

Section 5: Communicable Disease

Communicable diseases, as defined by the National Association of City and County Health Officials (NACCHO), includes diseases that are usually transmitted through person-to-person contact or shared use of contaminated instruments/materials. Many of these diseases can be prevented through the use of protective measures, such as a high level of vaccine coverage of vulnerable populations. In recent years the United States and DuPage County, have experienced new and emerging infectious diseases such as West Nile Virus, Severe Acute Respiratory Syndrome (SARS) and Monkeypox. These conditions capture headlines and raise the public's awareness. This section will focus on other communicable diseases having an impact on community health.

Vaccine-Preventable Diseases

Infectious diseases remain major causes of illness, disability, and death. Many of these are preventable through the appropriate and timely use of readily available vaccines. Vaccines protect more than the vaccinated individuals. They protect the entire community. By raising immunity levels in the majority of the population, the risk posed by unvaccinated individuals is greatly reduced.

Reduce or eliminate indigenous cases of vaccine-preventable diseases.

HP 2010 Objective: 14-1

National Targets and baselines:

Objective	Reduction in Vaccine-Preventable Diseases	1998 Baseline	2010 Target
		<i>Number of Cases</i>	
14-1b.	Diphtheria (persons under age 35 years)	1	0
14-1c.	<i>Haemophilus influenzae</i> type b (children under age 5 years)	163	0
14-1e.	Measles (persons of all ages)	74	0
14-1f.	Mumps (persons of all ages)	666	0
14-1g.	Pertussis (children under age 7 years)	3,417	2,000
14-1h.	Polio (wild-type virus) (persons of all ages)	0	0
14-1i.	Rubella (persons of all ages)	364	0
14-1j.	Tetanus (persons under age 35 years)	14	0
14-1k.	Varicella (chicken pox) (persons under age 18 years)	4 million	400,000

Data sources: DuPage County Health Department.

DuPage County Vaccine Preventable Diseases

Table 5.1

Disease	1998	1999	2000	2001	2002	2003*
Haemophilus Influenza (Invasive)	5	4	7	7	11	0
Hepatitis A	40	52	20	32	11	1
Hepatitis B	8	12	8	15	14	3
Hepatitis B Carrier	140	73	145	268	199	6
Measles	0	1	0	0	0	0
Mumps	3	0	0	3	0	0
N. Meningitis (Invasive)	4	1	3	3	5	0
Pertussis	6	4	4	7	12	0
Varicella	1,348	1,607	1,476	934	966	10

*Includes January through June 2003 only

As expected, the incidence of vaccine-preventable diseases is extremely low in DuPage County. However, an outbreak of Pertussis in Chicago in 2002 might suggest that our region may need to be more vigilant in promoting childhood immunizations.

Increase the proportion of adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease.

HP 2010 Objective: 14-29

Target and baseline:

Objective	Increase in Adults Vaccinated	1998* Baseline (unless noted)	2010 Target
		<i>Percent</i>	
Noninstitutionalized adults aged 65 years and older			
14-29a.	Influenza vaccine	64	90
14-29b.	Pneumococcal vaccine	46	90
Noninstitutionalized high-risk adults aged 18 to 64 years			
14-29c.	Influenza vaccine	26	60
14-29d.	Pneumococcal vaccine	13	60
Institutionalized adults (persons in long-term or nursing homes)[†]			

14-29e.	Influenza vaccine	59 (1997)	90
14-29f.	Pneumococcal vaccine	25 (1997)	90

*Age adjusted to the year 2000 standard population.

†National Nursing Home Survey estimates include a significant number of residents who have an unknown vaccination status. See *Tracking Healthy People 2010* for further discussion of the data issues.

Data sources: Behavioral Risk Factor Survey, 2000.

Immunizations against influenza and pneumococcal disease can prevent serious illness and death. Pneumonia and influenza deaths together constitute the sixth leading cause of death in the United States and in DuPage County (year 2000). **In 2000, 27.7 percent of DuPage County adults received a flu shot and 17.6 percent received a pneumonia vaccination. DuPage County does not meet HP 2010 Target Objectives.**

Vaccination Coverage

Achieve and maintain effective vaccination coverage levels for universally recommended vaccines among young children.

HP 2010 Objective: 14-1

National Targets and baselines:

Objective	Increase in and Maintenance of Vaccination Coverage Levels Among Children Aged 19 to 35 Months	1998 Baseline	2010 Target
		<i>Percent</i>	
14-22a.	4 doses diphtheria-tetanus-acellular pertussis (DTaP) vaccine	84	90
14-22b.	3 doses <i>Haemophilus influenzae</i> type b (Hib) vaccine	93	90
14-22c.	3 doses hepatitis B (hep B) vaccine	87	90
14-22d.	1 dose measles-mumps-rubella (MMR) vaccine	92	90
14-22e.	3 doses polio vaccine	91	90
14-22f.	1 dose varicella vaccine	43	90

Data Source: MMWR 2003;52:728--32

All children entering grade school require proof of immunization against most of these vaccine-preventable illnesses. However, 80% of these vaccines are needed by the age of two. Only vague estimates of the County's immunization rates for children under age five exist. The National Immunization Survey (NIS), sponsored by the National Immunization

Program (NIP) and conducted by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention, monitors childhood immunizations at the state and national level. The target population for the NIS is children between the ages of 19 and 35 months. An ongoing and systematic process for monitoring immunizations in DuPage County does not exist.

The most current data for Illinois (excluding Chicago) estimated vaccination coverage levels for 2002, for the recommended numbers of doses is (diphtheria and tetanus toxoids and pertussis vaccine (DTP), 4 doses; poliovirus vaccine (polio), 3 doses; measles-containing vaccine (MCV), 1 dose; Haemophilus influenza type b vaccine (Hib), 3 doses; hepatitis B vaccine (Hep B), 3 doses; and varicella zoster vaccine, 1 dose), at 58.1 percent.

Table 5.2

Disease	2004	2003	2002	2001	2000	1999	1998	1997	1996
Chicken Pox – Children	273	342	939	2145	1476	1607	1348	1902	2145
Chicken Pox – 20+ Years	13	10	27	0	0	0	0	0	0
Haemophilus Inf. (Invasive)	4	4	11	7	7	4	5	7	7
Hepatitis A	18	20	11	37	42	62	40	41	37
Hepatitis B	8	12	14	7	8	12	8	6	7
Hepatitis B - Carrier	144	136	199	115	145	73	140	135	115
Measles	0	0	0	0	0	1	0	0	0
Mumps	2	3	3	0	1	0	3	1	0
N. meningitidis (Invasive)	1	1	5	4	3	1	4	4	4
Pertussis	125	11	11	10	8	6	6	4	16
Streptococcus Pneumoniae (Invasive)	59	97	62	0	0	0	0	0	0
Other Communicable Diseases									
Amebiasis	3	2	3	3	5	2	5	4	7
Bacteremia	0	3	1	3	3	1	2	8	3
Blastomycosis	5	7	5	4	2	3	2	1	2
Brucellosis	0	0	1	0	1	1	1	1	0
Campylobacter	133	136	153	0	124	0	0	0	0
Cryptosporidiosis	2	4	4	17	9	2	1	1	17
Cyclosporiasis	26	0	0	0	0	0	0	0	0
E.coli 0157:H7	21	5	24	13	20	9	7	20	13
Encephalitis	0	1	2	7	1	6	6	3	7
Giardia	65	88	71	138	87	92	99	115	138
Hepatitis C	3	0	1	0	0	0	0	0	0
Hepatitis C Carrier	185	193	223	0	0	0	0	0	0
Histoplasmosis	3	1	4	0	0	1	2	0	0
Kawasaki	0	1	0	0	3	3	2	1	0
Legionellosis	5	8	5	4	2	3	6	7	4
Listeriosis	1	2	0	4	1	3	4	1	4

Lyme Disease	14	9	8	1	4	3	0	1	1
Malaria	5	4	3	21	12	9	10	12	21
Meningitis Aseptic*	158	174	122	41	81	46	105	59	41
Meningitis Bacterial**	1	3	1	15	13	19	17	15	15
Monkey Pox	0	4	0	0	0	0	0	0	0
Rocky Mt. Spotted Fever	1	0	0	0	0	1	1	1	0
Salmonellosis	122	99	111	174	134	119	112	143	174
Scarlet Fever	0	0	124	124	142	246	162	87	124
Shigellosis	15	44	41	24	43	56	45	41	24
Strep Throat	0	0	4476	4476	5339	6762	4065	3572	4476
Strep Group A (Invasive)	19	22	12	12	15	22	15	13	12
Toxic Shock	0	4	2	2	0	2	3	2	2
Tuberculosis	50	67	33	58	49	36	46	35	58
Typhoid Fever	1	1	3	4	1	7	5	2	4
West Nile Virus	5	4	44	0	0	0	0	0	0

* Excludes West Nile **Excludes N.Meningitis, Strep Pneumonia and Haemophilis Influenza

Sexually Transmitted Diseases

Sexually transmitted diseases (STDs) refer to the more than 25 infectious organisms transmitted primarily through sexual activity. STDs are among many related factors that affect the broad continuum of reproductive health agreed on in 1994 by 180 governments at the International Conference on Population and Development (ICPD). At ICPD, all governments were challenged to strengthen their STD programs. STD prevention as an essential primary care strategy is integral to improving reproductive health.

Reduce *Chlamydia trachomatis* infections.

HP 2010 Objective: 25-1

National Targets and baseline:

Objective	Reduction in <i>Chlamydia trachomatis</i> infections	1997 Baseline	2010 Target
		<i>Percent</i>	
25-1a.	Females aged 15 to 24 years attending family planning clinics	5.0	3.0
25-1b.	Females aged 15 to 24 years attending STD clinics	12.2	3.0
25-1c.	Males aged 15 to 24 years attending STD clinics	15.7	3.0

Data source: Illinois Department of Public Health.

Table 5.3

Chlamydia Trachomatis Infections Rate per 100,000			
Year	DuPage County	Lake County	Illinois
1997	76.4	258.3	255.3
1998	66.8	267.2	287.5
1999	83.9	323.8	318.5
2000	80.8	313.6	324.9
2001	92.6	350.9	352.0

In Table 5.3, the rate of chlamydia infections is presented for DuPage and Lake Counties and Illinois. While the DuPage rate has increased over the past 5 years, the rate is nearly one quarter of the rate of both Lake County and Illinois. There were 883 cases in DuPage County in 2002. This represents a five percent increase from the previous year. For DuPage County STD Clinic clients, 7.4 percent were diagnosed with Chlamydia in the first nine months of 2003. **This percentage exceeds the HP 2010 Target.**

Reduce gonorrhea.

HP 2010 Objective: 25-2

National Target: 19 new cases per 100,000 population.

National Baseline: 123 new cases of gonorrhea per 100,000 population occurred in 1997.

Data source: Illinois Department of Public Health.

Table 5.4

Gonorrhea Infections Rate per 100,000			
Year	DuPage County	Lake County	Illinois
1997	20.3	78.8	170.8
1998	17.7	68.9	196.8
1999	26.6	73.6	211.2

Gonorrhea Infections Rate per 100,000			
Year	DuPage County	Lake County	Illinois
2000	22.6	85.4	199.8
2001	25.4	68.9	193.4

Table 5.4 presents the rate of gonorrhea infections in DuPage and Lake Counties and Illinois. While the DuPage rate has increased over the past 5 years, on average the DuPage rate is nearly one third of the rate of Lake County. There were 224 cases in DuPage County in 2002. This represents a two percent decrease from the previous year. For DuPage County STD Clinic clients, 1.8 percent were diagnosed with gonorrhea in the first nine months of 2003. **DuPage County does not meet this HP 2010 Target.**

Eliminate sustained domestic transmission of primary and secondary syphilis.

HP 2010 Objective: 25-3

National Target: 0.2 cases per 100,000 population.

National Baseline: 3.2 cases of primary and secondary syphilis per 100,000 population occurred in 1997.

Data source: Illinois Department of Public Health.

Table 5.5

Syphilis Infections Rate per 100,000			
Year	DuPage County	Lake County	Illinois
1997	.8	1.4	12.8
1998	1.4	1.7	8.7
1999	1.0	.4	9.3
2000	.9	.8	6.4
2001	1.1	1.6	6.4

Table 5.5 shows the rate of early syphilis infections for a five-year period. Over this time period, the DuPage County rate of early syphilis infections has been reduced by nearly half. When the number of cases reached 10 in 2001, IDPH identified DuPage County as having an outbreak. There were also 10 cases in 2002. For DuPage County STD Clinic clients, 0.5 percent were diagnosed with syphilis in the first nine months of 2003. **DuPage County does not meet this HP 2010 Target.**

HIV

In 1981, a new infectious disease, AIDS, or acquired immunodeficiency syndrome, was identified in the United States. Several years later, the causative agent of AIDS—human immunodeficiency virus (HIV)—was discovered. This discovery coincided with the growing recognition of AIDS in the United States as part of a global infectious disease pandemic. Currently, HIV/AIDS has been reported in virtually every racial and ethnic population, every age group, and every socioeconomic group in every State and most large cities in the United States. Initially identified among men who have sex with men on the East and West Coasts, the AIDS epidemic is composed of diverse multiple sub-epidemics that vary by region and community. By the end of 1998, more than 680,000 cases of AIDS had been reported, and nearly 410,800 people had died from HIV disease or AIDS.

Reduce deaths from HIV infection.

HP 2010 Objective: 13-14

National Target: 0.7 deaths per 100,000 persons.

National Baseline: 4.9 deaths from HIV infection per 100,000 persons in 1998 (age adjusted to the year 2000 population).

Data source: Illinois Department of Public Health.

Table 5.6

AIDS and HIV				
Year	DuPage AIDS Cases Reported	Number of HIV Deaths		
		DuPage County	Lake County	Illinois
1996	26	20	22	1,186
1997	31	10	9	569
1998	15	3	13	515
1999	32	4	5	546
2000	36	10	7	477
2001	25	6	6	514
2002	48	5	8	489

Over the seven-year period 1996 to 2000, the average number of HIV deaths for DuPage County was 8.3. The average number of HIV deaths for Lake County was 10.0. Because the number of deaths is so small and the numbers fluctuate, it is difficult to determine the actual decrease in number of deaths. Illinois HIV deaths have decreased by more than half over the seven-year period. The cumulative number of cases in the county from 1996 to 2002 was 213 cases, for an average of 30.4 cases per year.

HIV infection incidence rates.

HP 2010 Objective: 13-5 (Developmental.)

Data source: IPLAN Data System.

The most important measure of progression controlling the AIDS epidemic is the annual incidence of HIV infection. Since the progression of HIV infection to AIDS is as high as 50 percent among untreated HIV-infected adults monitored for 10 years, the incidence of AIDS cases is a meaningful proxy for measuring the progress in reducing the incidence of HIV infection. Although the year of peak annual incidence of AIDS cannot be predicted, prevention activities, including counseling to prevent further transmission and medical interventions to show progression of HIV infection to AIDS, begun in the early 1980s should show results in the 1990s. Table 5.7 shows the most current HIV infection incidence rates available in the IPLAN data system.

Table 5.7

HIV Infection Incidence Rates Per 100,000 Population*		
Year	DuPage County	Illinois
1990	1.4	25.6
1991	2.4	29.1
1992	1.3	30.2
1993	1.3	25.4
1994	1.5	22.7
1995	1.4	24.2
1996	**	22.7
1997	1.5	21.3
1998	1.1	14.6

*No identifiers are used when collecting data, therefore unduplication is impossible.

**If less than 10 events, no rates are calculated.