INFECTIOUS DISEASE

Infectious (or communicable) diseases cause only about 2% of deaths in Washtenaw County residents, but they do cause substantial illness (morbidity) and hospitalization. Most communicable diseases cause acute symptoms and short term illness. Others, such as HIV, hepatitis B and C, and human papilloma virus (HPV), can result in lifelong infections and consequences.

HIP has a number of objectives related to infectious disease across the lifespan. The two main areas of focus are vaccine preventable diseases and sexually transmitted diseases.

HIP Year 2020 Health Objectives related to Infectious Disease:

Healthy Kids

- Decrease the Chlamydia infection rate in Ypsilanti teenagers 15-19 years from 3,345 per 100,000 to 1,201 per 100,000.
- Increase the proportion of females who have received the HPV vaccine by age 16 from 0% to 75%.
- Increase the annual influenza vaccination rate in children 6-59 months from 65% to 90%.
- Increase the proportion of children 19-35 months who are fully immunized from 73% to 90%.

Healthy Adults

- Decrease the incidence of HIV infection in persons 13 years and older from 10 per 100,000 to 1 per 100,000.
- Increase the annual influenza vaccination rate in adults 18 years and older from 28% to 80%.

Healthy Older Adults

• Increase the proportion of adults 65 years and older who have received at least one pneumococcal vaccination from 58% to 90%.

Health Outcomes

More than 75 communicable diseases and conditions are reportable in Michigan and are tracked in the Michigan Disease Surveillance System (MDSS). Diseases include salmonella, tuberculosis, measles, Chlamydia, and West Nile virus. The most frequently reported diseases are in the table below.

Top reportable communicable diseases in Washtenaw County residents 2010-2012¹

Disease	2010	2011	2012	Three-year average
Chlamydia	1379	1390	1422	1397
Gonorrhea	420	236	299	318
Hepatitis C	201	150	182	178
Pertussis (whooping cough)	236	19	28	94
Hepatitis B (chronic)	79	71	68	73
Campylobacter	59	55	48	54
Chickenpox	58	29	49	45

Source: Michigan Disease Surveillance System

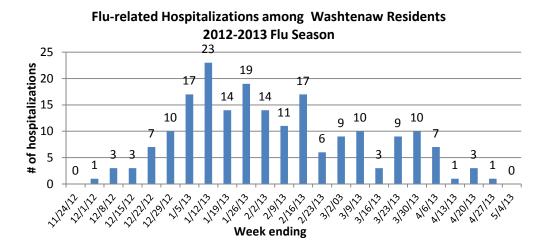
Influenza

Influenza can cause significant illness, hospitalization, and death. The virus changes frequently, making it a challenge to manufacture a vaccine that fully protects against flu. Washtenaw County Public Health tracks flu hospitalizations and deaths.

The 2011-12 flu season was mild with flu-associated hospitalizations much lower than the previous two seasons. No hospitalizations were reported in young children (0-4 years). Almost all hospitalized individuals had an underlying health condition. There were 28 total hospitalizations for flu (14% of which were ICU admissions) and one death. The death was in an adult older than 65 years who had severe underlying health conditions.

The 2012-13 flu season was moderately severe with numerous hospitalizations as seen below in the graph. Older adults were particularly affected, and there were several influenza outbreaks in long-term care and assisted-living facilities.

Young children, older adults, and those with underlying health conditions are the most vulnerable to severe outcomes from influenza infection. Vaccination is now recommended for everyone over six months of age, since having a well-vaccinated population helps protect those at highest risk.



Source: Washtenaw County Public Health, 2012-2013.

Sexually Transmitted Diseases

Unprotected sex can lead to some infections that are fairly easily cured with an antibiotic (e.g. Chlamydia) and to others that are more serious and potentially lifelong infections such as HIV.

Chlamydia Incidence

In Washtenaw County, the 2010 rate of new chlamydia cases was 331 per 100,000 residents of the population. This is lower than Michigan (457 per 100,000) or the nation (407 per 100,000)²; however, Washtenaw County is in the top third of counties in the United States for Chlamydia rate.³ Chlamydia and gonorrhea are the most frequently reported diseases in Washtenaw County and 15 to 24 year olds have the highest rates. Black or African-American young people are disproportionately affected.

HIV Prevalence

HIV is a life-threatening communicable disease that infects minority populations at higher rates than non-minority populations. In Washtenaw County, the prevalence rate of HIV is 159 per 100,000 residents. This is lower than Michigan (164 per 100,000) or the nation (309 per 100,000).

In Washtenaw County, newly diagnosed HIV cases have been fairly steady at 20-24 adults per year. This is a long way from the HIP 2020 objective of HIV incidence of 1 per 100,000 (approximately 3 cases per year).

Health Factors

Health Behavior

Hand and Respiratory Hygiene

Good hand washing has been a main stay of infectious disease prevention for over a century. Good respiratory hygiene (e.g. covering coughs) and staying isolated from others when ill is important as well.

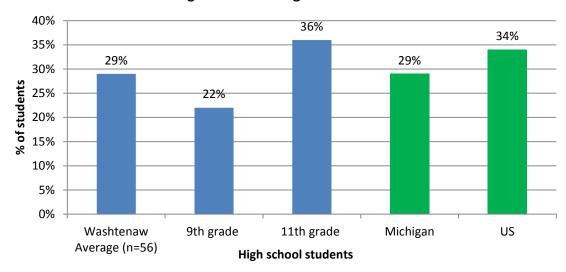
Sexual Behavior

Sexual Activity

The surest way to avoid sexually transmitted disease is to abstain from vaginal, anal, and oral sex or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Among Washtenaw County high school students surveyed in the 2012-2013 Michigan Profile for Healthy Youth, 29% reported having had sexual intercourse within the past three months. ⁵ This is the same as the state (29%) and lower than the nation (34%) (see figure below).

Recent sexual intercourse (within past three months) among Washtenaw high school students



Sources: Michigan Profile for Healthy Youth, 2012-2013; Youth Risk Behavior Survey, 2011.

According to the HIP 2010 Survey, 21% of Washtenaw County adults report no sexual partners in the past year, 68% report one partner, and 11% had two or more sex partners.⁷

Condom Use

According to the Centers for Disease Control and Prevention, latex male condoms when used consistently and correctly, can reduce the risk of getting or giving sexually transmitted diseases. In the 2012-2013 Michigan Profile for Healthy Youth, 75% of Washtenaw County high school students surveyed reported that they used a condom during their last sexual intercourse. This is higher than high school students in the state (60%) or nation (61%).⁸

Parental Waiver for Vaccines

Vaccines are one of the best tools available to prevent infectious disease and are one of the top public health achievements during the past 50 years. Michigan has vaccine requirements for entry into child care and school, which helps ensure a well-vaccinated population. Michigan is, however, one of 19 states that allow parents to decline recommended immunizations for their children based on personal beliefs. In the 2012-13 school year, 9% of Washtenaw County school children had at least one required vaccine waived. In addition, a number of parents in the county do not follow the recommended vaccine schedule, thus leaving their children vulnerable to diseases for a longer period of time.

Clinical Care

HIV Testing

Among Washtenaw County adults aged 18-64 years, 45% report that they have been tested for HIV (apart from tests that were part of a blood donation).⁹

Vaccines

Vaccines are among the most cost-effective clinical preventive services. Vaccines prevent childhood diseases, many of which have almost disappeared from the United States. Unfortunately, most vaccine preventable diseases are only a plane flight away. Maintaining high immunization levels is important for individuals and for communitywide protection.

Children Ages 19-35 Months

HIP assesses the completion of the required immunizations for 19-35 month olds every year via the Michigan Care Improvement Registry (MCIR). The rate of completion of the 4:3:1:3:3:1:4 series (4 DTaP, 3 IPV, 1 MMR, 3 Hib, 3 Hep B, 1 Varicella, and 4 PCV13) in Washtenaw County toddlers for 2012 was 73%, below the HIP 2020 goal of 90%.

Hepatitis B and Human Papilloma Virus (HPV)

Vaccines also have a role in preventing cancers caused by viruses such as Hepatitis B and HPV. One of the 2020 HIP objectives is HPV vaccination rates in 16 year-old females since cervical cancer can now largely be prevented with vaccination. Only 26% of Washtenaw County young woman have been vaccinated as of 2012, so more effort is needed.

Pneumonia Vaccinations (Age 65+)

In Washtenaw County, 65% of adults aged 65 and older report that they have received a pneumonia vaccine. ¹⁰ This is similar to rates for the state (67%) and the nation (66%). ¹¹

Flu Vaccine

In 2010, the Centers for Disease Control and Prevention recommended annual flu vaccines for everyone six months and older. Overall, 52% of Washtenaw County adults reported getting vaccinated in the previous year. The rate varies substantially by age group as seen below. 12

Percent of Washtenaw County adults who report receiving the flu vaccine in past year

Age in years	Percent
18 - 24	36%
25 - 34	50%
35 - 49	34%
50 - 64	66%
65+	76%

Source: HIP Survey, 2010.

Healthcare Worker Vaccination

Both large hospital systems in Washtenaw County (UM Health System and St. Joseph Mercy Health System) implemented mandatory flu vaccination for all of their employees during the 2011-12 flu season. Hospital staff vaccination rates have improved substantially. However, long-term care facilities are one area of the health care system that is not well covered in terms of flu vaccination, and these healthcare workers are often caring for some of the most vulnerable persons in the community.

Physical Environment

The physical environment can impact health in a variety of ways, including through food, drinking water, sewage disposal, housing conditions, and recreational water. Washtenaw County has a mix of municipal water supplies and individual wells that provide safe drinking water for the population. Individual wells are permitted, inspected, and sampled at the time of installation. Water is sampled for coliform, nitrates, and arsenic. Small water systems serving churches, schools, and other transient populations, called "Type II" water supplies, are regularly sampled and inspected.

Similarly, sewage and septic systems are managed at both the municipal and individual homeowner level. New and replacement sewage systems must meet certain requirements for soil type and sizing. Washtenaw County has a Time of Sale program which ensures that when homes with wells and septic systems are sold, these systems are functioning adequately. On average, 20% of Washtenaw County homes do not meet current standards in relation to their well and/or septic system as documented through this program.

Food service establishments are required to go through a plan review process to ensure proper facility design, construction, and flow of food. Once open, facilities are inspected routinely using the 2009 FDA Food Code and Michigan Food Law (amended 2012). Violations noted at the time of inspection are corrected and repeat violations are subject to enforcement procedures. Complaints of unsanitary conditions in food service establishments are investigated within five business days. Reports of foodborne illness in Washtenaw County are investigated within 24 hours of receipt.

In 2012, Washtenaw County Public Health investigated 202 complaints of unsanitary housing conditions. These conditions include mold, bed bugs, blight conditions, and standing water. Our department works with homeowners, renters, landlords, and township officials to resolve unsanitary housing conditions.

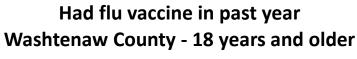
Washtenaw County Public Health also inspects day care centers to ensure a variety of health and safety requirements are met to help prevent and limit the spread of illness.

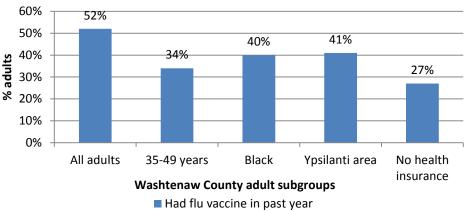
Recreational water can be a medium that transmits illness. All public swimming pools are inspected annually for health and safety requirements. Pools that do not meet health and safety requirements are not opened to the public. If unsafe conditions are noted during the operating year, they are corrected, or the pool is closed until correction can be made. Additionally, swimming pool water is sampled every other week and analyzed in an accredited lab for coliform, E. coli, and a standard plate count. Water failing to meet the standard of 0 coliform and/or standard plate count of under 200 are closed to the public until appropriately corrected.

The five public beaches in Washtenaw County are sampled five times per month, and sanitary surveys are completed annually. Beaches with E. coli levels exceeding state guidelines are closed to the public until a safe water sample can be obtained. All bathing beach sample results are posted on a public website.

Social and Economic Factors

As seen in the graph below, some groups are less likely to get flu vaccine than others, leaving themselves and those around them more vulnerable. Lack of health insurance is likely a barrier to getting vaccinated.





Source: HIP Survey, 2010.

Men Who Have Sex with Men

The vast majority of new HIV infections in Washtenaw County are in men who have sex with men. Black or African-American men who have sex with men have higher rates than white men.

Young People Ages 15-24 years

For Chlamydia and gonorrhea cases, young people 15-24 years have the highest rates of disease. Young people living in the Ypsilanti area (zip codes 48197 and 48198) are at particular risk of Chlamydia and gonorrhea infection.

Data Sources:

¹ Michigan Disease Surveillance System.

² Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention: 2010. Accessed from www.chna.org.

³ Michigan Department of Community Health and the Centers for Disease Control and Prevention websites.

⁴ Centers for Disease Control and Prevention and the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention 2009. Accessed from www.chna.org.

⁵ Michigan Profile for Healthy Youth, 2012-13.

⁶ Youth Risk Behavior Survey, 2011.

⁷ HIP Survey, 2010.

⁸ Youth Risk Behavior Survey, 2011.

⁹ HIP Survey, 2010.

¹⁰ HIP Survey, 2010.

¹¹ Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System: 2005-11. Accessed from www.chna.org.

¹² HIP Survey, 2010.