

## V. Communicable Diseases

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An infectious disease transmissible (as from person to person) by direct contact with an affected individual or the individual's discharges or by indirect means (as by a vector)

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*Key findings from this chapter:*

### ***Positive/Neutral Trends***

- [Chickenpox cases](#) in Ottawa County declined by 77% since 2002 (69.2 cases per 100,000 down to 16.0). Statewide, there was 68% decrease during the same time period (45.7 cases per 100,000 down to 14.7)
- Ottawa County's [sexually transmitted infection rates](#) for Chlamydia, Gonorrhea, and Syphilis have been lower than the statewide rate over the last decade. In 2011, Ottawa County's Chlamydia rate was 57% lower than the State (214.4 cases per 100,000 county residents compared to 506.9 statewide). The County's 2011 Gonorrhea rate was 81% lower (24.8 cases per 100,000 county residents compared to 132.3 statewide), and its Syphilis rate was 75% lower (1.6 cases per 100,000 county residents compared to 6.5 statewide)

### ***Negative Trends***

- [Whooping cough](#) cases increased by 642% (1.9 cases per 100,000 up to 14.1) in Ottawa County between 2006 and 2011. Cases statewide increased 150% during this same time period (4.2 cases per 100,000 up to 10.5)
- [Campylobacter](#) (food poisoning that is typically contracted by handling raw or undercooked poultry) cases in Ottawa County were nearly 50% higher than the State in 2011 (17.5 cases per 100,000 county residents compared to 11.7 statewide)
- [Giardiasis](#) (typically contracted by ingesting food or water that is tainted with human or animal waste) cases in Ottawa County were 89% higher than the State in 2011 (12.1 cases per 100,000 county residents compared to 6.4 statewide)

## Vaccine Preventable Diseases (2002-2011)

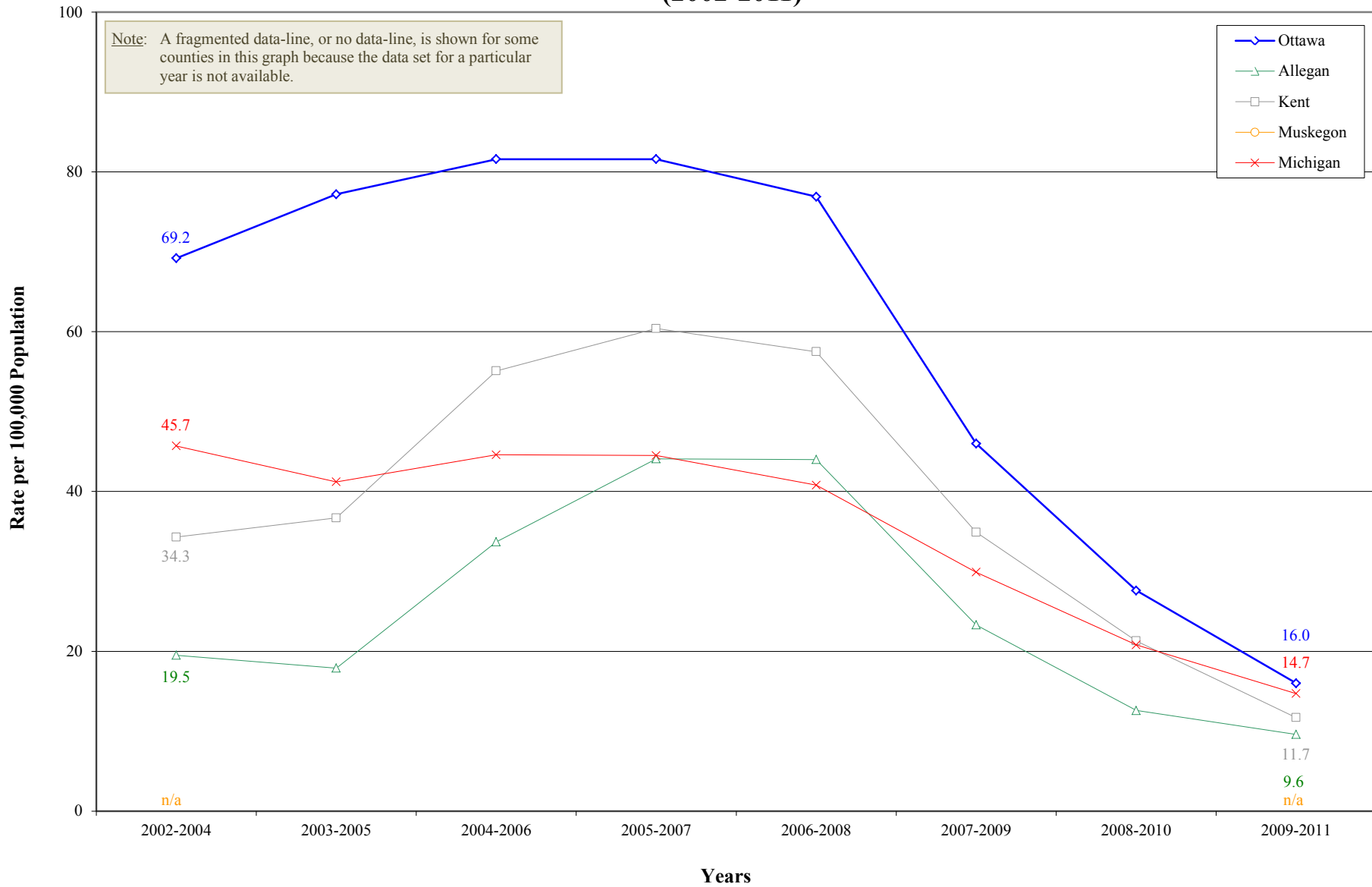
### Varicella (Chickenpox) Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | 69.2                        | 19.5    | 34.3 | *        | 45.7     |
| 2003-2005 | 77.2                        | 17.9    | 36.7 | *        | 41.2     |
| 2004-2006 | 81.6                        | 33.7    | 55.1 | *        | 44.6     |
| 2005-2007 | 81.6                        | 44.1    | 60.4 | *        | 44.5     |
| 2006-2008 | 76.9                        | 44.0    | 57.5 | *        | 40.8     |
| 2007-2009 | 46.0                        | 23.3    | 34.9 | *        | 29.9     |
| 2008-2010 | 27.6                        | 12.6    | 21.3 | *        | 20.8     |
| 2009-2011 | 16.0                        | 9.6     | 11.7 | *        | 14.7     |

Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* Varicella cases were not tracked prior to 2011

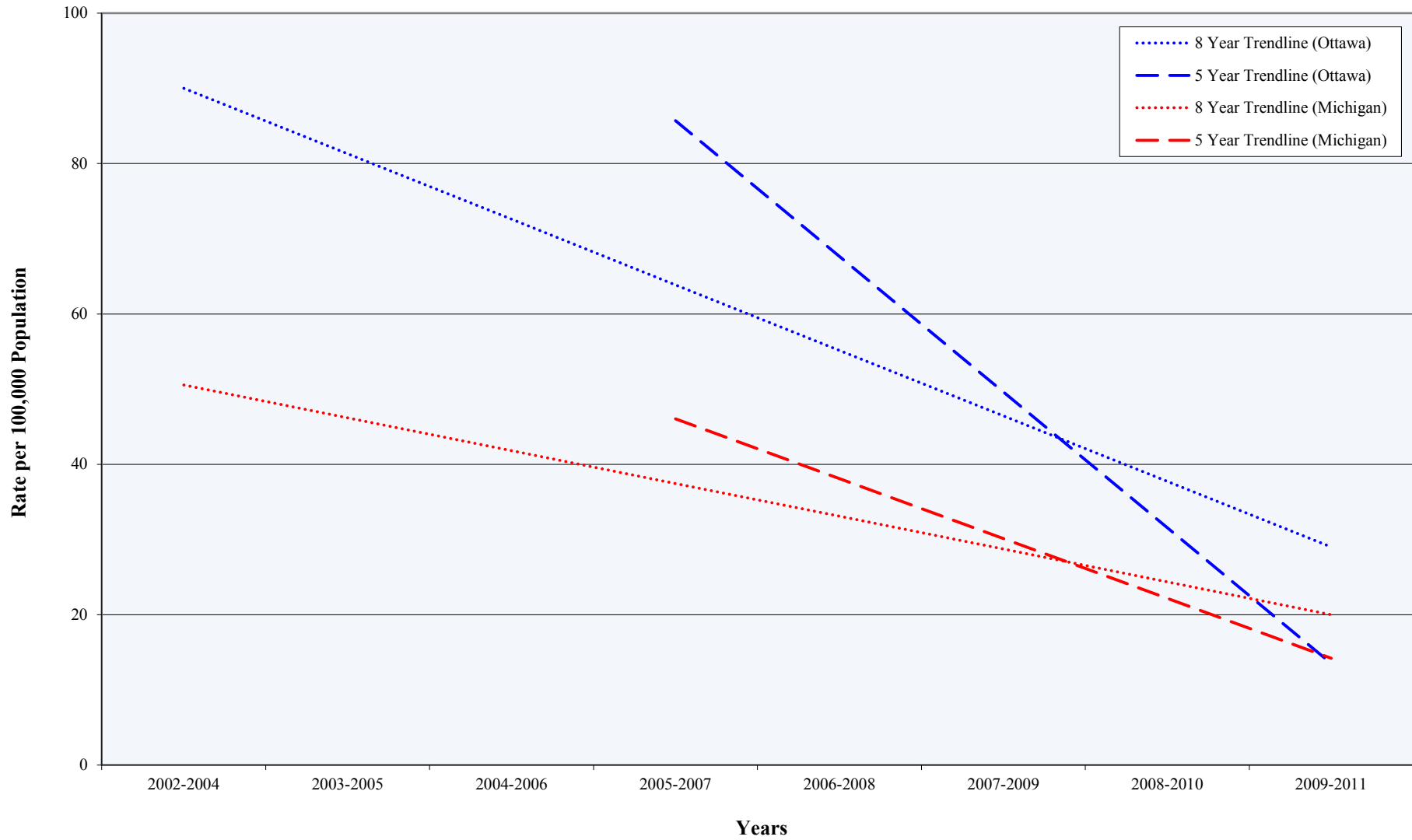
## Varicella (Chickenpox) Cases (2002-2011)



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

# Varicella (Chickenpox) Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

## Vaccine Preventable Diseases (2002-2011)

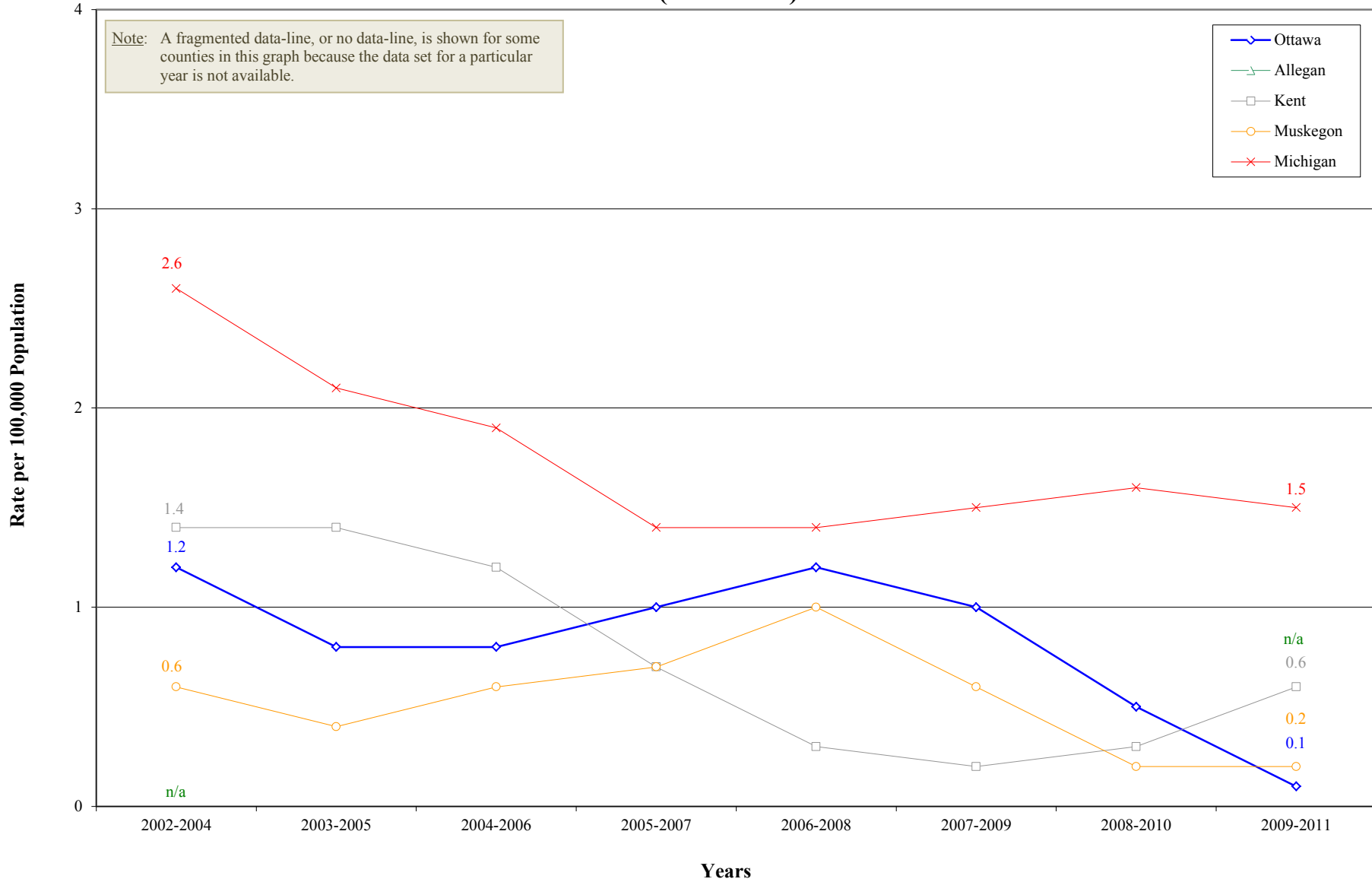
### Acute Hepatitis B Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | 1.2                         | *       | 1.4  | 0.6      | 2.6      |
| 2003-2005 | 0.8                         | *       | 1.4  | 0.4      | 2.1      |
| 2004-2006 | 0.8                         | *       | 1.2  | 0.6      | 1.9      |
| 2005-2007 | 1.0                         | *       | 0.7  | 0.7      | 1.4      |
| 2006-2008 | 1.2                         | *       | 0.3  | 1.0      | 1.4      |
| 2007-2009 | 1.0                         | *       | 0.2  | 0.6      | 1.5      |
| 2008-2010 | 0.5                         | *       | 0.3  | 0.2      | 1.6      |
| 2009-2011 | 0.1                         | *       | 0.6  | 0.2      | 1.5      |

Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* A rate could not be calculated because data is not available for three consecutive years

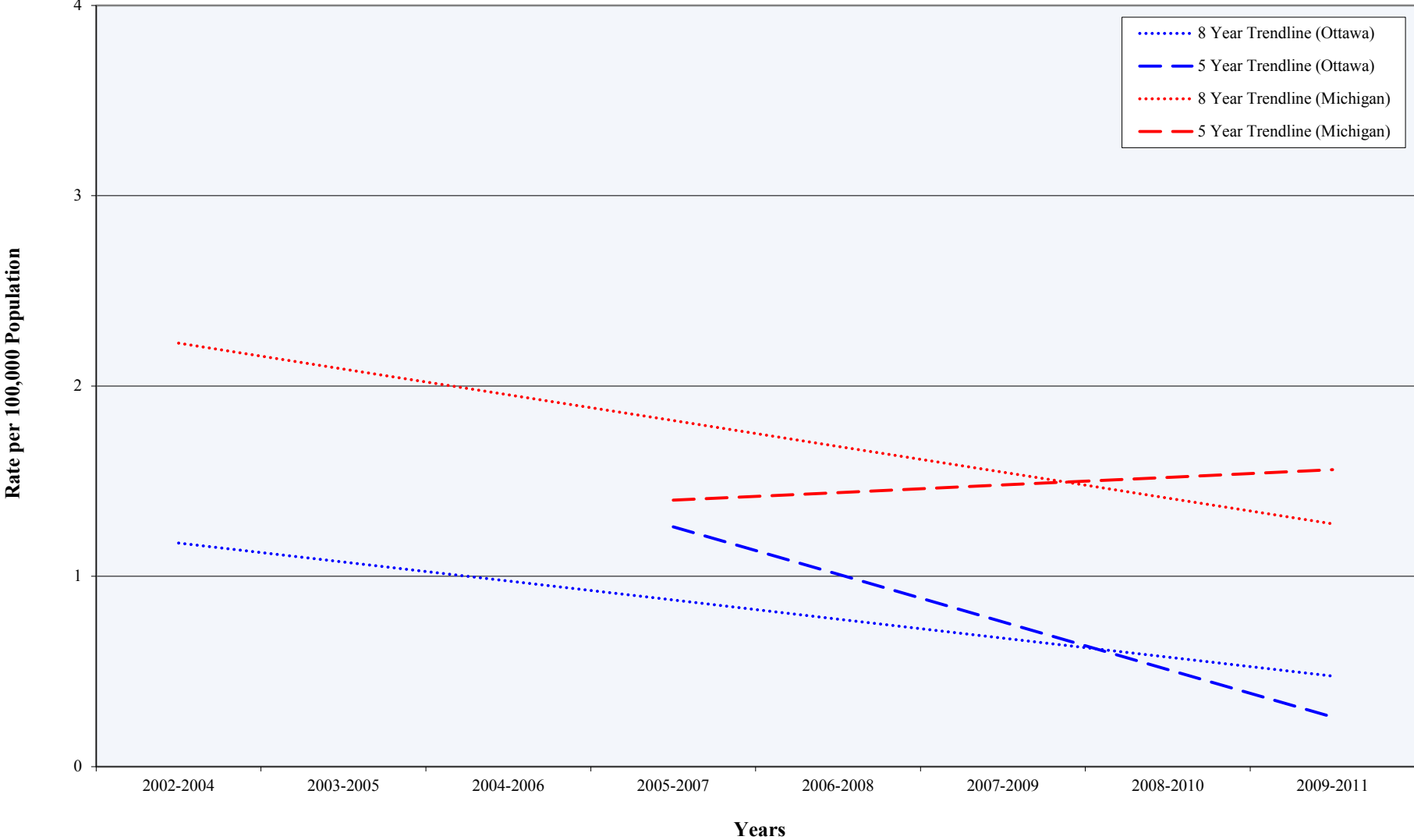
## Acute Hepatitis B Cases (2002-2011)



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

# Acute Hepatitis B Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

**Vaccine Preventable Diseases (2002-2011)**  
**Pertussis (Whooping Cough) Cases By Year** (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | *                           | 2.7     | 1.4  | 4.3      | 1.7      |
| 2003-2005 | 2.5                         | **      | 1.5  | 5.6      | 2.6      |
| 2004-2006 | 2.2                         | **      | 1.6  | 6.2      | 4.2      |
| 2005-2007 | 2.3                         | **      | 1.3  | 3.1      | 4.1      |
| 2006-2008 | 1.9                         | 3.6     | 1.2  | 3.1      | 4.2      |
| 2007-2009 | 5.2                         | 4.2     | 1.1  | 2.9      | 5.2      |
| 2008-2010 | 10.3                        | 9.9     | 1.7  | 7.5      | 9.5      |
| 2009-2011 | 14.1                        | 10.5    | 1.7  | 8.7      | 10.5     |

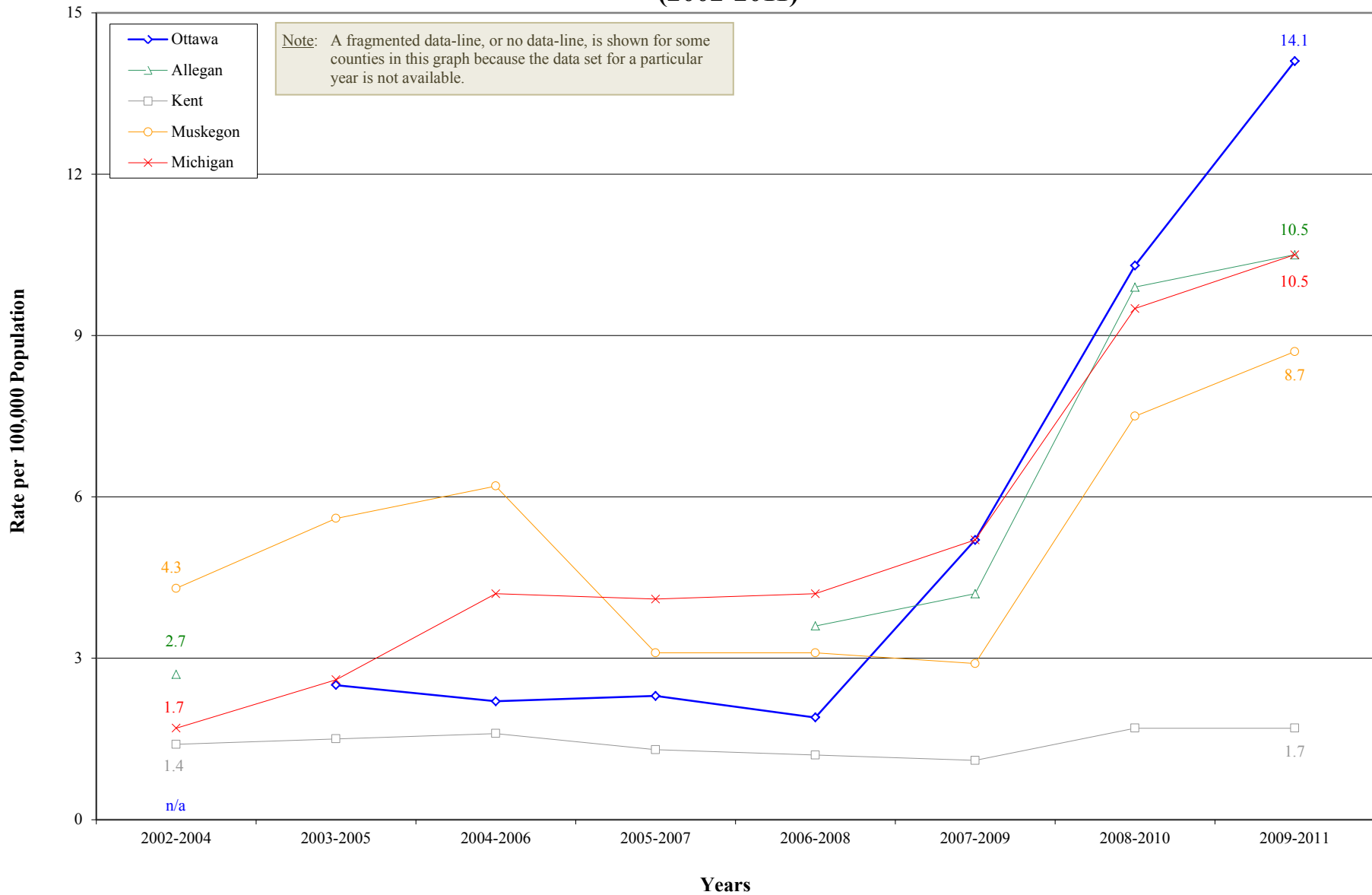
Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* A rate could not be calculated because data is not available for 2002

\*\*A rate could not be calculated because the number of cases in 2005 is not available



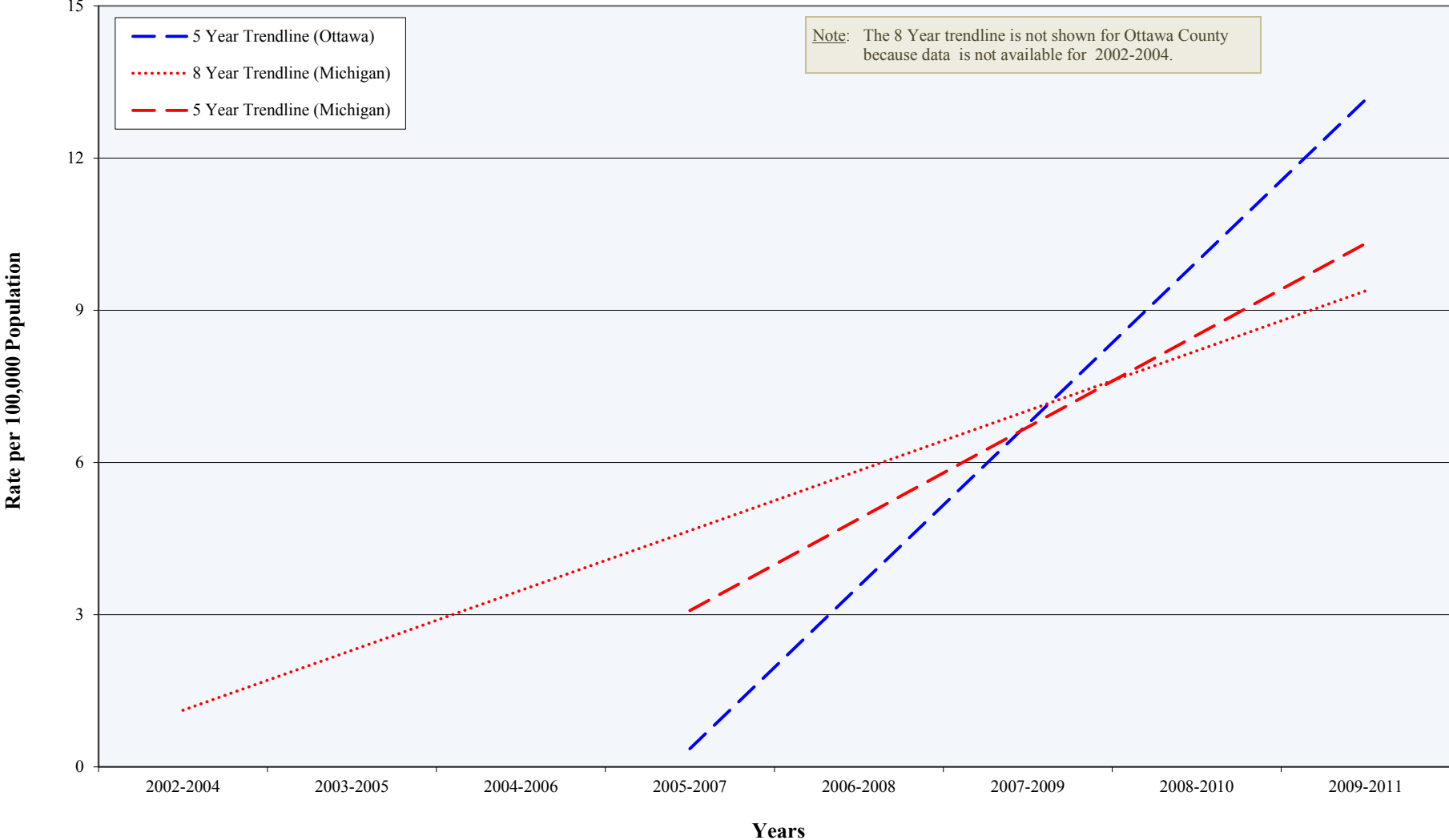
## Pertussis (Whooping Cough) Cases (2002-2011)



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

# Pertussis (Whooping Cough) Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

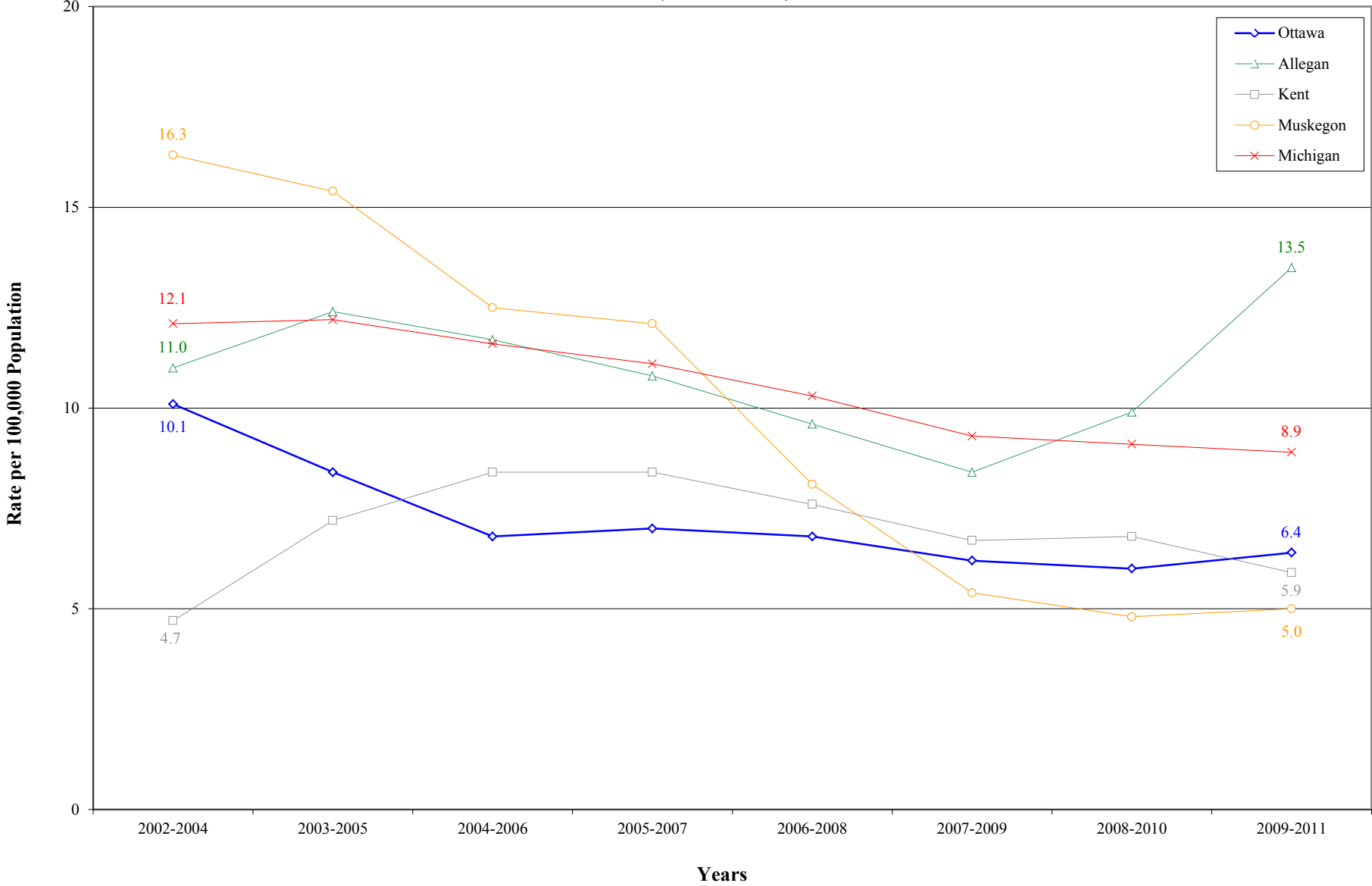
## Vaccine Preventable Diseases (2002-2011)

### Viral Meningitis Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | 10.1                        | 11.0    | 4.7  | 16.3     | 12.1     |
| 2003-2005 | 8.4                         | 12.4    | 7.2  | 15.4     | 12.2     |
| 2004-2006 | 6.8                         | 11.7    | 8.4  | 12.5     | 11.6     |
| 2005-2007 | 7.0                         | 10.8    | 8.4  | 12.1     | 11.1     |
| 2006-2008 | 6.8                         | 9.6     | 7.6  | 8.1      | 10.3     |
| 2007-2009 | 6.2                         | 8.4     | 6.7  | 5.4      | 9.3      |
| 2008-2010 | 6.0                         | 9.9     | 6.8  | 4.8      | 9.1      |
| 2009-2011 | 6.4                         | 13.5    | 5.9  | 5.0      | 8.9      |

Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

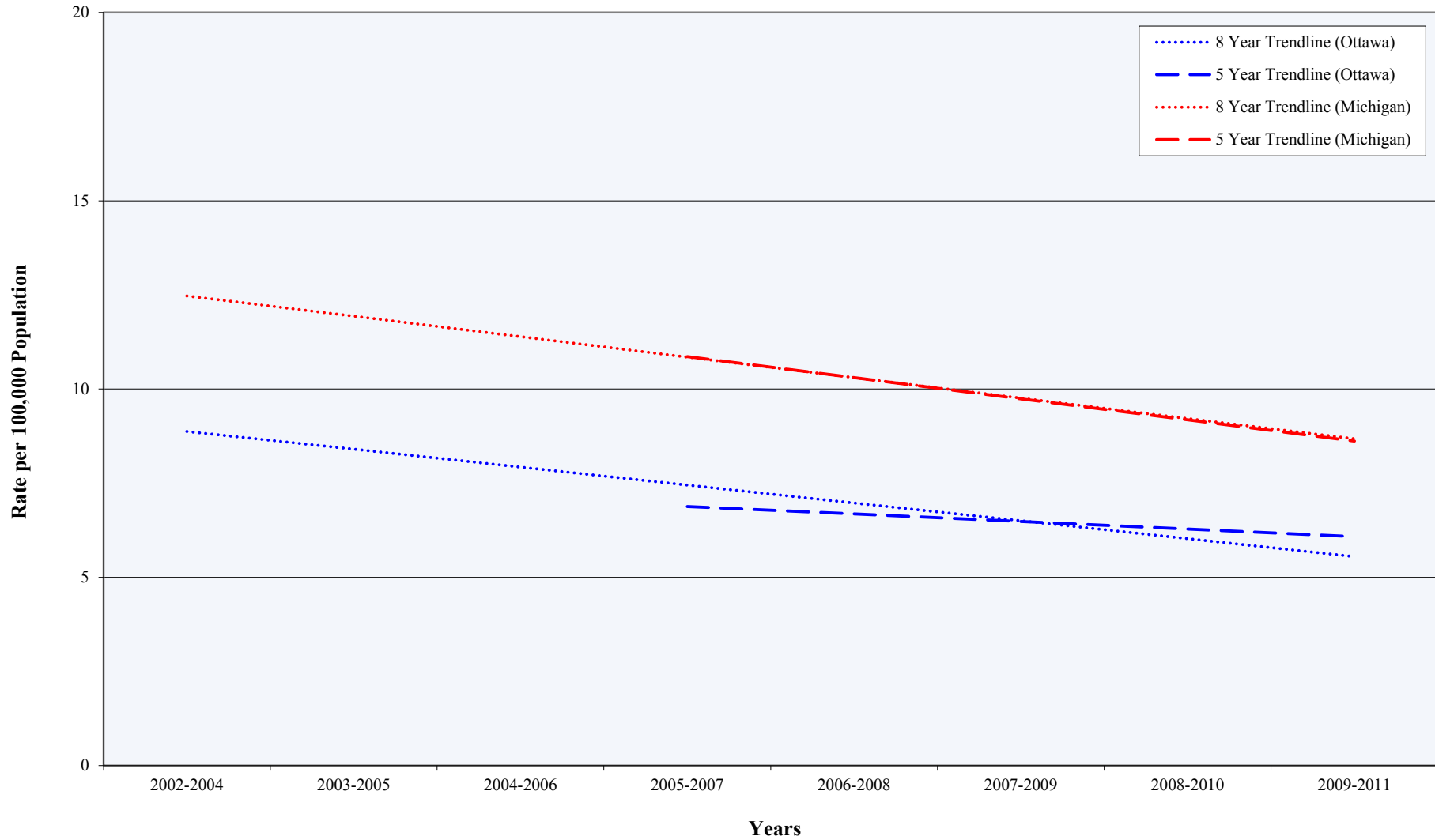
# Viral Meningitis Cases (2002-2011)



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

# Viral Meningitis Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

## Tuberculosis (2002-2011)

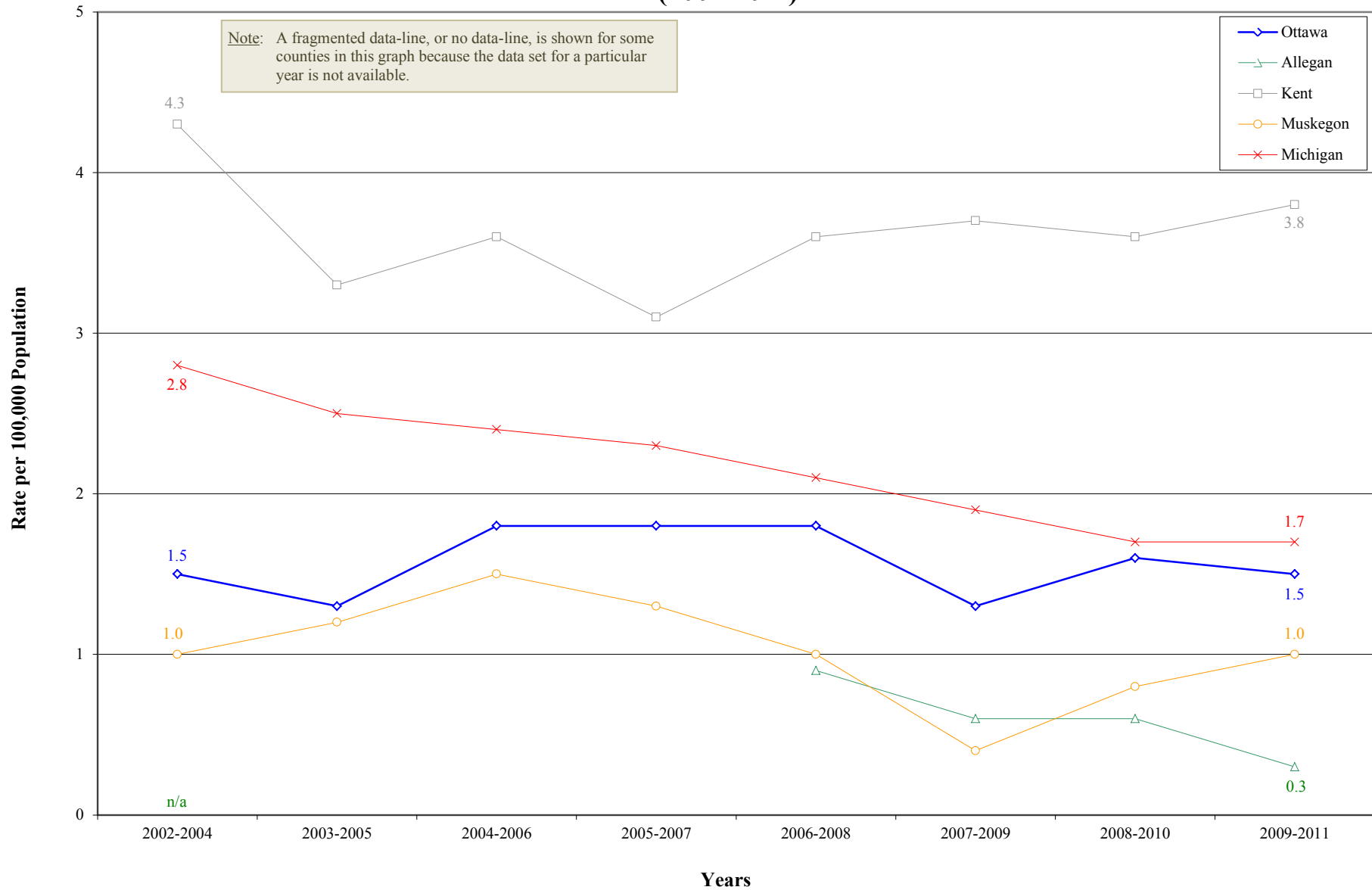
### Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | 1.5                         | *       | 4.3  | 1.0      | 2.8      |
| 2003-2005 | 1.3                         | *       | 3.3  | 1.2      | 2.5      |
| 2004-2006 | 1.8                         | *       | 3.6  | 1.5      | 2.4      |
| 2005-2007 | 1.8                         | *       | 3.1  | 1.3      | 2.3      |
| 2006-2008 | 1.8                         | 0.9     | 3.6  | 1.0      | 2.1      |
| 2007-2009 | 1.3                         | 0.6     | 3.7  | 0.4      | 1.9      |
| 2008-2010 | 1.6                         | 0.6     | 3.6  | 0.8      | 1.7      |
| 2009-2011 | 1.5                         | 0.3     | 3.8  | 1.0      | 1.7      |

Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* A rate could not be calculated because the number of cases in 2003 and 2005 is not available

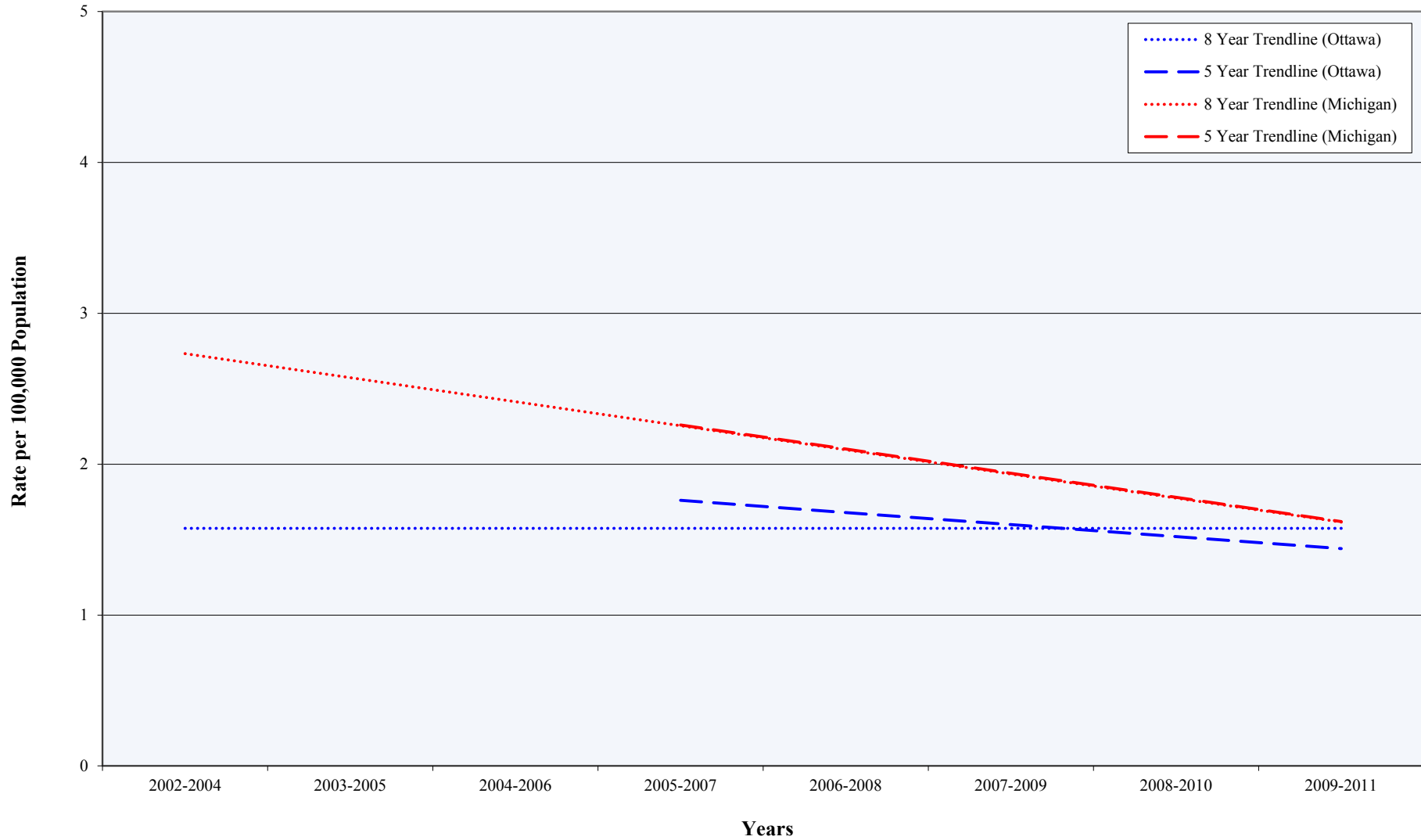
## Tuberculosis Cases (2002-2011)



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

# Tuberculosis Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau



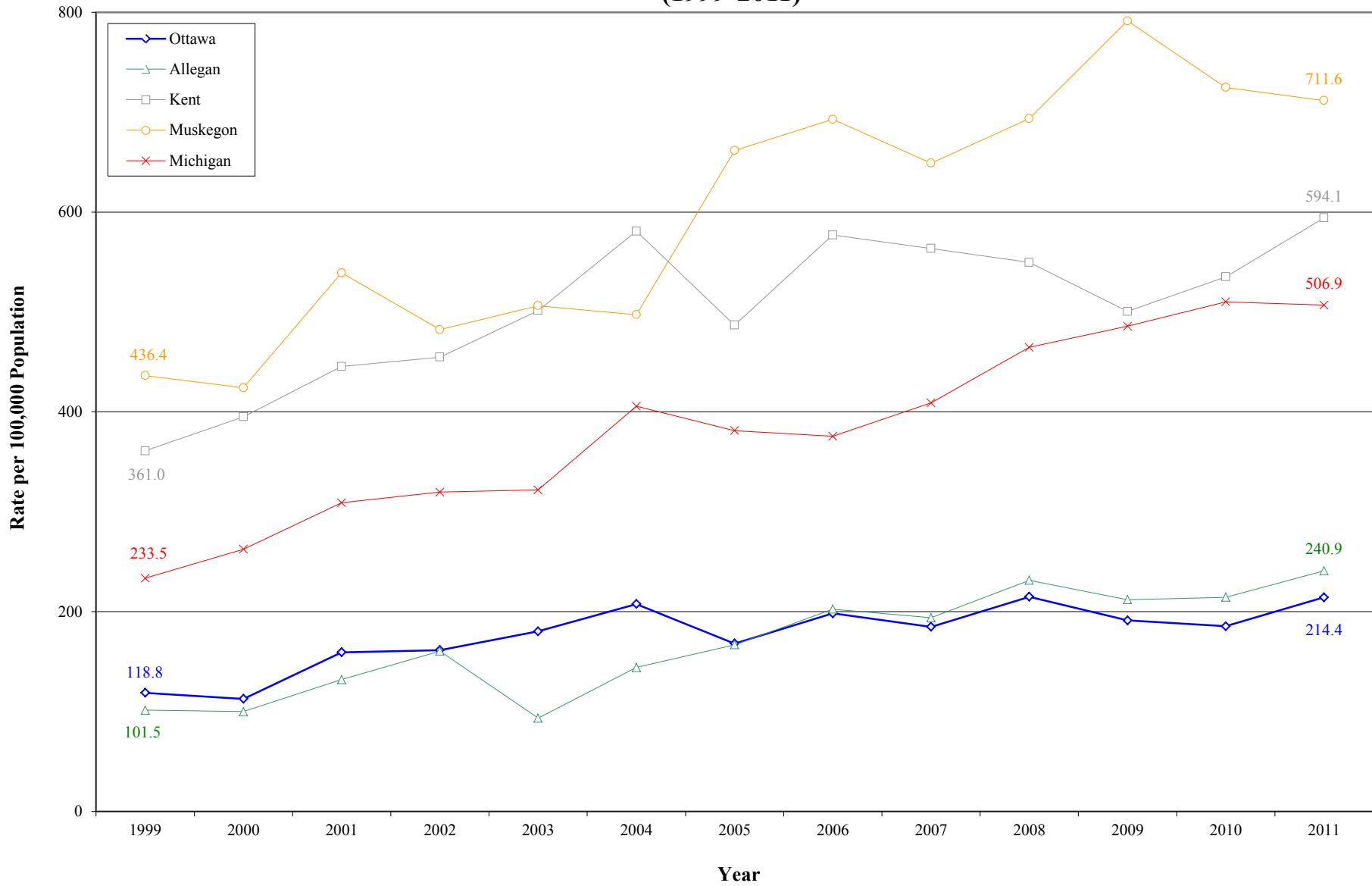
## Sexually Transmitted Infections (1999-2011)

### Chlamydia Cases By Year (Ottawa County, Adjacent Counties, State)

| Year | Rate per 100,000 Population |         |       |          |          |
|------|-----------------------------|---------|-------|----------|----------|
|      | Ottawa                      | Allegan | Kent  | Muskegon | Michigan |
| 1999 | 118.8                       | 101.5   | 361.0 | 436.4    | 233.5    |
| 2000 | 112.7                       | 100.0   | 395.1 | 424.1    | 262.5    |
| 2001 | 159.3                       | 132.1   | 445.4 | 539.1    | 309.0    |
| 2002 | 161.5                       | 160.6   | 454.8 | 482.3    | 319.7    |
| 2003 | 180.4                       | 93.4    | 501.4 | 506.2    | 321.9    |
| 2004 | 207.7                       | 144.2   | 580.9 | 497.3    | 405.6    |
| 2005 | 168.1                       | 166.9   | 486.9 | 661.6    | 381.2    |
| 2006 | 198.3                       | 202.6   | 577.0 | 692.8    | 375.5    |
| 2007 | 184.8                       | 194.0   | 563.6 | 649.0    | 409.0    |
| 2008 | 215.0                       | 231.4   | 549.6 | 693.6    | 464.6    |
| 2009 | 191.3                       | 212.0   | 500.5 | 791.4    | 485.7    |
| 2010 | 185.4                       | 214.5   | 535.2 | 724.8    | 510.2    |
| 2011 | 214.4                       | 240.9   | 594.1 | 711.6    | 506.9    |

Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

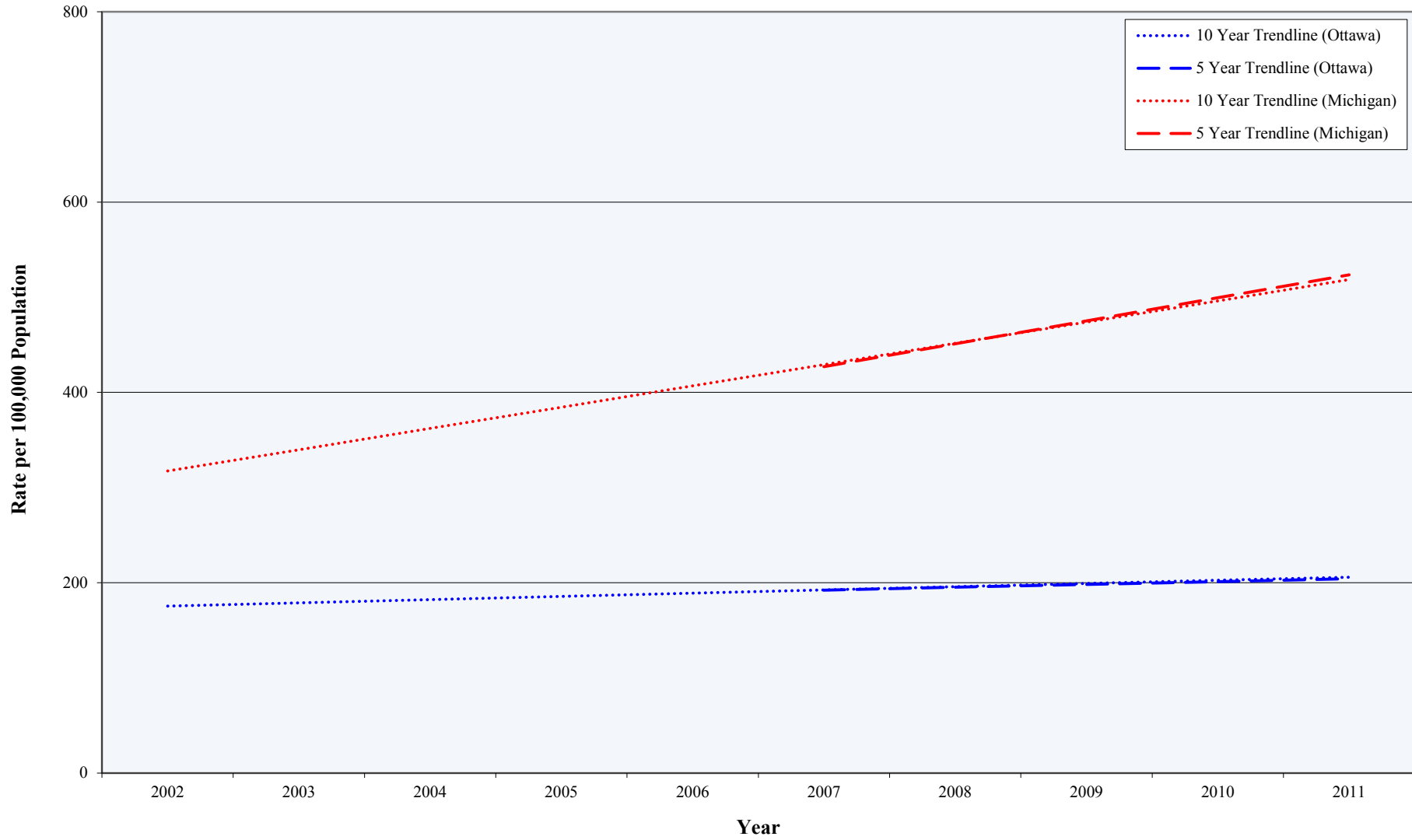
## Chlamydia Cases (1999-2011)



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

# Chlamydia Cases

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

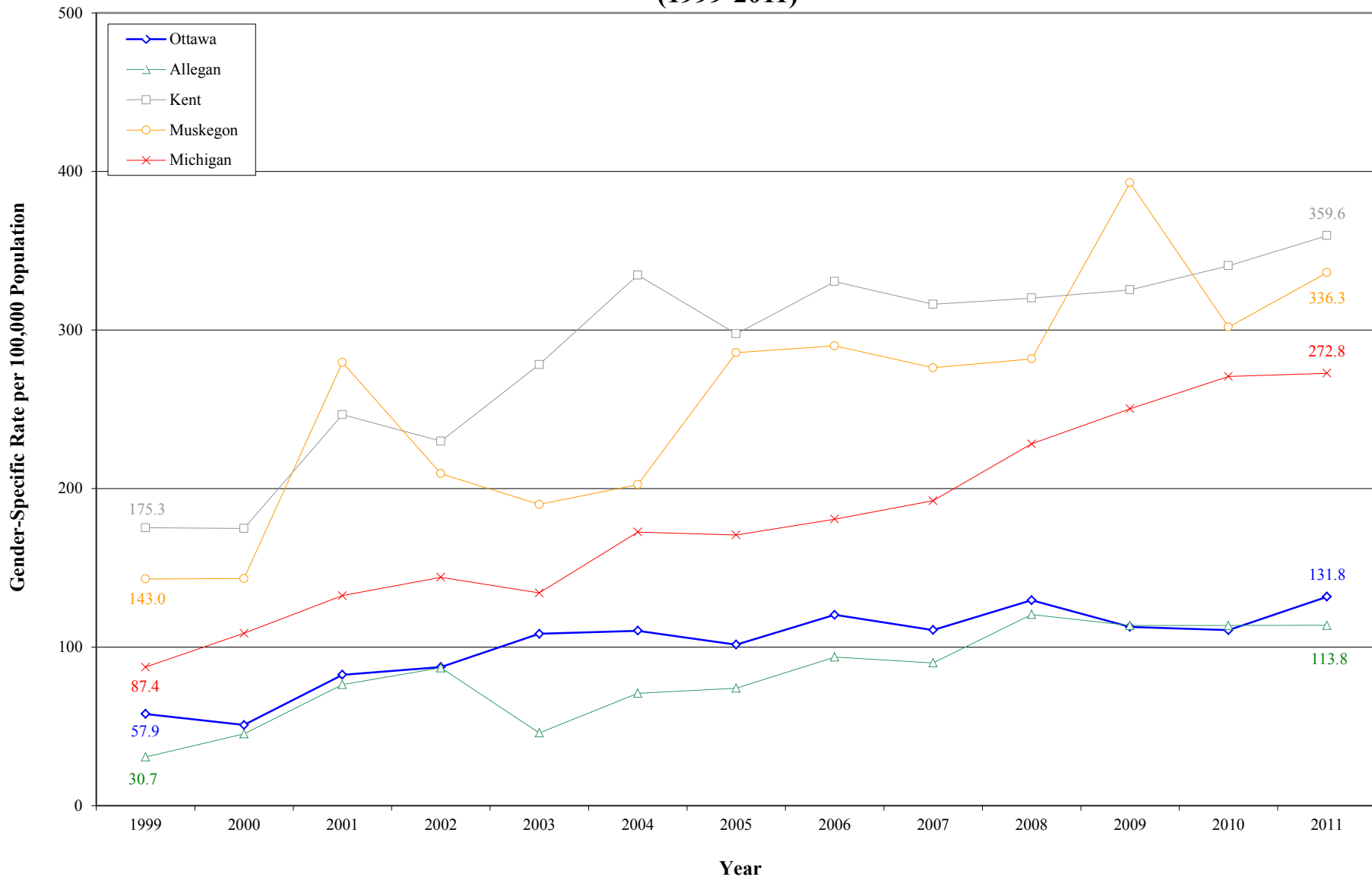
**Sexually Transmitted Infections (1999-2011)**  
**Chlamydia Cases By Gender** (Ottawa County, Adjacent Counties, State)

| Year | Rate per 100,000 Population* |         |       |          |          |        |         |       |          |          |
|------|------------------------------|---------|-------|----------|----------|--------|---------|-------|----------|----------|
|      | Male                         |         |       |          |          | Female |         |       |          |          |
|      | Ottawa                       | Allegan | Kent  | Muskegon | Michigan | Ottawa | Allegan | Kent  | Muskegon | Michigan |
| 1999 | 57.9                         | 30.7    | 175.3 | 143.0    | 87.4     | 177.9  | 171.9   | 540.4 | 724.7    | 373.8    |
| 2000 | 50.9                         | 45.3    | 174.8 | 143.2    | 108.7    | 172.8  | 154.4   | 608.6 | 700.2    | 410.7    |
| 2001 | 82.6                         | 76.4    | 246.6 | 279.6    | 132.5    | 233.7  | 187.6   | 637.9 | 794.2    | 479.2    |
| 2002 | 87.4                         | 86.9    | 229.9 | 209.4    | 144.1    | 233.1  | 234.1   | 672.6 | 750.5    | 488.9    |
| 2003 | 108.4                        | 45.9    | 278.2 | 190.0    | 134.2    | 250.0  | 140.7   | 717.5 | 816.8    | 503.1    |
| 2004 | 110.3                        | 70.9    | 334.7 | 202.5    | 172.6    | 301.6  | 217.2   | 818.8 | 786.6    | 630.4    |
| 2005 | 101.6                        | 74.1    | 297.6 | 285.7    | 170.8    | 232.3  | 259.4   | 661.1 | 1,030.9  | 581.8    |
| 2006 | 120.4                        | 93.8    | 330.6 | 290.0    | 180.7    | 273.6  | 310.9   | 810.0 | 1,089.4  | 561.4    |
| 2007 | 110.8                        | 90.1    | 316.3 | 276.2    | 192.3    | 256.0  | 297.5   | 799.7 | 1,015.8  | 614.6    |
| 2008 | 129.6                        | 120.6   | 320.2 | 281.8    | 228.2    | 297.1  | 341.4   | 766.6 | 1,098.8  | 688.5    |
| 2009 | 112.8                        | 113.6   | 325.4 | 392.9    | 250.4    | 266.6  | 309.6   | 667.6 | 1,183.9  | 708.7    |
| 2010 | 110.7                        | 113.6   | 340.6 | 301.9    | 270.8    | 256.9  | 314.7   | 720.9 | 1,140.2  | 738.3    |
| 2011 | 131.8                        | 113.8   | 359.6 | 336.3    | 272.8    | 293.8  | 366.9   | 818.5 | 1,081.8  | 730.2    |

Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

\* Rates are gender-specific and refer to the population of that gender

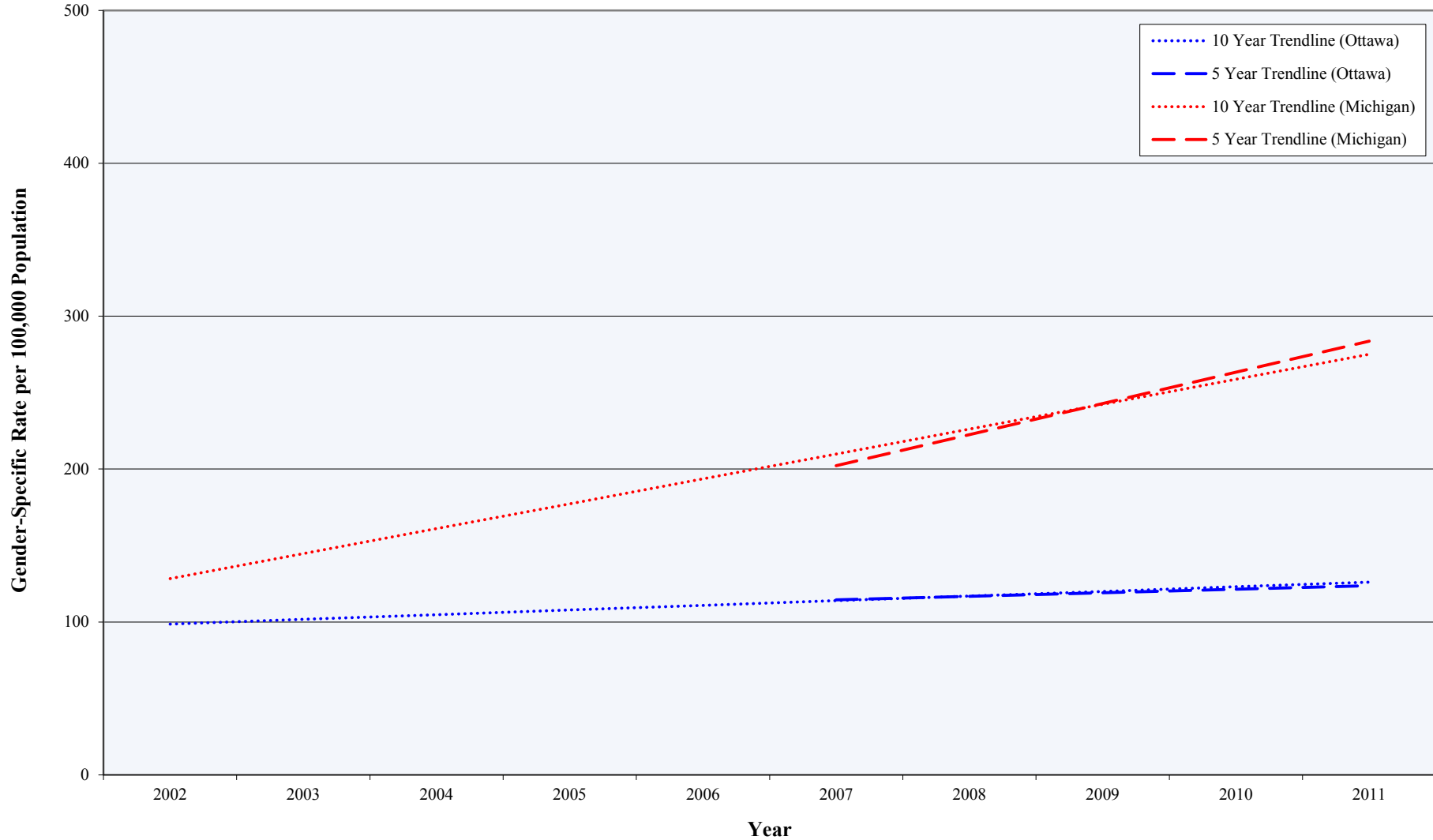
## Chlamydia Cases Among Males (1999-2011)



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

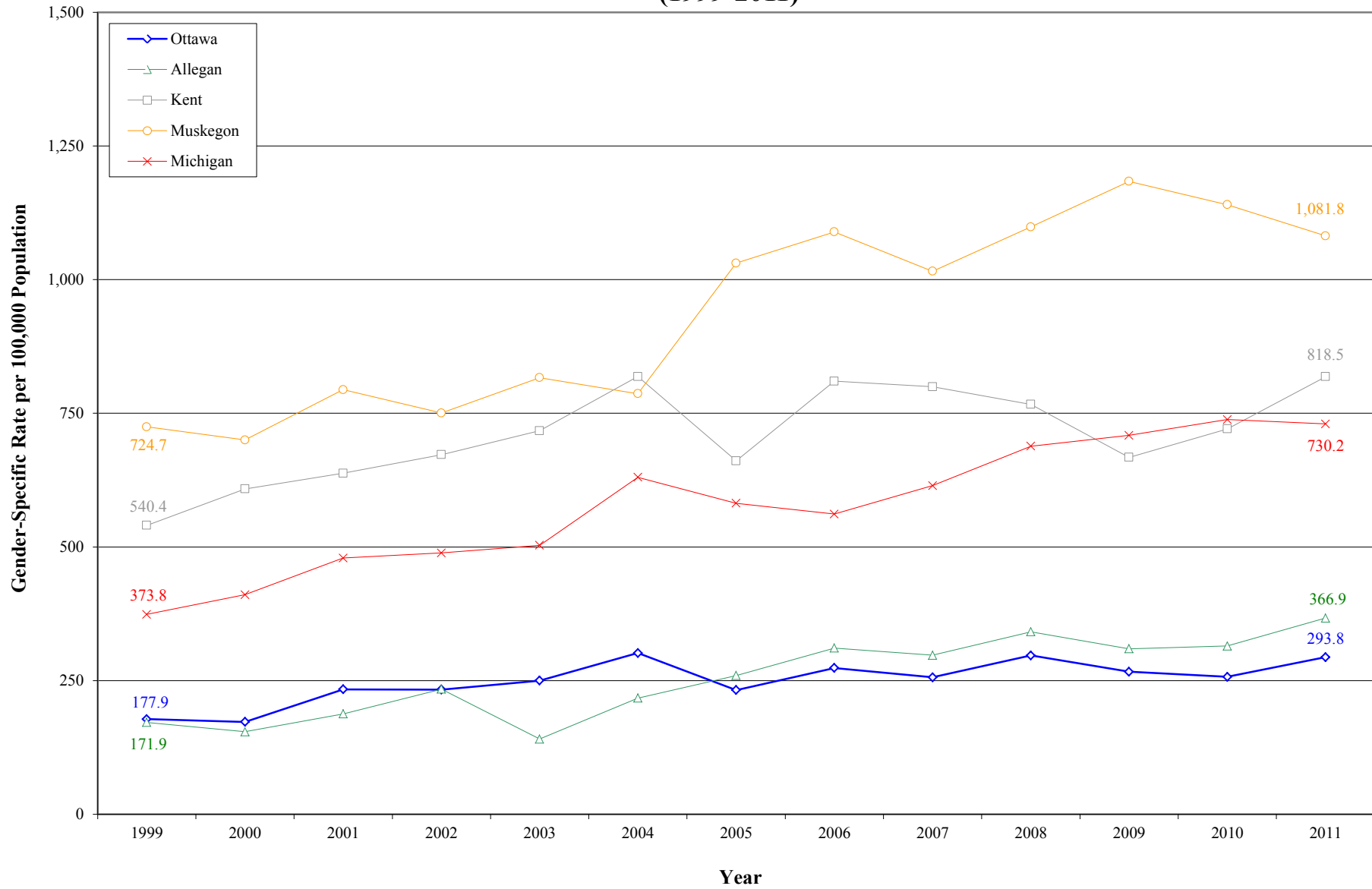
# Chlamydia Cases Among Males

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

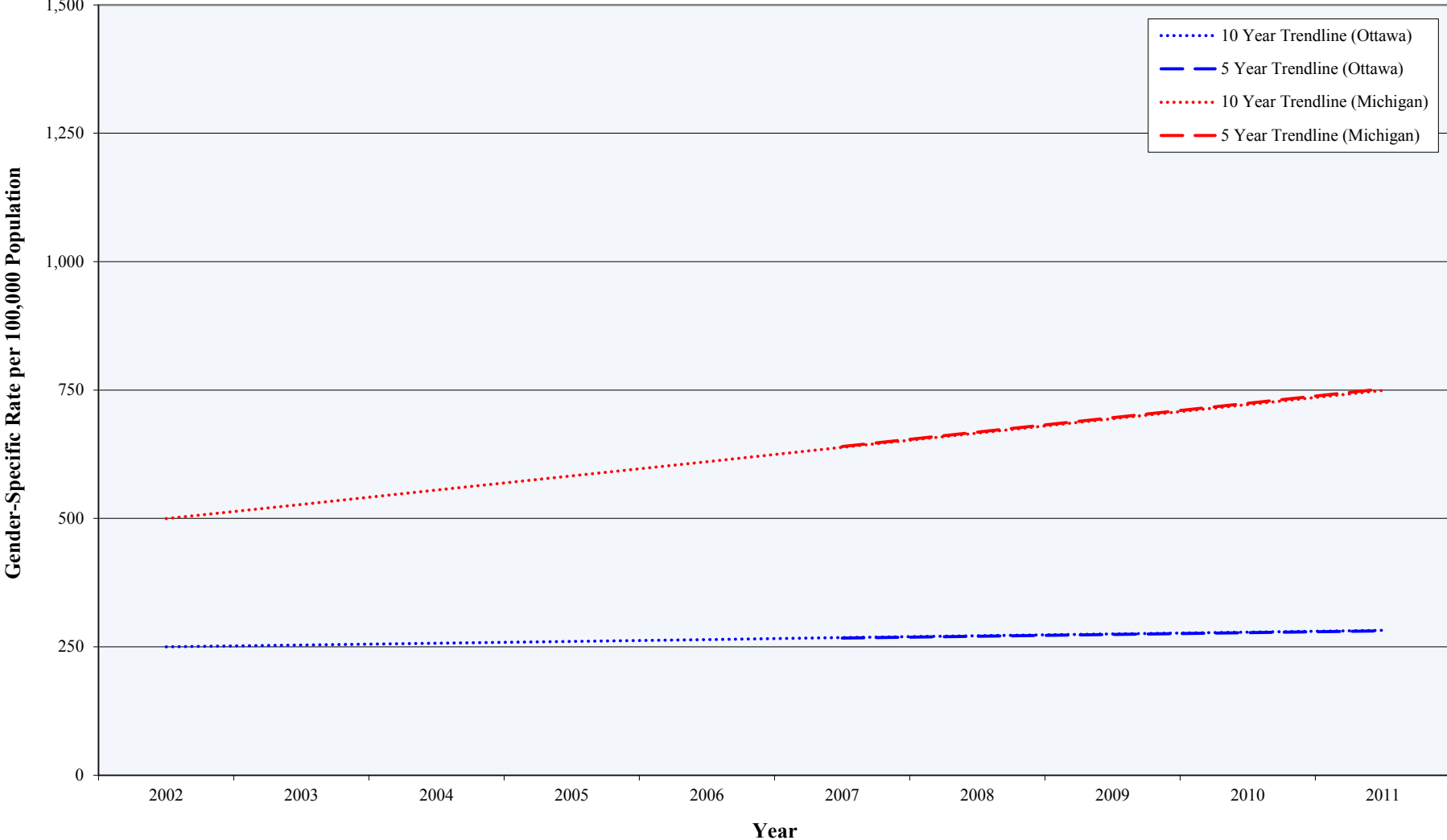
## Chlamydia Cases Among Females (1999-2011)



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

# Chlamydia Cases Among Females

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau



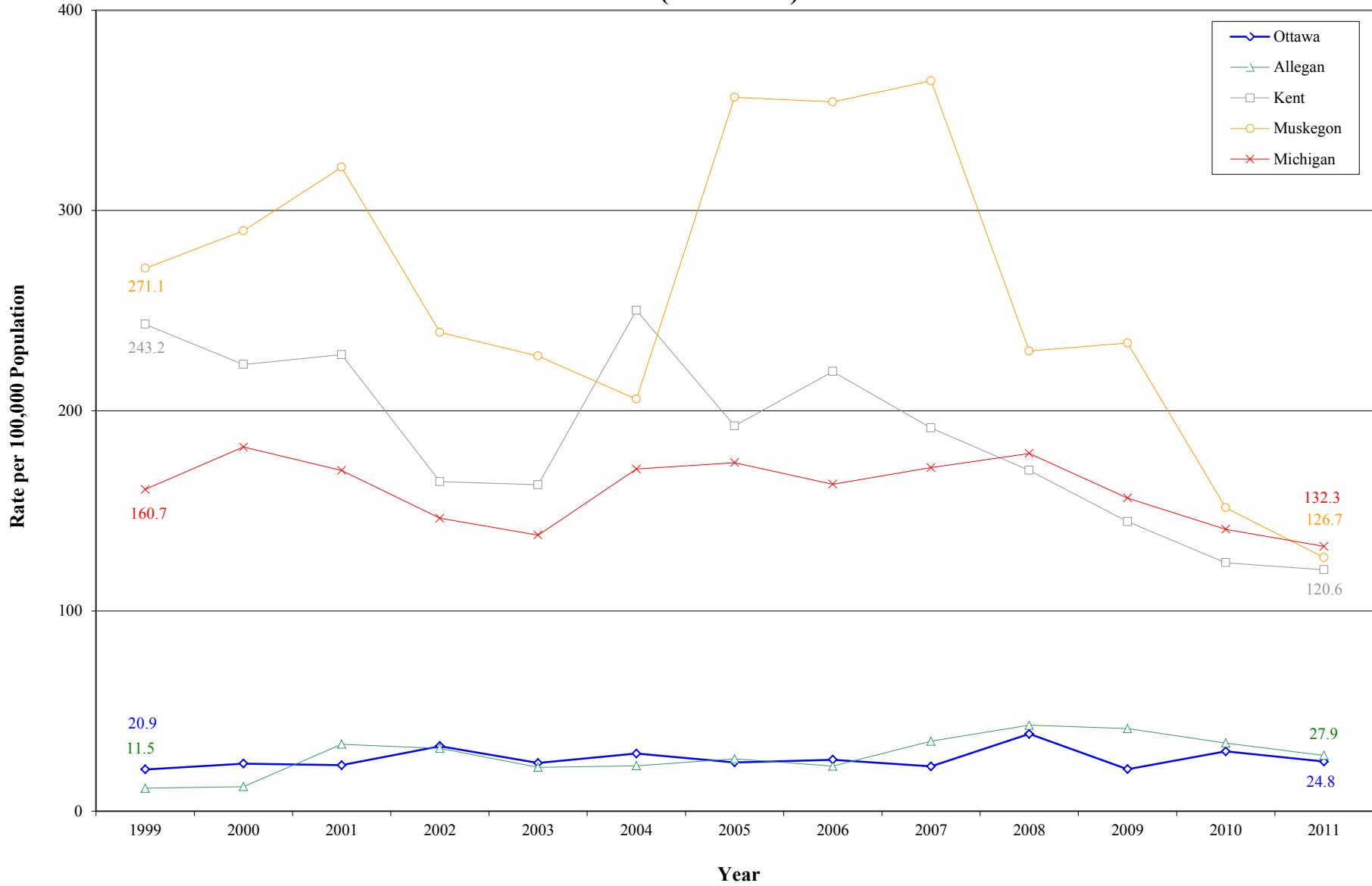
## Sexually Transmitted Infections (1999-2011)

### Gonorrhea Cases By Year (Ottawa County, Adjacent Counties, State)

| Year | Rate per 100,000 Population |         |       |          |          |
|------|-----------------------------|---------|-------|----------|----------|
|      | Ottawa                      | Allegan | Kent  | Muskegon | Michigan |
| 1999 | 20.9                        | 11.5    | 243.2 | 271.1    | 160.7    |
| 2000 | 23.8                        | 12.3    | 223.1 | 289.8    | 181.9    |
| 2001 | 23.0                        | 33.5    | 228.0 | 321.6    | 170.2    |
| 2002 | 32.5                        | 31.4    | 164.6 | 239.1    | 146.3    |
| 2003 | 24.1                        | 22.0    | 163.0 | 227.3    | 137.9    |
| 2004 | 28.8                        | 22.7    | 250.1 | 205.8    | 170.9    |
| 2005 | 24.4                        | 26.2    | 192.4 | 356.5    | 174.1    |
| 2006 | 25.7                        | 22.5    | 219.6 | 354.2    | 163.3    |
| 2007 | 22.4                        | 35.0    | 191.4 | 364.7    | 171.6    |
| 2008 | 38.6                        | 43.0    | 170.2 | 229.8    | 178.7    |
| 2009 | 21.0                        | 41.3    | 144.6 | 233.8    | 156.4    |
| 2010 | 29.9                        | 34.1    | 124.1 | 151.6    | 140.8    |
| 2011 | 24.8                        | 27.9    | 120.6 | 126.7    | 132.3    |

Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

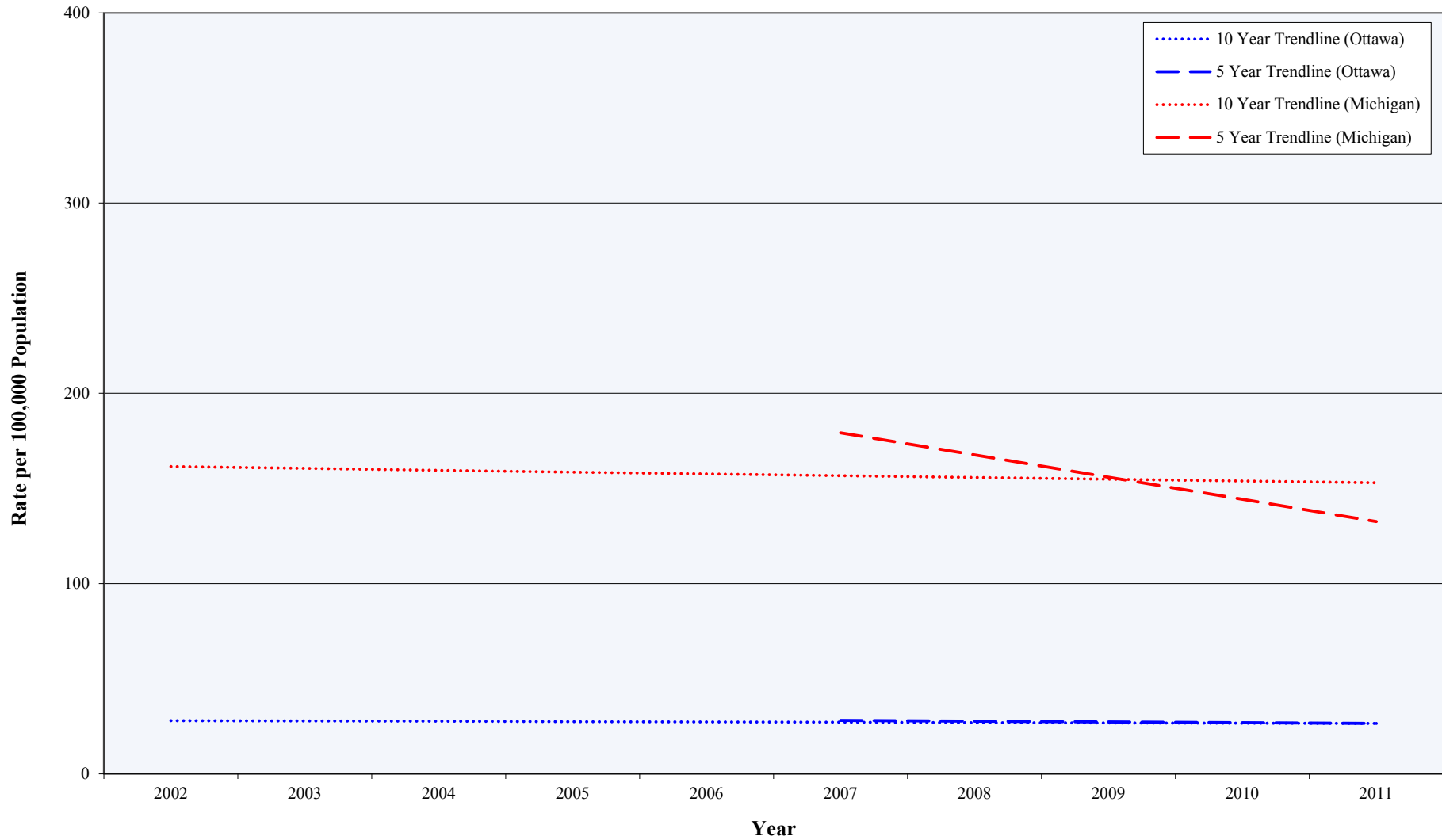
## Gonorrhea Cases (1999-2011)



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

# Gonorrhea Cases

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

**Sexually Transmitted Infections (1999-2011)**  
**Gonorrhea Cases By Gender** (Ottawa County, Adjacent Counties, State)

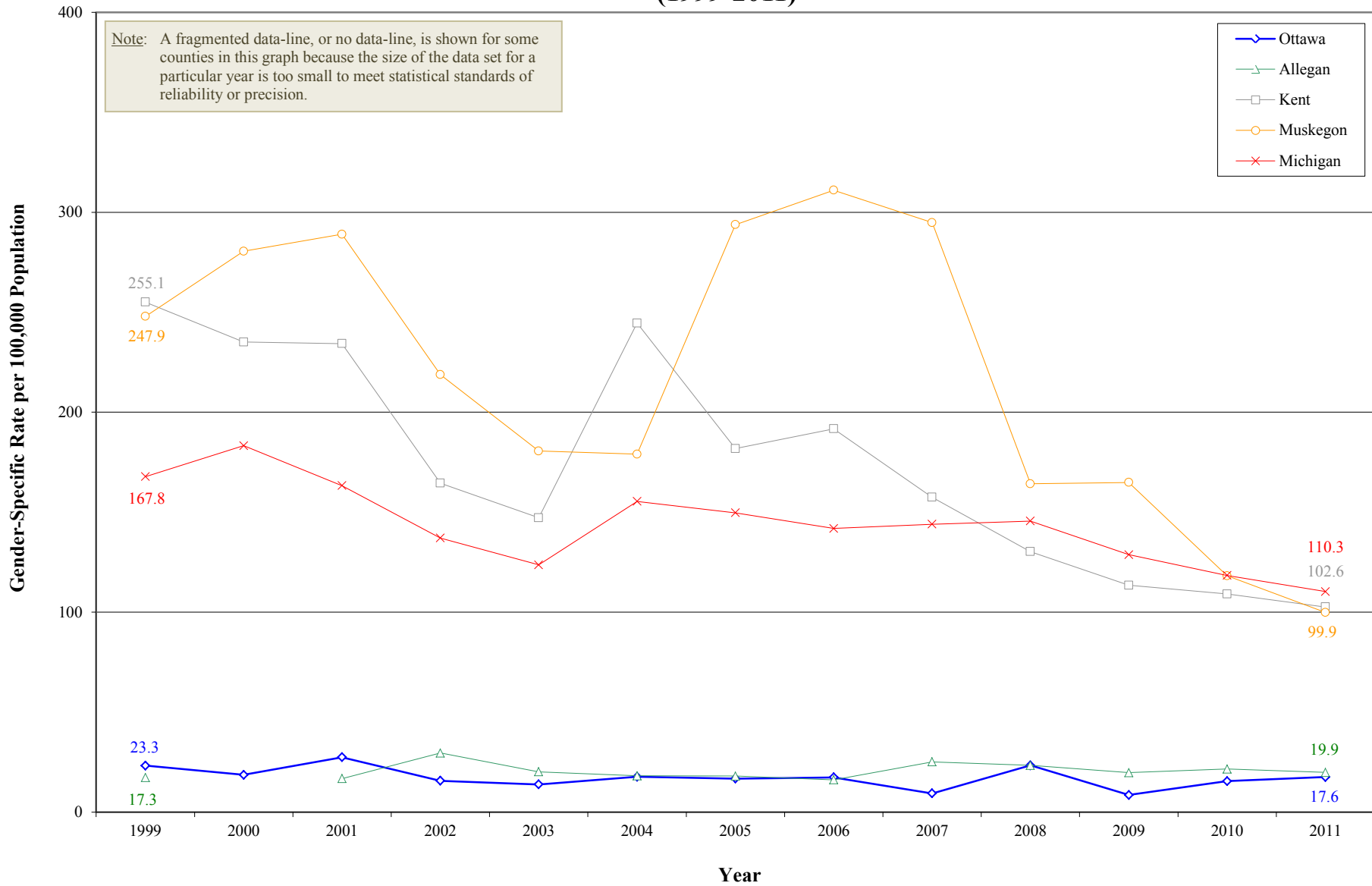
| Year | Rate per 100,000 Population* |         |       |          |          |        |         |       |          |          |
|------|------------------------------|---------|-------|----------|----------|--------|---------|-------|----------|----------|
|      | Male                         |         |       |          |          | Female |         |       |          |          |
|      | Ottawa                       | Allegan | Kent  | Muskegon | Michigan | Ottawa | Allegan | Kent  | Muskegon | Michigan |
| 1999 | 23.3                         | 17.3    | 255.1 | 247.9    | 167.8    | 18.5   | **      | 231.7 | 293.8    | 153.9    |
| 2000 | 18.7                         | **      | 235.1 | 280.5    | 183.3    | 28.8   | 15.1    | 211.4 | 298.9    | 180.6    |
| 2001 | 27.5                         | 16.8    | 234.3 | 289.0    | 163.3    | 18.6   | 50.2    | 221.9 | 353.6    | 176.8    |
| 2002 | 15.7                         | 29.6    | 164.5 | 218.8    | 137.1    | 48.7   | 33.2    | 164.6 | 259.0    | 155.1    |
| 2003 | 13.9                         | 20.2    | 147.2 | 180.6    | 123.7    | 33.9   | 23.8    | 178.4 | 273.0    | 151.8    |
| 2004 | 17.7                         | 18.2    | 244.6 | 179.0    | 155.4    | 39.5   | 27.2    | 255.5 | 232.0    | 185.8    |
| 2005 | 16.8                         | 18.1    | 181.8 | 293.8    | 149.7    | 31.6   | 34.2    | 200.6 | 418.1    | 196.5    |
| 2006 | 17.4                         | 16.2    | 191.7 | 311.0    | 141.9    | 33.6   | 28.8    | 246.1 | 396.8    | 183.3    |
| 2007 | 9.4                          | 25.2    | 157.5 | 294.8    | 144.0    | 34.8   | 44.8    | 223.7 | 433.4    | 197.1    |
| 2008 | 23.4                         | 23.4    | 130.3 | 164.2    | 145.6    | 53.3   | 62.6    | 205.0 | 293.3    | 207.7    |
| 2009 | 8.6                          | 19.8    | 113.5 | 164.9    | 128.8    | 32.9   | 62.6    | 173.9 | 301.7    | 179.6    |
| 2010 | 15.5                         | 21.6    | 109.1 | 118.2    | 118.4    | 43.8   | 46.5    | 138.5 | 184.5    | 162.0    |
| 2011 | 17.6                         | 19.9    | 102.6 | 99.9     | 110.3    | 31.7   | 35.8    | 137.9 | 153.0    | 153.2    |

Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

\* Rates are gender-specific and refer to the population of that gender

\*\*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

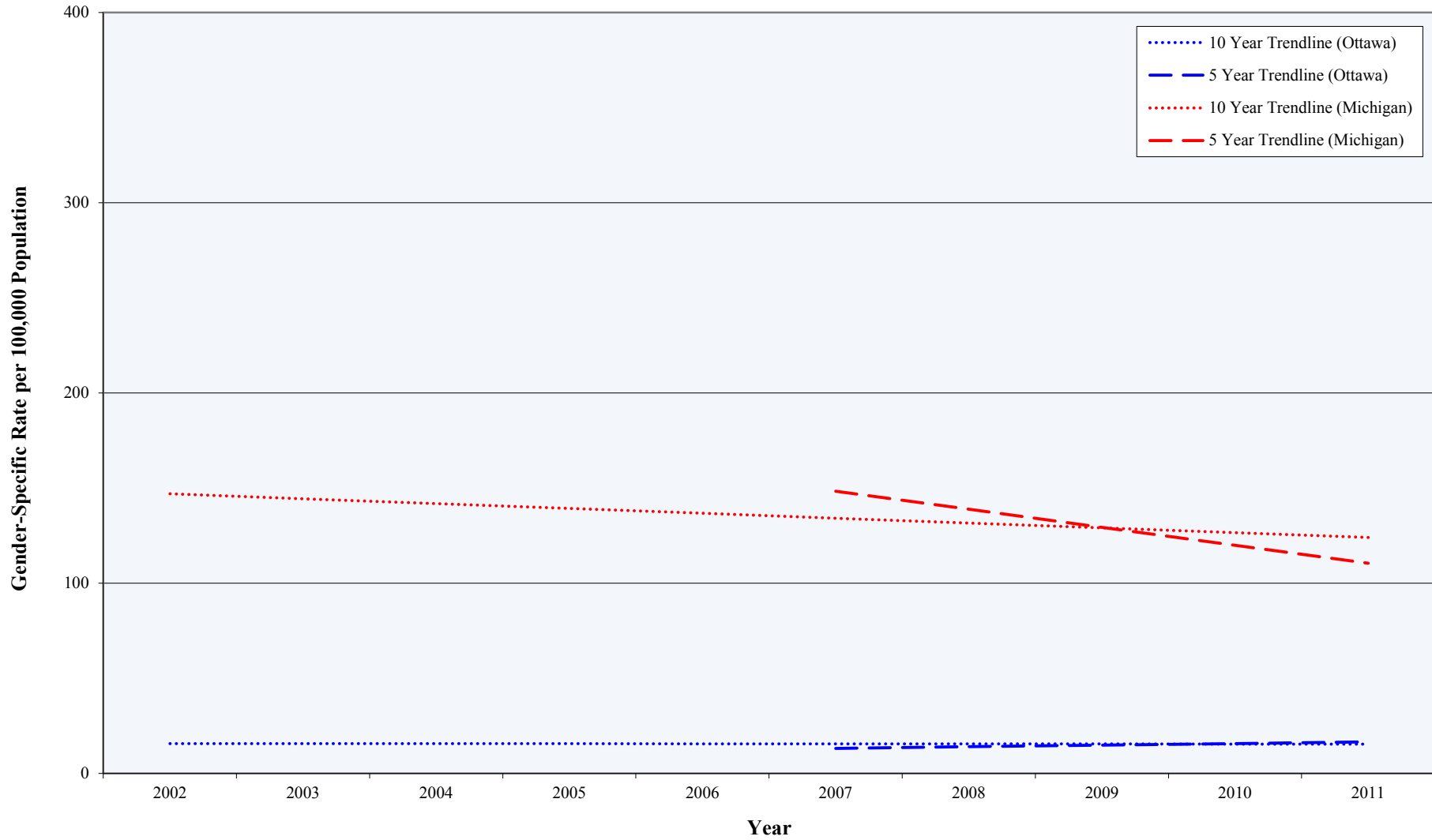
## Gonorrhea Cases Among Males (1999-2011)



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

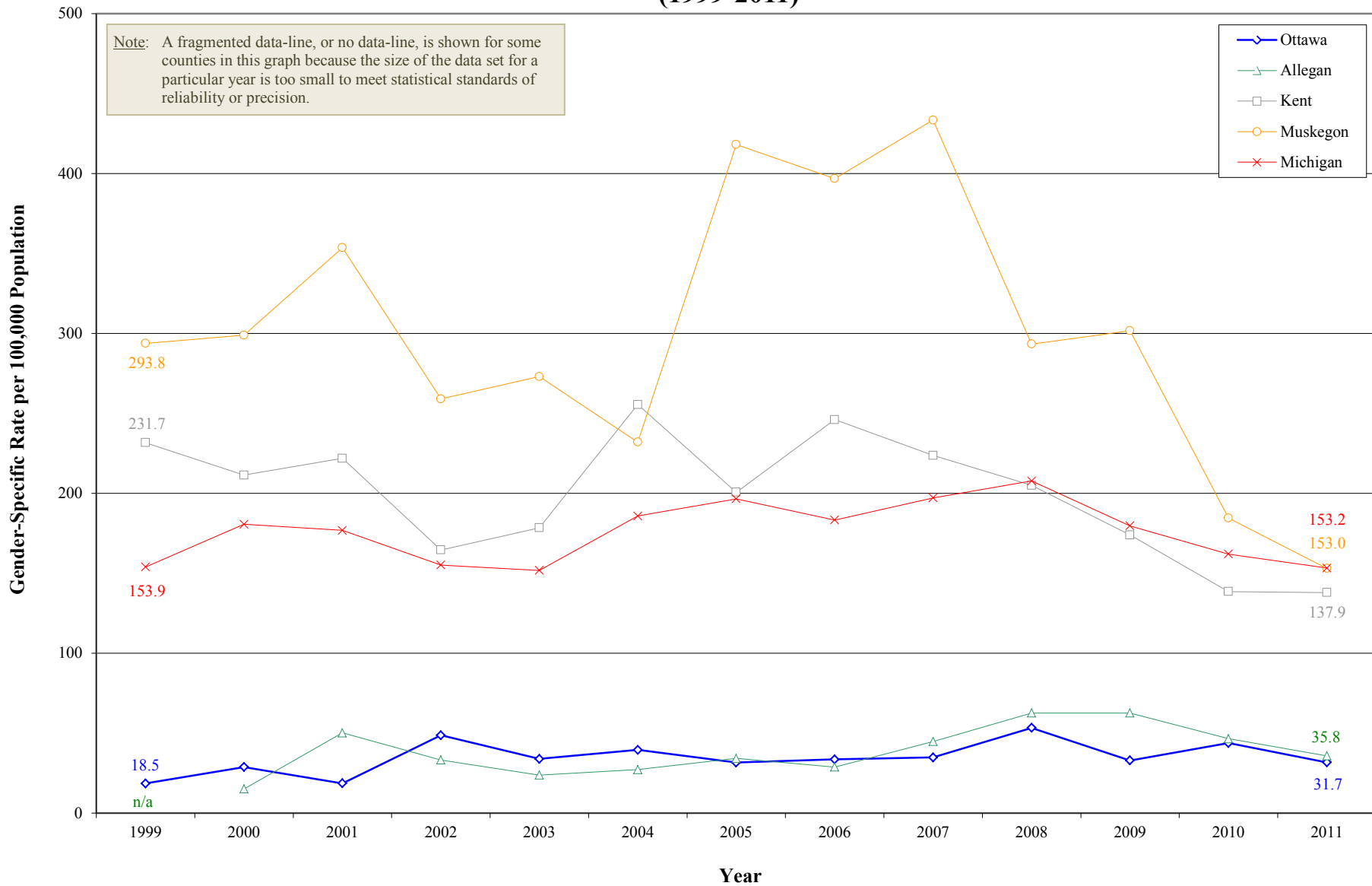
# Gonorrhea Cases Among Males

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

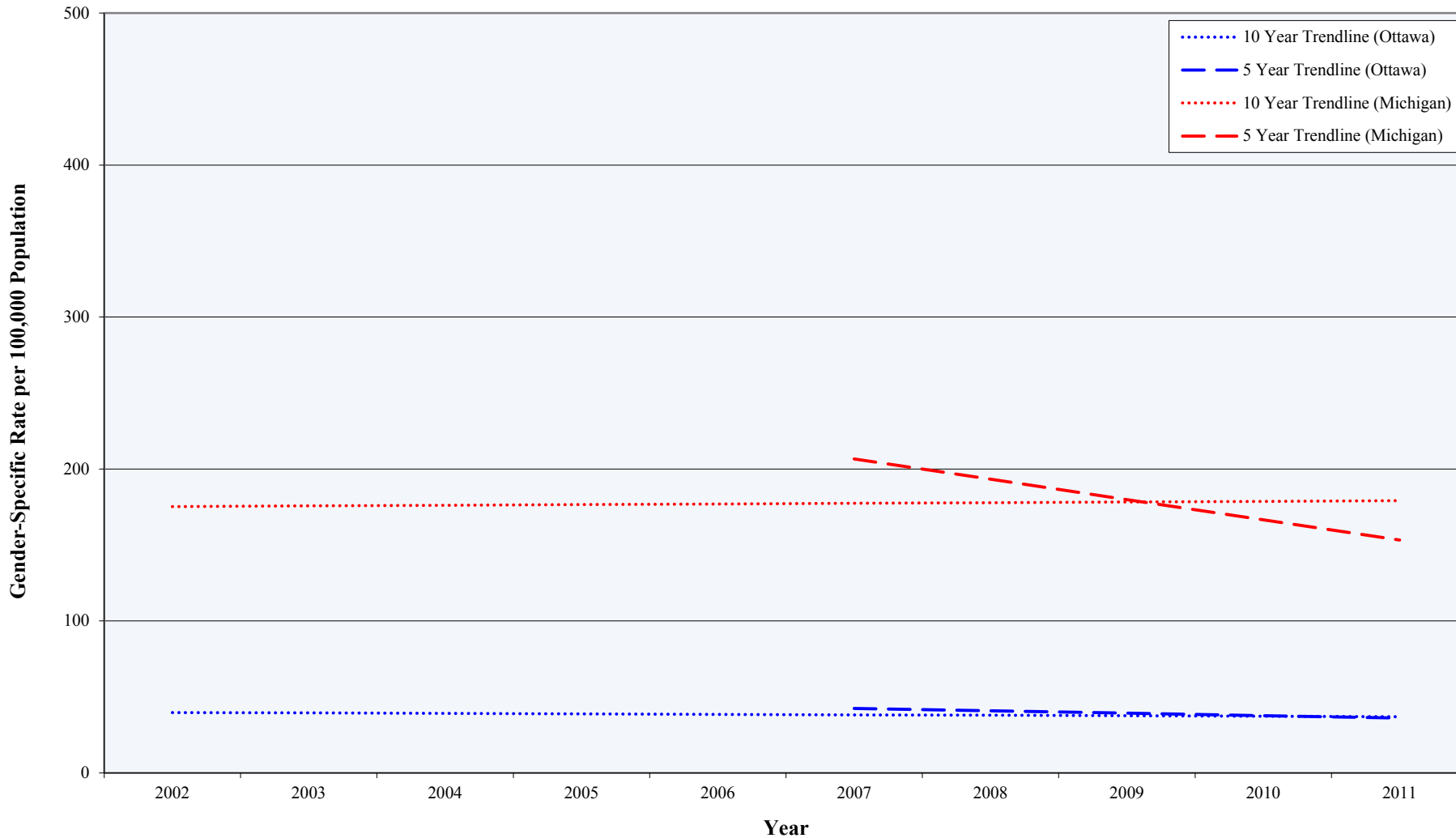
## Gonorrhea Cases Among Females (1999-2011)



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

# Gonorrhea Cases Among Females

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau



## Sexually Transmitted Infections (1999-2011)

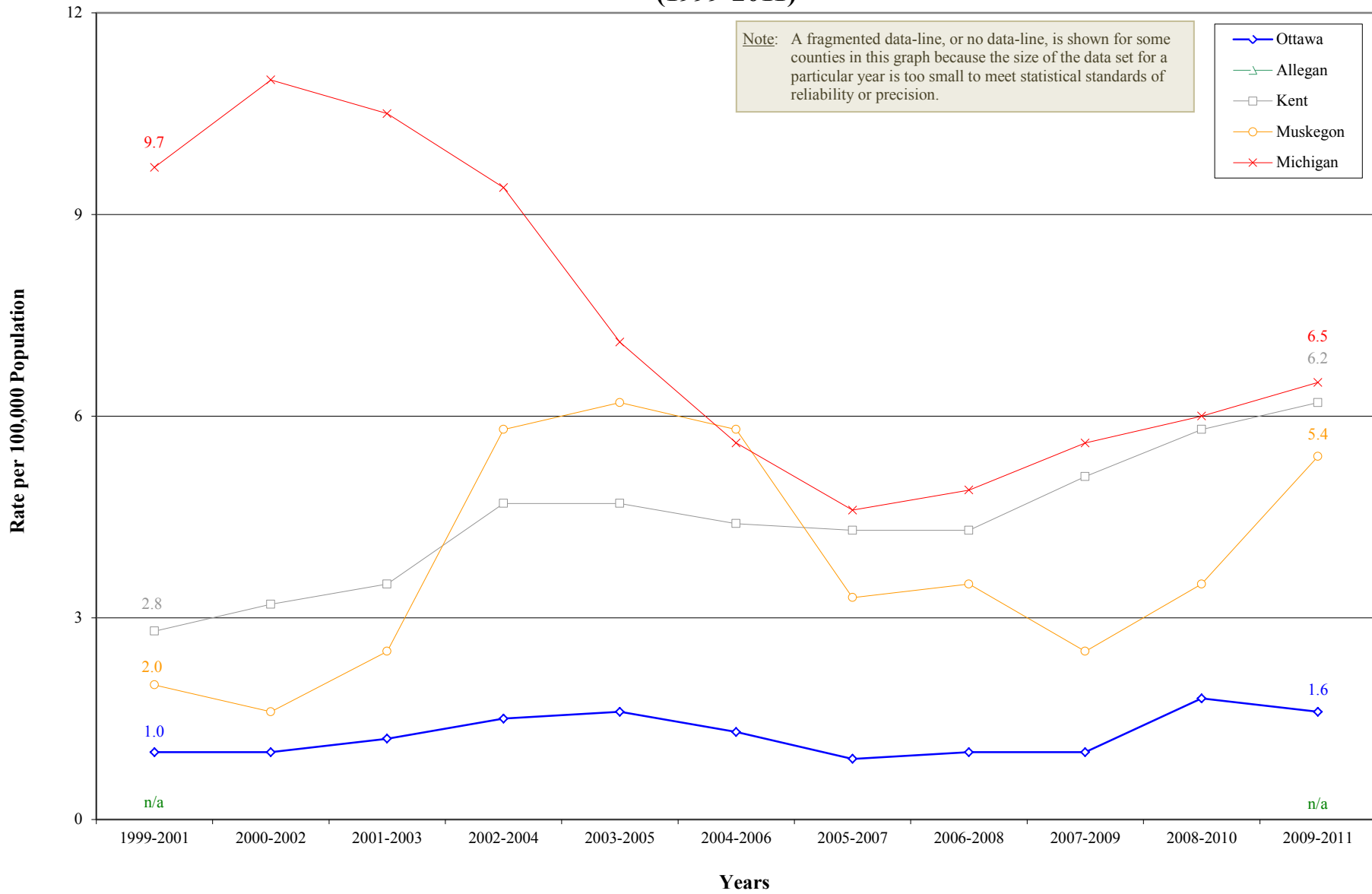
### Syphilis Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 1999-2001 | 1.0                         | *       | 2.8  | 2.0      | 9.7      |
| 2000-2002 | 1.0                         | *       | 3.2  | 1.6      | 11.0     |
| 2001-2003 | 1.2                         | *       | 3.5  | 2.5      | 10.5     |
| 2002-2004 | 1.5                         | *       | 4.7  | 5.8      | 9.4      |
| 2003-2005 | 1.6                         | *       | 4.7  | 6.2      | 7.1      |
| 2004-2006 | 1.3                         | *       | 4.4  | 5.8      | 5.6      |
| 2005-2007 | 0.9                         | *       | 4.3  | 3.3      | 4.6      |
| 2006-2008 | 1.0                         | *       | 4.3  | 3.5      | 4.9      |
| 2007-2009 | 1.0                         | *       | 5.1  | 2.5      | 5.6      |
| 2008-2010 | 1.8                         | *       | 5.8  | 3.5      | 6.0      |
| 2009-2011 | 1.6                         | *       | 6.2  | 5.4      | 6.5      |

Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

\* 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

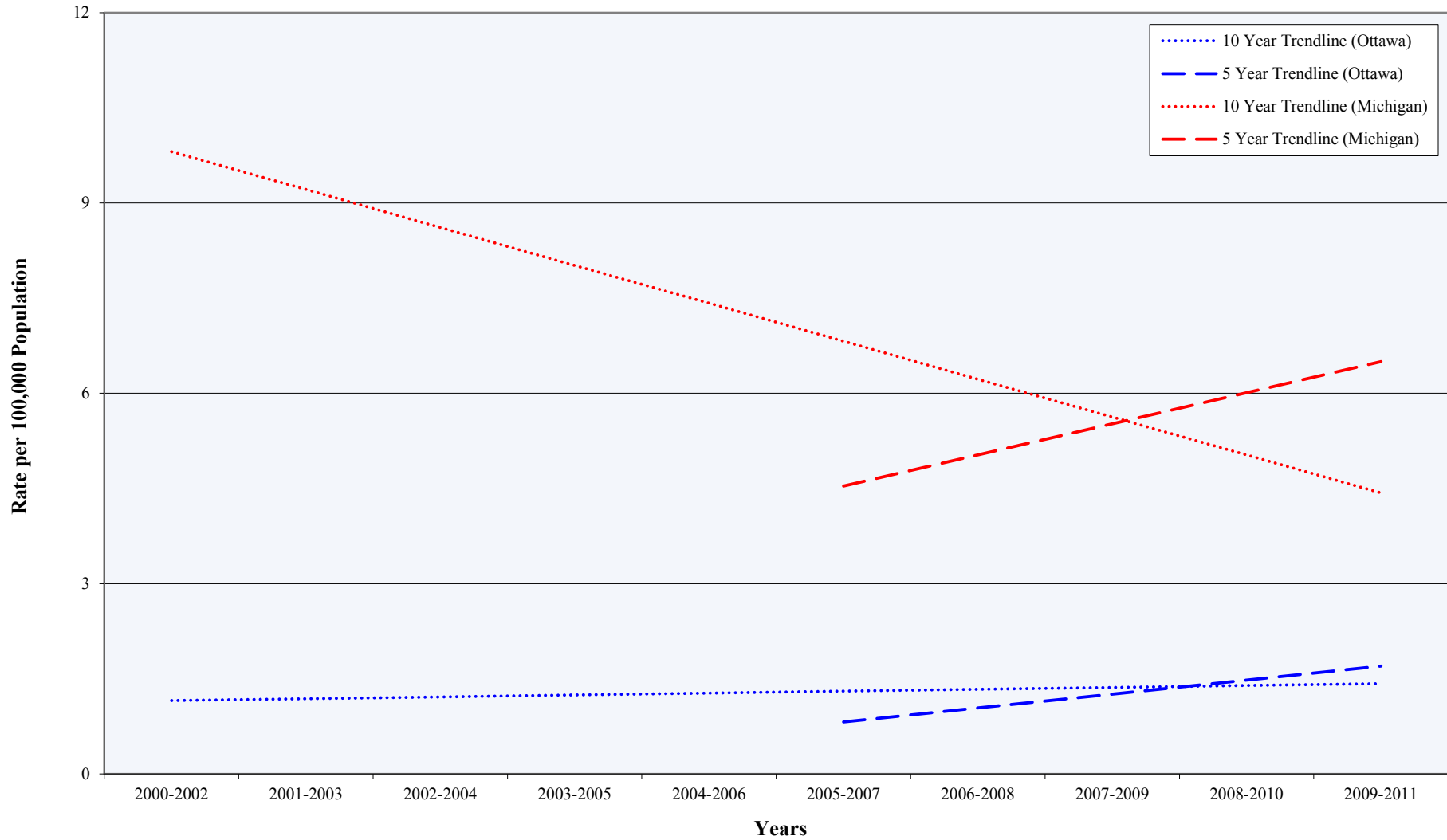
## Syphilis Cases (1999-2011)



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

# Syphilis Cases

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Michigan Sexually Transmitted Diseases Database; U.S. Census Bureau

# HIV/AIDS (1990-2010)

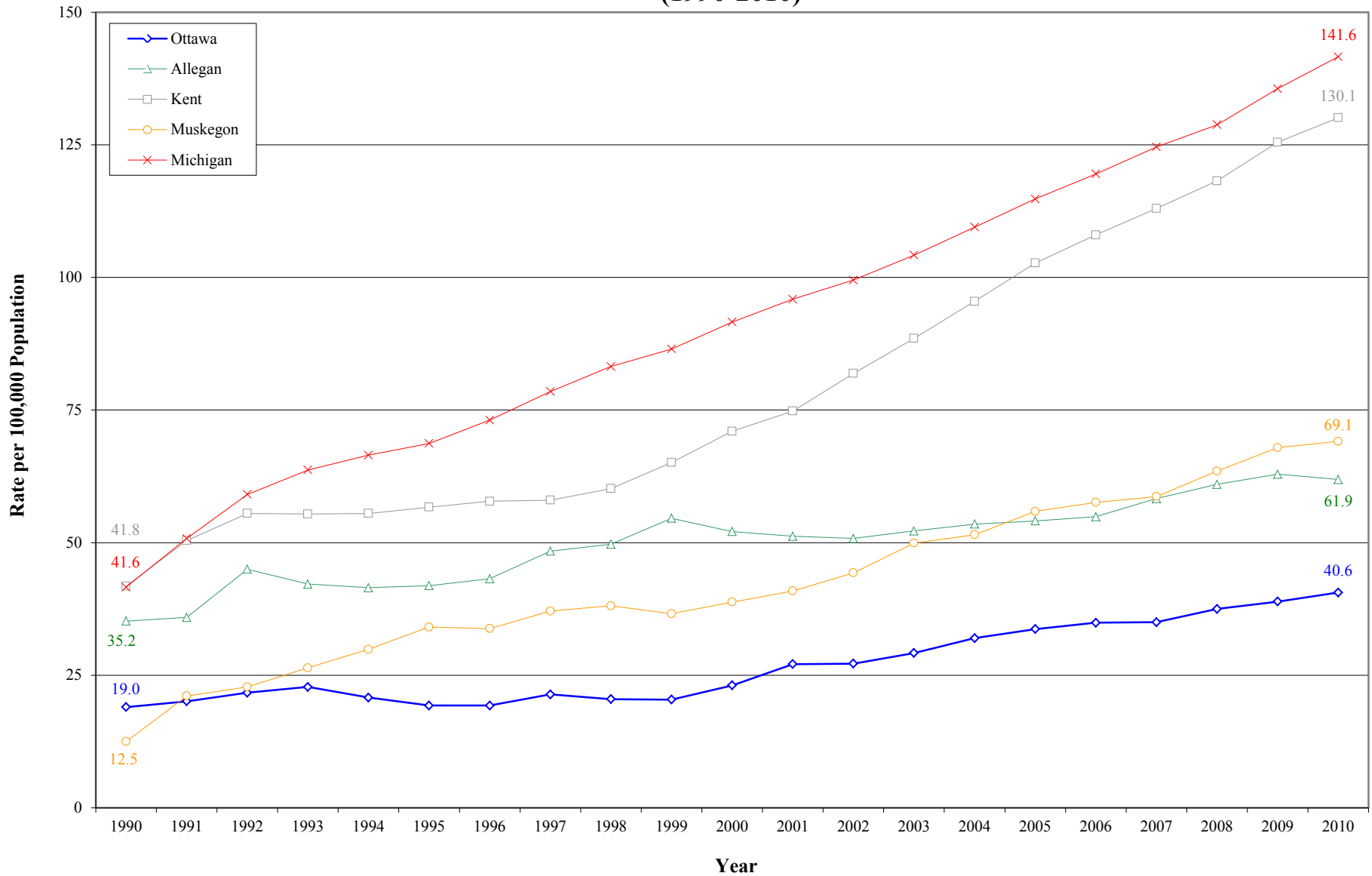
## Prevalence\* by Year (Ottawa County, Adjacent Counties, State)

| Year | Rate per 100,000 Population |         |       |          |          |        |         |      |          |          |
|------|-----------------------------|---------|-------|----------|----------|--------|---------|------|----------|----------|
|      | HIV/AIDS                    |         |       |          |          | AIDS   |         |      |          |          |
|      | Ottawa                      | Allegan | Kent  | Muskegon | Michigan | Ottawa | Allegan | Kent | Muskegon | Michigan |
| 1990 | 19.0                        | 35.2    | 41.8  | 12.5     | 41.6     | 5.8    | 5.5     | 10.3 | 3.8      | 13.0     |
| 1991 | 20.1                        | 35.9    | 50.4  | 21.1     | 50.8     | 6.7    | 7.6     | 15.4 | 4.4      | 17.6     |
| 1992 | 21.7                        | 45.0    | 55.5  | 22.8     | 59.1     | 9.1    | 17.1    | 22.7 | 3.7      | 23.8     |
| 1993 | 22.8                        | 42.2    | 55.4  | 26.4     | 63.7     | 10.4   | 19.0    | 23.4 | 6.1      | 27.3     |
| 1994 | 20.8                        | 41.5    | 55.5  | 29.9     | 66.5     | 11.1   | 22.8    | 24.8 | 9.2      | 28.9     |
| 1995 | 19.3                        | 41.9    | 56.7  | 34.1     | 68.7     | 9.9    | 23.5    | 26.6 | 12.8     | 30.8     |
| 1996 | 19.3                        | 43.2    | 57.8  | 33.8     | 73.1     | 9.6    | 25.1    | 27.3 | 14.5     | 33.3     |
| 1997 | 21.4                        | 48.4    | 58.0  | 37.1     | 78.5     | 10.7   | 28.6    | 28.8 | 16.8     | 36.4     |
| 1998 | 20.5                        | 49.7    | 60.2  | 38.1     | 83.2     | 9.2    | 29.3    | 29.6 | 16.1     | 39.2     |
| 1999 | 20.4                        | 54.6    | 65.1  | 36.6     | 86.5     | 9.4    | 33.5    | 31.5 | 14.8     | 41.5     |
| 2000 | 23.1                        | 52.1    | 71.0  | 38.8     | 91.6     | 11.7   | 32.2    | 34.5 | 16.5     | 44.5     |
| 2001 | 27.1                        | 51.2    | 74.8  | 40.9     | 95.9     | 15.2   | 31.7    | 37.3 | 17.5     | 46.8     |
| 2002 | 27.2                        | 50.8    | 81.9  | 44.3     | 99.5     | 15.0   | 30.5    | 40.3 | 19.2     | 49.2     |
| 2003 | 29.2                        | 52.2    | 88.5  | 49.9     | 104.2    | 16.4   | 32.1    | 44.4 | 22.1     | 52.0     |
| 2004 | 32.0                        | 53.5    | 95.5  | 51.5     | 109.5    | 17.8   | 31.8    | 48.2 | 21.4     | 54.8     |
| 2005 | 33.7                        | 54.1    | 102.7 | 55.9     | 114.8    | 18.8   | 33.4    | 53.4 | 25.9     | 59.2     |
| 2006 | 34.9                        | 54.9    | 108.0 | 57.6     | 119.5    | 19.8   | 35.1    | 58.5 | 28.8     | 62.6     |
| 2007 | 35.0                        | 58.3    | 113.0 | 58.7     | 124.6    | 20.4   | 35.9    | 62.2 | 31.1     | 65.9     |
| 2008 | 37.5                        | 61.0    | 118.2 | 63.5     | 128.8    | 22.2   | 37.7    | 65.0 | 30.6     | 68.4     |
| 2009 | 38.9                        | 62.9    | 125.5 | 67.9     | 135.6    | 23.2   | 41.3    | 69.9 | 32.5     | 71.7     |
| 2010 | 40.6                        | 61.9    | 130.1 | 69.1     | 141.6    | 23.9   | 41.3    | 73.0 | 31.9     | 75.1     |

Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

\* The prevalence of HIV/AIDS has steadily increased because people with these diseases are living longer. This is largely due to improved anti-retroviral therapy

## Prevalence\* of HIV/AIDS (1990-2010)

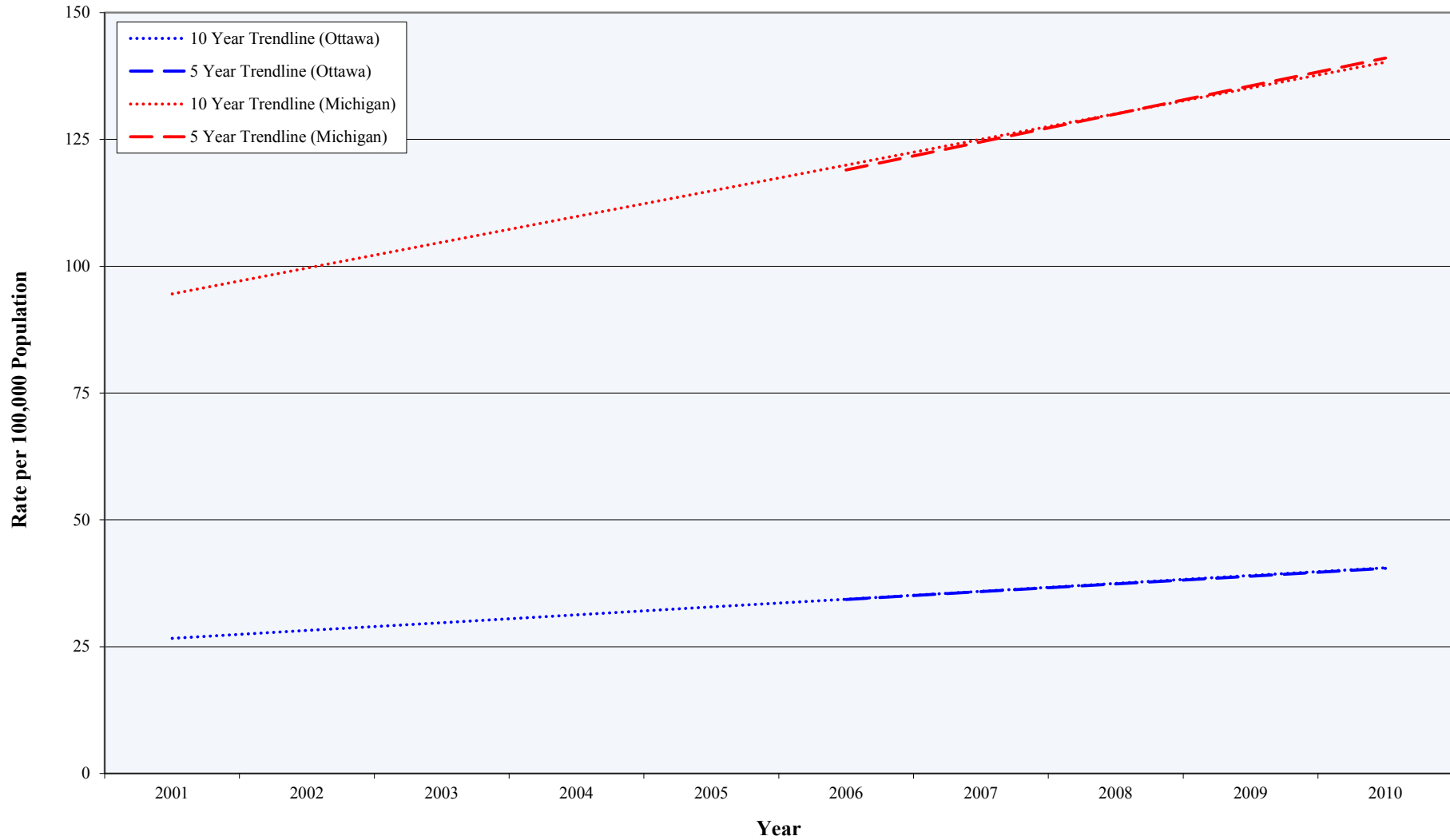


Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

\* The prevalence of HIV/AIDS has steadily increased because people with these diseases are living longer. This is largely due to improved anti-retroviral therapy

# Prevalence\* of HIV/AIDS

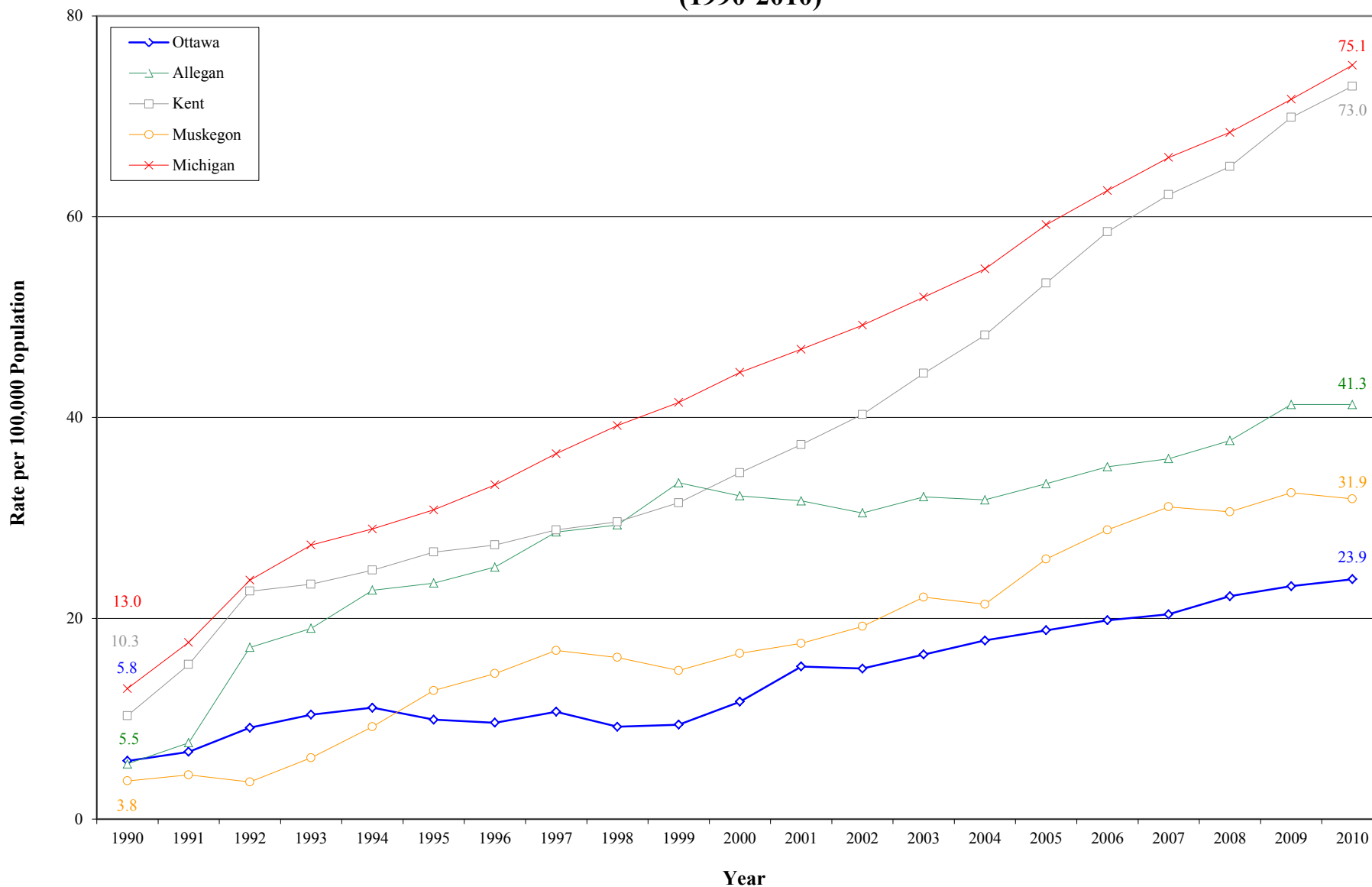
## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

\* The prevalence of HIV/AIDS has steadily increased because people with these diseases are living longer. This is largely due to improved anti-retroviral therapy

## Prevalence\* of AIDS (1990-2010)

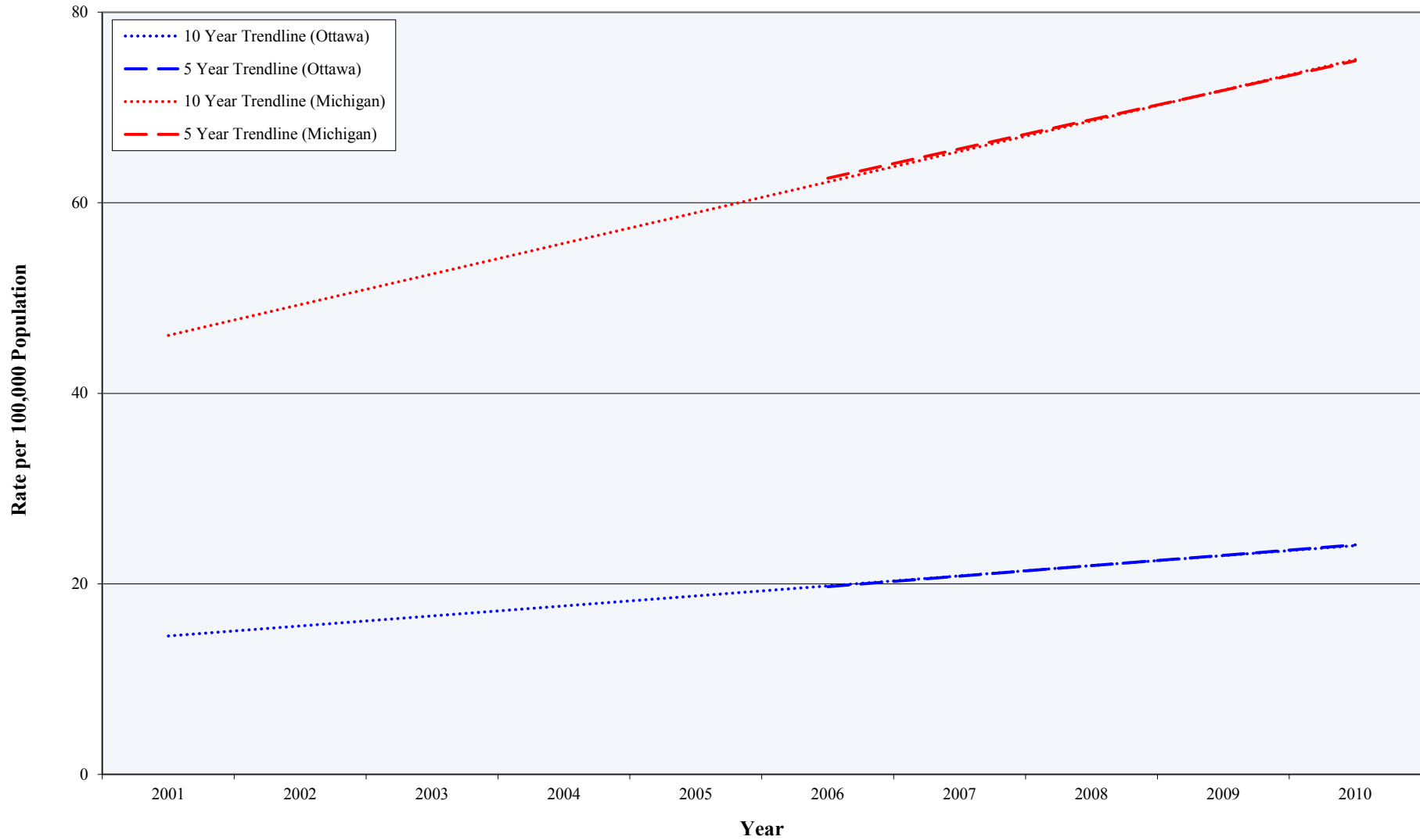


Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

\* The prevalence of HIV/AIDS has steadily increased because people with these diseases are living longer. This is largely due to improved anti-retroviral therapy

# Prevalence\* of AIDS

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

\* The prevalence of HIV/AIDS has steadily increased because people with these diseases are living longer. This is largely due to improved anti-retroviral therapy



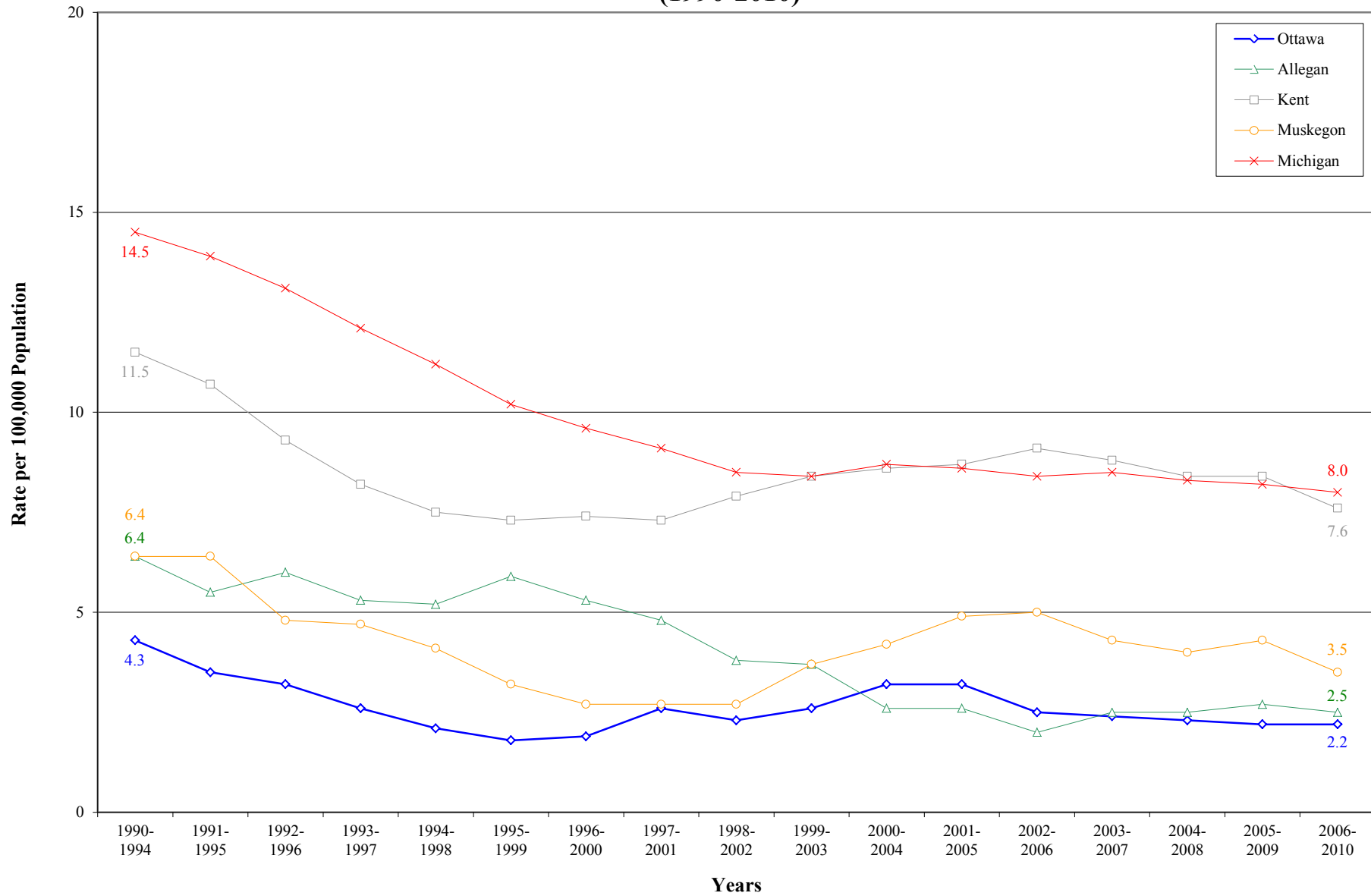
## HIV/AIDS (1990-2010)

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

| Year      | Rate per 100,000 Population |         |      |          |          |        |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|--------|---------|------|----------|----------|
|           | HIV                         |         |      |          |          | AIDS   |         |      |          |          |
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan | Ottawa | Allegan | Kent | Muskegon | Michigan |
| 1990-1994 | 4.3                         | 6.4     | 11.5 | 6.4      | 14.5     | 4.3    | 6.8     | 9.9  | 3.6      | 10.8     |
| 1991-1995 | 3.5                         | 5.5     | 10.7 | 6.4      | 13.9     | 3.8    | 7.2     | 10.3 | 3.8      | 11.3     |
| 1992-1996 | 3.2                         | 6.0     | 9.3  | 4.8      | 13.1     | 3.6    | 7.5     | 9.6  | 4.2      | 11.0     |
| 1993-1997 | 2.6                         | 5.3     | 8.2  | 4.7      | 12.1     | 2.7    | 6.3     | 8.3  | 4.4      | 9.9      |
| 1994-1998 | 2.1                         | 5.2     | 7.5  | 4.1      | 11.2     | 2.0    | 5.0     | 7.2  | 3.6      | 8.9      |
| 1995-1999 | 1.8                         | 5.9     | 7.3  | 3.2      | 10.2     | 1.3    | 4.9     | 6.1  | 2.9      | 7.9      |
| 1996-2000 | 1.9                         | 5.3     | 7.4  | 2.7      | 9.6      | 1.3    | 4.5     | 5.4  | 2.4      | 7.0      |
| 1997-2001 | 2.6                         | 4.8     | 7.3  | 2.7      | 9.1      | 1.9    | 4.0     | 5.1  | 1.8      | 6.4      |
| 1998-2002 | 2.3                         | 3.8     | 7.9  | 2.7      | 8.5      | 1.8    | 3.2     | 4.7  | 1.6      | 6.1      |
| 1999-2003 | 2.6                         | 3.7     | 8.4  | 3.7      | 8.4      | 2.1    | 3.4     | 5.0  | 2.5      | 6.0      |
| 2000-2004 | 3.2                         | 2.6     | 8.6  | 4.2      | 8.7      | 2.4    | 2.0     | 5.1  | 2.4      | 5.9      |
| 2001-2005 | 3.2                         | 2.6     | 8.7  | 4.9      | 8.6      | 2.2    | 2.0     | 5.5  | 3.3      | 6.1      |
| 2002-2006 | 2.5                         | 2.0     | 9.1  | 5.0      | 8.4      | 1.6    | 1.6     | 6.0  | 3.8      | 6.2      |
| 2003-2007 | 2.4                         | 2.5     | 8.8  | 4.3      | 8.5      | 1.7    | 1.8     | 6.3  | 3.7      | 6.2      |
| 2004-2008 | 2.3                         | 2.5     | 8.4  | 4.0      | 8.3      | 1.6    | 1.8     | 6.1  | 3.0      | 6.1      |
| 2005-2009 | 2.2                         | 2.7     | 8.4  | 4.3      | 8.2      | 1.8    | 2.7     | 6.2  | 3.2      | 5.9      |
| 2006-2010 | 2.2                         | 2.5     | 7.6  | 3.5      | 8.0      | 1.7    | 2.5     | 5.6  | 2.1      | 5.5      |

Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

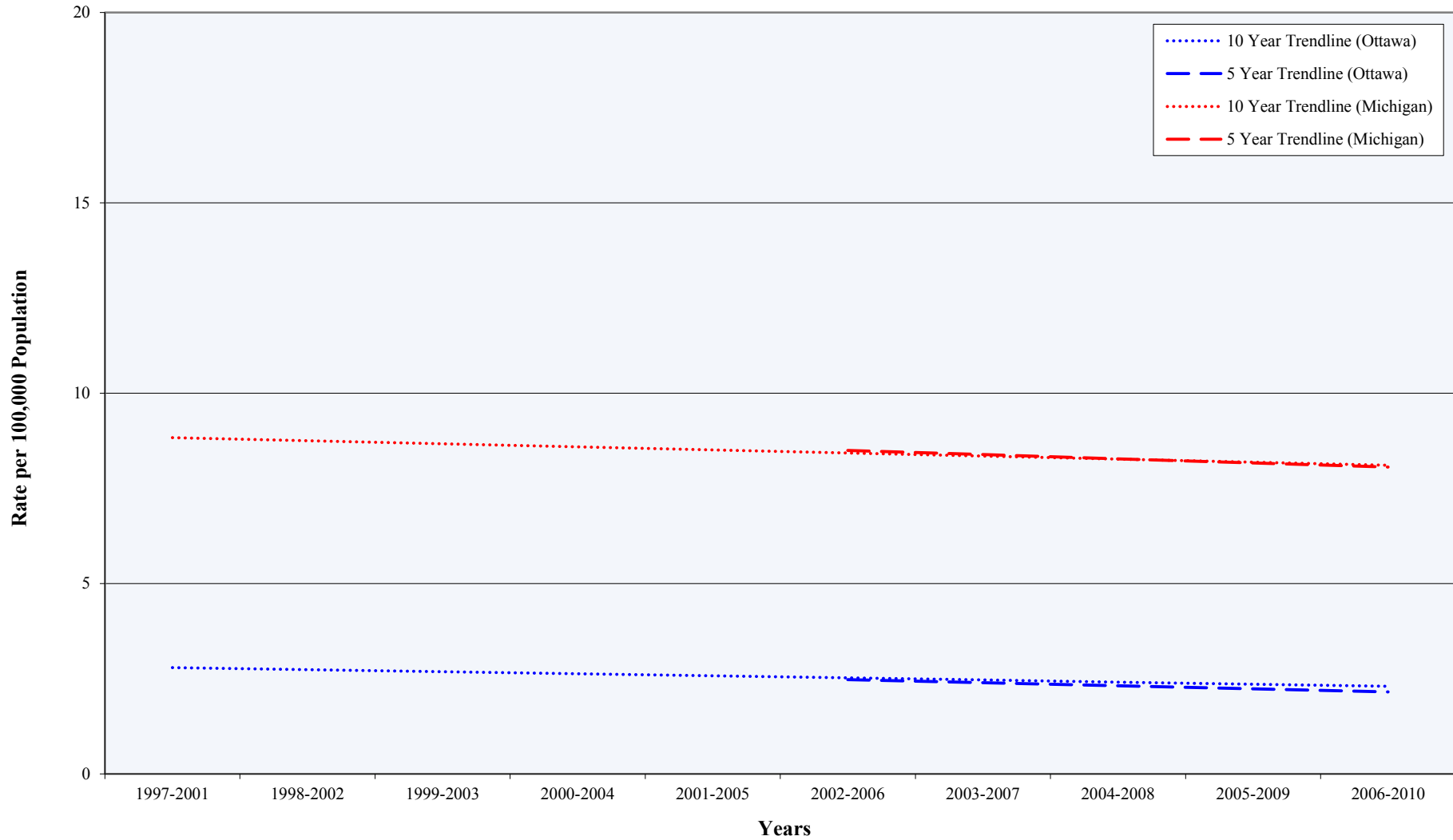
## Diagnosed New Cases of HIV (1990-2010)



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

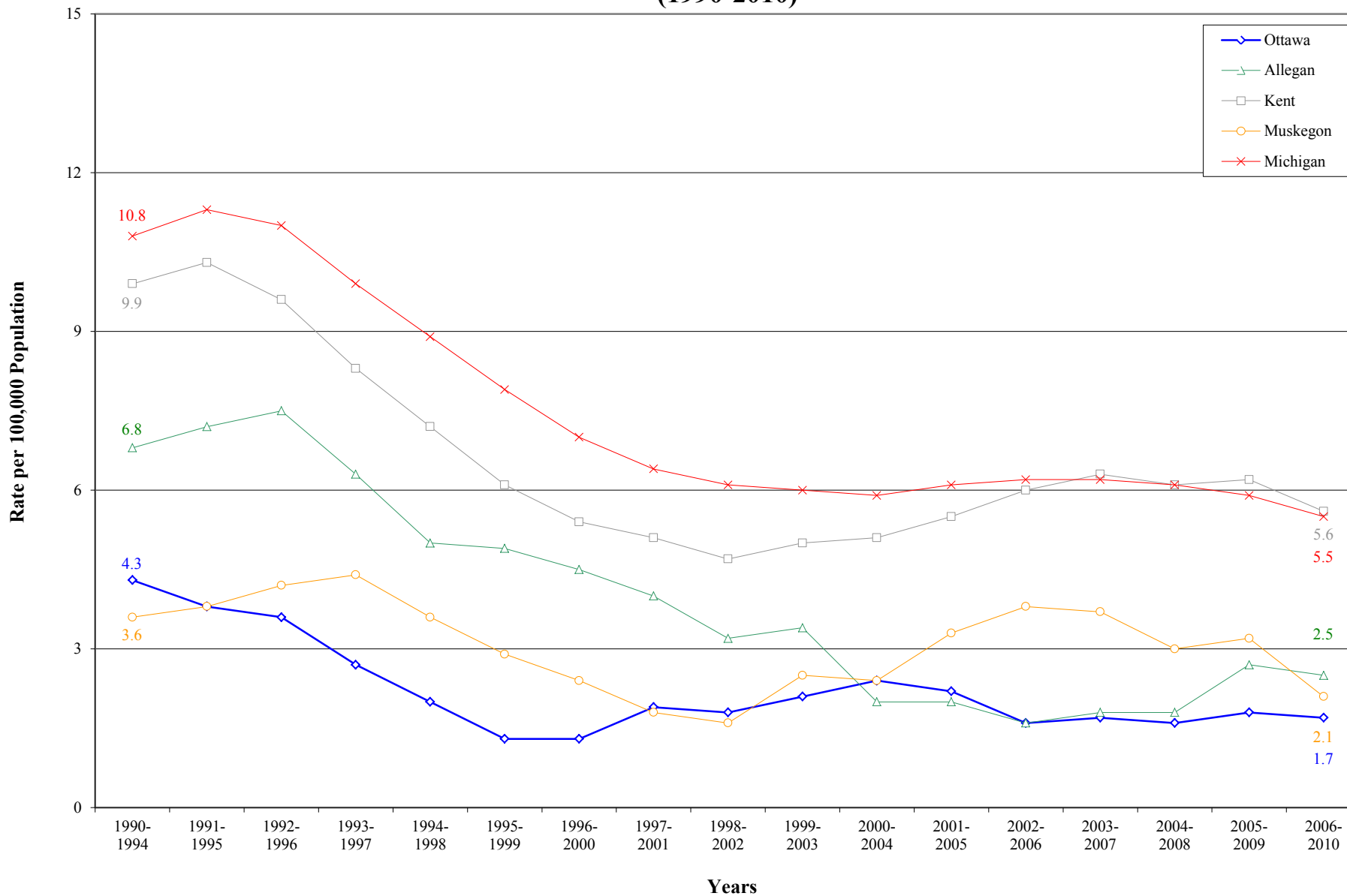
# Diagnosed New Cases of HIV

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

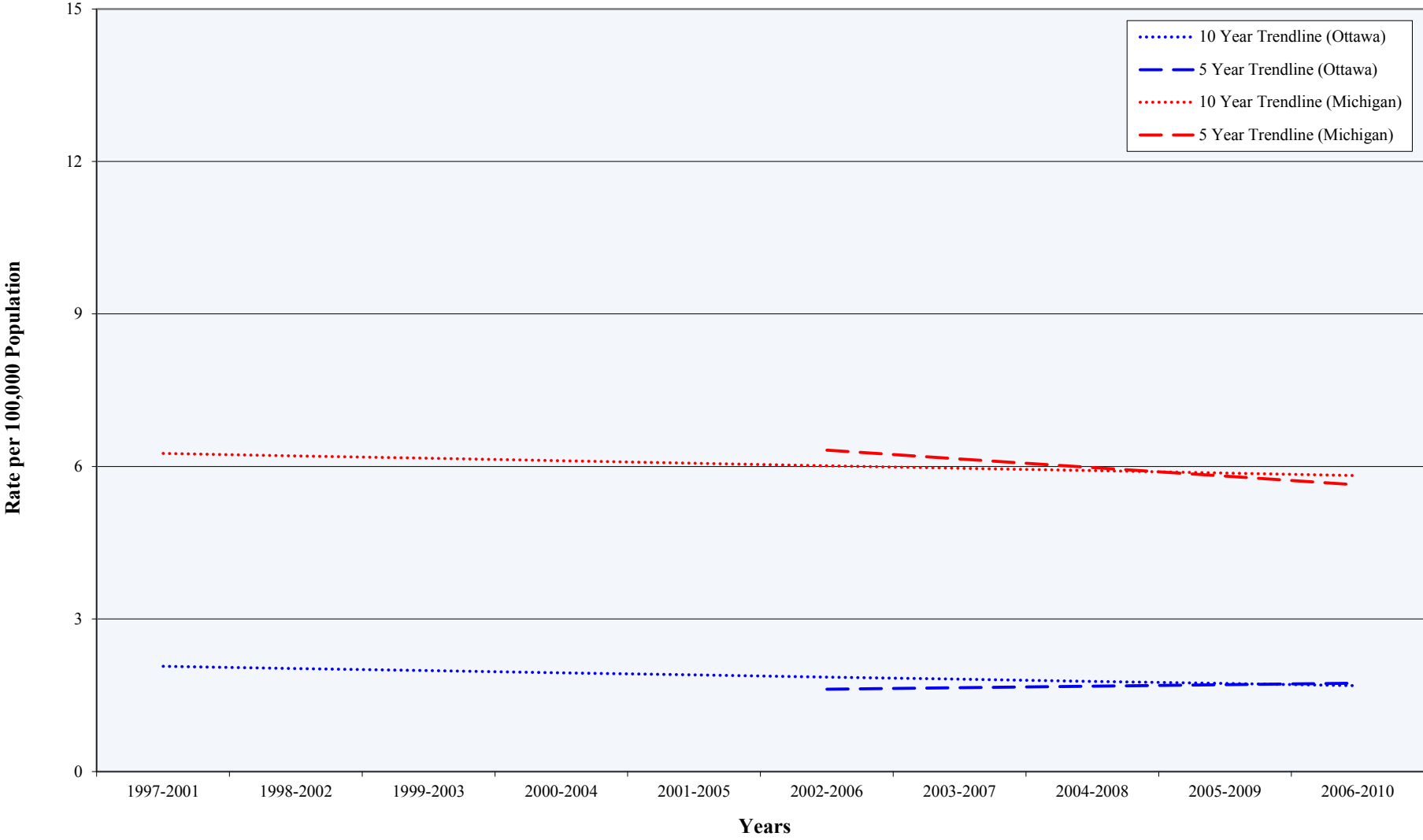
## Diagnosed New Cases of AIDS (1990-2010)



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

# Diagnosed New Cases of AIDS

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

## HIV/AIDS (1990-2010)

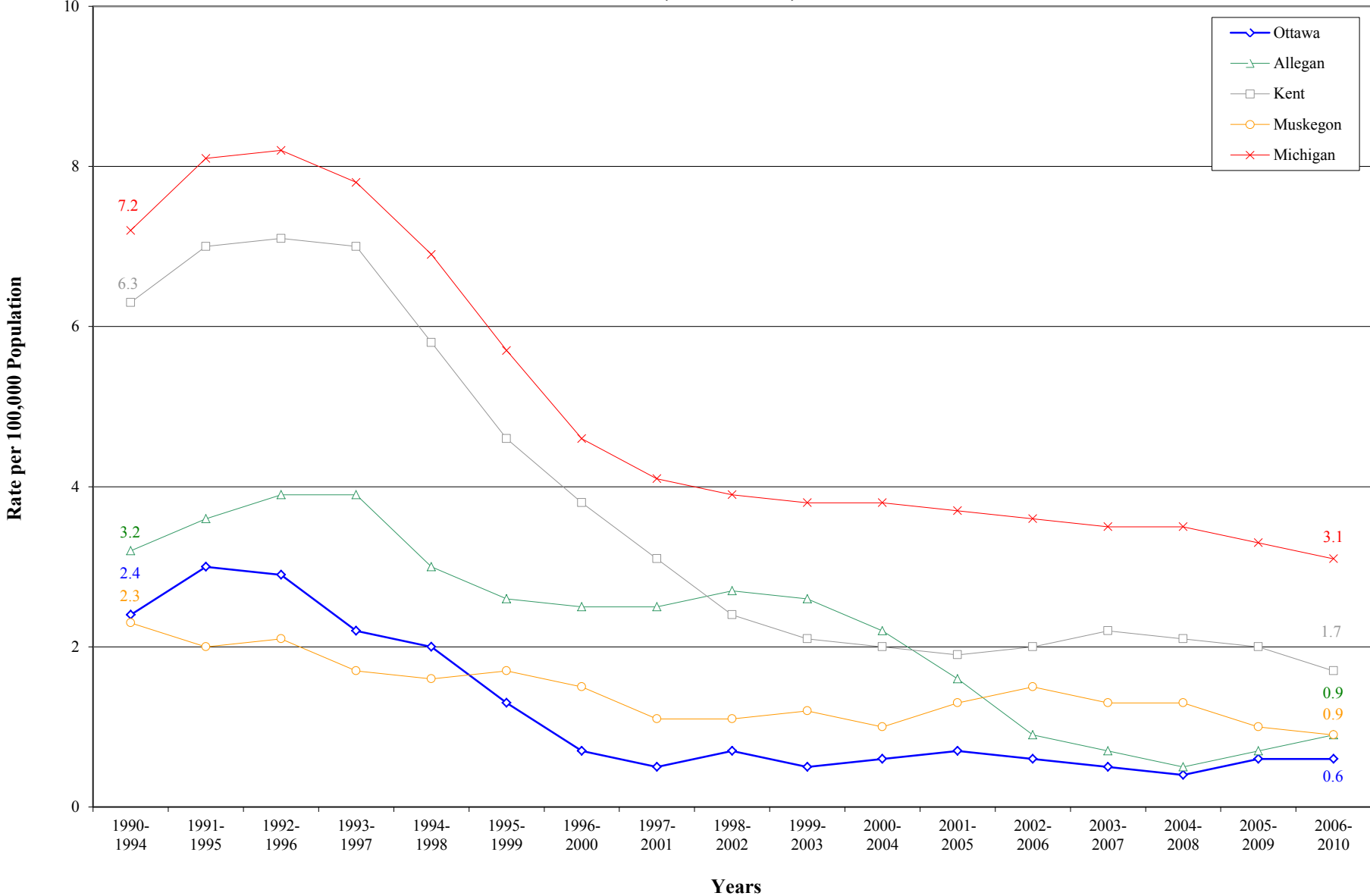
### Deaths\* by Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |        |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|--------|---------|------|----------|----------|
|           | HIV/AIDS                    |         |      |          |          | AIDS   |         |      |          |          |
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan | Ottawa | Allegan | Kent | Muskegon | Michigan |
| 1990-1994 | 2.4                         | 3.2     | 6.3  | 2.3      | 7.2      | 2.3    | 3.0     | 6.2  | 2.3      | 6.8      |
| 1991-1995 | 3.0                         | 3.6     | 7.0  | 2.0      | 8.1      | 2.9    | 3.4     | 6.8  | 2.0      | 7.6      |
| 1992-1996 | 2.9                         | 3.9     | 7.1  | 2.1      | 8.2      | 2.8    | 3.7     | 6.9  | 2.1      | 7.7      |
| 1993-1997 | 2.2                         | 3.9     | 7.0  | 1.7      | 7.8      | 2.2    | 3.7     | 6.8  | 1.7      | 7.2      |
| 1994-1998 | 2.0                         | 3.0     | 5.8  | 1.6      | 6.9      | 2.0    | 2.6     | 5.6  | 1.6      | 6.3      |
| 1995-1999 | 1.3                         | 2.6     | 4.6  | 1.7      | 5.7      | 1.3    | 2.4     | 4.4  | 1.7      | 5.2      |
| 1996-2000 | 0.7                         | 2.5     | 3.8  | 1.5      | 4.6      | 0.7    | 2.3     | 3.5  | 1.5      | 4.1      |
| 1997-2001 | 0.5                         | 2.5     | 3.1  | 1.1      | 4.1      | 0.5    | 2.3     | 2.8  | 1.1      | 3.6      |
| 1998-2002 | 0.7                         | 2.7     | 2.4  | 1.1      | 3.9      | 0.7    | 2.5     | 2.1  | 1.1      | 3.4      |
| 1999-2003 | 0.5                         | 2.6     | 2.1  | 1.2      | 3.8      | 0.5    | 2.4     | 1.7  | 1.2      | 3.2      |
| 2000-2004 | 0.6                         | 2.2     | 2.0  | 1.0      | 3.8      | 0.6    | 2.0     | 1.5  | 1.0      | 3.1      |
| 2001-2005 | 0.7                         | 1.6     | 1.9  | 1.3      | 3.7      | 0.6    | 1.5     | 1.4  | 1.3      | 3.0      |
| 2002-2006 | 0.6                         | 0.9     | 2.0  | 1.5      | 3.6      | 0.5    | 0.7     | 1.5  | 1.5      | 3.0      |
| 2003-2007 | 0.5                         | 0.7     | 2.2  | 1.3      | 3.5      | 0.5    | 0.5     | 1.7  | 1.3      | 2.9      |
| 2004-2008 | 0.4                         | 0.5     | 2.1  | 1.3      | 3.5      | 0.3    | 0.5     | 1.7  | 1.3      | 2.8      |
| 2005-2009 | 0.6                         | 0.7     | 2.0  | 1.0      | 3.3      | 0.5    | 0.7     | 1.6  | 1.0      | 2.7      |
| 2006-2010 | 0.6                         | 0.9     | 1.7  | 0.9      | 3.1      | 0.5    | 0.9     | 1.5  | 0.9      | 2.6      |

Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

\* Includes deaths directly attributable to the presence of HIV/AIDS as well as deaths resulting from complications with HIV/AIDS

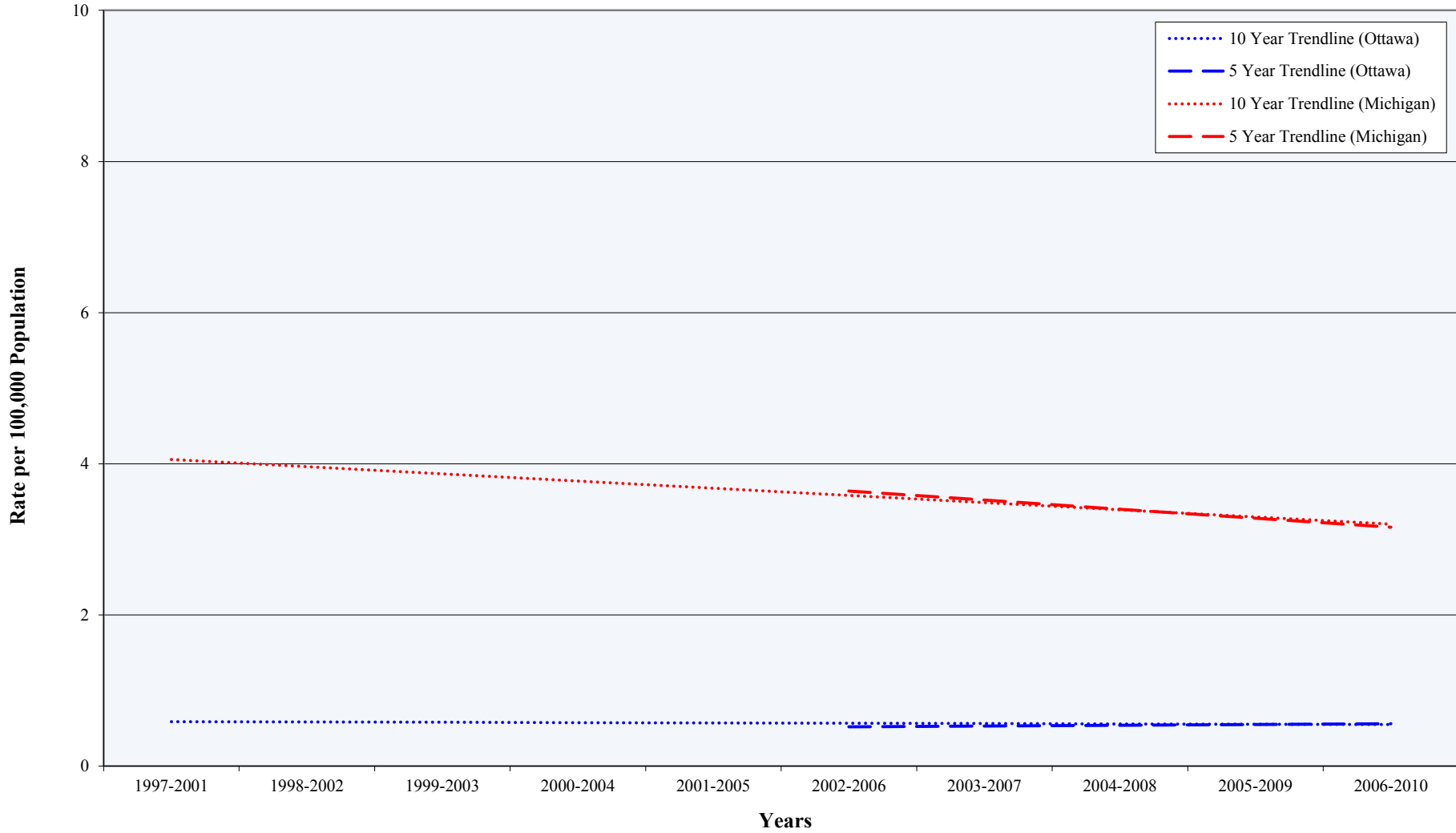
# HIV/AIDS Deaths (1990-2010)



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

# HIV/AIDS Deaths

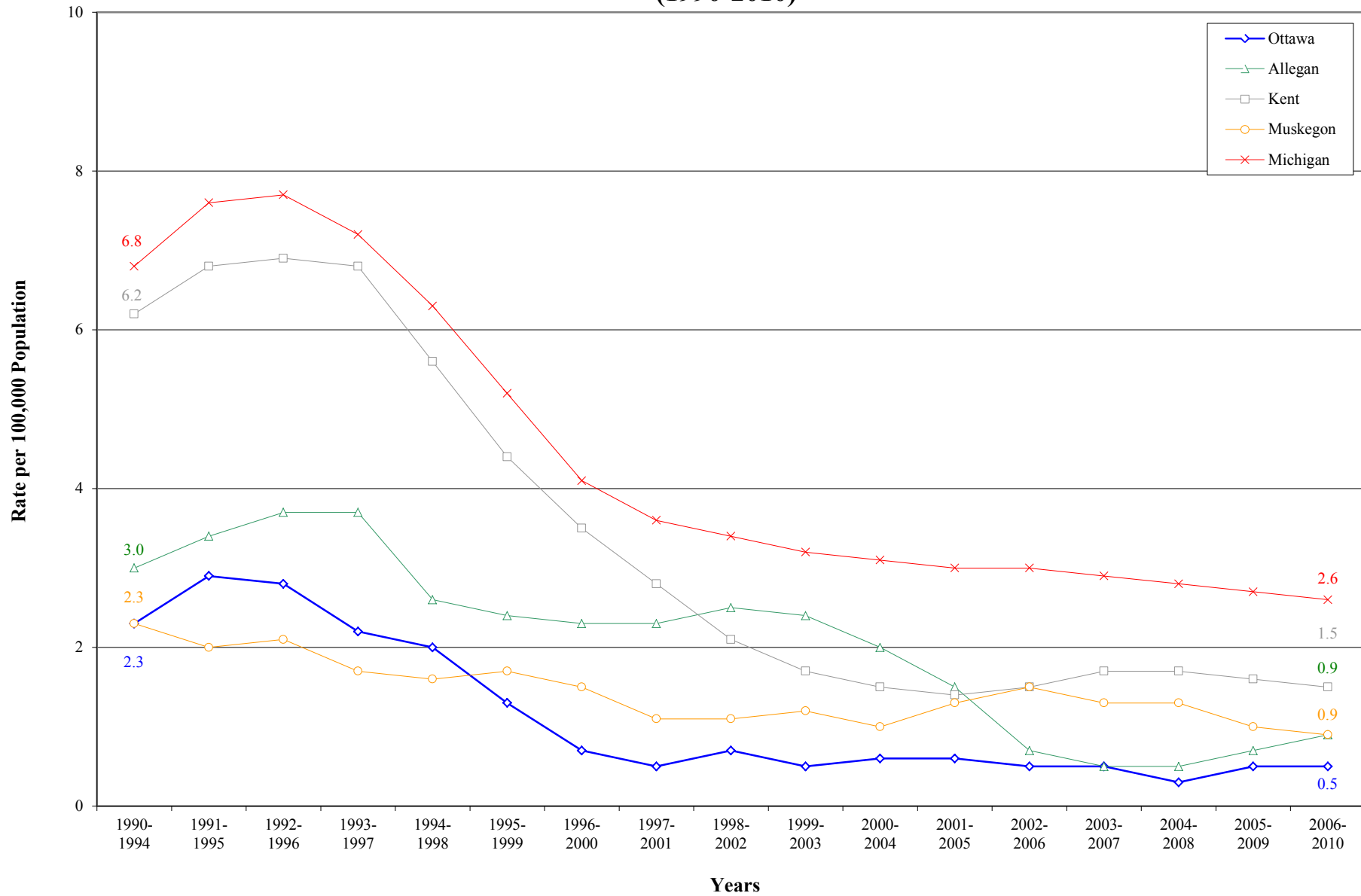
## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau



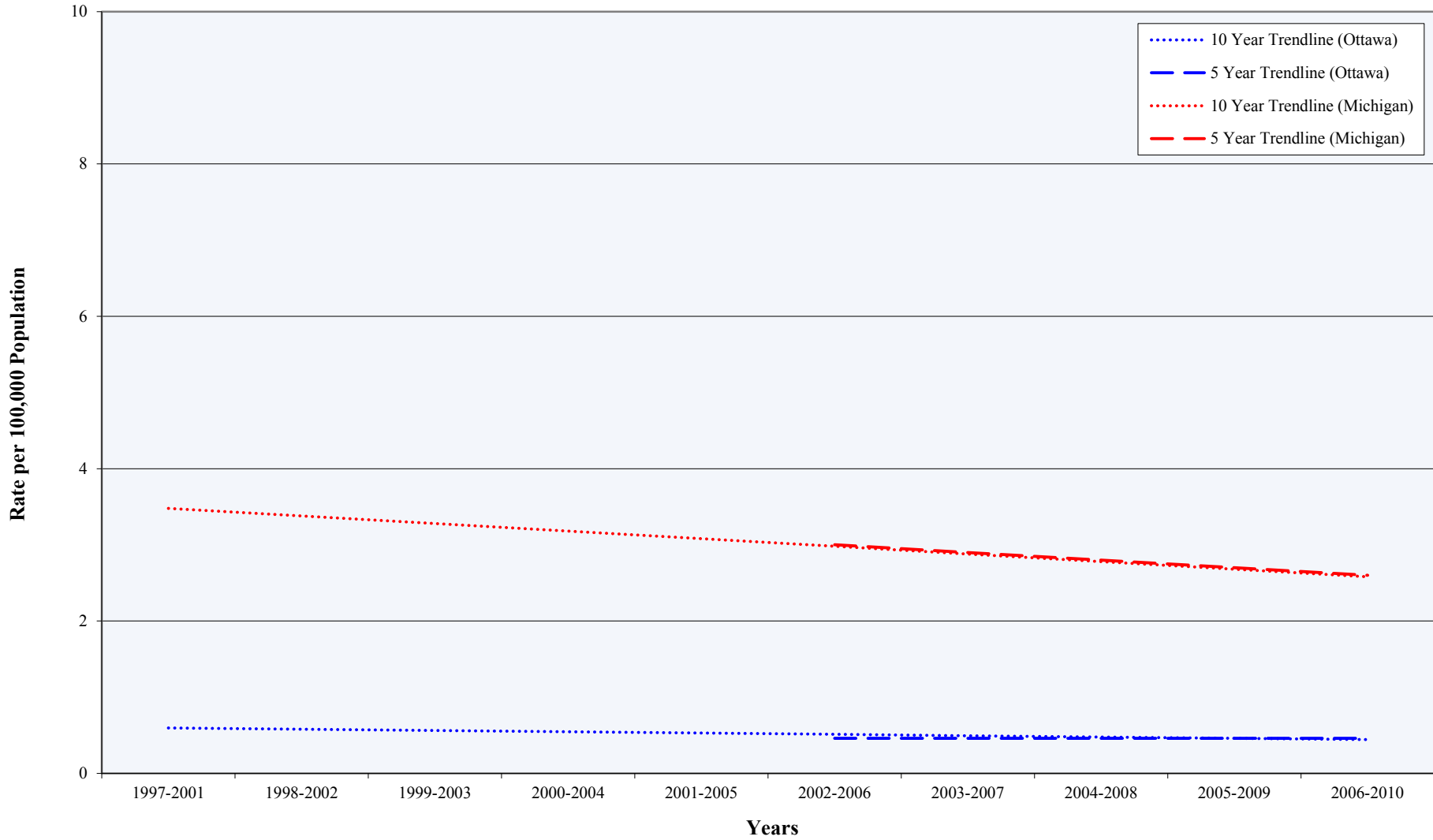
## AIDS Deaths (1990-2010)



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

# AIDS Deaths

## 5 and 10 Year Trends



Source: Michigan Department of Community Health, Quarterly HIV/AIDS Analysis; U.S. Census Bureau

## Foodborne Illnesses (2002-2011)

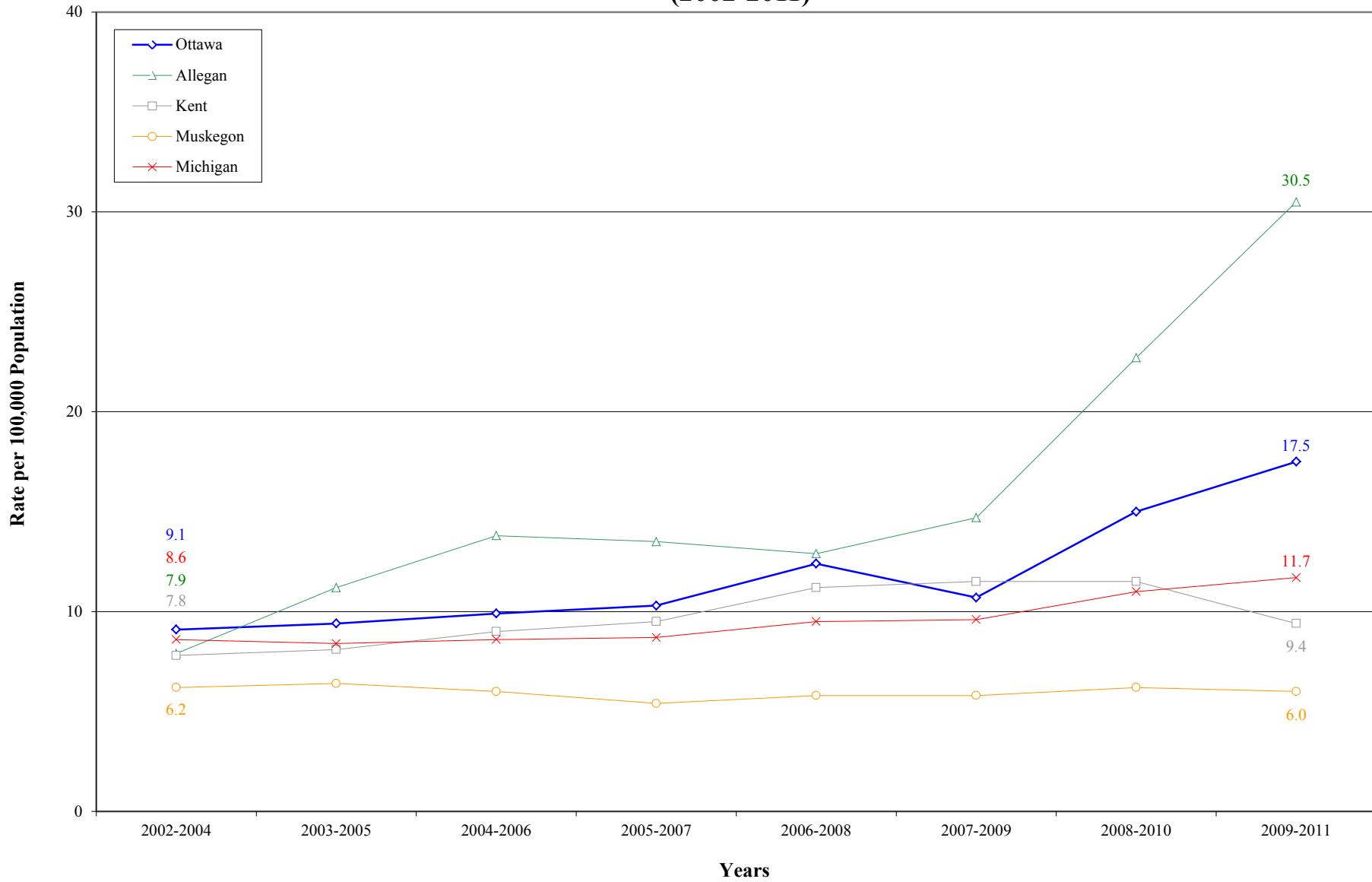
### Campylobacter\* Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | 9.1                         | 7.9     | 7.8  | 6.2      | 8.6      |
| 2003-2005 | 9.4                         | 11.2    | 8.1  | 6.4      | 8.4      |
| 2004-2006 | 9.9                         | 13.8    | 9.0  | 6.0      | 8.6      |
| 2005-2007 | 10.3                        | 13.5    | 9.5  | 5.4      | 8.7      |
| 2006-2008 | 12.4                        | 12.9    | 11.2 | 5.8      | 9.5      |
| 2007-2009 | 10.7                        | 14.7    | 11.5 | 5.8      | 9.6      |
| 2008-2010 | 15.0                        | 22.7    | 11.5 | 6.2      | 11.0     |
| 2009-2011 | 17.5                        | 30.5    | 9.4  | 6.0      | 11.7     |

Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* A type of food poisoning that is typically contracted by handling raw or undercooked poultry

## Campylobacter\* Cases (2002-2011)

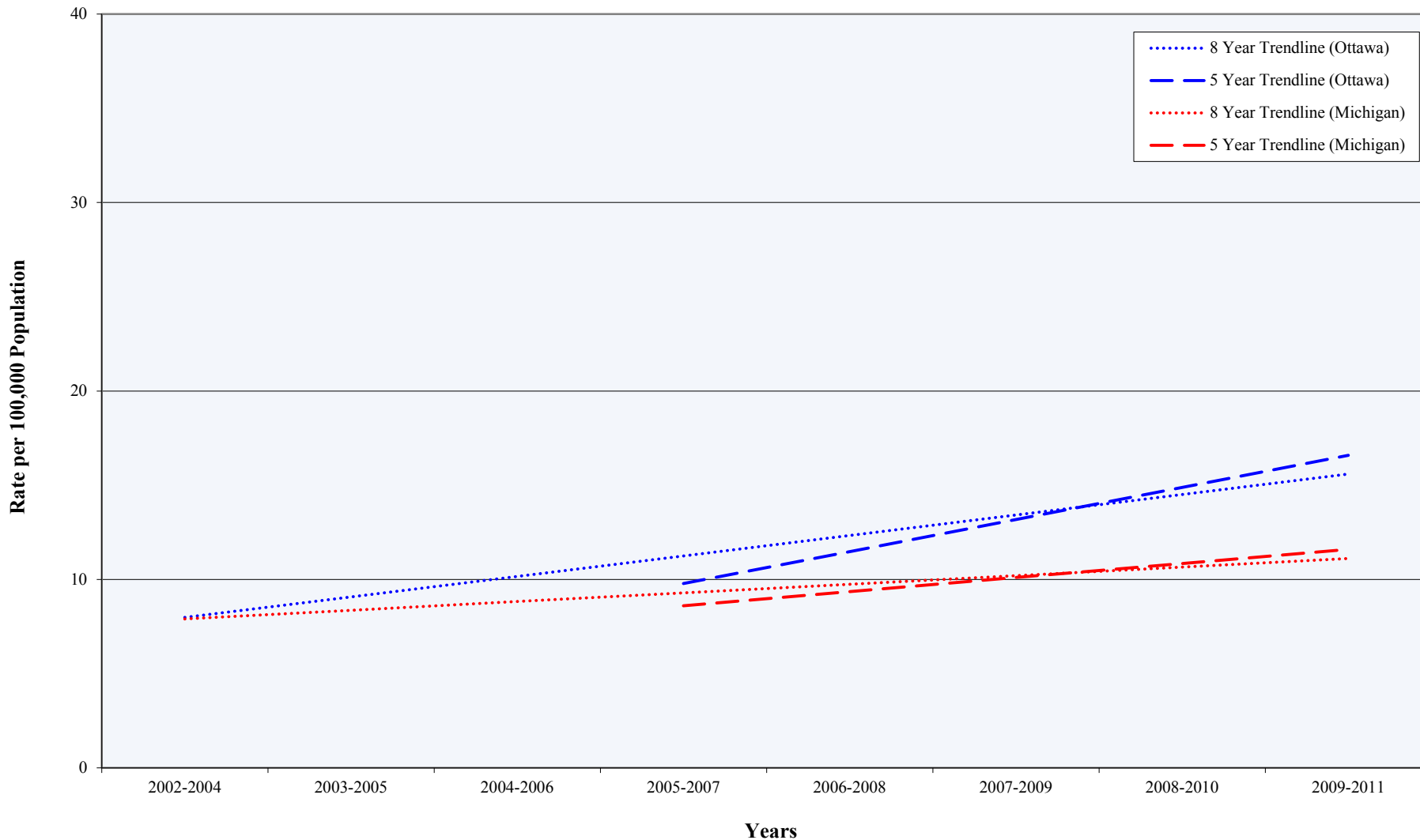


Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* A type of food poisoning that is typically contracted by handling raw or undercooked poultry

# Campylobacter\* Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* A type of food poisoning that is typically contracted by handling raw or undercooked poultry

## Foodborne Illnesses (2002-2011)

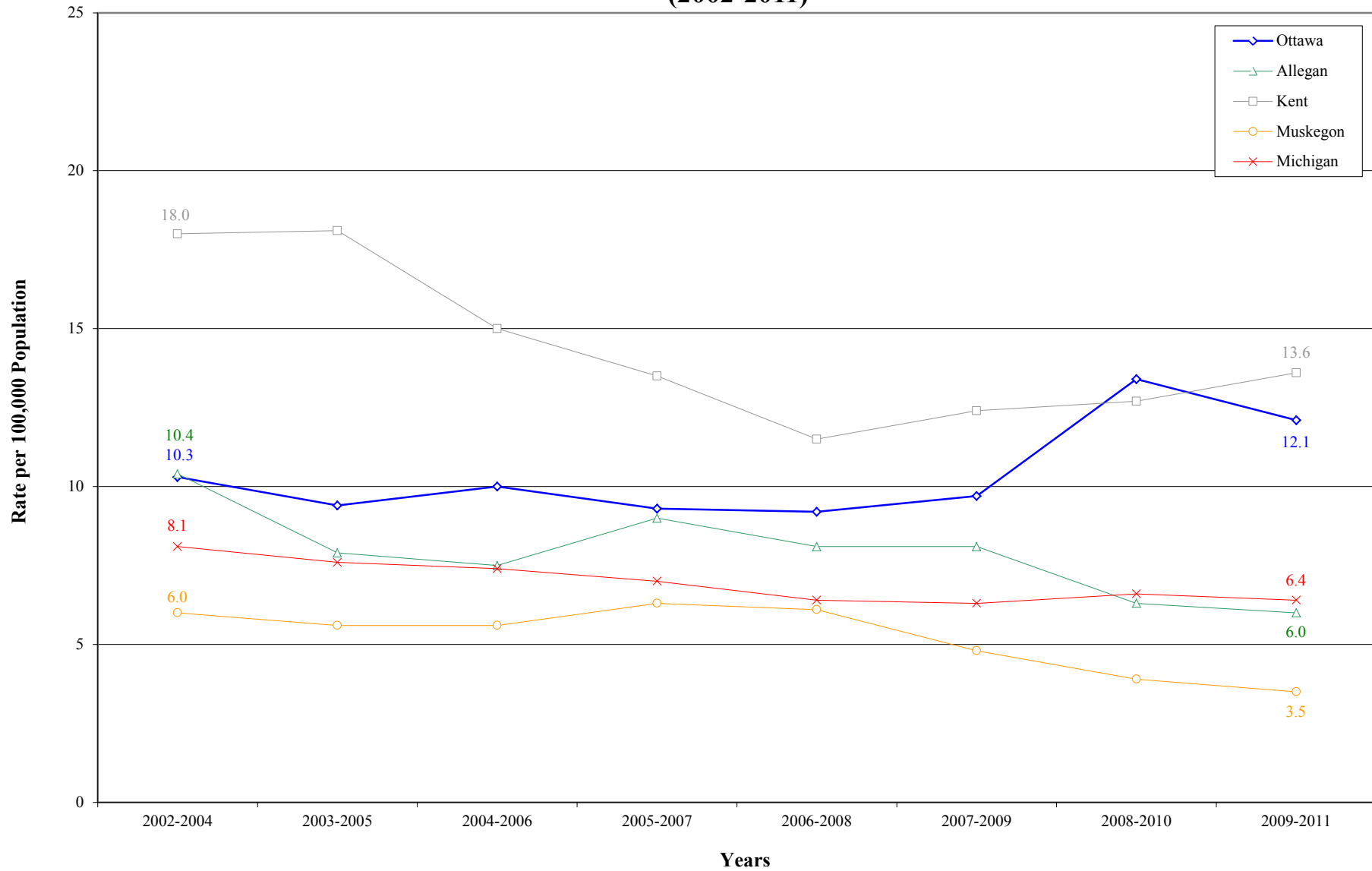
### Giardiasis\* Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | 10.3                        | 10.4    | 18.0 | 6.0      | 8.1      |
| 2003-2005 | 9.4                         | 7.9     | 18.1 | 5.6      | 7.6      |
| 2004-2006 | 10.0                        | 7.5     | 15.0 | 5.6      | 7.4      |
| 2005-2007 | 9.3                         | 9.0     | 13.5 | 6.3      | 7.0      |
| 2006-2008 | 9.2                         | 8.1     | 11.5 | 6.1      | 6.4      |
| 2007-2009 | 9.7                         | 8.1     | 12.4 | 4.8      | 6.3      |
| 2008-2010 | 13.4                        | 6.3     | 12.7 | 3.9      | 6.6      |
| 2009-2011 | 12.1                        | 6.0     | 13.6 | 3.5      | 6.4      |

Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* An infection of the small intestine that is caused by a parasite. It is typically contracted by ingesting food or water that is tainted with human or animal waste

## Giardiasis\* Cases (2002-2011)

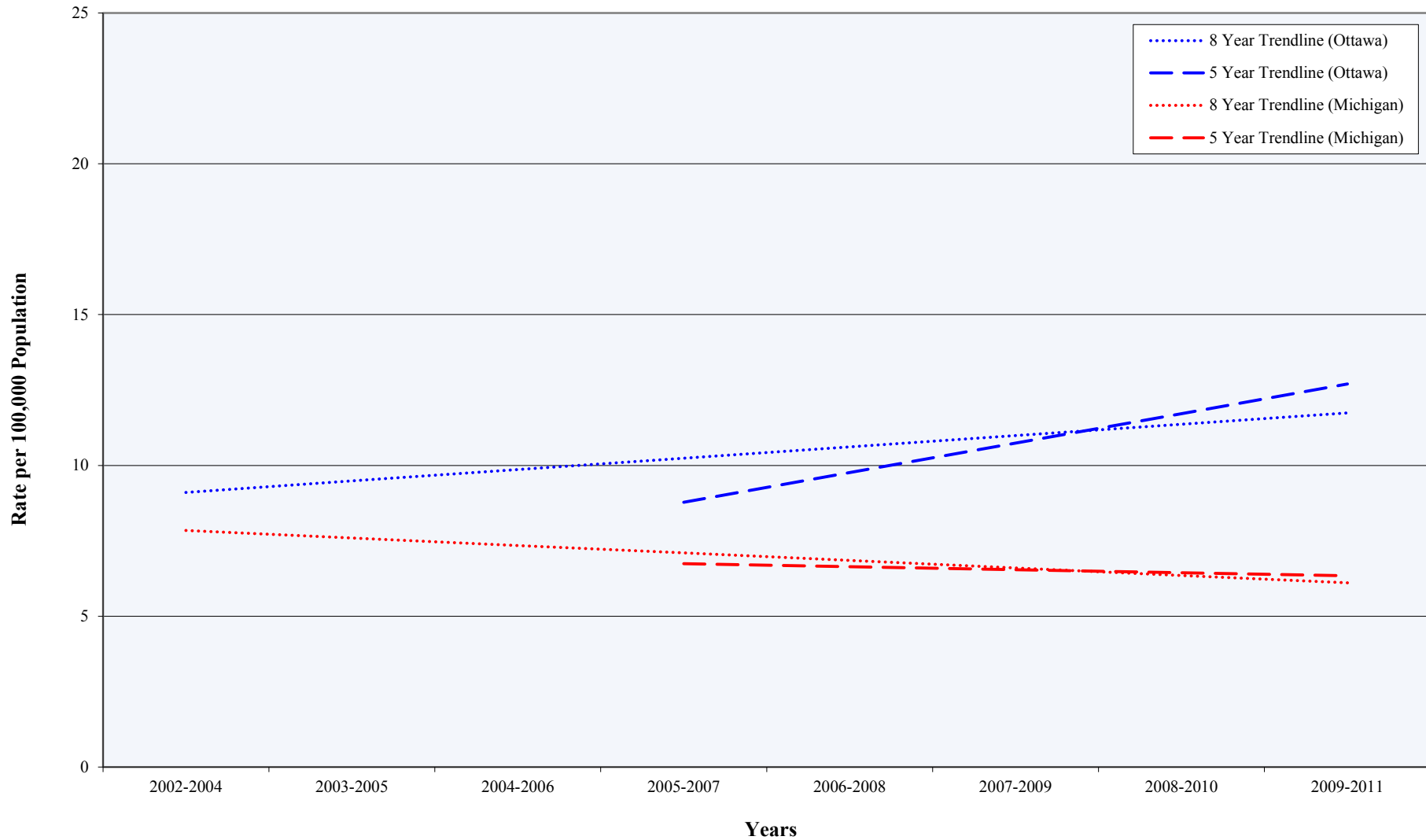


Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* An infection of the small intestine that is caused by a parasite. It is typically contracted by ingesting food or water that is tainted with human or animal waste

# Giardiasis\* Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

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## Foodborne Illnesses (2002-2011)

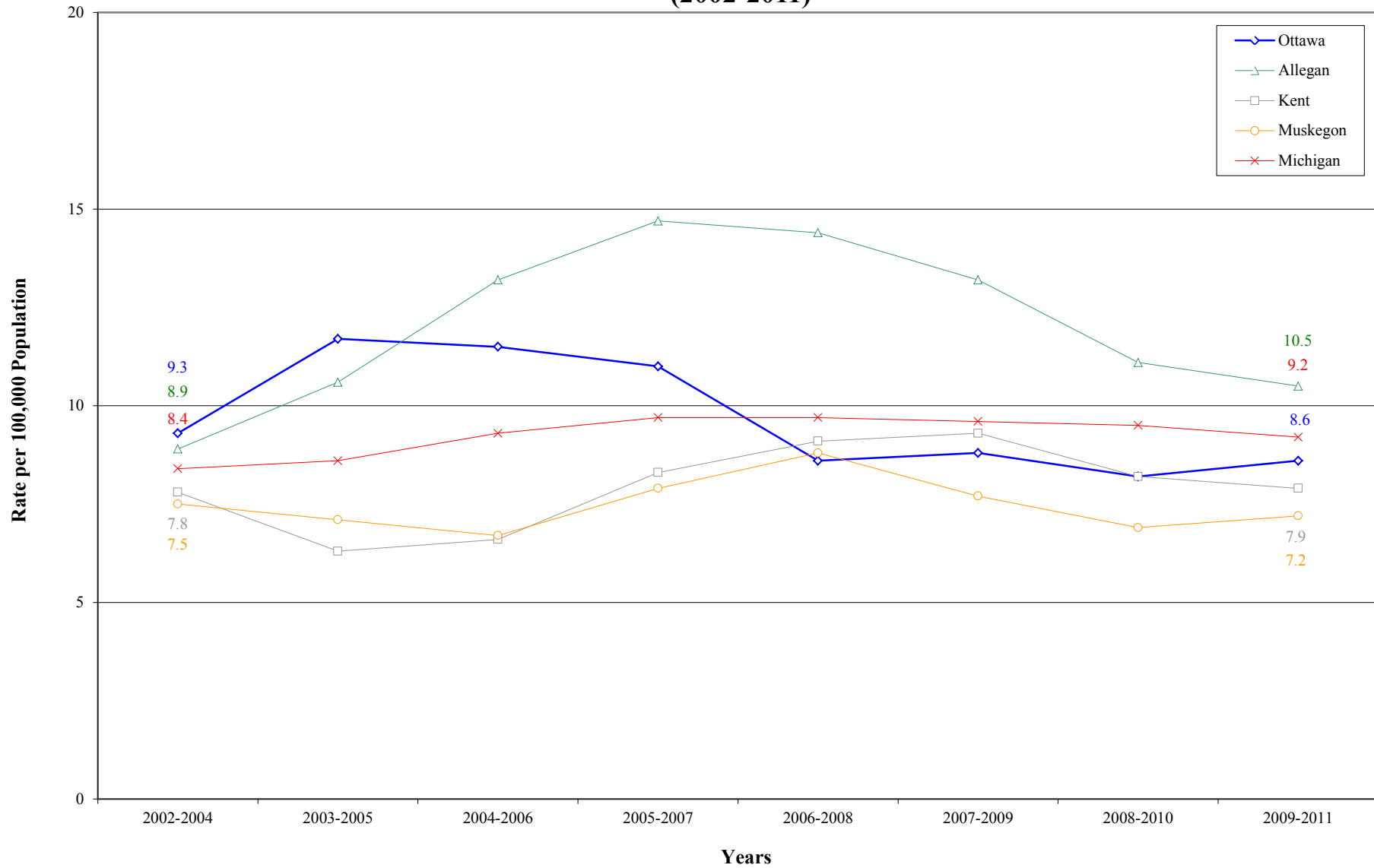
### Salmonellosis\* Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2004 | 9.3                         | 8.9     | 7.8  | 7.5      | 8.4      |
| 2003-2005 | 11.7                        | 10.6    | 6.3  | 7.1      | 8.6      |
| 2004-2006 | 11.5                        | 13.2    | 6.6  | 6.7      | 9.3      |
| 2005-2007 | 11.0                        | 14.7    | 8.3  | 7.9      | 9.7      |
| 2006-2008 | 8.6                         | 14.4    | 9.1  | 8.8      | 9.7      |
| 2007-2009 | 8.8                         | 13.2    | 9.3  | 7.7      | 9.6      |
| 2008-2010 | 8.2                         | 11.1    | 8.2  | 6.9      | 9.5      |
| 2009-2011 | 8.6                         | 10.5    | 7.9  | 7.2      | 9.2      |

Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* An infection caused by the *Salmonella* bacteria. It is typically contracted by ingesting raw or undercooked eggs, poultry, or meat

## Salmonellosis\* Cases (2002-2011)

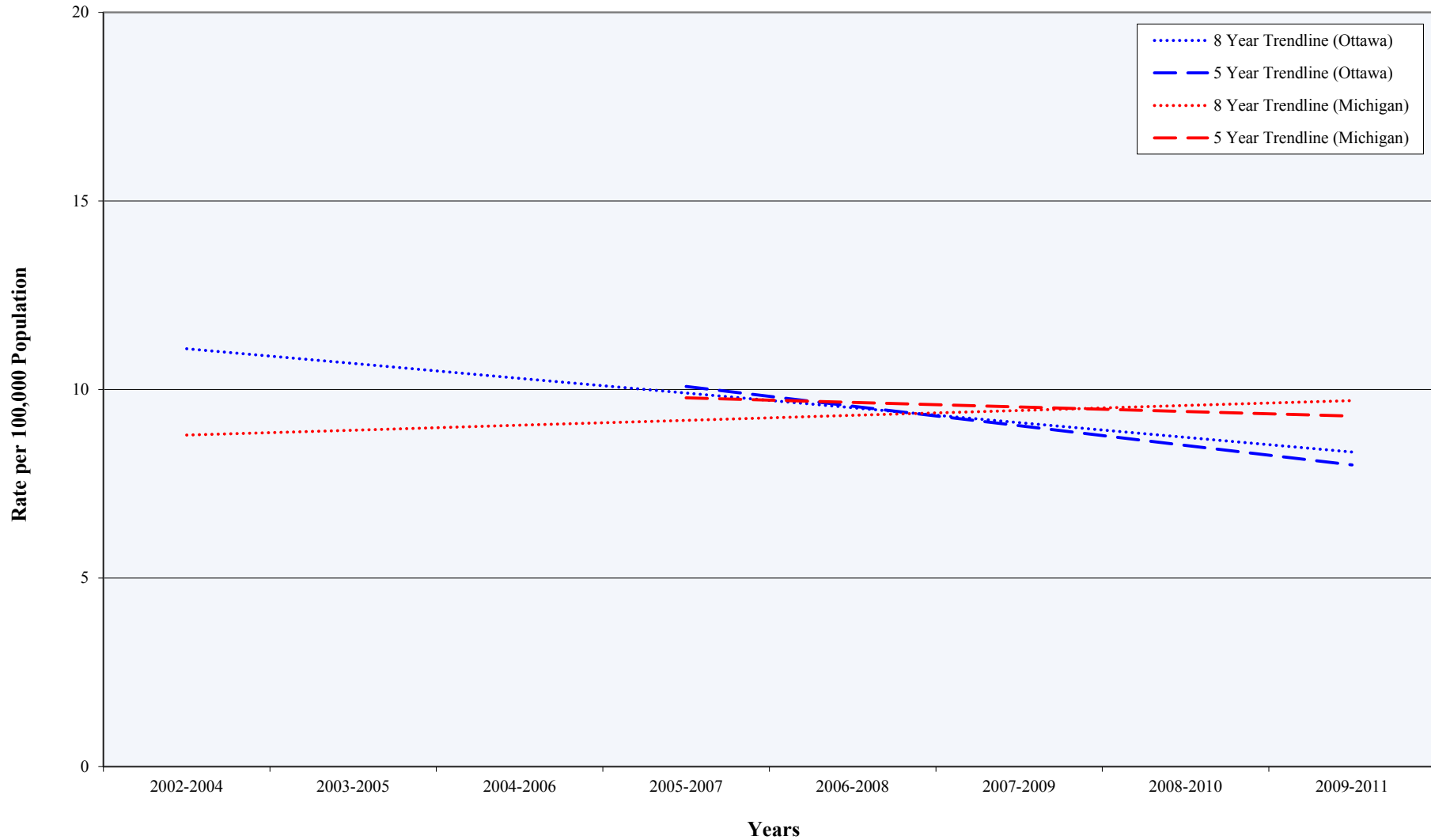


Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

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# Salmonellosis\* Cases

## 5 and 8 Year Trends



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* An infection caused by the *Salmonella* bacteria. It is typically contracted by ingesting raw or undercooked eggs, poultry, or meat

## Vector-borne\* Illnesses (2002-2011)

### Lyme Disease\*\* Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2006 | 0.9                         | ***     | 0.5  | 0.5      | 0.4      |
| 2003-2007 | 1.0                         | ***     | 0.6  | 0.5      | 0.4      |
| 2004-2008 | 1.1                         | ***     | 0.7  | 0.5      | 0.6      |
| 2005-2009 | 1.5                         | ***     | 0.7  | 0.7      | 0.7      |
| 2006-2010 | 1.4                         | 1.6     | 0.6  | 0.6      | 0.8      |
| 2007-2011 | 1.4                         | 2.0     | 0.6  | 0.5      | 1.0      |

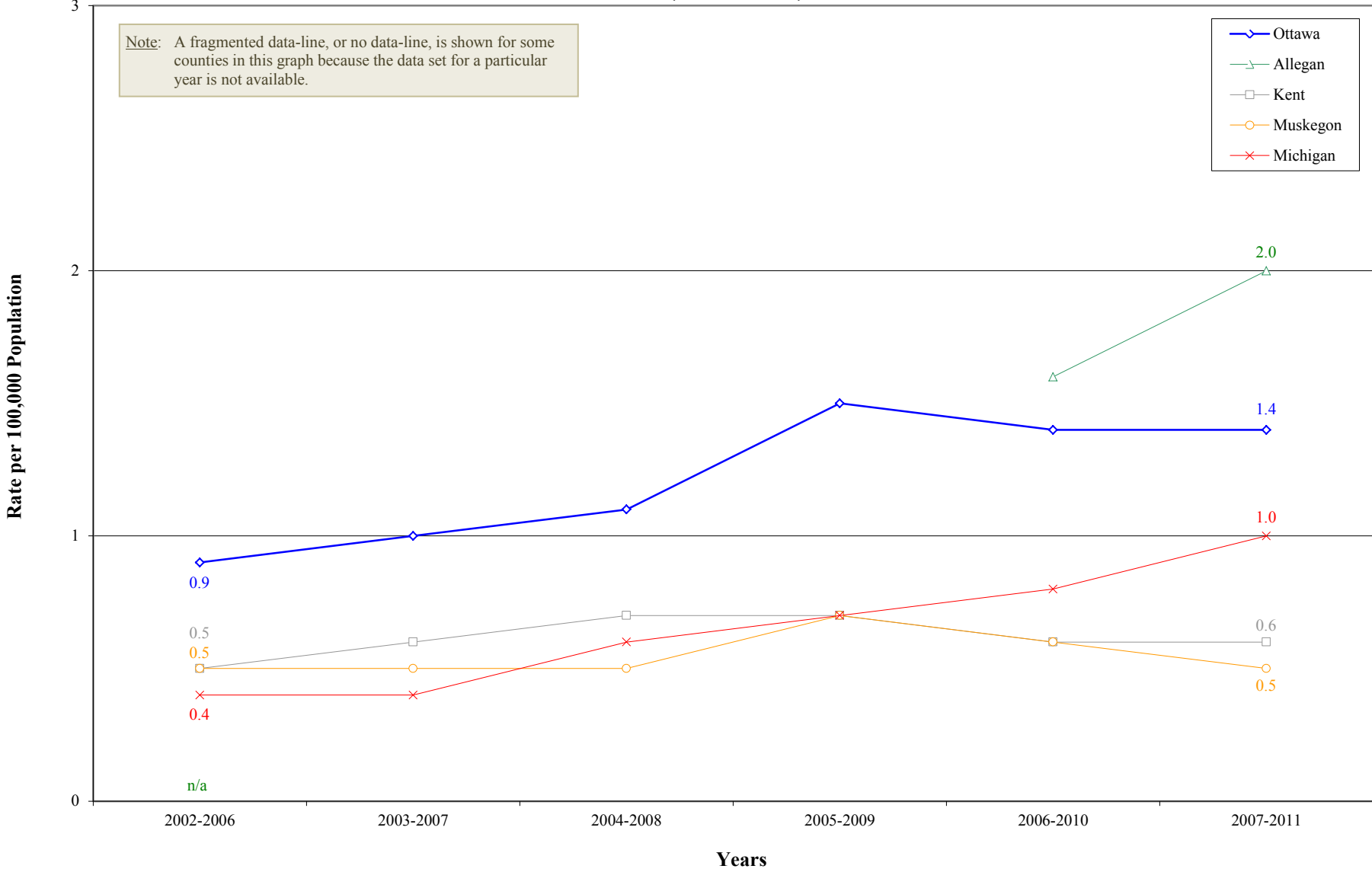
Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* Vector-borne is an illness that is transmitted to people by an insect or arachnid bite

\*\* A bacterial infection caused by a bite from a blacklegged tick that is infected with the disease

\*\*\*A rate could not be calculated because the number of cases prior to 2006 is not available

# Lyme Disease\* Cases (2002-2011)

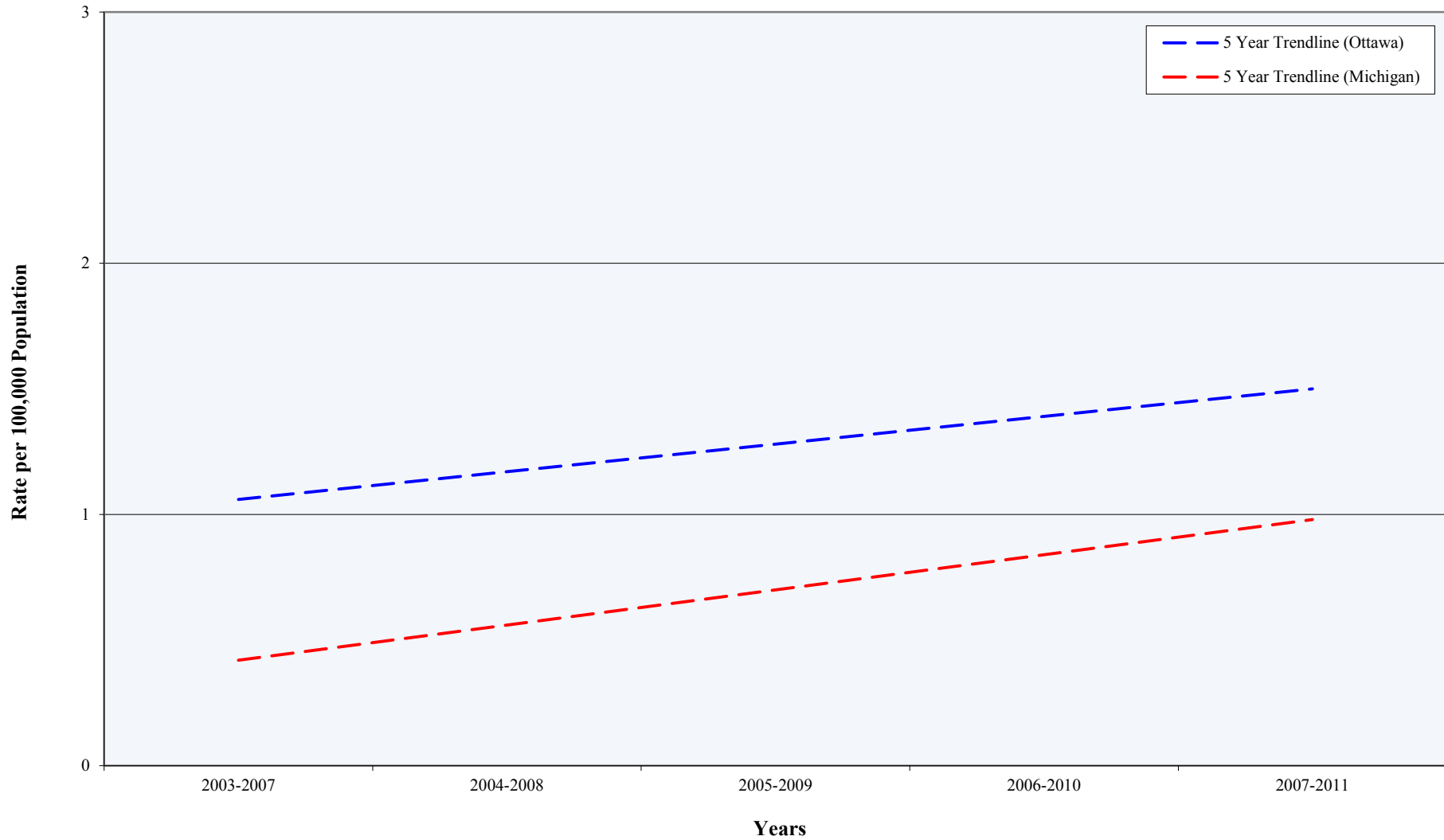


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\* A bacterial infection caused by a bite from a blacklegged tick that is infected with the disease

# Lyme Disease\* Cases

## 5 Year Trend



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

\* A bacterial infection caused by a bite from a blacklegged tick that is infected with the disease

## Vector-borne\* Illnesses (2002-2011)

### West Nile Virus\*\* Cases By Year (Ottawa County, Adjacent Counties, State)

| Year      | Rate per 100,000 Population |         |      |          |          |
|-----------|-----------------------------|---------|------|----------|----------|
|           | Ottawa                      | Allegan | Kent | Muskegon | Michigan |
| 2002-2006 | 1.0                         | ***     | 2.4  | 0.5      | 1.4      |
| 2003-2007 | 0.2                         | 0.2     | 0.8  | 0.3      | 0.3      |
| 2004-2008 | 0.2                         | 0.2     | 0.9  | 0.3      | 0.3      |
| 2005-2009 | 0.2                         | 0.2     | 0.8  | 0.3      | 0.3      |
| 2006-2010 | 0.2                         | 0.2     | 0.6  | 0.3      | 0.2      |
| 2007-2011 | 0.1                         | 0.0     | 0.2  | 0.0      | 0.2      |

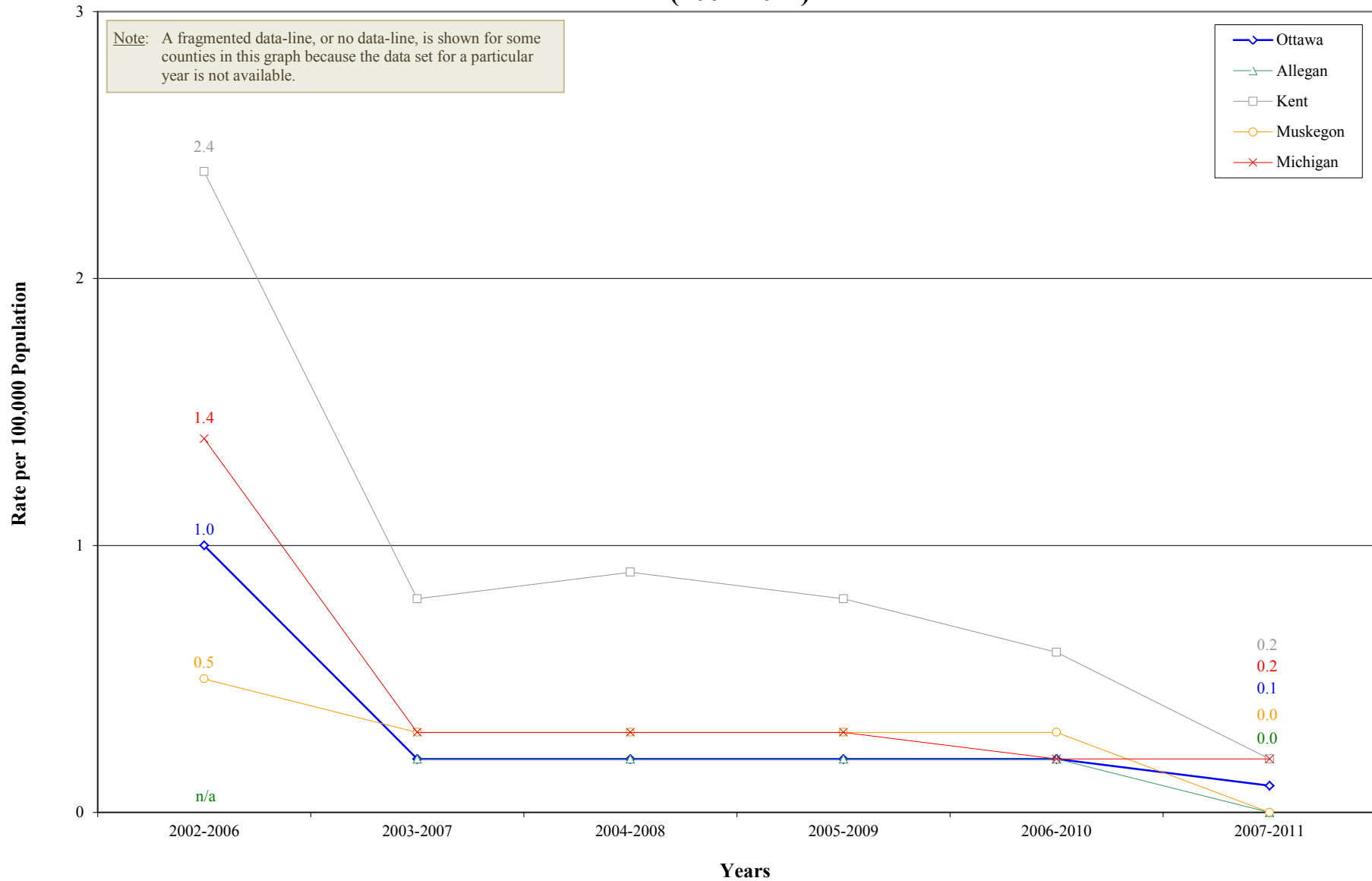
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\* Vector-borne is an illness that is transmitted to people by an insect or arachnid bite

\*\* In most cases, the West Nile Virus is spread by a bite from an infected mosquito

\*\*\*A rate could not be calculated because the number of cases in 2002 is not available

## West Nile Virus\* Cases (2002-2011)



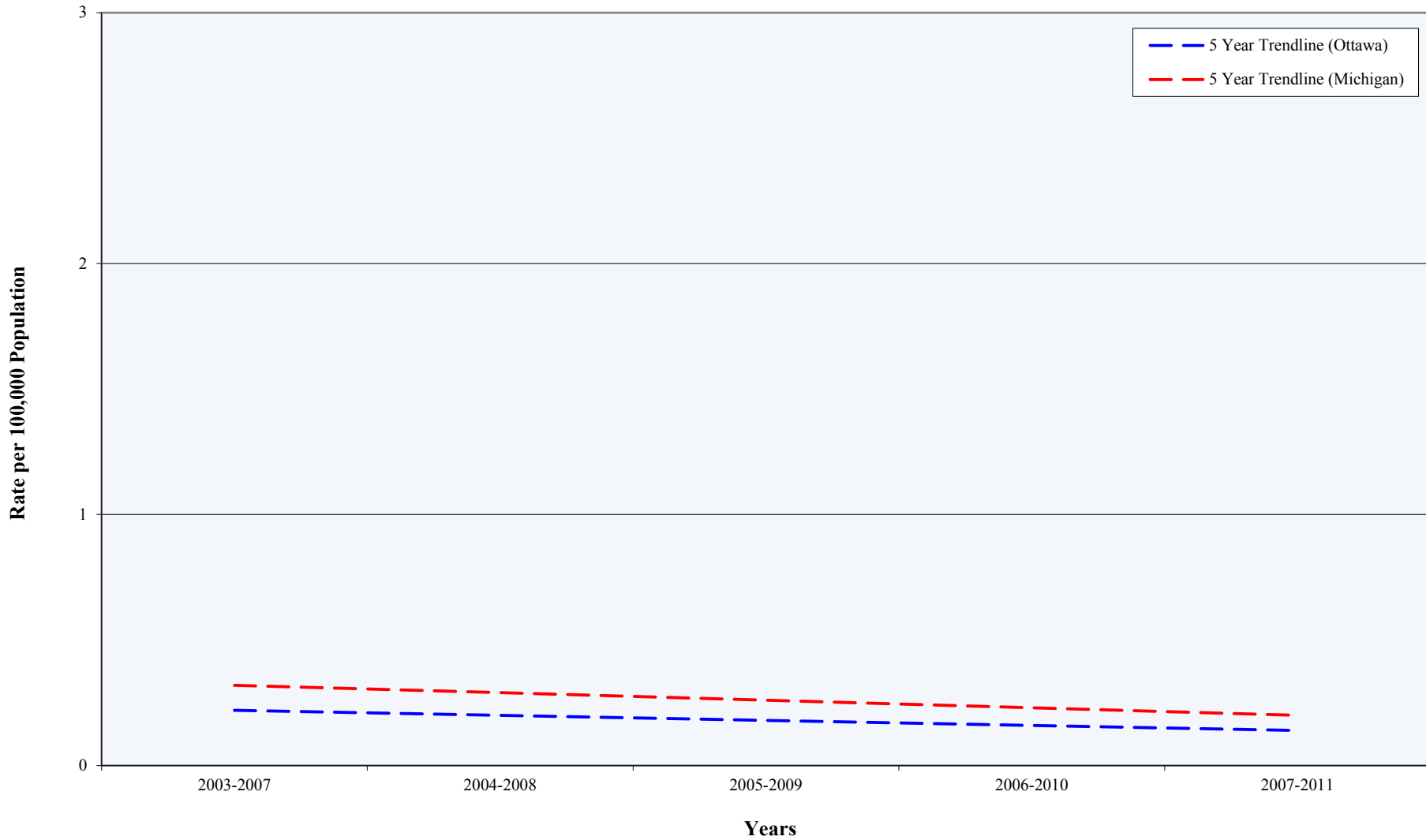
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\* In most cases, the West Nile Virus is spread by a bite from an infected mosquito



# West Nile Virus\* Cases

## 5 Year Trend



Source: Michigan Department of Community Health, Michigan Disease Surveillance System Weekly Disease Report and Reportable Infectious Diseases in Michigan Report; Ottawa County Health Department, Notifiable Disease Reports and Year End Reportable Disease Summaries; Allegan County Health Department, Communicable Disease Trends Report; Kent County Health Department, Notifiable Disease Reports; Muskegon County Health Department; U.S. Census Bureau

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