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HIV/AIDS Estimates

HIV/AIDS Surveillance

Before the spread of disease can be stopped, we need to know where infections are occurring and who is being infected. Gathering this information in a systematic way is called surveillance. Confidential, name-based reporting of AIDS in New Mexico has been in place since 1981 and for HIV since 1998. Names and other identifying information are removed from the data before it is sent to the Centers for Disease Control and Prevention (CDC) for national reporting purposes. Data are ultimately used to track the epidemic and distribute HIV prevention and services funding to areas according to need.

CDC Estimated HIV/AIDS Data

Without testing everyone in a given population, there is no way to know how many people are infected with HIV or the number of infections that occur each year. Because this information is critical for public health, methods to estimate the HIV infection have been developed. Estimation methods are also needed because surveillance systems do not exist in some areas of the world. National AIDS case projections and HIV prevalence estimates were first made by CDC in 1986 and last updated in 1990.[1] Estimates using back-calculation were dependent on AIDS data from surveillance programs and a reasonably predictable time between HIV infection and AIDS diagnosis. However, starting in 1996 better treatments made the time between HIV infection and progression to AIDS very unpredictable. Back-calculation also cannot detect recent changes in HIV incidence. Until 1992, CDC used this back-calculation to predict 40,000-80,000 new HIV infections each year in the U.S.

More recently, the CDC focused on infections among men who have sex with men, (MSM) who account for about half of new HIV diagnoses. CDC then extrapolated and adjusted the figure to come up with an estimate of 40,000 new infections for the entire U.S. population.

New Incidence Estimates

New HIV infections (incidence) can also be estimated by using serologic testing on recently diagnosed persons that can distinguish between recent and long-term infection. This technique involves applying the serologic testing algorithm for recent HIV seroconversion (STARHS) to the specimens from which the diagnosis of HIV infection was made. STARHS testing is conducted by CDC using samples from 34 states and dependent areas; however, New Mexico is not funded for STARHS. Estimating population-based HIV incidence will be critical in evaluating progress in decreasing the number of HIV infections that occur each year, in allocating resources, and in evaluating the effectiveness of prevention programs. CDC hopes to release new incidence estimates using STARHS sometime in 2008.

Prevalence Estimates

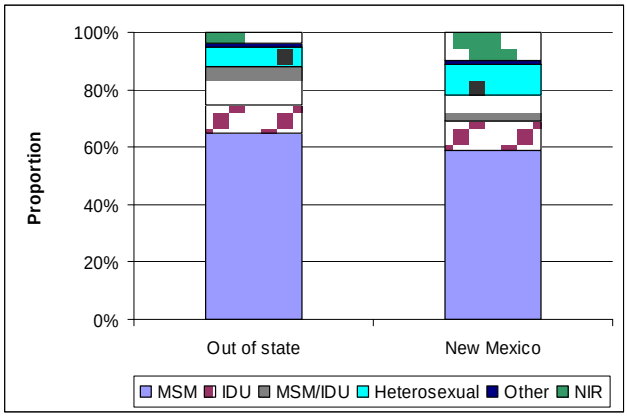
In reporting statistics of persons living with HIV/AIDS (PLWHA), CDC data do not reflect actual counts of cases reported. Rather, data are based on numbers of reported cases which are then adjusted for delays in reporting of cases and deaths. In addition, all areas have moved towards including HIV cases in their surveillance, but many do not yet have mature systems. As a result, national HIV data currently reflect only 38 states and dependent areas. Other adjustments made to national data include the redistribution of risk factors. CDC reclassifies cases reported with No Identified Risk (NIR) based on distributions from statistical models and population-based samples. Thus, national datasets do not include an NIR category.

New Mexico Reported HIV/AIDS Data

Data collected by the New Mexico Department of Health (NMDOH) is summarized on page 4. All reports, including cases diagnosed outside of New Mexico, are included. To date, about 35% of PLWHA in New Mexico were diagnosed outside of the state. As shown in Figure 1, the

mode of exposure for out of state cases differs slightly from those diagnosed in New Mexico. MSM and MSM that report injection drug use (MSM/IDU) are reported about 5% more and 4% more, respectively, among out of state cases.

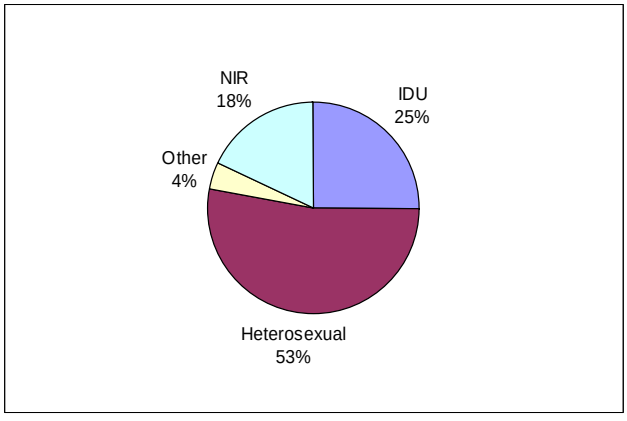
Figure 1. Prevalence of HIV/AIDS by place of diagnosis and mode of exposure, New Mexico, 2007*



Source: NMDOH, HIV & Hepatitis Epidemiology Program.
*Data through 2007 are subject to reporting delay.

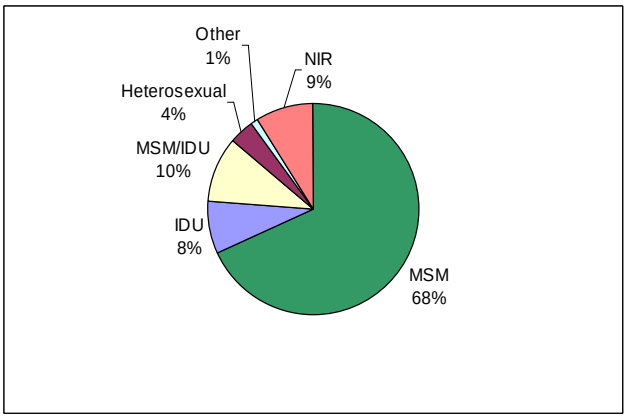
Cases in New Mexico are classified according to CDC risk categories, some of which are not comparable to data outside the U.S. As shown in Figure 2, female PLWHA report primarily heterosexual (53%) and IDU (25%) risks. CDC uses a strict definition for heterosexual risk in women: a woman must report she had sex with a man that is HIV+ or fits a predefined risk category (i.e., IDU, hemophilia). This definition does not take into account other important risks, such as commercial sex work. The large proportion of NIR in women is suspected to be heterosexual risk; however, these lack the documentation to classify them as such. Figure 3 shows that male PLWHA report mostly MSM.

Figure 2. Prevalence of HIV/AIDS in females by mode of exposure, New Mexico, 2007



Source: NMDOH, HIV & Hepatitis Epidemiology Program.

Figure 3. Prevalence of HIV/AIDS in males by mode of exposure, New Mexico, 2007



Source: NMDOH, HIV & Hepatitis Epidemiology Program.

New Mexico Estimated HIV/AIDS Data

The Joint United Nations Programme on HIV/AIDS (UNAIDS) developed the Workbook Method for making adult HIV prevalence estimates from surveillance data in countries with low-level or concentrated epidemics, such as in New Mexico. Estimates using this method are based on prevalence in high risk populations (e.g., sex workers, MSM, IDU) and estimations of the size of high and low risk populations. The final prevalence estimate summarizes the total average number of adults living with HIV/AIDS in all risk groups. Estimates only consider those cases that are diagnosed locally, and do not allow for imported cases.

The data entered into the Workbook include the following: general population data,[2] percentage of persons living in urban areas,[3] high risk population data,[4,5,6] HIV prevalence for high risk populations,[5] and percentage of HIV-infected IDU that are female.[7]

Table 1. Estimated HIV/AIDS prevalence in populations at high risk, New Mexico, 2007

	MSM	IDU
Size of population	7,315 – 29,993	16,550 – 24,073
HIV prevalence	5.04 – 15.8%	1.2 – 1.71%
Adults living with HIV/AIDS		
Low estimate	369 – 1,156	199 – 283
High estimate	1,512 – 4,739	283 – 289
Average	1,944	296

Source: NMDOH, HIV & Hepatitis Epidemiology Program.

As shown in Table 1, an average of 2,240 PLWHA comprised the high risk population. After considering high risk populations, the Workbook can estimate either HIV prevalence in

1) partners of high risk populations or 2) low risk women. Because prevalence data in New Mexico is not readily available for partners, the population of low risk women were estimated to be 235 (Table 2). Thus, the total estimate of PLWHA in New Mexico for 2007 was 2,475.

Table 2. Estimated HIV/AIDS prevalence in female populations at low risk, New Mexico, 2007

	Urban	Rural
Size of population	361,324 – 363,113	120,441 – 121,038
HIV prevalence	0.01 – 0.1%	0.01 – 0.1%
Adults living with HIV/AIDS		
Low estimate	36 – 361	12 – 60
High estimate	36 – 363	12 – 61
Average	199	36

Source: NMDOH, HIV & Hepatitis Epidemiology Program.

Based on the total estimate of PLHWA, the overall prevalence of HIV/AIDS in New Mexico's general population was 0.25% in 2007. Table 3 summarizes the proportion of estimated PLWHA by risk group.

Table 3. Summary of estimated HIV/AIDS cases by population at risk, New Mexico, 2007

	Proportion of all PLHWA, n (%)
MSM	1,944 (78.5%)
IDU	296 (12.0%)
Male	202 (8.2%)
Female	94 (3.8%)
All males	2,146 (86.7%)
All females	329 (13.3%)

Source: NMDOH, HIV & Hepatitis Epidemiology Program.

The most important limitation of the Workbook is that the estimates are only as good as the input data. Determining the size of high risk populations and their HIV prevalence is difficult. The Workbook also defined adult populations as being aged 15-49 years while available estimates on high risk populations were for those aged 18+ years. The only high risk groups considered in New Mexico were IDU and MSM; however, there are other groups that could be included such as sex workers and their clients. The overall estimate could have also been improved if data were available on low risk groups in New Mexico, including sex partners of IDU, female sex partners of MSM, and sex partners of clients of sex workers.

New Mexico Reported vs. Estimated Data

Overall, the estimated number of PLWHA in New Mexico is greater than what has been reported to NMDOH. The Workbook estimated that at the end of 2007 there were 2,475 PLWHA; this is 11.5% greater than the number of persons reported to surveillance (2,220). This difference is expected, as surveillance data is limited by HIV testing behavior, delays in reporting, anonymous tests, and lack of HIV reports prior to 1998. The prevalence estimate would have been even greater had data on other high or low risk populations been available, and if the Workbook considered cases in persons outside the age range of 15-49 years.

The proportion of female PLWHA predicted by the Workbook (13.3%) corresponds with surveillance data (see page 4). However, the Workbook underestimated the proportion of HIV-infected IDU (12.0%) compared to surveillance (20%, IDU and MSM/IDU). The availability of syringe exchange and other outreach to the IDU population in New Mexico may contribute to the reporting of more HIV cases than would be expected. The Workbook estimated there were more MSM (78.5%) than reported (71%, MSM and MSM/IDU).

The estimates calculated by the Workbook provide a new perspective of the HIV/AIDS epidemic in New Mexico. In particular, it offers insight into how many more New Mexicans may be infected with HIV. This important information can serve to guide prevention programs in their efforts to increase testing and assist service programs in projecting future burden.

References

1. CDC. HIV prevalence estimates and AIDS case projections for the United States: Report based upon a workshop. MMWR 1990;39(RR-16);1-18.
2. University of New Mexico, Bureau of Business and Economic Research. 2006 population estimates.
3. U.S. Census Bureau. 2000.
4. NMDOH, Substance Abuse Epidemiology Unit. 2005 IDU estimates.
5. Holmberg SD. The estimated prevalence and incidence of HIV in 96 large US metropolitan areas. Am J Public Health. 1996 May;86(5):642-54.
6. Gates GJ. Same-sex couples and the gay, lesbian, bisexual population: new estimates from the American Community Survey. The Williams Institute on Sexual Orientation Law and Public Policy, UCLA School of Law. October 2006.
7. NMDOH, HIV & Hepatitis Epidemiology Program. HIV/AIDS Reporting System, 2006.

HIV/AIDS IN NEW MEXICO FACT SHEET
Cases reported through March 31, 2008

In previous reports, the HIV & Hepatitis Epidemiology Program summarized only cases diagnosed in New Mexico. Living cases diagnosed in New Mexico are used by the U.S. Centers for Disease Control (CDC) to represent prevalent cases. However, data that include out-of-state diagnoses provide a better reflection of local prevalence patterns and are now also provided in the summary.

	Cases diagnosed in New Mexico					All cases in New Mexico				
	Living			Cumulative		Living			Cumulative	
	N	%	Rate*	N	%	N	%	Rate	N	%
Type of case										
HIV	936	41%	46.5	1015	27%	1323	38%	65.8	1421	26%
AIDS	1325	59%	65.9	2700	73%	2148	62%	106.8	4037	74%
Sex										
Male	1968	87%	199.0	3316	89%	3058	88%	309.2	4902	90%
Female	293	13%	28.7	399	11%	413	12%	40.4	556	10%
Race/Ethnicity										
White	986	44%	113.6	1768	48%	1720	50%	198.1	2846	52%
Hispanic	992	44%	113.6	1517	41%	1257	36%	144.0	1901	35%
Native American	151	7%	75.0	228	6%	248	7%	123.3	364	7%
African American	119	5%	294.8	184	5%	223	6%	552.4	318	6%
Asian/Pacific Islander	13	1%	46.2	18	0%	23	1%	81.7	29	1%
Region at Diagnosis**										
Region 1 (Northwest)	280	12%	66.7	436	12%	319	9%	76.0	496	9%
Region 2 (Northeast)	440	19%	145.2	769	21%	525	15%	173.2	918	17%
Region 3 (Bernalillo Co.)	1043	46%	166.0	1778	48%	1183	34%	188.3	2037	37%
Region 4 (Southeast)	129	6%	51.1	228	6%	160	5%	63.3	278	5%
Region 5 (Southwest)	369	16%	90.6	504	14%	415	12%	101.9	586	11%
Out of state	-	-	-	-	-	869	25%	-	1143	21%
Age at Diagnosis										
< 13	9	0%	2.5	13	0%	15	0%	4.2	22	0%
13-19	54	2%	25.8	57	2%	68	2%	32.5	73	1%
20-29	525	23%	182.6	761	20%	821	24%	285.6	1160	21%
30-39	887	39%	366.8	1515	41%	1414	41%	584.8	2313	42%
40-49	577	26%	194.9	968	26%	863	25%	291.5	1378	25%
50+	209	9%	33.7	401	11%	290	8%	46.7	512	9%
Exposure Risk										
MSM	1340	59%	-	2263	61%	2114	61%	-	3383	62%
IDU	227	10%	-	377	10%	353	10%	-	559	10%
MSM/IDU	198	9%	-	358	10%	358	10%	-	598	11%
Heterosexual	238	11%	-	306	8%	329	9%	-	417	8%
Other	14	1%	-	48	1%	18	1%	-	59	1%
No Identified Risk	230	10%	-	342	9%	277	8%	-	410	8%
Pediatric	14	1%	-	21	1%	22	1%	-	32	1%
TOTALS	**2261**	**100%**	**112.4**	**3715**	**100%**	**3471**	**100%**	**172.6**	**5458**	**100%**

*Rates per 100,000 based on Bureau of Business and Economic Research population data for 2006; **Residence at time of HIV or AIDS diagnosis.

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