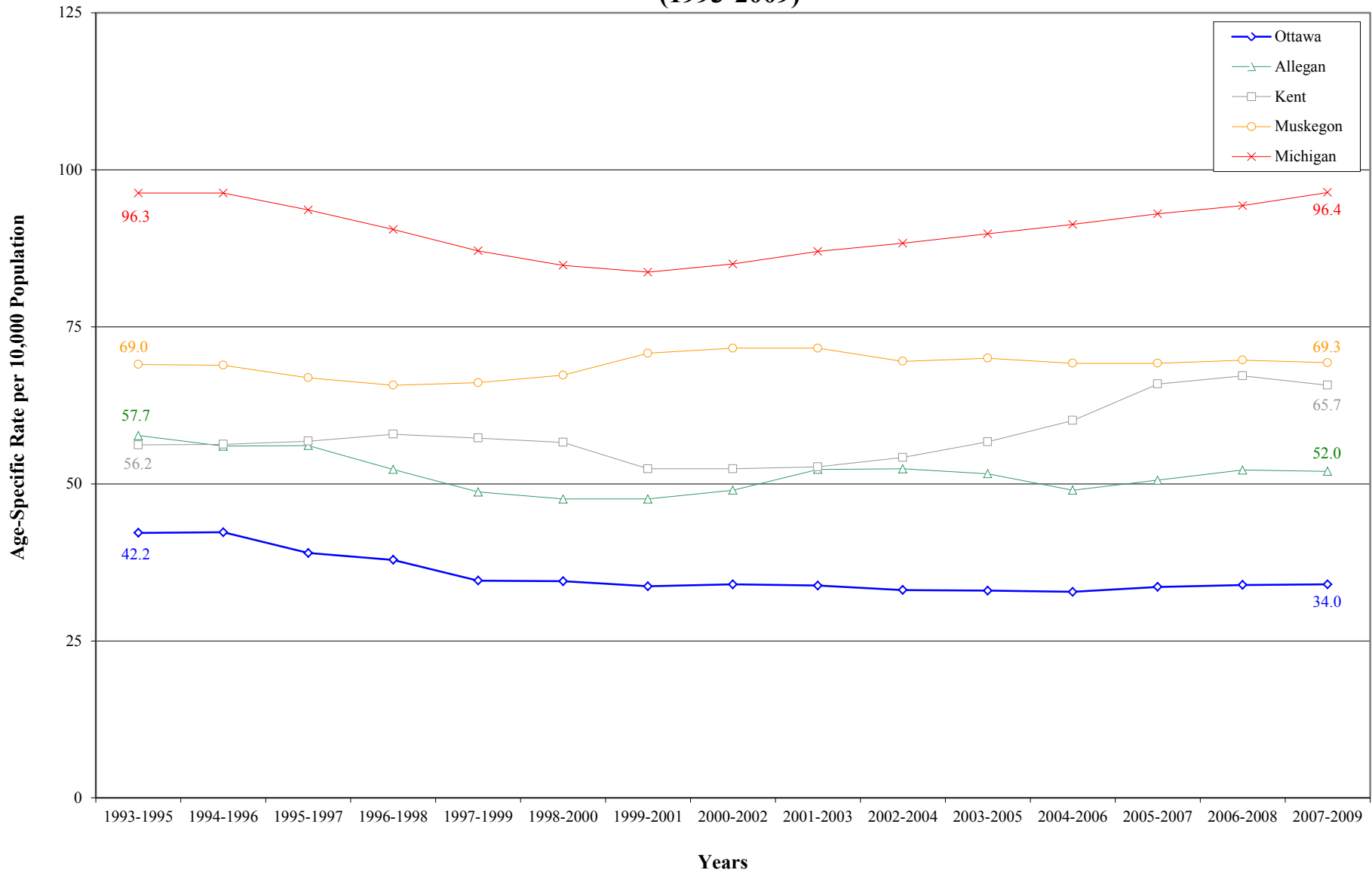
## 5 and 10 Year Trends



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



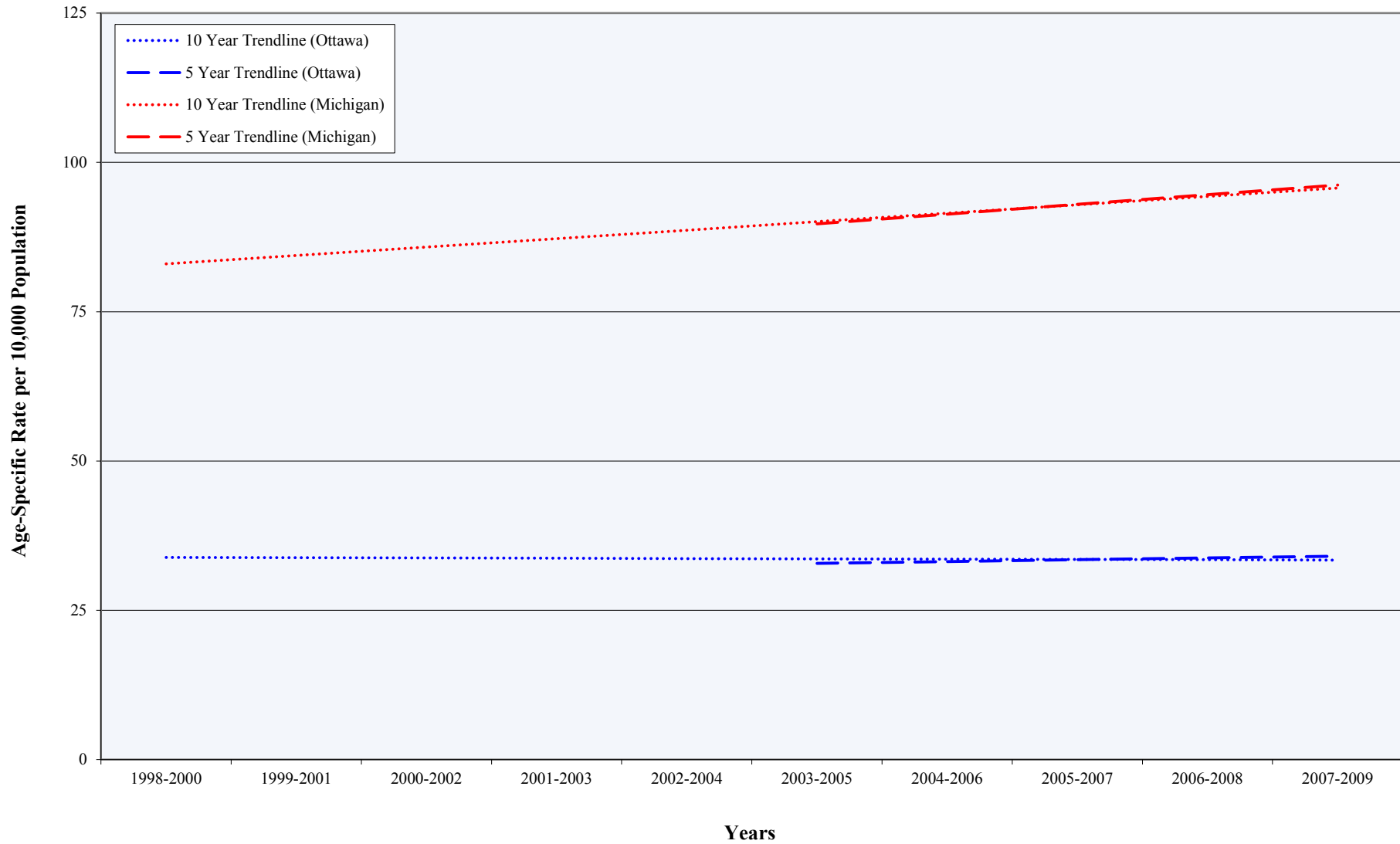
## All Preventable Hospitalizations Among Persons Age 18-44 (1993-2009)



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

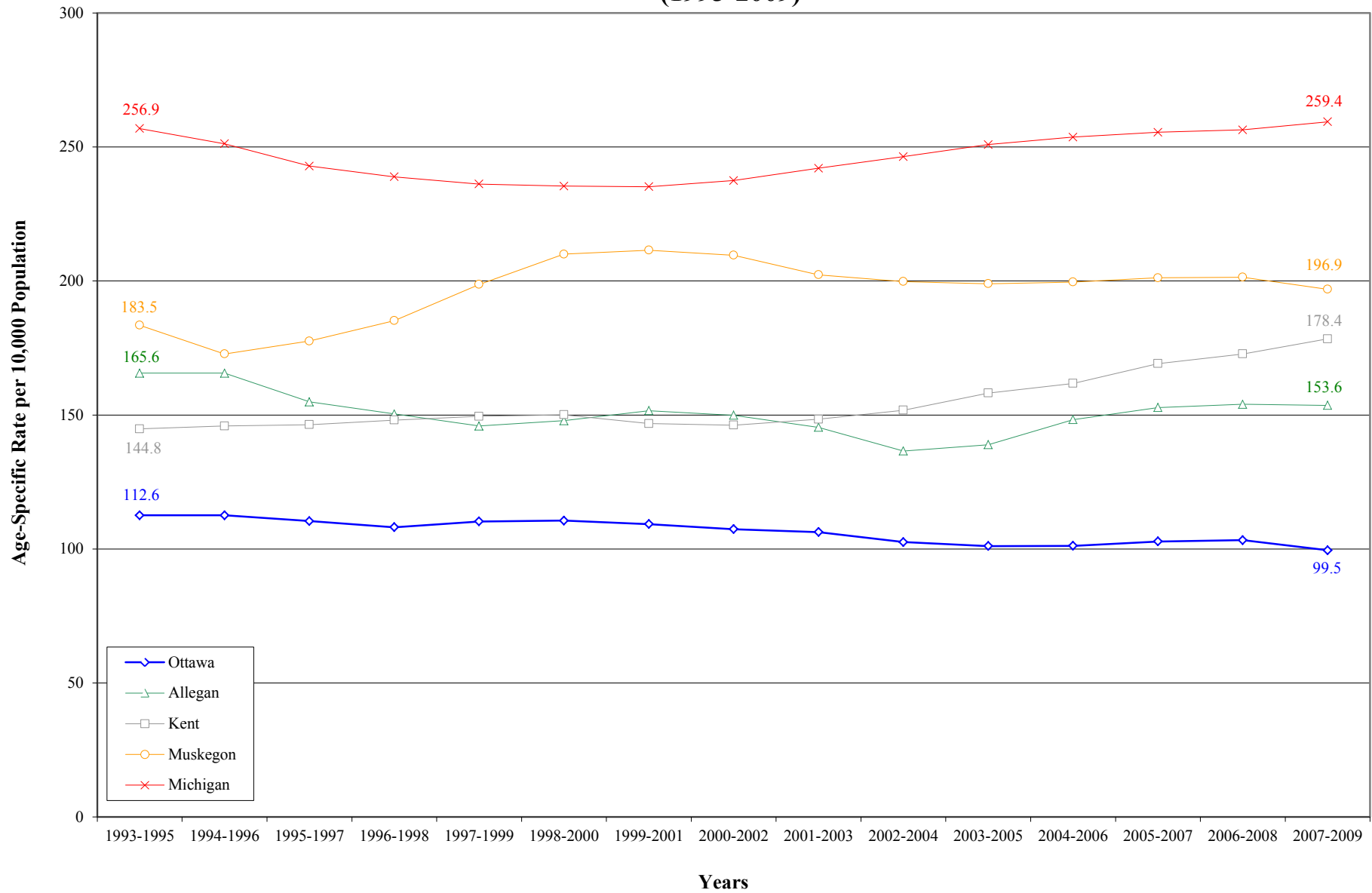
# All Preventable Hospitalizations Among Persons Age 18-44

## 5 and 10 Year Trends



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

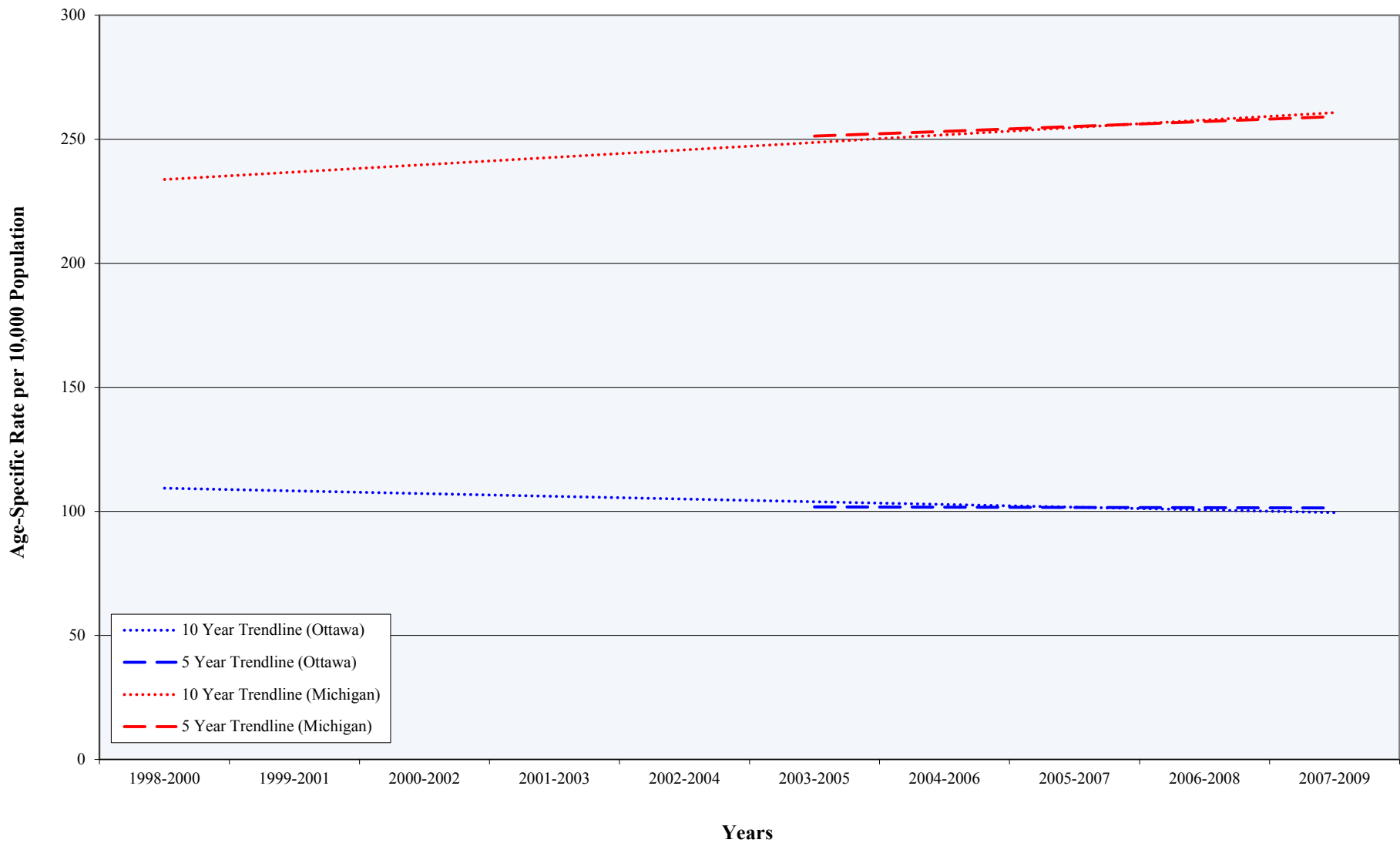
## All Preventable Hospitalizations Among Persons Age 45-64 (1993-2009)



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

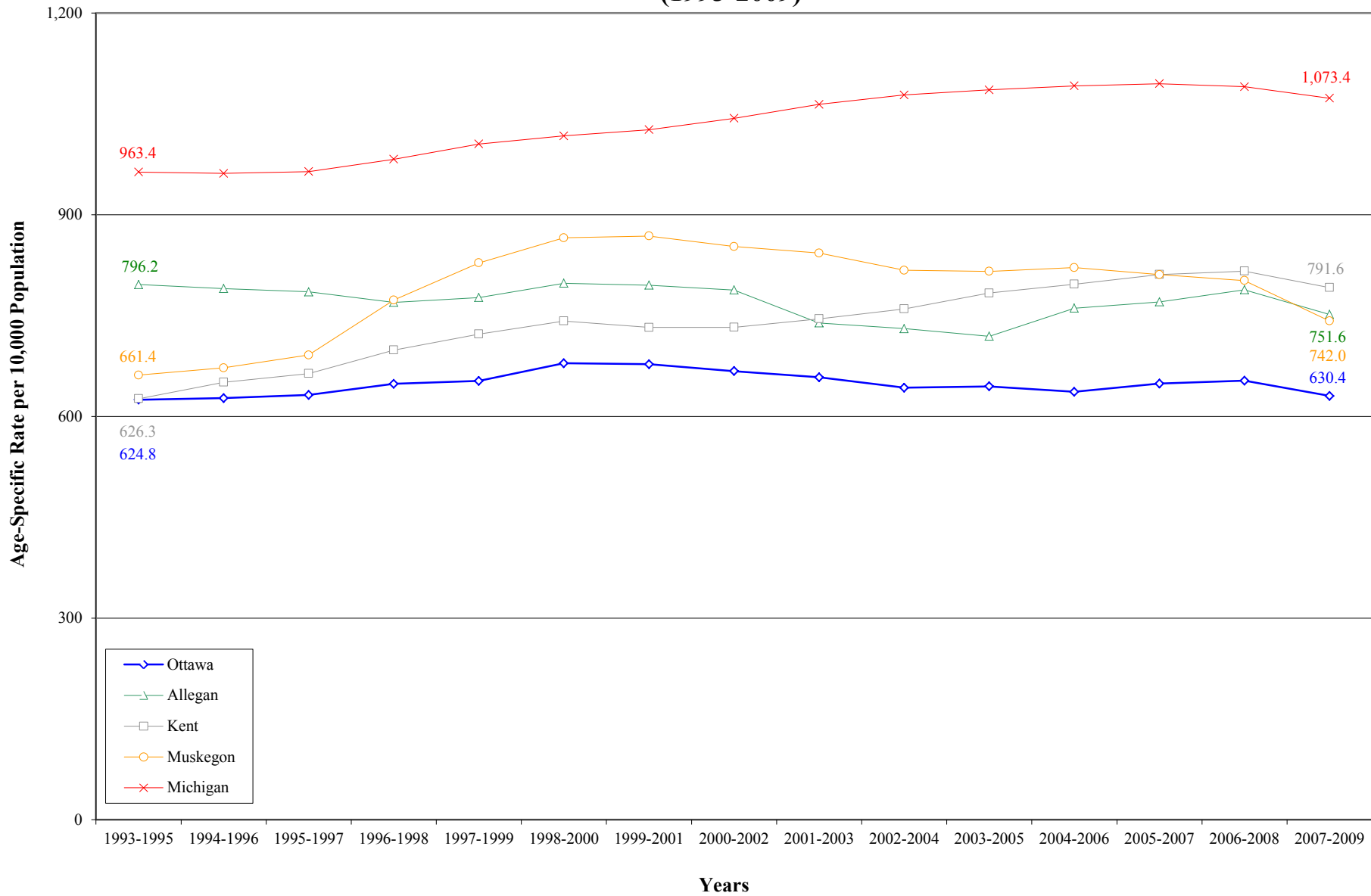
# All Preventable Hospitalizations Among Persons Age 45-64

## 5 and 10 Year Trends



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

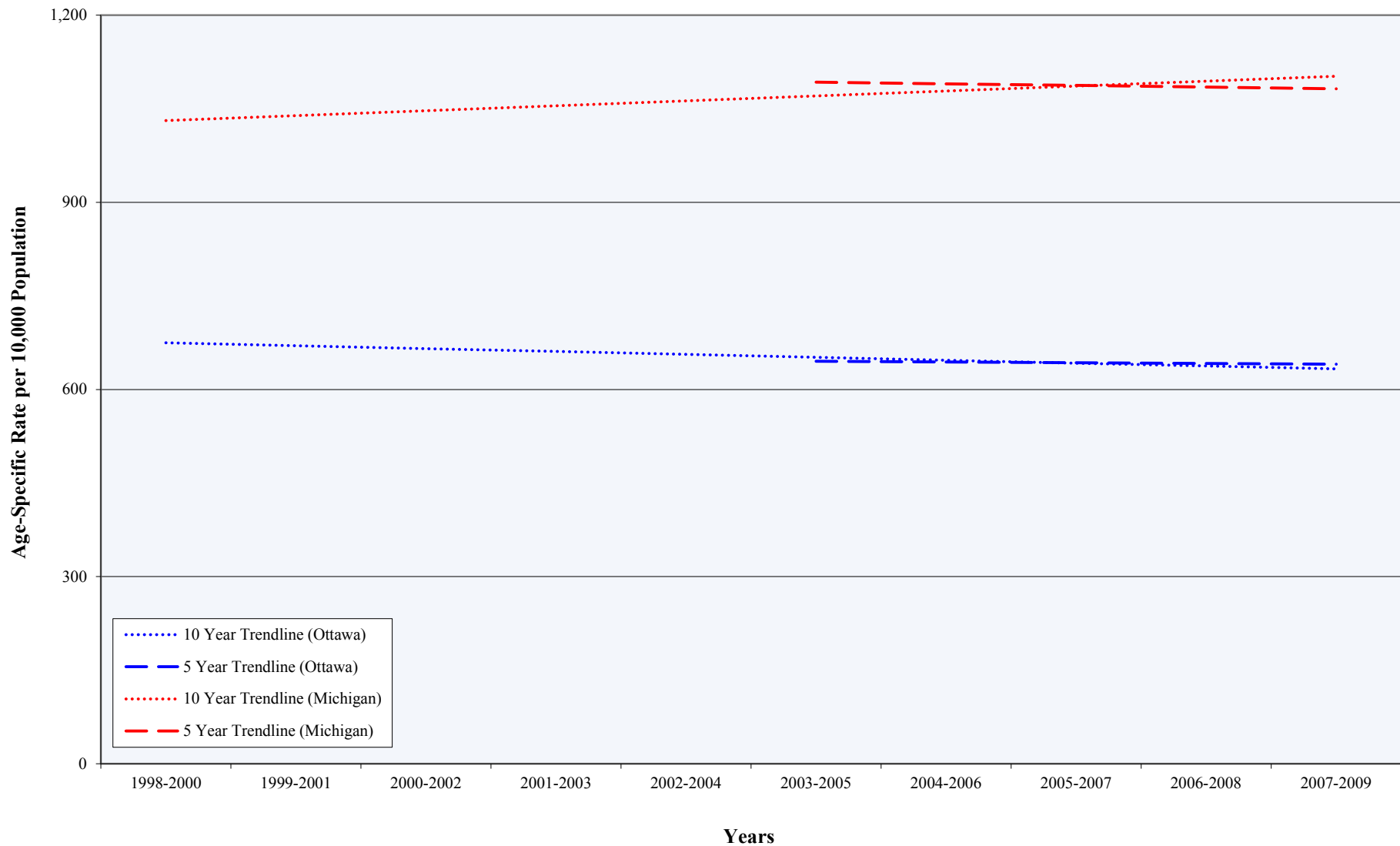
## All Preventable Hospitalizations Among Persons Age 65 and Older (1993-2009)



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

# All Preventable Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

# Ten Leading Causes of Preventable Hospitalizations (2009)

(Ottawa County, Adjacent Counties, State)

Percent of All Preventable Hospitalizations<sup>1</sup>

	Bacterial Pneumonia	Congestive Heart Failure	Kidney/Urinary Infections	Cellulitis <sup>2</sup>	Chronic Obstructive Pulmonary <sup>3</sup>	Diabetes	Asthma	Grand Mal & Other Epileptic Conditions <sup>4</sup>	Dehydration	Gastroenteritis <sup>5</sup>	Other <sup>6</sup>
Ottawa	16.3%	14.7%	7.2%	5.3%	5.0%	4.5%	3.6%	2.5%	2.4%	1.4%	37.3%
Allegan	15.5%	14.4%	7.4%	6.0%	10.6%	5.2%	4.6%	3.1%	2.5%	1.1%	29.6%
Kent	14.1%	13.1%	7.5%	6.2%	8.2%	5.3%	5.8%	3.2%	3.0%	n/a	33.7%
Muskegon	14.5%	11.7%	5.7%	4.0%	8.1%	7.1%	4.5%	3.3%	4.8%	1.1%	35.3%
Michigan	11.7%	14.1%	6.5%	5.7%	10.0%	4.9%	6.2%	2.7%	3.3%	1.4%	33.6%

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

<sup>1</sup> Causes of preventable hospitalization are ranked from most common to least common leading cause in Ottawa County

<sup>2</sup> Cellulitis is a bacterial infection of the skin

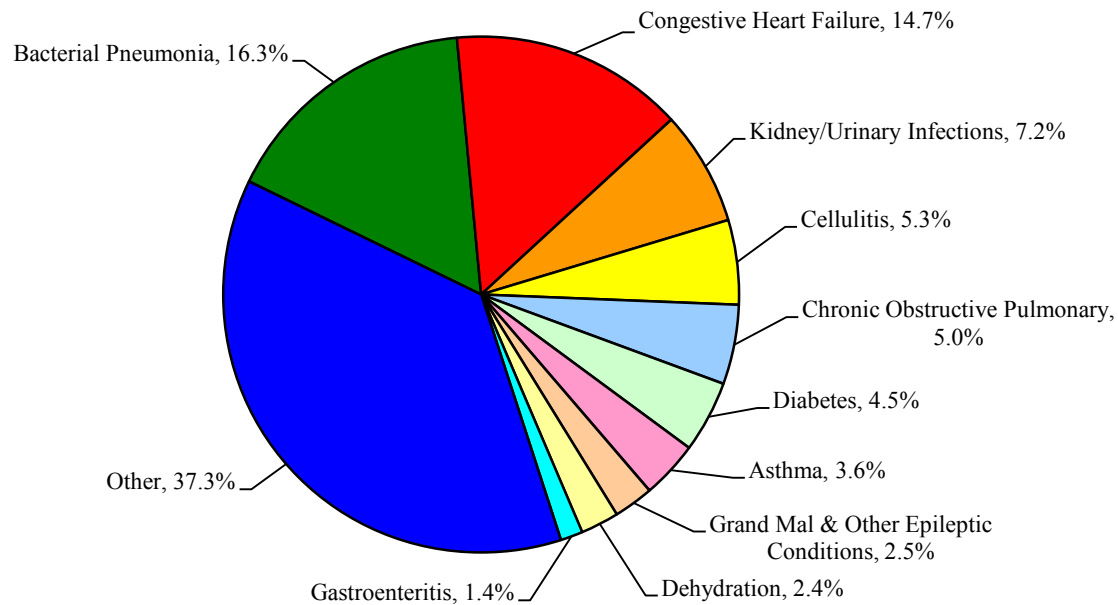
<sup>3</sup> Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

<sup>4</sup> Grand Mal & Other Epileptic conditions are commonly known as seizures

<sup>5</sup> Gastroenteritis is the irritation and inflammation of the stomach and intestines

<sup>6</sup> Used as a residual to include any other cause of preventable hospitalization that is not specified under the top ten leading causes

## Ten Leading Causes of Preventable Hospitalizations in Ottawa County (2009)



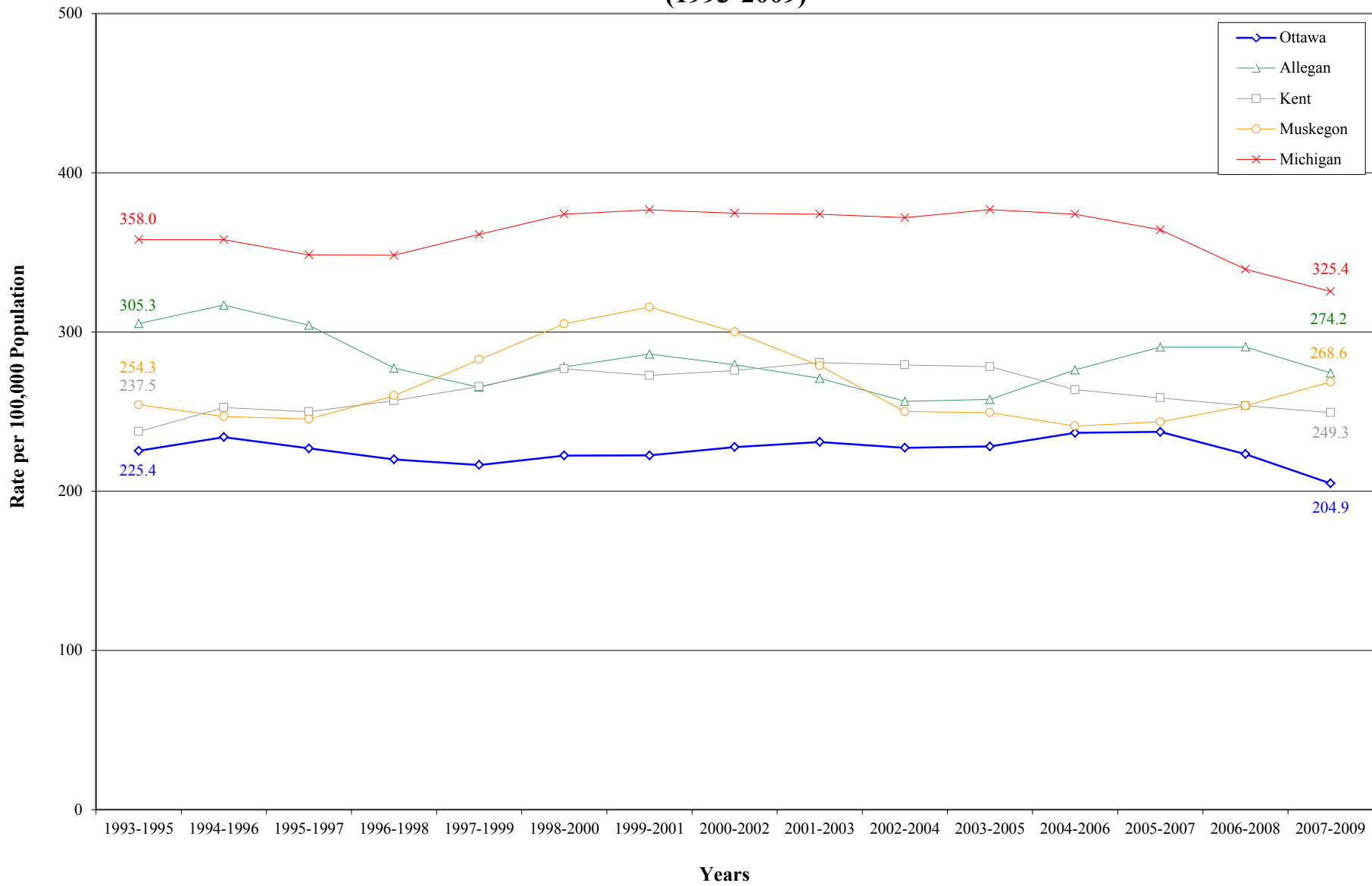
**Bacterial Pneumonia (1993-2009)**  
**Preventable Hospitalizations by Year** (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	225.4	305.3	237.5	254.3	358.0
1994-1996	234.0	316.8	252.5	246.8	358.0
1995-1997	226.9	304.2	249.9	245.3	348.4
1996-1998	220.0	277.3	256.9	260.0	348.2
1997-1999	216.5	265.3	265.7	282.7	361.3
1998-2000	222.4	278.1	276.9	305.1	374.0
1999-2001	222.5	286.1	272.7	315.6	376.7
2000-2002	227.7	279.5	275.8	300.0	374.6
2001-2003	230.9	270.9	280.8	278.8	374.0
2002-2004	227.3	256.4	279.3	250.0	371.8
2003-2005	228.1	257.6	278.2	249.3	376.9
2004-2006	236.6	276.2	263.7	241.0	374.0
2005-2007	237.2	290.5	258.6	243.5	364.2
2006-2008	223.3	290.6	253.7	253.7	339.4
2007-2009	204.9	274.2	249.3	268.6	325.4

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



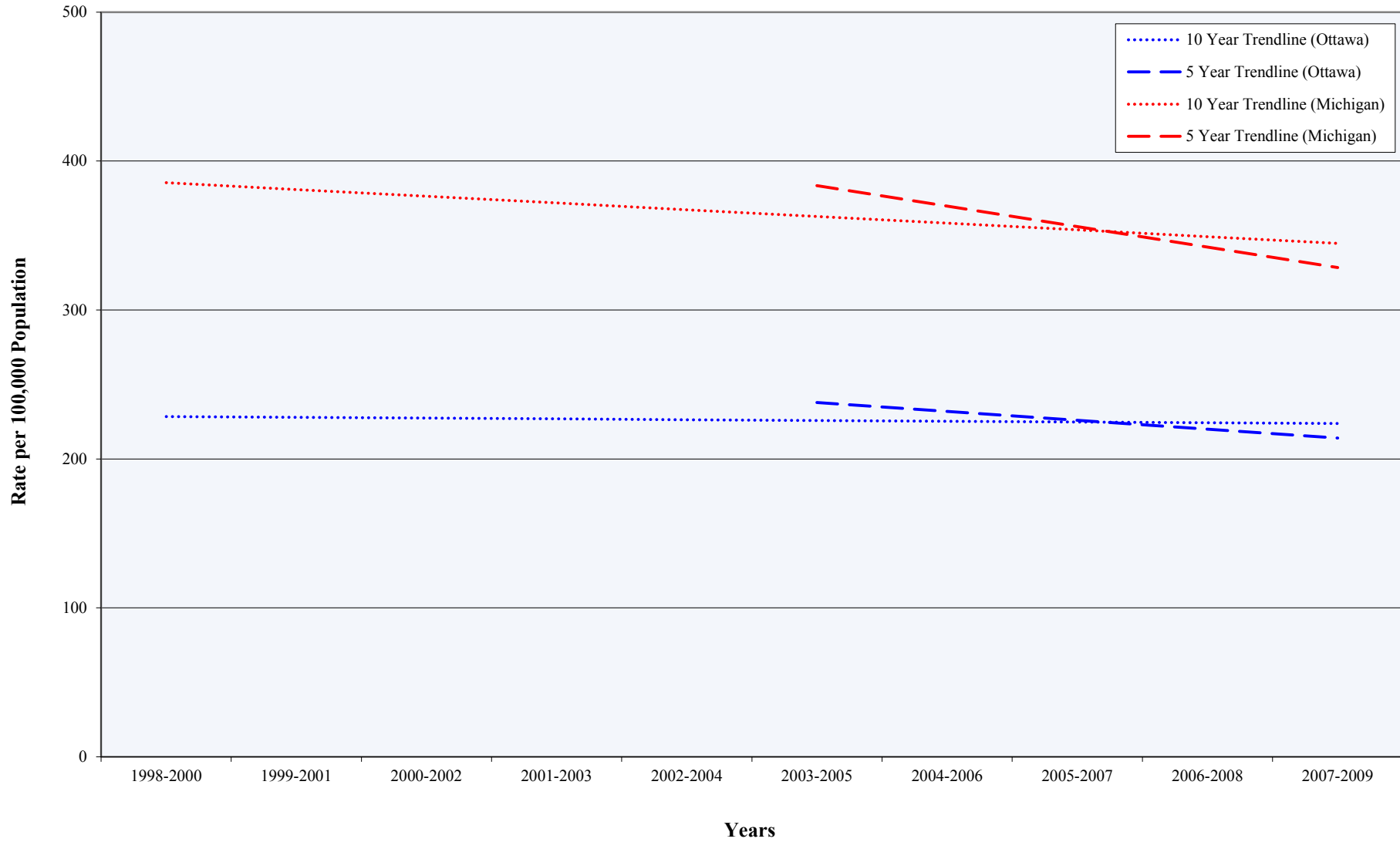
## Bacterial Pneumonia Hospitalizations (1993-2009)



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

# Bacterial Pneumonia Hospitalizations

## 5 and 10 Year Trends



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

## Bacterial Pneumonia (1993-2009) Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population*					Hospitalizations per 100,000 Population*				
	Under Age 18					Age 18-44				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	154.3	178.3	163.4	177.8	247.7	45.9	64.2	64.9	67.1	116.3
1994-1996	160.7	170.0	173.6	143.5	236.1	47.9	68.6	68.2	64.1	116.6
1995-1997	158.1	169.3	171.3	140.2	215.1	42.6	68.1	66.5	60.9	109.6
1996-1998	142.2	142.5	170.3	110.1	221.9	41.4	63.3	69.5	66.6	105.3
1997-1999	125.4	119.5	161.8	123.3	208.3	39.0	46.1	65.4	70.2	103.3
1998-2000	113.7	111.8	155.0	131.6	199.2	44.5	49.0	66.4	72.4	104.7
1999-2001	108.3	115.7	144.9	144.4	194.0	47.6	57.3	63.9	72.1	103.6
2000-2002	116.6	126.8	145.2	139.1	188.7	46.9	65.8	69.2	70.7	100.5
2001-2003	112.9	135.6	143.3	138.7	181.8	40.9	61.0	70.7	69.1	97.7
2002-2004	103.5	119.4	137.8	125.0	171.1	37.9	52.4	66.7	61.1	92.5
2003-2005	106.9	125.9	140.7	145.8	178.4	34.6	52.9	63.8	57.4	92.0
2004-2006	126.4	125.5	134.0	142.9	187.3	39.1	51.2	59.7	58.3	89.6
2005-2007	138.3	146.2	131.2	162.2	188.3	37.5	48.6	63.1	63.0	87.8
2006-2008	136.8	151.8	127.4	167.6	179.5	36.4	43.7	64.1	70.2	84.5
2007-2009	139.2	141.6	125.5	180.7	180.7	32.5	49.9	64.3	67.0	85.5

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

## Bacterial Pneumonia (1993-2009)

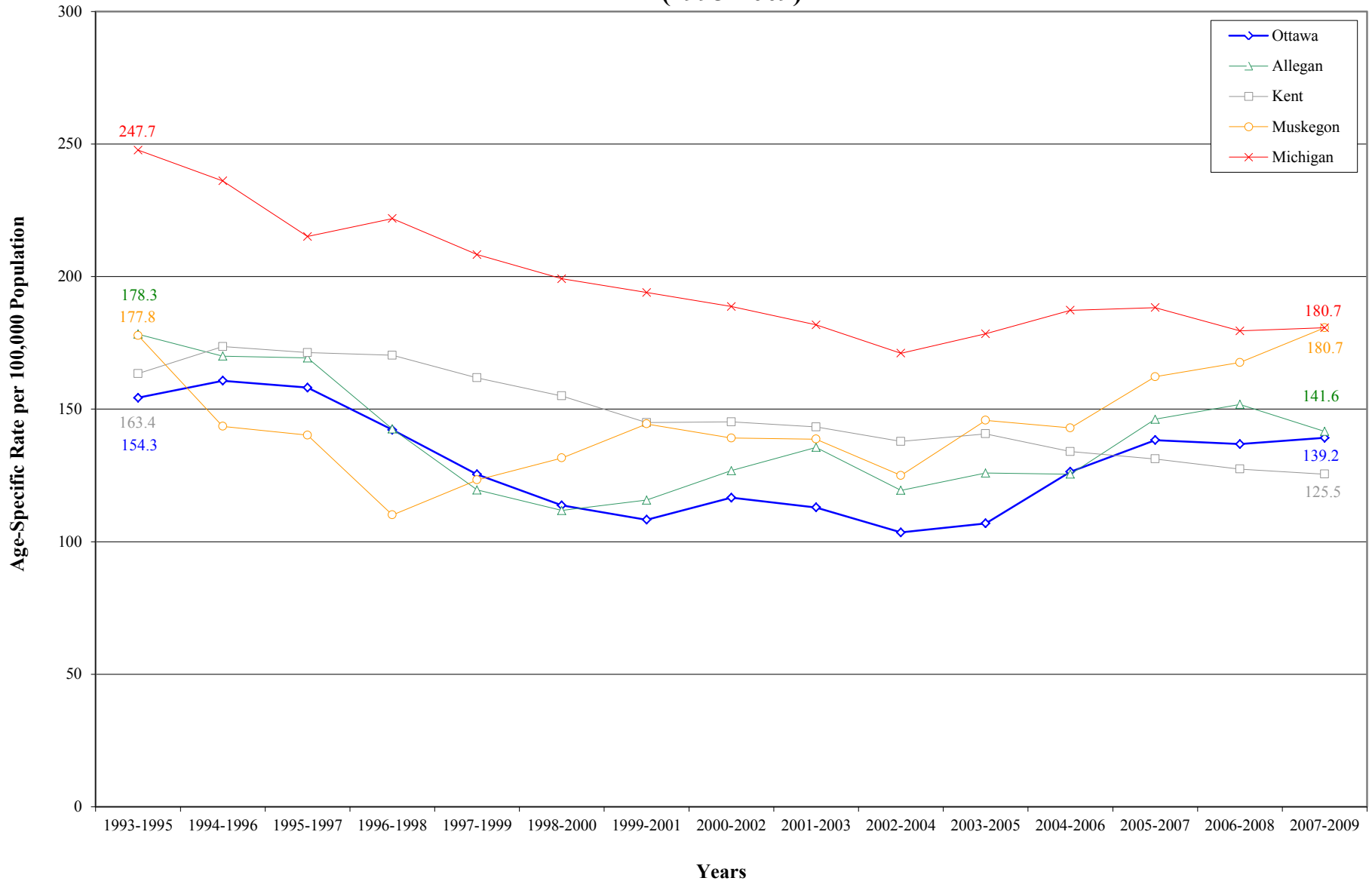
### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population*									
	Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	143.8	267.5	208.5	222.2	305.7	1,304.6	1,524.2	1,159.3	1,016.0	1,417.8
1994-1996	160.1	272.4	223.8	184.4	306.9	1,329.7	1,626.1	1,233.1	1,096.4	1,430.0
1995-1997	162.2	247.8	223.3	187.2	300.4	1,285.2	1,566.5	1,226.4	1,094.3	1,424.9
1996-1998	169.0	207.1	222.8	214.2	300.9	1,255.9	1,492.9	1,288.1	1,214.1	1,492.4
1997-1999	173.8	214.6	236.6	252.1	315.3	1,275.1	1,498.9	1,391.7	1,294.5	1,604.7
1998-2000	178.3	230.8	249.6	273.1	330.2	1,336.9	1,593.6	1,496.1	1,412.7	1,691.2
1999-2001	158.7	254.4	247.5	285.4	332.0	1,381.6	1,579.6	1,503.6	1,450.0	1,717.6
2000-2002	164.6	242.2	246.8	265.4	327.8	1,393.1	1,482.7	1,511.8	1,380.2	1,720.5
2001-2003	165.2	235.8	246.3	247.5	327.4	1,439.6	1,409.6	1,557.6	1,251.3	1,730.2
2002-2004	174.7	199.0	246.2	234.1	326.6	1,403.9	1,411.5	1,563.8	1,097.3	1,740.2
2003-2005	168.5	209.3	243.0	235.2	330.7	1,408.9	1,367.3	1,549.5	1,053.6	1,743.6
2004-2006	173.5	236.4	235.0	220.2	323.1	1,394.2	1,461.3	1,447.5	1,020.0	1,706.5
2005-2007	172.0	253.9	232.4	208.5	316.4	1,370.2	1,483.9	1,388.3	1,001.3	1,621.2
2006-2008	157.2	219.9	226.4	224.4	292.7	1,246.3	1,530.0	1,345.0	1,007.2	1,471.5
2007-2009	148.2	213.6	235.3	247.2	281.8	1,074.6	1,348.5	1,263.4	1,037.7	1,343.8

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

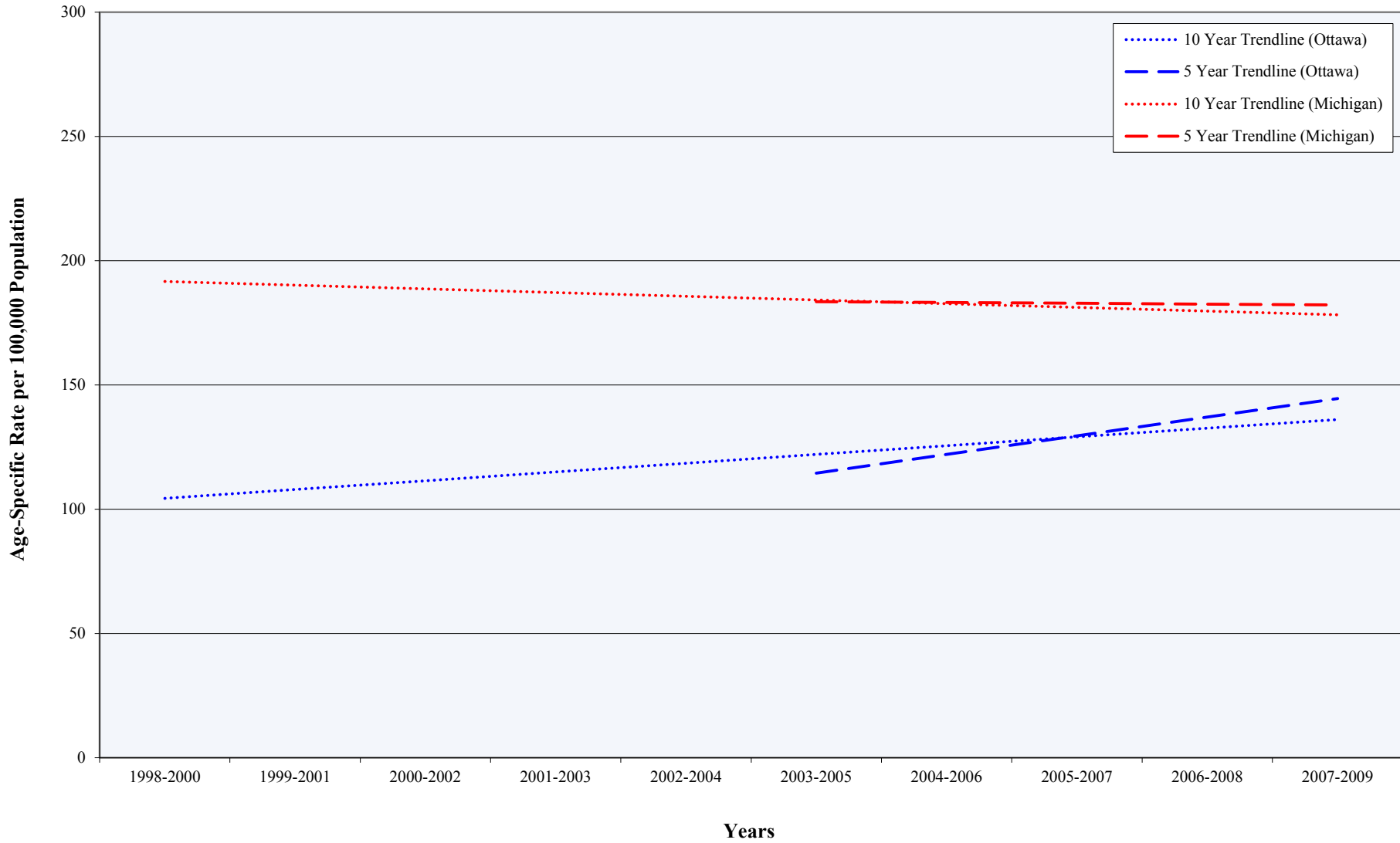
## Bacterial Pneumonia Hospitalizations Among Persons Under Age 18 (1993-2009)



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

# Bacterial Pneumonia Hospitalizations Among Persons Under Age 18

## 5 and 10 Year Trends



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

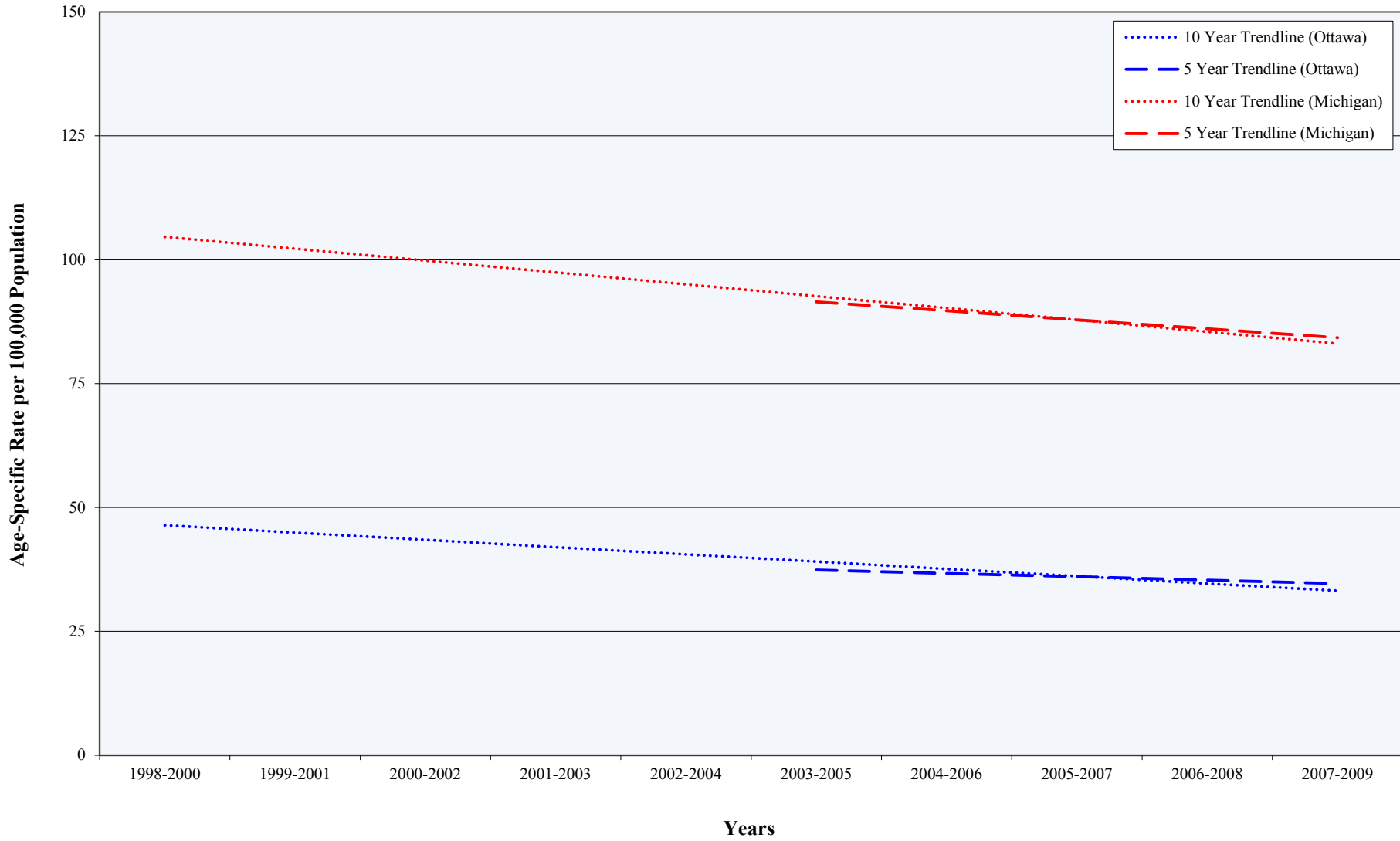
## Bacterial Pneumonia Hospitalizations Among Persons Age 18-44 (1993-2009)



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

# Bacterial Pneumonia Hospitalizations Among Persons Age 18-44

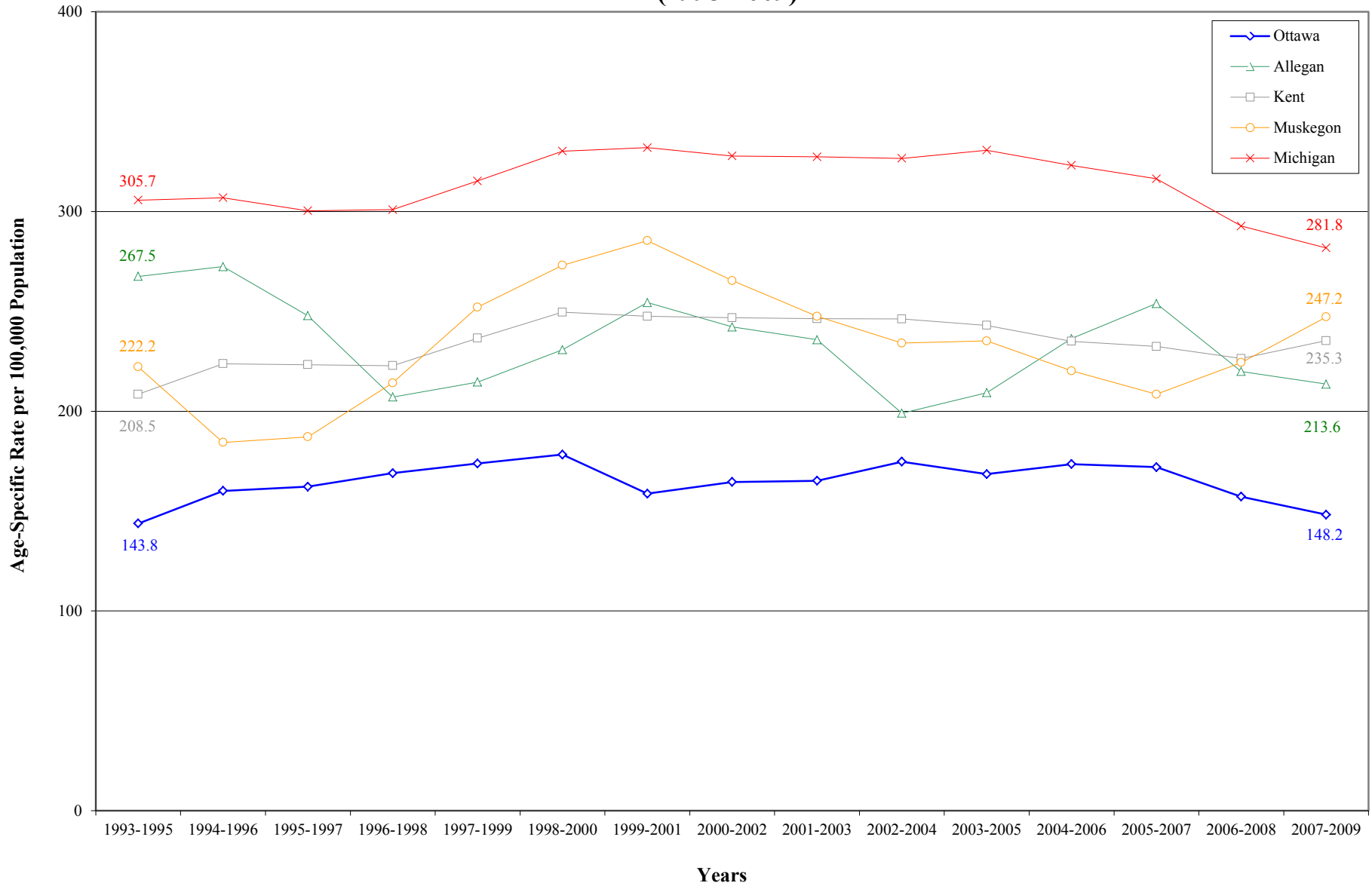
## 5 and 10 Year Trends



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



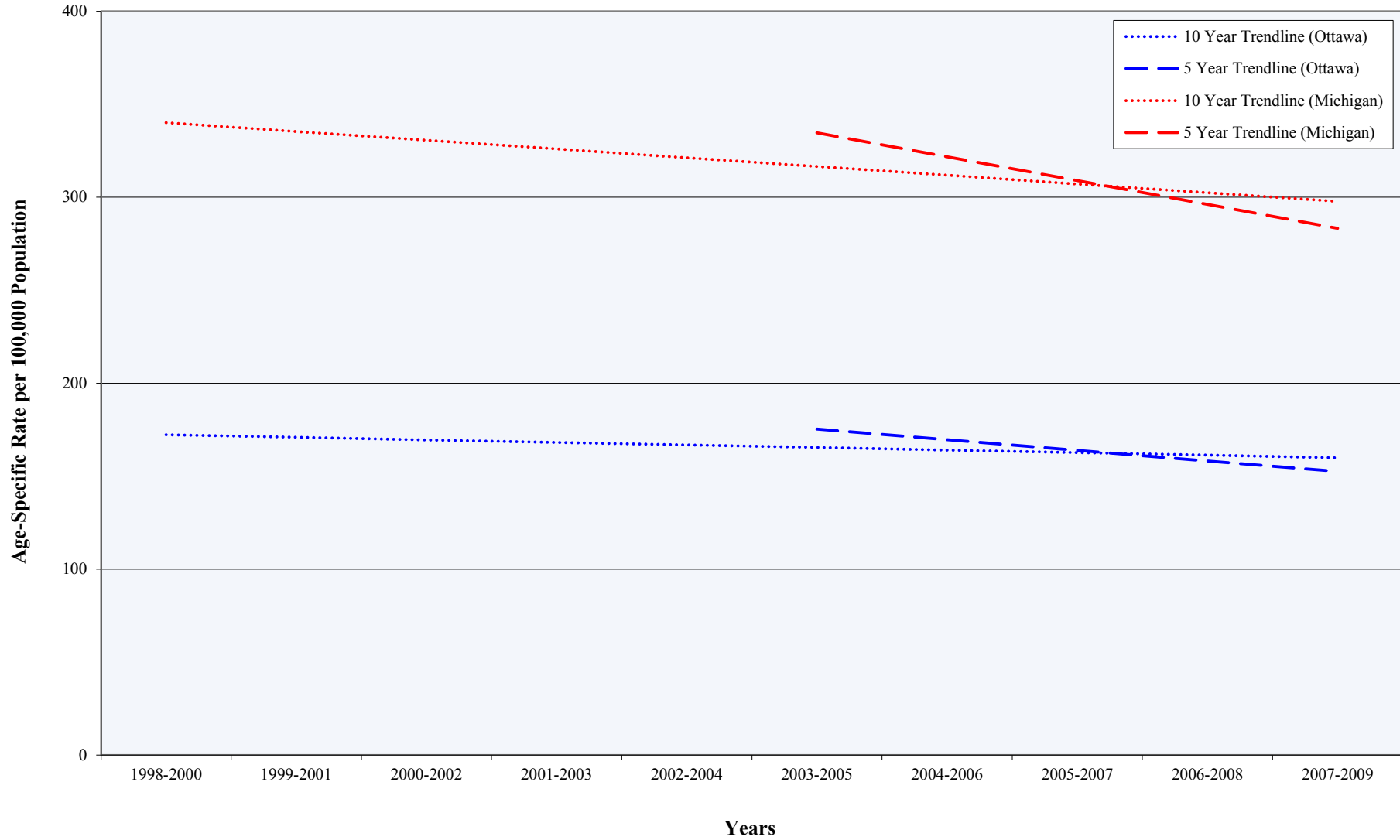
## Bacterial Pneumonia Hospitalizations Among Persons Age 45-64 (1993-2009)



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

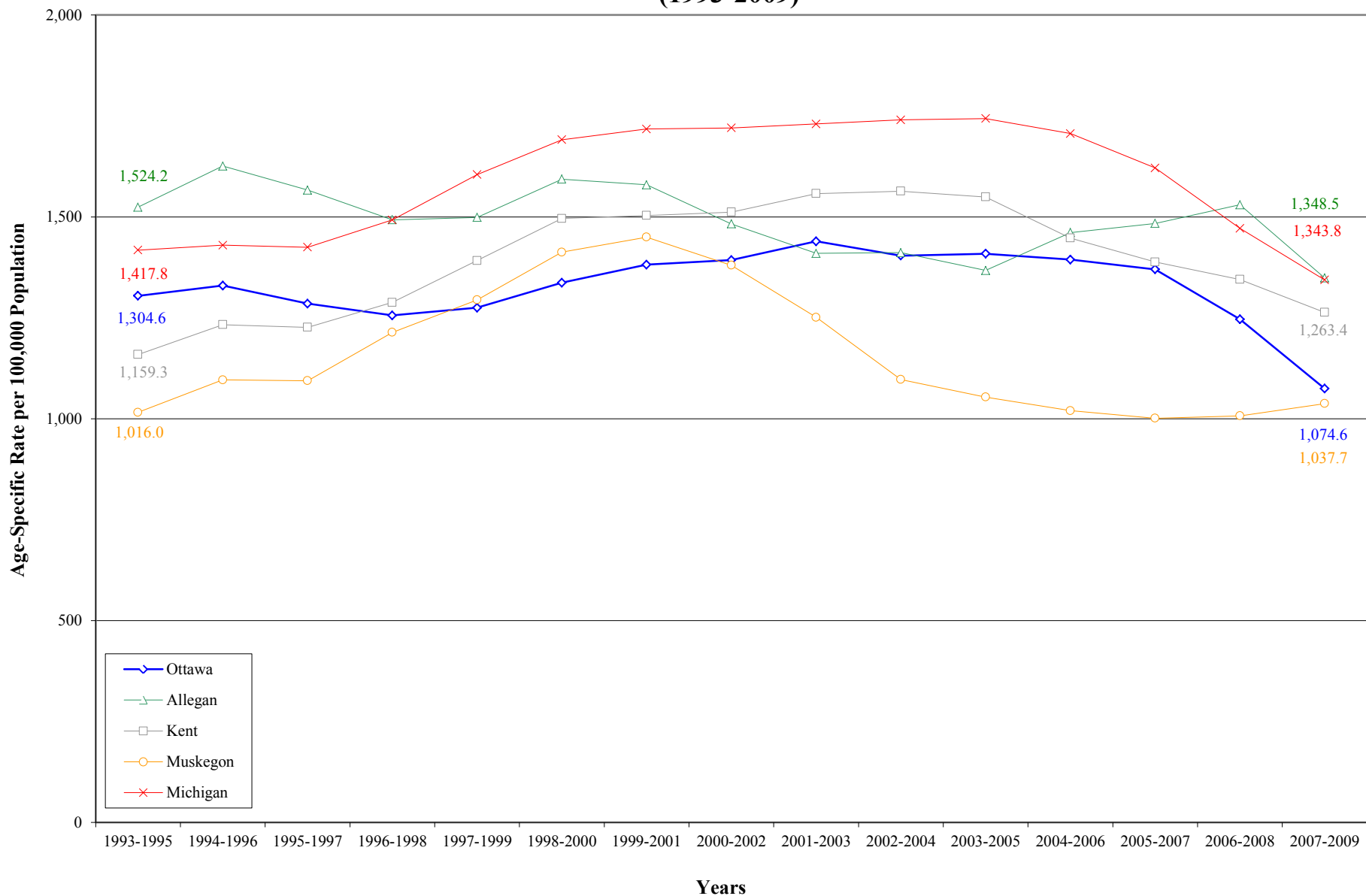
# Bacterial Pneumonia Hospitalizations Among Persons Age 45-64

## 5 and 10 Year Trends



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

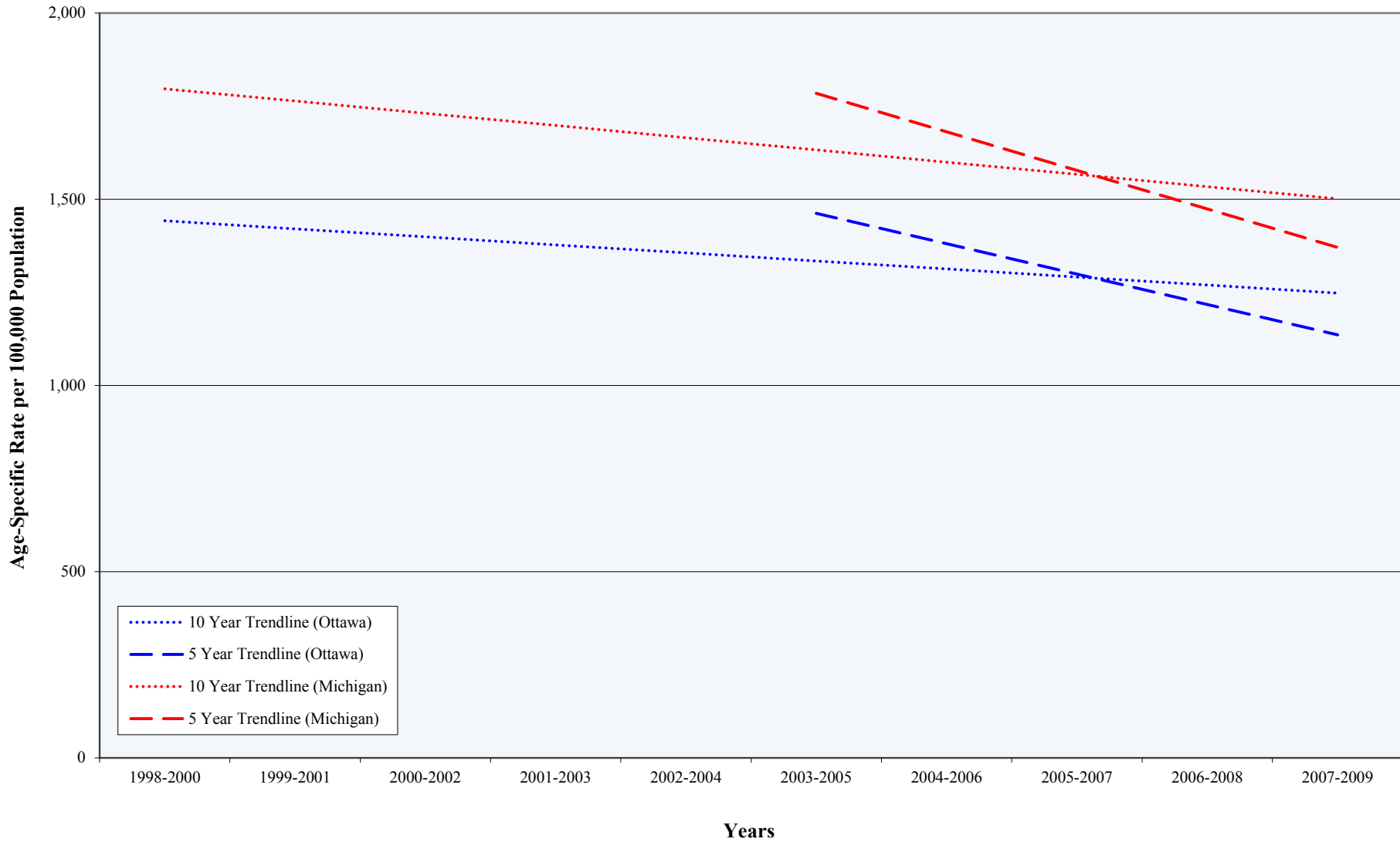
## Bacterial Pneumonia Hospitalizations Among Persons Age 65 and Older (1993-2009)



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

# Bacterial Pneumonia Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

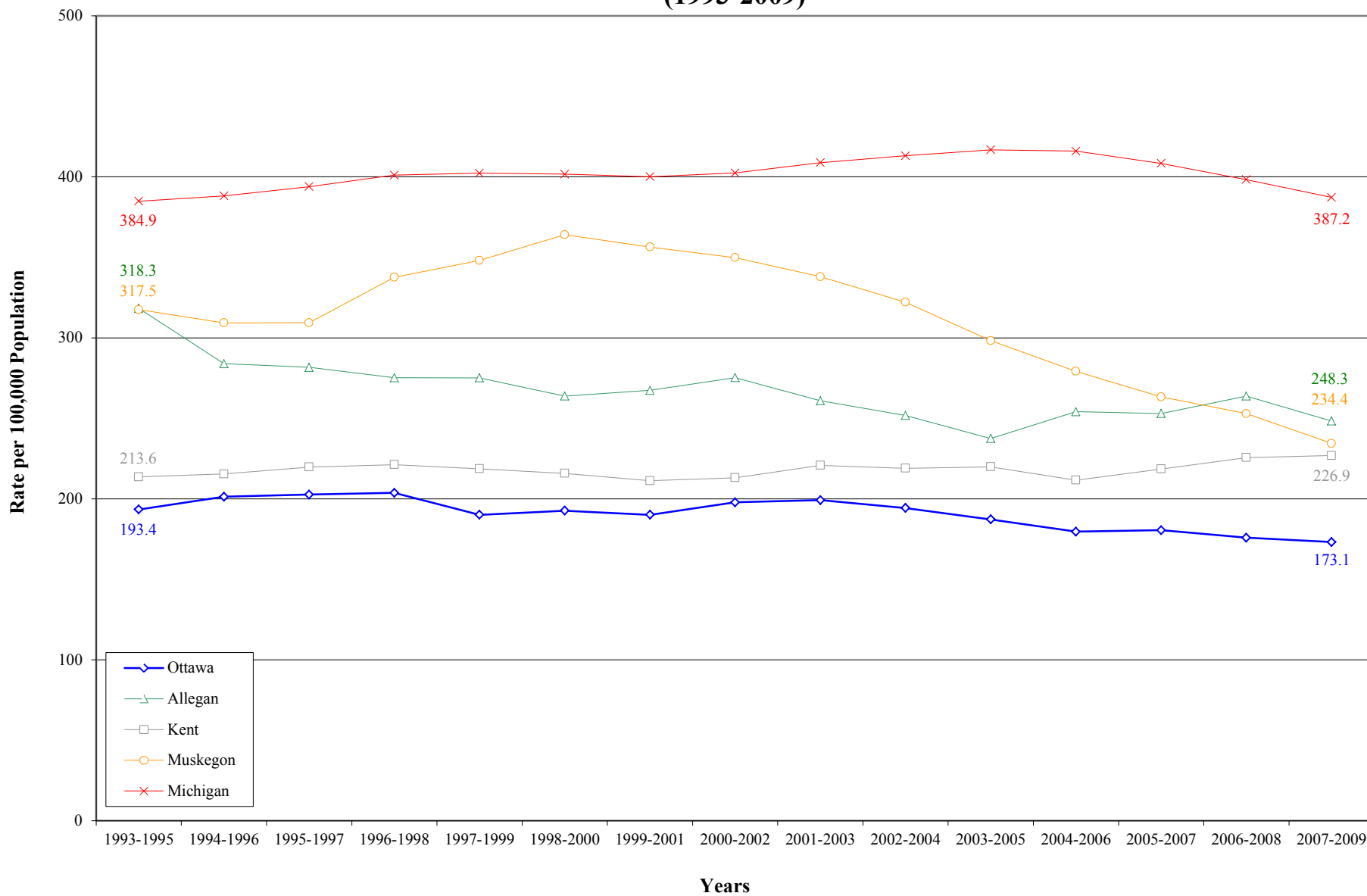
## Congestive Heart Failure (1993-2009)

### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	193.4	318.3	213.6	317.5	384.9
1994-1996	201.3	283.9	215.4	309.3	388.2
1995-1997	202.6	281.7	219.7	309.4	393.9
1996-1998	203.7	275.2	221.2	337.6	401.1
1997-1999	190.1	275.1	218.7	348.1	402.3
1998-2000	192.6	263.8	215.8	364.0	401.7
1999-2001	190.1	267.4	211.2	356.4	400.1
2000-2002	197.8	275.3	213.1	349.8	402.4
2001-2003	199.2	260.9	220.8	338.0	408.8
2002-2004	194.3	251.8	219.0	322.1	413.1
2003-2005	187.2	237.5	219.9	298.2	416.8
2004-2006	179.6	254.1	211.6	279.2	416.0
2005-2007	180.5	253.0	218.5	263.3	408.4
2006-2008	175.8	263.8	225.6	252.9	398.3
2007-2009	173.1	248.3	226.9	234.4	387.2

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

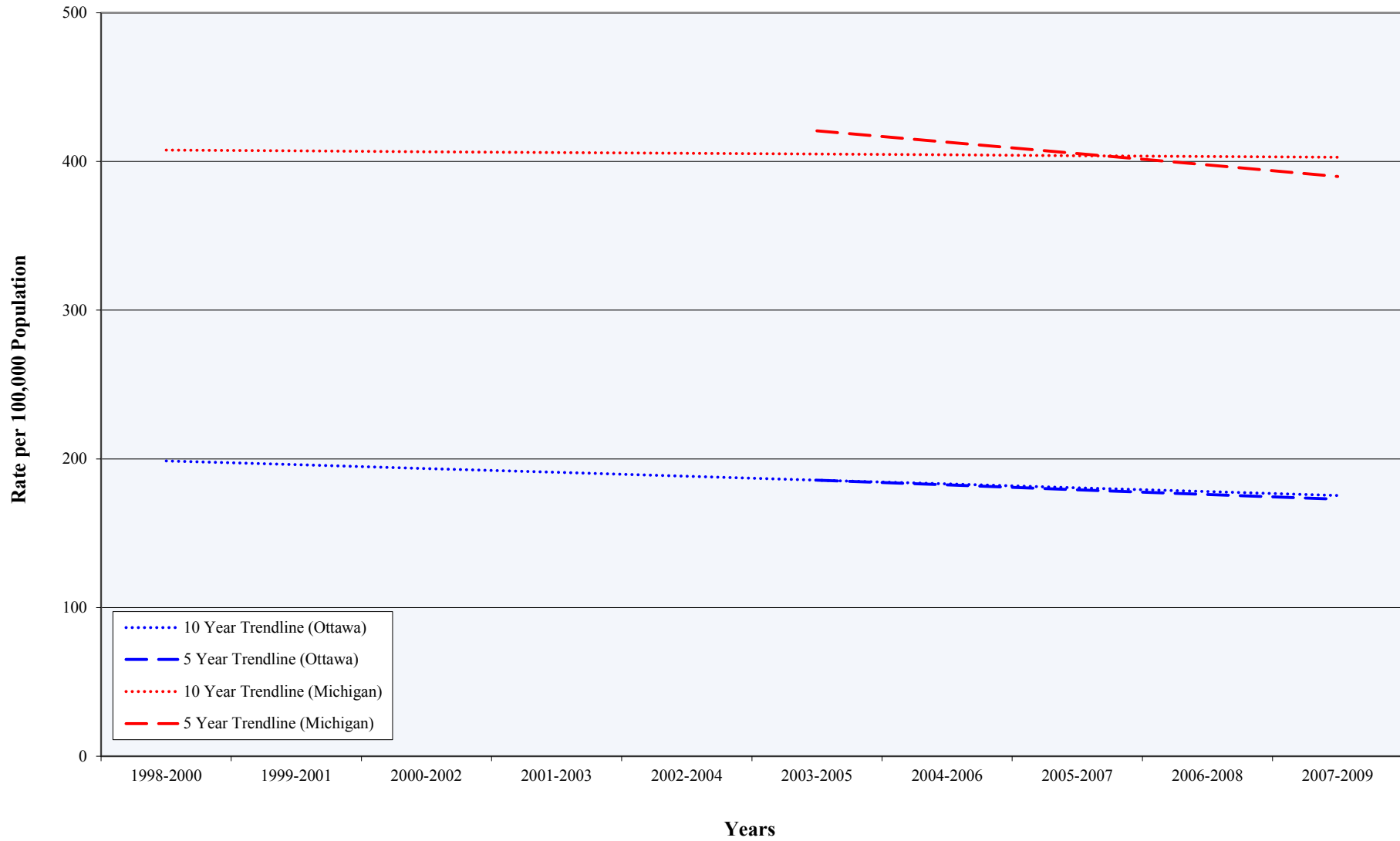
## Congestive Heart Failure Hospitalizations (1993-2009)



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

# Congestive Heart Failure Hospitalizations

## 5 and 10 Year Trends



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

# Congestive Heart Failure (1993-2009)

## Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

### Hospitalizations per 100,000 Population\*

Year	Under Age 45					Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	5.4	18.0	12.5	21.4	20.2	178.6	253.4	221.2	354.6	394.1	1,523.9	2,230.4	1,520.7	1,763.8	2,382.2
1994-1996	5.3	12.4	13.5	17.5	20.7	172.8	248.7	216.1	331.2	387.0	1,604.5	1,975.7	1,539.4	1,748.9	2,399.8
1995-1997	4.7	13.1	13.2	20.5	21.2	174.7	244.0	217.3	323.6	387.1	1,616.3	1,965.6	1,582.9	1,742.9	2,430.2
1996-1998	4.8	11.6	11.2	26.7	22.4	144.8	258.5	217.1	349.4	387.3	1,678.1	1,901.0	1,615.5	1,887.0	2,471.1
1997-1999	4.5	14.8	13.2	29.7	23.7	134.0	242.2	211.9	381.4	385.1	1,572.4	1,916.1	1,596.6	1,905.0	2,468.8
1998-2000	4.9	12.3	14.5	22.2	24.3	126.1	223.2	211.0	432.7	381.0	1,612.5	1,863.6	1,569.8	1,982.0	2,456.4
1999-2001	4.6	14.6	15.2	20.7	25.5	125.8	224.4	203.9	423.5	374.4	1,592.5	1,877.6	1,540.3	1,945.9	2,436.0
2000-2002	5.4	13.6	13.2	22.0	26.3	128.1	225.3	198.6	397.6	376.8	1,648.3	1,947.7	1,582.7	1,931.3	2,430.4
2001-2003	5.1	11.6	14.3	27.2	28.0	138.1	209.2	191.6	358.1	382.6	1,620.2	1,853.6	1,659.8	1,874.9	2,445.2
2002-2004	5.5	10.7	14.1	24.5	28.2	137.2	198.3	192.0	316.6	387.0	1,550.5	1,778.6	1,630.1	1,832.8	2,450.6
2003-2005	4.9	**	13.5	23.3	28.9	134.2	169.9	199.0	278.8	385.0	1,467.4	1,703.1	1,614.7	1,712.6	2,453.6
2004-2006	4.9	10.7	14.9	23.4	29.6	126.8	172.2	190.6	255.4	378.6	1,389.8	1,812.3	1,528.4	1,599.1	2,426.5
2005-2007	4.7	11.8	17.0	21.4	30.3	131.5	157.8	194.5	245.4	362.7	1,373.8	1,797.7	1,562.3	1,489.9	2,356.2
2006-2008	6.8	14.3	18.5	15.7	29.6	115.0	181.4	196.1	236.3	344.8	1,327.3	1,779.7	1,596.2	1,434.2	2,267.2
2007-2009	7.2	14.1	15.7	13.6	28.9	95.9	180.7	199.2	215.3	325.7	1,303.9	1,578.3	1,586.4	1,309.2	2,158.3

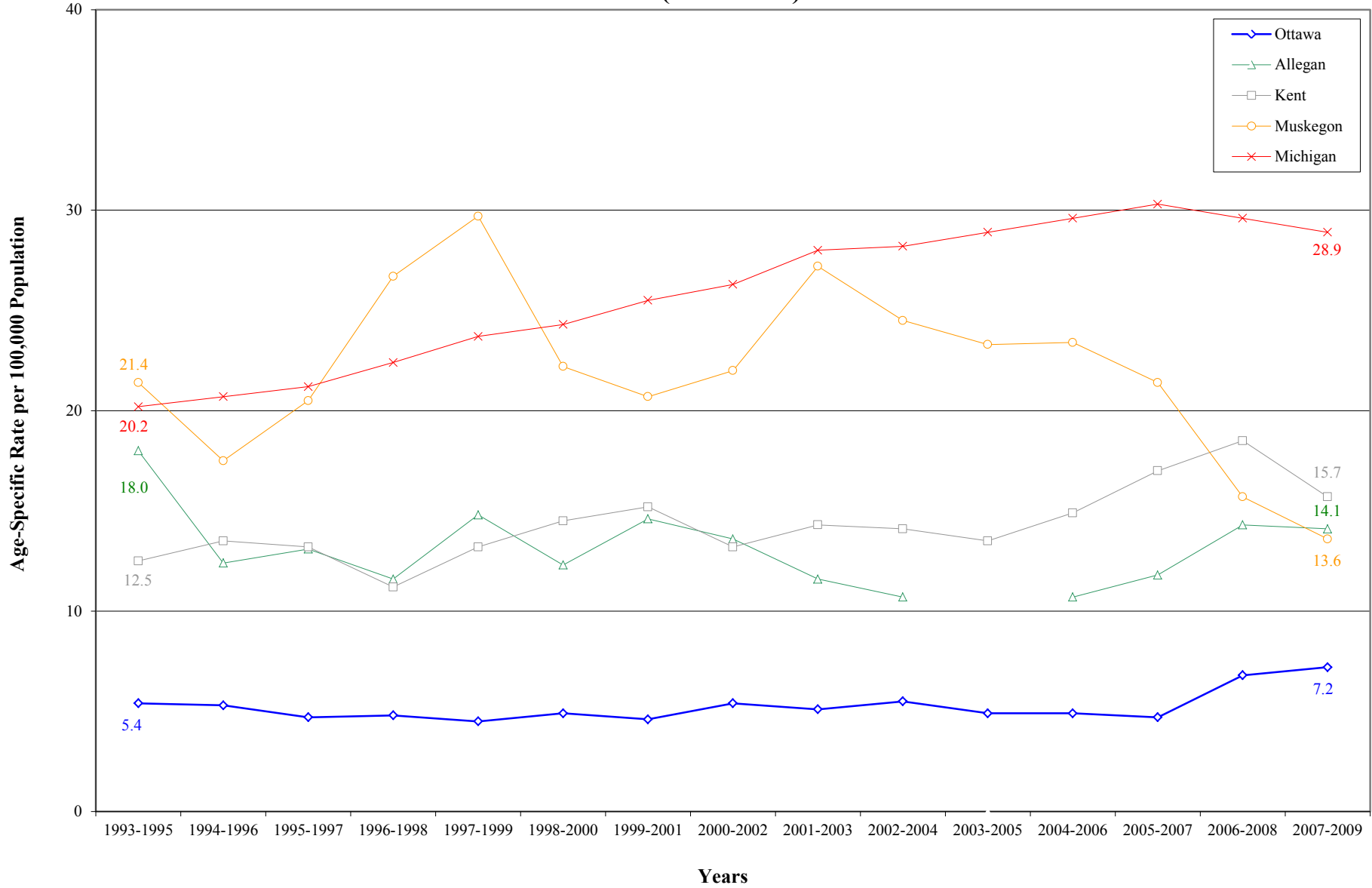
Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Preventable hospitalization 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 preventable hospitalizations) was too small to meet statistical standards of reliability or precision



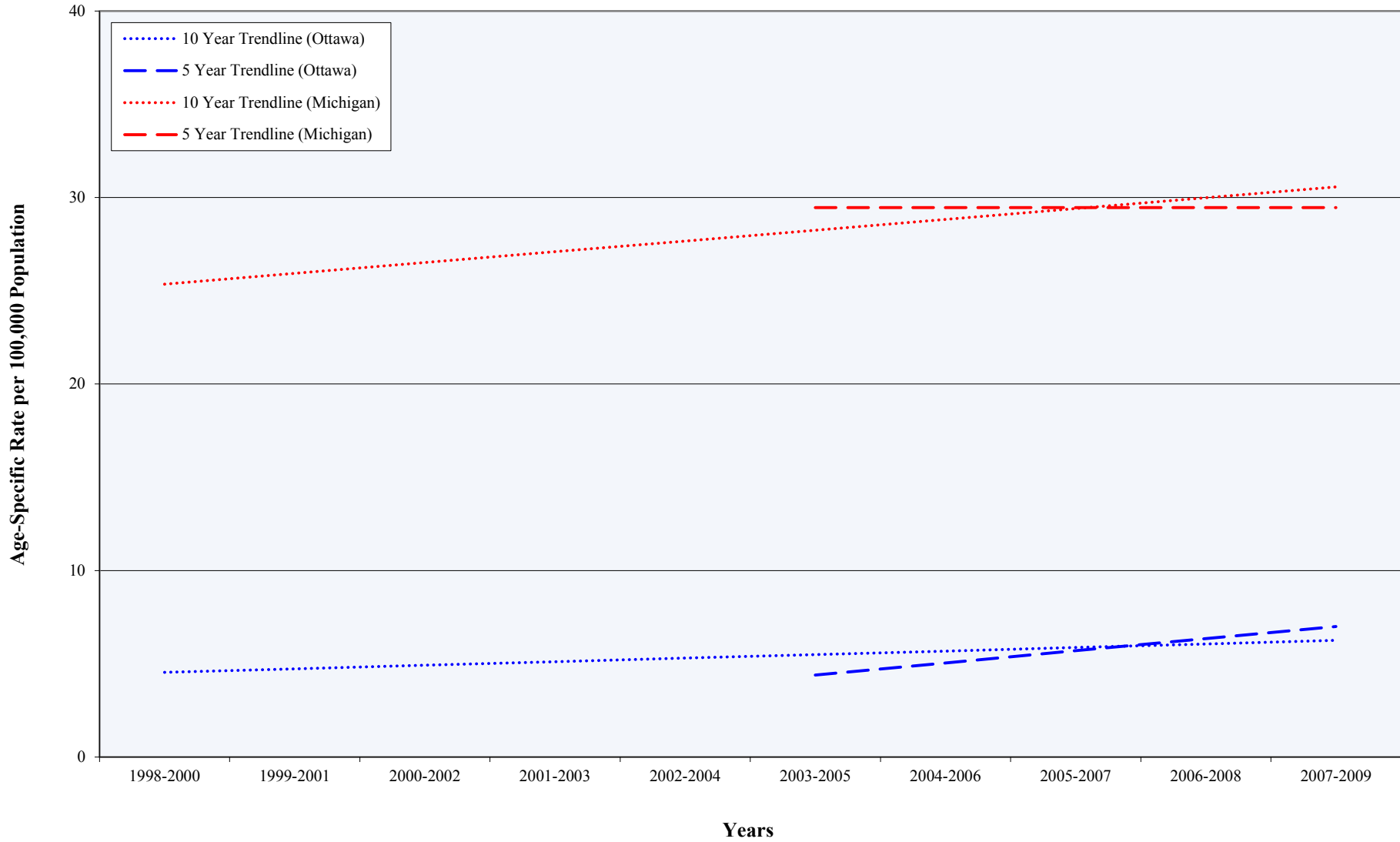
## Congestive Heart Failure Hospitalizations Among Persons Under Age 45 (1993-2009)



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

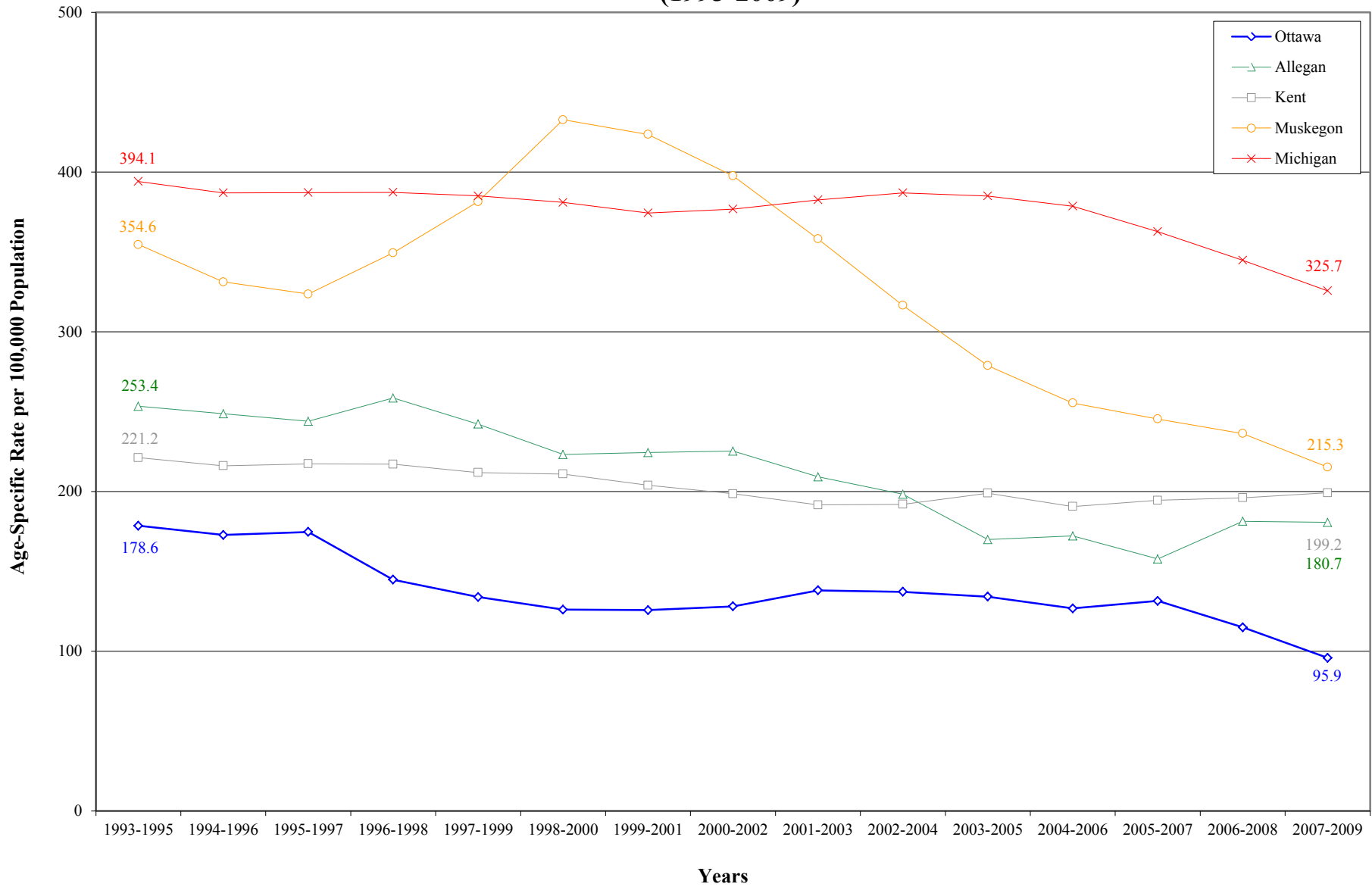
# Congestive Heart Failure Hospitalizations Among Persons Under Age 45

## 5 and 10 Year Trends



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

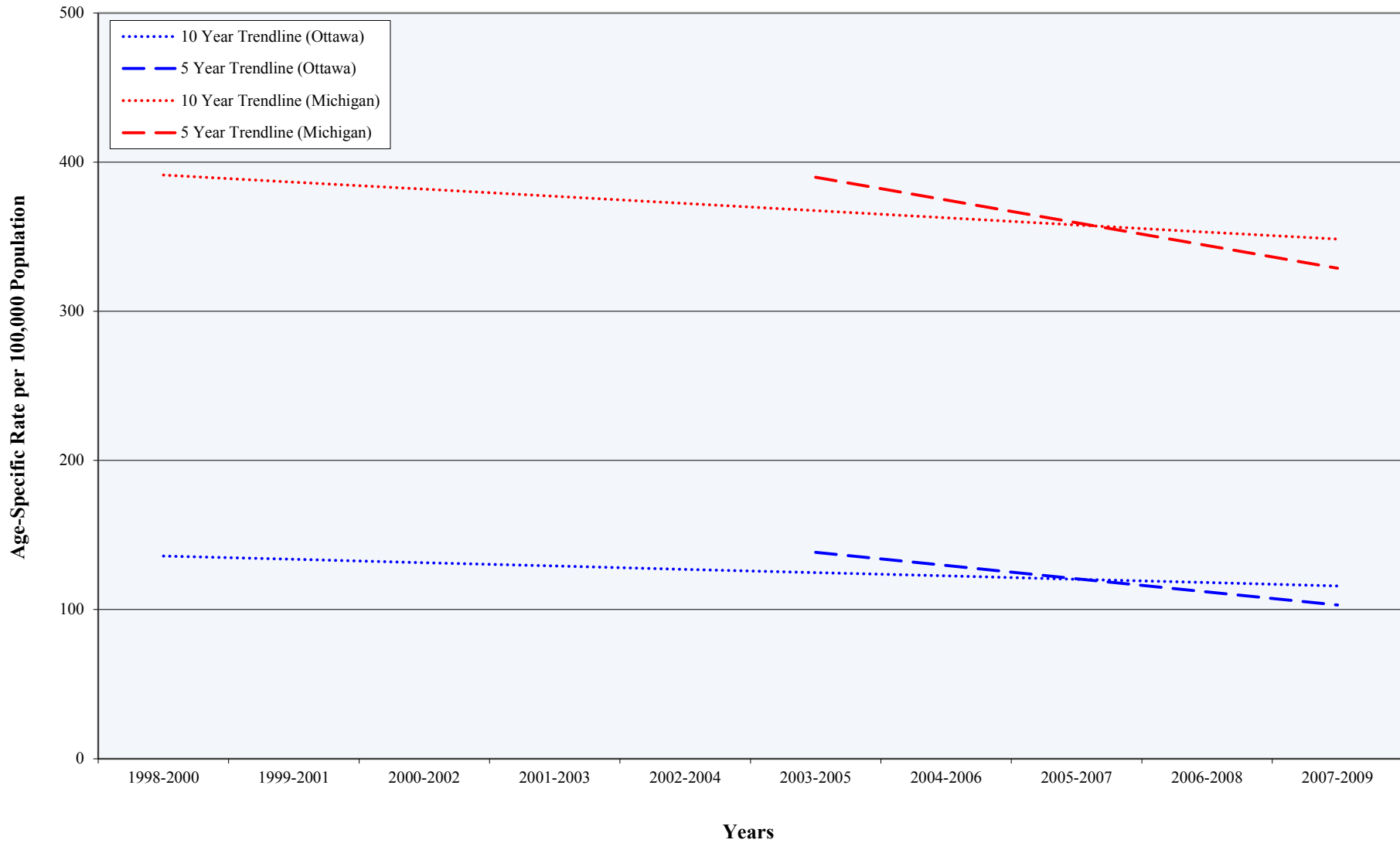
## Congestive Heart Failure Hospitalizations Among Persons Age 45-64 (1993-2009)



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

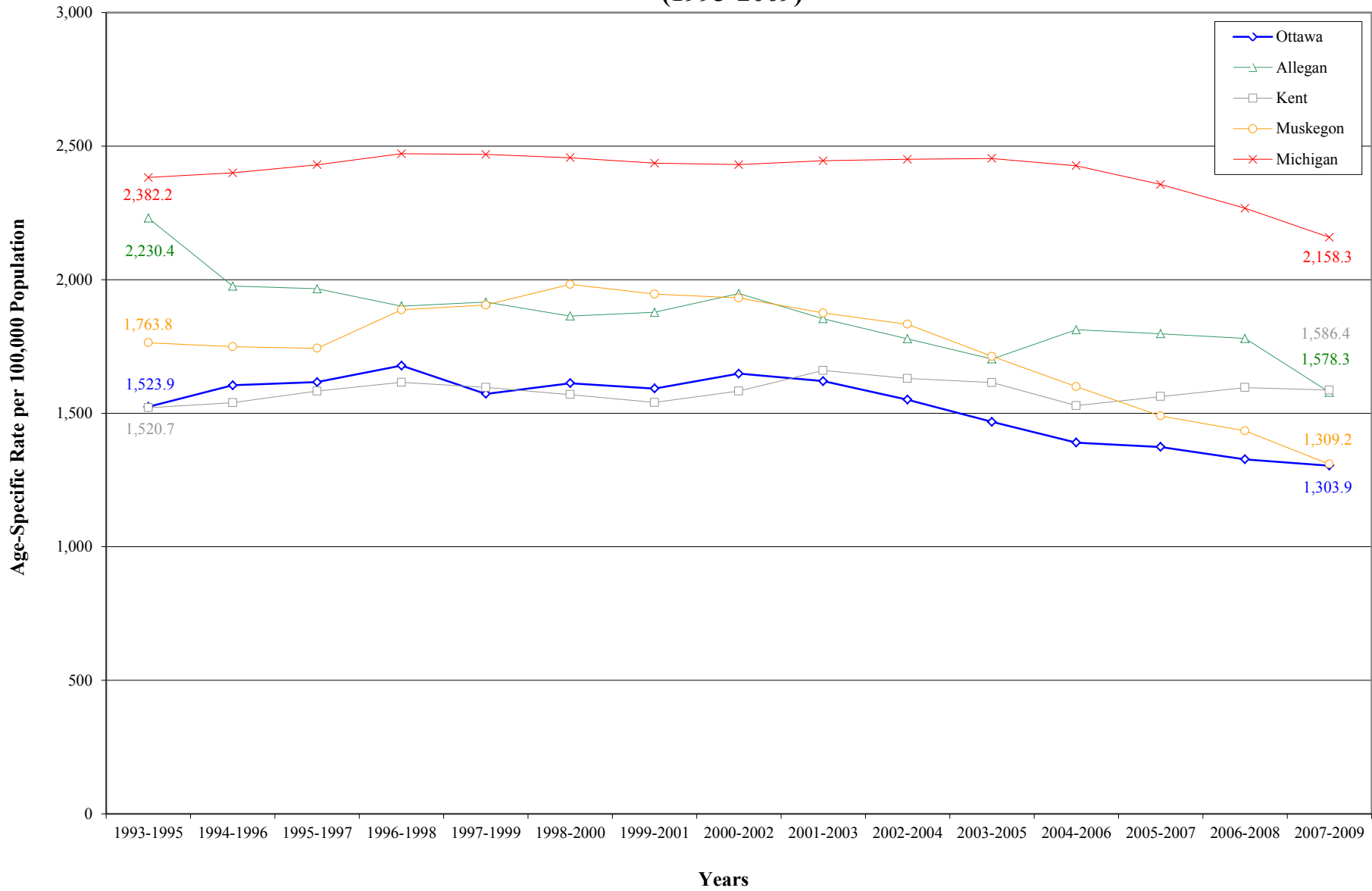
# Congestive Heart Failure Hospitalizations Among Persons Age 45-64

## 5 and 10 Year Trends



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

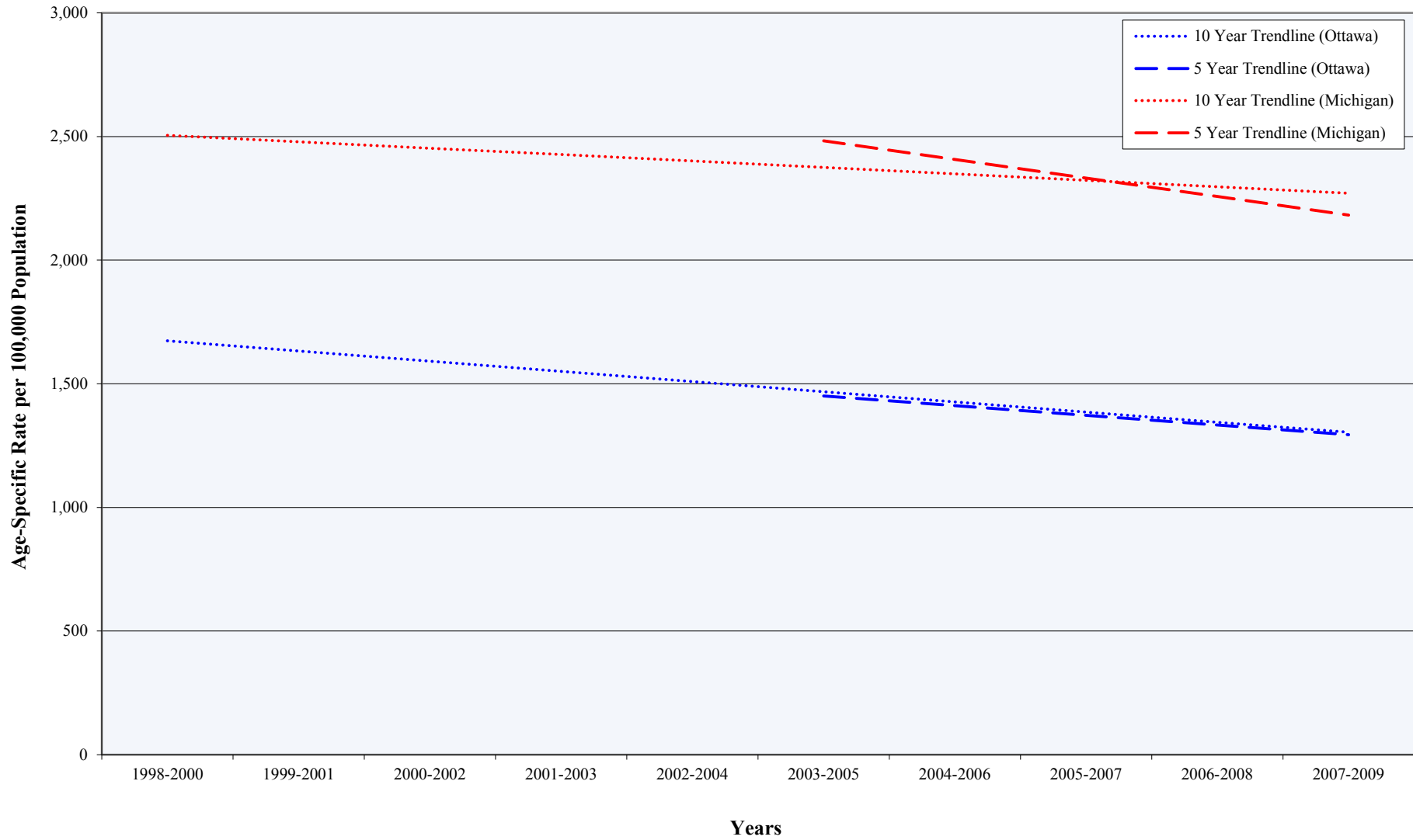
## Congestive Heart Failure Hospitalizations Among Persons Age 65 and Older (1993-2009)



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

# Congestive Heart Failure Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

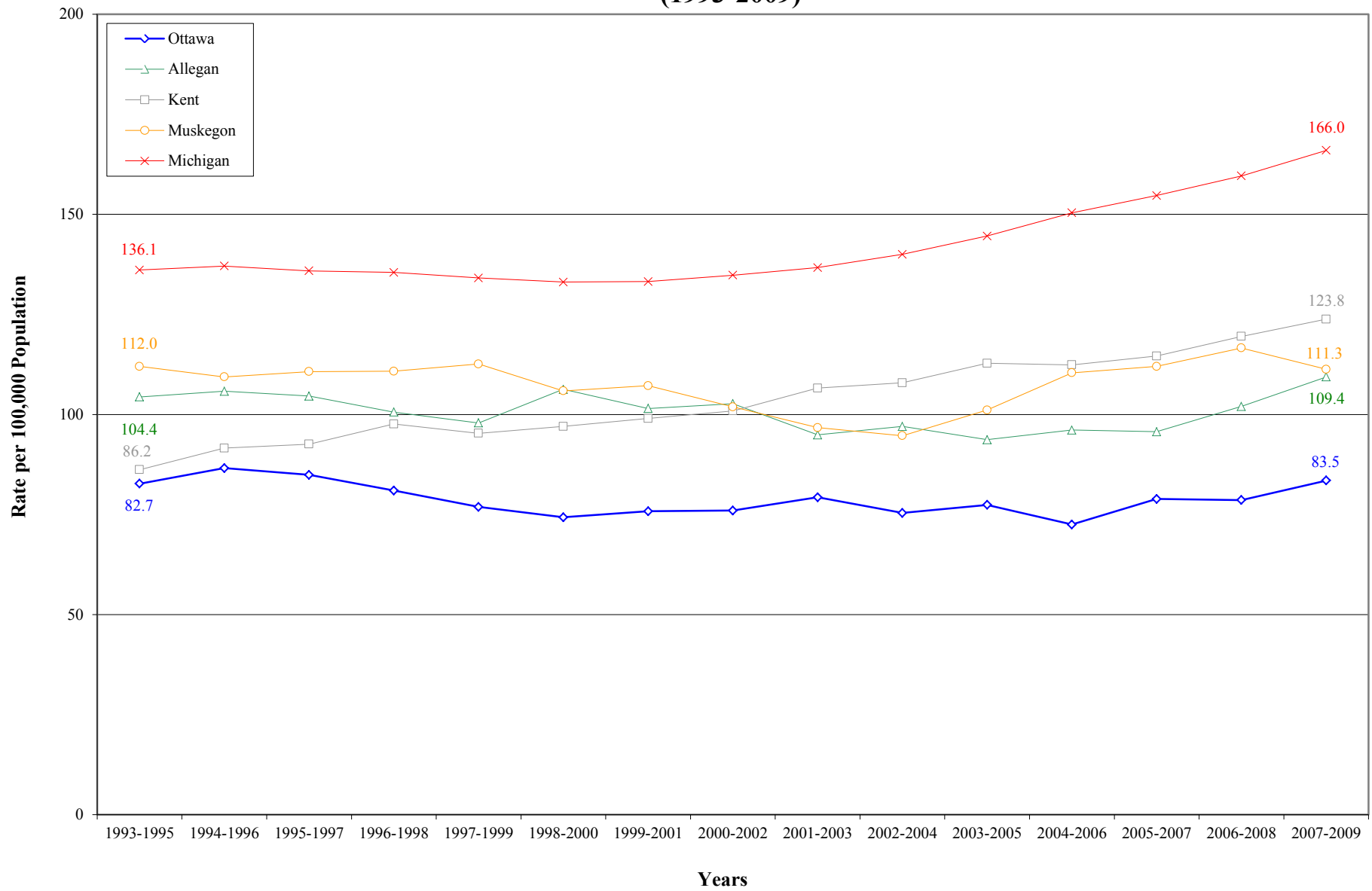
## Kidney/Urinary Infections (1993-2009)

### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	82.7	104.4	86.2	112.0	136.1
1994-1996	86.6	105.8	91.6	109.4	137.1
1995-1997	84.9	104.6	92.6	110.7	135.9
1996-1998	81.0	100.6	97.6	110.8	135.5
1997-1999	76.9	97.9	95.3	112.6	134.1
1998-2000	74.3	106.3	97.0	105.9	133.1
1999-2001	75.8	101.5	99.0	107.2	133.2
2000-2002	76.0	102.7	100.9	101.9	134.8
2001-2003	79.3	94.9	106.6	96.7	136.7
2002-2004	75.4	97.0	107.9	94.7	140.0
2003-2005	77.4	93.7	112.8	101.1	144.6
2004-2006	72.5	96.1	112.4	110.4	150.4
2005-2007	78.9	95.7	114.6	112.0	154.7
2006-2008	78.6	102.0	119.5	116.6	159.6
2007-2009	83.5	109.4	123.8	111.3	166.0

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

## Kidney/Urinary Infection Hospitalizations (1993-2009)

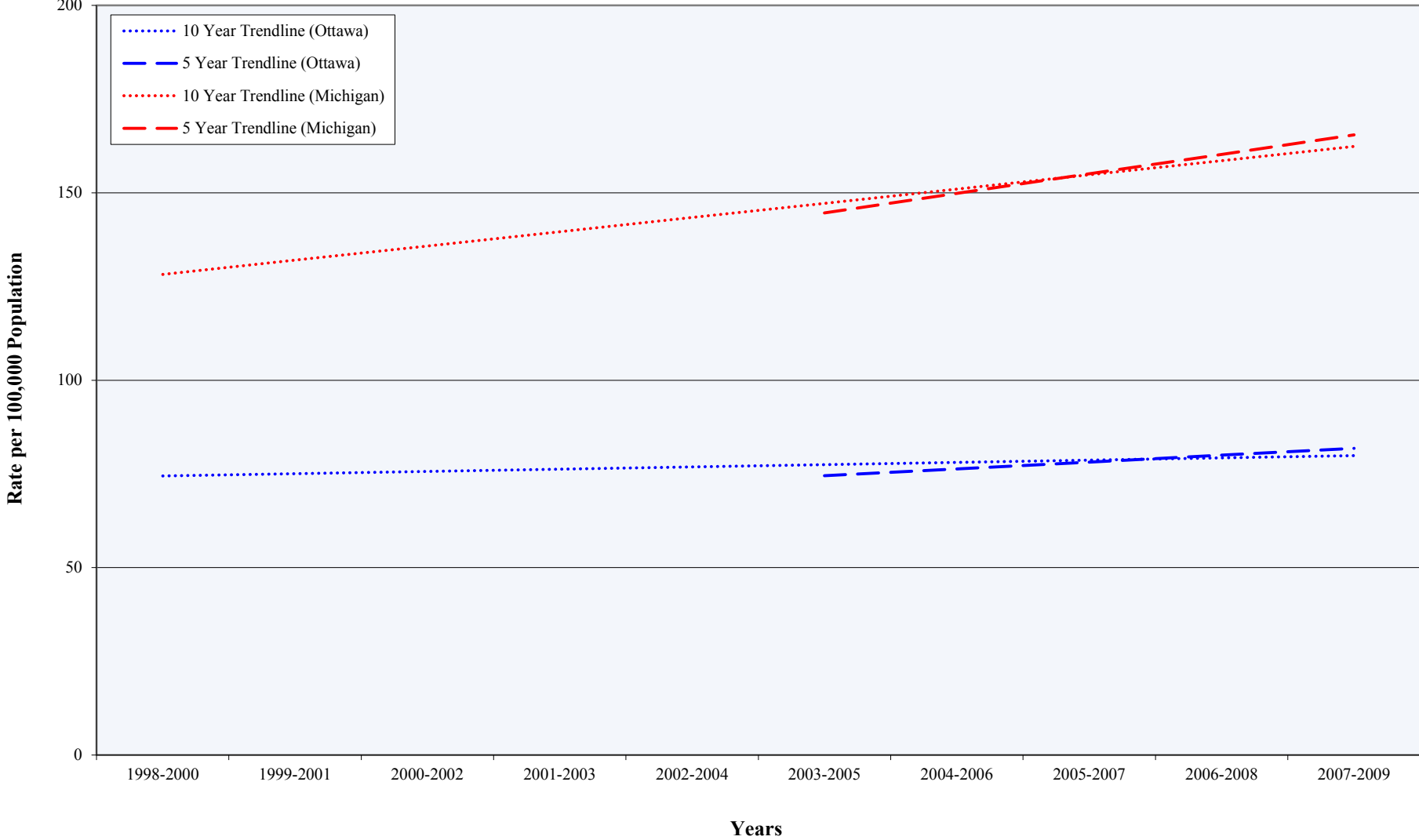


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics



# Kidney/Urinary Infection Hospitalizations

## 5 and 10 Year Trends



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

## Kidney/Urinary Infections (1993-2009)

### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population*									
	Under Age 18					Age 18-44				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	58.0	55.1	46.8	61.0	55.7	39.8	49.4	46.8	57.3	76.4
1994-1996	64.9	57.9	50.4	55.1	58.5	37.6	50.6	49.0	48.1	74.2
1995-1997	66.5	58.2	53.6	49.1	61.1	32.0	55.3	49.0	50.6	70.3
1996-1998	60.1	57.6	56.1	50.4	61.4	29.6	47.3	48.0	41.8	65.9
1997-1999	53.5	58.0	58.1	51.6	59.9	24.5	41.8	42.2	45.4	62.6
1998-2000	39.7	58.6	51.0	55.8	58.3	23.0	44.8	42.1	34.1	59.6
1999-2001	39.7	55.1	55.2	53.6	60.3	22.6	44.4	39.7	39.4	58.2
2000-2002	40.5	57.4	52.5	48.0	61.7	27.8	37.5	41.0	36.9	59.4
2001-2003	51.9	62.4	65.8	41.9	62.7	26.6	29.7	40.1	36.4	59.8
2002-2004	46.6	70.4	61.9	36.3	61.2	27.1	29.3	38.3	32.1	60.0
2003-2005	50.7	60.6	62.1	39.4	61.6	24.2	37.1	40.4	35.1	59.1
2004-2006	44.9	50.8	54.9	35.3	62.4	24.4	36.2	43.1	39.2	58.3
2005-2007	54.3	45.8	59.7	43.3	64.1	24.5	33.4	45.8	39.5	57.5
2006-2008	48.1	48.6	63.7	46.5	64.9	22.6	34.1	45.2	37.1	58.2
2007-2009	51.5	47.5	65.7	47.7	65.0	20.2	31.7	41.2	30.8	59.6

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

## Kidney/Urinary Infections (1993-2009)

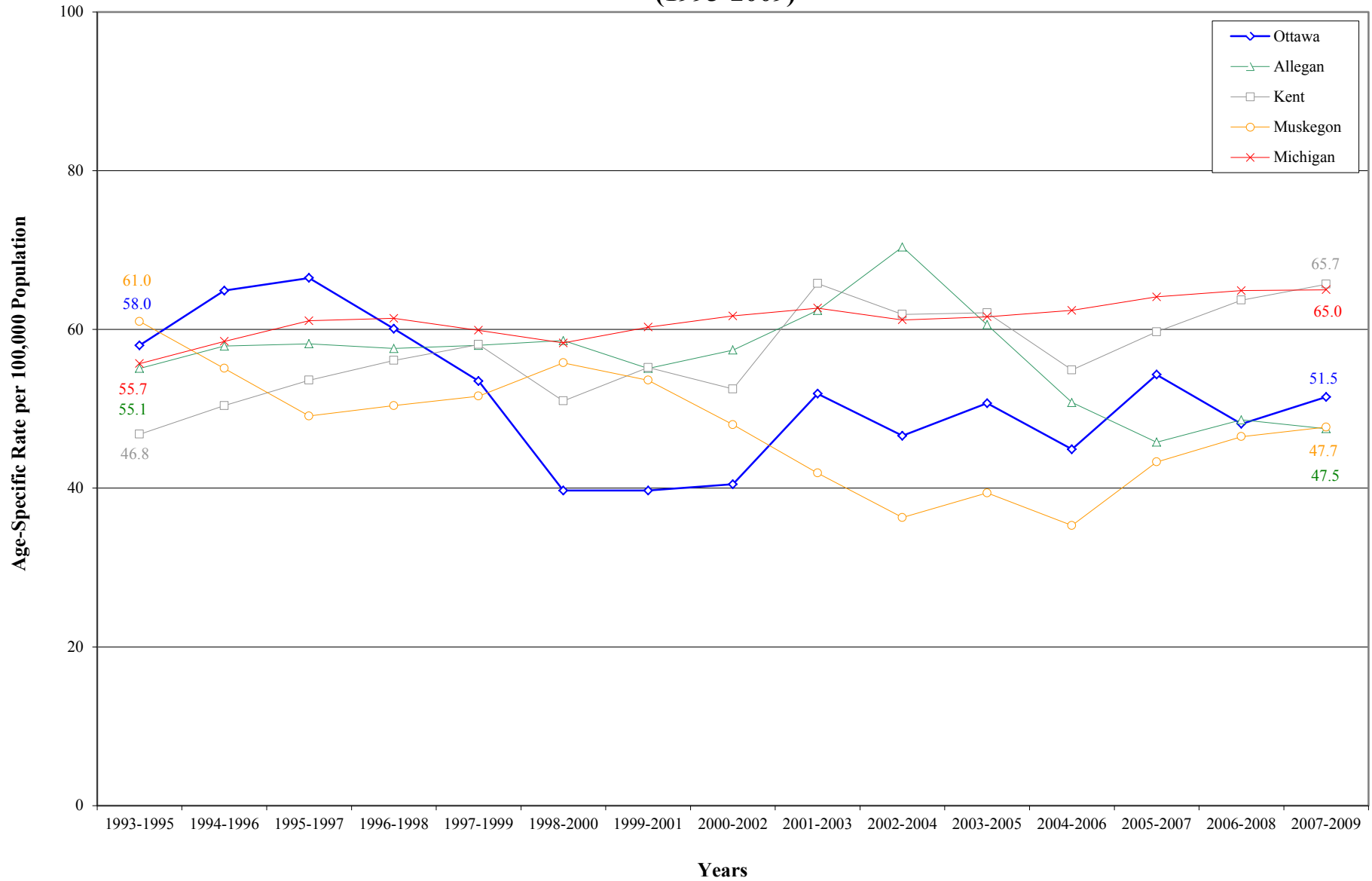
### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population*									
	Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	59.3	76.1	64.9	60.3	98.6	368.8	467.0	378.1	455.4	569.5
1994-1996	54.6	73.4	65.4	59.1	98.1	403.9	474.1	410.0	477.6	578.6
1995-1997	61.4	67.8	66.9	66.4	95.5	394.4	458.6	410.7	483.5	578.8
1996-1998	49.9	53.5	67.5	69.1	94.6	405.1	481.7	456.1	504.7	591.0
1997-1999	48.8	52.3	69.4	68.6	91.9	409.2	481.6	452.1	510.3	598.0
1998-2000	40.4	51.7	69.9	62.5	89.9	445.6	548.4	473.2	496.3	606.1
1999-2001	48.6	62.0	73.9	63.4	89.5	446.9	496.6	486.9	496.0	607.7
2000-2002	57.9	60.8	73.3	73.9	90.6	405.8	529.7	509.3	457.4	610.7
2001-2003	55.7	67.9	70.9	70.5	91.5	411.8	459.9	554.6	438.8	619.3
2002-2004	47.0	61.5	66.3	71.6	92.3	399.5	469.9	591.9	444.5	644.2
2003-2005	37.3	65.2	70.0	65.7	94.7	435.3	426.1	621.2	490.4	674.3
2004-2006	40.6	64.3	69.6	74.2	97.6	391.6	471.4	624.2	544.1	710.9
2005-2007	41.5	62.7	72.3	70.8	98.3	421.3	485.7	614.9	543.0	734.3
2006-2008	43.6	56.9	72.9	82.3	98.4	427.4	533.7	647.2	552.0	757.3
2007-2009	43.5	53.8	81.3	85.7	97.5	461.0	587.4	666.2	507.5	785.2

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

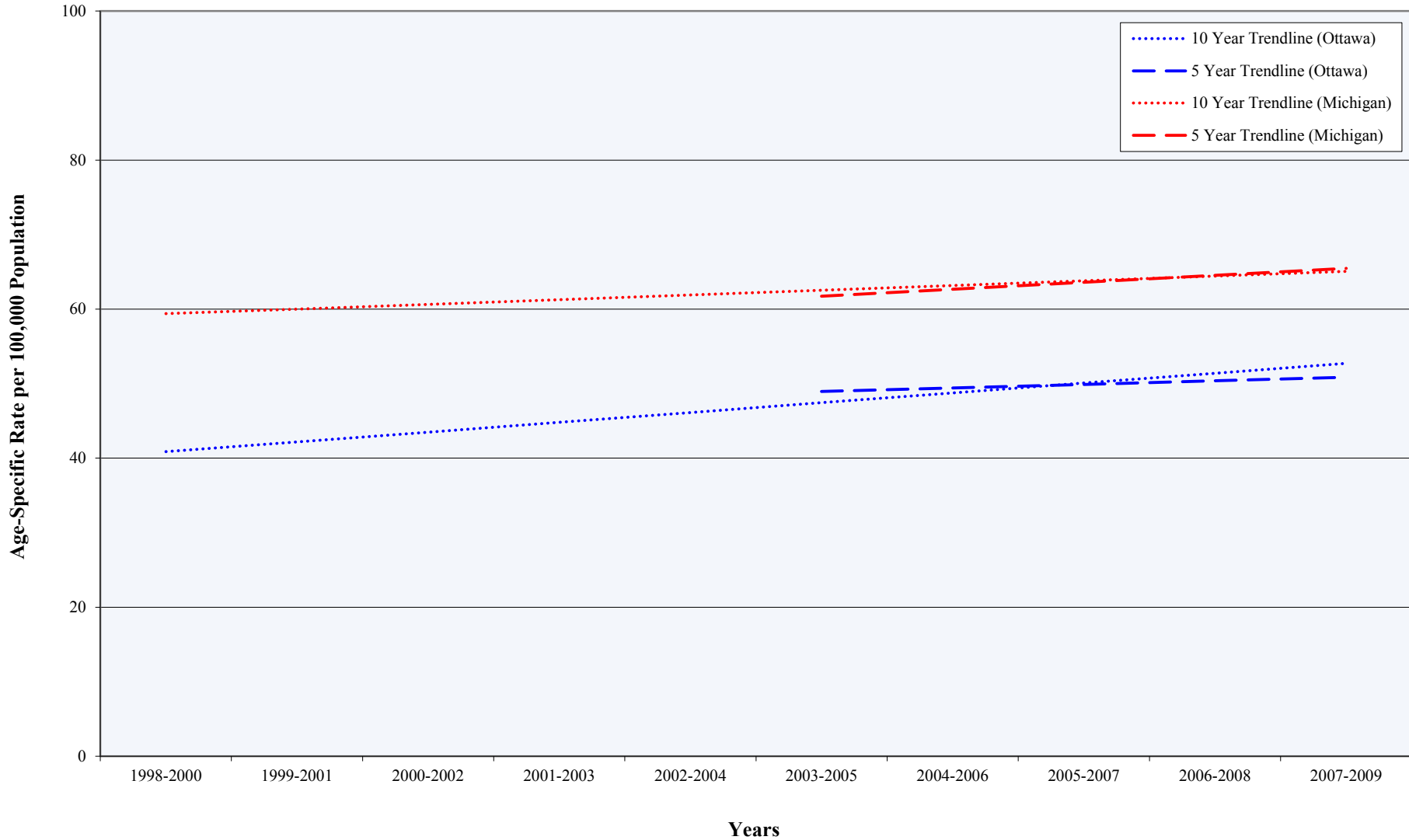
## Kidney/Urinary Infection Hospitalizations Among Persons Under Age 18 (1993-2009)



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

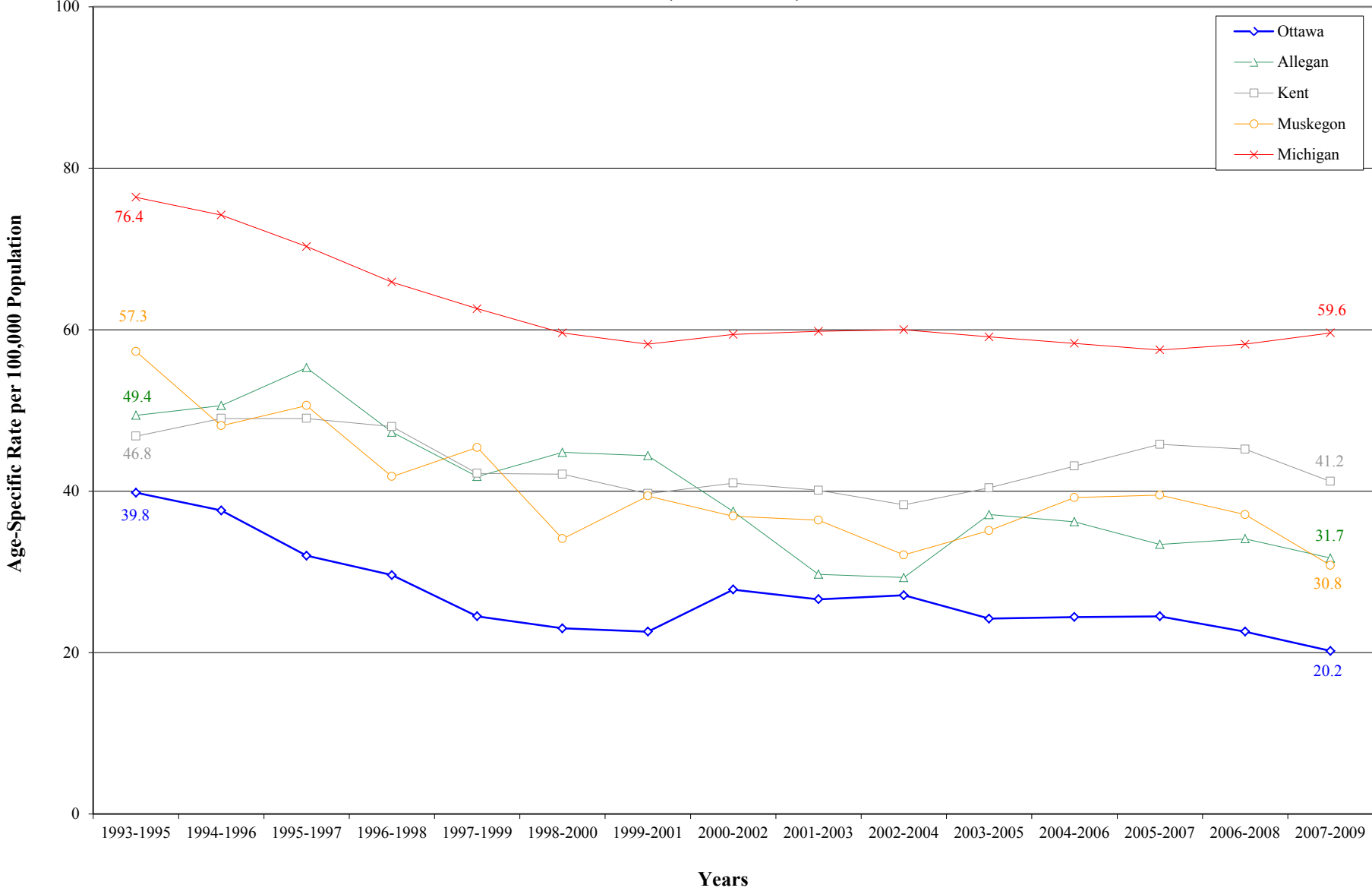
# Kidney/Urinary Infection Hospitalizations Among Persons Under Age 18

## 5 and 10 Year Trends



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

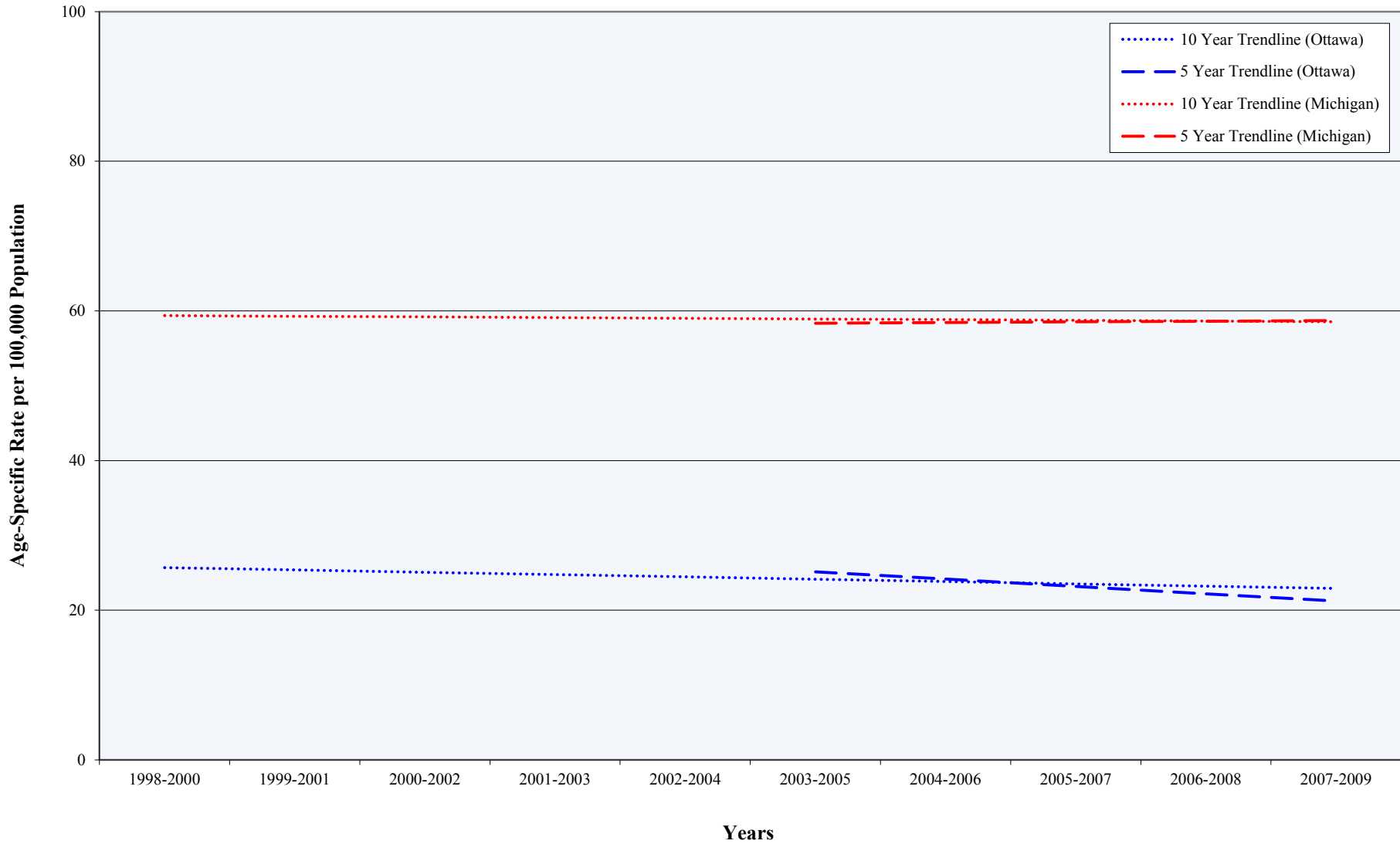
# Kidney/Urinary Infection Hospitalizations Among Persons Age 18-44 (1993-2009)



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

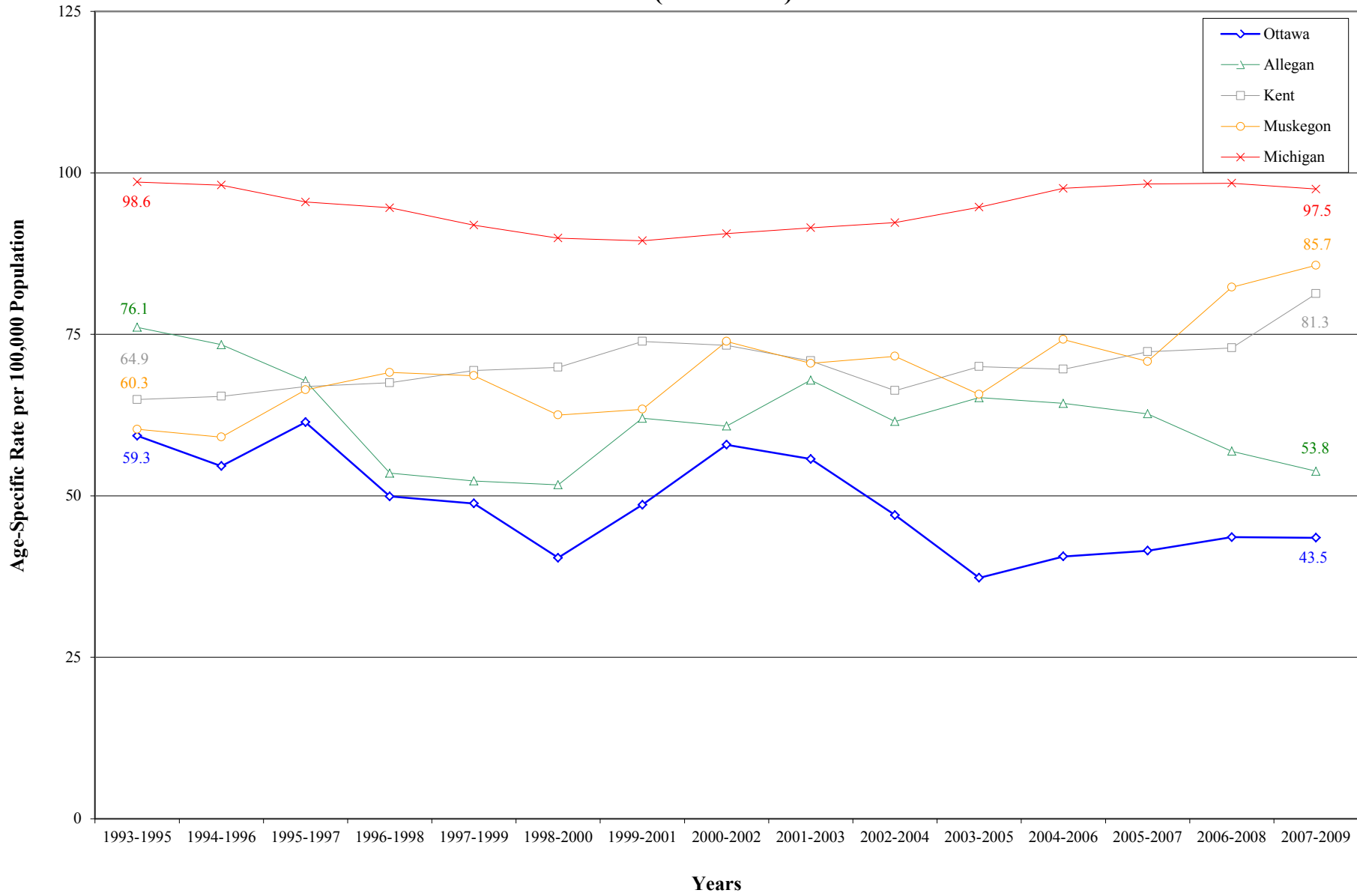
# Kidney/Urinary Infection Hospitalizations Among Persons Age 18-44

## 5 and 10 Year Trends



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

## Kidney/Urinary Infection Hospitalizations Among Persons Age 45-64 (1993-2009)

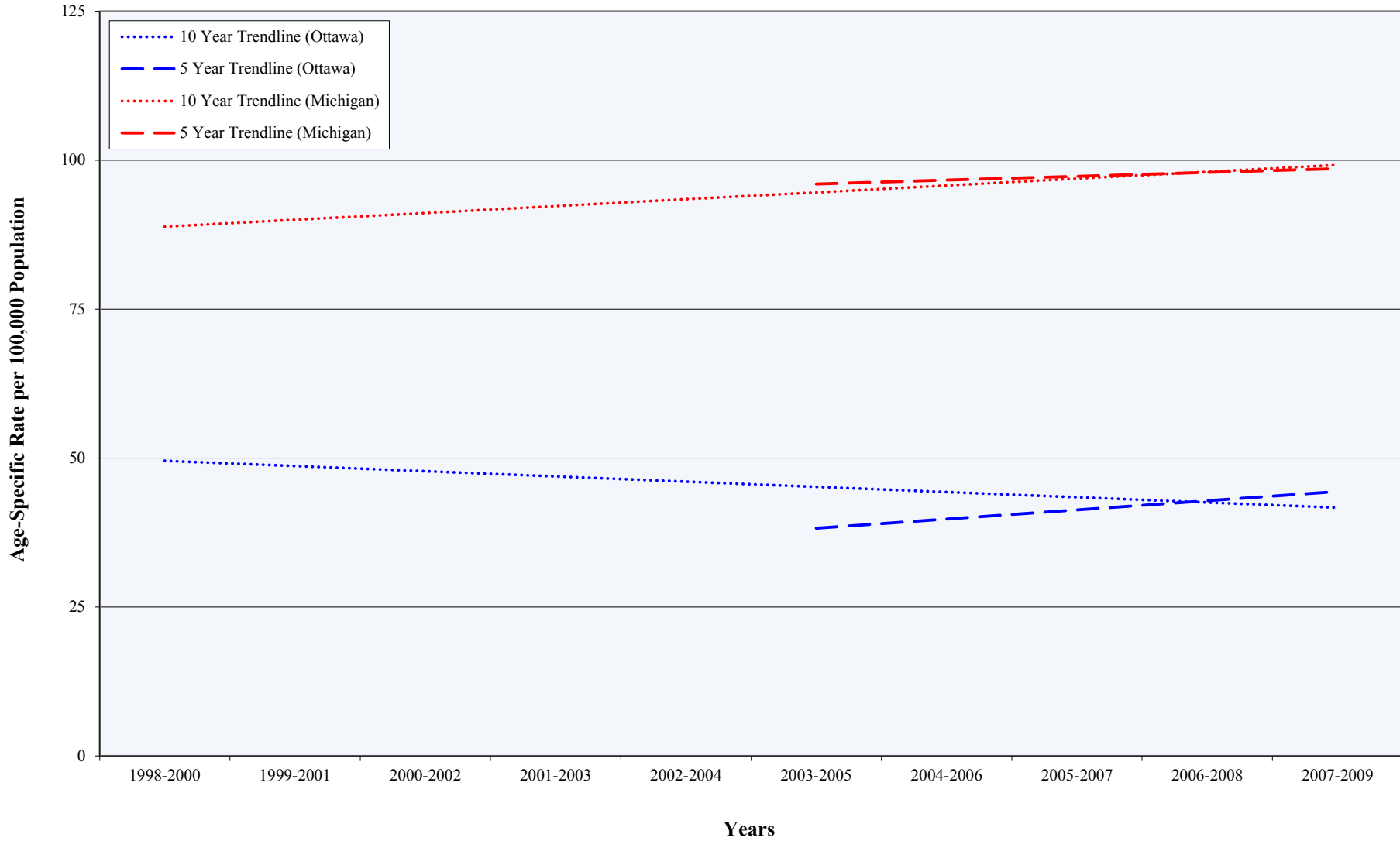


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics



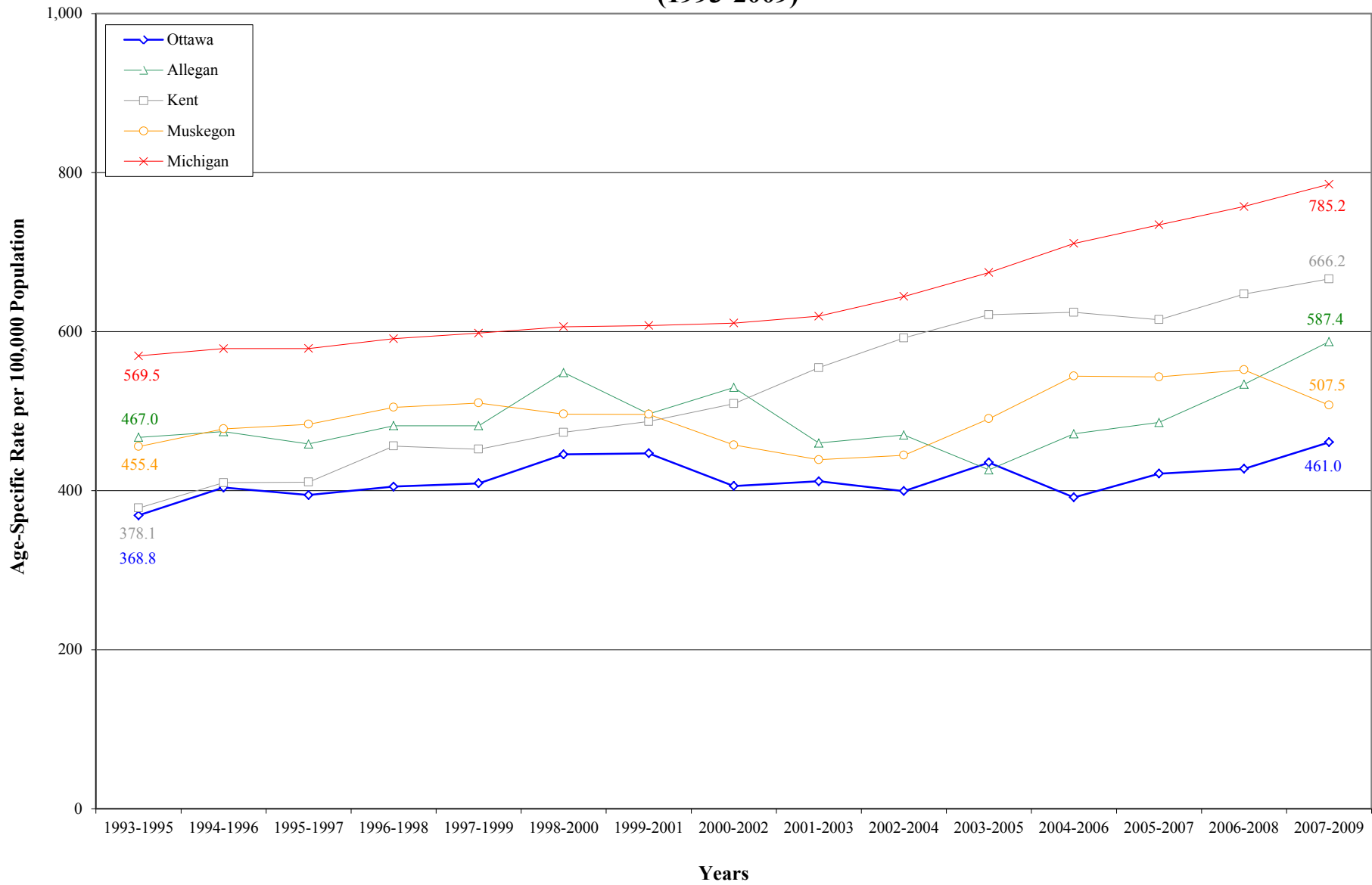
# Kidney/Urinary Infection Hospitalizations Among Persons Age 45-64

## 5 and 10 Year Trends



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

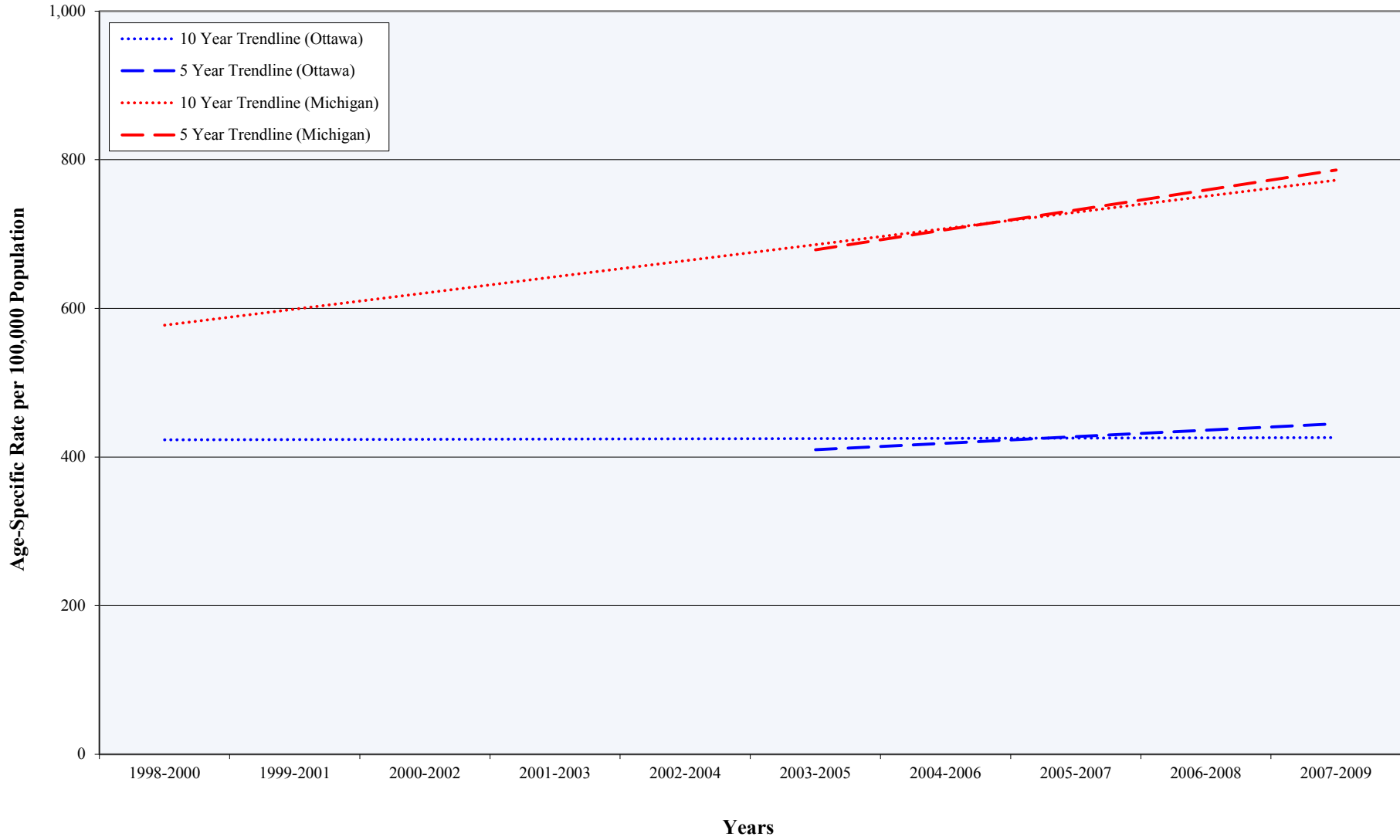
## Kidney/Urinary Infection Hospitalizations Among Persons Age 65 and Older (1993-2009)



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

# Kidney/Urinary Infection Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

## Cellulitis\* (1993-2009)

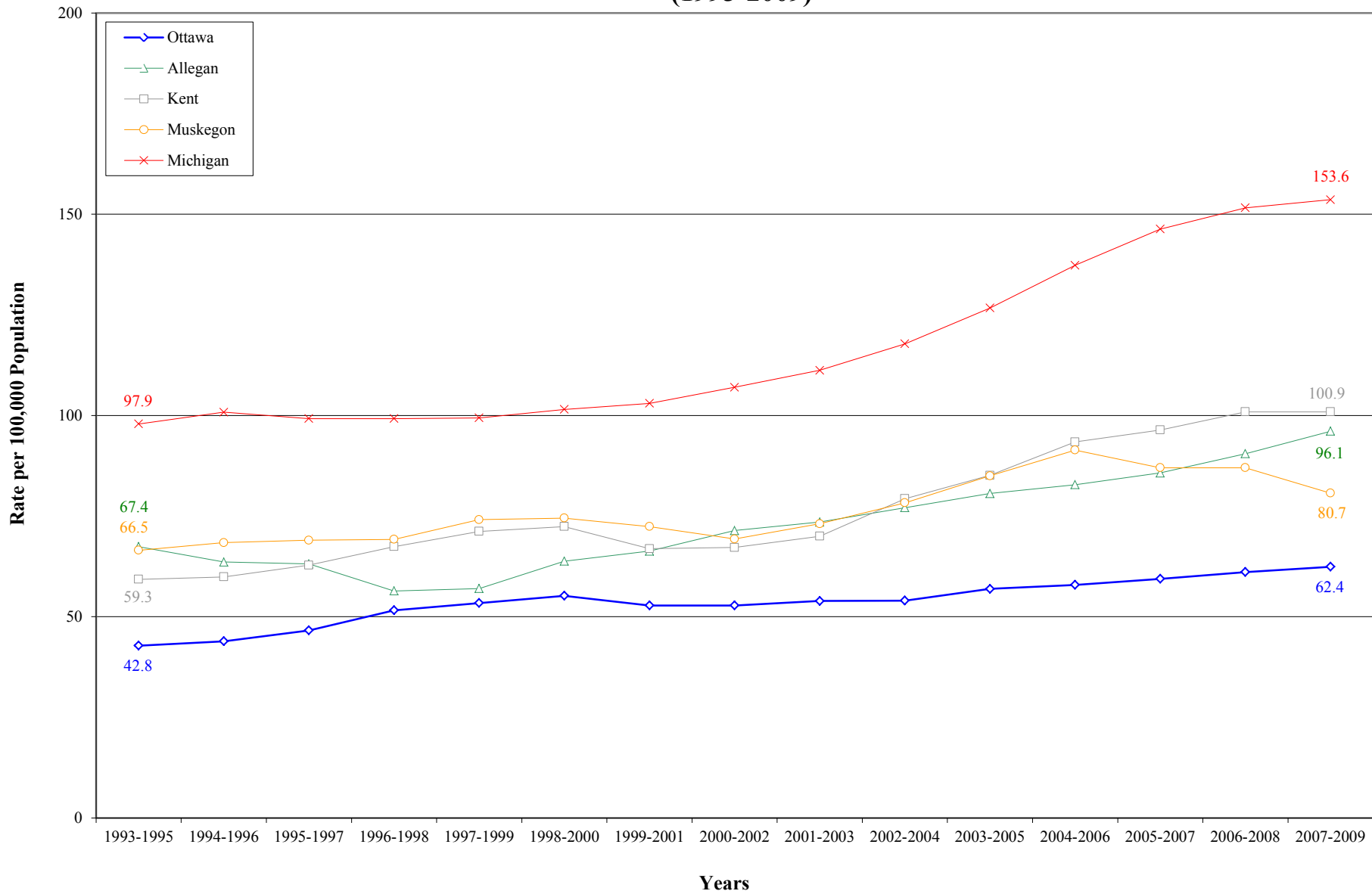
### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	42.8	67.4	59.3	66.5	97.9
1994-1996	43.9	63.6	59.9	68.4	100.8
1995-1997	46.6	63.1	62.8	69.0	99.2
1996-1998	51.6	56.4	67.4	69.2	99.2
1997-1999	53.4	57.0	71.2	74.1	99.4
1998-2000	55.2	63.8	72.4	74.5	101.5
1999-2001	52.8	66.3	66.9	72.4	103.0
2000-2002	52.8	71.4	67.2	69.3	107.0
2001-2003	53.9	73.5	70.0	73.1	111.2
2002-2004	54.0	77.1	79.3	78.3	117.8
2003-2005	56.9	80.6	85.1	85.0	126.7
2004-2006	57.9	82.8	93.4	91.4	137.3
2005-2007	59.4	85.7	96.4	87.0	146.3
2006-2008	61.1	90.5	100.9	87.0	151.6
2007-2009	62.4	96.1	100.9	80.7	153.6

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

\* Cellulitis is a bacterial infection of the skin

## Cellulitis\* Hospitalizations (1993-2009)

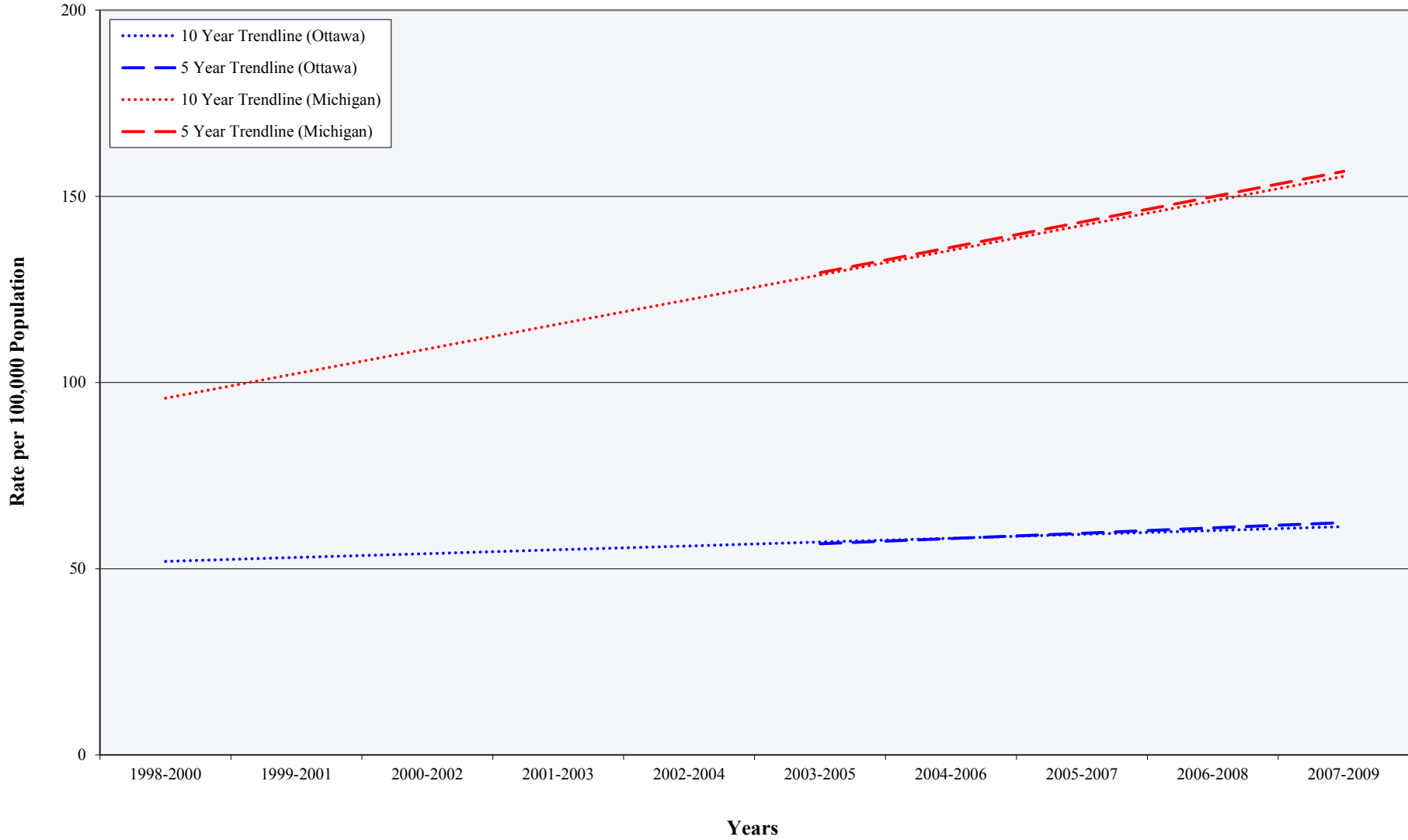


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Cellulitis is a bacterial infection of the skin

# Cellulitis\* Hospitalizations

## 5 and 10 Year Trends



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

\* Cellulitis is a bacterial infection of the skin

## Cellulitis\* (1993-2009)

### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

#### Hospitalizations per 100,000 Population\*\*

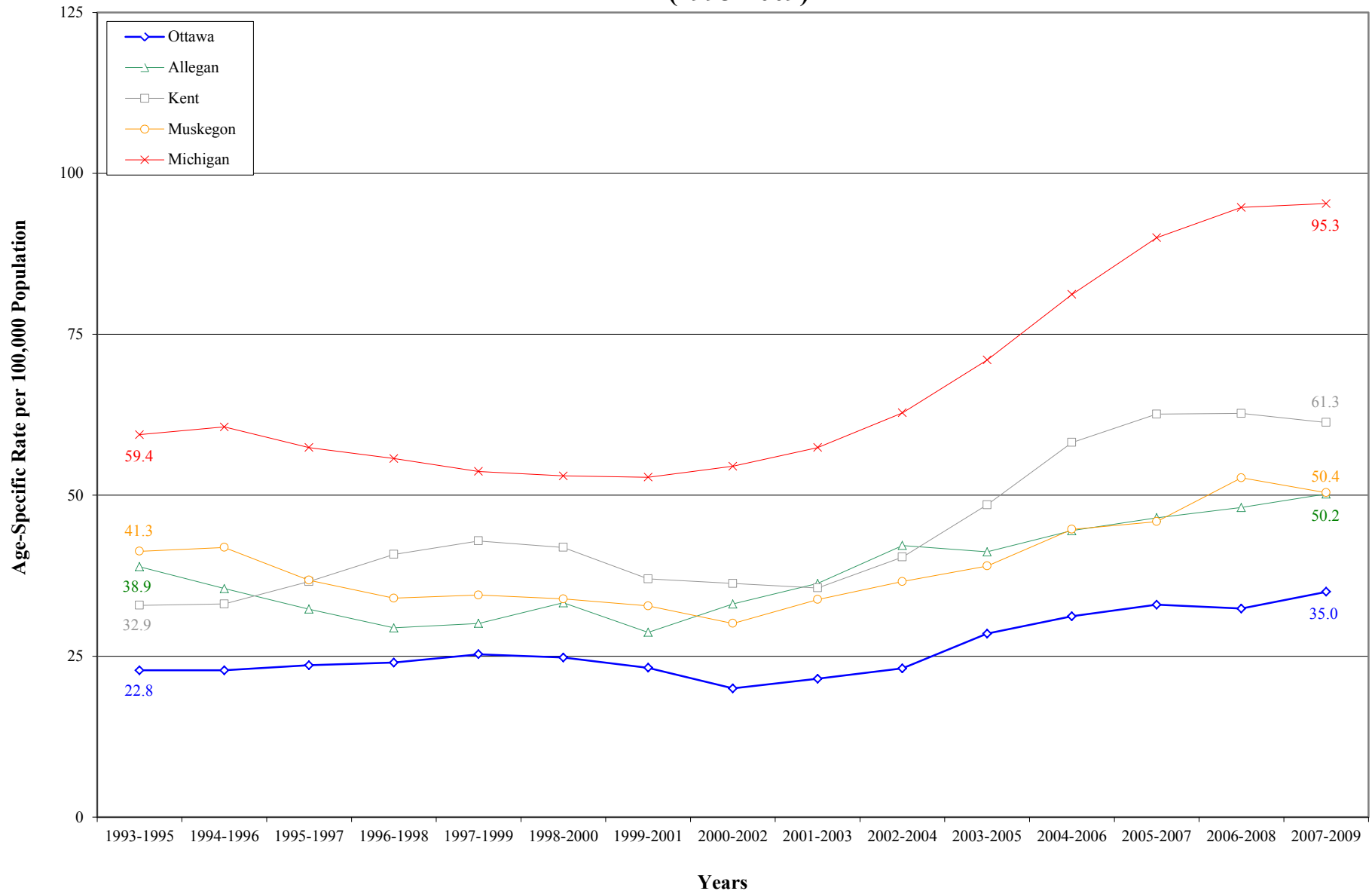
Year	Under Age 45					Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	22.8	38.9	32.9	41.3	59.4	61.7	89.3	86.3	99.4	127.7	148.9	203.5	189.8	146.6	262.6
1994-1996	22.8	35.5	33.1	41.9	60.6	61.2	85.5	84.1	96.3	132.3	159.1	195.3	196.0	161.0	269.5
1995-1997	23.6	32.3	36.6	36.8	57.4	73.1	79.2	88.0	100.0	132.1	156.8	220.5	193.6	184.9	271.3
1996-1998	24.0	29.4	40.8	34.0	55.7	87.5	76.2	95.6	103.2	132.4	175.7	184.1	195.0	194.0	277.9
1997-1999	25.3	30.1	42.9	34.5	53.7	87.3	73.8	108.5	123.6	134.4	184.1	188.6	192.5	194.4	283.7
1998-2000	24.8	33.3	41.9	33.9	53.0	82.6	86.7	112.3	116.1	138.8	211.8	203.5	202.8	211.6	294.0
1999-2001	23.2	28.7	37.0	32.8	52.8	76.4	102.8	105.1	108.6	140.1	208.5	218.5	194.5	212.2	301.3
2000-2002	20.0	33.1	36.3	30.1	54.5	83.8	107.1	98.3	97.8	144.3	212.2	227.1	212.5	217.3	312.7
2001-2003	21.5	36.3	35.6	33.8	57.4	84.6	108.3	104.8	118.4	149.6	205.7	221.4	227.7	188.2	316.7
2002-2004	23.1	42.2	40.4	36.6	62.8	78.9	101.7	115.3	121.2	157.6	204.7	228.0	259.2	208.5	323.0
2003-2005	28.5	41.2	48.5	39.0	71.0	75.3	101.6	119.7	127.6	166.6	200.2	260.9	249.4	234.4	329.2
2004-2006	31.2	44.5	58.2	44.7	81.2	78.7	106.2	126.9	120.5	176.1	180.2	246.6	245.8	267.5	338.2
2005-2007	33.0	46.5	62.6	45.9	90.0	85.4	113.6	130.7	113.5	183.2	165.4	238.7	234.0	236.8	345.3
2006-2008	32.4	48.1	62.7	52.7	94.7	86.7	130.1	137.2	105.4	185.5	176.1	224.5	256.5	216.0	352.2
2007-2009	35.0	50.2	61.3	50.4	95.3	82.4	124.2	136.5	96.8	184.4	176.7	261.9	260.8	190.5	356.6

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

\* Cellulitis is a bacterial infection of the skin

\*\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

## Cellulitis\* Hospitalizations Among Persons Under Age 45 (1993-2009)



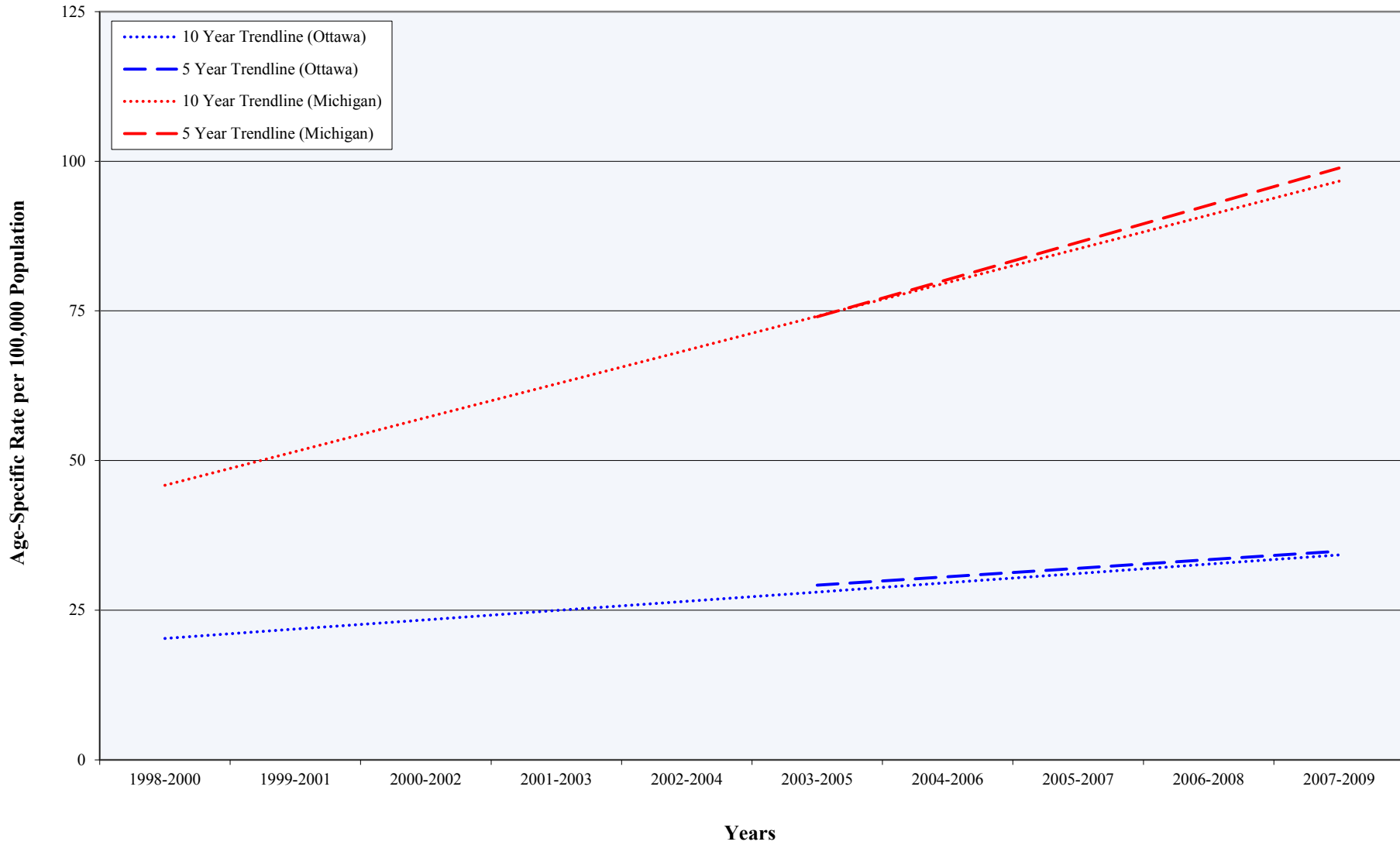
Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Cellulitis is a bacterial infection of the skin



# Cellulitis\* Hospitalizations Among Persons Under Age 45

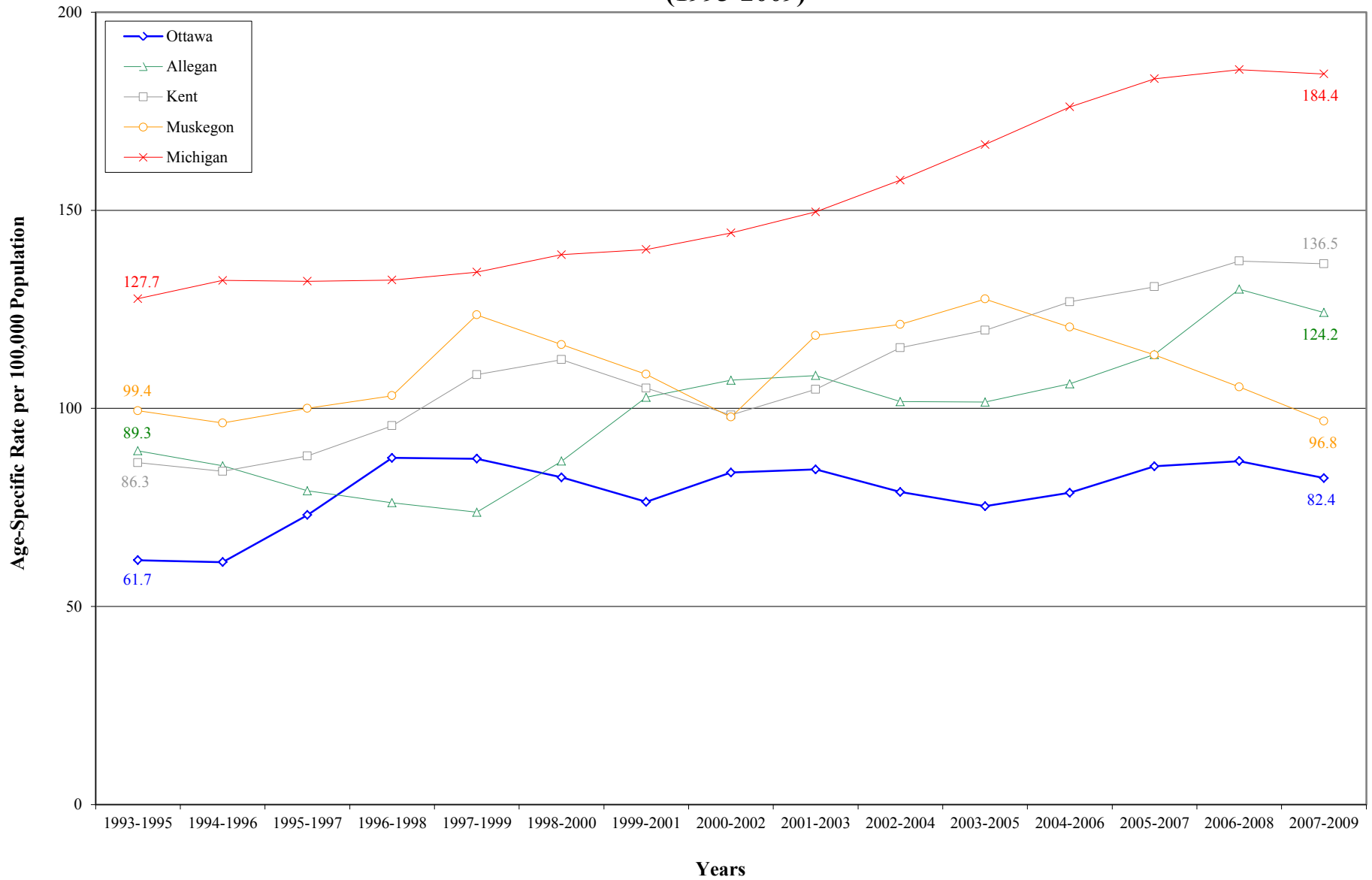
## 5 and 10 Year Trends



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

\* Cellulitis is a bacterial infection of the skin

## Cellulitis\* Hospitalizations Among Persons Age 45-64 (1993-2009)

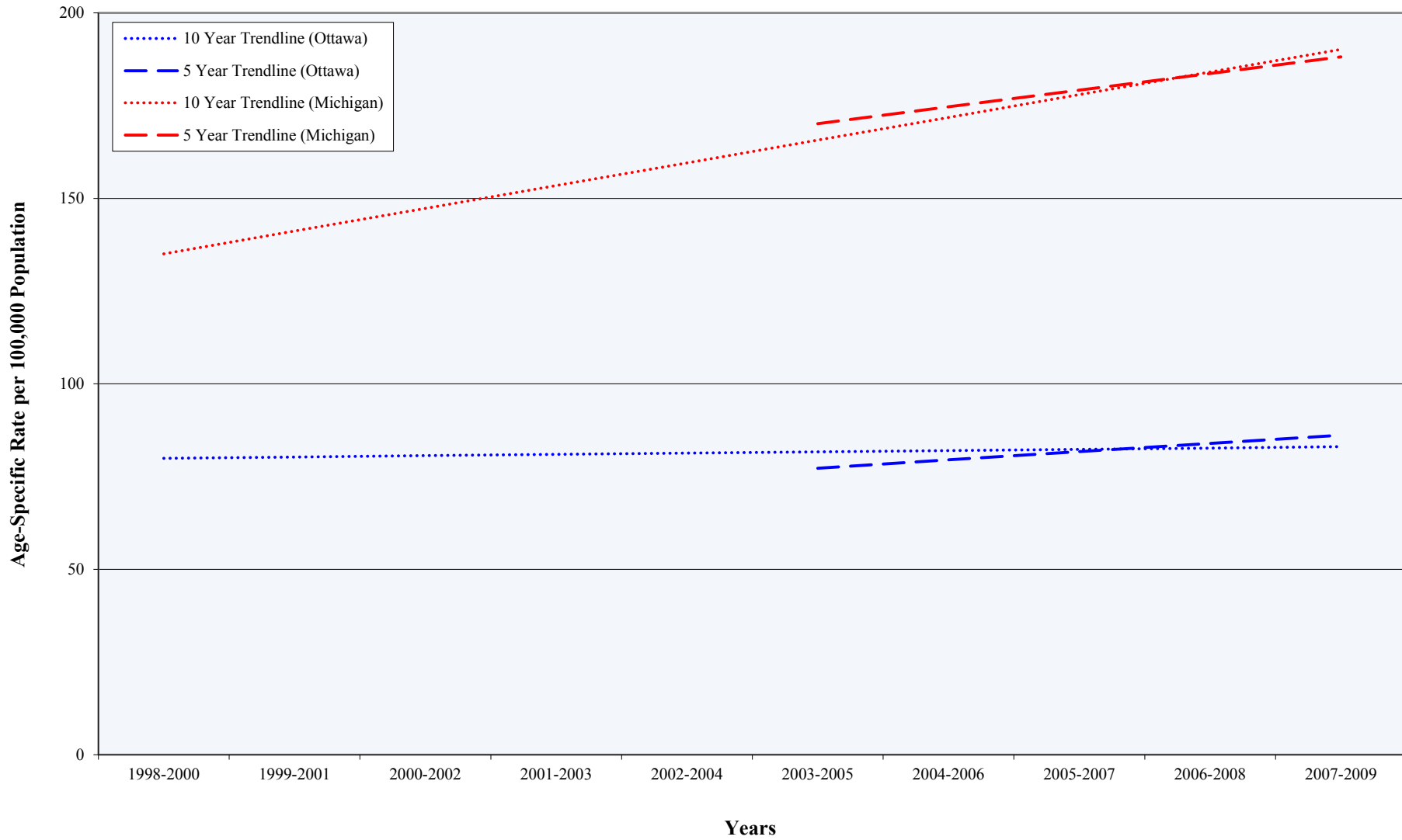


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Cellulitis is a bacterial infection of the skin

# Cellulitis\* Hospitalizations Among Persons Age 45-64

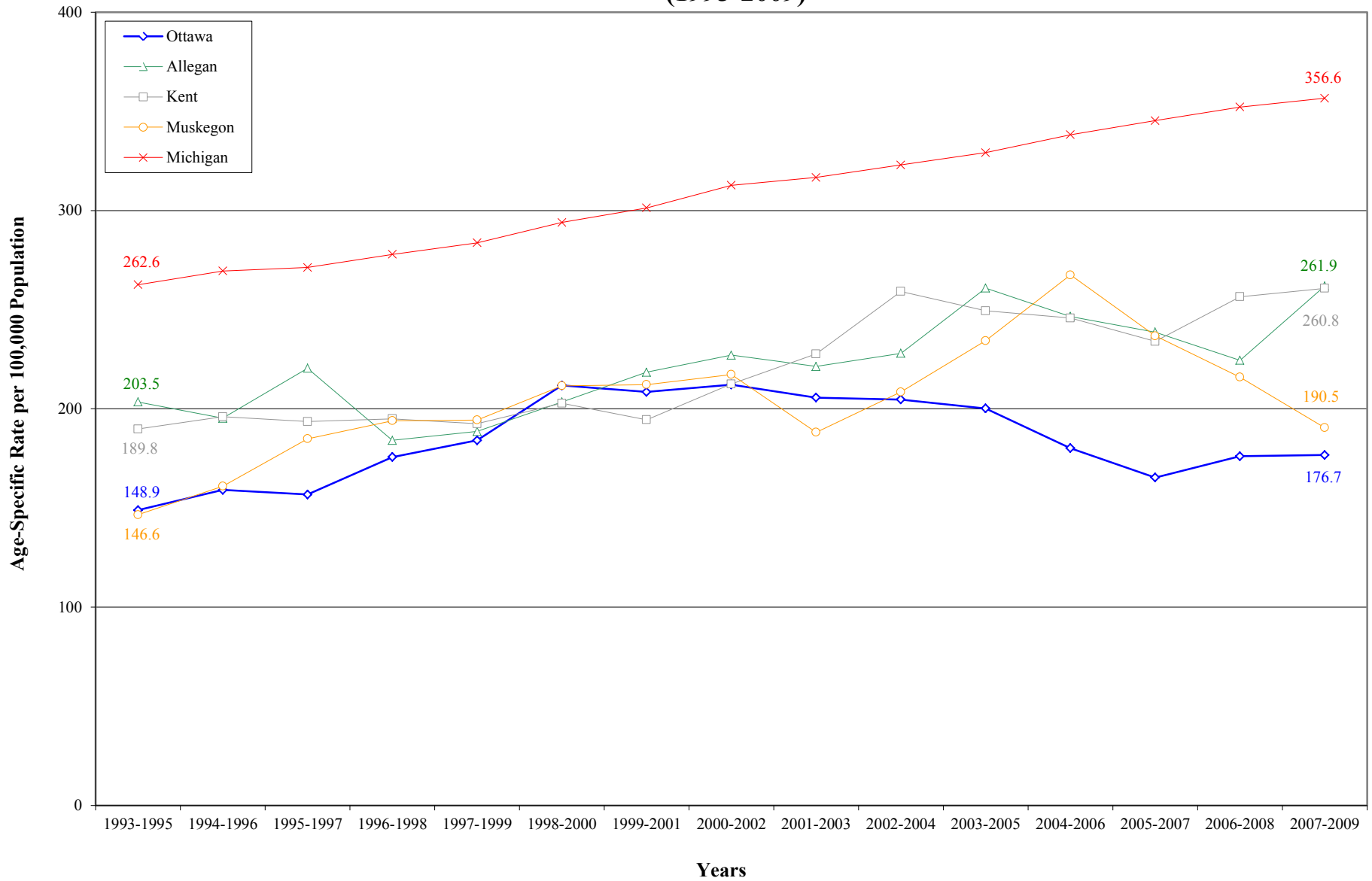
## 5 and 10 Year Trends



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

\* Cellulitis is a bacterial infection of the skin

## Cellulitis\* Hospitalizations Among Persons Age 65 and Older (1993-2009)

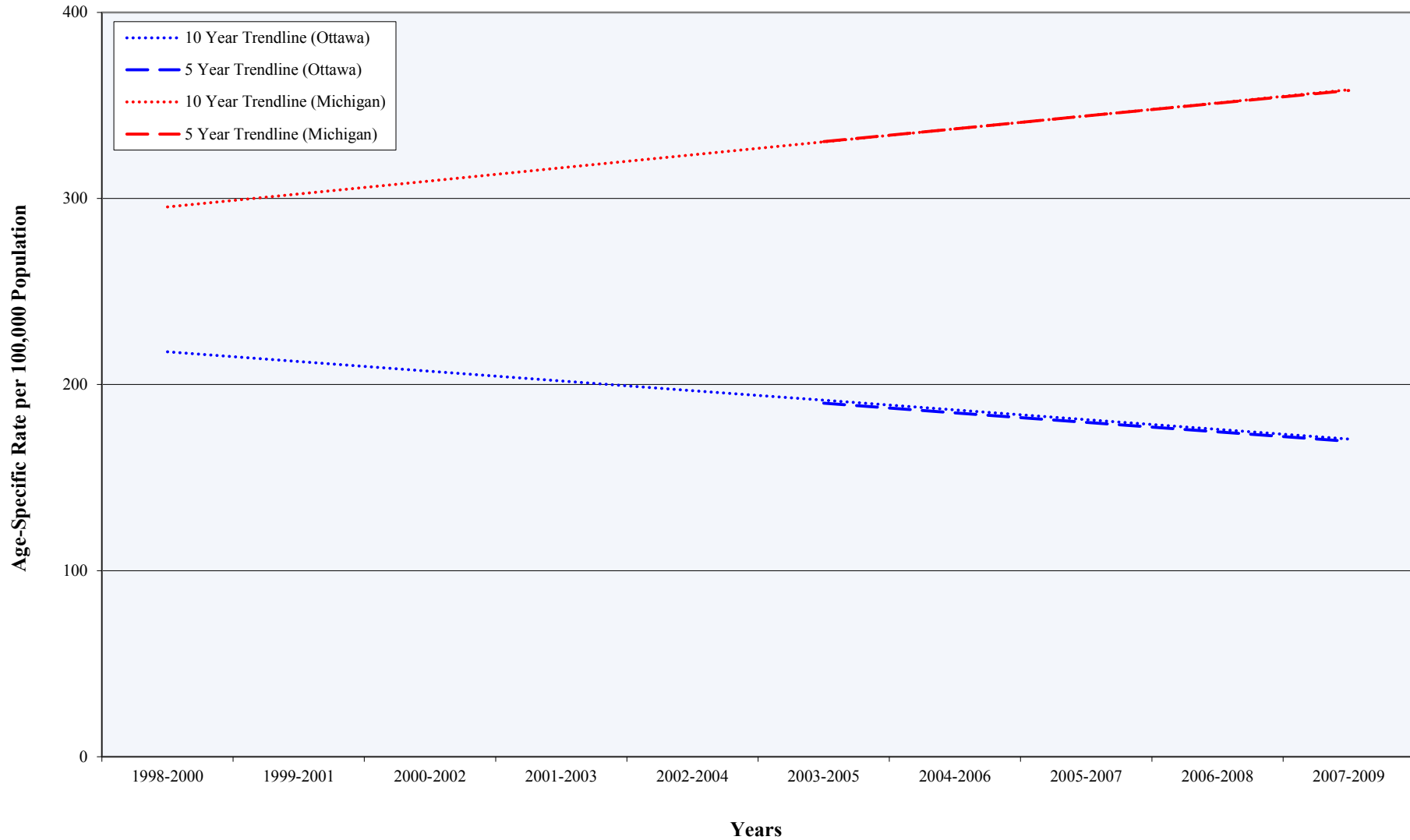


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Cellulitis is a bacterial infection of the skin

# Cellulitis\* Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

\* Cellulitis is a bacterial infection of the skin

## Chronic Obstructive Pulmonary\* (1993-2009)

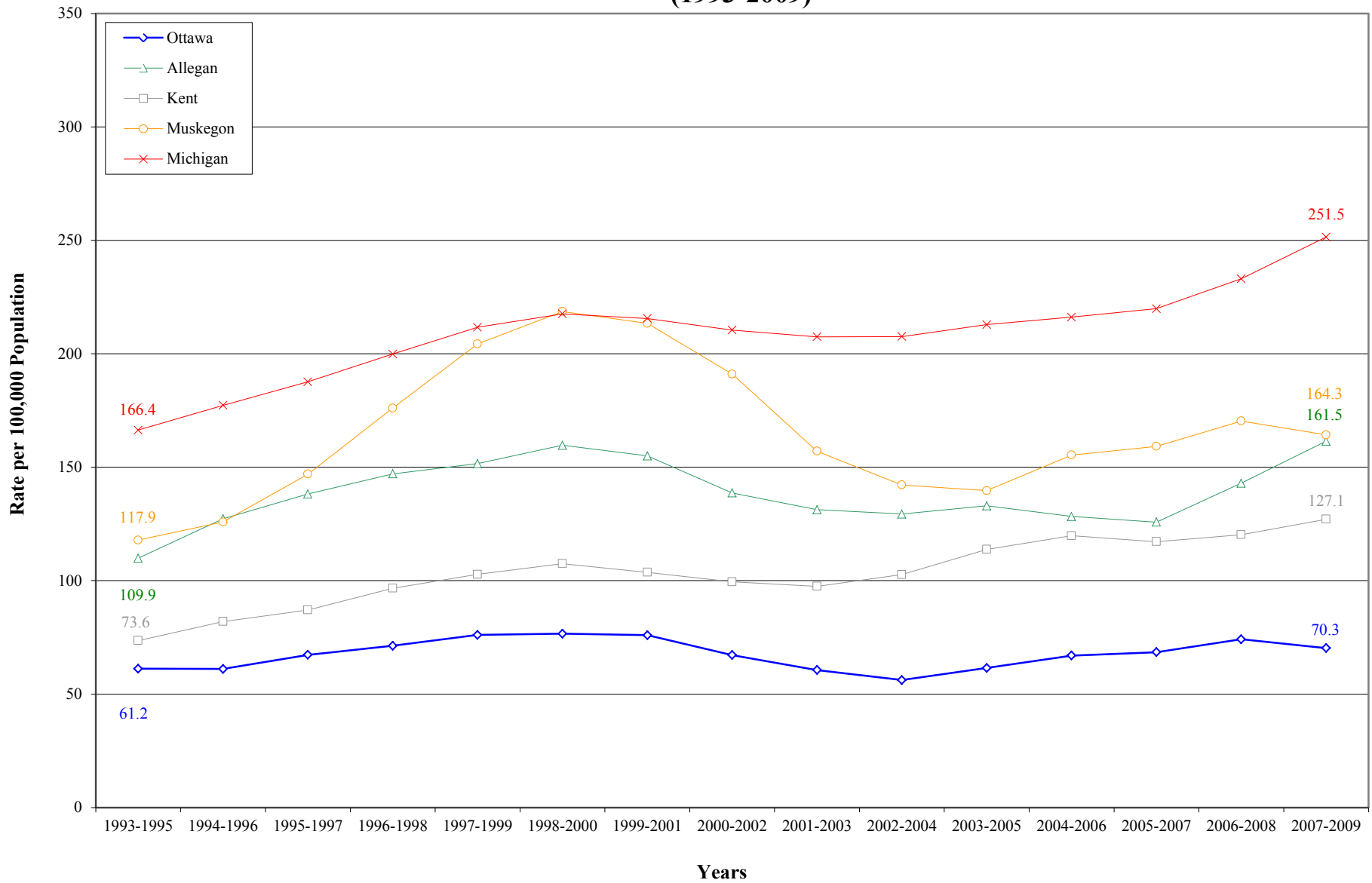
### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	61.2	109.9	73.6	117.9	166.4
1994-1996	61.1	127.3	82.0	125.9	177.3
1995-1997	67.3	138.2	87.1	147.0	187.7
1996-1998	71.3	147.1	96.7	176.1	199.9
1997-1999	76.1	151.6	102.8	204.4	211.7
1998-2000	76.6	159.7	107.5	218.7	217.6
1999-2001	76.0	155.0	103.7	213.4	215.6
2000-2002	67.2	138.7	99.5	191.1	210.5
2001-2003	60.6	131.3	97.5	157.1	207.5
2002-2004	56.2	129.4	102.7	142.2	207.6
2003-2005	61.5	133.0	113.8	139.7	212.9
2004-2006	67.0	128.3	119.8	155.4	216.2
2005-2007	68.5	125.8	117.2	159.2	219.9
2006-2008	74.2	143.0	120.3	170.4	233.1
2007-2009	70.3	161.5	127.1	164.3	251.5

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

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

## Chronic Obstructive Pulmonary\* Hospitalizations (1993-2009)

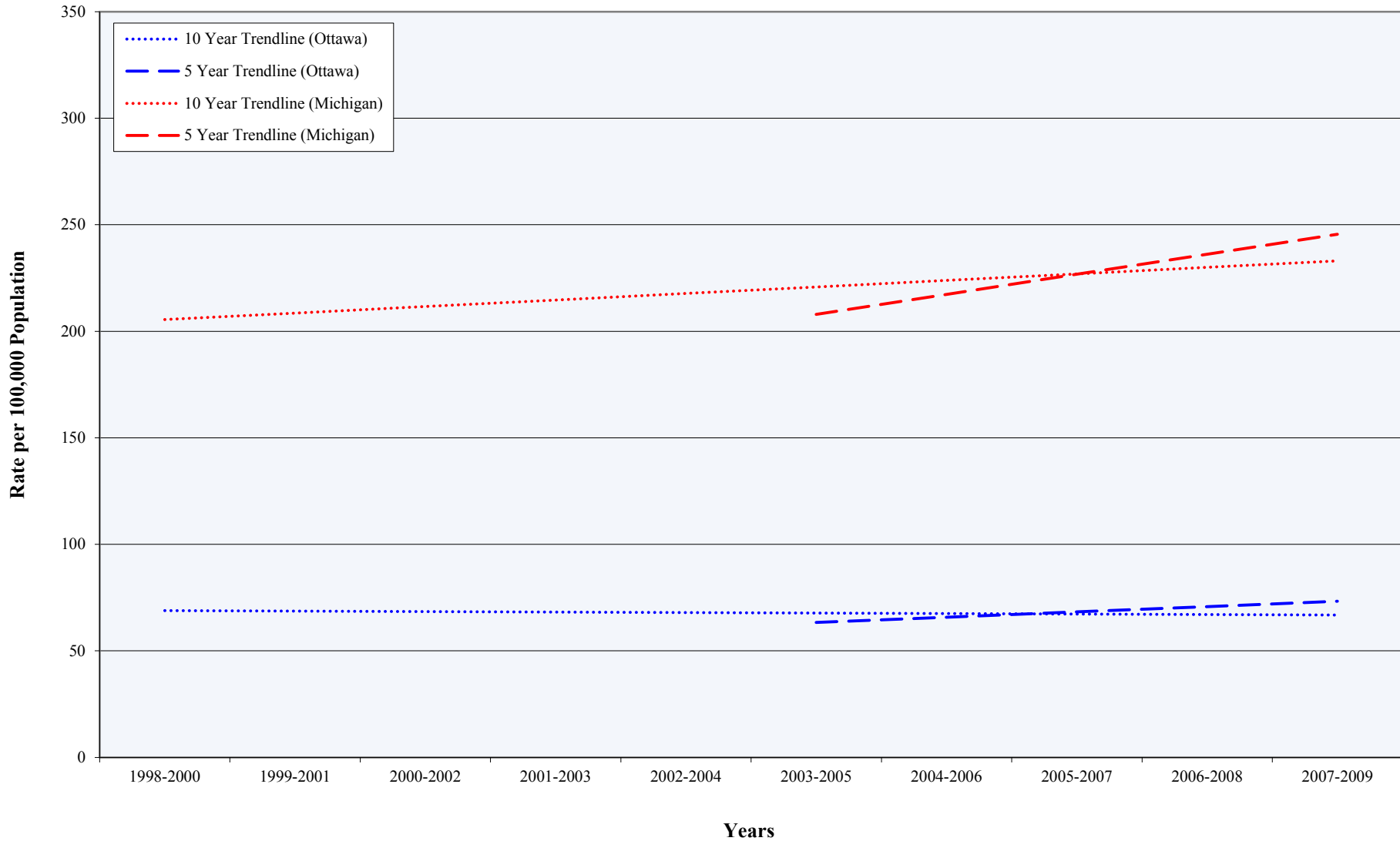


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

# Chronic Obstructive Pulmonary\* Hospitalizations

## 5 and 10 Year Trends



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

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe



# Chronic Obstructive Pulmonary\* (1993-2009)

## Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

### Hospitalizations per 100,000 Population\*\*

Year	Under Age 45					Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	***	***	6.1	***	10.9	80.6	166.0	132.2	184.3	237.9	425.6	653.1	423.2	586.8	909.6
1994-1996	***	***	5.5	11.2	12.3	78.8	196.1	139.0	204.7	251.7	422.8	745.7	491.7	588.5	957.4
1995-1997	***	***	5.7	16.6	12.0	82.4	210.8	140.5	241.7	262.3	472.3	822.1	533.9	660.8	1,010.4
1996-1998	***	***	7.0	19.2	12.6	93.0	222.3	150.9	274.1	276.3	497.0	873.5	595.1	815.6	1,074.6
1997-1999	***	***	7.1	18.0	12.4	109.1	224.6	160.4	300.3	284.0	513.0	904.7	637.4	995.3	1,149.6
1998-2000	***	***	6.0	18.6	13.6	106.4	241.5	162.2	303.0	289.3	519.8	930.3	685.5	1,093.1	1,179.8
1999-2001	***	***	4.6	16.8	12.9	94.0	226.7	149.0	291.4	280.8	537.0	912.1	681.7	1,077.4	1,171.4
2000-2002	***	***	4.2	13.5	12.1	78.1	213.1	143.8	257.4	272.6	478.7	780.0	650.3	976.1	1,137.0
2001-2003	***	***	4.6	***	11.3	73.1	196.0	143.3	200.9	262.8	423.5	752.7	622.1	839.9	1,123.9
2002-2004	***	***	4.4	***	10.4	67.2	177.4	152.6	180.8	260.6	385.1	748.3	645.7	756.0	1,120.0
2003-2005	***	***	5.9	***	10.5	66.4	164.4	164.1	184.0	266.2	425.2	802.7	708.8	715.9	1,133.6
2004-2006	***	***	7.5	***	10.6	67.8	171.7	162.3	221.0	271.0	460.5	716.3	750.6	757.2	1,132.7
2005-2007	***	***	9.5	10.1	11.2	71.1	176.2	153.4	221.3	274.3	447.3	663.3	724.0	769.1	1,130.1
2006-2008	7.1	***	8.4	10.6	11.4	76.8	206.7	158.2	230.2	290.2	467.4	700.8	734.1	822.8	1,166.8
2007-2009	7.5	***	6.9	11.3	12.0	69.3	221.2	176.7	213.0	314.6	432.2	782.9	746.7	782.5	1,216.5

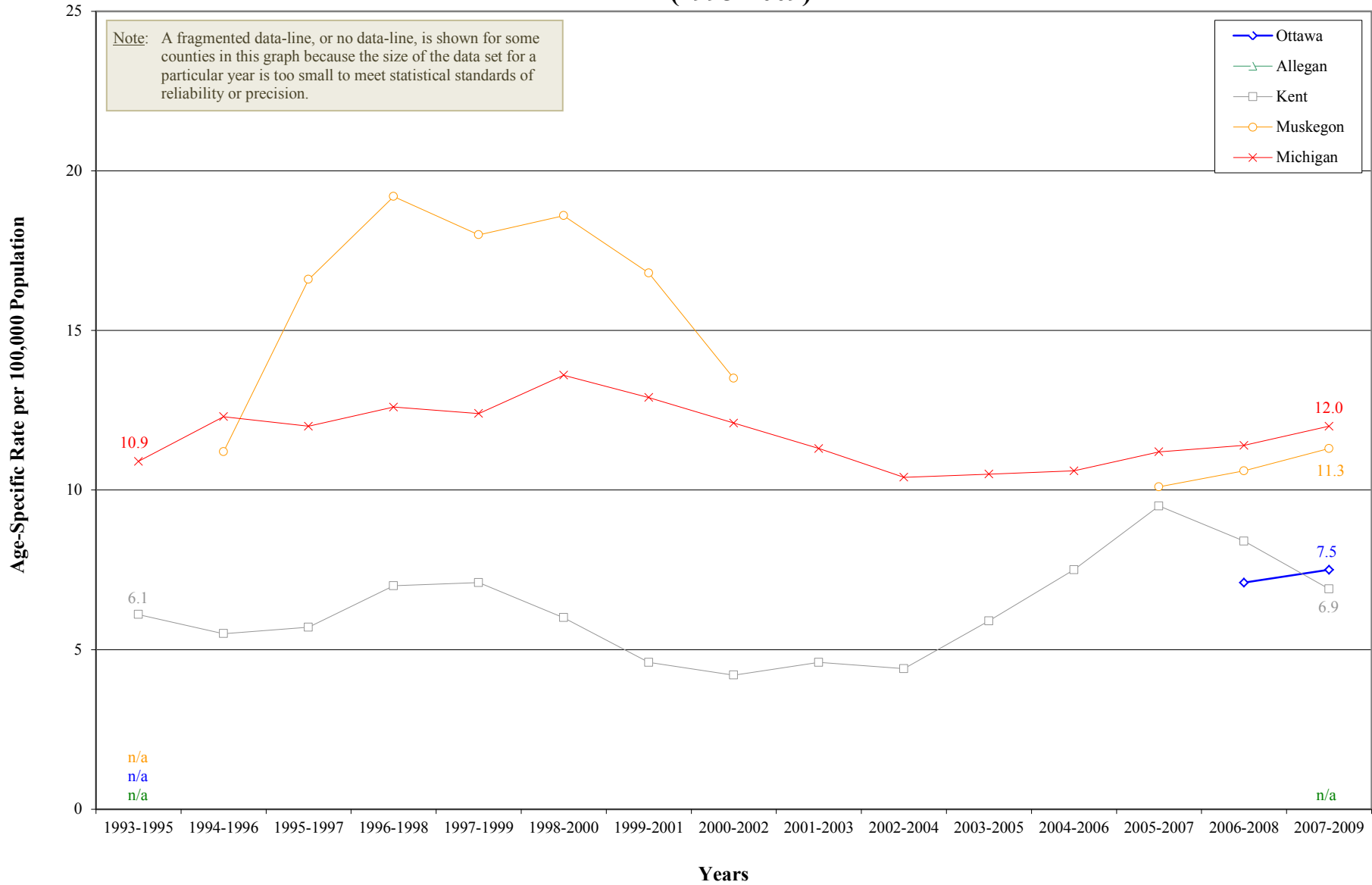
Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

\*\* Preventable hospitalization 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 preventable hospitalizations) was too small to meet statistical standards of reliability or precision

## Chronic Obstructive Pulmonary\* Hospitalizations Among Persons Under Age 45 (1993-2009)

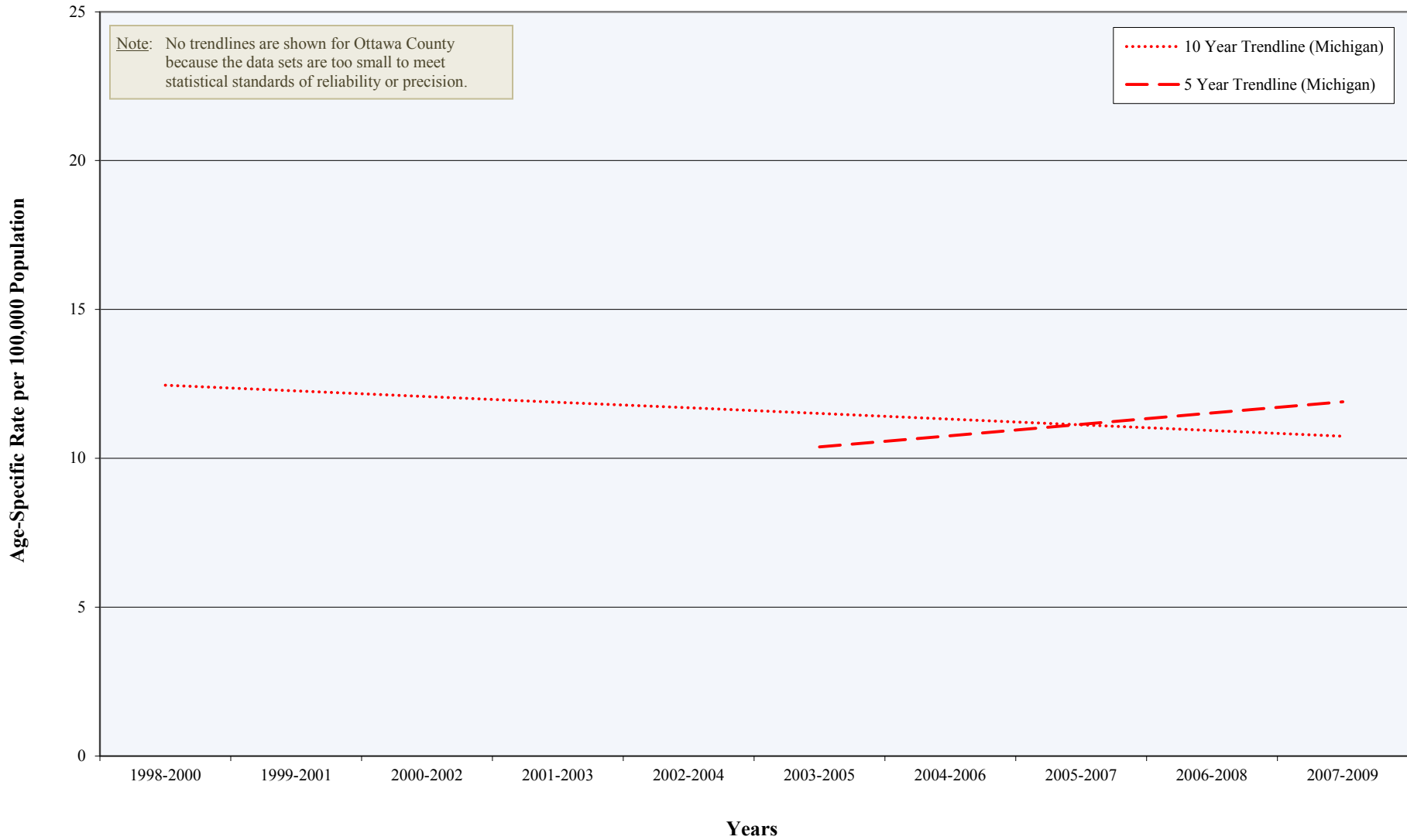


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

# Chronic Obstructive Pulmonary\* Hospitalizations Among Persons Under Age 45

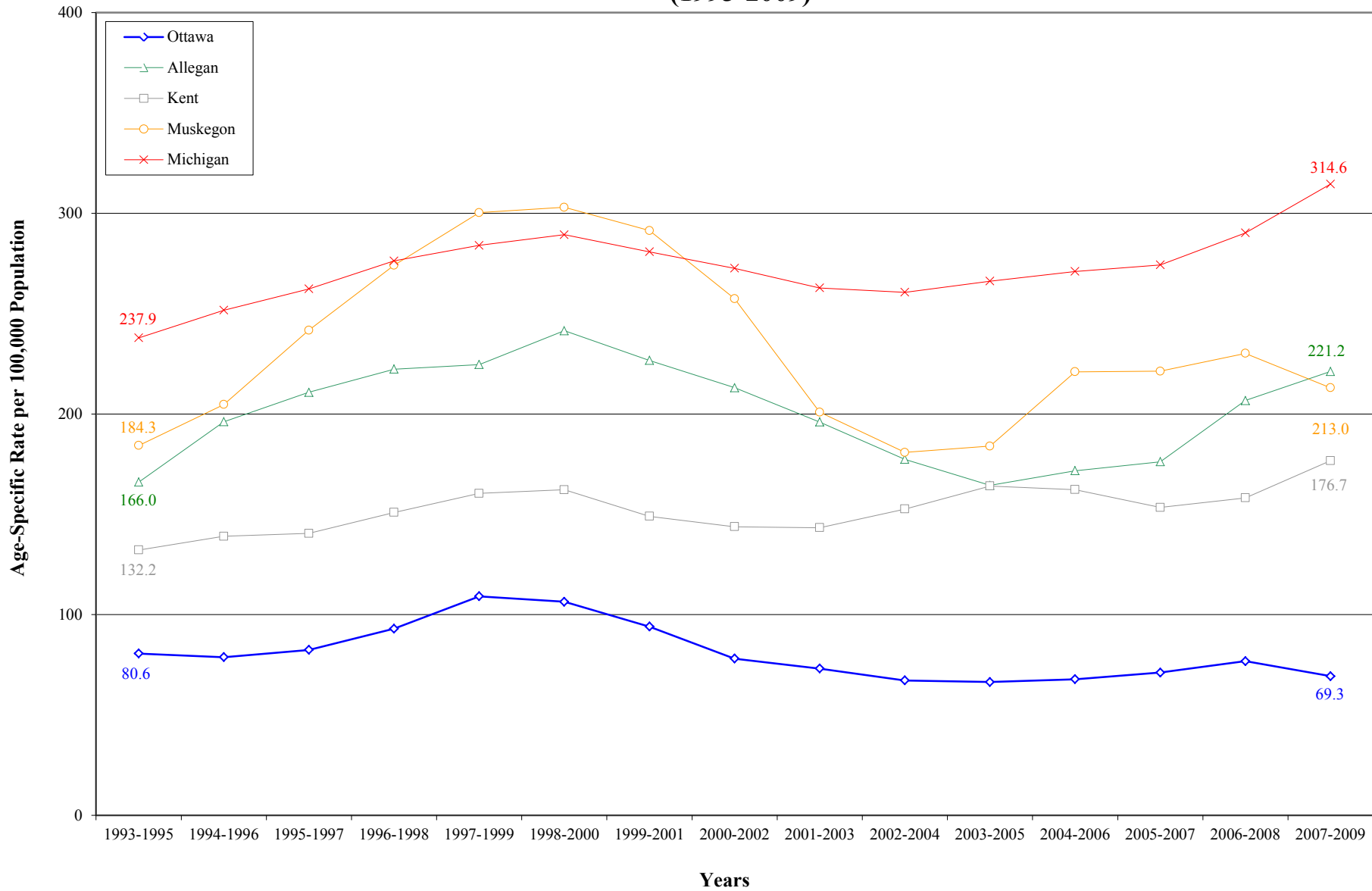
## 5 and 10 Year Trends



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

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

## Chronic Obstructive Pulmonary\* Hospitalizations Among Persons Age 45-64 (1993-2009)

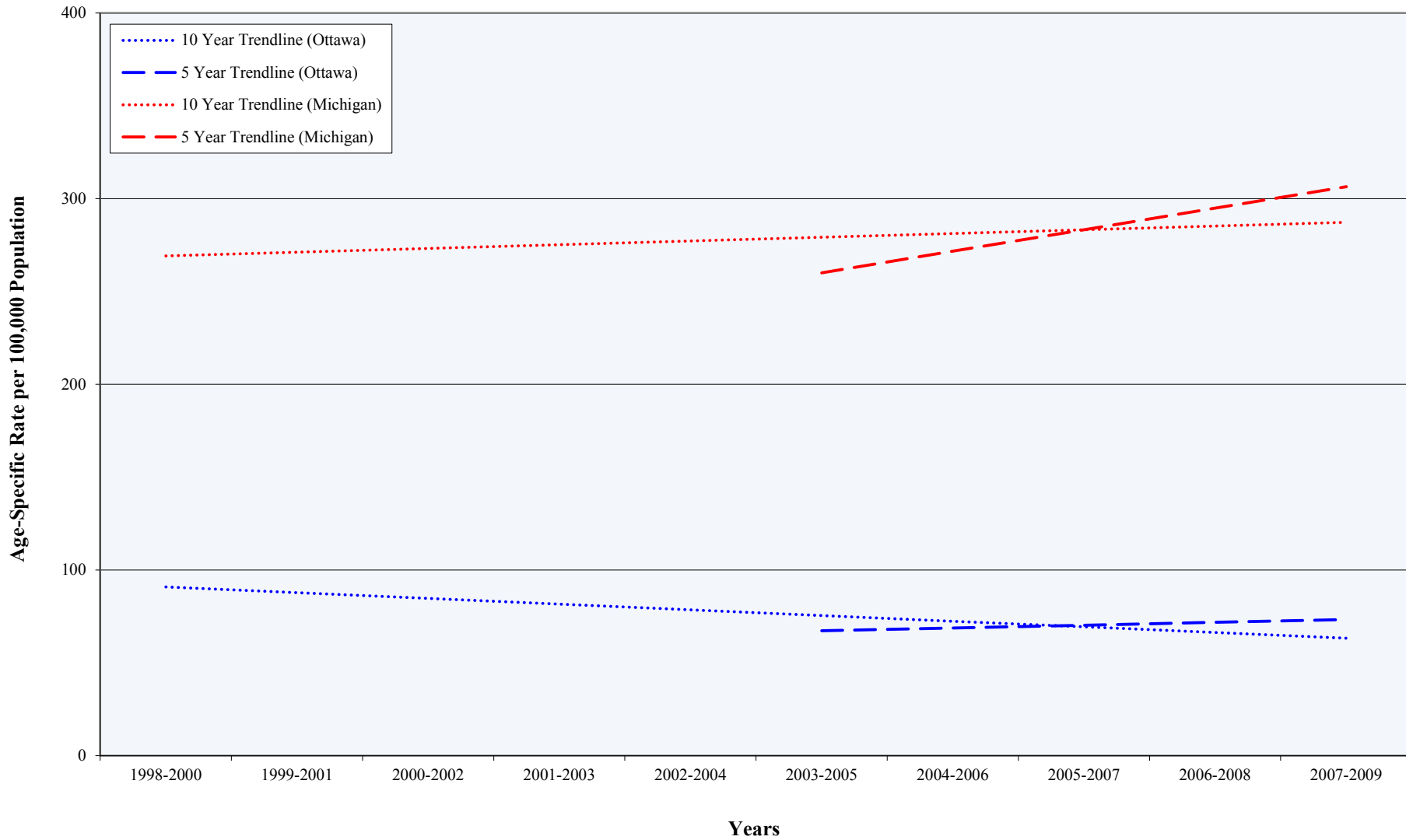


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

# Chronic Obstructive Pulmonary\* Hospitalizations Among Persons Age 45-64

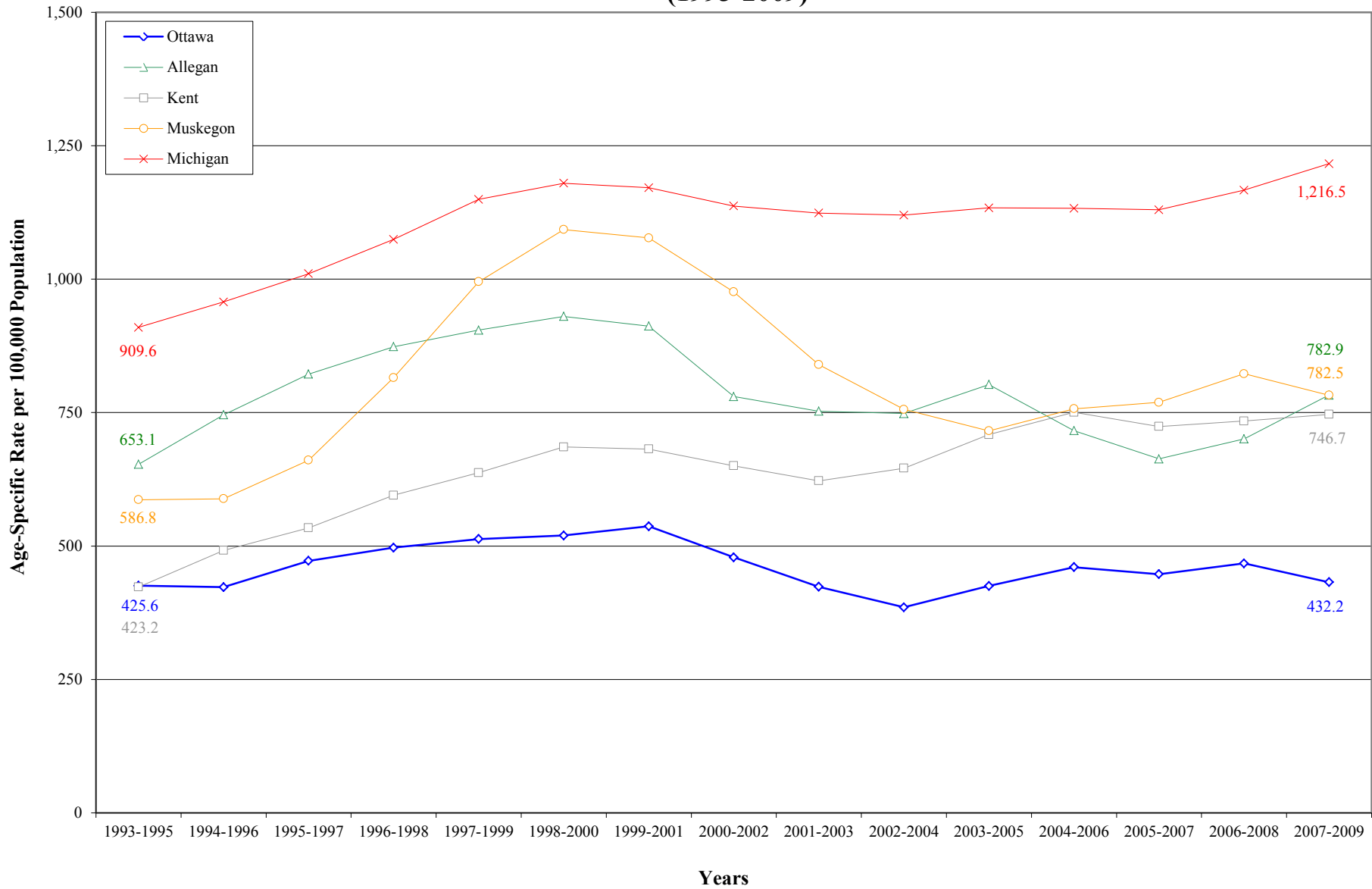
## 5 and 10 Year Trends



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

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

## Chronic Obstructive Pulmonary\* Hospitalizations Among Persons Age 65 and Older (1993-2009)

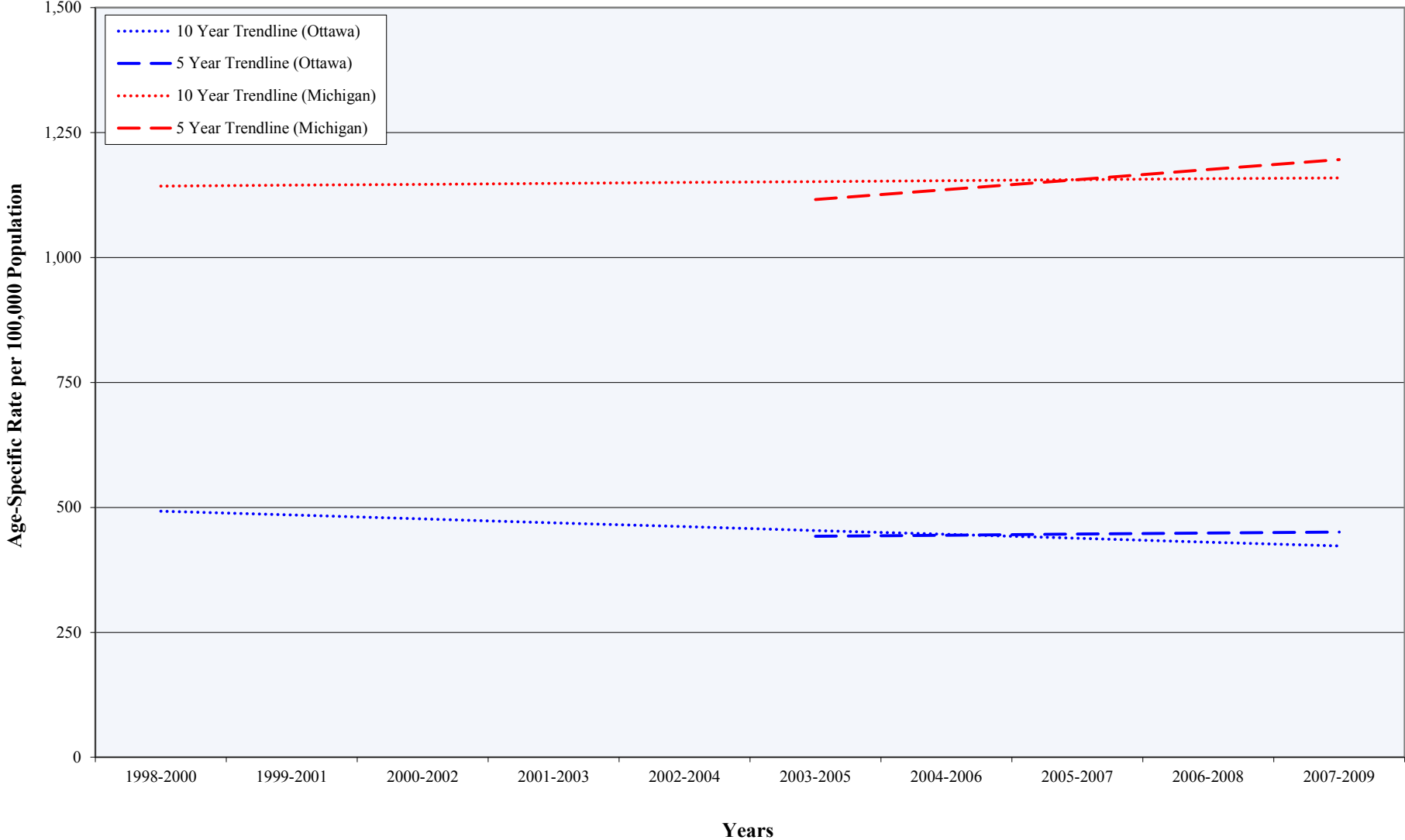


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

# Chronic Obstructive Pulmonary\* Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

\* Chronic Obstructive Pulmonary is a lung disease that makes it difficult to breathe

## Diabetes (1993-2009)

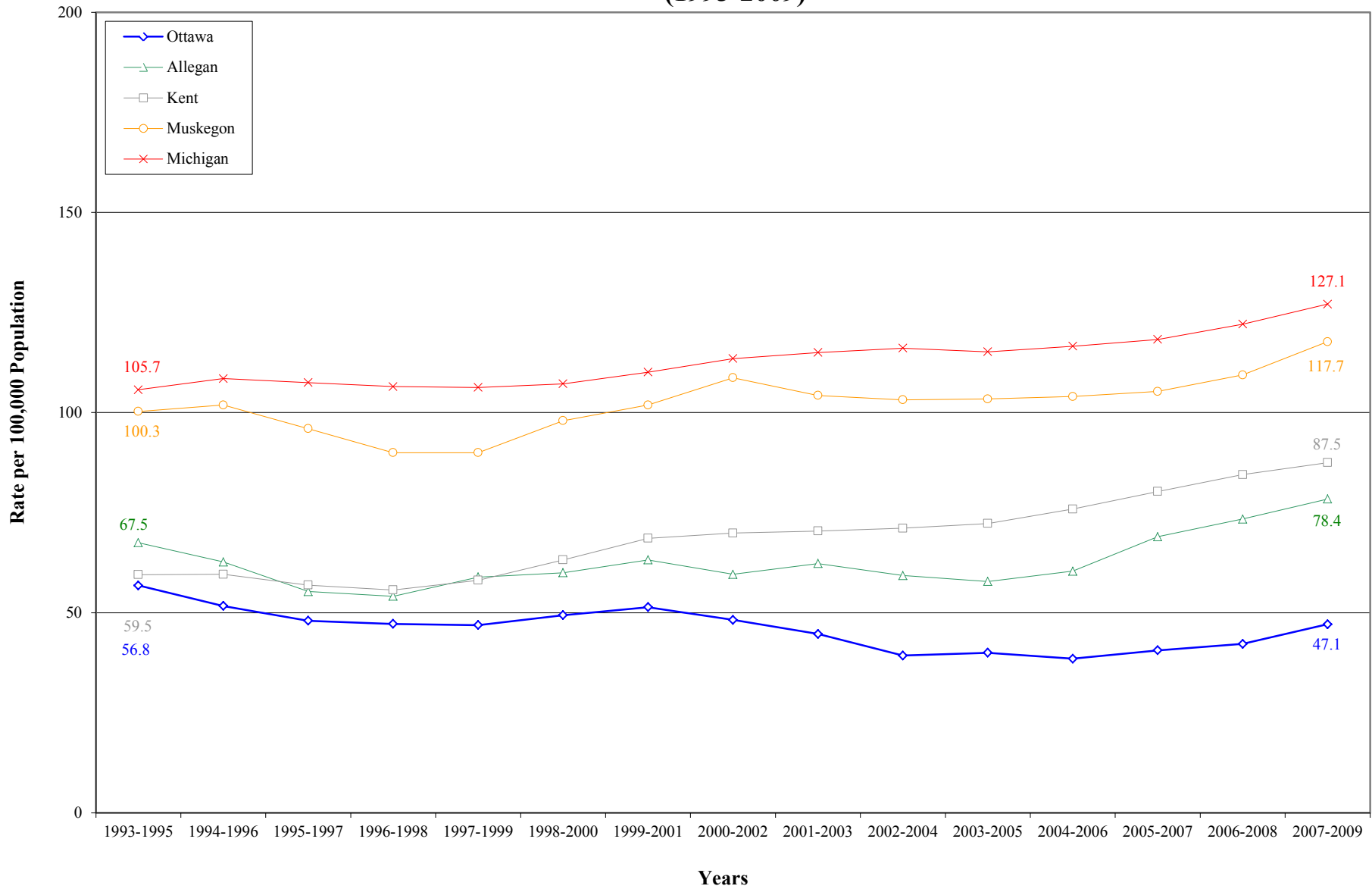
### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	56.8	67.5	59.5	100.3	105.7
1994-1996	51.7	62.7	59.6	101.9	108.5
1995-1997	48.0	55.3	56.9	96.0	107.5
1996-1998	47.2	54.1	55.7	90.0	106.5
1997-1999	46.9	58.9	58.1	90.0	106.3
1998-2000	49.4	60.0	63.2	98.0	107.2
1999-2001	51.4	63.2	68.6	101.9	110.1
2000-2002	48.2	59.6	69.9	108.7	113.5
2001-2003	44.7	62.3	70.4	104.3	115.0
2002-2004	39.3	59.3	71.1	103.2	116.1
2003-2005	40.0	57.8	72.3	103.4	115.2
2004-2006	38.5	60.4	75.9	104.0	116.6
2005-2007	40.6	69.0	80.3	105.3	118.3
2006-2008	42.2	73.4	84.5	109.4	122.1
2007-2009	47.1	78.4	87.5	117.7	127.1

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



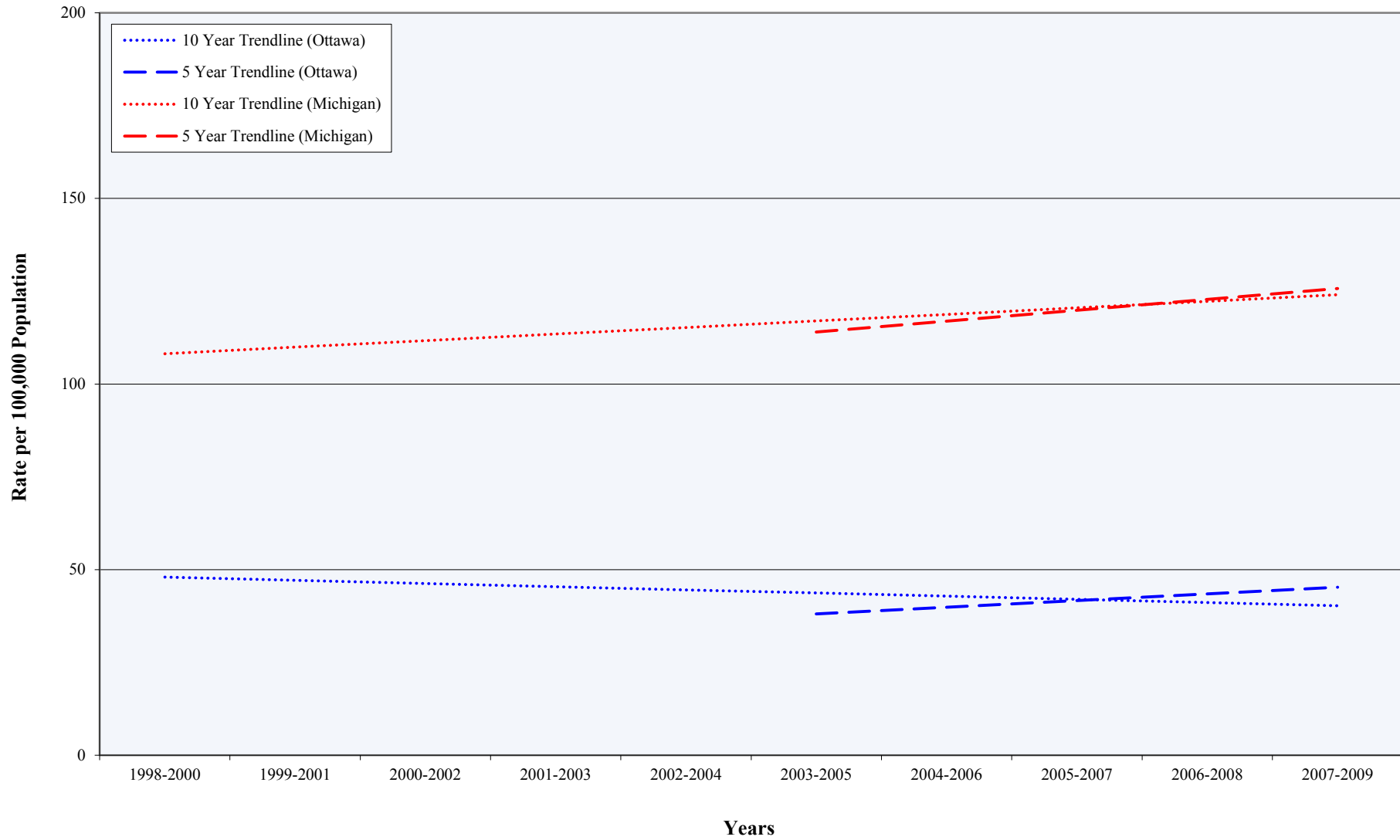
## Diabetes Hospitalizations (1993-2009)



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

# Diabetes Hospitalizations

## 5 and 10 Year Trends



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

## Diabetes (1993-2009)

### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

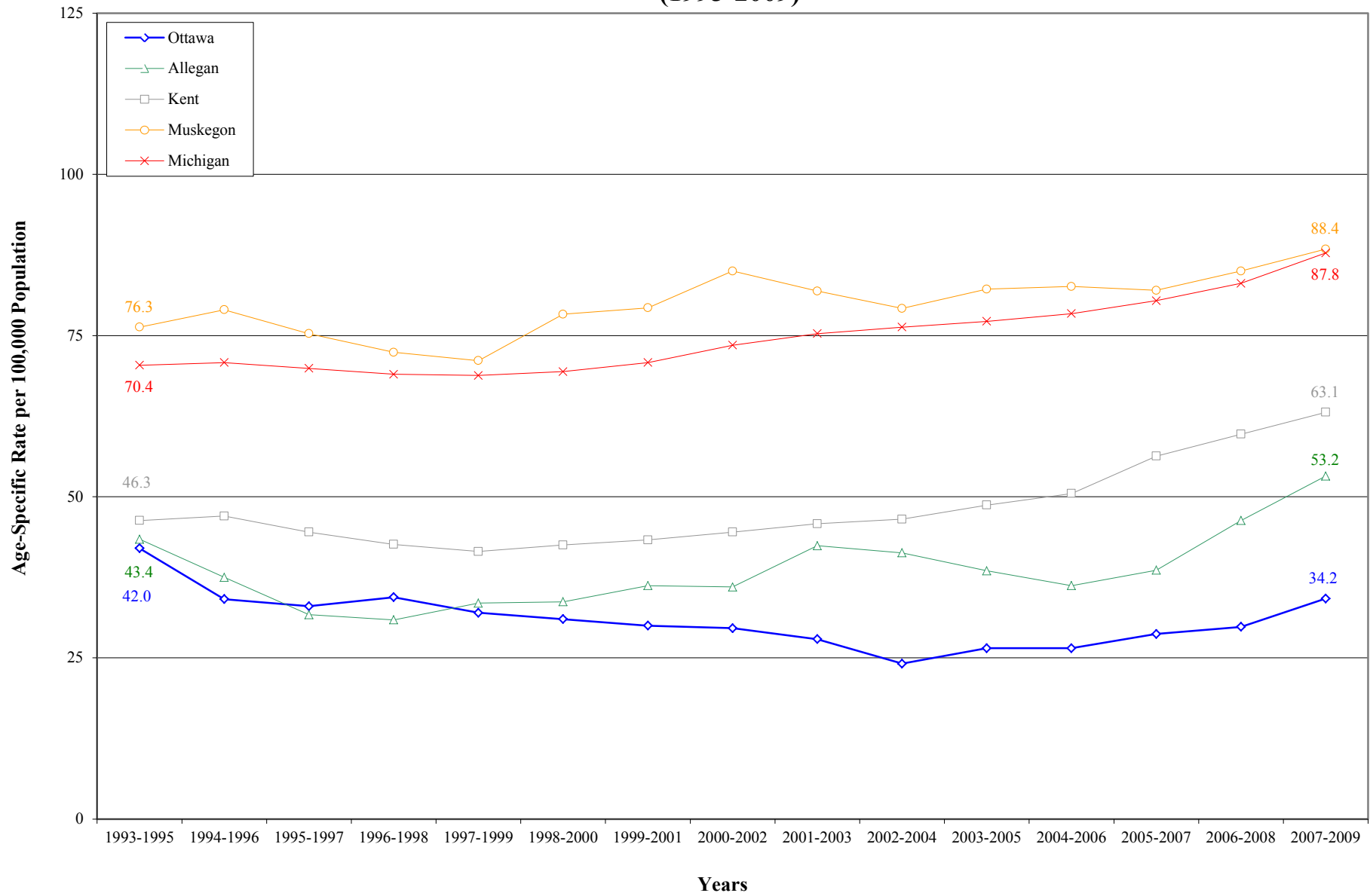
#### Hospitalizations per 100,000 Population\*

Year	Under Age 45					Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	42.0	43.4	46.3	76.3	70.4	65.9	96.4	70.0	140.8	142.5	143.0	165.0	129.8	163.4	241.4
1994-1996	34.1	37.5	47.0	79.0	70.8	58.3	83.1	69.2	141.0	144.7	162.2	180.5	126.3	159.8	255.7
1995-1997	33.0	31.7	44.5	75.3	69.9	54.1	60.7	65.8	128.4	142.5	140.4	187.9	123.3	151.6	254.0
1996-1998	34.4	30.9	42.6	72.4	69.0	42.1	59.4	70.3	114.5	140.1	144.7	184.2	117.1	141.0	252.2
1997-1999	32.0	33.5	41.5	71.1	68.8	53.3	76.6	77.4	105.3	140.4	137.4	179.7	133.7	161.0	248.7
1998-2000	31.0	33.7	42.5	78.3	69.4	63.5	85.5	88.0	113.4	142.2	147.7	169.5	155.3	172.1	246.5
1999-2001	30.0	36.2	43.3	79.3	70.8	79.9	90.7	102.2	113.3	147.0	141.6	170.7	173.9	196.9	250.0
2000-2002	29.6	36.0	44.5	85.0	73.5	72.4	80.2	103.8	121.4	150.3	125.9	159.5	172.6	206.6	254.1
2001-2003	27.9	42.4	45.8	81.9	75.3	62.1	70.7	103.1	119.4	149.2	121.2	163.5	168.1	189.7	256.2
2002-2004	24.1	41.3	46.5	79.2	76.3	51.0	66.5	99.0	128.4	149.1	114.7	150.0	174.6	176.8	255.7
2003-2005	26.5	38.5	48.7	82.2	77.2	48.7	67.5	96.8	129.1	144.6	108.5	146.6	173.4	160.5	249.0
2004-2006	26.5	36.2	50.5	82.6	78.4	47.6	83.9	102.5	123.1	144.6	94.9	144.1	179.7	173.8	250.5
2005-2007	28.7	38.6	56.3	82.0	80.4	47.6	105.3	107.3	130.4	144.8	98.8	152.9	172.1	168.9	248.8
2006-2008	29.8	46.3	59.7	85.0	83.1	45.3	104.8	109.9	148.2	148.4	109.3	146.6	181.6	148.8	252.7
2007-2009	34.2	53.2	63.1	88.4	87.8	48.2	99.5	111.8	165.8	152.9	118.3	157.9	180.9	157.2	253.6

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

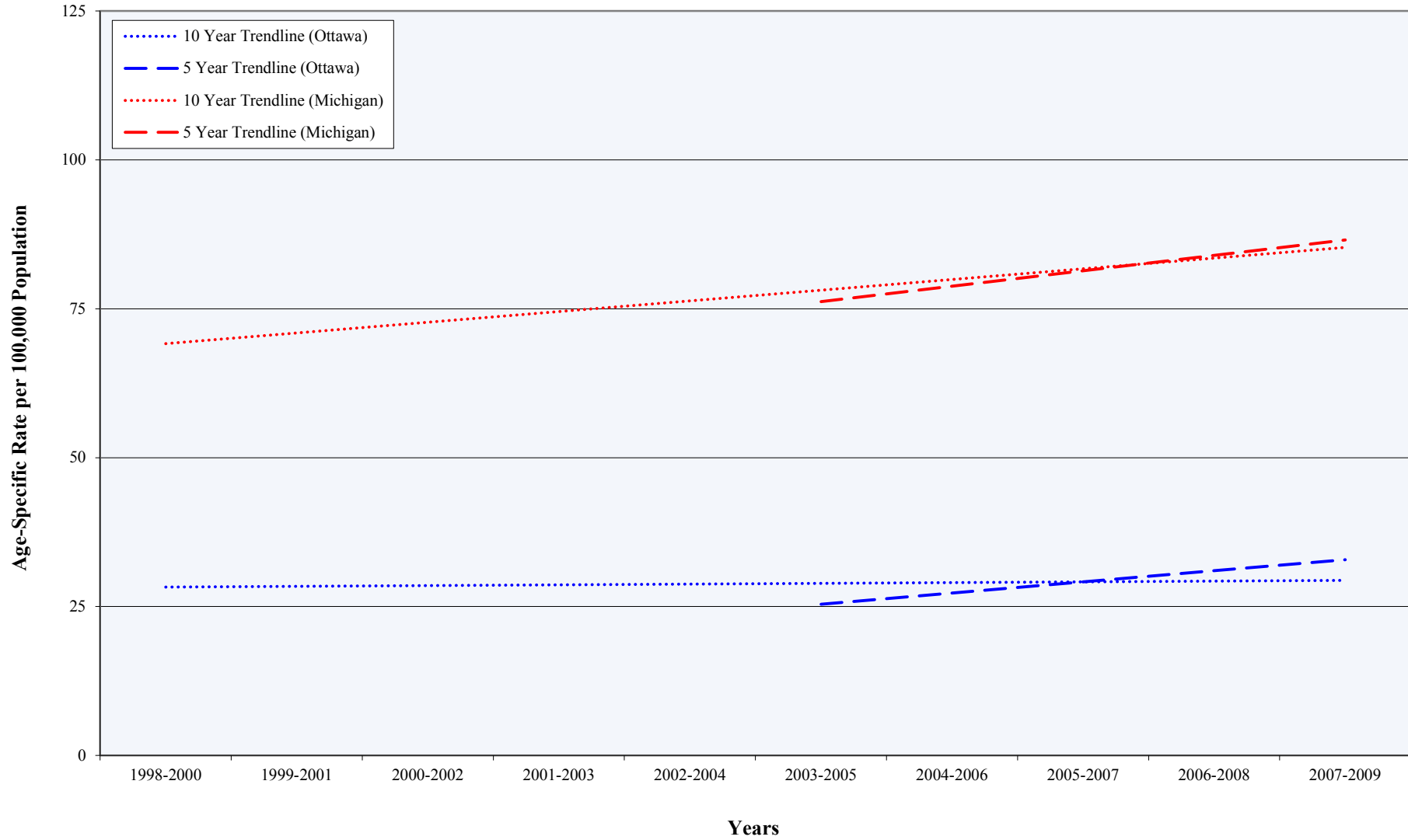
## Diabetes Hospitalizations Among Persons Under Age 45 (1993-2009)



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

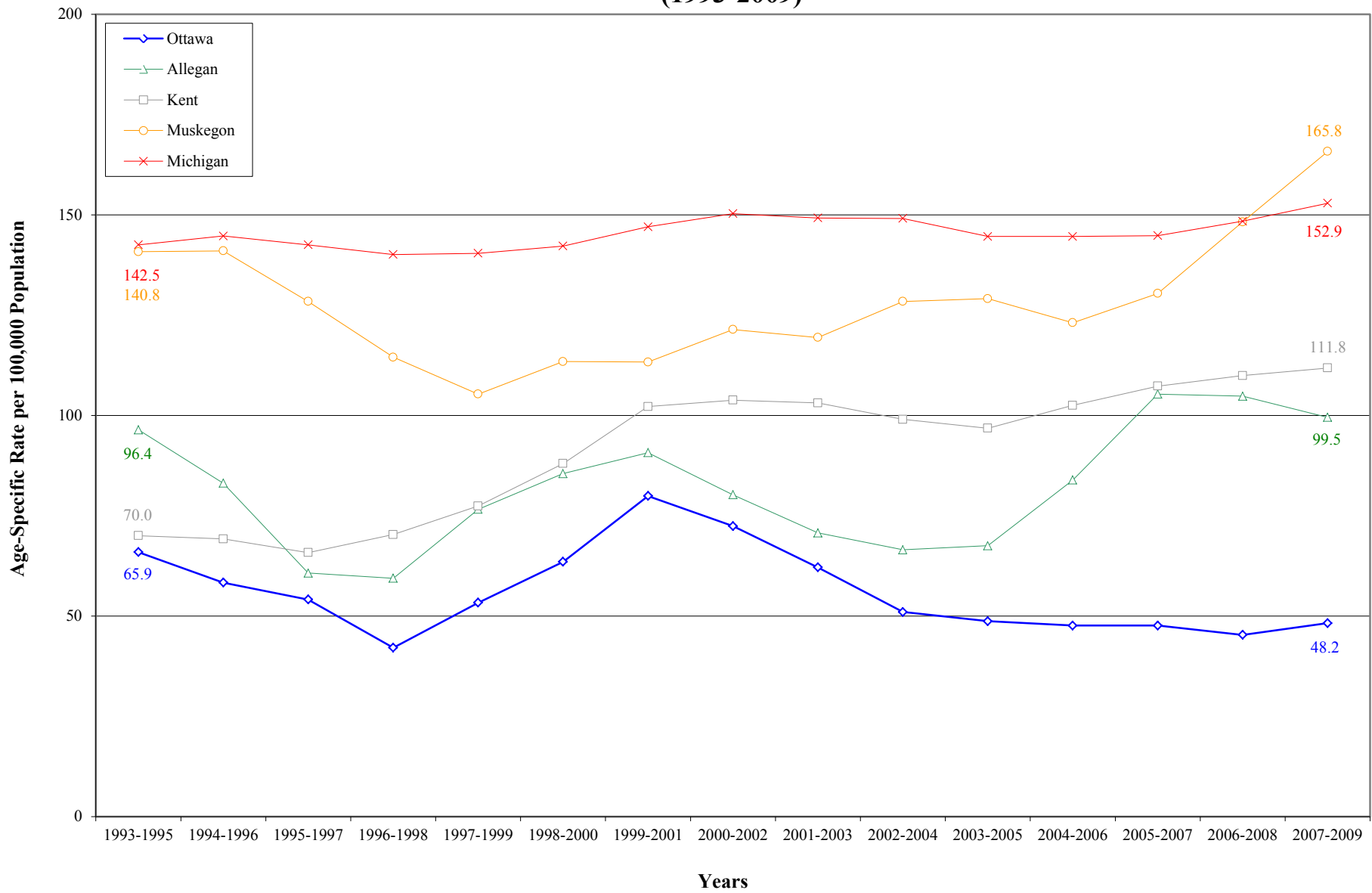
# Diabetes Hospitalizations Among Persons Under Age 45

## 5 and 10 Year Trends



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

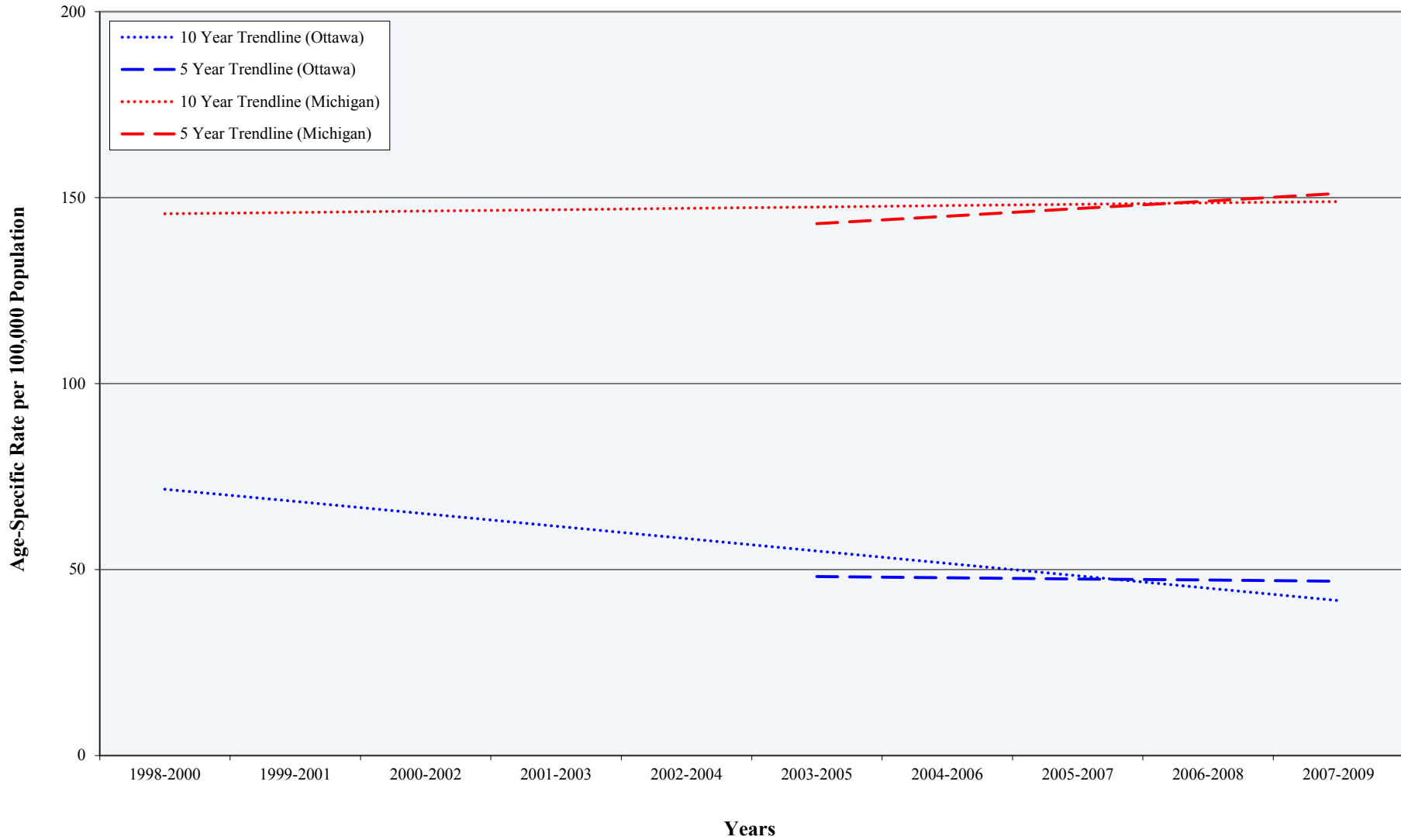
## Diabetes Hospitalizations Among Persons Age 45-64 (1993-2009)



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

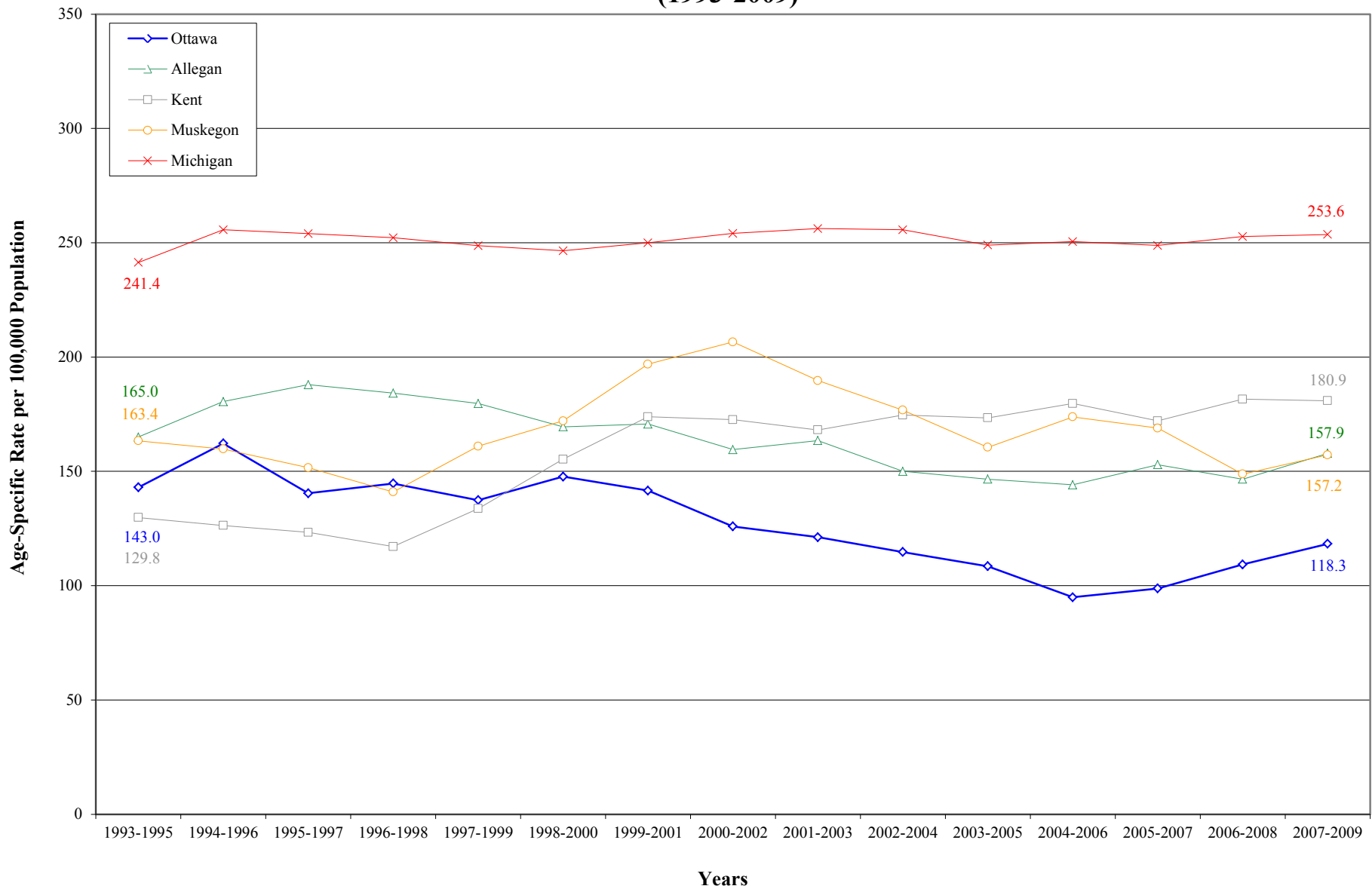
# Diabetes Hospitalizations Among Persons Age 45-64

## 5 and 10 Year Trends



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

## Diabetes Hospitalizations Among Persons Age 65 and Older (1993-2009)

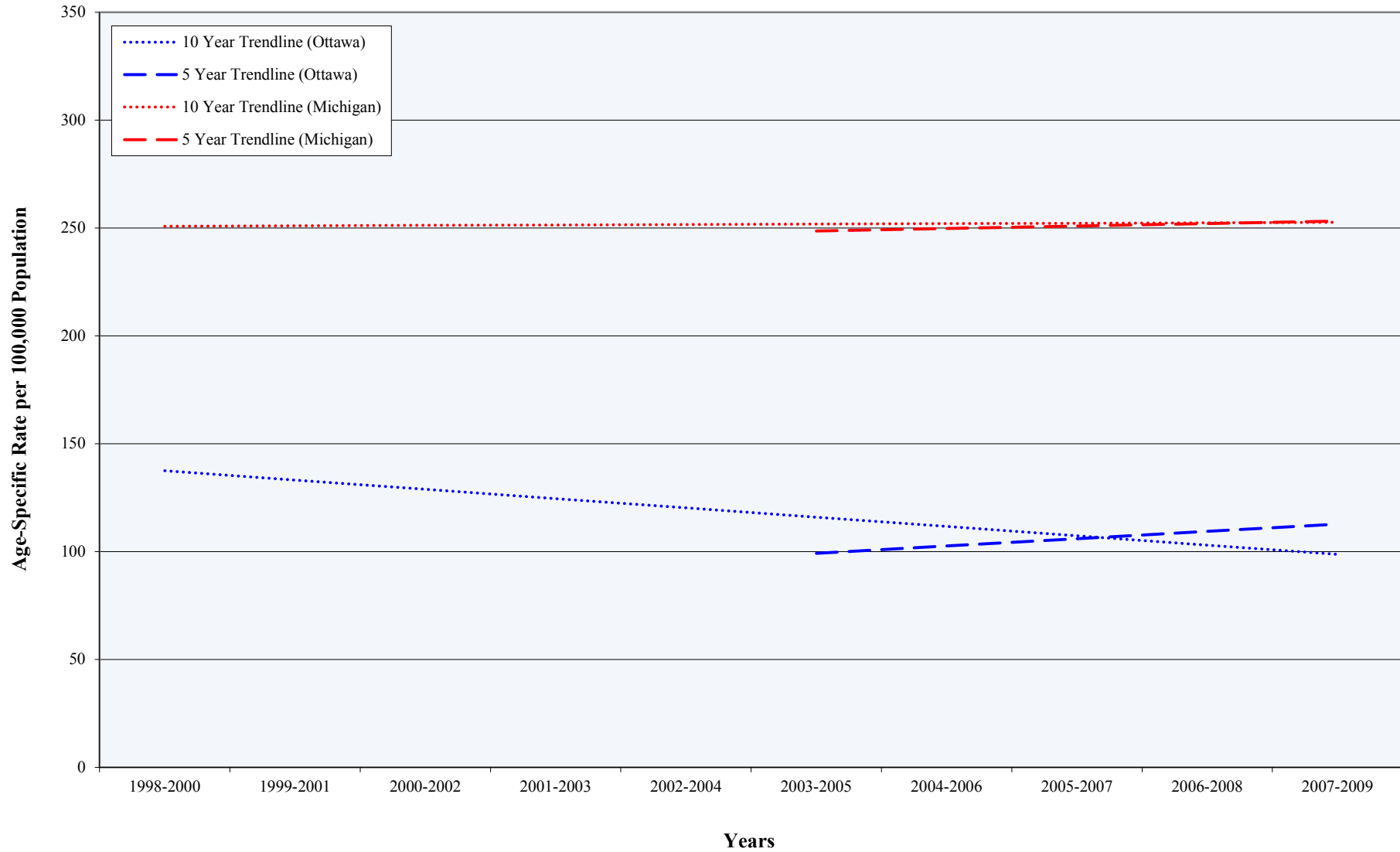


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics



# Diabetes Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

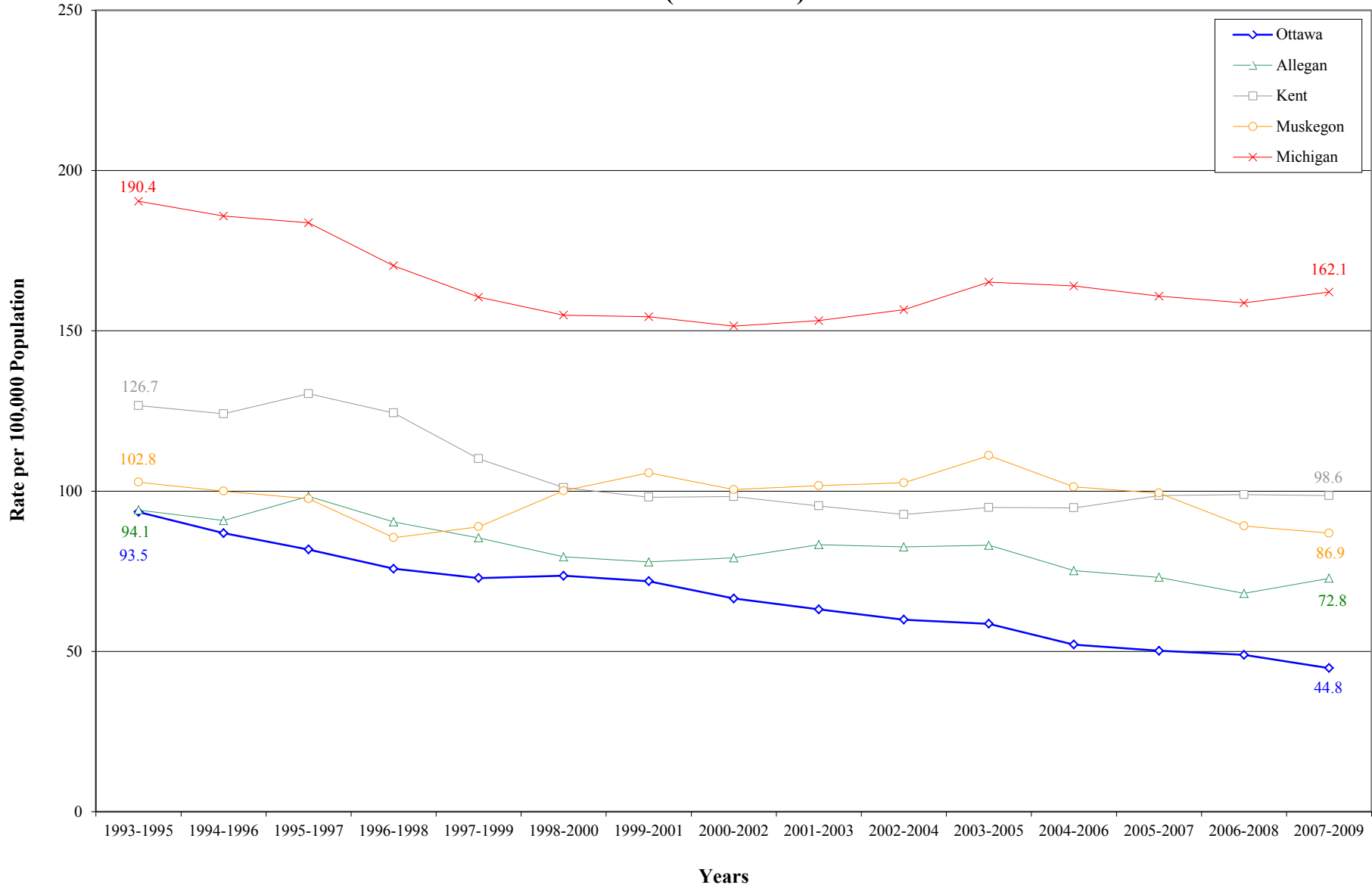
## Asthma (1993-2009)

### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	93.5	94.1	126.7	102.8	190.4
1994-1996	86.9	90.8	124.1	100.0	185.8
1995-1997	81.8	98.4	130.4	97.6	183.7
1996-1998	75.8	90.4	124.4	85.5	170.3
1997-1999	72.9	85.4	110.1	88.9	160.5
1998-2000	73.6	79.5	101.1	100.1	154.9
1999-2001	71.9	77.9	98.1	105.7	154.4
2000-2002	66.5	79.2	98.3	100.5	151.5
2001-2003	63.1	83.3	95.4	101.7	153.2
2002-2004	59.9	82.6	92.7	102.6	156.6
2003-2005	58.6	83.1	94.9	111.1	165.2
2004-2006	52.1	75.2	94.8	101.3	164.0
2005-2007	50.2	73.1	98.6	99.4	160.8
2006-2008	48.9	68.1	98.9	89.1	158.7
2007-2009	44.8	72.8	98.6	86.9	162.1

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

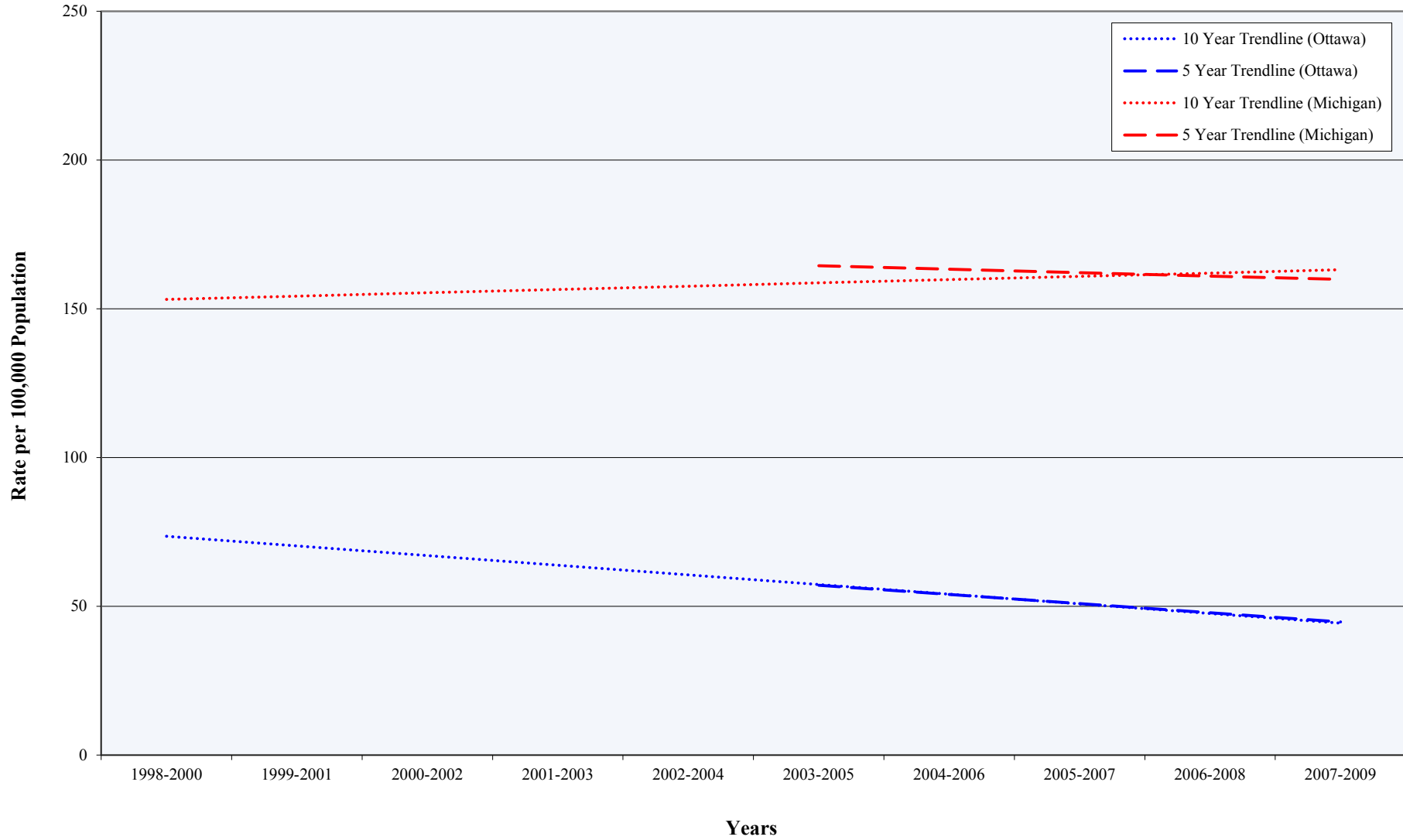
## Asthma Hospitalizations (1993-2009)



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

# Asthma Hospitalizations

## 5 and 10 Year Trends



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

## Asthma (1993-2009)

### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population*									
	Under Age 18					Age 18-44				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	124.3	116.1	193.6	176.4	296.4	67.7	54.6	88.7	70.8	118.8
1994-1996	109.9	113.4	188.3	173.9	292.9	68.5	65.1	86.7	72.9	119.0
1995-1997	104.4	127.8	203.1	182.0	304.5	59.3	72.3	92.5	69.2	119.4
1996-1998	92.1	125.3	183.6	159.1	270.1	53.4	71.8	91.9	53.7	115.9
1997-1999	84.6	115.2	156.7	154.1	241.5	47.5	58.6	83.8	61.5	112.3
1998-2000	94.4	99.7	137.1	162.3	228.2	44.9	52.4	80.1	78.6	109.9
1999-2001	94.1	88.1	135.4	168.0	234.8	39.2	46.8	75.5	88.6	105.5
2000-2002	88.4	83.8	132.2	157.0	232.9	33.9	53.4	73.7	81.6	101.1
2001-2003	77.8	81.2	125.4	144.4	224.9	29.5	74.4	66.1	83.1	100.3
2002-2004	73.2	87.1	118.1	149.0	222.0	27.3	73.1	59.6	82.8	98.2
2003-2005	75.4	85.3	123.0	179.3	188.7	27.1	63.3	58.6	82.7	100.8
2004-2006	74.1	78.9	115.7	184.7	175.1	27.0	44.9	62.4	69.1	99.1
2005-2007	75.6	59.3	121.6	190.4	161.6	28.7	50.4	66.4	61.9	98.2
2006-2008	67.9	46.1	114.5	161.8	185.9	27.2	59.2	64.3	57.6	95.2
2007-2009	55.0	33.6	111.9	150.2	179.5	22.5	71.0	58.4	68.5	95.7

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

## Asthma (1993-2009)

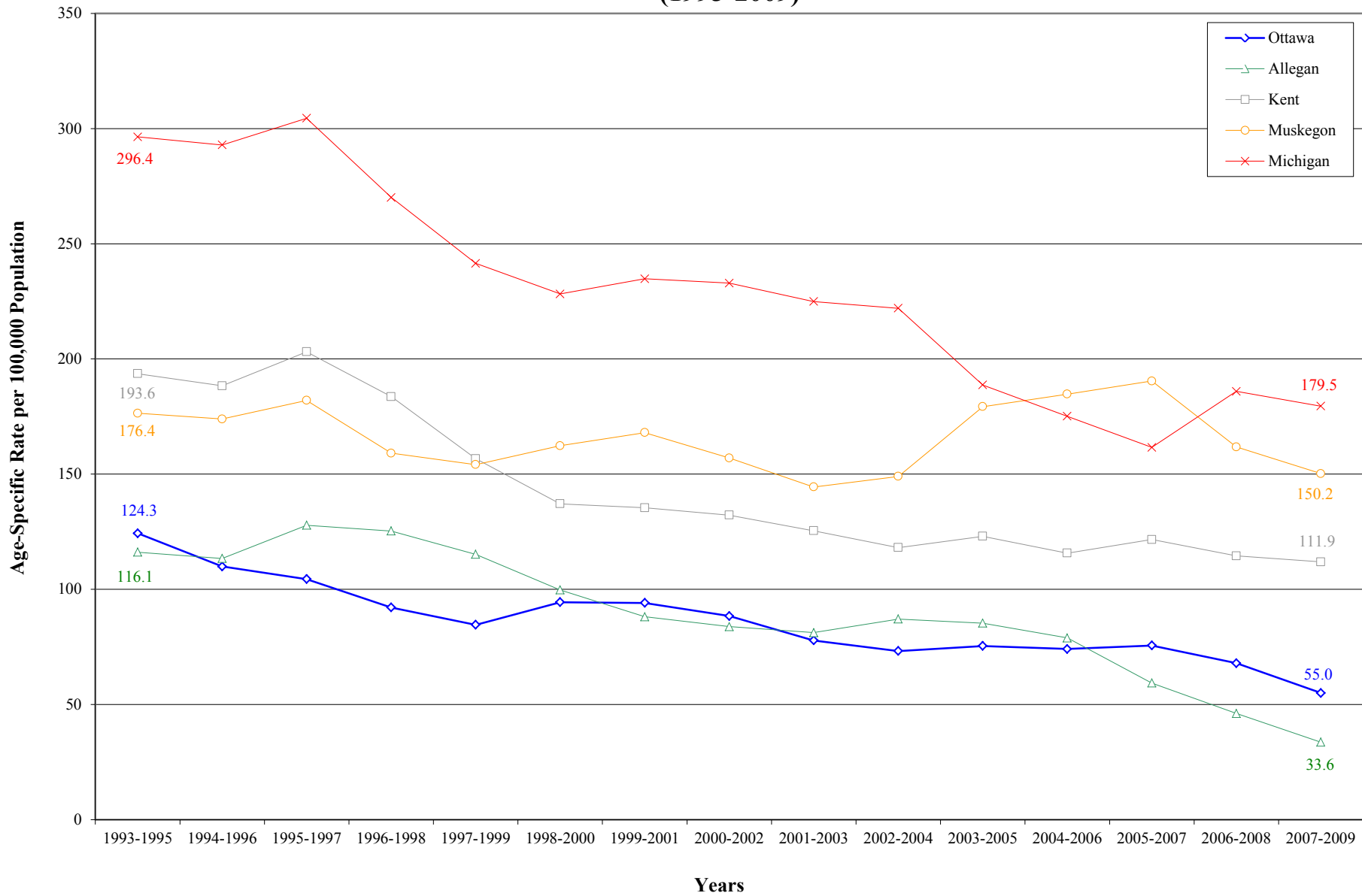
### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population*									
	Age 45-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	61.2	84.9	106.0	74.1	173.9	167.4	189.2	136.2	84.2	230.2
1994-1996	66.0	71.9	104.4	75.7	168.2	133.6	154.2	135.5	60.9	207.2
1995-1997	65.2	68.1	108.1	70.6	155.3	138.5	167.3	126.1	44.0	184.5
1996-1998	70.9	42.0	110.4	71.3	149.1	128.8	152.0	121.1	45.5	170.9
1997-1999	79.9	47.8	101.2	75.6	147.7	129.4	171.1	105.8	53.2	166.5
1998-2000	83.6	59.9	95.7	76.1	145.9	112.8	157.6	98.9	71.6	161.0
1999-2001	83.6	74.6	87.4	74.6	144.3	119.5	165.0	108.6	76.3	160.2
2000-2002	72.5	86.6	87.6	72.2	139.2	125.5	140.2	124.8	85.7	163.3
2001-2003	73.6	82.2	90.0	80.9	146.9	135.5	121.8	141.0	103.9	182.0
2002-2004	66.2	76.9	98.1	75.0	156.7	139.3	117.0	141.7	115.8	203.2
2003-2005	64.5	79.4	104.7	76.9	169.4	124.9	151.5	138.1	118.1	225.0
2004-2006	47.8	74.9	106.4	67.8	172.9	102.5	167.6	137.0	89.1	238.7
2005-2007	40.1	76.4	104.0	70.3	171.8	90.6	179.1	146.2	81.4	242.1
2006-2008	40.3	66.7	109.9	62.4	175.6	99.7	154.4	159.7	89.7	252.8
2007-2009	40.3	77.2	121.8	54.0	187.3	106.8	157.9	155.8	84.4	260.0

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

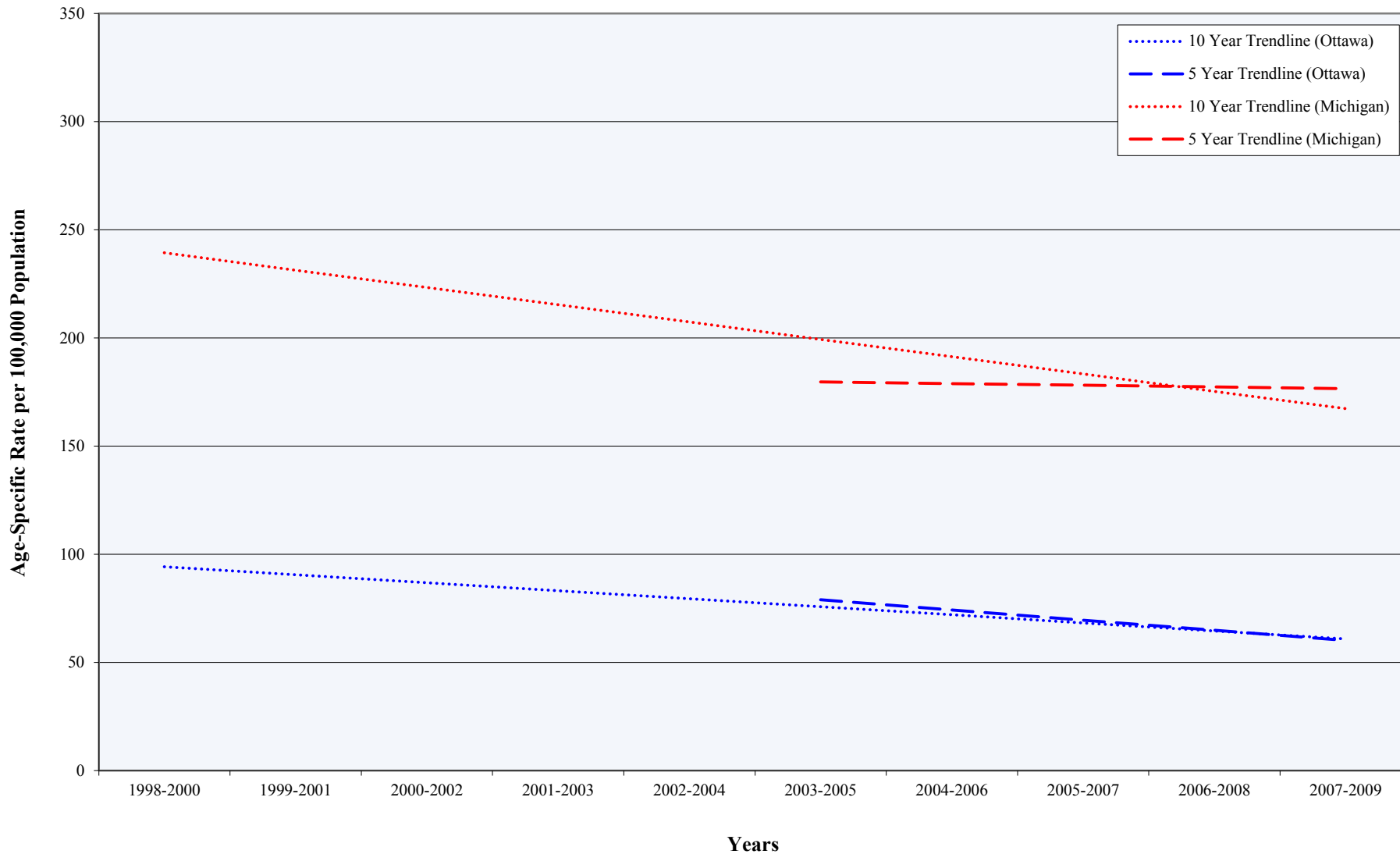
## Asthma Hospitalizations Among Persons Under Age 18 (1993-2009)



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

# Asthma Hospitalizations Among Persons Under Age 18

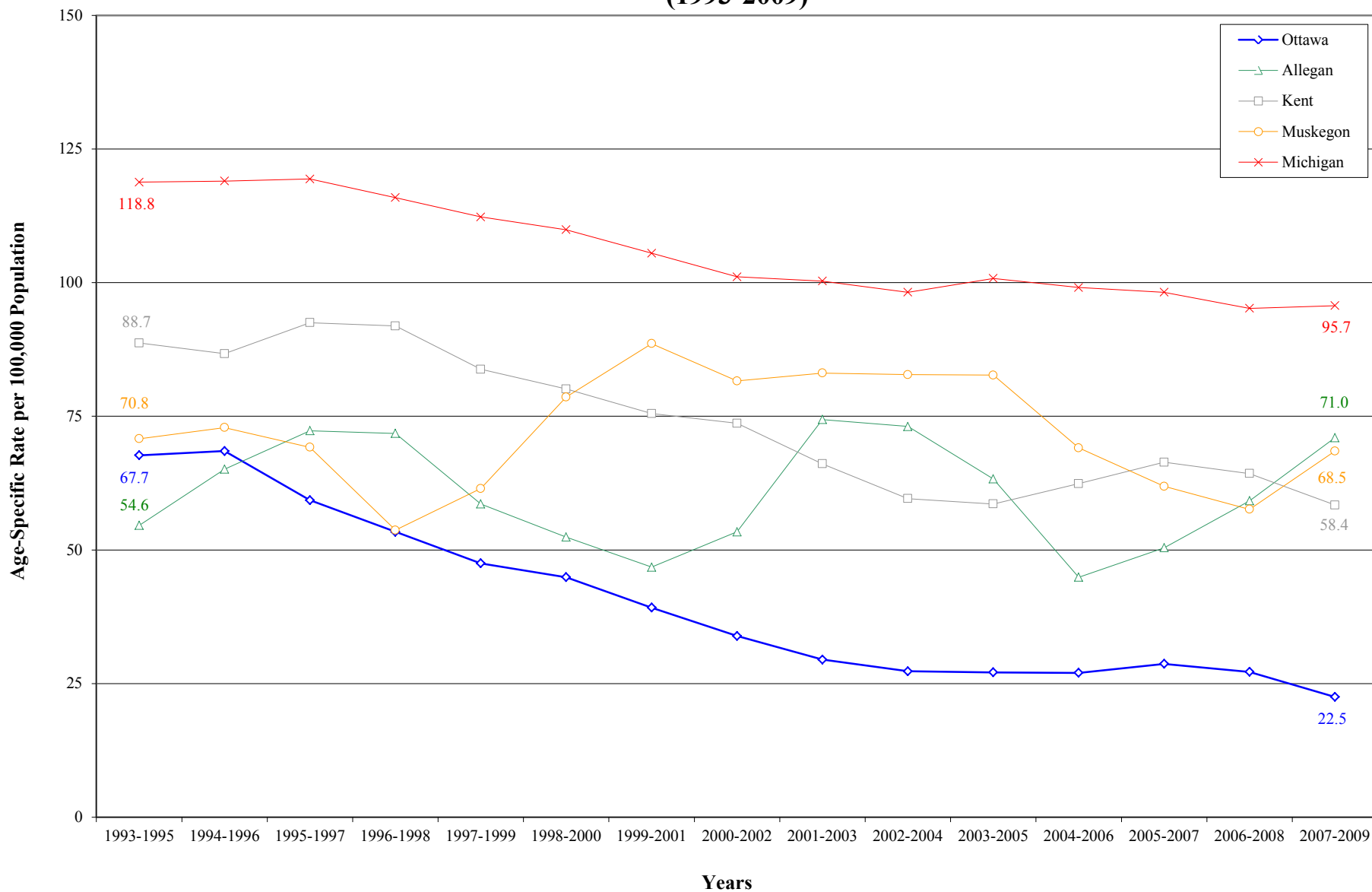
## 5 and 10 Year Trends



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



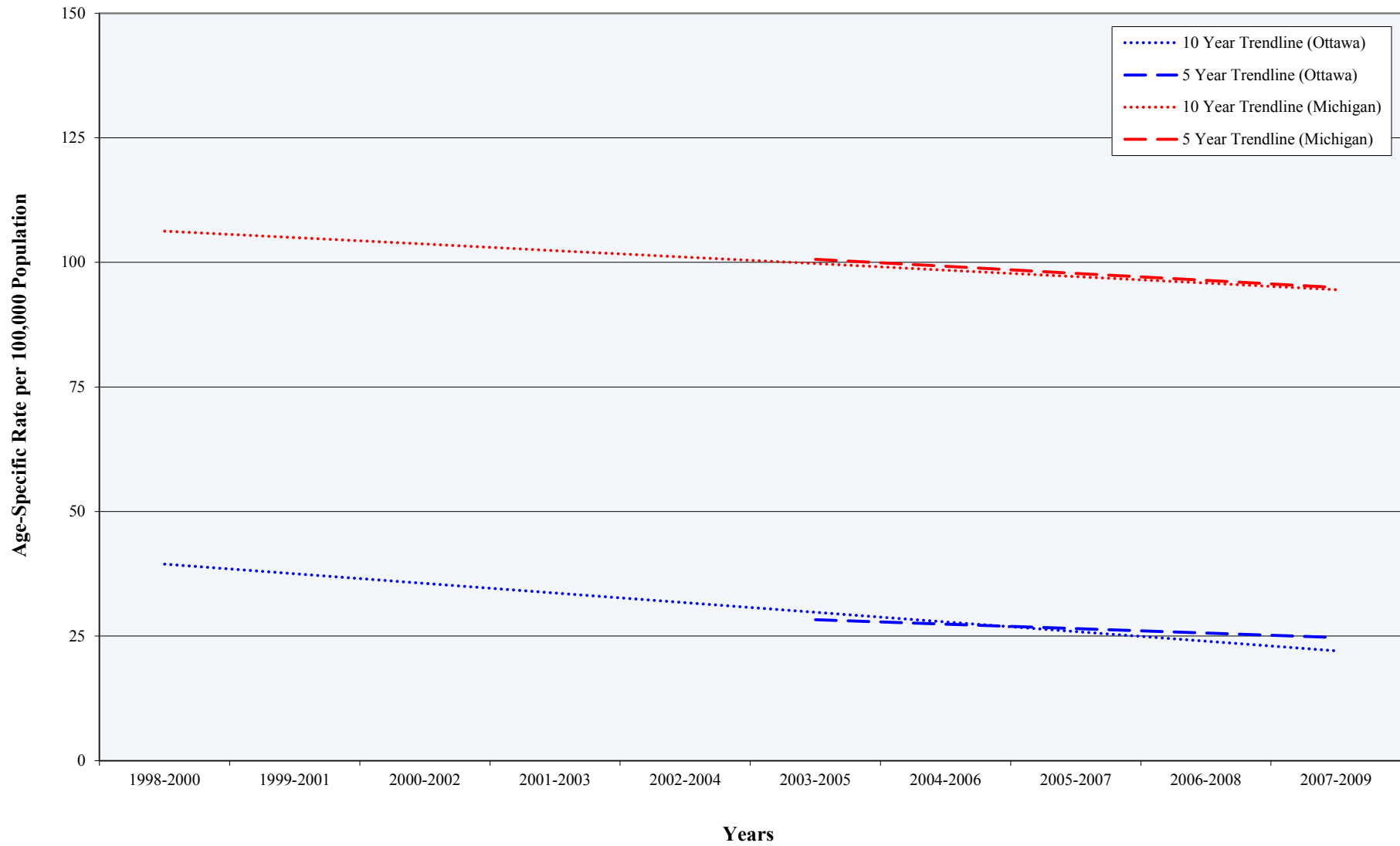
## Asthma Hospitalizations Among Persons Age 18-44 (1993-2009)



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

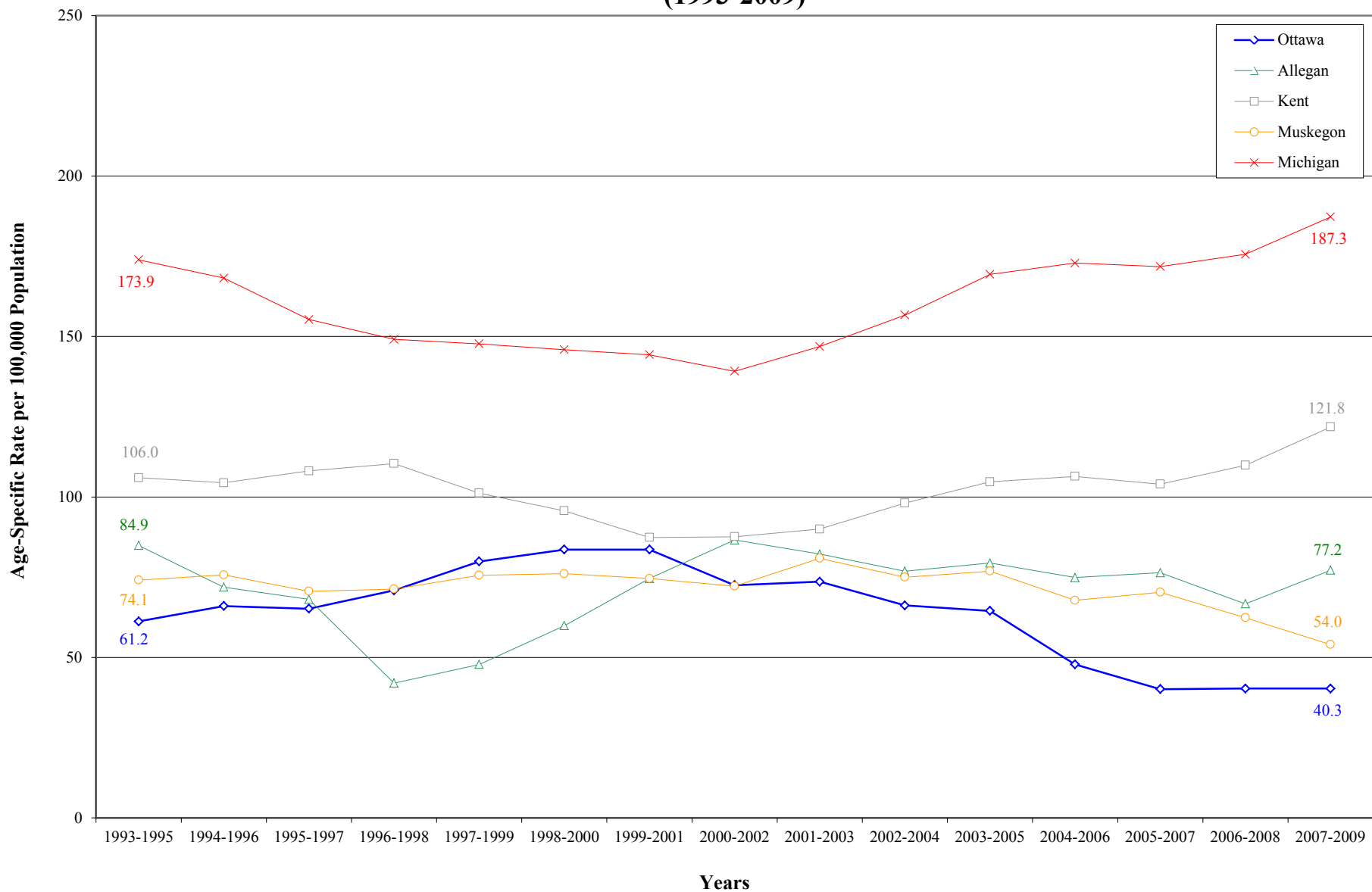
# Asthma Hospitalizations Among Persons Age 18-44

## 5 and 10 Year Trends



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

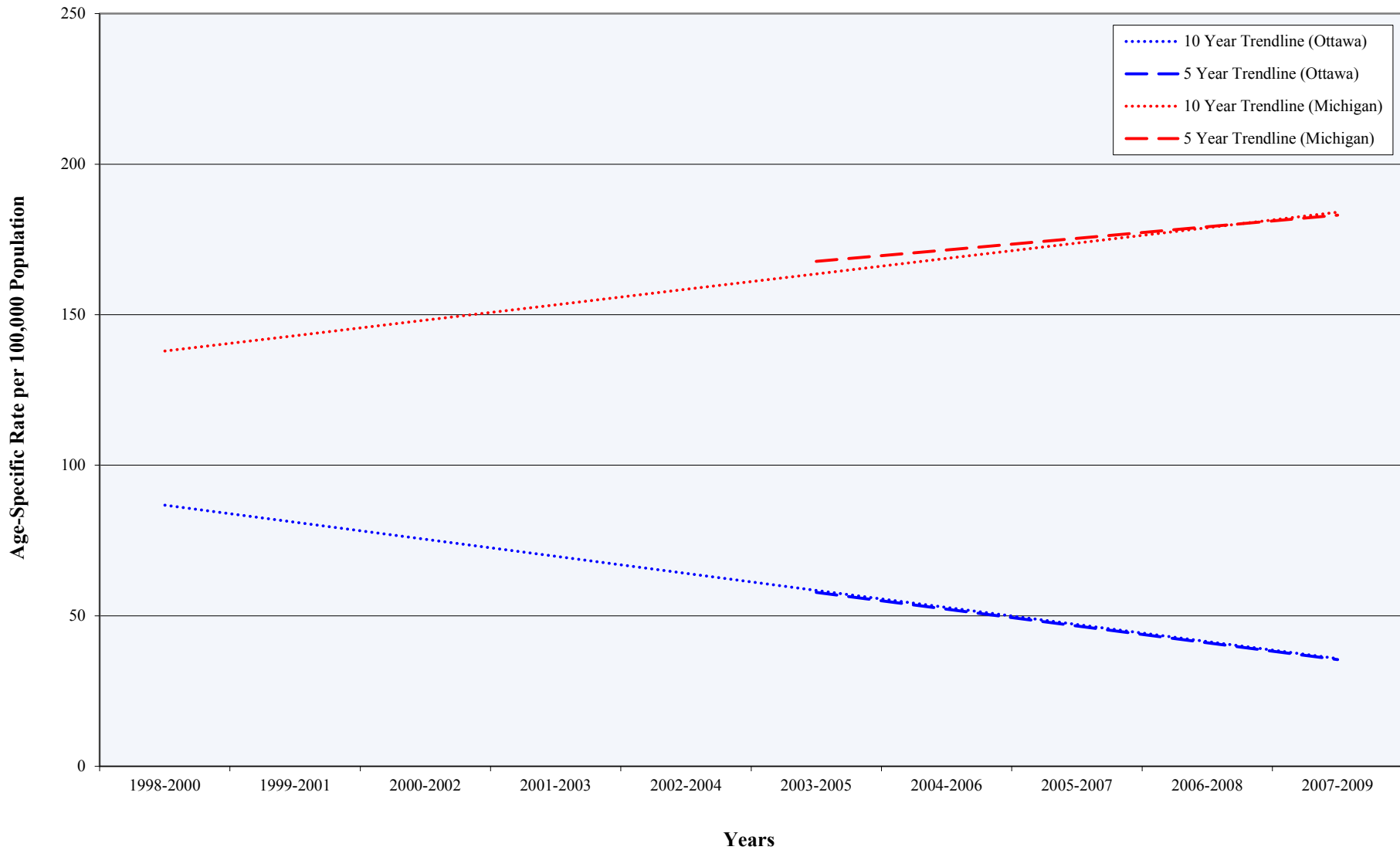
## Asthma Hospitalizations Among Persons Age 45-64 (1993-2009)



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

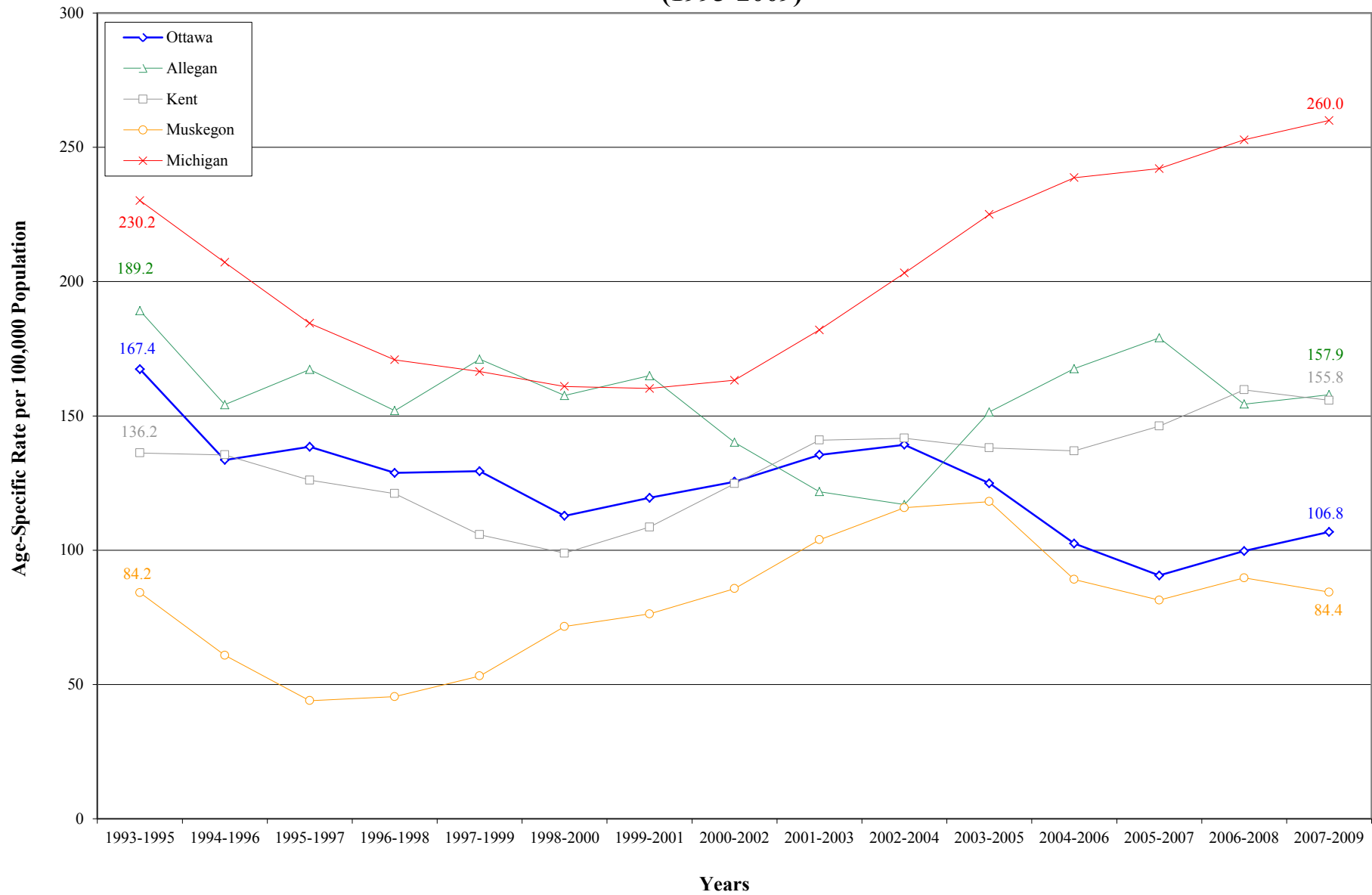
# Asthma Hospitalizations Among Persons Age 45-64

## 5 and 10 Year Trends



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

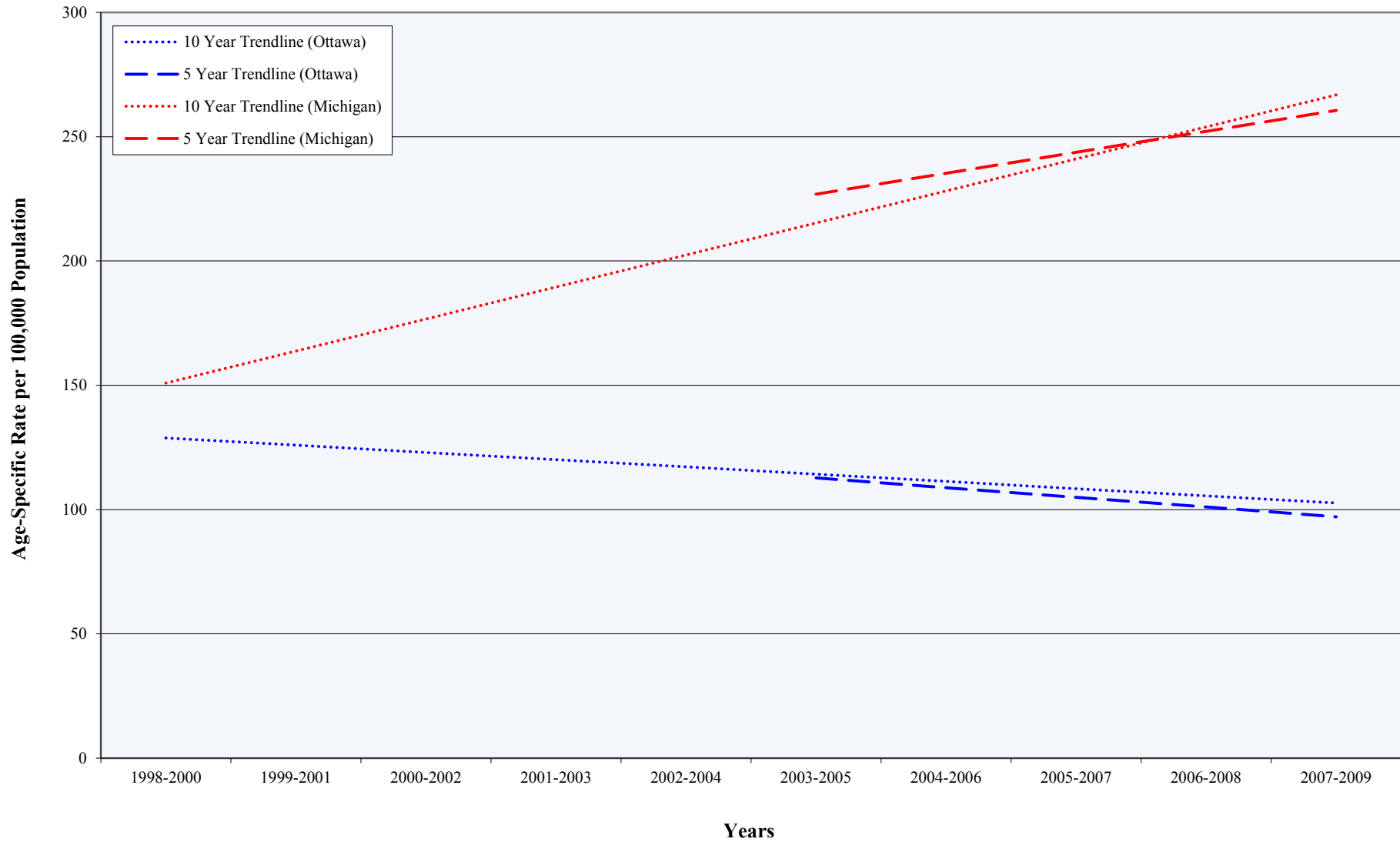
## Asthma Hospitalizations Among Persons Age 65 and Older (1993-2009)



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

# Asthma Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

## Grand Mal & Other Epileptic Conditions\* (1993-2009)

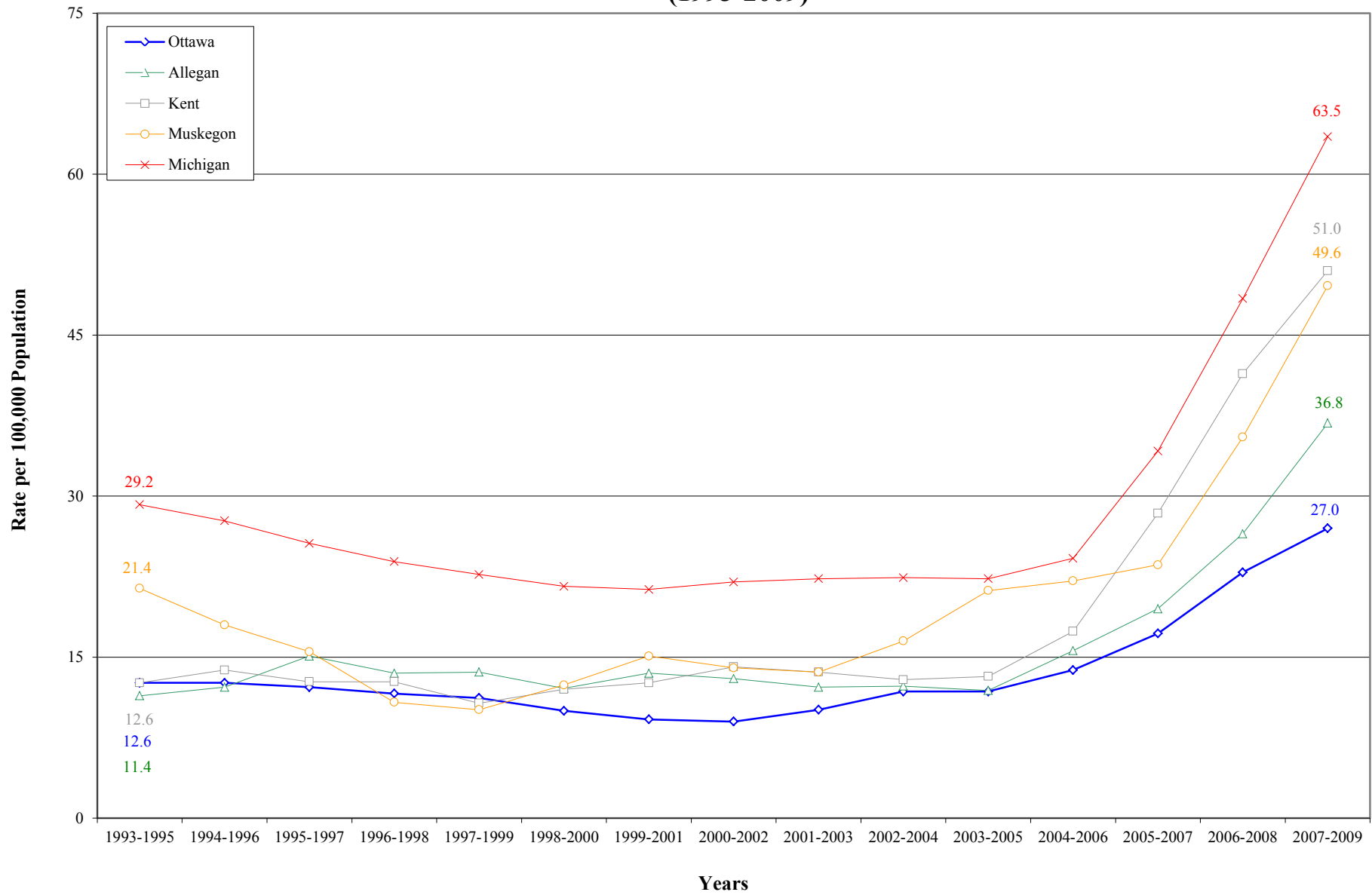
### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	12.6	11.4	12.6	21.4	29.2
1994-1996	12.6	12.2	13.8	18.0	27.7
1995-1997	12.2	15.1	12.7	15.5	25.6
1996-1998	11.6	13.5	12.7	10.8	23.9
1997-1999	11.2	13.6	10.7	10.1	22.7
1998-2000	10.0	12.1	12.0	12.4	21.6
1999-2001	9.2	13.5	12.6	15.1	21.3
2000-2002	9.0	13.0	14.1	14.0	22.0
2001-2003	10.1	12.2	13.6	13.6	22.3
2002-2004	11.8	12.3	12.9	16.5	22.4
2003-2005	11.8	11.9	13.2	21.2	22.3
2004-2006	13.8	15.6	17.4	22.1	24.2
2005-2007	17.2	19.5	28.4	23.6	34.2
2006-2008	22.9	26.5	41.4	35.5	48.4
2007-2009	27.0	36.8	51.0	49.6	63.5

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

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

## Grand Mal & Other Epileptic Condition\* Hospitalizations (1993-2009)



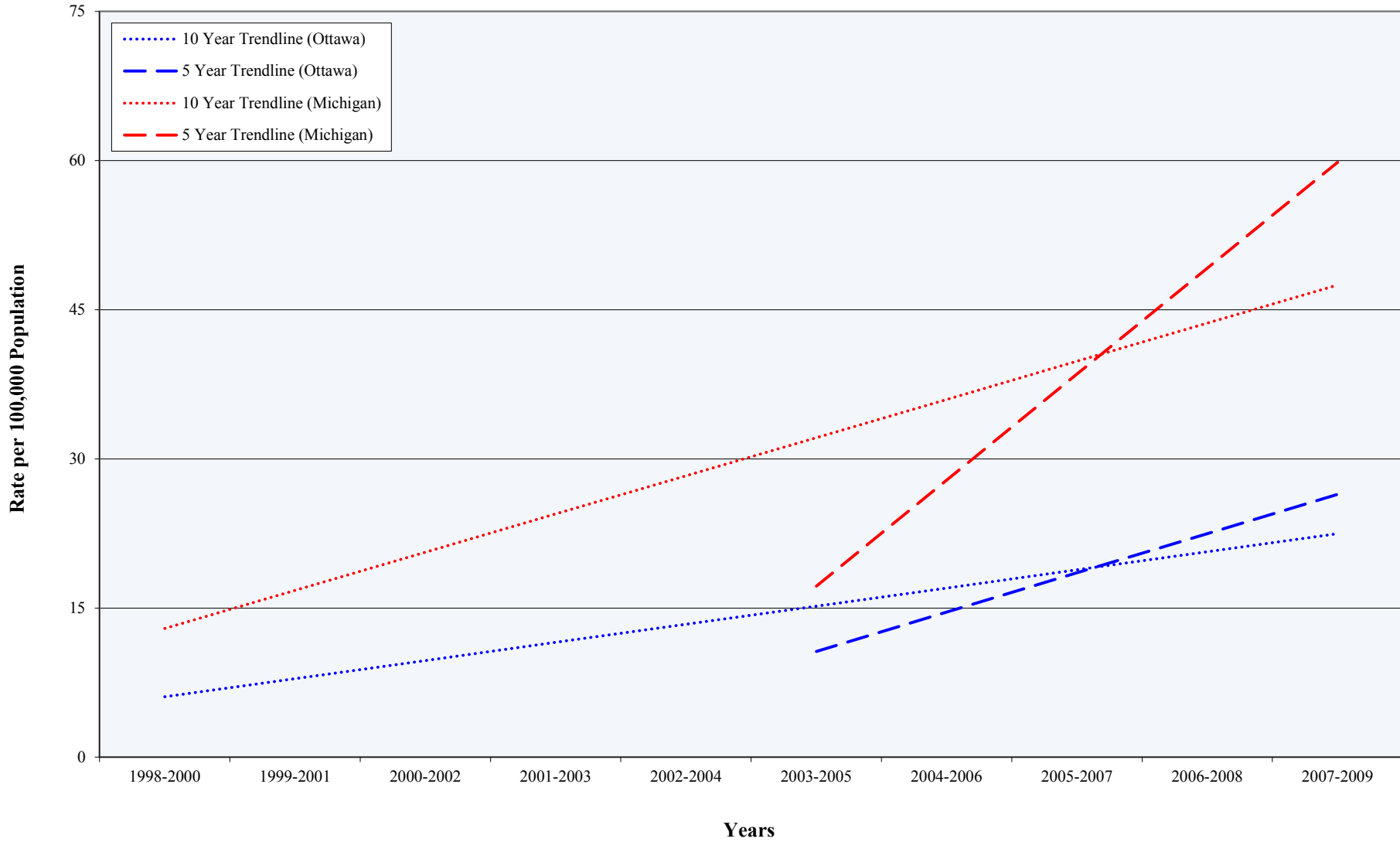
Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Grand Mal & Other Epileptic conditions are commonly known as seizures



# Grand Mal & Other Epileptic Condition\* Hospitalizations

## 5 and 10 Year Trends



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

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

# Grand Mal & Other Epileptic Conditions\* (1993-2009)

## Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

### Hospitalizations per 100,000 Population\*\*

Year	Under Age 18					Age 18-44					Age 45 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	12.1	***	11.8	25.4	34.9	12.8	***	10.3	19.6	23.4	***	***	17.0	20.0	32.1
1994-1996	11.3	***	16.0	26.1	34.6	14.1	***	10.9	13.4	22.1	***	***	15.9	16.7	29.1
1995-1997	14.1	***	20.1	22.4	33.3	***	***	7.4	***	19.7	***	***	13.3	15.8	26.7
1996-1998	15.3	***	18.9	***	30.5	***	***	8.8	***	19.0	11.8	***	12.4	***	24.7
1997-1999	15.2	***	15.8	***	27.9	***	***	8.8	***	18.3	14.2	***	8.4	***	23.7
1998-2000	11.4	***	12.7	***	25.3	7.5	***	12.7	***	15.6	***	***	10.4	***	22.8
1999-2001	9.8	***	15.2	***	25.3	8.1	***	12.9	19.2	14.8	***	***	9.7	15.1	22.8
2000-2002	14.6	***	16.3	***	27.6	8.4	***	13.1	***	15.1	***	***	13.5	14.9	22.6
2001-2003	16.6	***	14.5	***	28.0	9.9	***	12.2	***	18.0	***	***	14.8	14.6	22.8
2002-2004	19.1	***	11.0	***	26.0	10.9	***	11.4	***	19.1	***	***	16.4	17.9	23.4
2003-2005	17.2	***	12.2	21.1	20.6	11.4	***	11.3	18.6	19.6	***	***	16.5	23.8	23.5
2004-2006	20.7	***	21.6	21.4	22.3	11.1	***	12.1	17.0	20.9	***	***	20.0	27.6	26.1
2005-2007	29.6	***	30.5	26.9	29.7	11.1	***	23.0	13.5	28.1	***	***	32.9	31.1	40.2
2006-2008	35.7	33.6	47.4	32.0	41.6	13.1	***	33.1	20.5	39.1	24.2	***	45.8	51.9	60.8
2007-2009	41.6	50.9	59.3	36.2	50.2	16.0	***	41.2	37.1	52.3	28.3	40.8	55.5	69.4	81.4

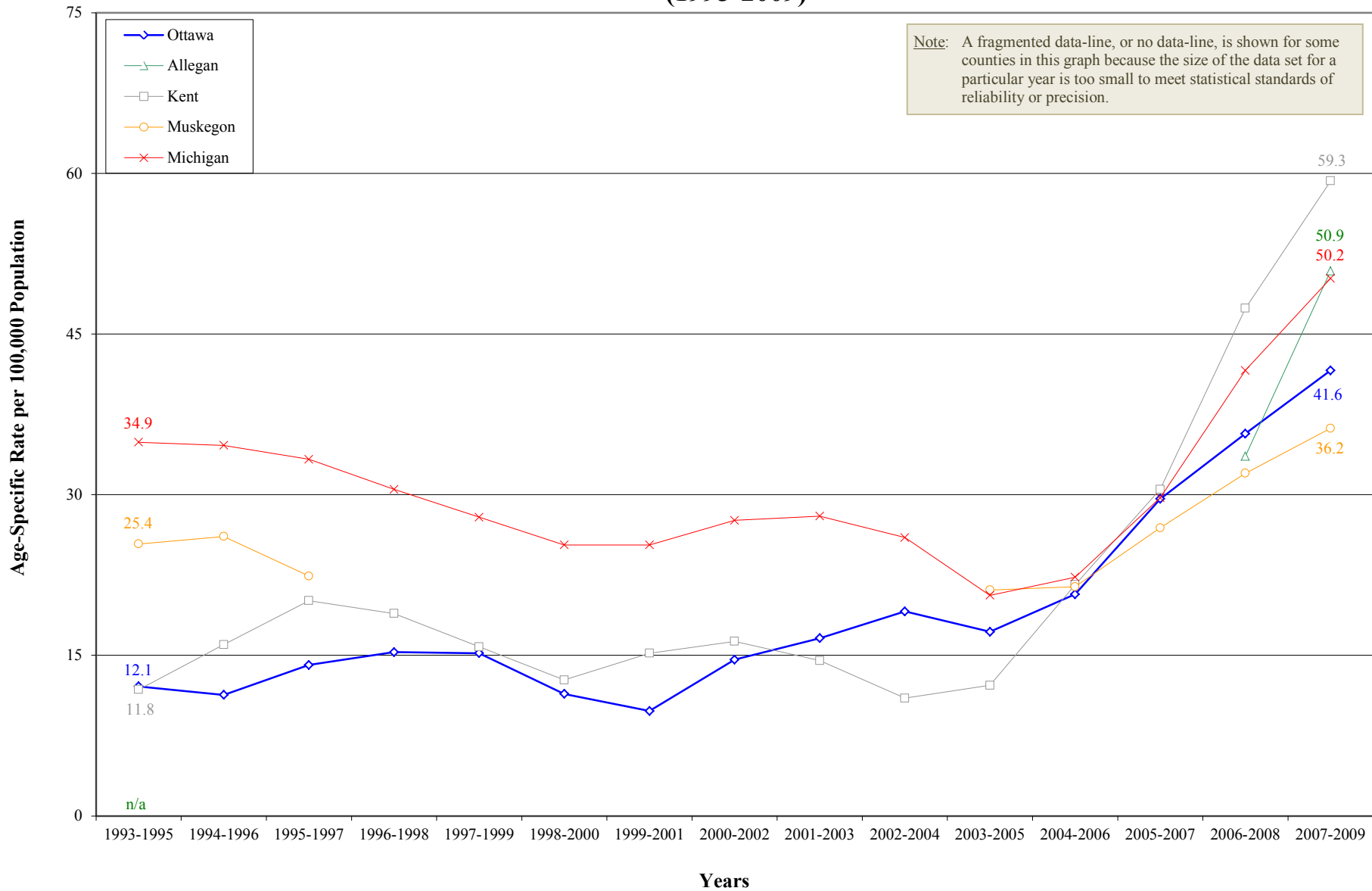
Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

\*\* Preventable hospitalization 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 preventable hospitalizations) was too small to meet statistical standards of reliability or precision

## Grand Mal & Other Epileptic Condition\* Hospitalizations Among Persons Under Age 18 (1993-2009)

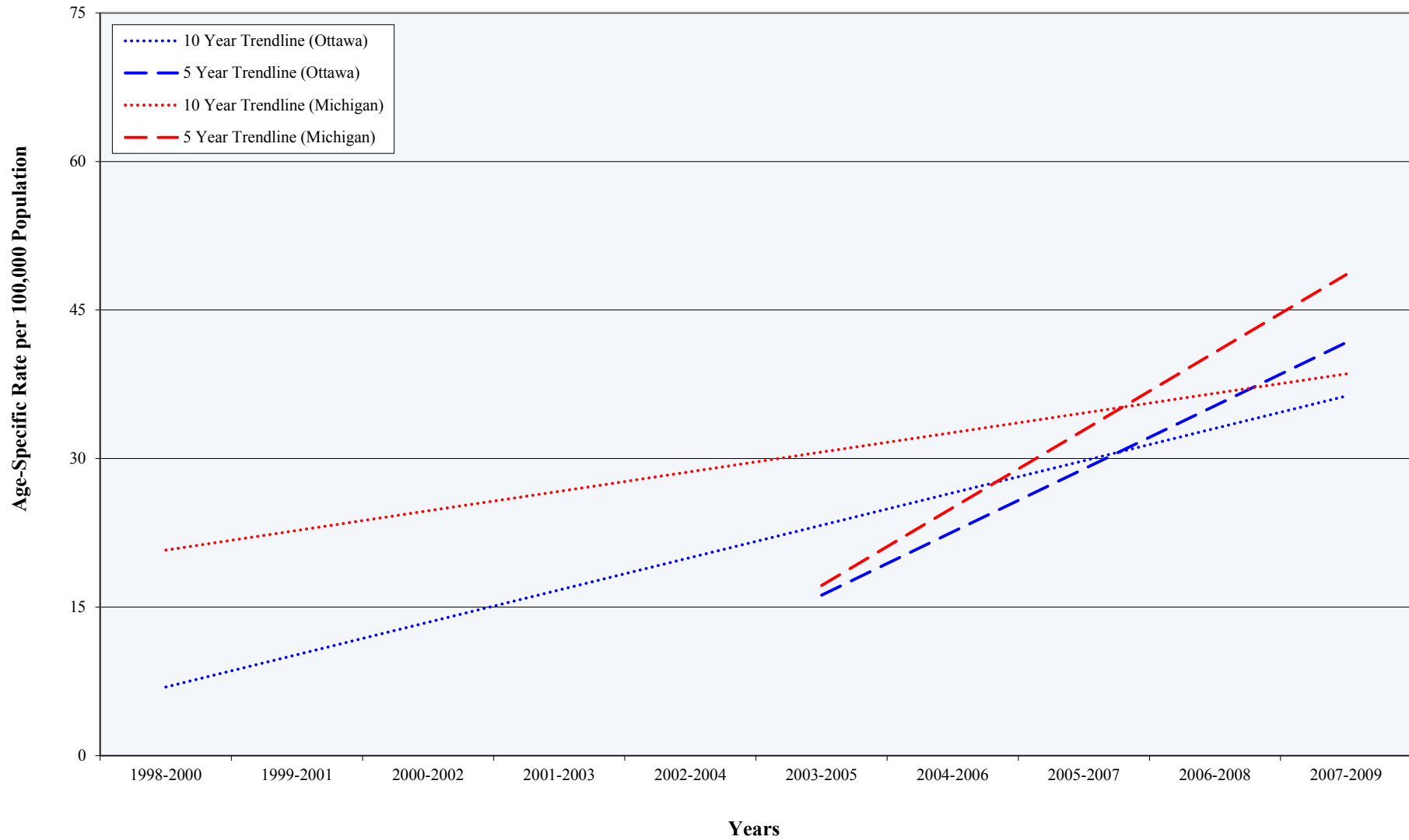


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

# Grand Mal & Other Epileptic Condition\* Hospitalizations Among Persons Under Age 18

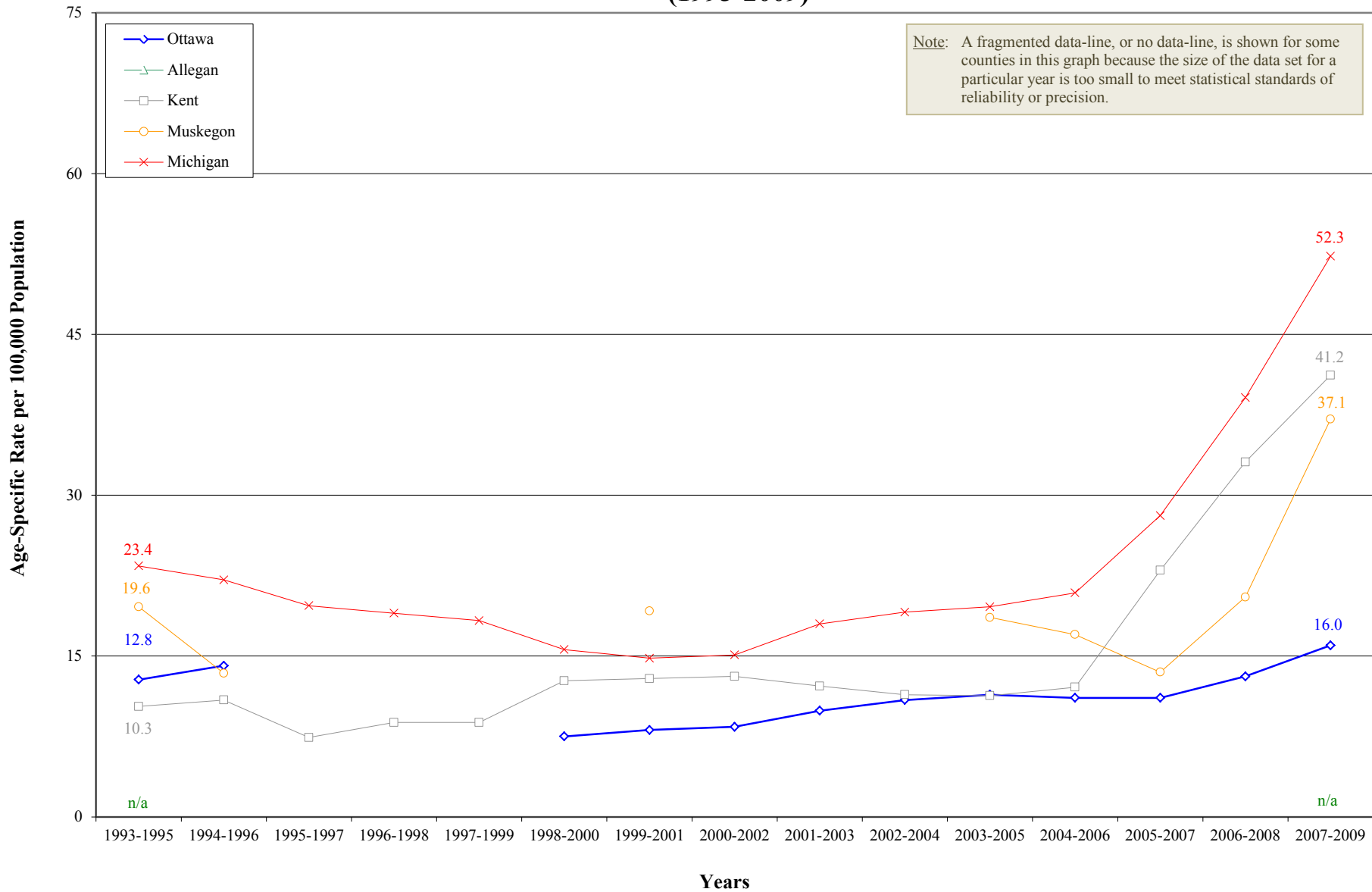
## 5 and 10 Year Trends



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

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

## Grand Mal & Other Epileptic Condition\* Hospitalizations Among Persons Age 18-44 (1993-2009)

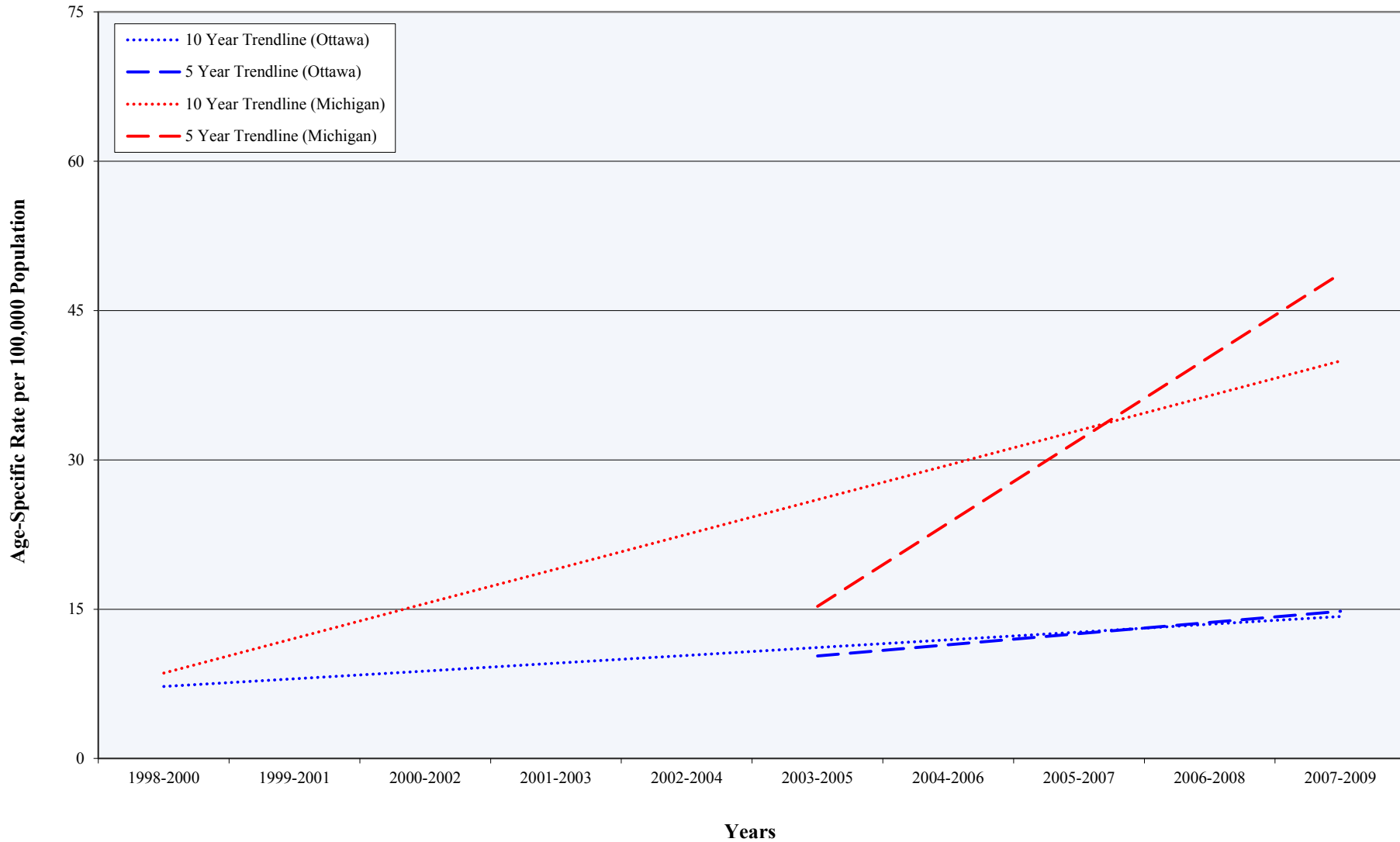


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

# Grand Mal & Other Epileptic Condition\* Hospitalizations Among Persons Age 18-44

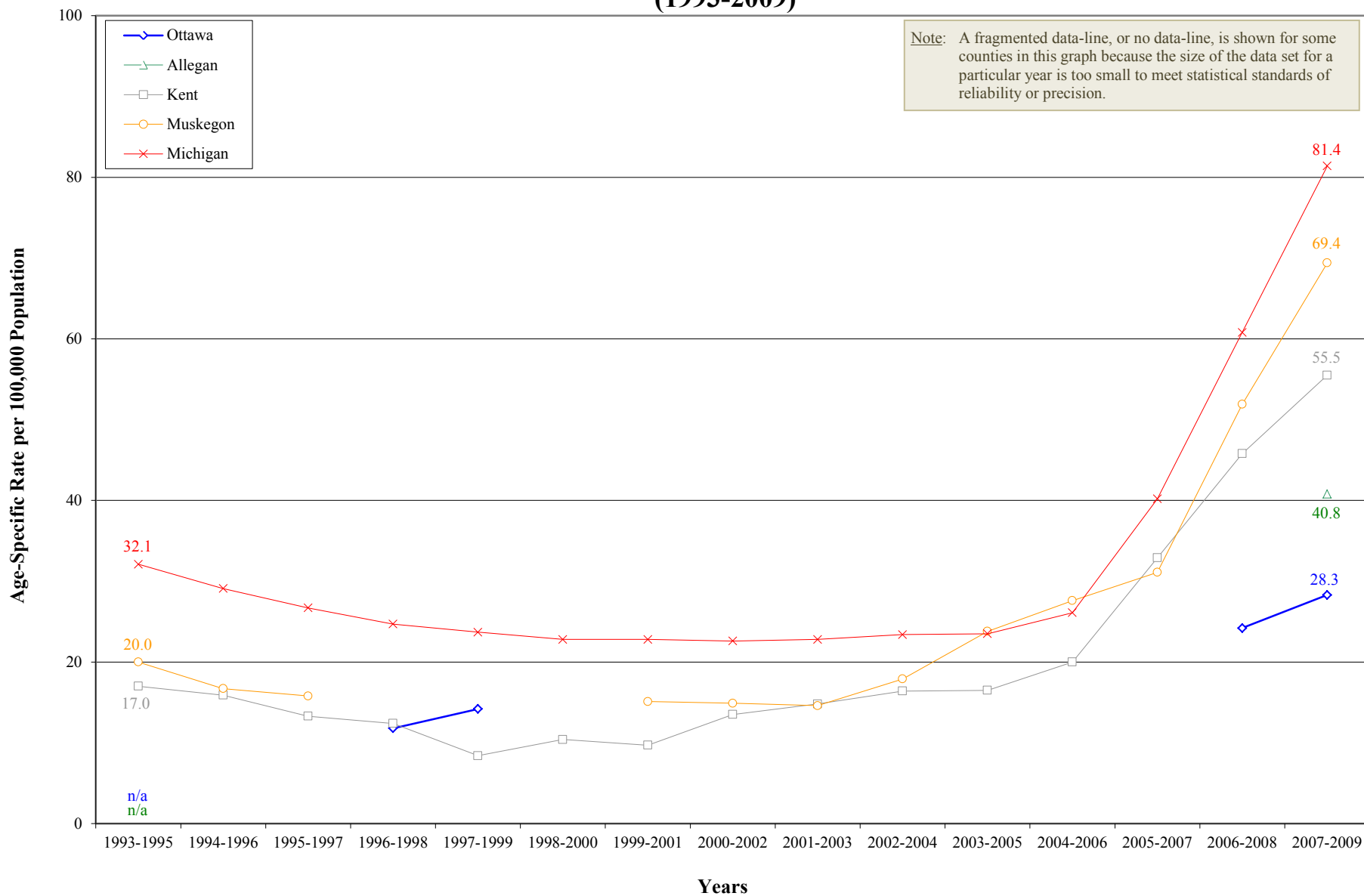
## 5 and 10 Year Trends



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

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

## Grand Mal & Other Epileptic Condition\* Hospitalizations Among Persons Age 45 and Older (1993-2009)

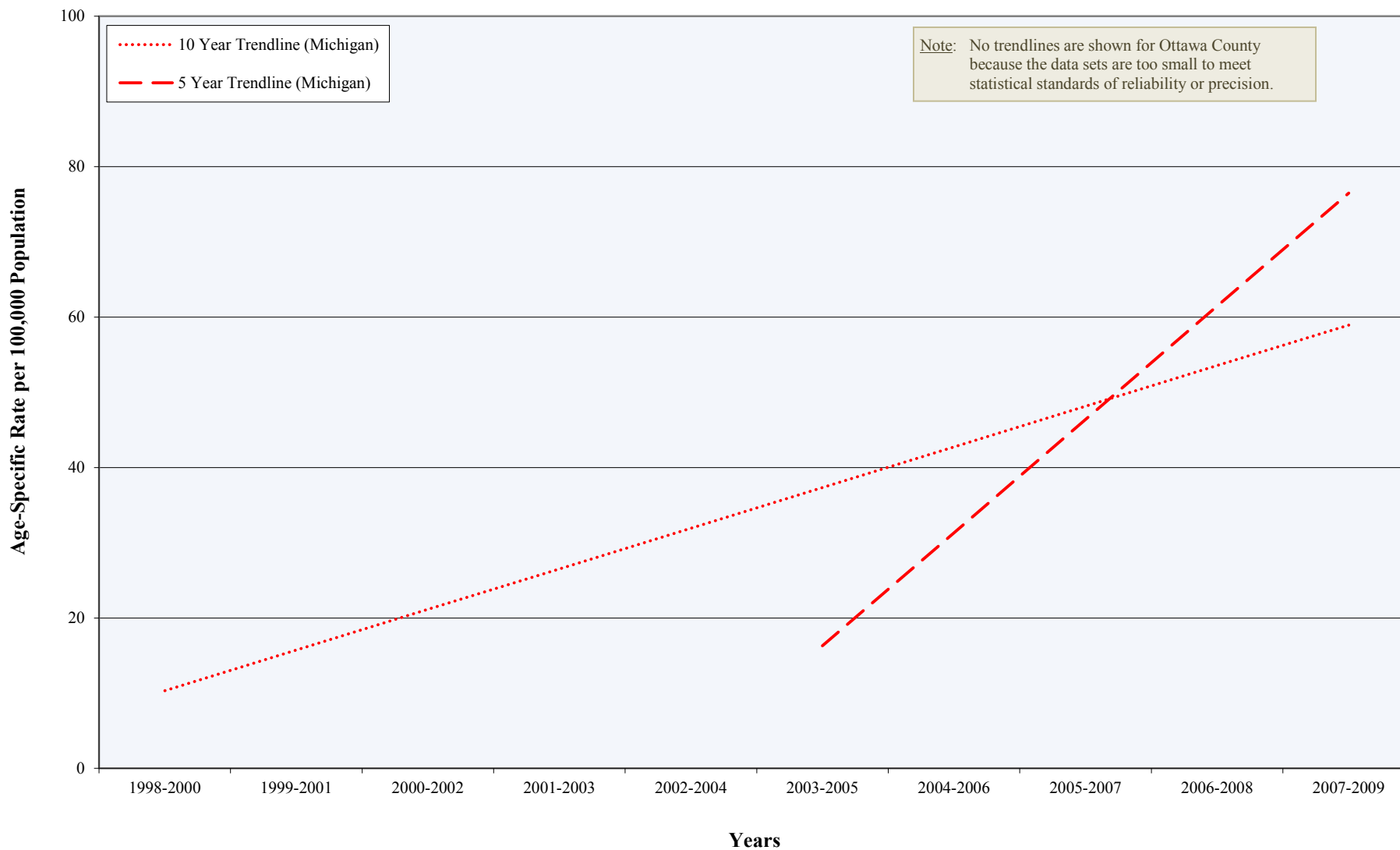


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Grand Mal & Other Epileptic conditions are commonly known as seizures

# Grand Mal & Other Epileptic Condition\* Hospitalizations Among Persons Age 45 and Older

## 5 and 10 Year Trends



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

\* Grand Mal & Other Epileptic conditions are commonly known as seizures



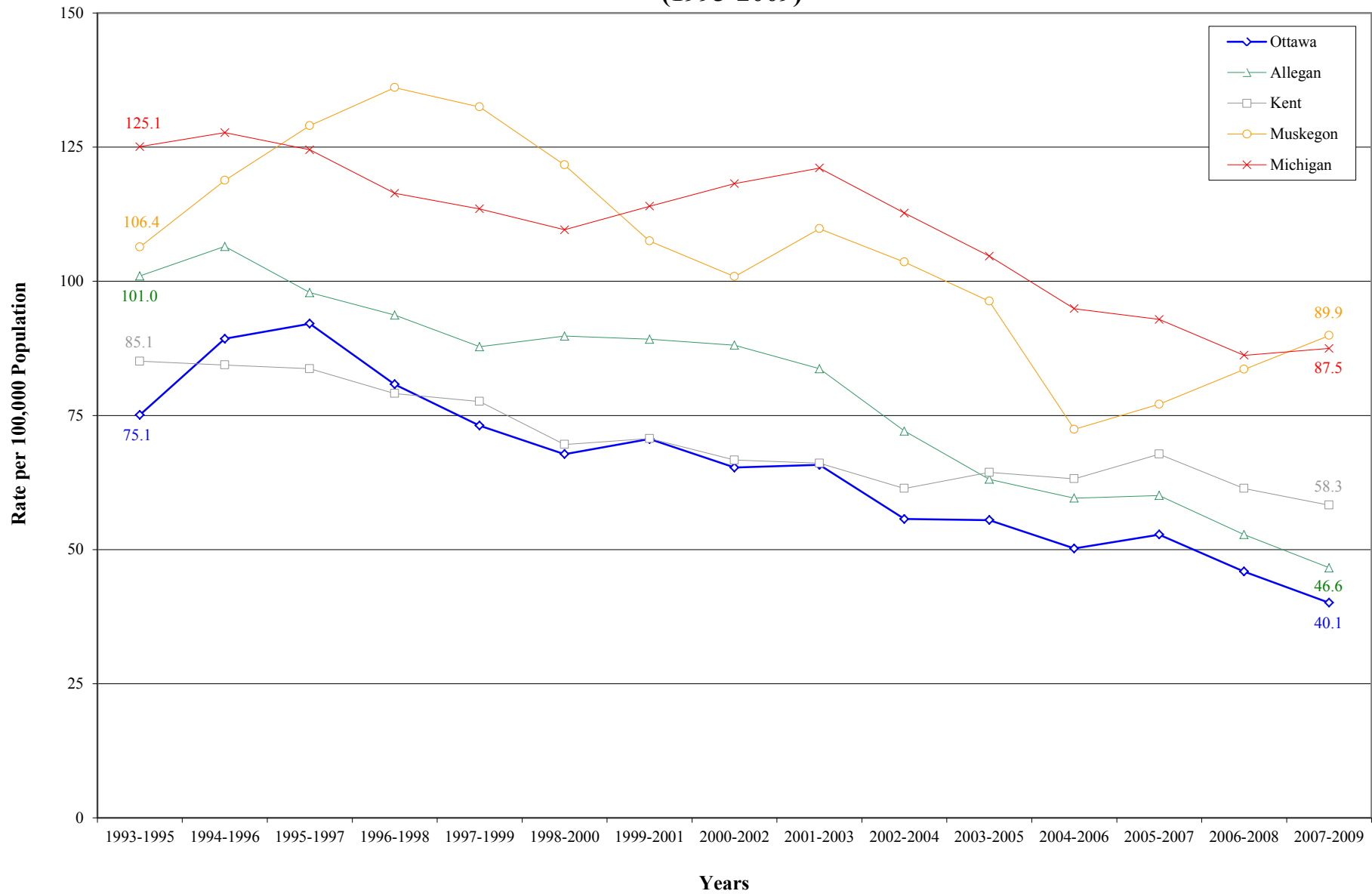
## Dehydration (1993-2009)

### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	75.1	101.0	85.1	106.4	125.1
1994-1996	89.3	106.5	84.4	118.8	127.7
1995-1997	92.1	97.9	83.7	129.0	124.5
1996-1998	80.8	93.7	79.1	136.1	116.4
1997-1999	73.1	87.8	77.6	132.5	113.5
1998-2000	67.8	89.8	69.6	121.7	109.6
1999-2001	70.6	89.2	70.7	107.5	114.0
2000-2002	65.3	88.1	66.7	100.9	118.2
2001-2003	65.8	83.7	66.1	109.8	121.1
2002-2004	55.7	72.1	61.4	103.6	112.7
2003-2005	55.5	63.1	64.4	96.3	104.7
2004-2006	50.2	59.6	63.2	72.4	94.9
2005-2007	52.8	60.1	67.8	77.1	92.9
2006-2008	45.9	52.8	61.4	83.6	86.2
2007-2009	40.1	46.6	58.3	89.9	87.5

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

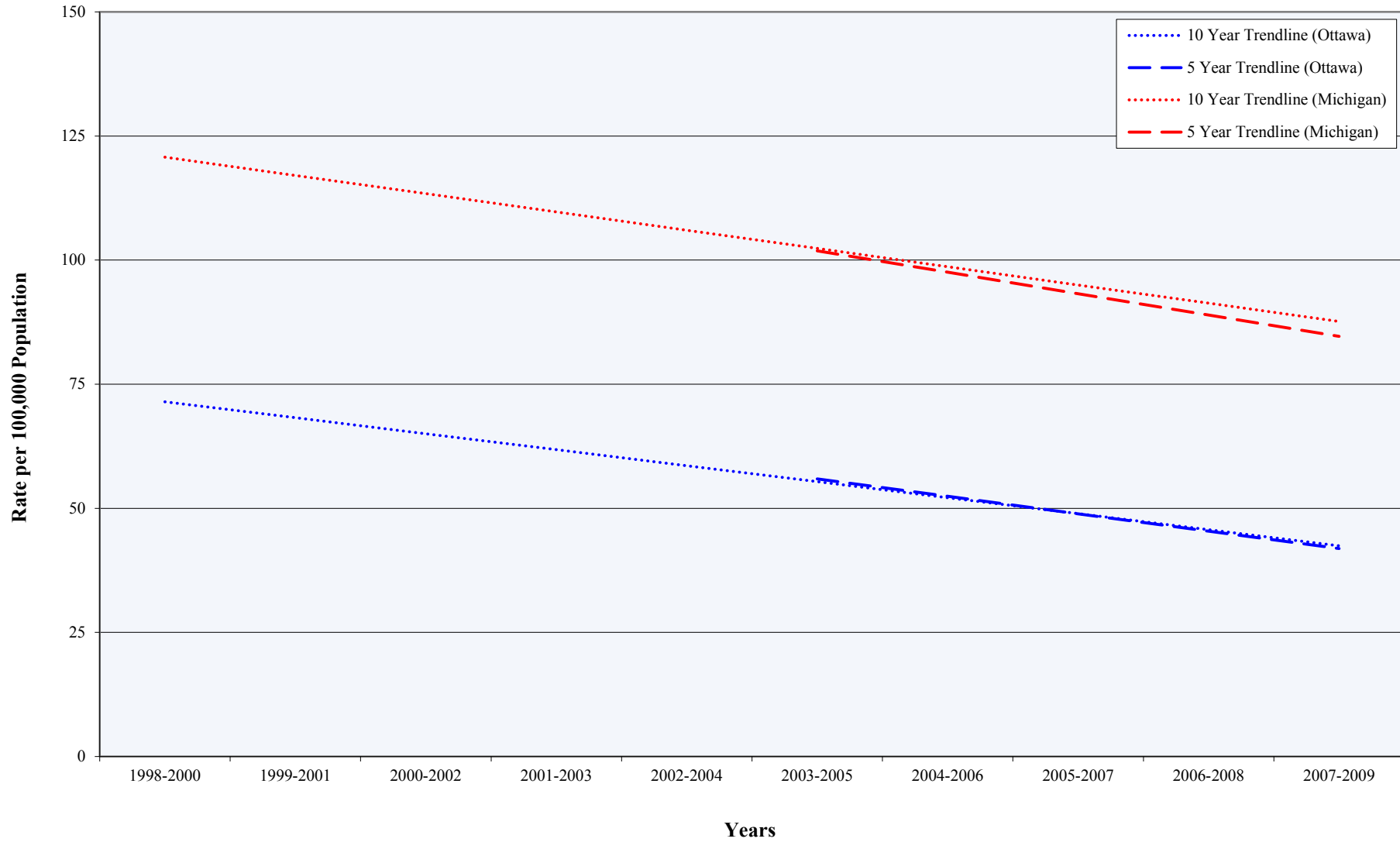
## Dehydration Hospitalizations (1993-2009)



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

# Dehydration Hospitalizations

## 5 and 10 Year Trends



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

## Dehydration (1993-2009)

### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

#### Hospitalizations per 100,000 Population\*

Year	Under Age 18					Age 18-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	97.0	101.8	111.2	123.4	123.1	22.8	36.3	29.4	43.8	50.0	317.5	429.0	325.6	346.8	502.7
1994-1996	125.0	123.8	116.6	168.9	128.5	29.5	36.8	28.2	40.0	50.0	337.3	421.0	312.9	361.9	511.0
1995-1997	118.9	103.1	114.2	166.1	120.1	30.1	39.6	29.0	38.6	47.7	378.6	387.7	311.2	453.1	514.5
1996-1998	89.4	87.2	93.1	139.7	95.3	27.8	36.0	27.4	41.5	44.9	367.9	414.7	336.1	553.3	516.9
1997-1999	60.5	68.0	76.7	107.6	81.6	24.6	32.1	26.4	42.1	43.6	396.9	437.8	374.9	595.3	530.2
1998-2000	49.6	62.1	59.2	77.3	68.6	22.1	28.3	23.4	48.6	42.0	393.1	493.6	367.1	552.5	535.9
1999-2001	71.4	80.4	81.4	69.4	80.6	20.9	23.9	22.0	44.2	42.6	370.0	468.9	330.1	483.8	544.1
2000-2002	72.7	76.1	83.7	63.8	83.3	20.2	26.4	20.9	44.4	43.5	319.4	459.7	294.1	446.8	569.7
2001-2003	88.0	101.1	89.1	102.8	98.3	22.0	27.3	21.9	42.2	44.3	271.0	355.2	269.9	447.9	558.9
2002-2004	64.3	79.4	69.2	106.9	89.9	21.0	27.7	22.2	42.1	42.3	241.4	303.3	276.8	393.2	517.7
2003-2005	81.8	83.2	76.6	113.7	99.4	16.9	26.8	23.5	37.6	38.6	219.2	218.5	278.0	344.0	450.9
2004-2006	73.1	71.2	66.2	73.5	88.5	13.9	25.4	24.9	30.6	35.0	208.3	222.7	285.8	273.6	410.4
2005-2007	85.9	74.3	78.3	79.0	88.5	14.8	23.9	28.0	31.7	34.5	195.6	227.7	280.3	295.5	393.5
2006-2008	64.4	61.2	68.3	77.6	71.8	16.5	18.3	26.5	33.5	34.3	172.7	220.3	253.3	340.1	369.9
2007-2009	63.4	59.0	74.4	119.3	77.9	14.2	13.2	22.5	33.8	35.4	132.1	194.1	230.4	305.3	357.0

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

\* Preventable hospitalization rates are age-specific and refer to the population in a specific age group

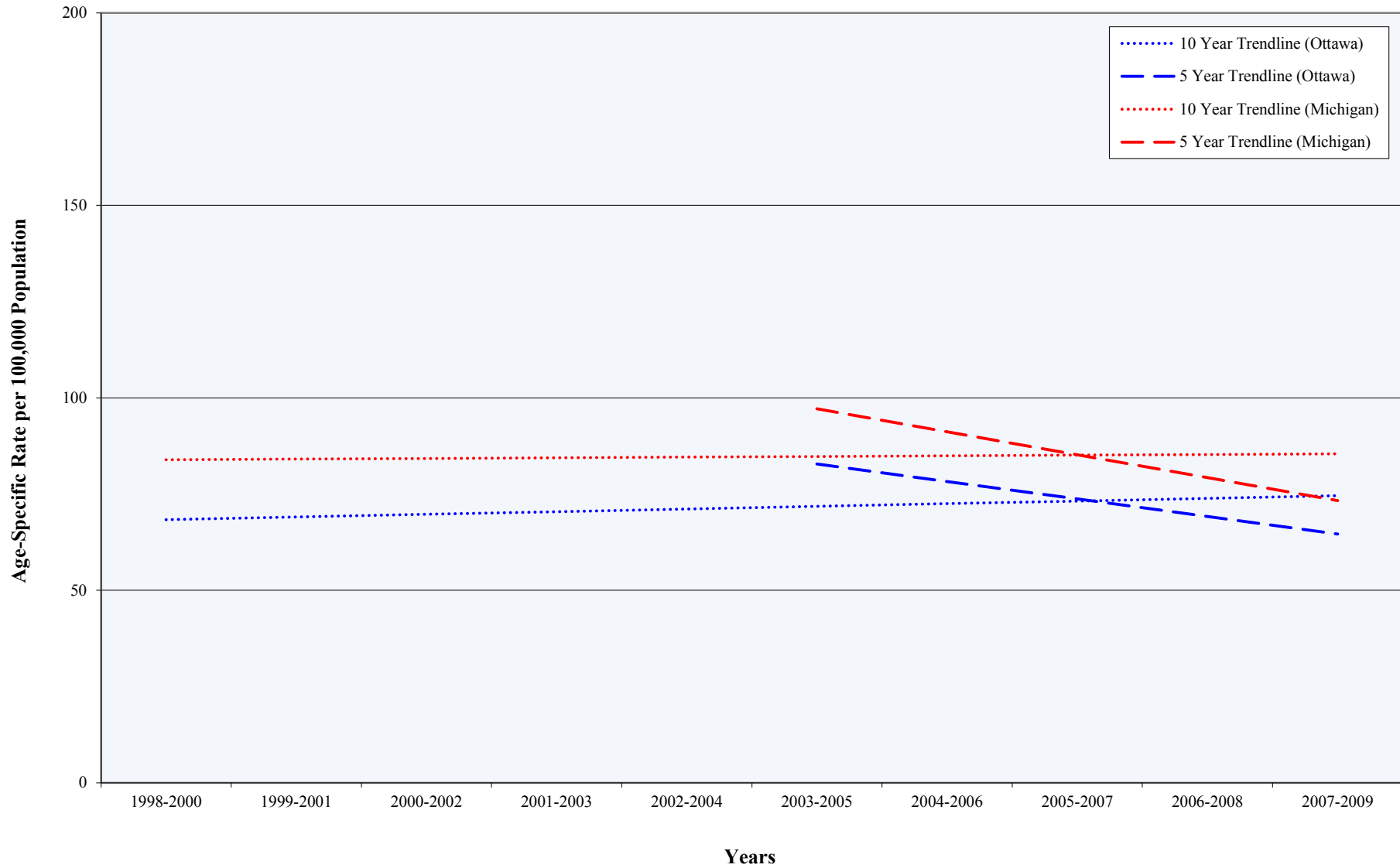
## Dehydration Hospitalizations Among Persons Under Age 18 (1993-2009)



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

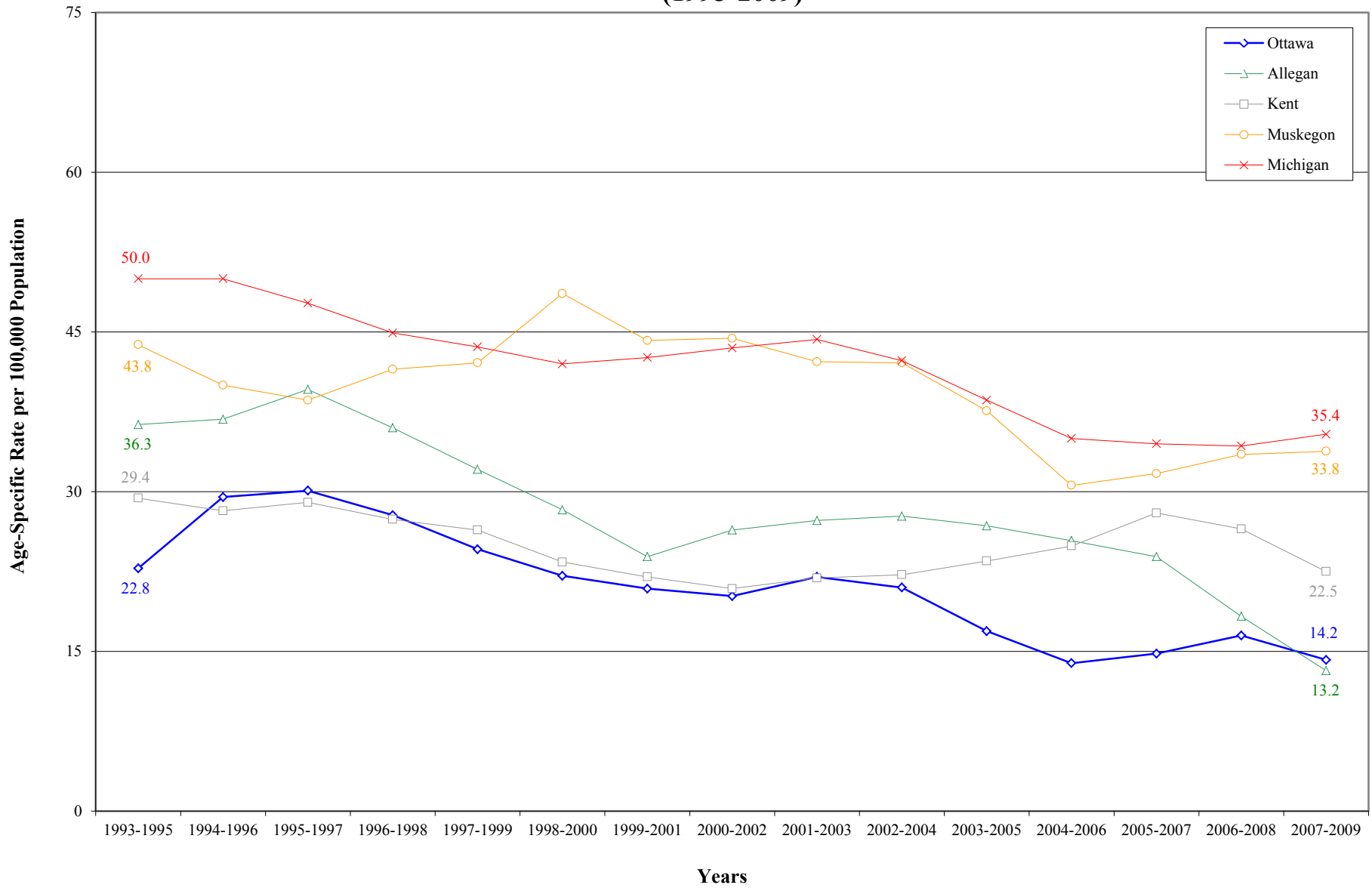
# Dehydration Hospitalizations Among Persons Under Age 18

## 5 and 10 Year Trends



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

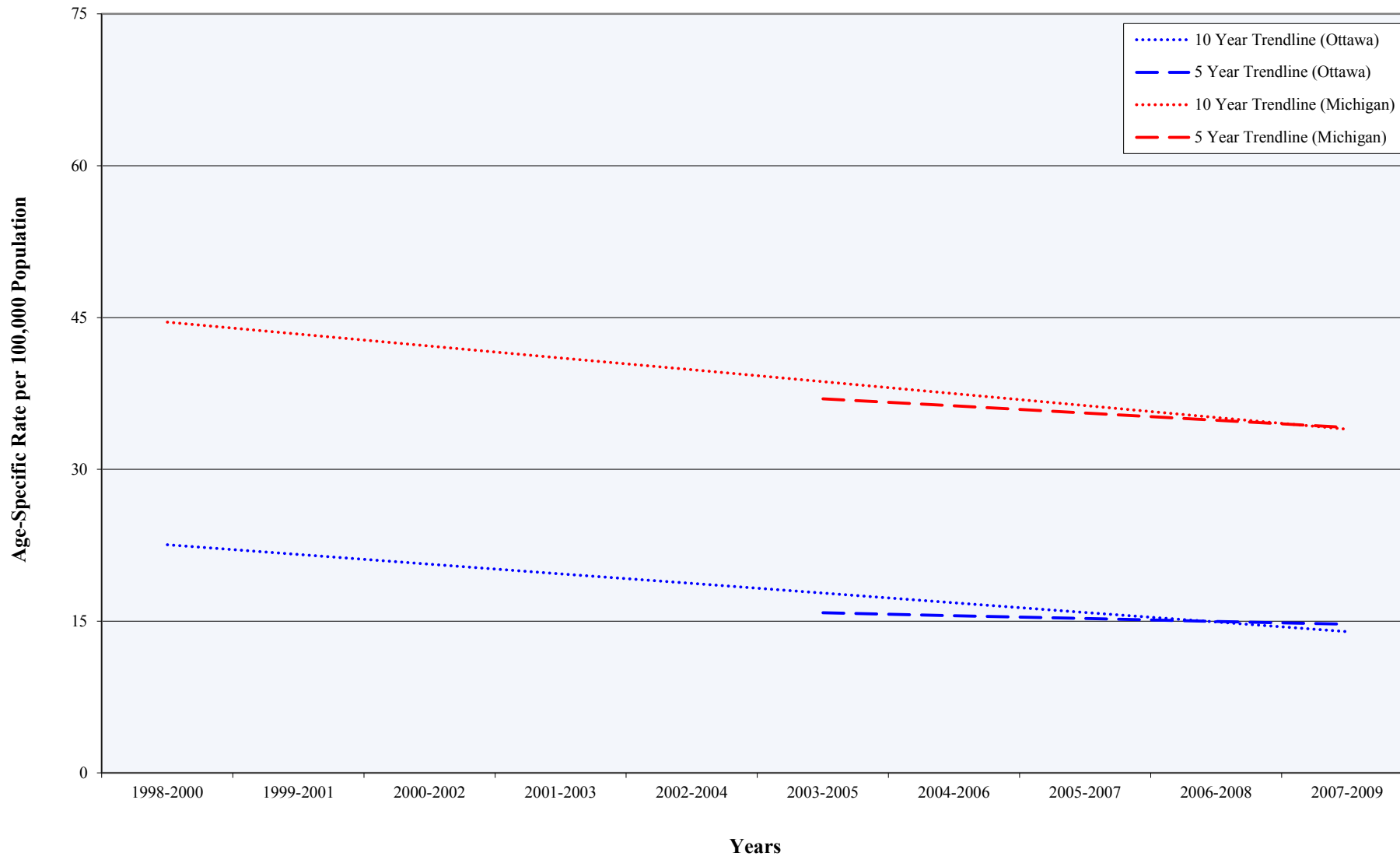
## Dehydration Hospitalizations Among Persons Age 18-64 (1993-2009)



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

# Dehydration Hospitalizations Among Persons Age 18-64

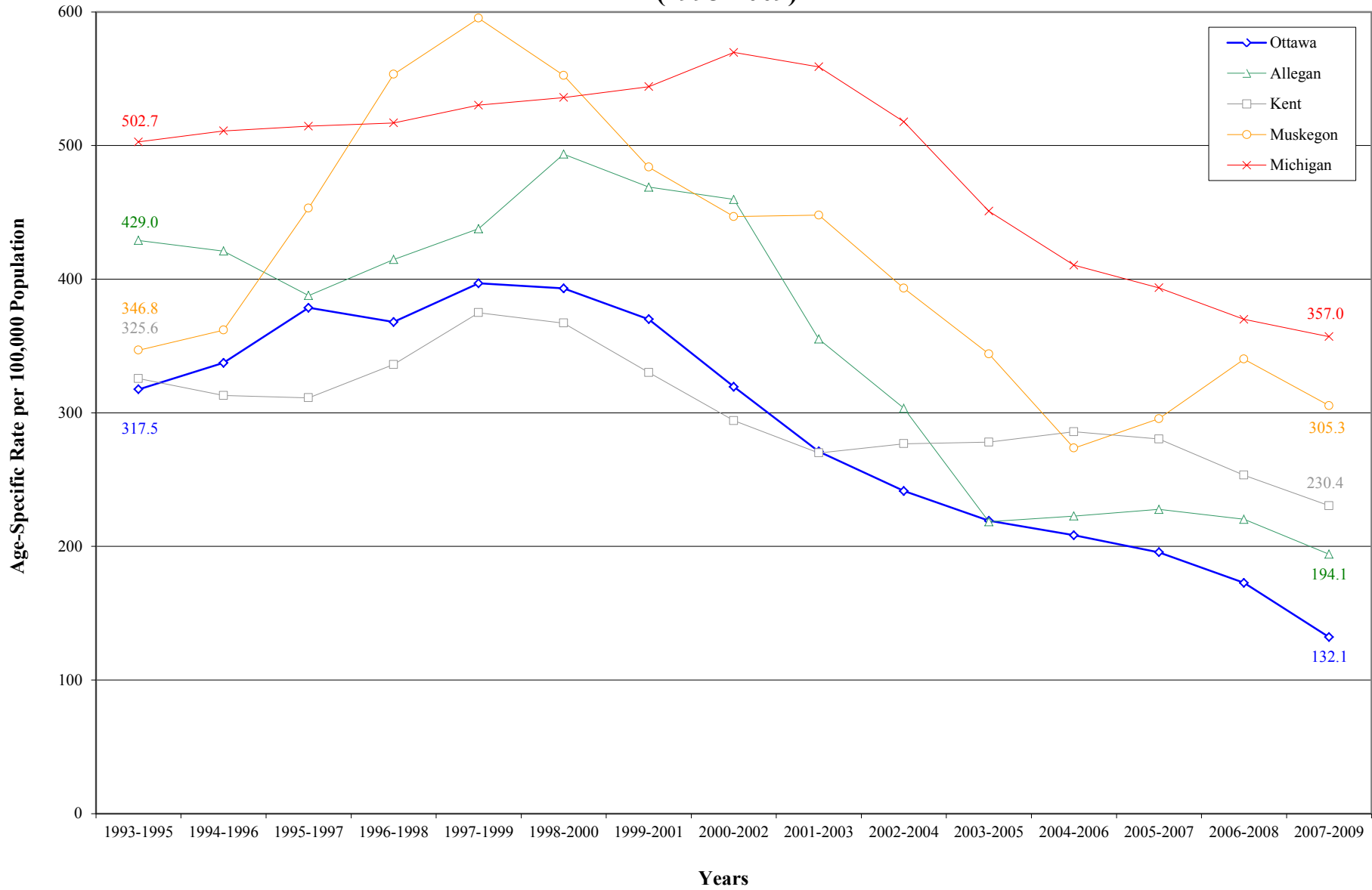
## 5 and 10 Year Trends



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



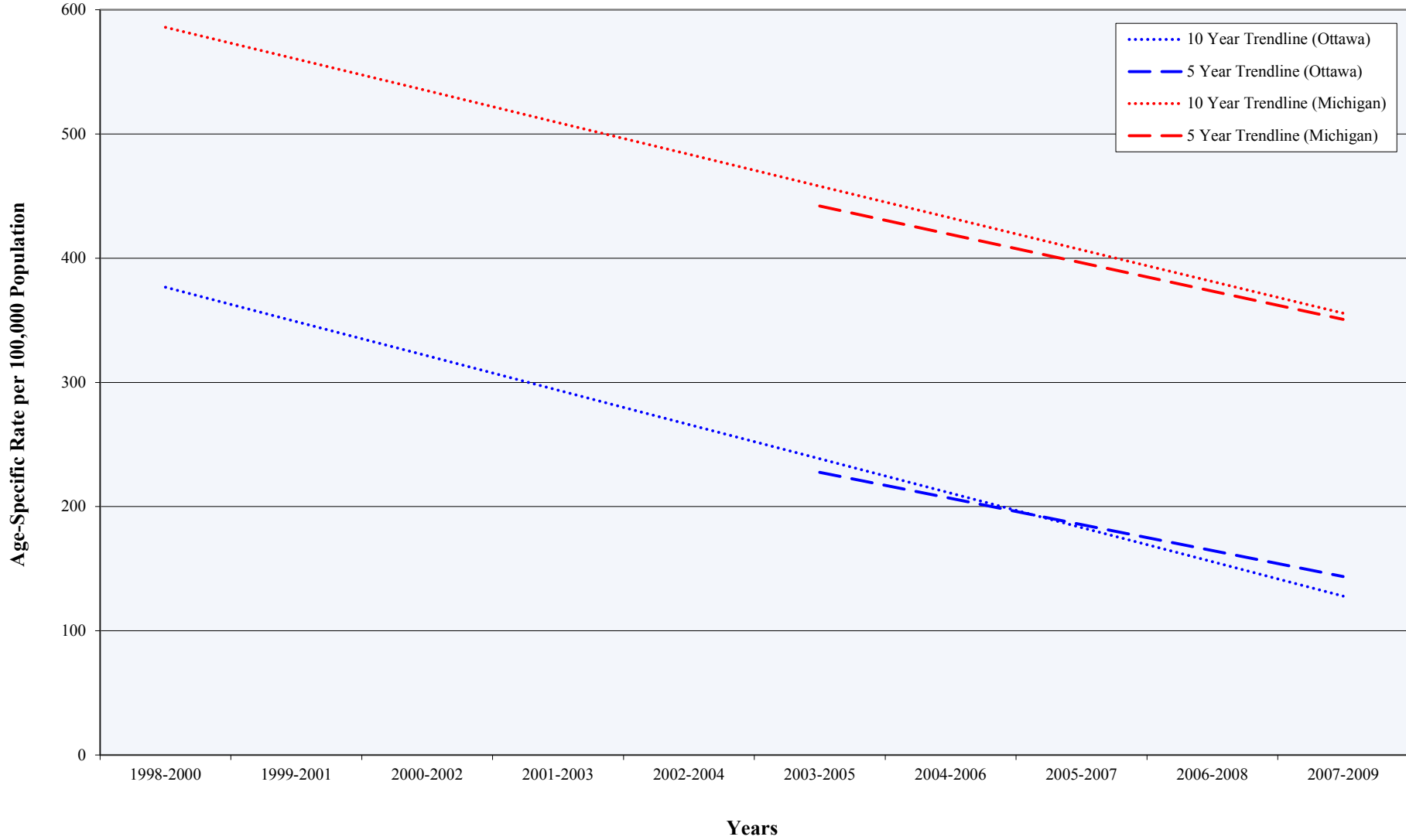
## Dehydration Hospitalizations Among Persons Age 65 and Older (1993-2009)



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

# Dehydration Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

## Gastroenteritis\* (1993-2009)

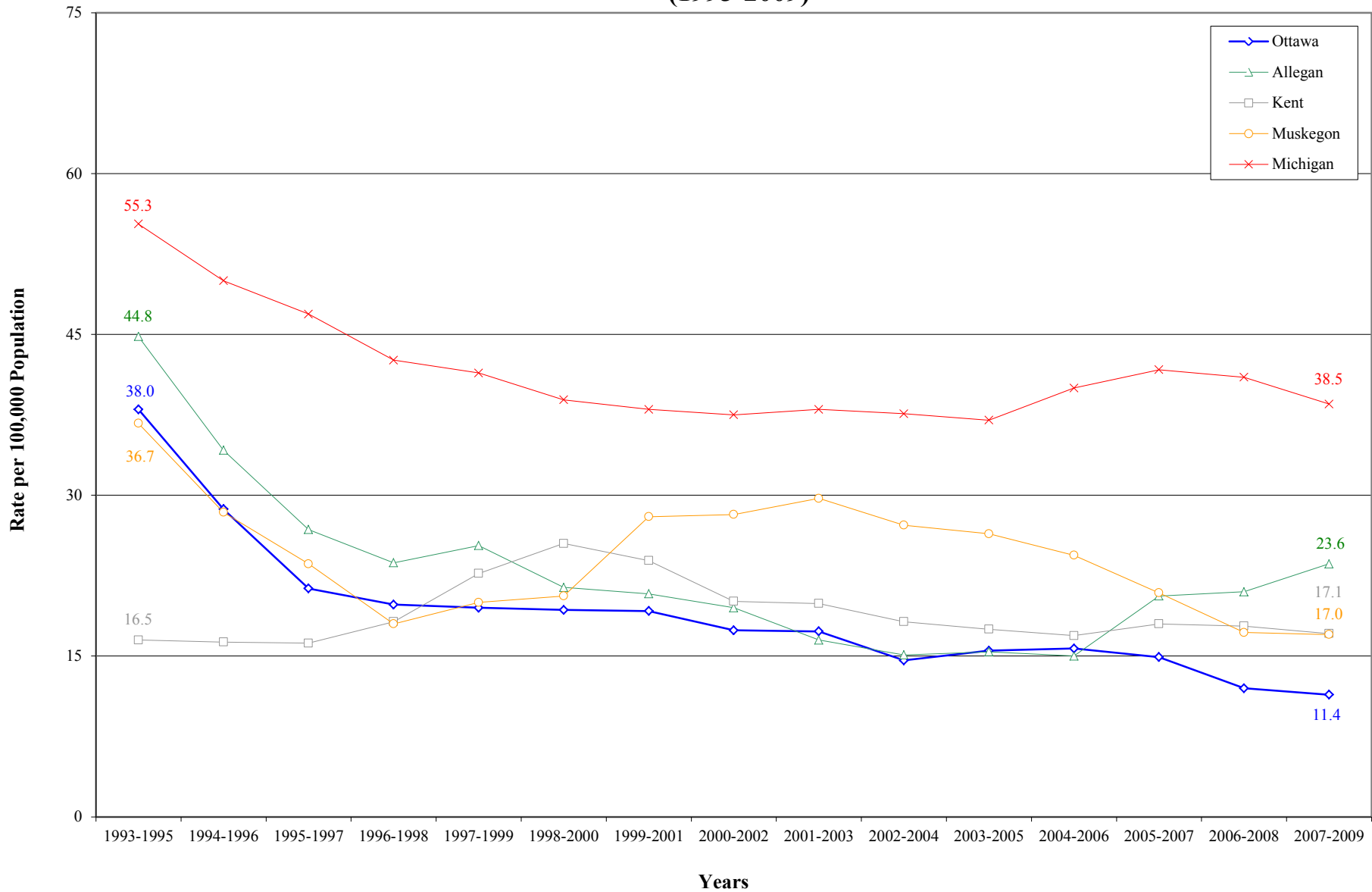
### Preventable Hospitalizations by Year (Ottawa County, Adjacent Counties, State)

Year	Hospitalizations per 100,000 Population				
	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	38.0	44.8	16.5	36.7	55.3
1994-1996	28.7	34.2	16.3	28.4	50.0
1995-1997	21.3	26.8	16.2	23.6	46.9
1996-1998	19.8	23.7	18.2	18.0	42.6
1997-1999	19.5	25.3	22.7	20.0	41.4
1998-2000	19.3	21.4	25.5	20.6	38.9
1999-2001	19.2	20.8	23.9	28.0	38.0
2000-2002	17.4	19.5	20.1	28.2	37.5
2001-2003	17.3	16.5	19.9	29.7	38.0
2002-2004	14.6	15.1	18.2	27.2	37.6
2003-2005	15.5	15.4	17.5	26.4	37.0
2004-2006	15.7	15.0	16.9	24.4	40.0
2005-2007	14.9	20.6	18.0	20.9	41.7
2006-2008	12.0	21.0	17.8	17.2	41.0
2007-2009	11.4	23.6	17.1	17.0	38.5

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

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines

## Gastroenteritis\* Hospitalizations (1993-2009)

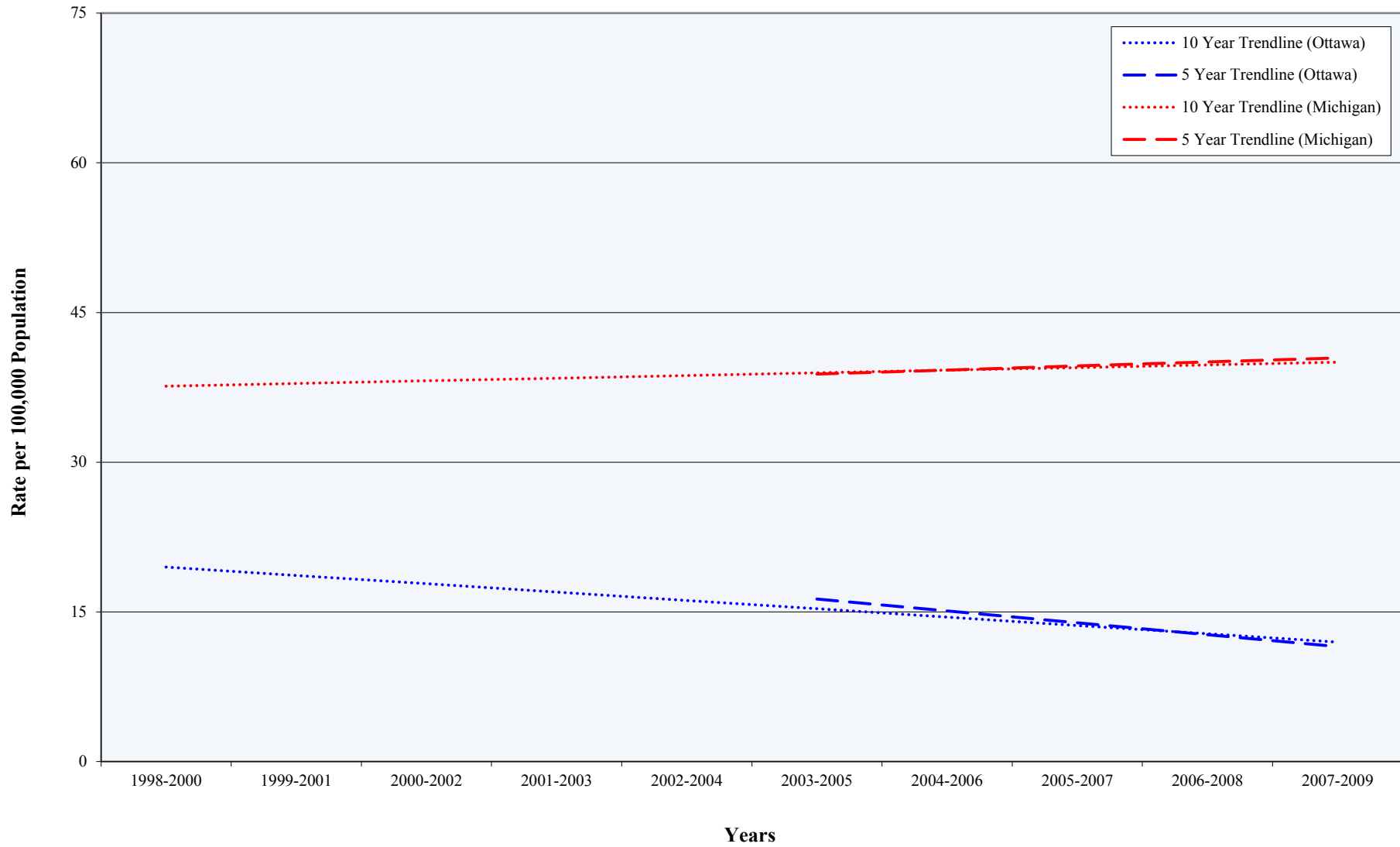


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines

# Gastroenteritis\* Hospitalizations

## 5 and 10 Year Trends



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

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines

## Gastroenteritis\* (1993-2009)

### Preventable Hospitalizations by Age (Ottawa County, Adjacent Counties, State)

#### Hospitalizations per 100,000 Population\*\*

Year	Under Age 18					Age 18-64					Age 65 and Older				
	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan	Ottawa	Allegan	Kent	Muskegon	Michigan
1993-1995	63.6	42.5	16.2	49.4	76.2	18.5	31.1	12.9	22.2	34.0	79.6	120.2	37.2	73.4	100.0
1994-1996	45.5	29.0	16.0	37.0	68.2	15.1	***	12.2	16.2	32.9	60.9	95.3	40.2	63.9	95.9
1995-1997	29.3	28.5	15.0	31.1	64.5	12.7	***	11.8	13.7	30.3	49.0	70.4	43.9	51.6	91.9
1996-1998	28.2	27.1	21.3	23.8	59.1	12.3	***	11.5	10.5	26.6	40.4	***	47.6	39.4	87.1
1997-1999	28.7	33.4	31.6	29.4	59.0	9.3	15.8	12.0	11.0	24.5	53.7	***	61.0	41.0	88.4
1998-2000	24.8	***	35.8	***	51.8	10.0	15.4	13.3	13.5	23.0	59.9	***	69.3	50.3	90.8
1999-2001	27.0	***	29.3	***	49.9	8.4	13.0	13.3	18.6	22.8	63.3	***	71.9	67.2	89.2
2000-2002	20.5	***	18.4	***	42.1	9.1	13.3	12.9	23.0	24.1	59.3	72.8	67.1	61.2	95.3
2001-2003	19.1	***	13.2	33.2	39.2	9.6	11.9	14.4	21.8	25.7	59.4	***	70.8	59.6	97.7
2002-2004	12.8	***	9.8	32.0	34.1	8.2	14.1	14.0	20.0	26.7	58.2	***	66.0	51.7	100.3
2003-2005	15.3	***	9.1	35.7	34.8	8.9	15.7	13.8	15.7	26.4	55.3	***	62.3	59.1	95.1
2004-2006	17.3	***	10.8	37.5	37.4	8.5	***	13.0	12.7	28.4	54.2	***	56.3	54.4	103.4
2005-2007	17.3	***	12.8	32.7	37.5	8.8	***	13.1	11.1	29.6	44.9	82.5	61.3	45.3	110.4
2006-2008	11.9	***	11.6	***	30.3	7.8	***	12.9	10.7	30.4	36.7	73.5	63.4	39.0	113.3
2007-2009	***	***	8.6	***	22.3	8.7	21.2	12.8	13.8	30.1	38.3	69.3	63.9	42.5	108.5

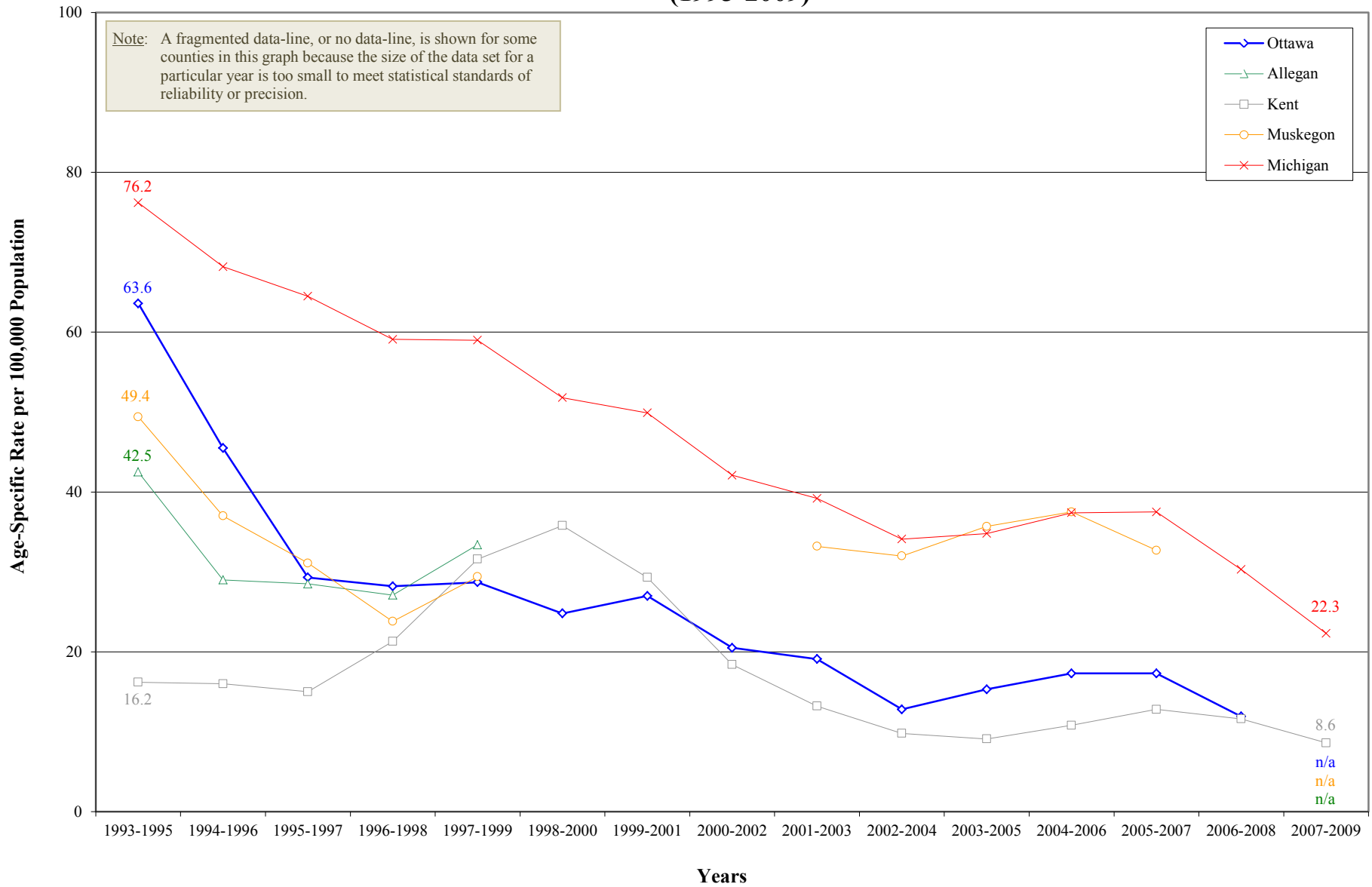
Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines

\*\* Preventable hospitalization 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 preventable hospitalizations) was too small to meet statistical standards of reliability or precision

## Gastroenteritis\* Hospitalizations Among Persons Under Age 18 (1993-2009)

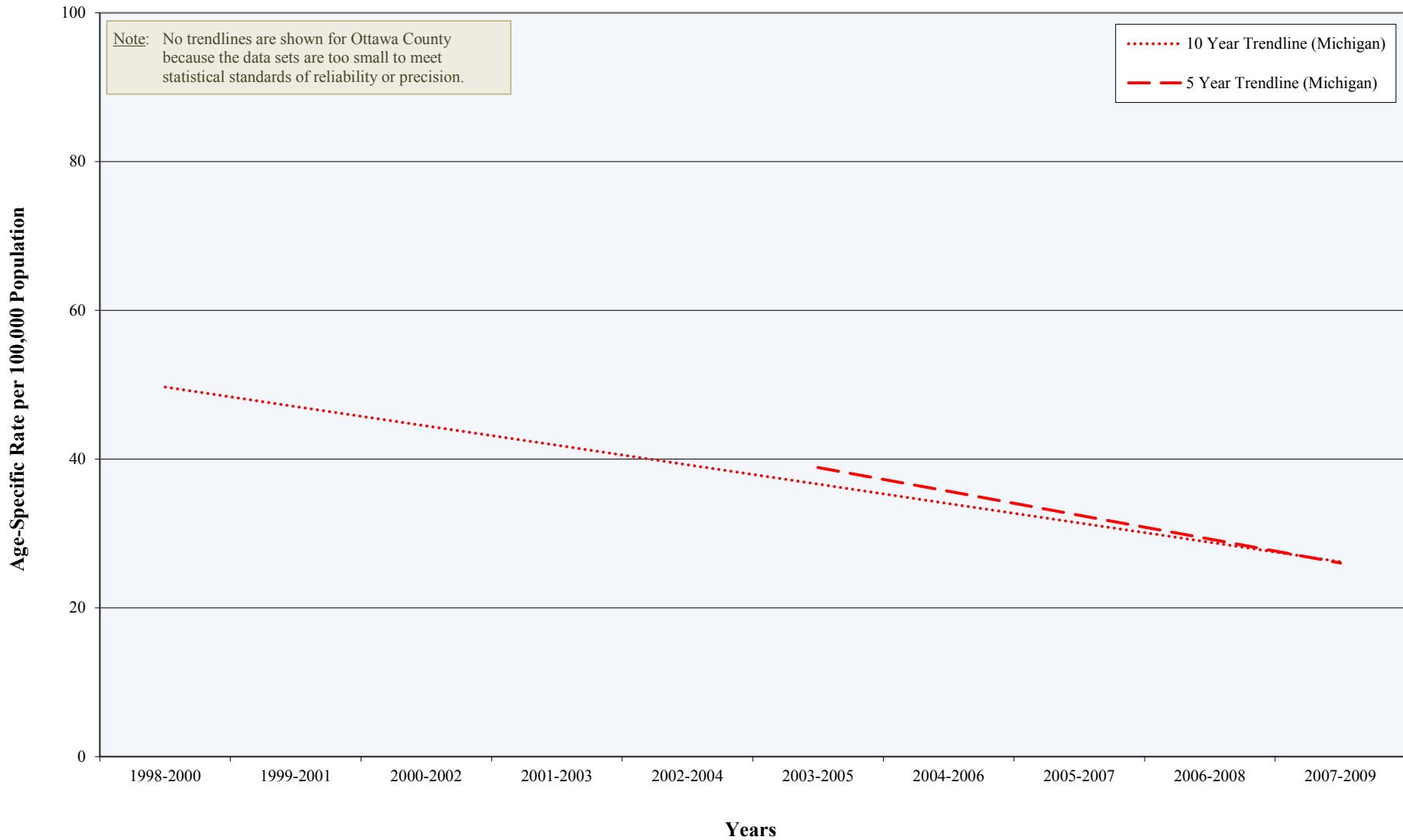


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

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# Gastroenteritis\* Hospitalizations Among Persons Under Age 18

## 5 and 10 Year Trends

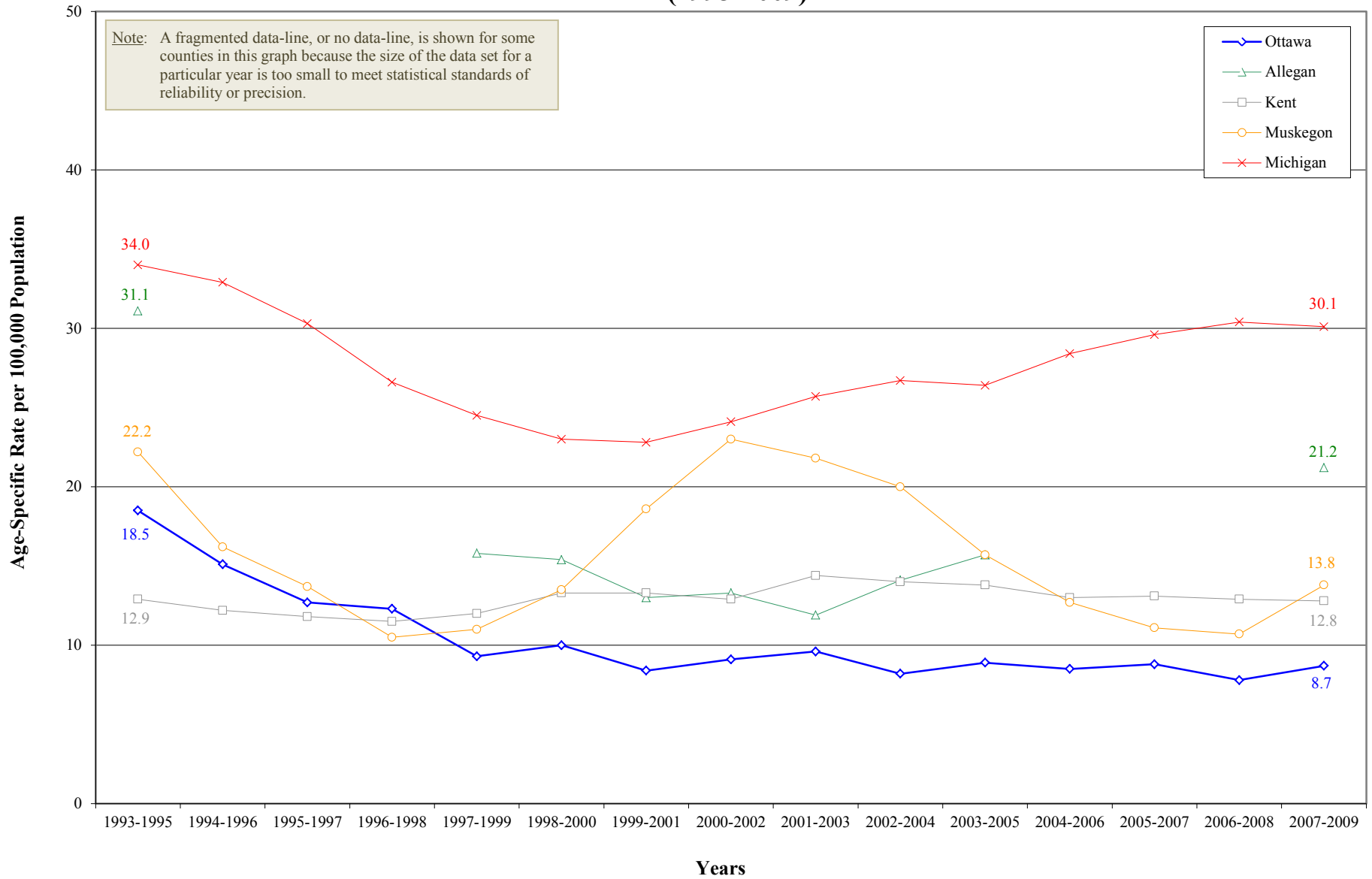


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines



## Gastroenteritis\* Hospitalizations Among Persons Age 18-64 (1993-2009)

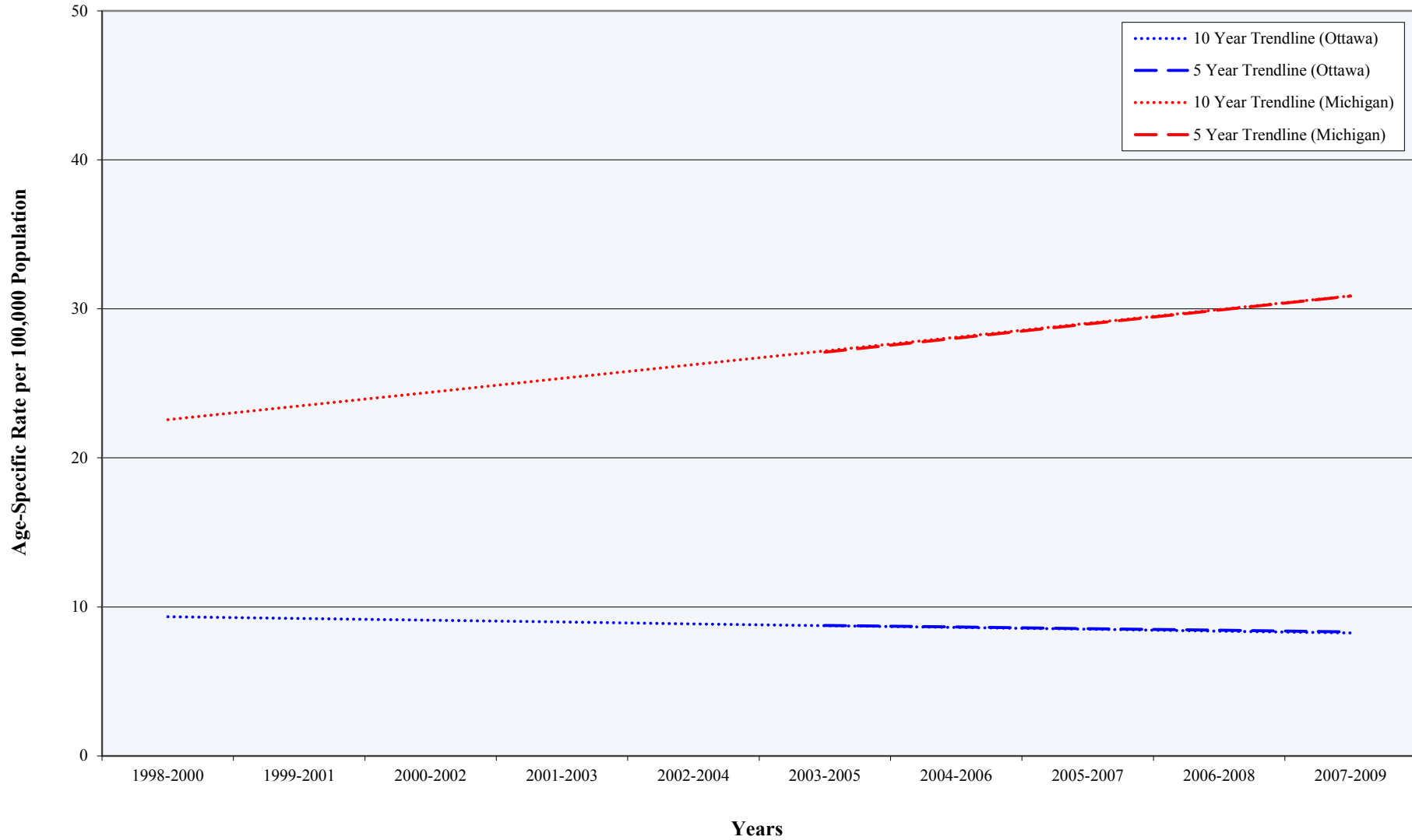


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

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# Gastroenteritis\* Hospitalizations Among Persons Age 18-64

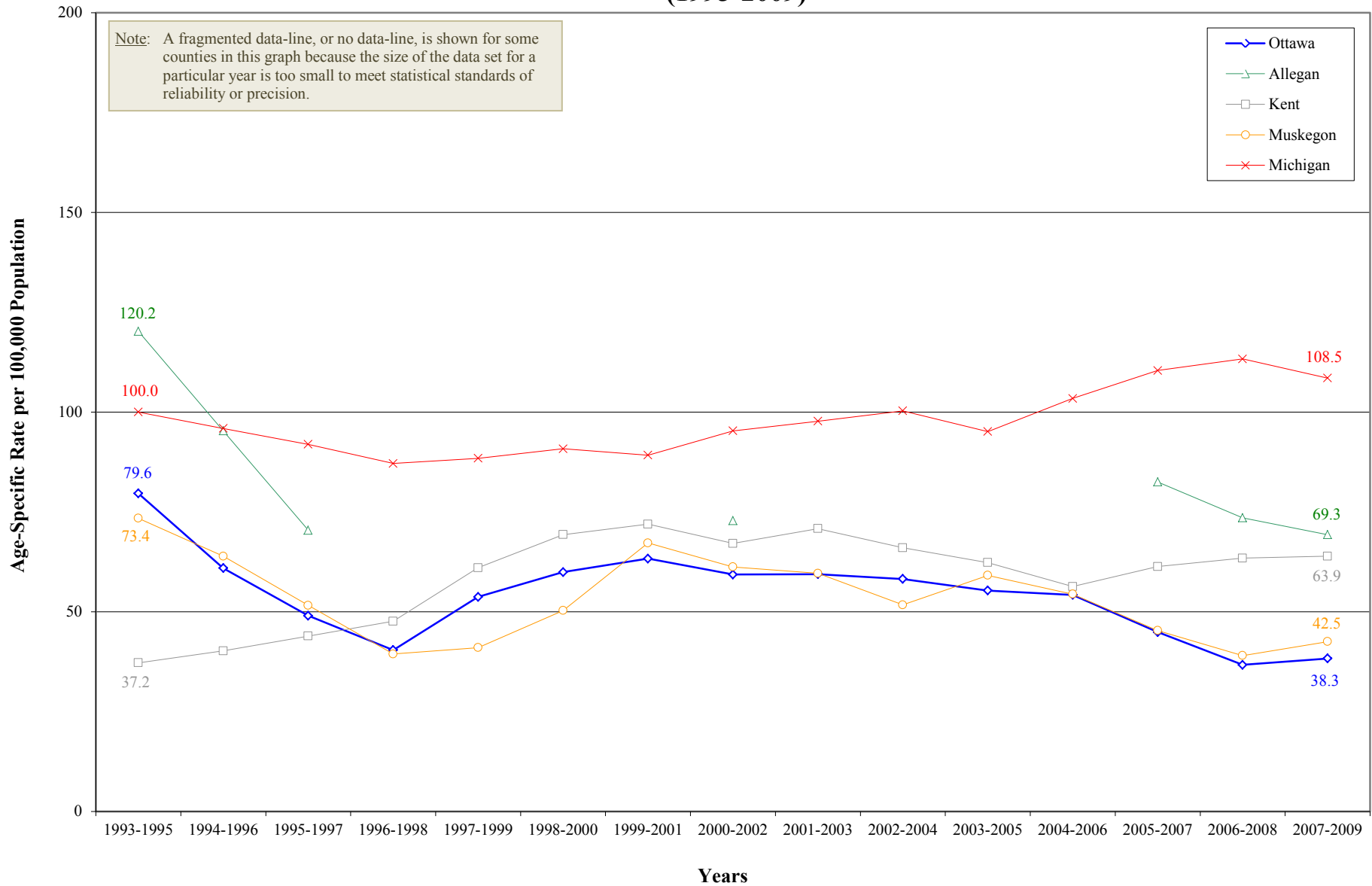
## 5 and 10 Year Trends



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

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines

## Gastroenteritis\* Hospitalizations Among Persons Age 65 and Older (1993-2009)

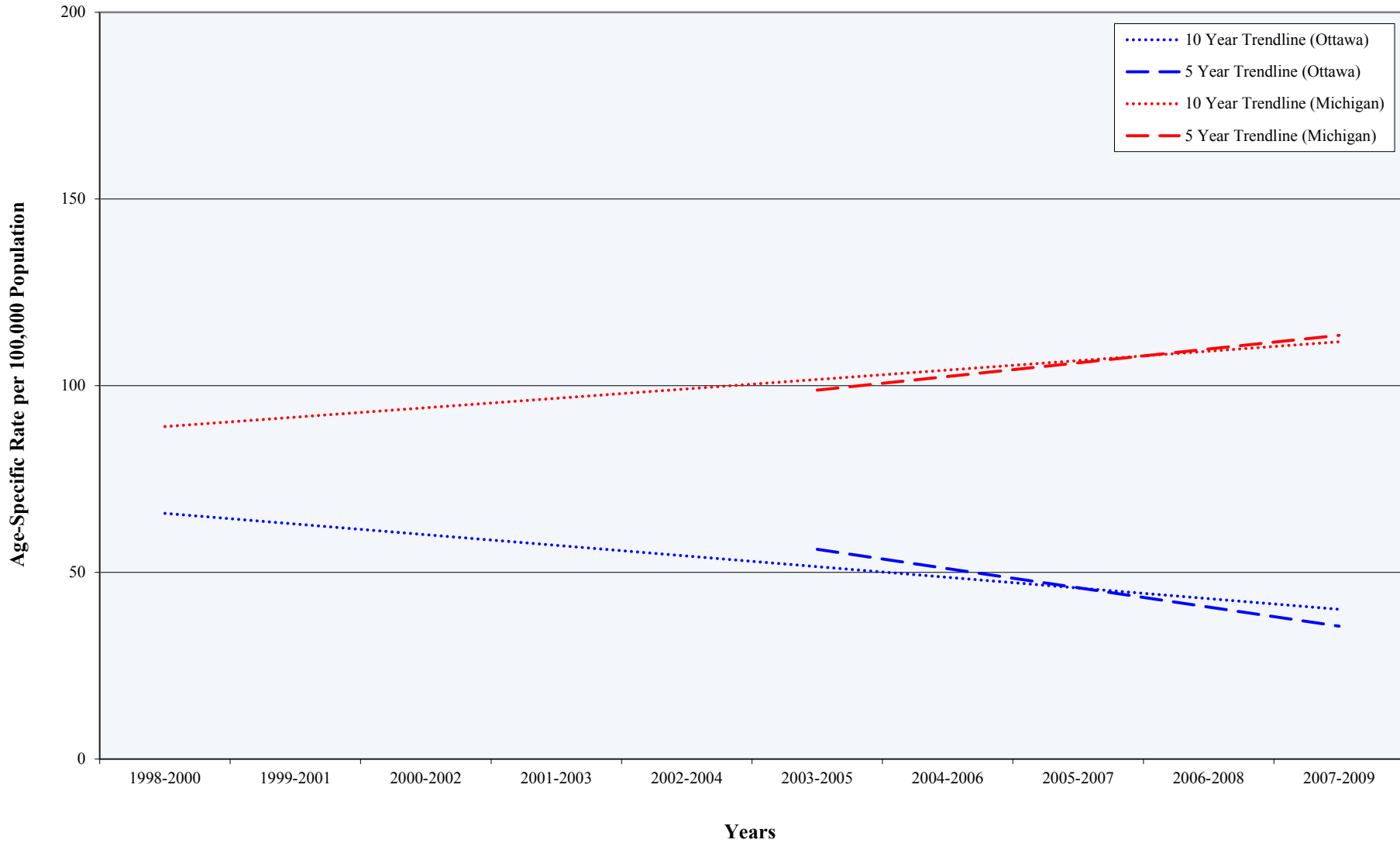


Source: Michigan Department of Community Health, Michigan Resident Inpatient Files, Division for Vital Records & Health Statistics

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines

# Gastroenteritis\* Hospitalizations Among Persons Age 65 and Older

## 5 and 10 Year Trends



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

\* Gastroenteritis is the irritation and inflammation of the stomach and intestines