Infectious DISEASE

2014 Report

RAMSEY COUNTY
Saint Paul – Ramsey County Public Health

Introduction

For an electronic copy of the 2014 Disease Report

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The 2014 Disease Report provides final numbers, rates and trends for selected reportable diseases among Ramsey County residents for the year 2014. Several diseases, including measles and pertussis, are not summarized in this report due to paucity. The source of information is a disease surveillance and reporting system maintained by the Minnesota Department of Health in conjunction with local jurisdictions, including Saint Paul – Ramsey County Public Health. The system is authorized by a State of Minnesota disease reporting rule (Minnesota Rules 4605.7000 - 4605.7800) and includes confirmed reports of disease from laboratories, clinics, schools and other partners throughout Minnesota. Multiple sources describe the analytic processes used in this report.[1-3]

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Varicella

Varicella (chickenpox) is caused by Varicella Zoster Virus (VZV). VZV is a herpesvirus, which persists in the body after the initial infection and can reactivate later in life to cause an illness called "shingles." Varicella is characterized by a rash that is red, itchy, and can cover any area of the body, but tends to be concentrated on the trunk. In unvaccinated people, the rash begins as red spots that fill with fluid and ultimately scab over. Most people who are vaccinated will not develop varicella, but if they do, the rash tends to be less severe and limited to red, raised spots that simply fade away over time. Most people will develop lifelong immunity following an infection with VZV.[4]

Virtually everyone in the U.S. had varicella in childhood before the vaccine became available in 1995. One dose of varicella vaccine was initially recommended and was successful at reducing varicella incidence and varicella-related hospitalizations. However, by 2006, surveillance indicated that outbreaks of varicella continued to occur in schools despite high vaccination coverage. This and other observations led to the addition of a second dose of vaccine to the childhood schedule. Varicella vaccine is recommended for children at 12 through 15 months of age and again at 4 through 6 years of age.[4] In Minnesota starting in the 2009-10 school year, children in kindergarten and 7th grade were required to have received 2 doses of varicella vaccine. As of the 2015-16 school year, all cohorts of children will have been required to have 2 doses.[3,4] Data reported by schools indicate that in the 2014-15 school year, 89.5% of Ramsey County kindergarteners and 91.7% of 7th graders were fully vaccinated against varicella, which is slightly lower than statewide coverage and the Healthy People 2020 goal (95% for kindergarteners).[5,6]

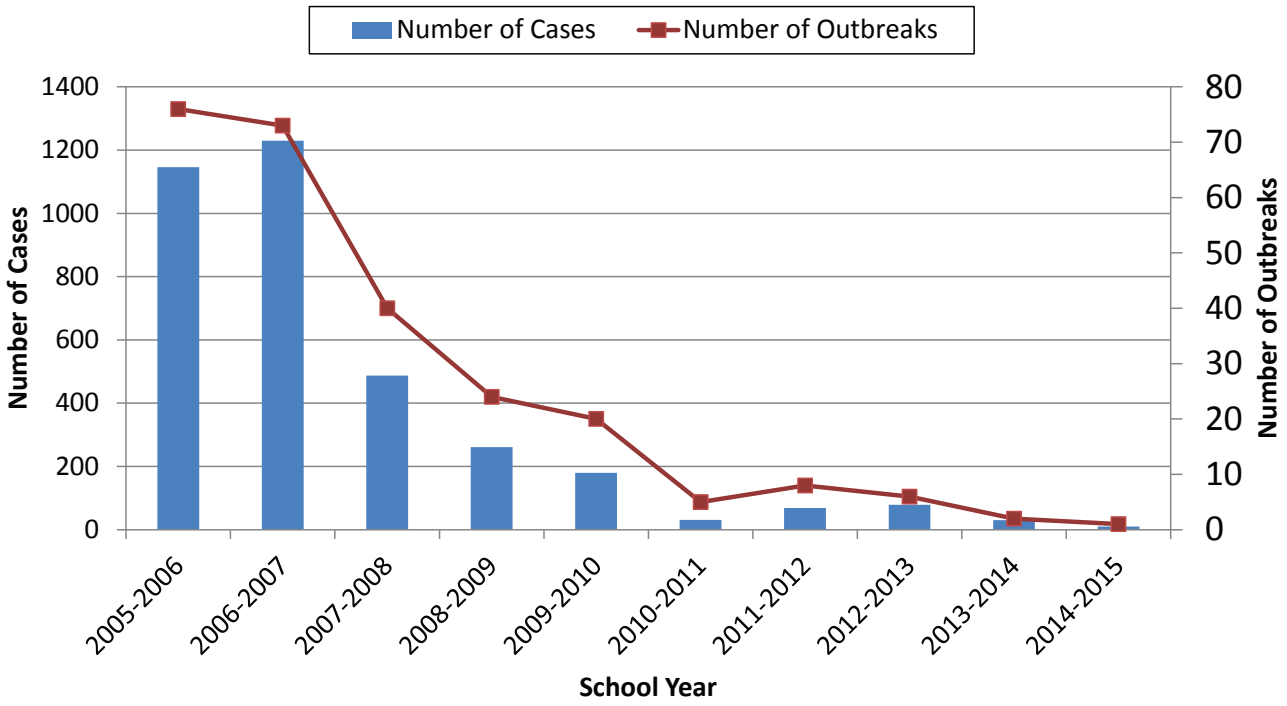
Varicella surveillance programs are important for monitoring the impact of varicella vaccine on the disease. However, in the early years after the introduction of vaccine in the United States, the Centers for Disease Control and Prevention relied on two active surveillance sites to provide data. Those sites demonstrated that routine vaccination was successful in reducing varicella cases by 97% between 1995 and 2010.[4] The varicella vaccine has also had a significant impact on varicella-related hospitalizations and deaths; each year in the United States, 9,000 hospitalizations and 100 deaths are prevented.[7]

Varicella surveillance in Minnesota began in 2006. The Minnesota Department of Health (MDH) initially used a sentinel surveillance system, which enrolled 80 schools each year to report each case of varicella in their students. All other schools were required to report outbreaks of varicella. This surveillance program

continued until 2012, when cases and outbreaks were so rare that it became ineffective. On January 1, 2013, case-based surveillance for varicella was implemented, which means all cases of varicella identified by health care providers, laboratories, school health offices, and daycare providers are required to be reported to MDH.[3] Like the national active surveillance sites, Minnesota surveillance has also identified a stark reduction of disease following the introduction of vaccine. In each of the first 2 years of surveillance (2005-06 and 2006-07 school years) more than 70 school outbreaks were reported involving over 1,100 cases. In the most recent school year (2014-15) only one school outbreak with 10 cases was reported.[8] In 2014, 297 cases (6 per 100,000 population) were reported compared to 483 in 2013, which is a 39% decrease. The majority of cases in 2014 (63%) were reported from the metropolitan area.[3] There were 35 cases (6.9 per 100,000 population) in Ramsey County in 2014.[8,9]

The varicella vaccine program has been extremely successful at preventing illnesses, hospitalizations, and deaths from varicella.

Reported Varicella (Chickenpox) Outbreaks in Minnesota Schools and Number of Students Involved, by School Year



Source: http://www.health.state.mn.us/divs/idepc/diseases/varicella/stats/report14.pdf

Sexually Transmitted Diseases

The number of cases of sexually transmitted diseases (STDs) reported is affected by several factors, including the availability of screening resources and programs in a community, changes in the type and accuracy of diagnostic tests and completeness of case reporting. Because of these factors, it can be difficult to interpret the reason for changes in the rates of STDs.

Clinic 555 (sexual health services) of Saint Paul – Ramsey County Public Health, along with community clinics and other community health care providers, offer many services related to the prevention and treatment of STDs.

Chlamydia

Infections caused by *Chlamydia trachomatis* are the most frequently occurring reportable disease in Ramsey County, Minnesota, and the United States. There were 2,825 infections reported in Ramsey County in 2014, corresponding to an incidence of 555 cases per 100,000 persons. The incidence in Ramsey County continues to be higher than in Minnesota (375 cases per 100,000 persons) and the United States (456 cases per 100,000 persons). Ramsey County's incidence increased 1.3% from the previous year and accounts for 14% of the total cases reported in Minnesota.[9,10] However, the burden of disease is much greater in the City of Saint Paul compared to the rest of Ramsey County.

City of Saint Paul:

- Incidence: 797 cases per 100,000 persons
  - ◊ Change from 2013: Decreased 4.4%
- Percentage of cases in Ramsey County: 80.5%
- Percentage of cases in Minnesota: 11%

Ramsey County, excluding Saint Paul:

- Incidence: 247 cases per 100,000 persons
  - ◊ Change from 2013: Increased 35%

Sexually Transmitted Diseases

While the majority of cases reside in Saint Paul, it is the only jurisdiction reported by the Minnesota Department of Health to report a decrease since 2013. Conversely, the seven-county metro area (excluding the cities of Minneapolis and Saint Paul) reported the greatest increase in chlamydia (19%)[10] and Ramsey County (excluding Saint Paul) increased 35%.[9]

In 2014, ages of individuals with chlamydia ranged from 0 days to 68 years. Adolescents and young adults, however, make up the largest percentage of chlamydia infections. People between the ages of 15 and 24 years consistently make up approximately 70% of cases in Ramsey County, however in 2014 this percentage dropped slightly to 65%. The mean and median age of cases was 24 and 22 years, respectively, which is consistent with previous years.[9]

The majority of infected people have no symptoms, but serious complications can occur if infections are not detected and treated. In 2014, females accounted for 68% of chlamydia cases in Ramsey County.[9] Females are at higher risk of complications from chlamydia, which include pelvic inflammatory disease, permanent damage to the fallopian tubes and uterus, chronic pelvic pain, infertility, and potentially fatal ectopic pregnancy. Chlamydia infection can also increase the chances of becoming infected with other STDs, including HIV. Infections in pregnant women can potentially lead to premature delivery and eye and respiratory infections in their newborns. Women can also be re-infected by their sexual partners, which underscores the importance of having sexual partners of infected women screened and treated for chlamydia. Expedited Partner Therapy, which is the practice of treating sex partners of persons with STDs without requiring a clinic visit, is an effective means by which to accomplish this and has been available in Minnesota since 2008.[11]

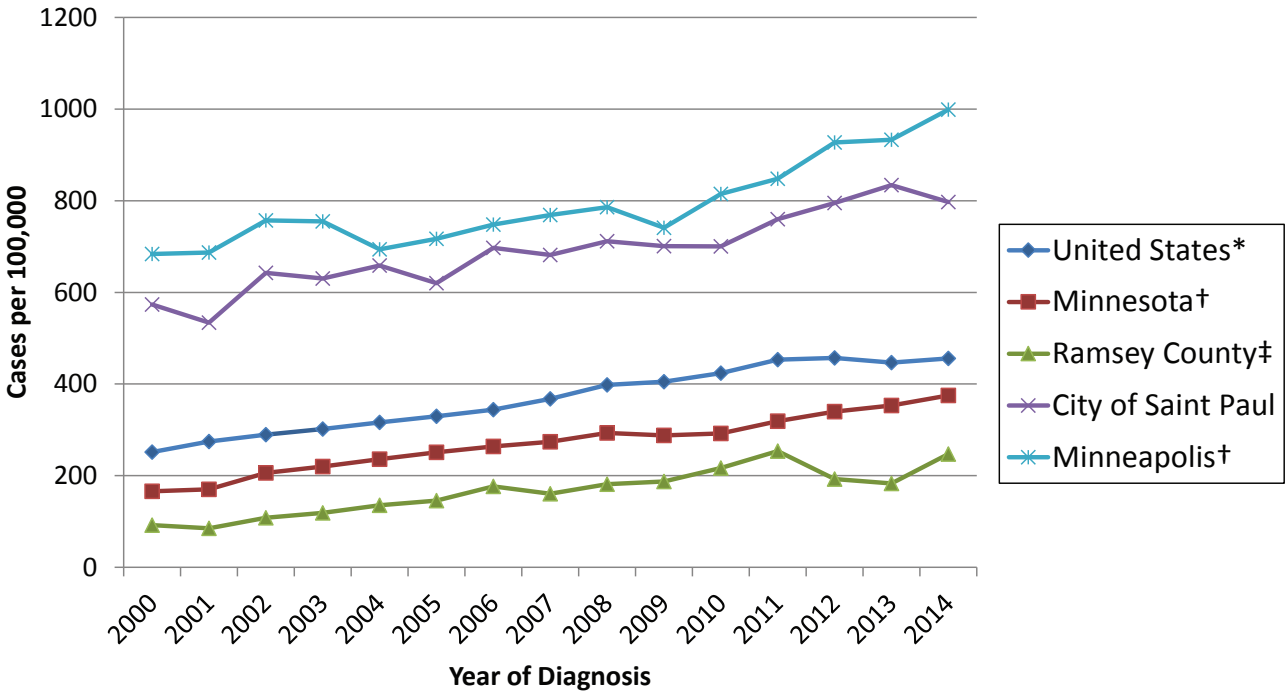
Between 2013 and 2014, rates decreased 4.4% in Saint Paul and increased 35% in the rest of Ramsey County.

In response to the chlamydia epidemic in Minnesota, The Minnesota Chlamydia Partnership (MCP) was formed in 2010. The MCP is a collaboration of public health, health care, community organizations, and youth organizations that has developed a strategy with the goal of reducing and preventing chlamydia by enhancing public and professional awareness, increasing screening and treatment and making it more accessible and reducing health inequities in populations of color and in LGBTQ communities.[12]

Sexually Transmitted Diseases

In 2014, 182 Ramsey County residents were diagnosed with chlamydia by Saint Paul - Ramsey County Public Health's Clinic 555. This represents 6.4% of the cases in Ramsey County, which is a 28% decrease from the number of people diagnosed in 2014. STD screening capability exists at Ramsey County Corrections locations (Juvenile Detention Center, Boys Totem Town, Adult Detention Center and Ramsey County Correctional Facility), however chlamydia is rarely diagnosed at these locations.[9]

Chlamydia Incidence per 100,000 Population, Select Populations, 2000 - 2014



*Source: http://www.cdc.gov/std/stats14/tables/1.htm

†Source: http://www.health.state.mn.us/divs/idepc/dtopics/stds/stdstatistics.html

‡Does not include City of Saint Paul

Primary and Secondary Syphilis

Syphilis surveillance data for primary and secondary syphilis are used to monitor morbidity trends because they represent recently acquired infections.[3] Syphilis causes symptoms and can be transmitted to sexual partners during these two stages of illness. In 2014, there were 39 cases of primary/secondary syphilis in Ramsey County (7.7 cases per 100,000 persons). This represents an increase of 70% compared to 2013, when 23 cases were reported (4.5 per 100,000 persons). This is a dramatic increase considering that between 2012 and 2013 the increase in cases was 9.5%. Historically, the incidence in Ramsey County closely followed the incidence in Minnesota, both of which were below the national incidence.[9] However, the increase in 2014 pushed the county's incidence above the incidence in the United States (6.3 cases per 100,000 persons) and Minnesota (4.8 cases per 100,000 persons).[9,10,13] Similar to the epidemiology of chlamydia and gonorrhea, the burden of disease is much greater in the City of Saint Paul. The City of Saint Paul accounted for 85% (33 cases) of reported cases of primary/secondary syphilis, compared to 6 cases in the rest of Ramsey County.[9] The incidence of primary/secondary syphilis is consistently and dramatically higher in Minneapolis than other jurisdictions.[10] In 2014, the incidence in Minneapolis (34.0 per 100,000 persons) was 2.9 times greater than the incidence in Saint Paul.[9,10]

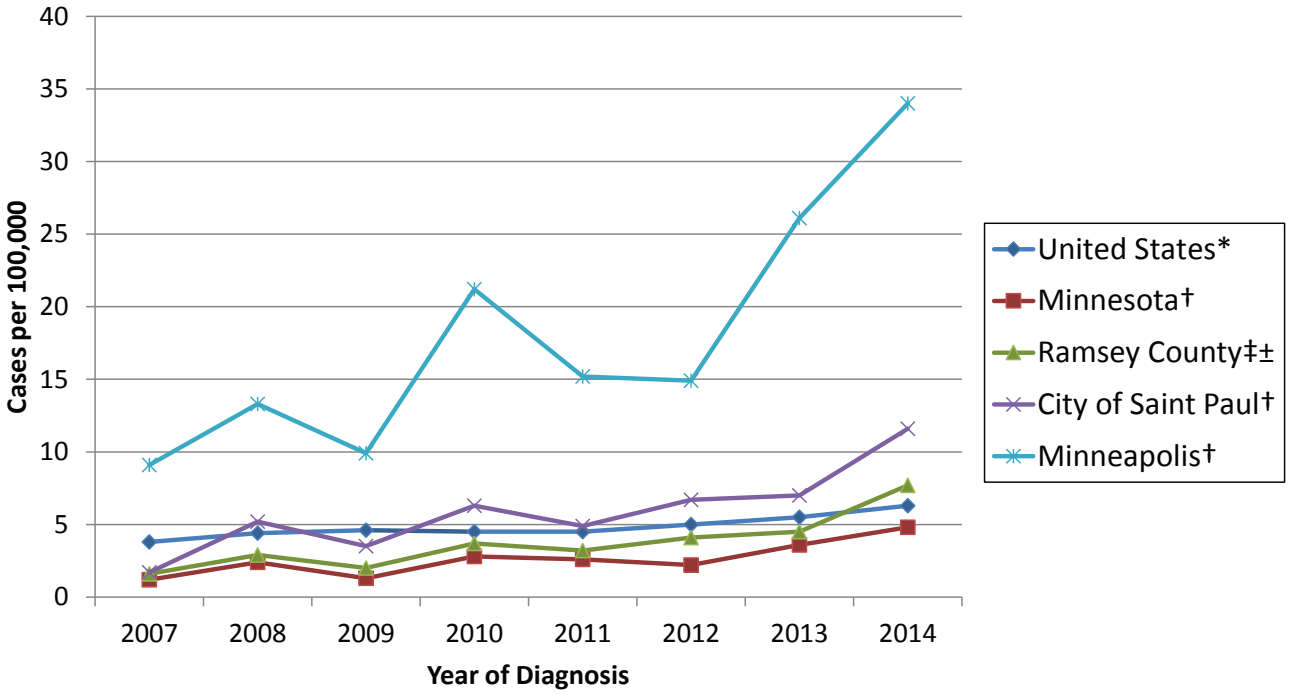
Between 2013 and 2014, the number of cases of primary and secondary syphilis in Ramsey County increased 70%.

The incidence of primary/secondary syphilis in Minnesota has remained elevated since an outbreak began in 2002 among men who have sex with men (MSM).[3] Primary/secondary syphilis continues to disproportionately impact men and is highly concentrated among MSM. Of the cases in Ramsey County in 2014, 36 (92%) were men, the majority of whom reported having sex with other men.[9] While large increases among women have not been identified in Ramsey County, the Minnesota Department of Health reports that rates among women have increased over the past two years.[10]

In 2014, ages ranged from 19 to 69 years. Unlike the epidemiology of chlamydia, which disproportionately impacts adolescents and young adults, primary/secondary syphilis cases are distributed fairly evenly among adult age groups. The mean and median age of cases was 33 and 28 years, respectively, which represent a slight shift towards younger age groups compared to 2013.[9]

Sexually Transmitted Diseases

Primary and Secondary Syphilis Incidence per 100,000 Population, Select Populations, 2007 - 2014



*Source: http://www.cdc.gov/std/stats14/surv-2014-print.pdf

†Source: http://www.health.state.mn.us/divs/idepc/dtopics/stds/stdstatistics.html

±Source: Saint Paul – Ramsey County Public Health, Epidemiology

‡Includes City of Saint Paul

Tuberculosis

Reported cases of tuberculosis (TB) decreased in 2014. Twenty-six cases of active TB were reported in Ramsey County, which is the fewest reported since 2000. This represents a decrease of 45% from the high of 47 cases reported in 2007. Despite the decrease in cases, Ramsey County continues to have higher incidence than other metro area counties in Minnesota (5.1 cases per 100,000 persons). Of Minnesota counties with available incidence data, only Olmsted County reported a higher incidence (10.7 cases per 100,000 persons).[9,14] Ramsey County continues to have higher incidence than Minnesota (2.7 cases per 100,000 persons) and the United States (3.0 cases per 100,000 persons).[14] The incidence of TB in Ramsey County, Minnesota and nationally have not met the Healthy People 2020 goal of 1.0 cases per 100,000 persons.[6]

The majority of TB cases were initially identified and reported by private physicians' offices (42.3%) and local public health departments (34.6%), including Saint Paul - Ramsey County Public Health (SPRCPH). The remaining cases were reported by hospitals and laboratories. Due to the complexities of managing the treatment of patients with active TB infections, nearly all patients are managed by local public health departments that have clinic capacity. SPRCPH has a TB clinic with medical providers who specialize in TB treatment. In 2014, 23 (89%) of the 26 TB patients in Ramsey County received treatment through SPRCPH.[9]

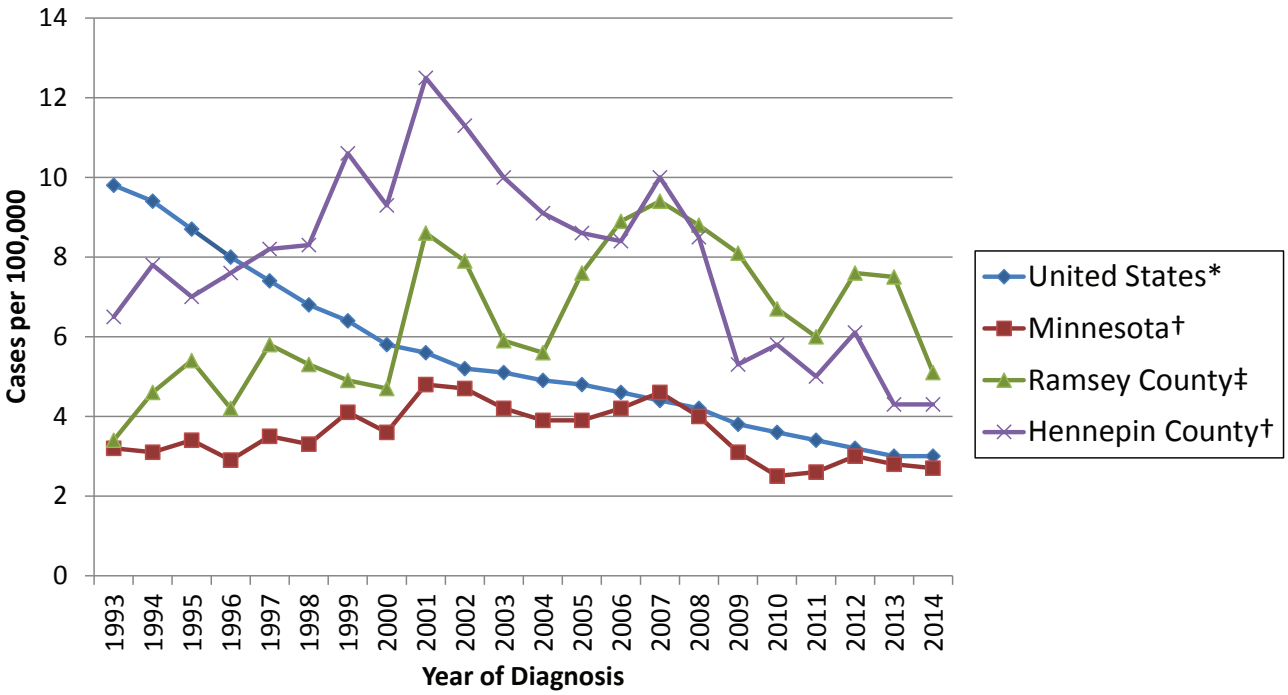
In Ramsey County, the majority of cases continue to be in persons born in countries where active TB is common. In 2014, 69% of active TB cases were in persons born outside of the United States, which is lower than the average over the last decade (82%). The most common region of birth among cases born outside of the United States was South/Southeast Asia (44%), followed by Sub-Saharan Africa (33%). Of the 18 cases born outside of the U.S., 17% were diagnosed with TB disease before residing in the U.S. for a full year.[9] These cases stress the importance of considering TB disease in patients who recently immigrated to the U.S. Early identification and treatment can greatly reduce the duration of contagiousness and can help reduce transmission of TB in the community. Seventy-two percent of foreign-born TB cases had resided in the U.S. for three years or longer prior to being diagnosed with TB disease.[9] These cases show the potential impact that domestic screening and treatment of latent TB infection in recently arrived refugees, immigrants

Ramsey County continues to have higher incidence of TB than other metro area counties in Minnesota.

other foreign-born persons could have on TB disease in Ramsey County. Cases born in the United States often report other risk factors including immunosuppression due to certain therapies or illnesses, substance abuse, and to a lesser extent being homeless, an inmate of a correctional facility, or a resident of a nursing home.[14]

Of the new cases identified in 2014, 3 (15%) of 20 tested for drug sensitivities were resistant to one or more first line anti-TB medications, which is lower than the percentage in Minnesota (24%). Only one case in Minnesota was found to be multidrug-resistant, which is defined as resistance to at least isoniazid and rifampin, and they did not reside in Ramsey County.[9,14]

Tuberculosis Incidence per 100,000 Population, Select Populations, 1993 - 2014



*Source: http://www.cdc.gov/tb/statistics/default.htm

†Source: http://www.health.state.mn.us/divs/idepc/diseases/tb/stats/index.html

‡Source: Saint Paul – Ramsey County Public Health, Epidemiology

Sources

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[13] Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2014. Atlanta: U.S. Department of Health and Human Services; 2015. Retrieved from: http://www.cdc.gov/std/stats14/surv-2014-print.pdf

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Contact Information

Saint Paul - Ramsey County Public Health has programs that detect and manage communicable diseases, provide childhood and adult immunizations, and promote positive sexual health behaviors.
For more information about public health programs | **651-266-2400**

The Epidemiology Program monitors the occurence of disease, provides information and consultation on control of communicable diseases, and investigates acute disease outbreaks.
For more information about this disease report | **651-266-1277**