

Epidemiology Report



January-February-March 2007

In this Issue:

- 2006 HIV/AIDS Summary
- 2006 Tuberculosis Epidemiology Report
- Summary of Selected Reportable Conditions

2006 HIV/AIDS Summary

North Dakota continues to have one of the lowest incidence rates of HIV/AIDS in the United States. According to the U.S. Centers for Disease Control and Prevention, state-specific AIDS incidence rates per 100,000 people ranged from 1.0 in Vermont to 32.7 in New York state for 2005. North Dakota was ranked 48th with a rate of 1.6. Similar comparisons for HIV (non-AIDS) incidence rates are not possible because some states require only AIDS case reporting.

A total of 25 HIV/AIDS cases were reported to the North Dakota Department of Health (NDDoH) in 2006. This total includes newly diagnosed (incident) cases and cases diagnosed previously in other states that moved to North Dakota during 2006.

Incident HIV (non-AIDS) case analysis provides a timelier description of the impact of HIV in North Dakota for prevention planning purposes. Incident cases reflect those individuals receiving their first HIV diagnosis during a given time period.

In 2006, 13 incident HIV (non-AIDS) cases were diagnosed in North Dakota residents and reported to the NDDoH. Seven of the incident HIV cases were advanced enough to meet the diagnostic criteria for AIDS at the time of diagnosis. **Table 1** summarizes newly diagnosed HIV and AIDS cases for 2006 and compares data to the same time period in 2005.

HIV (non-AIDS) Incident Cases by Year, North Dakota, 2002–2006

From 2002 through 2006, 49 new HIV (non-AIDS) cases were diagnosed in North Dakota residents. (**Table 2**) During this period, nearly 49 percent (24/49) received their diagnosis of HIV infection and AIDS within the same 12-month period.

Unprotected sexual contact with an HIV-positive partner was the major source of infection. Eighty percent of incident HIV infections in North Dakota from 2002

through 2006 occurred in males; male-to-male sexual contact was the most common source of exposure. (**Table 2**) Among newly diagnosed females, heterosexual contact with an infected partner continued as the predominant mode of exposure to HIV.

Among the incident HIV (non-AIDS) cases, injecting drug use as a risk for transmission of HIV remained steady at four cases reported between 2002 through 2006, the same number reported during the previous five-year period. (**Table 2**)

The majority of incident HIV (non-AIDS) diagnoses continue to be in those between the ages of 20 and 49. From 2002 through 2006, increases in incident HIV (non-AIDS) diagnoses were observed in people ages 20 to 29. (**Table 2**)

Whites continue to compose the greatest percentage of HIV diagnoses in North Dakota. The number of blacks residing in North Dakota and diagnosed with HIV increased over the previous five-year period. The increased number of diagnoses reported is the result of the resettlement of foreign-born individuals in North Dakota. These individuals arrive in North Dakota with previously diagnosed infections, but are classified as North Dakota incident HIV cases because they were never previously diagnosed or reported in the United States.

Cumulative (1984–2006) HIV/AIDS Cases, North Dakota

HIV and AIDS have been reportable conditions in North Dakota since 1984. The cumulative reported infections include cases newly diagnosed in the state, as well as cases diagnosed elsewhere who moved to North Dakota.

As of Dec. 31, 2006, a cumulative total of 387 HIV/AIDS cases had been reported in North Dakota, including 228 AIDS cases and 154 HIV (non-AIDS) cases. Of the cumulative total HIV/AIDS cases, 252 are known to be still living.

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Of the 387 reported HIV/AIDS cases:

- 85 percent were male; 15 percent female.
- 73 percent of reported cases were between the ages of 20 and 39 at diagnosis.
- 76 percent (293) were white, 11 percent (42) were American Indian, 10 percent (40) were black, 2 percent (9) were Hispanic and fewer than 1 percent were Asian/Pacific Islander and more than one race.

- Most frequently indicated risk factors: male-to-male sexual contact, 52 percent; heterosexual contact, 16 percent; and injecting drug use, 10 percent.

The HIV/AIDS Surveillance Program estimates that there were about 160 people known to be living with HIV in North Dakota at the end of 2006, either diagnosed as residents of North Dakota or diagnosed out of state.

Table 1. New HIV and AIDS Diagnoses by Gender, Age at Diagnosis, Race/Ethnicity, and Exposure Risk
North Dakota, 2005-2006

	New HIV Diagnoses ¹				New AIDS Diagnoses ²				Living HIV and AIDS Cases ³	
	January - December				January - December					
	2005		2006		2005		2006			
	No.	(%)*	No.	(%)*	No.	(%)*	No.	(%)*	No.	(%)*
Gender										
Male	4	(67)	12	(93)	5	(83)	6	(86)	112	(80)
Female	2	(33)	1	(7)	1	(17)	1	(14)	29	(20)
Race/Ethnicity										
White	3	(50)	7	(54)	3	(50)	4	(58)	97	(67)
American Indian	1	(17)	3	(23)	1	(17)	1	(15)	13	(10)
Black	2	(33)	2	(16)	2	(33)	1	(15)	24	(24)
Hispanic	0	--	0	--	0	--	0	--	6	(5)
Other	0	--	1	(8)	0	--	1	(15)	1	(1)
Age at Diagnosis										
≤12	0	--	0	--	0	--	0	--	2	(2)
13-19	0	--	0	--	0	--	0	--	4	(3)
20-29	2	(33)	4	(31)	1	(17)	1	(15)	39	(28)
30-39	1	(17)	3	(23)	2	(33)	2	(29)	52	(37)
40-49	2	(33)	5	(39)	2	(33)	3	(43)	32	(23)
>49	1	(17)	1	(8)	1	(17)	1	(15)	12	(9)
Risk										
Male-to-male sexual contact (MMS)	2	(33)	7	(54)	3	(50)	3	(43)	69	(49)
Injecting drug use (IDU)	0	--	0	--	0	--	0	(0)	11	(8)
MMS/IDU	0	--	1	(8)	0	--	1	15	3	(3)
Heterosexual contact	2	(33)	4	(31)	1	(17)	3	(43)	33	(24)
Receipt of blood or tissue	0	--	0	--	0	--	0	--	3	(3)
Adult hemophilia/coagulation disorder	0	--	0	--	0	--	0	--	2	(2)
Mother w/or risk for HIV infection	0	--	0	--	0	--	0	--	2	(2)
Risk not specified	2	(33)	1	(8)	2	(33)	0	--	18	(13)
Total	6		13		6		7		141	

*Due to rounding, values may not equal 100 percent.

¹ New HIV Diagnoses reflects all residents of North Dakota diagnosed with HIV infection for the first time during the time period, regardless of AIDS status. Some also may be counted as AIDS cases if they received an AIDS diagnosis during the same period.

² New AIDS Diagnoses reflects all residents of North Dakota who first met the criteria for AIDS during the time period, regardless of when their HIV infection was reported to the state.

³ Living HIV and AIDS cases reflects people diagnosed with HIV or AIDS as a resident of North Dakota and were known to be living on December 31, 2006. All deaths may not have been reported.

Table 2. Characteristics of Individuals Diagnosed With HIV (Non-AIDS), North Dakota

New HIV (non-AIDS) cases diagnosed:	2002-2006		1997-2001	
	No.	%	No.	%
Total	49	100	35	100
Sex				
Male	39	80	23	66
Female	10	20	12	34
Race/Ethnicity				
White	28	58	24	69
American Indian	7	15	3	9
Black	13	27	8	23
Hispanic	1	2	0	0
Age at Diagnosis by age group				
≥12 years	0	0	1	3
13-19 years	0	0	1	3
20-29 years	19	39	4	12
30-39 years	13	27	14	40
40-49 years	12	25	11	32
over 49	5	11	4	12
Risk				
Male-to-male sexual contact (MMS)	25	51	10	29
Injecting drug use (IDU)	4	9	4	12
MMS/IDU	1	2	0	0
Heterosexual contact	12	25	12	34
Blood transfusion, disorder	1	2	0	0
Mother w/HIV	0	0	1	3
Other/Risk not specified	6	13	8	23

*Due to rounding, may not equal 100 percent.

2006 Tuberculosis Epidemiology Report

TB in North Dakota – 2006

In 2006, nine cases of tuberculosis (TB) were reported in North Dakota. With an incidence rate of 1.4 per 100,000, the North Dakota rate continues to be below the national rate. (Figure 1)

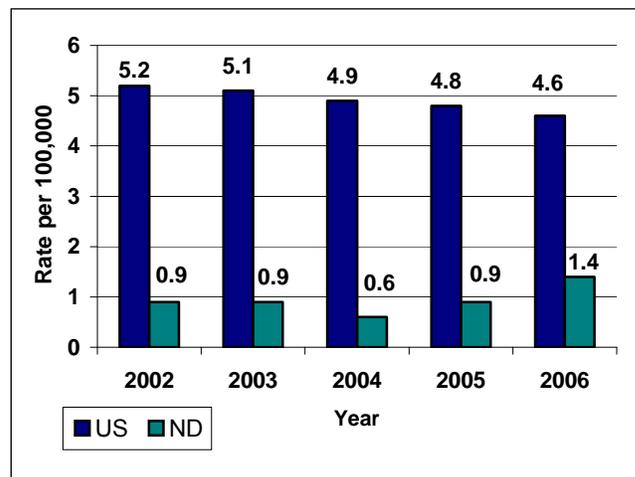
Six of the tuberculosis cases were pulmonary and three were extra-pulmonary. Extra-pulmonary cases involved the lymphatic (cervical) and synovial fluid (ankle).

The ages of the tuberculosis cases ranged from 21 to 84, with a median age of 40. Three cases were Asian, three white, two Native American and one black.

Risk factors associated with tuberculosis in 2006 included belonging to a high-risk racial/ethnic group, being foreign-born, having a history of being a resident of a high-risk congregate setting and having prior tuberculosis infection.

No tuberculosis-related deaths were reported in 2006.

Figure 1. United States and North Dakota Tuberculosis Disease Rates, 2002–2006.

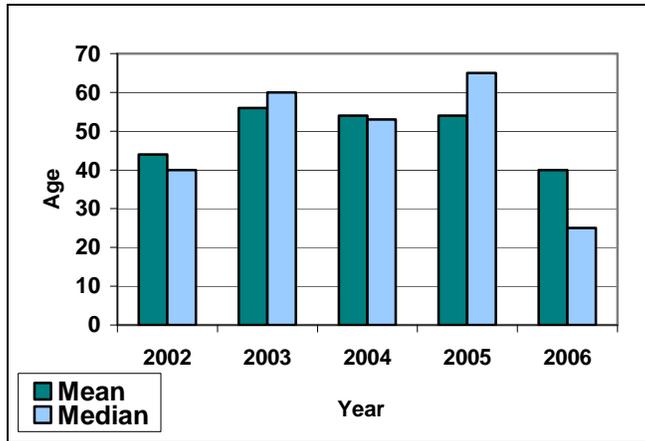


TB in North Dakota – 2002–2006

From 2002 through 2006, 31 cases of tuberculosis were reported in North Dakota. The number of annual tuberculosis cases ranged from four to nine, resulting in an incidence rate between 0.6 and 1.4 per 100,000.

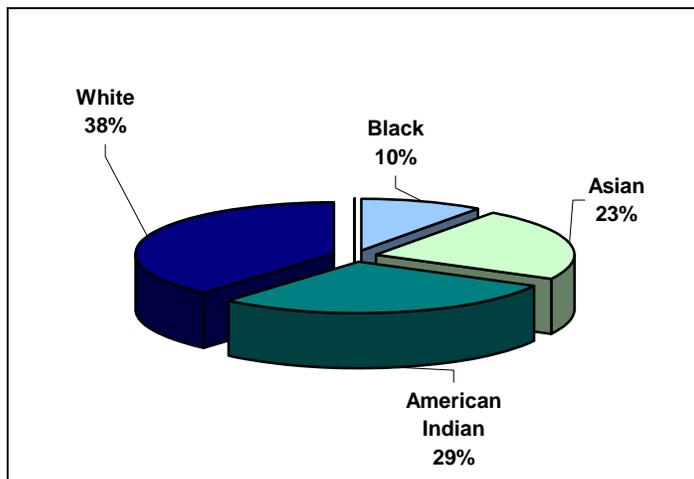
Of the 31 cases, 19 were pulmonary (61%), 11 were extra-pulmonary (35%) and one was pulmonary/extra-pulmonary (3%). Fifty-two percent of the tuberculosis cases were 50 and older. The mean and median ages of tuberculosis cases during the past five years were 50 and 53 respectively. (Figure 2)

Figure 2. Tuberculosis by Age, North Dakota, 2002–2006.



The race/ethnicity of tuberculosis cases during the past five years shows a disproportionately high number of the cases reported among minority populations. Cumulatively, American Indians, blacks and Asians account for only 6 percent of North Dakota’s population but more than half of the states’ reported TB cases. (Figure 3)

Figure 3. Percentage of Tuberculosis Cases by Race/Ethnicity, North Dakota, 2002–2006.



An increase in the state’s racial/ethnic populations during the past few years has contributed to the increased number of tuberculosis cases reported in minority racial/ethnic groups. While the number of foreign-born people in the state represents less than 2 percent of the state’s total population, it increased 29 percent between 1990 and 2000.

Drug-Resistant Tuberculosis

Drug resistant tuberculosis (DR-TB) and multi-drug resistant tuberculosis (MDR-TB) present difficult problems for tuberculosis control. This is due to the complicated treatment regimen for the index case and the treatment of latent tuberculosis infection in contacts to the index case. The contact’s treatment regimen must be individualized based on the index case’s medication history and drug susceptibility studies.

With the increase in foreign-born populations entering the United States and North Dakota, the potential exists for an increase of DR-TB. During the past five years, however, there have been no cases of multidrug-resistant tuberculosis identified in North Dakota. Furthermore, only one case of single-drug resistance has been identified; an isolate in 2002 was resistant to streptomycin.

Latent Tuberculosis Infection

Latent TB infection (LTBI) occurs when individuals are infected with *M. tuberculosis* bacteria through direct exposure to active tuberculosis disease.

People with infection do not have active disease and are not infectious. Clinical findings of LTBI normally include a positive tuberculin skin test, absence of symptoms and a normal chest x-ray.

The number of tuberculosis infections reported in North Dakota over the past five years is shown in Table 3.

Table 3. Reported Cases of LTBI North Dakota, 2000–2006.

2002	2003	2004	2005	2006
304	321	384	315	367

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Summary of Selected Reportable Conditions

North Dakota, January – March 2006-2007

Reportable Condition	January-March 2007*	January-March 2006*
Campylobacteriosis	10	17
Chlamydia	461	478
Cryptosporidiosis	2	0
<i>E. coli</i> , shiga toxin positive (non-O157)	0	0
<i>E. coli</i> O157:H7	2	2
Enterococcus, Vancomycin-resistant (VRE)	55	34
Giardiasis	2	6
Gonorrhea	25	29
Haemophilus influenzae (invasive)	1	0
Acute Hepatitis A	0	0
Acute Hepatitis B	0	0
Acute Hepatitis C	0	0
HIV/AIDS ¹	6	2
Legionellosis	1	0
Listeria	0	0
Lyme Disease	0	0
Malaria	1	1
Meningitis, bacterial ² (non meningococcal)	0	0
Meningococcal disease ³	1	1
Mumps	1	1
Pertussis	7	13
Q fever	0	0
Rabies (animal)	6	5
Salmonellosis	11	7
Shigellosis	3	4
<i>Staphylococcus aureus</i> , Methicillin-resistant (MRSA)	467	347
Streptococcal disease, Group A ⁴ (invasive)	4	5
Streptococcal disease, Group B ⁴ (infant < 3 months of age)	1	1
Streptococcal disease, Group B ⁴ (invasive ⁵)	8	10
Streptococcal disease, other ⁴ (invasive)	5	4
Streptococcal pneumoniae ⁴ , (invasive, children < 5 years of age)	1	1
Streptococcal pneumoniae ⁴ (invasive ⁶)	16	13
Streptococcus pneumoniae ⁴ , drug-resistant	0	0
Tuberculosis	1	3
Tularemia	0	0
West Nile Virus Infection	0	0

*Provisional data

¹ Includes newly diagnosed cases and cases diagnosed previously in other states that moved to North Dakota

² Meningitis caused by *Staphylococcus aureus* and *Streptococcus pneumoniae*.

³ Includes confirmed, probable and suspect meningococcal meningitis cases.

⁴ Includes invasive infections caused by streptococcal disease not including those classified as meningitis.

⁵ Includes invasive infections of streptococcal, Group B, disease in persons \geq 3 months of age.

⁶ Includes invasive infections caused by *Streptococcus pneumoniae* in persons \geq 5 years of age.