9. Communicable Diseases

Table 9-1: Communicable Diseases Summary Table

Measure	County Data	Recent Change			U.S. Comparison		IN Comparison		HP 2010
		yrs	% Change		U.S. Data		IN Data		
Positive Indicators for Marion County									
Incidence of primary and secondary syphilis infection per 100,000	5.3 (2003-2005)	4	-36.9%		3.0		1.0		25-3 0.2
Negative Indicators for Marion County									
Incidence of AIDS per 100,000	19.5 (2001-2005)	5	+30%		14.0		6.5		13-1 1.0
Incidence of gonorrhea	482.9 (2001-2005)	5	+12%		120.9		139.2		25-02 19.0
Incidence of chlamydia	795.4 (2001-2005)	5	-2%		347.8		316.6		25-01 NA*
Incidence of tuberculosis	4.9 (2002-2005)**	4	+51%		4.8		2.3		14-11 1.0

* Healthy People 2010 objectives are set by age categories for chlamydia

**Source: http://www.in.gov/isdh/dataandstats/tuberculosis/2005/2005AnnualTB_Report%20_2.pdf . Indiana State Department of Health, Annual Tuberculosis Report, 2005.

Table notes: **County data**: Is for most recent year available. **Recent Change**: Percent change of most recent measurement from a measurement the noted number of years prior. Changes of more than 5 percent in either direction are denoted by thumbs up or thumbs down symbols. Neutral thumbs indicate no change, even though no change may be a negative outcome; **U.S. or IN population data:** Is for most recent year available; **U.S. (or IN) Comparison:** Comparison of most recent data using thumbs up or thumbs down symbols to denote differences that are statistically significant or deemed to be noteworthy from the analysts' professional perspective. **Note:** When there is no public health implication associated with a measure, directional arrows replace thumb icons to indicate the direction of change or the relationship of the Marion County measure (higher/lower/not different) to the U.S./IN measure.

Syphilis

Syphilis, a genital ulcerative disease, is highly infectious but easily curable in its early (primary and secondary) stages. If untreated, it can lead to serious long-term complications, including neurological, cardiovascular, and organ damage, and even death. Congenital syphilis can cause stillbirth, death soon after birth, and physical deformity and neurological complications in children who survive. Syphilis, like many other STDs, facilitates the spread of HIV, increasing transmission of the virus at least two- to five-fold.

Between 2004 and 2005, the national primary and secondary syphilis rate increased 11.1 percent, from 2.7 to 3.0 cases per 100,000 persons.[1] A sudden outbreak in 1999 resulted in Indianapolis (Marion County) having the highest incidence of primary and secondary syphilis among 21 of the largest U.S. cities, after several years of having a lower syphilis incidence than most of those cities. A community coalition was established to overcome the outbreak, and by 2003, Marion County's syphilis incidence rate was the lowest among the 28 large U.S. cities for which data was available.[2] Marion County's incidence of new syphilis cases remained fairly stable from 2003 through 2005 (Table 9-2).[3] In each of those years, Indianapolis continued to have the lowest syphilis incidence rate among the large U.S. cities.[4] However, Marion County's primary and secondary syphilis incidence remain well above the Healthy People 2010 objective 25-3 of 0.2 cases per 100,000 persons[5].

[1] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/std/stats/trends2005.htm

[2] Benbow N. ed. *Big Cities Health Inventory, 2007.* National Association of County and City Health Officials, Washington, D.C. 2007. http://www.naccho.org/pubs/product1.cfm?Product_ID=202 This report presented heath for cities with populations over 350,000indicators for cities with populations over 350,000. Some health statistics were only available for a subset of those cities. Several statistics comparing cities in the *Big Cities Health Inventory* report were based on Indianapolis, rather than all of Marion County. Indianapolis contains 96% of the Marion County land area and 92% of the Marion County population, based on the 2000 U.S. Census, so almost all health statistics for Indianapolis and Marion County are very similar.

[3] Marion County Selected Notifiable Disease Ten year Report, Marion County Health Department, Communicable Disease Department

[4] Benbow N. ed. *Big Cities Health Inventory, 2007.* National Association of County and City Health Officials, Washington, D.C. 2007. http://www.naccho.org/pubs/product1.cfm?Product_ID=202 A complete listing of the cities and various statistics can be found in the Big Cities Health Inventory section of Appendix I: Methods. Several statistics comparing cities in the *Big Cities Health Inventory* report were based on Indianapolis, rather than all of Marion County. Indianapolis contains 96% of the Marion County land area and 92% of the Marion County population, based on the 2000 U.S. Census, so almost all health statistics for Indianapolis and Marion County are very similar.

[5] U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed.* Objective 25-3 http://www.healthypeople.gov/document/HTML/Volume2/25STDs.htm#_Toc489706324

Table 9-2: Incidence of Primary and Secondary Syphilis Infection per 100,000 Persons, Marion County, Indiana, and U.S., 2002-2005

	2002	2003	2004	2005
Marion County	8.4	5.4	5.7	5.3
Indiana	1.0	0.8	1.0	1.0
U.S.	2.4	2.5	2.7	3.0

n/a = not available

Sources: Marion County: Selected Notifiable Disease Ten Year Report (DR0479) and December 2006 Report, Marion County Health Department; Indiana: 2003 Report of Infectious Diseases, Indiana State Department of Health. http://www.in.gov/isdh/22251.htm ; U.S.: Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2005. Atlanta, GA. U.S. Department of Health and Human Services, November 2006. Table 24. Primary and Secondary

AIDS/HIV

In 2005, 165 cases of AIDS and 177 cases of HIV (Figure 9-1) were reported for Marion County residents. Table 9-3 illustrates an increase in the incidence of AIDS cases in 2002 with a subsequent decline in 2004 through 2005. The decline may be due to earlier diagnosis and treatment of HIV cases with antiretroviral drugs. The incidence rate for AIDS cases in Marion County has not changed significantly since 2004, and is 3 times the incidence rate reported for the state from 2003 to 2005 (Table 9-3, Figure 9-1).[6] The Healthy People 2010 objective 13-1 sets AIDS incidence targets among U.S. adults and adolescents to one new case per 100,000 persons[7].

HIV is a disease that is most often seen in urban areas. Marion County is Indiana's most populous urban area. Using 2005 population estimates from the U.S. Census Bureau and reported cases in 2005, Marion County has almost 14 percent of the Indiana's total population, but has 41 percent of Indiana's cases of AIDS or HIV.[8] CDC estimates that over one million Americans are living with HIV, and 24 to 27 percent of these people are unaware of their HIV status.[9]

[6] Marion County Selected Notifiable Disease Ten year Report, Marion County Health Department, Communicable Disease Department

[7] U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed.* Objective 13-1 http://www.healthypeople.gov/Document/HTML/Volume1/13HIV.htm

[8] Indiana State Department of Health. Total Number of HIV/AIDS Reported by County http://www.state.in.us/isdh/programs/hivstd/quarterly/2005/December/hiv-aids_cases_reported.htm

[9] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/hiv/aboutDHAP.htm

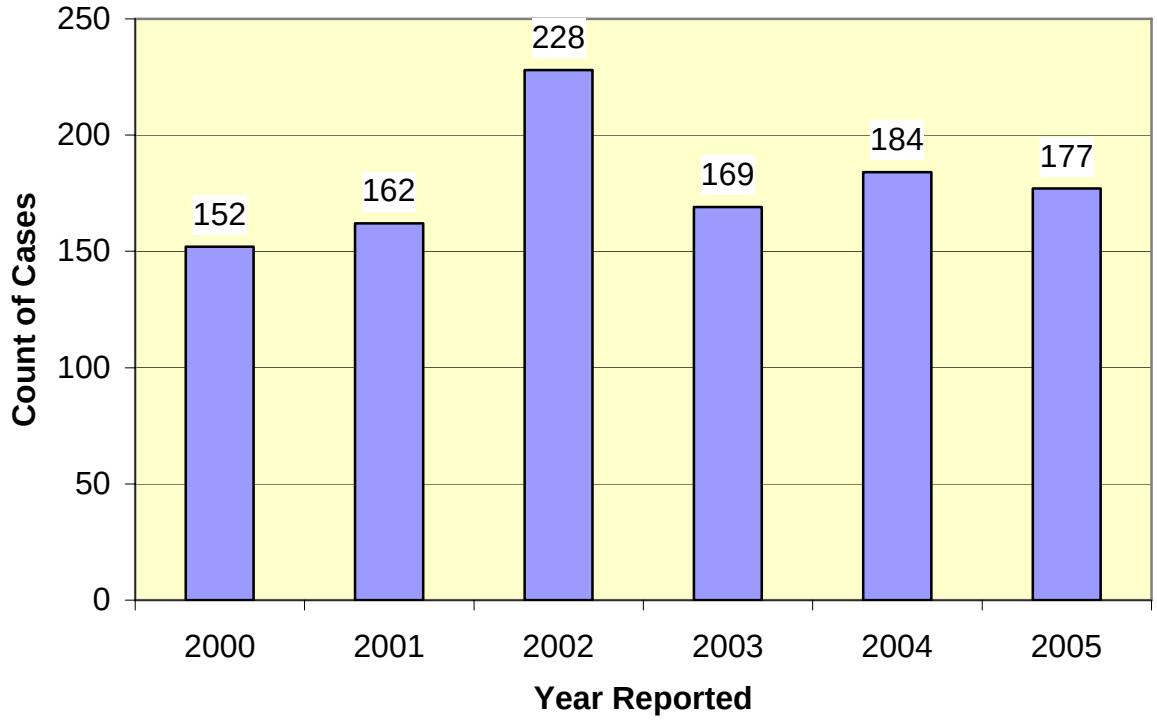
Table 9-3: Incidence of AIDS Cases per 100,000 Persons, Marion County, Indiana, and U.S., 2000-2005

	2000	2001	2002	2003	2004	2005
Marion County	15	17.2	29.2	26.1	19.1	19.5
Indiana	6.3	6.2	8	7.8	6.3	6.5
U.S. *	14.6	14.9	14.8	15	14.6	14

* U.S. rates include states and dependent areas.

Sources: Marion County: Selected Notifiable Disease Ten Year Report and December 2006 Report, MCHD (DR0479); Indiana and U.S.: Table 2. AIDS cases and annual rates per 100,000 persons, by area and age group, reported through December 2001, United States; CDC Table 14. http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2003report/pdf/table14.pdf and http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2005report/pdf/table14.pdf Centers for Disease Control and Prevention. Atlanta, GA. U.S. Department of Health and Human Services HIV/AIDS Surveillance Report, Volume 17. Table 14.

Figure 9-1: HIV (Not AIDS) Cases by Report Year, Marion County, 2000-2005



Source: Selected Notifiable Disease Ten Year Report, MCHD (DR0479)

Gonorrhea

Gonorrhea is a common, sexually transmitted disease, especially among sexually active adolescents and young adults. If detected, it is usually cured with a single dose of antibiotics. In males, common symptoms include a pus discharge from the penis (the urethra) or a burning sensation when urinating within a week of infection. Females are often asymptomatic, but one in five infected women may develop a uterine infection or

other pelvic inflammatory disease (PID)[10] with possible complications, including infertility or ectopic pregnancy.[11] A gonorrhea infection makes an individual three to five times more likely to acquire HIV, if exposed.[12]

Antibiotic resistance against the recommended, standard treatments for gonorrhea is a national problem. The Gonococcal Isolate Surveillance Project (GISP) monitors trends in antimicrobial susceptibilities of U.S. strains of *N. gonorrhoeae* to establish a rational basis for the selection of gonococcal therapies. Overall, 9.4 percent of gonorrhea isolates tested through GISP in 2005 demonstrated resistance to fluoroquinolones, a leading class of antibiotics used to treat the disease.[13] MCHD monitors such resistant cases and follows national guidelines on stopping the use of antibiotics known to be ineffective in fighting the disease. The first resistant case in Marion County was reported in 2003. Fifty-four resistant cases were reported in 2006.[14] The CDC recently issued new guidelines for gonorrhea treatment in which this class of antibiotics is no longer recommended as of April 2007.[15]

In 2005, 461.6 cases of gonorrhea were reported per 100,000 persons in Marion County. This rate was more than four times greater than the U.S. reported annual incidence of 114.2 cases per 100,000 persons, similar to the incidence of 112.4 in 2004.[16] Among the 43 largest U.S. cities reporting gonorrhea rates, Indianapolis had the seventh highest rate in 2005, having gradually increased from having the 16th highest in 2000. The average incidence rate among those cities was 279 new cases per 100,000 persons, less than two-thirds of Marion County's rate.[17]

The incidence of gonorrhea is high in the surrounding counties as well. With a rate of 255.4 cases per 100,000, the Indianapolis metropolitan statistical area (MSA)[18] was ranked third for reported gonorrhea cases in 2005[19] among the country's 50 most

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[10] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/std/PID/STDFact-PID.htm

[11] Chin J, ed. Control of Communicable Diseases Manual. Washington, D.C.: American Public Health Association, 2000.

[12] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/std/hiv/STDFact-STD&HIV.htm

[13] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/std/Gonorrhea/arg/stdfact-resistant-gonorrhea.htm

[14] STD-MIS Database. Marion County Health Department, Bellflower Clinic.

[15] del Rio C et al. Update to CDC's sexually transmitted diseases treatment guidelines, 2006: fluoroquinolones no longer recommended for treatment of gonococcal infections. MMWR 2007; 56(14):332-336. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5614a3.htm?s_cid=mm5614a3_e

[16] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/std/stats/gonorrhea.htm

[17] Benbow N. ed. *Big Cities Health Inventory, 2007.* National Association of County and City Health Officials, Washington, D.C. 2007. http://www.naccho.org/pubs/product1.cfm?Product_ID=202

[18] The Indianapolis metropolitan statistical area is defined by the U.S. Census Bureau, and includes Marion County and the following nearby counties: Boone, Hamilton, Hendricks, Hancock, Morgan, Johnson, Shelby, Putnam, and Brown Counties.

[19] The gonorrhea infection rate for the 9-county Indianapolis MSA was 255.4 per 100,000, following Memphis and Milwaukee MSAs (Source: Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2005. Atlanta, GA:U.S. Department of Health and Human Services,

populous MSAs monitored by the CDC. The averaged rate among the 50 MSAs was 128.2 cases per 100,000 in 2005.

In 2006, the gonorrhea rate in Marion County continued to rise, reaching 482.9 per 100,000 residents. While 15 to 24 year olds make up less than 13 percent of the population and only 16 percent of the potentially sexually active population[20], they accounted for over 56 percent of the gonorrhea cases. The risk for gonorrhea infection in this age group was 6.7 times higher than the risk among those over 25 (Table 9-5), with one new reported case for every forty-seven 15 to 24 years olds in 2006. About half of all cases may have no symptoms and go undetected, so the actual annual incidence may be closer to one case per twenty-two 15 to 24 years olds in Marion County.[21]

The rate of gonorrhea continues to increase in Marion County each year, while the rates of this disease remain relatively stable at the national level (Table 9-4). The rate of infection in Marion County is statistically significantly greater than both state and national rates.[22] All the rates were far above the Healthy People 2010 objective 25-02 of 19 infections per 100,000 persons.[23]

November 2006. Table 16. Gonorrhea —Reported cases and rates in selected metropolitan statistical areas* (MSAs) listed in alphabetical order: United States, 2001–2005.)

[20] The potentially sexually active portion of the population was considered to be those over 15 years.

[21] Health care providers in Indiana are required to report new cases of gonorrhea to the local health department, and reporting in Marion County is believed to be fairly complete. However, the reported rate does not account for instances where physicians may treat persons based on their clinical presentation or partner's disease status, or based on results of gram staining tests done in their office, rather than sending out a lab test, and subsequently fail to report those cases. In addition, persons that are asymptomatic may not seek care and so may not be identified as a case. A study in New Orleans found the percentage of cases that are asymptomatic to be 42% in men and 68% of women (Farley TA, Cohen DA, Elkins W. "Asymptomatic sexually transmitted diseases: the case for screening." Preventive Medicine. 36: 2003. 502-509).

[22] Marion County Health Department. Marion County Selected Notifiable Disease Ten Year Report and December 2006 Report

Indiana State Department of Health. Indiana: 2004 Quarterly and Cumulative HIV/AIDS, STD, and Hepatitis B & C Data.

Centers for Disease Control and Prevention. 2005 Sexually Transmitted Disease Surveillance- U.S.: Table 1, Cases of sexually transmitted diseases reported by state health departments and rates per 100,000 population: 1941-2005

[23] U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health. 2nd ed.* Washington, DC: U.S. Government Printing Office, November 2000. Objective 25-2. http://www.healthypeople.gov/document/html/objectives/25-02.htm

Table 9-4: Incidence of Gonorrhea infections per 100,000 Persons, Marion County, Indiana, and U.S. 2002-2006

	2002	2003	2004	2005	2006
Marion County	431.9	365.3	390.8	461.6	482.9
Indiana	120.1	107.8	109.8	129.8	139.2
U.S.	120.5	113.8	111.0	114.2	120.9

Sources: Marion County: Selected Notifiable Disease Ten Year Report and December 2006 Report(DR0479), MCHD; Indiana and U.S.: Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2005. Atlanta, GA. U.S. Department of Health and Human Services, November 2006. Table 13. Gonorrhea — Reported cases and rates by state/area and region listed in alphabetical order: United States and outlying areas, 2002–2006

Table 9-5: Incidence of Gonorrhea Infections per 100,000 Persons, Marion County 2006

	Male	Female	Total
<15 years	6.9	32.0	19.2
15-24 years	1656.1	2620.5	2140.6
25+ years	408.0	239.1	319.4
Total	473.7	484.8	482.9

Source: STD-MIS data, DR0627.

Chlamydia

Chlamydia is a very common sexually transmitted disease that can easily be cured with antibiotics, but it is often asymptomatic and undiagnosed. It is similar to gonorrhea (see Gonorrhea, page 9-4) in its symptoms and consequences, although it is asymptomatic in most cases, and the cure may require a one-week course of antibiotics rather than a single dose.[24] Nationally, chlamydia infection is three times more common in females than in males. Up to 40 percent of females with untreated chlamydia infections develop PID, and up to 20 percent of those may become infertile. Complications from chlamydia among men are relatively uncommon, but may include epididymitis and urethritis, which can cause pain, fever, and in rare cases, sterility.[25]

The national rate of reported chlamydia in 2005 was 329.5 cases per 100,000 persons, an increase of 5 percent from 2004 (313.6).[26] In 2005 Marion County had 846 reported cases of chlamydia per 100,000 persons, which was well over twice that of the U.S. overall (Table 9-6).[27] Indianapolis ranked tenth worst among 43 of the largest U.S. cities

[24] Chin J, ed. Control of Communicable Diseases Manual. Washington, D.C.: American Public Health Association, 2000.
[25] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/std/Chlamydia/STDFact-Chlamydia.htm
[26] Centers for Disease Control and Prevention, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Atlanta, GA:U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, [2004]. http://www.cdc.gov/std/stats04/Chlamydia.htm
[27] Marion County Health Department. Marion County: Selected Notifiable Disease Ten Year Report and December 2006 Report

reporting chlamydia rates in 2005.[28] The Indianapolis metropolitan statistical area[29] had the fourth highest rate of chlamydia infections among the 50 CDC-monitored most populous U.S. metropolitan statistical areas.[30] The thoroughness of chlamydia and gonorrhea reporting varies greatly throughout the country. Some portion of the high rates in Marion County may be due to especially complete laboratory reporting and aggressive case findings. All the rates were far above the Healthy People 2010 objective 25-01 of 3.0 cases per 100,000 for males or females age 15 to 24 years attending either family planning clinics or STD clinics.[31]

In 2006, the chlamydia rate in Marion County was 795.4 cases per 100,000 people. Even more so than with gonorrhea, the 15-24 year old population experienced the majority of the chlamydia cases (68%) and were 11.6 times more likely to be infected with chlamydia than those over 25 (Table 9-7). In 2006, there was one new reported chlamydia case for every sixteen 15 to 24 year old females, and one new case for every forty-seven 15 to 24 year old males. Many cases may have no symptoms and go undetected, so the actual 2006 incidence may have two to four times higher than the reported, diagnosed incidence.[32]

Indiana State Department of Health. Indiana: 2004 Quarterly and Cumulative HIV/AIDS, STD, and Hepatitis B & C Data.

Centers for Disease Control and Prevention. 2005 Sexually Transmitted Diseases Surveillance-U.S.: Table 1, Cases of sexually transmitted diseases reported by state health departments and rates per 100,000 population 1941-2005.

[28] Benbow N. ed. *Big Cities Health Inventory, 2007.* National Association of County and City Health Officials, Washington, D.C. 2007. http://www.naccho.org/pubs/product1.cfm?Product_ID=202 A complete listing of the cities and various statistics can be found in the Big Cities Health Inventory section of Appendix I: Methods. Several statistics comparing cities in the *Big Cities Health Inventory* report were based on Indianapolis, rather than all of Marion County. Indianapolis contains 96% of the Marion County land area and 92% of the Marion County population, based on the 2000 U.S. Census, so almost all health statistics for Indianapolis and Marion County are very similar.

[29] The Indianapolis Metropolitan Statistical Area is defined by the U.S. Census Bureau, and includes Marion County and the following nearby counties: Boone, Hamilton, Hendricks, Hancock, Morgan, Johnson, Shelby, Putnam, and Brown Counties.

[30] The Indianapolis MSA had a reported rate of 507.3 cases per 100,000 population in 2005, following Memphis, Milwaukee and Virginia Beach MSAs http://www.cdc.gov/std/stats/Tables/Table6.htm

[31] U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health. 2nd ed.* Washington, DC: U.S. Government Printing Office, November 2000. Objective 25-1. http://www.healthypeople.gov/document/html/objectives/25-01.htm

[32] As with gonorrhea, chlamydia reporting cannot account for those asymptomatic individuals who are never identified as being infected. A study in New Orleans found that 75 percent of women and 84 percent of men infected with chlamydia were asymptomatic (Farley TA, Cohen DA, Elkins W. "Asymptomatic sexually transmitted diseases: the case for screening." Preventive Medicine. 36: 2003. 502-509). Assuming that asymptomatic cases go undetected in Marion County and that they their incidence is in the proportion to the asymptomatic prevalence found in the New Orleans study, the reported female incidence of 1/16 person*years implies an underlying incidence of 1/4 (1 / (16 * (100% - 75%)) = 1 / 4). Likewise, the reported male incidence of 1/47 person*years implies an underlying incidence of 1/8 (1 / (47 * (100% - 84%)) = 1 / 8). Note that statistics from the CDC chlamydia web page (http://www.cdc.gov/std/Chlamydia/STDFact-Chlamydia.htm#Common) implies a lower (929462 / 2800000 = 66%) unreported incidence, but we were unable to locate population-based studies supporting those statistics (Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2004 Supplement, Chlamydia Prevalence Monitoring Project. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, December 2005).

Table 9-6: Incidence of Chlamydia Infections per 100,000 Persons, Marion County, Indiana, and U.S. 2002-2006

	2002	2003	2004	2005	2006
Marion County	810.5	748.9	719.5	846.5	795.4
Indiana	277.6	275.6	295.6	321.6	316.6
U.S.	286.6	298.7	313.6	329.5	347.8

n/a = not available

Sources: Marion County: Selected Notifiable Disease Ten Year Report and December 2006 Report (DR0479), MCHD; Indiana and U.S: Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2005. Atlanta, GA. U.S. Department of Health and Human Services, November 2006. Table 3. Chlamydia- Reported cases and rates by state/area and region listed in alphabetical order: United States and outlying areas, **2002–2006**.

Table 9-7: Incidence of Chlamydia Infections per 100,000 Persons, Marion County, 2006

	Male	Female	Total
<15 years	23.7	93.8	58.0
15-24 years	2148.9	6383.6	4266.4
25+ years	305.4	420.1	366.9
Total	477.5	1077.5	795.4

Source: STD-MIS data, DR0627.

Other Communicable Diseases

The prevalence of most communicable diseases has remained stable since 2002, including *E. coli* O157:H7, Hepatitis A,B and C, and Legionnellosis (Table 9-8).

Shigellosis is an infectious disease caused by a group of bacteria called *Shigella*. Most *Shigella* infections are the result of the bacterium passing from stools or dirty fingers of one person to the mouth of another person. This happens when hand washing habits are inadequate. It is particularly likely to occur among toddlers who are not fully toilet-trained. Most who are infected with *Shigella* develop diarrhea, fever, and stomach cramps starting a day or two after they are exposed to the bacterium. Shigellosis usually resolves in 5 to 7 days. In some persons, especially young children and the elderly, the diarrhea can be so severe that the patient needs to be hospitalized. Some persons who are infected may have no symptoms at all, but may still pass the *Shigella* bacteria to others.[33] A relatively large number of shigellosis infections (114 cases) were reported in 2005, but the number had been almost 50 percent greater in 2004 (169 cases).

Salmonellosis is an infection with a bacteria called Salmonella. Salmonella live in the intestinal tracts of humans and other animals, including birds. Salmonella are usually transmitted to humans by eating foods contaminated with animal feces. Most persons infected with Salmonella develop diarrhea, fever, and abdominal cramps 12 to 72 hours after infection. The illness usually lasts 4 to 7 days, and most persons recover without

[33] Centers for Disease Control and Prevention, Coordinating Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases.
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/shigellosis_g.htm#What%20is%20shigellosis

treatment. However, in some persons the diarrhea may be so severe that the patient needs to be hospitalized. In these patients, the Salmonella infection may spread from the intestines to the blood stream and then to other body sites and can cause death unless the person is treated promptly with antibiotics. The elderly, infants, and those with impaired immune systems are more likely to have a severe illness. Salmonella cases increased from about 70 per year to 107 in 2005. An identified foodborne outbreak was the source for some of the cases reported in 2005.

Histoplasmosis is a disease caused by the fungus *Histoplasma capsulatum* that grows in soil and material contaminated with bat or bird droppings. These fungal spores become airborne when contaminated soil is disturbed. Breathing the spores causes infection. The disease is not transmitted from an infected person to someone else. Its symptoms vary greatly, but the disease primarily affects the lungs. Occasionally, other organs are affected. This form of the disease is called disseminated histoplasmosis, and it can be fatal if untreated. Mild disease usually resolves without treatment.[34] Physicians are often unaware that the disease is a reportable condition. In 2004, six cases of histoplasmosis were reported in Marion County. The number of reports increased to 30 in 2005. This increase in Marion County cases may not indicate a truly higher number of new infections, but may reflect improved laboratory reporting as the INPC (Indiana Network for Patient Care) electronic reporting system has become more widely used. While physicians may not make the initial contact to report the diagnosis, an automated surveillance system sends daily reports to MCHD for review. These electronic lab reports often alert public health staff of notifiable diseases not reported by other means.

Tuberculosis (TB) is a disease caused by bacteria called *Mycobacterium tuberculosis*. TB is spread through the air from one person to another. The bacteria are put into the air when a person with active TB disease of the lungs or throat coughs or sneezes. People nearby may breathe in these bacteria and become infected. People with active TB disease are most likely to spread it to people they spend time with every day. This includes family members, friends, and coworkers. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body including the kidney, spine, or brain. If not treated properly, TB disease can be fatal.[35] Tuberculosis increased between 2004 and 2005, but as many of these cases were identified among foreign-born residents in Marion County, this increase does not indicate an increase in active transmission in Indiana. The Marion County rate of 4.9 cases per 100,000 was comparable to the U.S. rate of 4.8, but higher than the Indiana rate of 2.3 and the HP 2010 objective 14-11 of 1.0 case per 100,000[36].

[34] Centers for Disease Control and Prevention, Coordinating Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases
http://www.earthday.net/UER/report/pdfs/EDN_UER_Methodology_121206.pdf
[35] Centers for Disease Control and Prevention, Division of Tuberculosis Elimination, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.cdc.gov/tb/faqs/default.htm
[36]U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed.* Objective 14-11
http://www.healthypeople.gov/Document/HTML/Volume1/14Immunization.htm#_Toc494510240

West Nile Virus (WNV) is a flavivirus commonly found in Africa, West Asia, and the Middle East. It is closely related to St. Louis encephalitis virus that is also found in the United States. The virus can infect humans, birds, mosquitoes, horses and some other mammals. The main route of human infection with West Nile virus is through the bite of an infected mosquito.[37] WNV cases peaked in 2002 (32 cases), but have dropped to less than ten cases per year in Marion County since then. The cause of the peak in 2002 is unknown. Contributing factors may include the fact that the bird population was almost entirely susceptible, increasing the presence of the virus, or that detection and reporting was more thorough in that first year of the Midwest outbreak. Additionally, a dry, warm summer may have caused an increase in the number and concentration of infected mosquitoes.

Table 9-8: Newly Reported Cases of Selected Communicable Diseases, Marion County Residents, 2002-2005 Report Years

Disease	Year			
	2002	2003	2004	2005
E. coli O157:H7	13	4	6	8
Salmonellosis	78	60	64	107
Shigellosis	19	44	169	114
Hepatitis A	13	9	7	8
Hepatitis B, acute	29	22	26	29
Hepatitis B, chronic	143	113	118	154
Hepatitis C, acute	0	2	4	3
Hepatitis C, chronic	1124	1003	883	911
Histoplasmosis	18	8	6	30
Legionellosis	5	8	12	6
Tuberculosis	31	54	36	46
Pertussis	22	10	12	19
West Nile Encephalitis/West Nile Meningitis*	32	0	0	2

Source: Ten Year Report, Notifiable Disease, Communicable Disease Department, Marion County Health Department 2006. ***Source:** InSight database, Marion County Health Department

Vaccine Preventable Diseases

The Immunization Program of the Marion County Health Department provides immunization services to children, adolescents and adults through regularly scheduled clinics and targeted community outreach programs. The program assists schools in monitoring immunization status of students and provides tracking and follow-up of high-risk pre-school children. Adult immunizations are available for individuals involved in high-risk lifestyles and occupations, as well as immigrants. Such immunizations have drastically reduced disease that used to cripple the public's health. The incidences of many of these diseases are now extremely low. As noted in Table 9-8, there were 19 cases of pertussis in Marion County in 2005. There were 394 cases of pertussis in Indiana

[37] Centers for Disease Control and Prevention, Division of Vector-Borne Infectious Diseases http://www.cdc.gov/ncidod/dvbid/westnile/qa/transmission.htm

in 2005.[38] There were no cases of tetanus or rubella in Indiana in 2005.[39] There was only one case of mumps during that year and the case was not a Marion County resident.[40] There were 33 cases of measles in Indiana during 2005. None were in Marion County.[41]

The Immunization Program offers pneumococcal and annual flu shots for older adults.[42] According to the Behavioral Risk Factor Surveillance System (BRFSS) survey administered in 2005, 65.7 percent of adults 65 years and older reported having a flu shot within the last year. Indiana's percentage was slightly lower at 64 percent.[43] When asked about receiving a pneumonia shot in the last year, 65.7 percent of adults nationwide age 65 and over reported they had received the immunization, while 65.3 percent of the Indiana adults reported receiving it. The Healthy People 2010 objective 14-29a/b for both immunizations is 90 percent[44].

[38] Indiana State Department of Health. 2005 Report of Infectious Diseases http://www.state.in.us/isdh/dataandstats/disease/2005/idtoc.htm
Marion County Health Department. Communicable Disease Department-Ten Year Report 2006.
[39] Indiana State Department of Health. 2005 Report of Infectious Diseases http://www.state.in.us/isdh/dataandstats/disease/2005/idtoc.htm
[40] Indiana State Department of Health. 2005 Report of Infectious Diseases, Figure 1: Mumps Cases by Year-Indiana, 2001-2005 http://www.state.in.us/isdh/dataandstats/disease/2005/idtoc.htm
[41] Indiana State Department of Health. 2005 Report of Infectious Diseases, Figure 4: Measles Cases by County http://www.state.in.us/isdh/dataandstats/disease/2005/idtoc.htm
[42] Marion County Health Department. Program Services-Immunizations www.mchd.com
[43] Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, [2005] http://apps.nccd.cdc.gov/BRFSS
[44] U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed.* Objective 14-29 http://www.healthypeople.gov/document/html/uih/uih_4.htm#immuniz