2008
Delaware HIV/AIDS Surveillance Report

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Health Promotion and Disease Prevention

HIV/AIDS Epidemiology
Health Promotion & Disease Prevention

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Executive Summary

In 2008, 1,317 Delawareans were living with HIV and another 2,153 were living with AIDS. In that same year, the cumulative number of HIV/AIDS cases in Delaware reached 5,112. Despite the fact that it is the 2nd smallest state in the U.S. in terms of geographic size, Delaware's AIDS incidence rate (19.8 cases per 100,000 residents) is among the highest in the nation. Furthermore, recent data indicate that, compared to other states, the frequency with which new AIDS cases are diagnosed in Delaware is increasing. In 2006, Delaware's AIDS incidence rate was the 10th highest among U.S. states. By 2007, Delaware's AIDS incidence rate had increased to a level which ranked 6th highest in the nation.

The statewide distribution of Delaware's HIV/AIDS cases closely follows county-level population estimates. New Castle County – the most populated of Delaware's three counties – has the highest percentage of Delaware's HIV/AIDS cases. Cases in New Castle County are largely confined to the densely populated Wilmington metropolitan area. Wilmington comprises just 14% of the New Castle County population, but accounts for 67% of the county's HIV/AIDS cases. In 2008, 32% of all newly diagnosed HIV cases occurred among minorities residing in the City of Wilmington.

Males account for the majority (71%) of HIV/AIDS cases ever diagnosed in Delaware. However, in recent years, Delaware females have accounted for an increasingly large percentage of total HIV/AIDS cases. For example, in 1990, 24% of newly diagnosed AIDS cases were female; in 2008, females accounted for 34% of newly diagnosed cases.

African-American Delawareans carry a disproportionate share of the state's HIV/AIDS burden. Despite representing just one-fifth of Delaware's total population, African-American Delawareans accounted for 69% of all HIV/AIDS cases ever diagnosed in the state. This racial disparity is more pronounced in Delaware compared to the U.S., and persists for both HIV and AIDS when considered as two separate disease states. African-American males account for 36% of all male AIDS cases in the U.S., but 62% of all males AIDS cases in Delaware. Similarly, African-American women comprise 60% of all female AIDS cases in the U.S., but nearly 80% of all female AIDS cases in Delaware.

Consistent with U.S. trends, the majority (70%) of HIV/AIDS cases ever reported in Delaware were diagnosed among adults aged 30-49. In Delaware and the U.S., fewer than 3% of HIV/AIDS cases ever reported were diagnosed among adults age 60 and older.

Pediatric HIV/AIDS cases – defined as cases diagnosed among children under the age of 13 – account for just 1% of cases ever reported in both Delaware and the U.S. In Delaware, 76% of all pediatric HIV/AIDS cases were diagnosed among African-American children. From 2007-2008, 49 Delawarean women infected with HIV gave birth to infants; 100% of infants born to these HIV-infected mothers tested negative for

the disease. No HIV-positive infants have been born in Delaware in the past three years.

Among all new HIV infections diagnosed in Delaware in 2008, the largest percentage of cases (36%; N=64) were attributable to men having sex with men. Heterosexual transmission and injection drug use accounted for an additional 32% (N=53) and 13% (N=22) of newly diagnosed HIV cases, respectively. An additional 2% of new cases (N=3) were attributable to both MSM and injection drug use. The remaining 17% (N=24) of cases fell into the “Other Risk” or “No Risk Identified” behavioral categories.

Within Delaware, the mode of HIV transmission varies among the three counties. In New Castle County, African-American injection drug users account for the majority of new HIV diagnoses. In Sussex County new cases are predominantly diagnosed among Caucasian men who have sex with men.

From 1981 through December 2008, 2,049 Delawareans have died from AIDS. In the past decade, the survival rate for Delawareans living with AIDS has dramatically increased. In addition to improvements in the life expectancy for Delawareans with AIDS, Delawareans with HIV are also living longer prior to progression of the disease to AIDS. Earlier diagnoses, improved medical management of HIV, and the development of extremely effective anti-retroviral drugs have contributed to the dramatic improvement in HIV/AIDS survival rates.

Background and Introduction

Delaware initiated AIDS surveillance and reporting efforts in 1981. In 2001, the Delaware Division of Public Health (DPH) expanded surveillance efforts and began collecting data for Delawareans infected with HIV. HIV/AIDS surveillance efforts heavily rely on data compiled from healthcare professionals and laboratories throughout the state.

The Human Immunodeficiency Virus (HIV) is the underlying biological agent that weakens an individual's immune system, facilitating the development of Acquired Immune Deficiency Syndrome (AIDS). Except for initial viral response, HIV may not manifest itself with symptoms for some time after infection. Following the progression of HIV to AIDS, symptoms of the virus typically advance to a state where a clinical diagnosis may be made by a physician. AIDS symptoms include specific infections, cancers, and cellular changes in a person's immune system.

Analysis of HIV/AIDS incidence and prevalence data is a crucial component to combating the disease. The Delaware HIV Consortium and its Planning Council rely on accurate surveillance data to guide the development of HIV prevention efforts, as well as HIV/AIDS healthcare planning and services administration. Surveillance data allow DPH to monitor risk reduction and disease prevention progress, and also influence the amount of federal funds that Delaware receives to assist in the fight against HIV/AIDS.

This report largely focuses on three main areas of interest: (1) the socio-demographic characteristics of Delawareans; (2) the scope of the HIV/AIDS epidemic in Delaware; and (3) the pattern of service utilization among Delawareans living with HIV/AIDS.

HIV/AIDS Surveillance in Delaware

Delaware's HIV/AIDS surveillance efforts largely focus on three fundamental epidemiological concepts: person, place, and time.

- **Person**: Identifying the mode by which an individual contracts HIV is a crucial first step in an investigation, as this information is used to guide future prevention efforts. In Delaware, HIV/AIDS surveillance staff help characterize mode of HIV transmission using case report forms, personal interviews, and medical record reviews.

- **Place**: It is also important to determine the geographic area where HIV transmission occurred. In this report, "place" generally refers to the county of residence at time of HIV/AIDS diagnosis. Every effort is made to identify the precise location of HIV/AIDS transmission among Delawareans, regardless of whether diagnosis and/or treatment occur within the state. That is, Delaware engages in data-sharing agreements with other states to identify Delawareans who may have been diagnosed or who seek treatment outside of the state.

- **Time**: In terms of HIV/AIDS surveillance, DPH relies on two dates to help characterize disease trends in Delaware: (1) date of diagnosis and (2) date of report (to the DPH HIV/AIDS Surveillance Office). Excessive time-lag between these two dates complicates the process of data analysis and accurate surveillance. For this reason, the HIV/AIDS Surveillance Office works with healthcare practitioners and laboratories across the state to facilitate timely reporting of all newly diagnosed cases. The successes of timely reporting and active surveillance methods allow the majority of this report to include data pertaining to date of diagnoses.

Patient confidentiality is crucial for maintaining an effective HIV/AIDS surveillance system. The DPH HIV/AIDS Surveillance Office adheres to detailed data confidentiality protocols that mandate physical, operational, and personnel security standards when working with HIV/AIDS data. Data confidentiality standards must be maintained as a condition of receiving federal funding for surveillance efforts.

Methods

Data Source Descriptions, Limitations and Precautions

In addition to HIV/AIDS surveillance data collected by DPH, this report includes data from the U.S. Census Bureau, the Centers for Disease Control and Prevention (CDC), and the Health Resources and Services Administration of the U.S. Department of Health and Social Services (DHSS). A brief description of each data source is found below.

Delaware Division of Public Health (DPH): provides statewide HIV testing and counseling data via the Delaware HIV Counseling and Testing System database. Healthcare practitioners and centers use standardized data collection forms to report information for Delawareans tested in public clinics across the state, as well as for those seeking HIV counseling.

This report also contains data derived from Delaware-specific *Sexually Transmitted Infection and Disease Reports*, DPH publications that include statewide data pertaining to sexually transmitted diseases (STDs; e.g., gonorrhea, chlamydia, and syphilis). STD data are helpful for identifying populations at increased risk for contracting HIV.

Birth and death information, originating directly from birth and death certificates provides Delaware-specific morbidity and mortality data. Doctors, hospitals, and clinics in Delaware are required to report birth and death certificate data. However, in terms of mortality data, it is important to note that the data quality is dependent upon death certificate data provided by physicians. Some physicians may not note a diagnosis of HIV/AIDS on death certificates. This may be due to family request, physician lack of knowledge regarding HIV status, or failure to record underlying causes of death. For these reasons, the number of AIDS-related deaths may be artificially suppressed not only in Delaware, but across the nation.

U.S. Census Bureau: provides Delaware-specific county-level population data. Data are complete and standardized nationwide through 2000. Data from the most recent Census year (2000) are used to provide interim one-year estimates for non-Census years (e.g., 2001-2009).

The Centers for Disease Control and Prevention (CDC): provides national-level HIV/AIDS trend data via the Evaluation HIV/AIDS Reporting System (EHARS). EHARS is used nationwide for storing HIV/AIDS surveillance data. State-specific HIV/AIDS data (both prevalence and incidence data) are available through EHARS. While it represents an advanced public health surveillance system, it is possible that actual HIV/AIDS prevalence and incidence counts are underreported in EHARS. Delays in reporting and noncompliance contribute to this underreporting. While HIV data are reported to the CDC by all 50 states, the quality of HIV surveillance data for some states has not met the minimum level for inclusion in analyses.

The quality of Delaware's EHARS data has improved substantially in recent years, largely in response to the proactive efforts of the HIV/AIDS Surveillance Office and field workers. Via increased record reviews and education of healthcare professionals and laboratories regarding the proper methods for reporting HIV/AIDS cases, case report forms in Delaware reflect more accurate data regarding newly diagnosed HIV/AIDS cases. It is important to note, however, that Delaware-specific HIV data in EHARS does not represent all Delawareans who test positive for the disease. While Delaware HIV cases detected through confidential testing are reported to EHARS, Delaware cases detected through anonymous testing are not reported to EHARS.

This report also utilizes data from the CDC-published *HIV/AIDS Surveillance Report*. Data from the *HIV/AIDS Surveillance Report* summarizes national and state-level trends with respect to the HIV/AIDS epidemic.

Data derived from the Youth Risk Behavior Survey (YRBS) are also included in the current report. YRBS represents an ongoing surveillance effort by the CDC with the overall goal of identifying risk factor trends among youth (e.g., nutrition patterns, substance use, accidents, sexual behaviors, and delinquency). These data are then used to explore the relationship between risk behaviors and health. YRBS uses self-administered, anonymous questionnaires to collect data from high school students in odd-numbered years. The Delaware Department of Education oversees the implementation of YRBS. In Delaware, YRBS response rates are very high; 84% of students approached for participation complete a questionnaire.

Health Resources and Services Administration (HRSA), U.S. Department of Health and Social Services (DHSS): provides data related to HIV/AIDS service utilization patterns via the Ryan White Data Reports (RDR). States receiving federal Ryan White dollars use these funds to provide medical and support services to those infected with HIV/AIDS. Ryan White funds are also used to provide health insurance coverage and prescription drugs for those with the disease. HRSA receives information from states and uses the data to monitor HIV/AIDS service utilization patterns across the nation.

While RDR data are limited to those individuals with HIV/AIDS who seek healthcare, these data are nonetheless important for future healthcare planning.

Data Specifics

- In 1993, the CDC expanded the AIDS case definition to include individuals diagnosed with the disease who did not yet display several AIDS indicators (including severely compromised immune system with CD_4 counts <200 µ/L or <14%, invasive cervical cancer, recurrent pneumonia, and pulmonary mycobacterium tuberculosis).

The expansion in case definition created a rapid increase in the prevalence of AIDS cases, nationwide, in the early 1990s. This sharp increase in AIDS prevalence was observable at the local, state, and national levels. It is important to note that the AIDS case definition was modified again in 2007; however, the impact of the most recent case definition on Delaware's HIV/AIDS statistics is not yet known.

- In 2001, 20 years after the initiation of AIDS surveillance efforts, Delaware initiated HIV surveillance efforts. In this report, 2001-2008 HIV data are combined with AIDS data. For reporting years prior to 2001 (i.e., 1981-2000), data reflect AIDS case counts only. The inclusion of HIV cases beginning with reporting year 2001 created a sharp increase in HIV/AIDS case counts. However, note that this increase in cases is a methodological artifact and does not represent a true increase in the actual number of HIV/AIDS counts in Delaware.

- Per DPH data release policies, data in this report may be combined or suppressed to ensure patient confidentiality. No Delaware-specific HIV/AIDS data are released in a format that may allow for individual identification. In this report, any combined or suppressed data are noted in footnotes.

Definition of Terms

Adolescent:	An individual between the ages of 13 and 19.
Adult/Adolescent case:	Patient is 13 years or older at the time of diagnosis.
Epidemiology:	A branch of medical science that deals with incidence, distribution and control of a disease in a population.
Heterosexual:	Persons with a history of sexual contact with a person of the opposite sex.
Incidence Rate:	A measure of the rate of development of a disease in population over a period of time. Calculated by dividing the number of new cases diagnosed in a population during a specific time period by the size of the population during the same time period.

NIR case:	No Identified Risk case. NIR cases may be reclassified as information is obtained via a complete epidemiologic investigation.
Pediatric case:	Patient is younger than age 13 at the time of diagnosis.
Prevalence:	The percentage of a population that is affected with a particular disease at a specific point in time.
Rate:	Number of cases in a population divided by the total size of the population. Rates allow for the direct comparison of groups with different population sizes.
Transfusion case:	Person who acquired the HIV virus as a result of receiving blood or blood products.
Year of diagnosis:	The year when the disease event was first confirmed by medical personnel.
Year of report:	The year when the case was reported to the Delaware HIV/AIDS Surveillance Office.

Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
A/PI	Asian/Pacific Islander
CARE	Comprehensive AIDS Resource Emergency
CADR	CARE Act Data Report
CDC	Centers for Disease Control and Prevention
C/T	Counseling and Testing Services
DHSS	Delaware Health and Social Services
DPH	Delaware Division of Public Health
EHARS	Evaluation HIV/AIDS Reporting System (CDC database)
HAART	Highly active anti-retroviral therapy
HIV	Human Immunodeficiency Virus
HRSA	Health Resources and Services Administration
IDU(s)	Injecting Drug User(s)
MSM	Men who have Sex with Men
MSM/IDU	Men who have Sex with Men and Inject Drugs
NA/AN	Native American/Alaskan Native
NIR	No Identified Risk
NRR	No Risk Reported
STD (STI)	Sexually Transmitted Disease (Infection)
YRBS	Youth Risk Behavior Survey

1. Socio-Demographic Characteristics of the State of Delaware

Delaware is the second smallest state in the U.S. in terms of geographic size, measuring 100 miles from north to south and 30 miles from west to east. Delaware is comprised of New Castle, Kent, and Sussex Counties. New Castle County, located in the northern portion of Delaware, is the most densely populated of the three counties and home to 62% of Delawareans. Almost 14% of New Castle County residents live in the city of Wilmington. Centrally-located Kent County, home to 17% of Delawareans includes a blend of urban, suburban, and agricultural zones. Dover Air Force Base and the state capital (Dover) are located in Kent County. The remaining 21% of Delawareans live in Sussex County, the southernmost of the three counties. Sussex County is largely rural and home to a large number of poultry, dairy, and crop-growing farms and facilities. Eastern Sussex County includes the beach communities and draws a large number of retirees each year.

In 2006, Delaware's total population included 853,476 children and adults, representing 0.3% of the total U.S. population. The majority of Delawareans (69.0%) are Caucasian; African-Americans and Hispanics comprise 21% and 6% of Delaware's population, respectively. Approximately 4% of Delawareans are Asian or Pacific Islander. Females account for 52% of Delaware's total population, equivalent to the national gender distribution. See Table 1, below, for racial distributions at the county-level.

Table 1: Racial Distribution among Delawareans, by County, 2006

County	Caucasian N (%)	African-American N (%)	Hispanic N (%)	Other N (%)	Total N (County%)
New Castle	346,888 (66%)	120,885 (23%)	36,791 (7%)	21,023 (4%)	525,587 (62%)
Sussex	140,625 (78%)	25,240 (14%)	10,817 (6%)	3,606 (2%)	180,288 (21%)
Kent	103,321 (70%)	32,472 (22%)	4,428 (3%)	7,380 (5%)	147,601 (17%)
Delaware	590,834 (69%)	178,597 (21%)	52,036 (6%)	32,009 (4%)	853,476 (100%)

Source: U.S. Census Bureau; Rows sum to 100%

The median age of Delawareans is 38. Compared to the general U.S. population, Delawareans have a slightly higher median annual household income ($50,007 vs. $55,303, respectively). Patterns of educational attainment among Delawareans are similar to that of the general U.S. population. Approximately 83% of Delawareans have a high school diploma compared to 80% of the U.S. population. Twenty-five percent of Delawareans have earned a bachelor's degree or higher compared to 24% of the U.S. population. Twelve percent of Delaware residents report speaking a language other than English in the home.

2. Scope of the HIV/AIDS Epidemic in Delaware and the U.S.

Between 1981 and 2008, 5,112 Delawareans were diagnosed with HIV or AIDS. In 2008, 2,153 Delawareans were living with AIDS. An additional 1,317 Delawareans were living with HIV that had not yet progressed to AIDS. Approximately 15% of Delawareans living with HIV/AIDS moved to the state after diagnosis.

Males account for 71% of all HIV/AIDS cases ever diagnosed in the state. African-American Delawareans represent a disproportionate share of the state's HIV/AIDS burden, accounting for 66% of all cases diagnosed since 1981. Caucasian and Hispanic Delawareans account for 28% and 6% of all HIV/AIDS cases ever diagnosed in the state, respectively. The largest percentage of HIV/AIDS cases have been diagnosed among adults ages 30-39. Delawareans in New Castle County account for the majority of HIV/AIDS cases ever diagnosed in the state. See Table 2, below, for a breakdown of Delaware's HIV and AIDS cases by gender, race, age, and county.

Table 2: Delaware Reported HIV/AIDS Cases, 1981-2008

	HIV Cases N (%)	AIDS Cases N (%)	Total (HIV/AIDS) Cases N (%)
Total Cases	**1,278 (100%)**	**3,834 (100%)**	**5,112 (100%)**
Gender			
Males	834 (65%)	2,780 (73%)	3,614 (71%)
Females	444 (35%)	1,054 (27%)	1,498 (29%)
Race			
Caucasian	371 (29%)	1,038 (28%)	1,409 (28%)
African-American	806 (63%)	3,129 (66%)	3,383 (66%)
Hispanic	87 (7%)	256 (5%)	287 (6%)
Other / Unknown	14 (1%)	25 (< 1%)	33 (< 1%)
Age Group (Years)			
< 13	14 (1%)	27 (< 1%)	41 (< 1%)
13-19	66 (5%)	20 (< 1%)	86 (2%)
20-29	319 (25%)	497 (13%)	816 (16%)
30-39	433 (34%)	1,516 (40%)	1,949 (38%)
40-49	311 (24%)	1,250 (33%)	1,561 (31%)
50+	135 (11%)	524 (14%)	659 (13%)
County			
New Castle (NCC)	949 (74%)	2,905 (76%)	3,854 (75%)
NCC,City of Wilmington	*593 (46%)*	*1,937 (50%)*	*2,530 (49%)*
NCC, non-Wilmington	*356 (28%)*	*968 (25%)*	*1,324 (26%)*
Kent County	124 (10%)	373 (10%)	497 (10%)
Sussex County	205 (16%)	556 (15%)	761 (15%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)
Note: In Delaware, AIDS and HIV surveillance efforts began in 1981 and 2001, respectively.

Prevalence and Incidence

Prevalence rates describe the total number of people in a population diagnosed with a particular disease. The 2006 U.S. HIV and AIDS prevalence rates were 154.2 and 185.1 per 100,000, respectively. In other words, in 2006, for every 100,000 U.S. residents, 154 residents were living with HIV and 185 residents were living with AIDS. In comparison, Delaware's 2008 HIV and AIDS prevalence rates were 154.3 and 252.2 per 100,000, respectively. Therefore, while Delaware's HIV prevalence rate is virtually identical to that of the U.S., Delaware's AIDS prevalence rate is 36% greater than the U.S. rate.

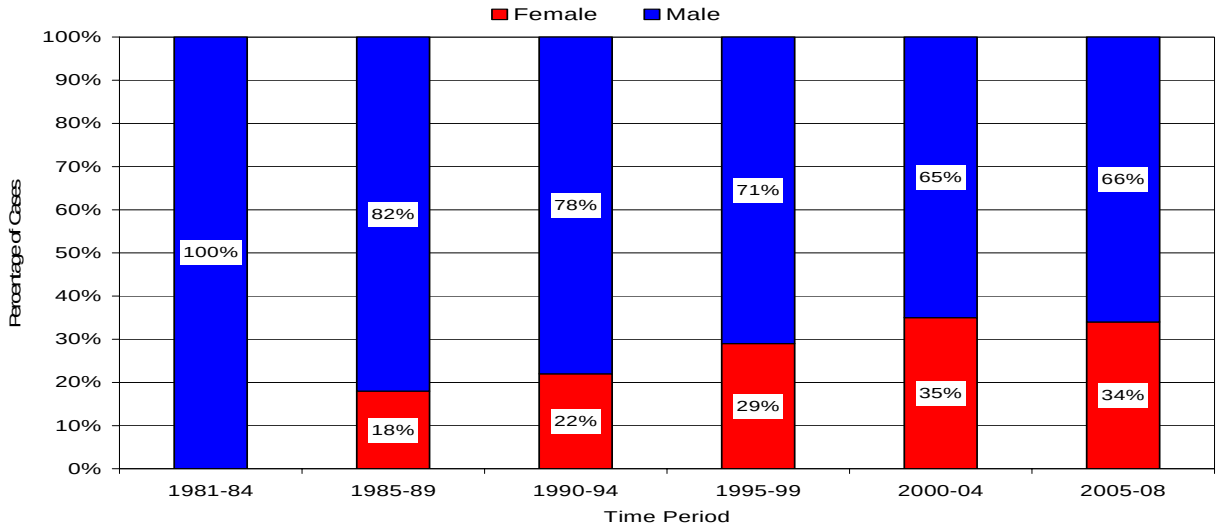
While prevalence rates describe the percentage of a population living with a particular disease, incidence rates describe the extent to which *new* cases are diagnosed within a population. Specifically, incidence rates represent the speed with which a disease spreads throughout a population. In the U.S., the 2007 AIDS incidence rate was 12.4 per 100,000. In other words, in 2007, approximately 12 out of every 100,000 U.S. residents were diagnosed with AIDS. Delaware's AIDS incidence rate tends to be higher than that of the U.S. In 2008, Delaware's AIDS incidence rate was 19.8 per 100,000 – nearly 60% higher than the 2007 U.S. rate. In 2008, Delaware ranked 6th among all states in terms of AIDS incidence rates.

HIV/AIDS prevalence and incidence data are unavailable for smaller, hard-to-reach populations, such as the homeless, transgendered, and mentally ill. Additionally, some HIV/AIDS cases are diagnosed through routine screenings (e.g., blood donations) and little additional information is available regarding individuals' risk factors.

Gender

Since the initiation of AIDS surveillance in 1981 and HIV surveillance in 2001, males have accounted for the vast majority of cases diagnosed annually in Delaware. However, as shown in Figure 1 (next page), Delaware females continue to account for a growing percentage of HIV/AIDS cases diagnosed each year in the state. Before 1984, no female HIV/AIDS cases were diagnosed in Delaware. From 2005-2008, females accounted for 34% of all HIV/AIDS cases diagnosed in Delaware.

Figure 1: Delaware HIV/AIDS Cases, by Gender, 1981-2008 (N=5,112)



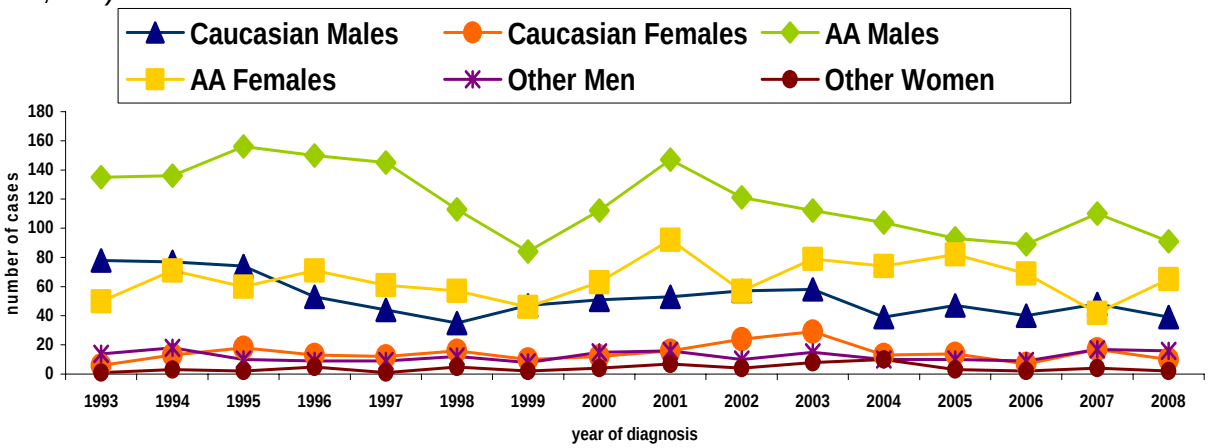
Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Race/Ethnicity

Delaware's HIV/AIDS epidemic continues to disproportionately affect the African-American population. African-Americans comprise 21% of the Delaware's total population, but account for 63% and 67% of the state's HIV and AIDS cases, respectively.

Since the early 1990s, African-American men and women in Delaware have accounted for proportionately more HIV/AIDS cases than their Caucasian counterparts (Figure 2). The largest number of HIV/AIDS cases continues to be diagnosed among the African-American male population. As shown in figure 2 below, males account for comparatively more cases than females within each race category (i.e., Caucasian, African-American, Hispanic, and Other).

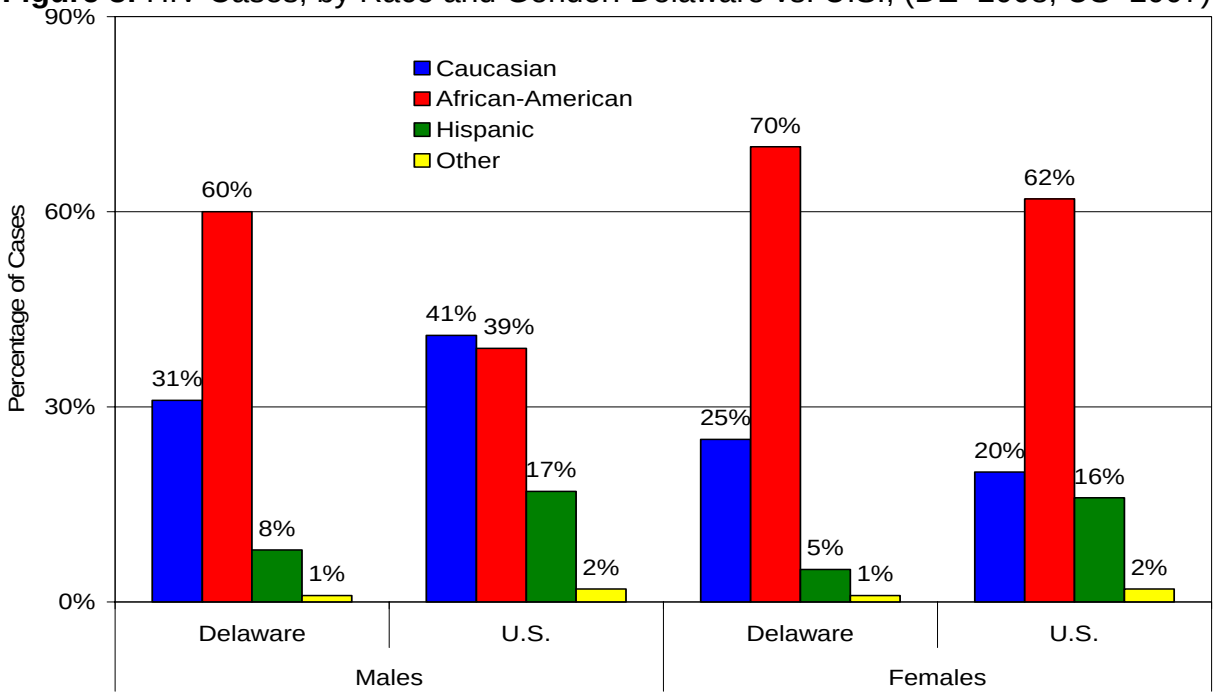
Figure 2: Delaware HIV/AIDS Cases, by race and Gender, 1993-2008 (N=4,268)



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

When considered as two separate disease states, Delaware's racial disparity persists for both HIV and AIDS. Furthermore, Figures 3 and 4 with accompanying data tables below, show the magnitude of this racial disparity in Delaware is greater than that in the U.S. In terms of HIV, African-American males account for 39% of all male HIV cases in the U.S., but 60% of all male HIV cases in Delaware. African-American females account for 62% of all female HIV cases in the U.S., but 70% of all female HIV cases in Delaware. Among Delaware's pediatric cases, African-American youth account for 77% of HIV cases. The U.S. pediatric breakout is not available.

Figure 3: HIV Cases, by Race and Gender: Delaware vs. U.S., (DE=2008, US=2007)



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Table 3: Delaware HIV Cases Diagnosed Through 2008 by Race and Gender (N=1278)

Race	Male N (%)	Female N (%)	Total N (%)
Caucasian	262 (31%)	109 (25%)	371 (29%)
African American	497 (60%)	309 (70%)	806 (63%)
Hispanic	65 (8%)	22 (5%)	87 (7%)
Other	10 (1%)	4 (1%)	14 (1%)
Total	834 (100%)	444 (100%)	1278 (100%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

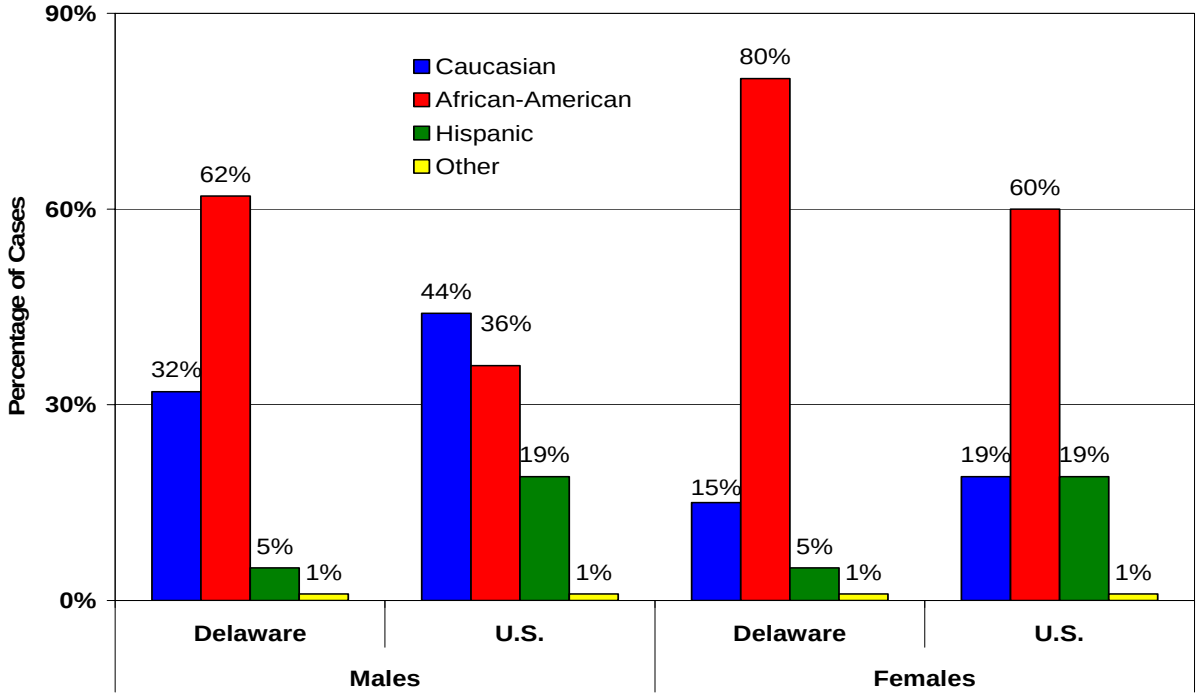
Table 4: U.S. HIV Cases Diagnosed Through 2007 by Race and Gender (N=337,590)

Race	Male N (%)	Female N (%)	Total N (%)
Caucasian	98,524 (41%)	18,680 (20%)	117,204 (35%)
African American	93,775 (39%)	56,732 (62%)	150,507 (45%)
Hispanic	41,912 (17%)	14,608 (16%)	56,520 (17%)
Other	3,271 (1%)	981 (1%)	4,252 (1%)
Unknown	2,278 (1%)	1,003 (1%)	3,281 (1%)
Total	239,760 (100%)	92,004 (100%)	337,590 (100%)*

Source: CDC, HIV/AIDS Surveillance Report
***Includes national pediatric cases = 5,822 (no breakdown available) and 4 people of unknown sex**

Compared to HIV, Delaware's racial disparity is even more pronounced for AIDS. African-American males account for 36% of male AIDS cases in the U.S., but 62% of male AIDS cases in Delaware. African-American females account for 60% of female AIDS cases in the U.S., but 80% of all female AIDS cases in Delaware. Among Delaware's pediatric cases, African-American youth account for 76% of AIDS cases.

Figure 4: AIDS Cases, by Race and Gender: Delaware vs. U.S., (DE=2008, US=2007)



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Table 5: Delaware AIDS Cases Diagnosed Through 2008 by Race and Gender (N=3,834)

Race	Male N (%)	Female N (%)	Total N (%)
Caucasian	882 (32%)	156 (15%)	1,038 (27%)
African American	1,735 (62%)	842 (80%)	2,577 (67%)
Hispanic	152 (5%)	48 (5%)	200 (5%)
Other	11 (<1%)	8 (<1%)	19 (<1%)
Total	2,780 (100%)	1,054 (100%)	3,834 (100%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Table 6: U.S. AIDS Cases Diagnosed Through 2007 by Race and Gender (N=1,030,832)

Race	Male N (%)	Female N (%)	Total N (%)
Caucasian	358,298 (44%)	39,034 (19%)	397,341 (39%)
African American	291,701 (36%)	120,148 (60%)	411,849 (40%)
Hispanic	155,560 (19%)	38,340 (19%)	193,900 (19%)
Other	9,477 (1%)	1,830 (1%)	11,307 (1%)
Unknown	5,001 (1%)	1,844 (1%)	6,845 (1%)
Total	820,037 (100%)	201,205 (100%)	1,030,832 (100%)*

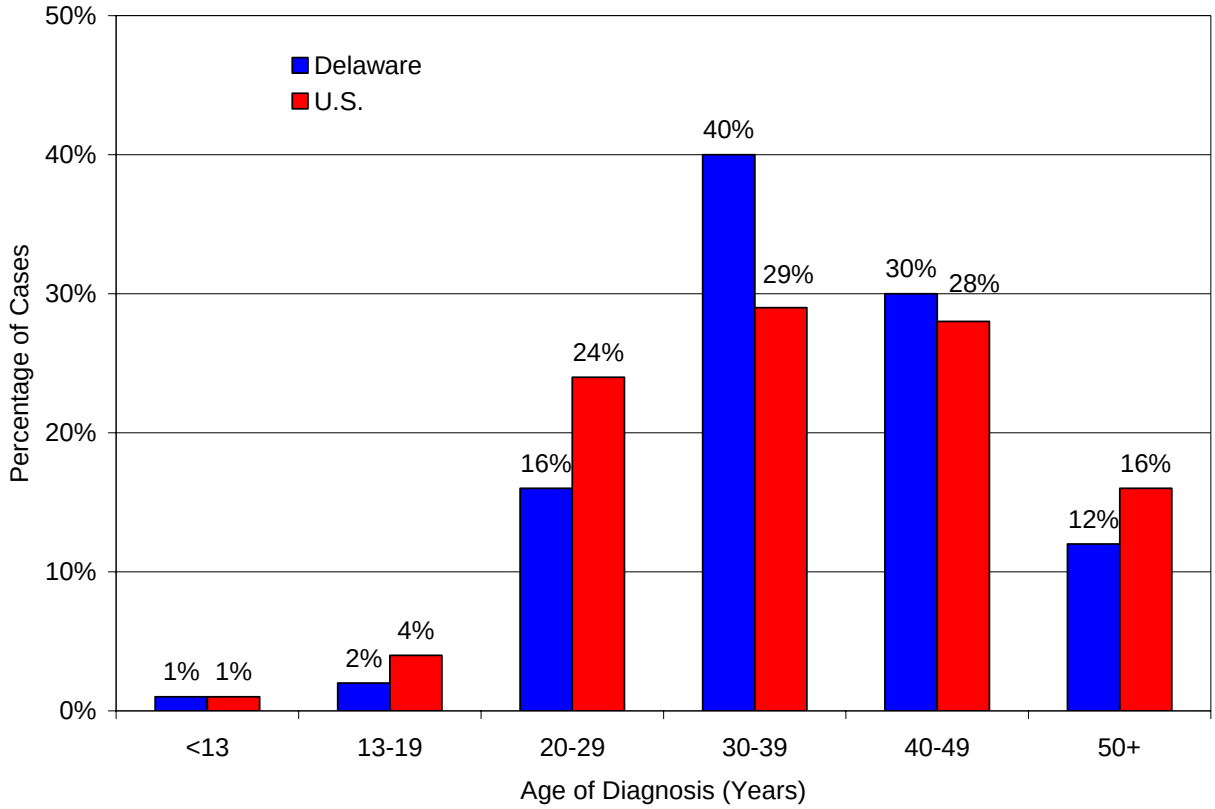
Source: CDC, HIV/AIDS Surveillance Report
***Includes national pediatric cases = 9,590 (no breakdown available) and 4 people of unknown sex**

Unlike the African-American population, Hispanic Delawareans do not carry a disproportionate share of the state's AIDS burden. Hispanics represent approximately 6% of the state's population and account for nearly 7% of AIDS cases diagnosed in the Delaware.

Age of Diagnosis

Age of diagnosis trends among Delaware's HIV/AIDS cases are similar to those observed in the U.S. (Figure 5, next page). At both the state and national levels, the majority of HIV/AIDS cases are diagnosed among adults age 30-39. HIV/AIDS diagnoses are less common among young children and older adults. In Delaware and the U.S., only 1% of cases are diagnosed among youth under the age of 13. Adults age 50 and older account for 12% of HIV/AIDS cases in Delaware and 16% of cases nationwide.

Figure 5: HIV/AIDS Cases, by Age of Diagnosis: Delaware vs. U.S., 1981-2008

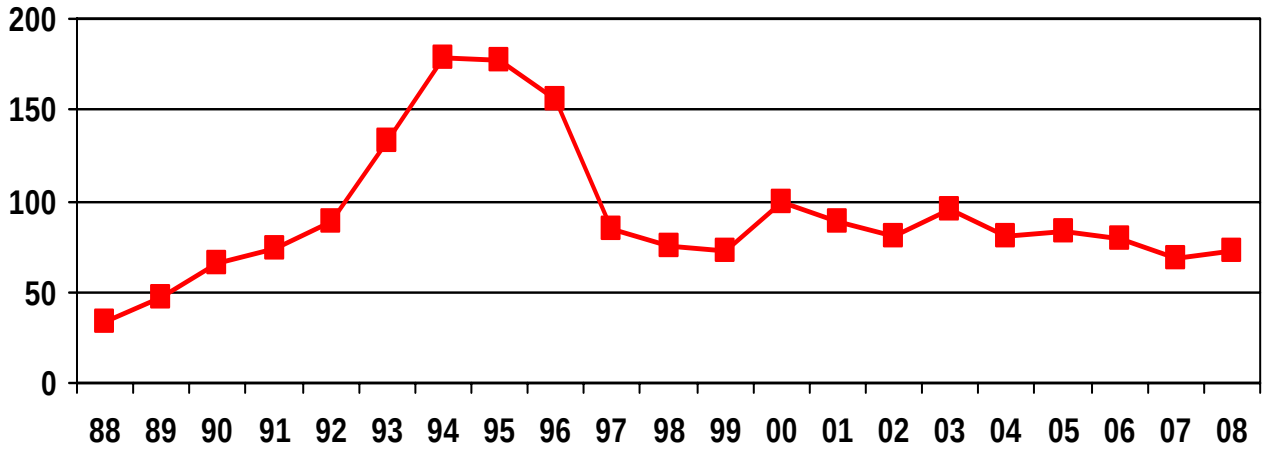


Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Mortality

Between 1981 and 2008, a total of 2,047 Delawareans died from AIDS. The annual number of deaths due to AIDS in Delaware has declined in recent years (Figure 6).

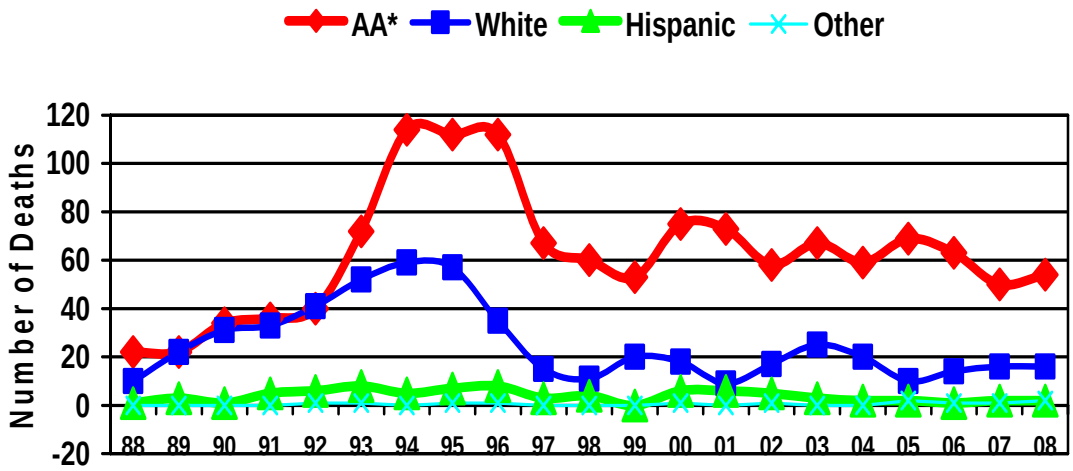
Figure 6: Delaware AIDS Deaths, by Year: 1988-2008 (N=1,933)



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Following a peak in the early 1990s, the annual number of AIDS deaths decreased among Delawareans of all races (Figure 7). However, since 1992, the decline in the annual number of AIDS-related deaths among African-American Delawareans has been especially noteworthy.

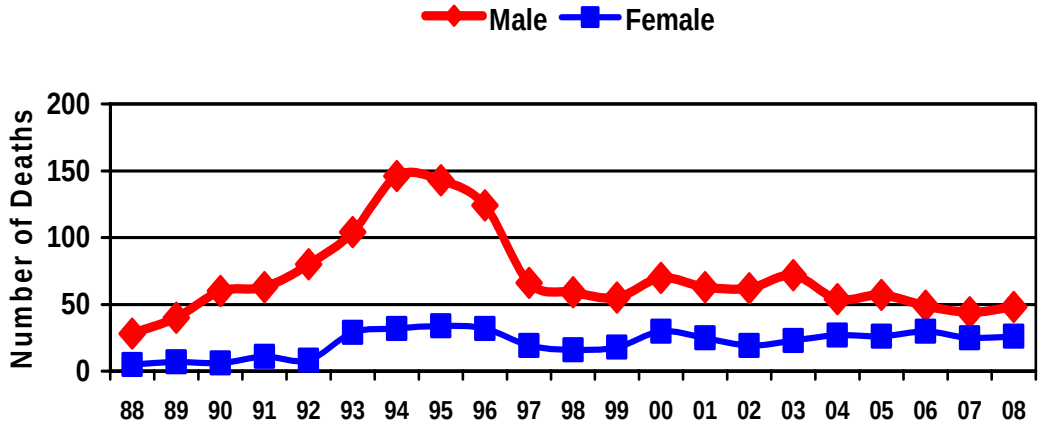
Figure 7: Delaware AIDS Deaths by Race, 1988 to 2008 (N=1,933)



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Among Delaware males, the annual number of AIDS-related deaths has declined sharply since its peak during the mid-1990s (Figure 8, below). Conversely, AIDS-related deaths among Delawarean women experienced a minor peak during the mid-1990s, and have remained fairly stable through 2008 (Figure 8).

Figure 8: Delaware AIDS Deaths by Gender, 1988 to 2008 (N=1,933)



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Delaware's trends in AIDS-related deaths follow those observed at the national level. The annual number of AIDS deaths has declined among U.S. Caucasians, African-Americans, and Hispanics. On the other hand, annual AIDS-related deaths have slightly increased among the Asian/Pacific Islander and American Indian/Alaskan Native populations in the U.S. The annual number of AIDS-related deaths has declined across

all geographic regions. Currently, the Northeast and South experience the highest number of AIDS deaths in the nation; the Midwest region of the U.S. continues to experience the fewest AIDS-related deaths. Behavioral surveillance data also indicate that the number of annual AIDS-related deaths continue to decline among men who have sex with men (MSM) and intravenous drug users (IDU).

Factors contributing to this decline include earlier diagnosis of HIV/AIDS, progress in the medical management of HIV, and the introduction of highly active anti-retroviral therapy (HAART). As survival rates increase for persons living with HIV/AIDS, society will face increased costs associated with chronic disease management.

3. Mode of Disease Transmission

Transmission Category Hierarchy

In an effort to monitor disease transmission trends, newly diagnosed HIV/AIDS cases are assigned to a category in the CDC-established HIV transmission risk hierarchy, shown below. Case assignment indicates the risk factor most likely to have been responsible for HIV transmission. If a newly diagnosed case reports more than one suspected mode of HIV transmission, the case is classified using the highest risk category in the hierarchy. The one exception to this rule involves males with a history of both sexual contact with other men and injecting drugs; these individuals comprise a separate exposure category (Risk Category 3).

1. Men who have sex with men
2. Injecting drug user
3. Men who have sex with men and inject drugs
4. Heterosexual contact "sex partner at risk"
    a. Sexual contact with an injecting drug user
    b. Sexual contact with a bisexual male
    c. Sexual contact with a person with hemophilia
    d. Sexual contact with a transfusion recipient with HIV
    e. Sexual contact with a transplant recipient with HIV
    f. Sexual contact with a person with HIV/AIDS; with a risk unspecified
5. Transfusion of blood/blood components
6. Transplant of tissue/organs or artificial insemination
7. Worked in a health care or laboratory setting

A relatively sizeable proportion of HIV/AIDS cases are unable to be assigned to an exposure risk category; these cases are referred to as "no identified risk" (NIR) cases. In the U.S., 25% of HIV cases and 11% of AIDS cases reported from 1981-2007 were classified as NIR cases. The NIR category generally includes cases for which the reporting source does not have the risk information to report. For example, private laboratories and blood banks generally do not have data pertaining to individuals' risk behaviors. Even hospital-reported HIV/AIDS cases may lack risk factor data; occasionally, lab tests are completed during inpatient hospitalizations and results arrive after patient discharge.

The CDC-established standard for case assignment to a transmission risk category is 85%. That is, according to CDC guidelines, no more than 15% of HIV/AIDS cases should be classified as NIR. Surveillance personnel in Delaware place a high priority on case assignment to the appropriate transmission risk category. Among all cases ever diagnosed in Delaware, only 5.6% and 2.0% of HIV and AIDS cases, respectively, are classified as NIR.

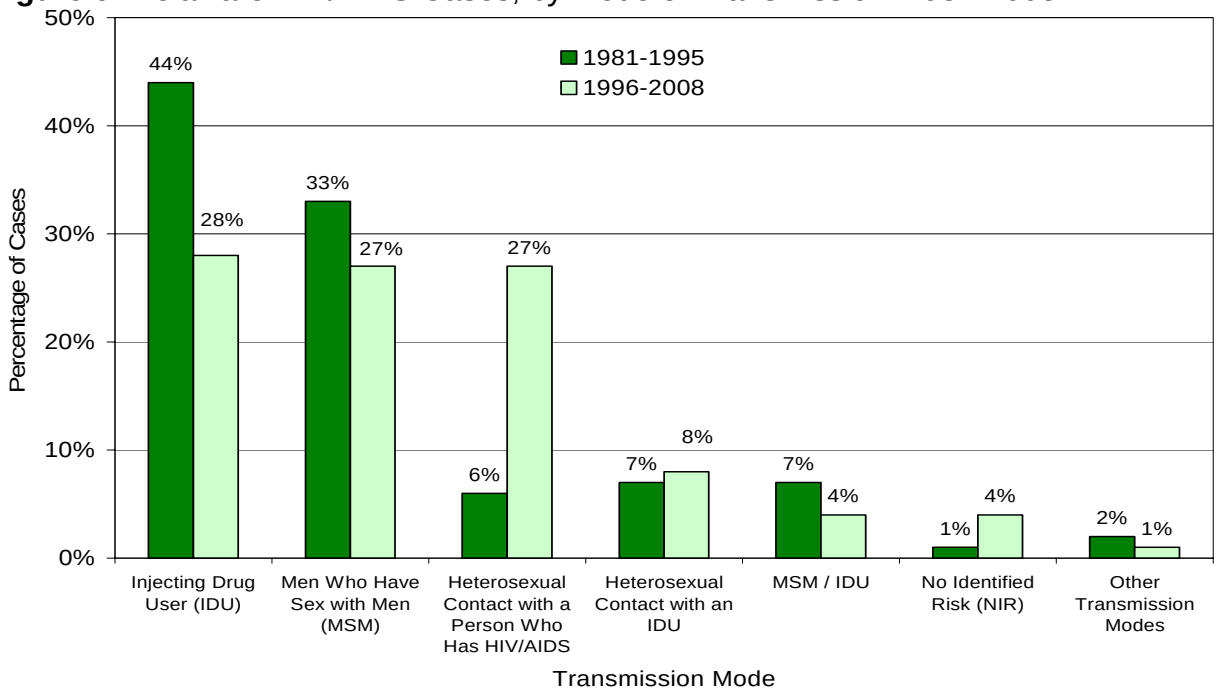
Mode of HIV Transmission:

The mode of HIV transmission within a population reflects individuals' behavioral risk factors. Interestingly, patterns of disease transmission shift over time. In Delaware, mode of HIV transmission at the beginning of the HIV/AIDS epidemic (1981-1995) differs from patterns of disease transmission over the past decade (Table 7, below).

From 1996-2008, the percentage of newly diagnosed HIV/AIDS cases attributable to injection drug use (IDU) dropped substantially. From 1981-1995, nearly one-half of all HIV/AIDS cases diagnosed among Delawareans were attributable to IDU. However, since 1996, the percentage of cases attributable to IDU fell to less than one-third. The proportion of Delaware's HIV/AIDS cases diagnosed among men who have sex with men (MSM) dropped from 33% to 27% between 1981-1995 and 1996-2008, respectively.

In Delaware, the percentage of cases attributable to heterosexual contact with a person who has HIV/AIDS substantially increased between 1981-1995 and 1996-2008. Occasionally, cases attributable to heterosexual contact with a person who has HIV/AIDS are later re-assigned to a different risk category if it is determined that the sexual partner who has HIV/AIDS is also an IDU and/or a bisexual. Cases attributable to other modes of transmission include pediatric cases infected via perinatal exposure, transfusion recipients, and those infected from working in a healthcare or laboratory setting. Cases representing other modes of transmission continue to account for a very small percentage of all HIV/AIDS cases in the state.

Figure 9: Delaware HIV/AIDS Cases, by Mode of Transmission: 1981-2008



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Table 7: Delaware HIV/AIDS Cases, by Mode of Transmission: 1981-2008

	1981-1995 N (%)	1996-2008 N (%)	Total (1981-2008) N (%)
Mode of Transmission			
Injection Drug Use (IDU)	1,040 (44%)	765 (28%)	1,805 (35%)
Men Who have Sex with Men (MSM)	784 (33%)	745 (27%)	1,529 (30%)
Heterosexual contact with PWH/A	134 (6%)	755 (27%)	889 (17%)
Heterosexual contact with an IDU	175 (7%)	234 (8%)	409 (8%)
IDU and are MSM	160 (7%)	98 (4%)	258 (5%)
No Identified Risk (NIR)	22 (1%)	121 (4%)	143 (3%)
Other Modes	43 (12%)	36 (1%)	79 (2%)
Totals	2,358 (100%)	2,754 (100%)	5,112 (100%)

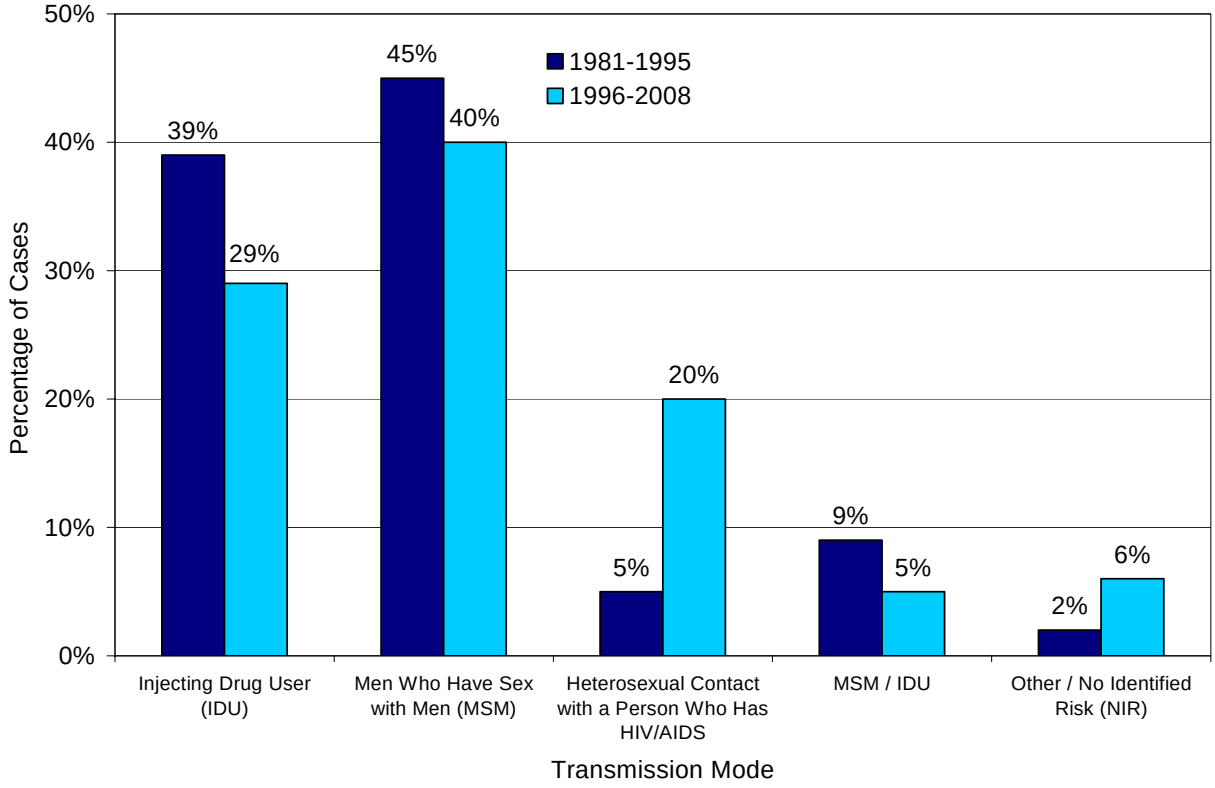
Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Historical trends in the mode of HIV transmission among Delawareans differ by gender. Gender-specific modes of HIV transmission are explored below in more detail.

HIV Transmission among Delawarean Males

Between 1981-1995 and 1996-2008, the percentage of male HIV/AIDS cases attributable to IDU, MSM, and MSM/IDU declined in Delaware. As shown in figure 10 (next page), IDU-attributable cases among males fell from 39% from 1981-1995 to 29% from 1996-2008. Similarly, between these two time periods, MSM-attributable cases fell from 45% to 40% and MSM/IDU-attributable cases fell from 9% to 5%. In Delaware, the percentage of male HIV/AIDS cases attributable to heterosexual contact has sharply increased in recent years. From 1981-1995, heterosexual contact with an HIV-positive female accounted for just 5% of cases. From 1996-2008, 20% of all male HIV/AIDS cases were attributable to heterosexual contacted with an infected individual.

Figure 10: Delaware HIV/AIDS Cases among Males, by Mode of Transmission: 1981-2008



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

HIV/AIDS cases attributable to different modes of transmission (i.e., IDU, MSM, MSM/IDU, and heterosexual contact) often differ demographically. Below, the subpopulation of Delawarean men diagnosed with HIV/AIDS is explored in detail, by mode of disease transmission.

Men Who Have Sex with Men (MSM). Since 1981, a total of 1,529 MSM-attributable cases have been diagnosed among males in Delaware. MSM cases account for 42% of all HIV/AIDS cases ever diagnosed among males in Delaware. The majority (66%) of MSM cases were diagnosed in New Castle County. Kent and Sussex Counties accounted for 10% and 24% of MSM-attributable cases, respectively.

As shown in Table 8 (next page), the demographic composition of HIV/AIDS cases attributable to MSM has shifted since the early 1980s. From 1981-1995, 62% of MSM-related cases in Delaware were diagnosed among Caucasian men. From 1996-2008, the percentage of Caucasian MSM-related cases had fallen to 42%. Conversely, the percentage of MSM-attributable cases diagnosed among African-American males increased from 34% from 1981-1995 to 51% from 1996-2008. The proportion of MSM-related cases among Hispanic Delawareans has remained fairly stable since 1981. In terms of age of diagnosis, the majority of MSM-related cases were diagnosed among men ages 20-29 and 30-39.

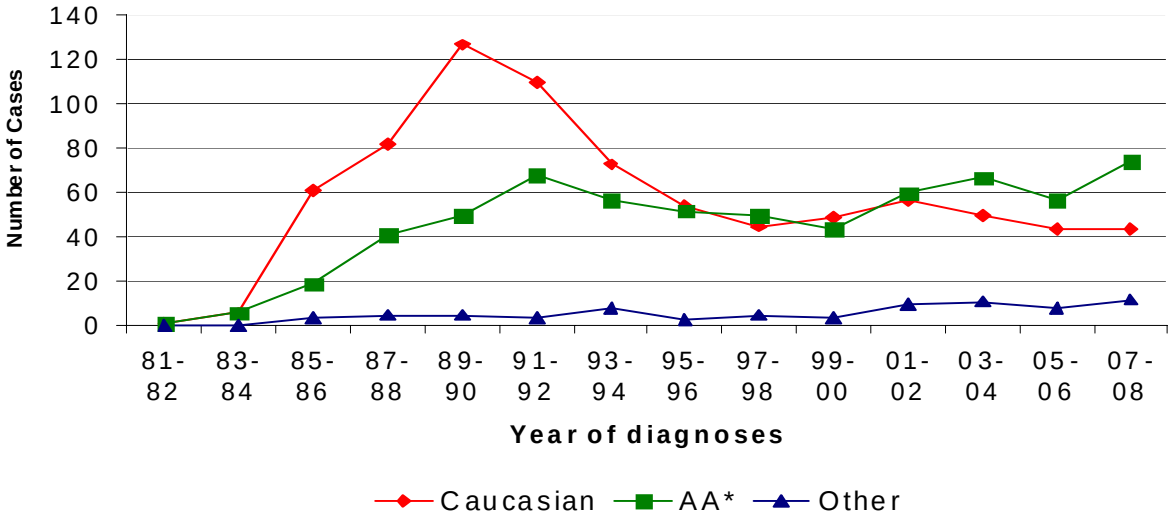
Table 8: Delaware HIV/AIDS Cases Attributable to MSM, by Race and Age: 1981-2008

	1981-1995 N (%)	1996-2008 N (%)	Total (1981-2008) N (%)
Total Cases	784	745	1,529
Race			
Caucasian	489 (62%)	314 (42%)	803 (53%)
African-American	266 (34%)	378 (51%)	644 (42%)
Hispanic/Other	29 (4%)	53 (7%)	82 (5%)
Age Group (Years)			
13-19	6 (1%)	27 (4%)	33 (2%)
20-29	256 (33%)	194 (26%)	450 (29%)
30-39	327 (42%)	266 (36%)	593 (39%)
40-49	128 (16%)	179 (24%)	307 (20%)
50+	67 (9%)	79 (11%)	146 (10%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

As shown below in Figure 11, the number of MSM-attributable HIV/AIDS cases diagnosed among Caucasian males in Delaware peaked in the late 1980s but has declined fairly steadily over the past two decades. Conversely, the number of MSM-attributable cases among African Americans in Delaware has generally increased over time.

Figure 11: Delaware HIV/AIDS Cases Attributable to MSM, by Race: 1981-2008



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Male Injecting Drug Users (IDU). From 1981-2008, 1,228 IDU-attributable cases of HIV/AIDS were diagnosed among Delawarean males. IDU-attributable cases account for 34% of all cases ever diagnosed among Delawarean men. Eighty-six percent of all male IDU-attributable cases were diagnosed among New Castle County residents; Kent and Sussex Counties account for 6% and 8% of IDU-attributable cases among males, respectively.

The vast majority (81%) of all IDU-attributable cases among Delawarean men were diagnosed within the African-American population. The percentage of IDU-attributable cases among African-Americans has remained stable since the early 1980s. The percentage of IDU cases among Caucasian males increased from 10% from 1981-1995 to 14% from 1996-2008. During the same time period, the number of IDU-attributable HIV/AIDS cases among Hispanic males decreased from 9% to 6%.

Of particular note is the substantial decline in the percentage of IDU-attributable cases among young adult Delawarean males. Between 1981-1995 and 1996-2008, the percentage of IDU cases diagnosed among males ages 20-29 and 30-39 fell 14 and 24 percentage points, respectively. During the same time period, the percentage of IDU cases among Delawarean males age 40-49 and 50 and older increased 26 and 13 percentage points, respectively.

Table 9: Delaware HIV/AIDS Cases Among Delawarean Males, Attributable to IDU, by Race and Age: 1981-2008

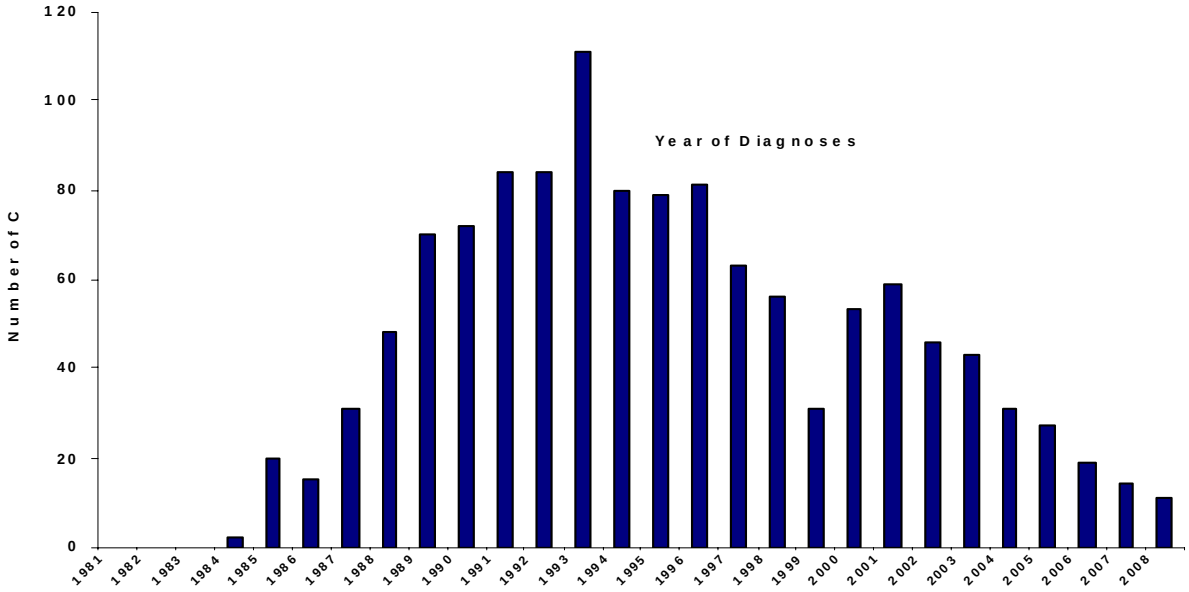
	1981-1995 N (%)	1996-2008 N (%)	Total (1981-2008) N (%)
Total Cases	694	534	1,228
Race			
Caucasian	73 (10%)	74 (14%)	147 (12%)
African-American	562 (81%)	428 (80%)	990 (81%)
Hispanic/Other	59 (9%)	32 (6%)	91 (7%)
Age Group (Years)			
13-19	0 (0%)	1 (<1%)	1 (< 1%)
20-29	135 (19%)	27 (5%)	162 (13%)
30-39	360 (52%)	147 (28%)	507 (41%)
40-49	162 (23%)	263 (49%)	425 (35%)
50+	37 (5%)	96 (18%)	133 (11%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

As shown Figure 12 (next page), the annual number of IDU-attributable cases diagnosed among Delawarean men has declined fairly steadily since the mid 1990s. The peak in male IDU cases that occurred in 1993 largely reflects the expansion of the AIDS definition in that same year.

It is likely that the sub-population of male IDUs in Delaware that has not yet adopted safer injection and sexual practices has reached near complete saturation in terms of HIV/AIDS. That is, the annual number of newly diagnosed IDU-attributable cases among males will likely reflect the rate by which new male IDUs join the population and fail to adopt safer injection practices.

Figure 12: Delaware HIV/AIDS Cases Among Delawarean Males, Attributable to IDU, by Year of Diagnosis and Age: 1981-2008



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Men Who Have Sex with Men and Who Also Inject Drugs (MSM/IDU). Since 1981, 258 MSM/IDU-attributable cases of HIV/AIDS have been diagnosed among Delawarean men. MSM/IDU cases account for 7% of all male HIV/AIDS cases ever diagnosed in the state. The majority of MSM/IDU cases (79%) were diagnosed among males in New Castle County; Kent and Sussex Counties account for 8% and 12% of MSM/IDU cases, respectively.

Approximately two-thirds of all MSM/IDU cases were diagnosed among African-American males. Caucasian males account for 30% of MSM/IDU cases ever diagnosed in the state. From 1981-1995 to 1996-2008, the overall number of MSM/IDU cases declined approximately 39%. Despite this decrease in the overall number of MSM/IDU-attributable cases over the past 12 years, African-American males continue to account for the majority of such cases.

From 1981-1995, 53% of all MSM/IDU cases were diagnosed among males age 30-39. However, from 1996-2008, the age group accounting for the largest percentage of MSM/IDU cases (43%) were males age 40-49.

Table 10: Delaware HIV/AIDS Cases Attributable to MSM Who Are Also IDU, by Year of Diagnosis and Age: 1981-2008

	1981-1995 N (%)	1996-2008 N (%)	Total (1981-2008) N (%)
Total Cases	160	98	258
Race			
Caucasian	48 (30%)	30 (31%)	78 (30%)
African-American	103 (64%)	65 (66%)	168 (65%)
Hispanic/Other	9 (6%)	3 (3%)	12 (5%)
Age Group (Years)			
13-19	2 (1%)	0 (0%)	2 (< 1%)
20-29	44 (28%)	9 (9%)	53 (21%)
30-39	84 (53%)	37 (38%)	121 (47%)
40-49	27 (17%)	42 (43%)	69 (27%)
50+	3 (2%)	10 (10%)	13 (5%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Heterosexual Transmission among Males. Heterosexual transmission accounted for 453 HIV/AIDS cases diagnosed among Delawarean males since 1981. Approximately 13% of all HIV/AIDS cases ever diagnosed among Delawarean men are attributable to heterosexual contact with an HIV-positive partner. Just over 70% of male cases attributable to heterosexual transmission were diagnosed among New Castle County males. Sussex County males accounted for 18% of all HIV/AIDS cases attributable to heterosexual transmission. The remaining 11% of male cases due to heterosexual transmission were diagnosed among Kent County males.

From 1981-1995, 86 male cases of HIV/AIDS were attributable to heterosexual contact. From 1996-2008, this number ballooned to 367, reflecting a 327% increase in the number of male cases attributable to heterosexual transmission. African-American males continue to account for approximately three-quarters of cases contracted through heterosexual transmission. The percentage of male cases attributable to heterosexual contact slightly decreased among Caucasian males and slightly increased among Hispanic males between the two time periods. The relatively low percentage of cases due to heterosexual transmission among Hispanic males may partially reflect an inadequate level of HIV outreach and testing efforts in this community.

The percentage of male cases attributable to heterosexual contact has decreased substantially among males age 20-29, falling from 29% from 1981-1995 to 12% from 1996-2008. During the same time periods, the percentage of cases attributable to heterosexual transmission increased dramatically among males age 40-49 and 50 and older.

Table 11: Delaware HIV/AIDS Cases among Males, Attributable to Heterosexual Contact, by Year of Diagnosis and Age: 1981-2008

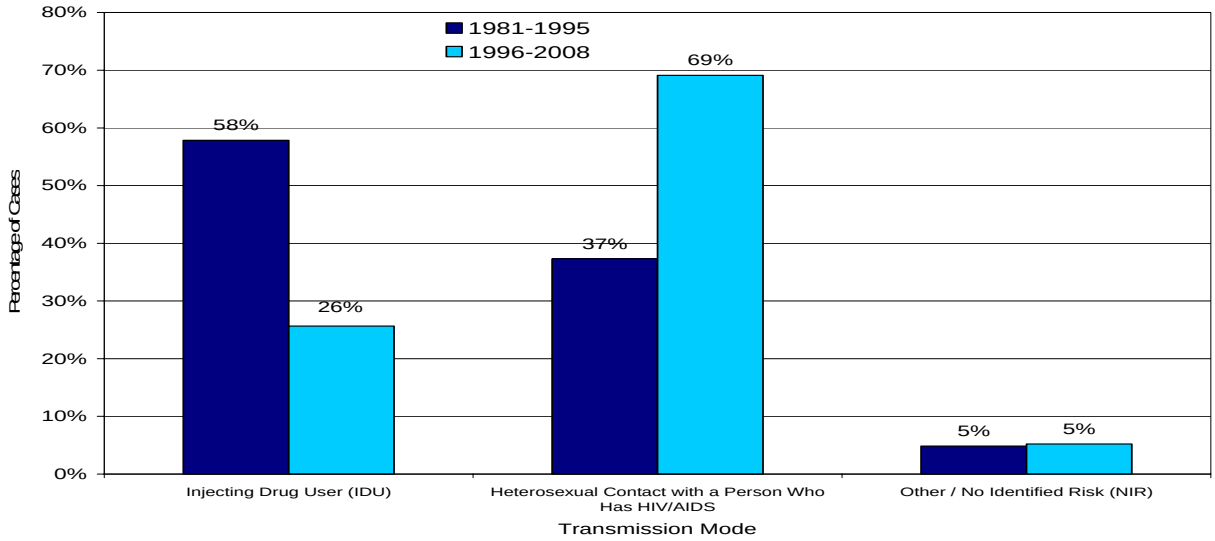
	1981-1995 N (%)	1996-2008 N (%)	Total (1981-2008) N (%)
Total Cases	86	367	453
Race			
Caucasian	20 (23%)	57 (16%)	77 (17%)
African-American	62 (72%)	274 (75%)	336 (74%)
Hispanic/Other	4 (5%)	36 (10%)	40 (9%)
Age Group (Years)			
13-19	0 (0%)	8 (2%)	8 (2%)
20-29	25 (29%)	45 (12%)	70 (15%)
30-39	32 (37%)	112 (31%)	144 (32%)
40-49	16 (19%)	116 (32%)	132 (29%)
50+	13 (15%)	86 (23%)	99 (22%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

HIV Transmission Mode among Delawarean Females

Between 1981-1995 and 1996-2008, the percentage of female HIV/AIDS cases attributable to IDU declined in Delaware. As shown in figure 13 below, IDU-attributable cases among females fell from 58% from 1981-1995 to 26% from 1996-2008. In Delaware, the percentage of female HIV/AIDS cases attributable to heterosexual contact has sharply increased in recent years. From 1981-1995, heterosexual contact with an HIV-positive male accounted for 37% of cases. From 1996-2008, 69% of all female HIV/AIDS cases were attributable to heterosexual contact with an infected individual.

Figure 13: Delaware HIV/AIDS Cases among Females, by Mode of Transmission: 1981-2008.



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Female Injecting Drug Users (IDUs). Since 1981, 577 IDU-attributable cases of HIV/AIDS have been diagnosed among Delawarean females. IDU-attributable cases account for 39% of all HIV/AIDS cases ever diagnosed among Delawarean women. Eighty-nine percent of female IDU-attributable cases were diagnosed among female residents in New Castle County. Kent and Sussex Counties accounted for 6% and 5% of IDU-attributable cases among females, respectively.

From 1981-1995 to 1996-2008, the number of IDU-attributable cases diagnosed among Delaware women fell 33%. While the percentage of IDU-attributable cases among African-American females fell from 82% from 1981-1995 to 74% from 1996-2008, this population continues to account for the majority of such cases in the state. Caucasian females accounted for 14% and 19% of IDU-attributable cases from 1981-1995 and 1996-2008, respectively. Since 1981, Hispanic females have only accounted for 5% of IDU-attributable HIV/AIDS cases in Delaware.

The percentage of IDU-attributable cases among females age 20-29 sharply declined from 34% from 1981-1995 to 10% from 1996-2008. During the same time period, the percentage of IDU-attributable cases increased among Delawarean females age 40-49 and 50 and older.

Table 12: Delaware HIV/AIDS Cases Among Delawarean Females, Attributable to IDU, by Race and Age: 1981-2008

	1981-1995 N (%)	1996-2008 N (%)	Total (1981-2008) N (%)
Total Cases	346	231	577
Race			
Caucasian	48 (14%)	45 (19%)	93 (16%)
African-American	284 (82%)	172 (74%)	456 (79%)
Hispanic/Other	14 (4%)	14 (6%)	28 (5%)
Age Group (Years)			
13-19	7 (2%)	7 (3%)	14 (2%)
20-29	117 (34%)	23 (10%)	140 (24%)
30-39	172 (50%)	93 (40%)	265 (46%)
40-49	45 (13%)	83 (36%)	128 (22%)
50+	5 (1%)	25 (11%)	30 (5%)

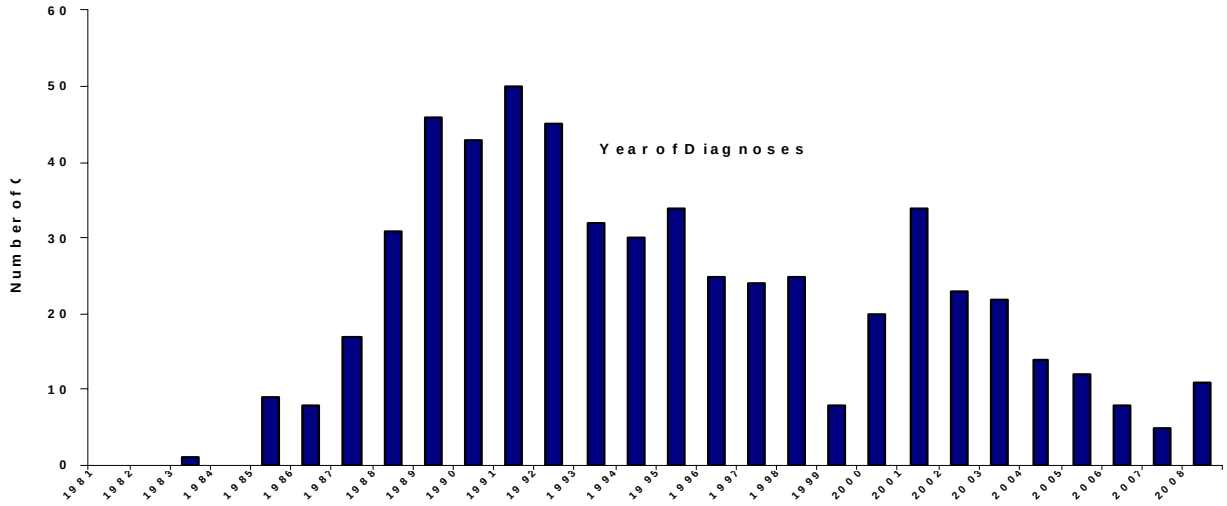
Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

As shown in Figure 14 (next page), the annual number of IDU-attributable cases diagnosed among Delawarean females peaked in 1991 and again in 2001. From 2001-2007, the annual number of IDU-attributable cases among females steadily declined. In 2008, the annual number of IDU-attributable cases experienced a minor increase; however, more data are necessary to determine if this minor increase is part of trend or is simply a single-year aberration.

As with males, it is likely that the sub-population of female IDUs in Delaware that has not yet adopted safer injection and sexual practices has reached near complete

saturation in terms of HIV/AIDS. That is, the annual number of newly diagnosed IDU-attributable cases among females will likely reflect the rate by which new female IDUs join the population and fail to adopt safer injection practices.

Figure 14: Delaware HIV/AIDS Cases Among Delawarean Females, Attributable to IDU, by Year of Diagnosis and Age: 1981-2008



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

Heterosexual Transmission among Females. Heterosexual transmission accounted for 845 HIV/AIDS cases diagnosed among Delawarean females since 1981. Among all HIV/AIDS cases ever diagnosed among Delawarean women, 56% were attributable to heterosexual HIV transmission. New Castle County females account for 73% of heterosexual transmission cases diagnosed among Delawarean women. Kent and Sussex County females accounted for 13% and 14% of all female HIV/AIDS cases attributable to heterosexual transmission, respectively.

Table 13: Delaware HIV/AIDS Cases among Females, Attributable to Heterosexual Contact, by Race and Age: 1981-2008

	1981-1995 N (%)	1996-2008 N (%)	Total (1981-2008) N (%)
Total Cases	223	622	845
Race			
Caucasian	51 (23%)	104 (17%)	155 (18%)
African-American	154 (69%)	486 (78%)	640 (76%)
Hispanic/Other	18 (8%)	32 (5%)	50 (6%)
Age Group (Years)			
13-19	17 (8%)	31 (5%)	48 (6%)
20-29	81 (36%)	149 (24%)	230 (27%)
30-39	85 (38%)	199 (32%)	284 (34%)
40-49	28 (13%)	167 (27%)	195 (23%)
50+	12 (5%)	76 (12%)	88 (10%)

Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

4. Pediatric HIV/AIDS Cases in Delaware

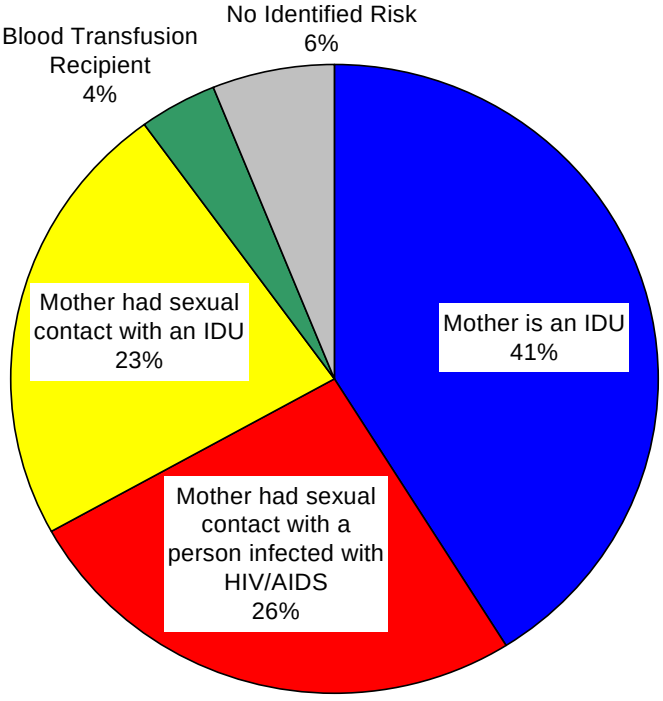
From 1981-2008, 53 children under the age of 13 were diagnosed with HIV/AIDS and 10 children died from the disease. In 2007, Delaware ranked 2nd among all states in terms of pediatric HIV/AIDS prevalence rates. In that year, Delaware's pediatric HIV/AIDS prevalence rate was 229% greater than that of the U.S. (5.6 per 100,000 vs. 1.7 per 100,000, respectively).

The majority (75%) of pediatric HIV/AIDS cases in Delaware were diagnosed among African-American youth. Caucasian and Hispanic youth accounted for 15% and 8% of pediatric HIV/AIDS cases, respectively.

Seventy-five percent of pediatric HIV/AIDS cases were diagnosed among youth in New Castle County. Kent and Sussex County youth accounted for 15% and 10% of pediatric HIV/AIDS cases, respectively.

In terms of HIV transmission, perinatal exposure accounts for 90% of pediatric HIV/AIDS cases ever diagnosed in the state. Forty-one percent of pediatric cases contracted the disease from mothers who were IDU. An additional 26% of pediatric cases contracted the disease from mothers who had sexual contact with a person infected with HIV/AIDS. Another 23% of pediatric cases contracted the disease from mothers who had sexual contact with an IDU. Four percent of pediatric cases contracted the disease through blood transfusions.

Figure 15: Delaware Pediatric HIV/AIDS Cases, by Mode of Transmission: 1981-2008



Source: Delaware Evaluation HIV/AIDS Reporting System (EHARS)

5. HIV Counseling and Testing in Delaware

From January 1, 2007 through December 31, 2008, over 30,000 Delawareans received HIV counseling services at one of the state's 45 counseling and testing agencies who run 94 individual sites. During the same two-year time period, 27,769 HIV tests were performed among Delaware residents. Of all HIV tests performed in Delaware between 2007 and 2008, 165 (0.59%) were found to be positive.

As shown in Table 14 (next page), females accounted for 52% of all Delawareans who received counseling services, as well as 52% of all HIV tests performed from 2007-2008. However, females accounted for just 25% of all positive HIV tests during the two-year period.

Slightly less than 50% of all those seeking HIV counseling and testing services were African-American. African-Americans accounted for 68% of all positive HIV tests performed in Delaware from 2007-2008. Caucasians accounted for slightly more than one-third of all Delawareans receiving HIV counseling and testing services; however, they accounted for just over one-fifth of all positive HIV diagnoses.

Delawareans age 20-29 were most likely to obtain HIV counseling and testing services; 44% of all those receiving HIV counseling and 45% of all those tested for HIV were age 20-29. However, Delawareans age 40-49 represented the age group with the largest percentage of HIV positive tests; residents in this age group accounted for 36% of all positive HIV tests diagnosed from 2007-2008.

In terms of transmission risk categories, the largest percentage of Delawareans seeking HIV counseling and testing services included those at risk for the disease through heterosexual contact only. Among this sub-population, just 0.58% of individuals tested were found to be HIV-positive. Interestingly, individuals typically considered at comparatively higher risk for the disease (e.g., heterosexual contact + IDU, sexual contact with a person at risk for HIV/AIDS, sexual contact with a person with HIV/AIDS, MSM, and MSM/IDU) accounted for smaller percentages of Delawareans seeking HIV counseling and testing. The MSM/IDU sub-population had the largest percentage of positive HIV tests from 2007-2008. During this time period, nearly 5% of MSM/IDU individuals who were tested for HIV were found to be positive. It is also important to note that nearly 25% of all those who received HIV counseling and testing services did not acknowledge any transmission risks.

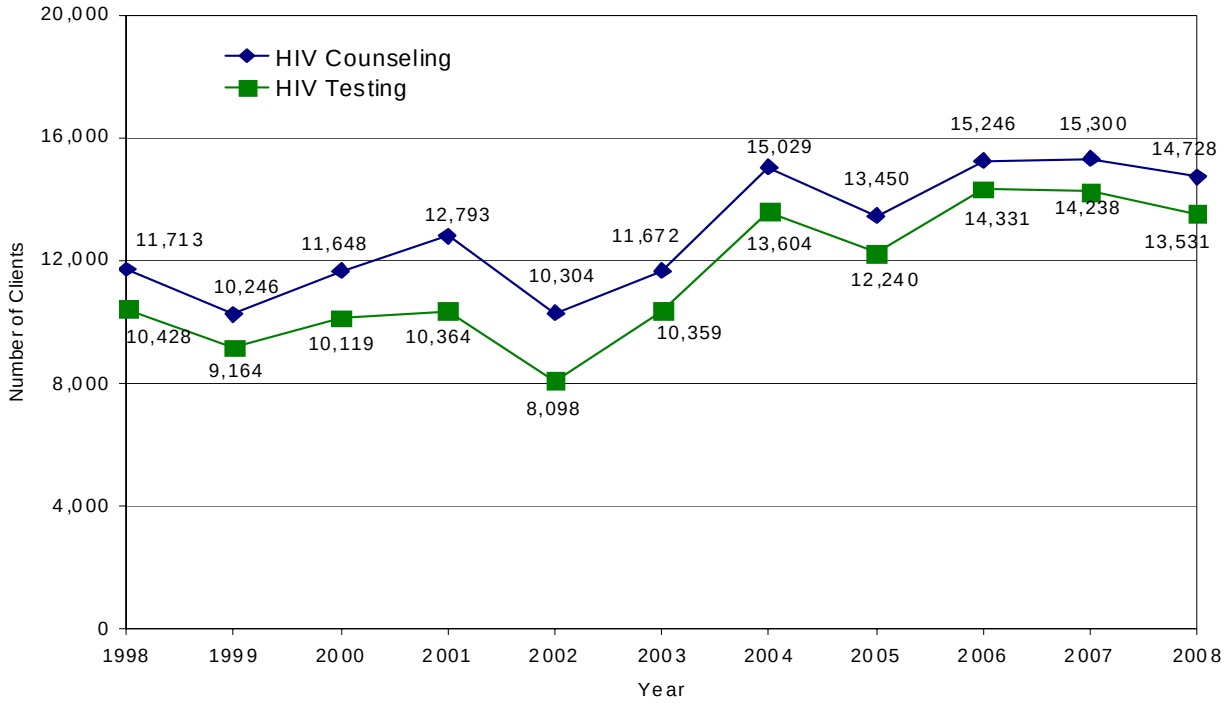
Table 14: Utilization of State HIV Counseling and Testing Services in Delaware, 2007-2008

	Delawareans Counseled (N)	HIV Tests Performed in Delaware (N)	Positive HIV Tests (N)	Positive HIV Tests (%)
Total	**30,028**	**27,769**	**165**	**0.59%**
Gender				
Male	14,479 (48%)	13348 (48%)	123 (75%)	0.92%
Female	15,544 (52%)	14416 (52%)	42 (25%)	0.29%
Not specified	5 (< 1%)	5 (< 1%)	0 (< 1%)	0.00%
Race/Ethnicity				
Caucasian	10,577 (35%)	10050 (36%)	37 (22%)	0.37%
African-American	14,332 (48%)	12,991 (47%)	113 (68%)	0.87%
Hispanic	4,513 (15%)	4,265 (15%)	15 (9%)	0.35%
Asian/Pacific Islander	264 (1%)	185 (1%)	0	0.00%
Am Indian/AK Native	57 (< 1%)	55 (< 1%)	0	0.00%
Other / Not Specified	285 (1%)	223 (1%)	0	0.00%
Age Groups (Years)				
<13	35 (< 1%)	35 (< 1%)	0	0.00%
13 – 19	3,469 (12%)	3,307 (12%)	9 (5%)	0.27%
20 – 29	13,346 (44%)	12,125 (44%)	45 (27%)	0.36%
30 – 39	6,089 (20%)	5,743 (21%)	36 (22%)	0.65%
40 – 49	4,167 (14%)	3,812 (14%)	59 (36%)	1.58%
50+	2,419 (8%)	2,317 (8%)	16 (10%)	0.80%
Age Not Specified	503 (2%)	430 (1%)	0	0.00%
Transmission Risk Category				
Heterosexual Transmission, No Other Risk	9,936 (33%)	9252 (33%)	54 (33%)	0.58%
Sexual Transmission with a Partner at Risk for HIV/AIDS	4705 (16%)	4445 (16%)	7 (4%)	0.16%
MSM	2,122 (7%)	1,624 (6%)	46 (28%)	2.83%
Heterosexual Transmission + IDU	2,010 (7%)	1,773 (6%)	17 (10%)	0.96%
Sexual Transmission with an HIV-positive Partner	596 (2%)	596 (2%)	19 (12%)	3.19%
MSM/IDU	82 (< 1%)	82 (< 1%)	4 (2%)	4.88%
No Acknowledged Risk	7,073 (23%)	6,700 (24%)	18 (11%)	0.27%
Other	3,504 (12%)	3,297 (12%)	0	0.00%

Source: Ryan White Data Reports

As shown in Figure 16 below, the number of Delawareans receiving HIV counseling and testing services has substantially increased in recent years. In 1998, 11,713 Delawareans received HIV counseling and 10,428 were tested for HIV. By 2008, these figures had increased 26% and 30%, respectively, to 14,728 and 13,531 Delawareans.

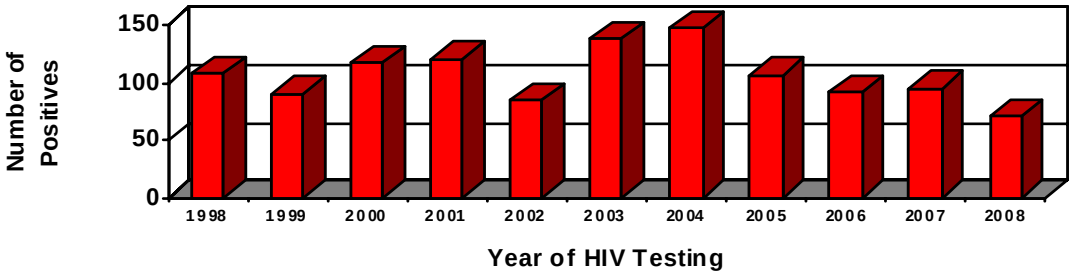
Figure 16: Annual Number of Delawareans Receiving HIV Counseling and Testing Services, 1998-2008



Source: Delaware HIV Counseling and Testing System[5]

Figure 17, below, shows the annual number of positive HIV tests diagnosed among Delawareans since 1998. In 2003 and 2004, the annual number of positive HIV tests peaked among Delawareans. Since then, the annual number of positive HIV tests has trended downward. Future data will assist in confirming this pattern of positive diagnoses statewide.

Figure 17: Annual Number of Positive HIV Tests Diagnosed among Delawareans: 1998-2008



Source: Delaware HIV Counseling and Testing System[5]

6. Utilization Patterns of HIV Services among Delawareans

To investigate utilization patterns of HIV Services across the state, DPH largely relies on data compiled by the Health Resources and Service Administration (HRSA). Delaware grantees who receive funding through multiple title programs submit data to HRSA for national-level HIV/AIDS surveillance purposes.

One such title program is the Ryan White HIV/AIDS Program. Ryan White funding is awarded to grantees for the purposes of improving the quality, availability, and coordination of healthcare and support services for individuals and families affected by HIV/AIDS. Ryan White funding also facilitates access to recommended pharmaceuticals via the AIDS Drug Assistance Program (ADAP).

In 2007 and 2008 combined, a total of 1,372 clients received services funded through Ryan White funding. Table 15, compares the demographic characteristics of the unduplicated HIV-infected clients receiving services that are funded by Ryan White HIV/AIDS Treatment Modernization Act Programs in 2007 through 2008 to the distribution of living HIV/AIDS cases in Delaware through 2008.

Table 15. Demographic characteristics of clients receiving services through Ryan White in 2007 and 2008 compared to Delaware living HIV/AIDS cases

Demographics	Ryan White 2007-2008 N(%)	Living HIV/AIDS Cases Through 2008 N(%)
Total	**1,372 (100%)**	**3,470 (100%)**
Ethnicity		
Hispanic or Latino Origin	47 (3%)	241 (7%)
Non-Hispanic	1,325 (97%)	3,229 (93%)
Unknown/Unreported Ethnicity	0 (0%)	0 (0%)
Race – (Non Hispanic)		
Caucasian (Non-Hispanic)	379 (29%)	1,011 (31%)
African American (Non-Hispanic)	919 (69%)	2,189 (68%)
Other*	26 (2%)	29 (1%)
Unknown/Unreported Race	1 (<1%)	0 (0%)
Gender		
Male	888 (65%)	2,370 (68%)
Female	480 (34%)	1,100 (32%)
Unknown/Transgender	4 (<1%)	0 (0%)
Age		
Less than 13 years	4 (<1%)	30 (1%)
13 - 19	2 (<1%)	83 (2%)
20 - 29	72 (5%)	646 (19%)
30 - 39	209 (15%)	1,298 (37%)
40 - 49	560 (41%)	1,037 (30%)
50+	525 (38%)	376 (11%)
Unknown/Unreported	0 (0%)	0 (0%)

Source: Ryan White Data Reports/EHARS *Other includes Asian, American Indian, and Multi-racial

Table 16. Demographic characteristics of clients served in 2007-2008 AIDS Drug Assistance Program (ADAP) compared to living Delaware HIV/AIDS reported cases through 2008

Client Characteristics	ADAP 2007-2008 N(%)	Living with HIV/AIDS Through 2008 N(%)
Total	**934 (100%)**	**3,470 (100%)**
Gender		
Male	615 (66%)	2,370 (68%)
Female	317 (34%)	1,100 (32%)
Unknown/Trans	2 (0%)	0 (0%)
Ethnicity		
Hispanic/Latino	37 (4%)	200 (6%)
Non-Hispanic or Latino	897 (96%)	3,270 (94%)
Race		
Caucasian	280 (30%)	1,011 (29%)
African American	608 (65%)	2,189 (63%)
Other/Unknown	46 (5%)	270 (8%)
Age (Years)		
0-19	5 (1%)	113 (3%)
20-29	64 (7%)	646 (19%)
30-39	159 (17%)	1,298 (37%)
40-49	378 (40%)	1,037 (30%)
50+	328 (35%)	376 (11%)

Source: Ryan White Data Reports, Delaware Evaluation HIV/AIDS Reporting System (EHARS)

In Delaware, Ryan White Treatment Modernization Act funding was awarded to the following three provider types:

1. **Hospital-Based Clinics**
    a. A.I. DuPont Hospital for Children
    b. Infectious Disease Wellness Clinics (IDWC) jointly sponsored by Christiana Care Health Services and DPH
        i. Wilmington Hospital Annex
        ii. Porter State Service Center
        iii. Kent Wellness
        iv. Sussex Wellness

2. **Community-Based Organizations (CBOs)**
    a. AIDS Delaware
    b. Beautiful Gate Outreach Center
    c. Brandywine Counseling Incorporated
    d. Case Management Services
    e. Catholic Charities
    f. Central Delaware Committee on Drug and Alcohol Abuse Inc

g. Connections Community Support Programs Inc
h. Delaware Center for Justice
i. Delaware HIV Consortium
j. Ministry of Caring
k. Sussex County AIDS Council

3. Delaware Division of Public Health (DPH)

Ryan White funding covers a wide range of support services to residents affected by HIV/AIDS. Below is a list of services provided by Ryan White funding; in parentheses is the number of Delawareans who accessed the particular service from 2007-2008:

- Health education and case management services (929)
- Dental services (1167)
- Food-bank or home food deliveries (715)
- Direct State Services including nutritional supplements, disposable medical supplies, eye exams, and eye glasses (442)
- Emergency financial assistance (333)
- Transportation services (328)
- Housing assistance services (153)
- Health insurance services (128)
- Mental health and nutritional counseling (14)
- Durable medical supplies (6)

Infectious Disease Wellness Clinics (IDWCs) are especially important to Delawareans affected by HIV/AIDS. In 2008, IDWCs served as the main treatment location for 44% and 54% of all Delawareans living with HIV and AIDS, respectively. The majority of Delawareans with HIV/AIDS receive treatment from IDWCs regardless of county of residence.

In 2008, 1,440 Delawareans with HIV/AIDS accessed services at one of the state's IDWCs. Seventy-eight percent of those received Highly Active Antiretroviral Therapy (HAART) at an IDWC location. In addition to treating HIV/AIDS, IDWCs perform other important wellness services including TB, STI, and Hepatitis C screening and treatment.

IDWCs also provide critical gynecological/obstetric care to Delaware women with HIV/AIDS. In 2008, 548 Delaware females with HIV/AIDS accessed services at one of the states IDWCs. IDWCs are equipped to perform pelvic examinations and pap tests. Of the 548 women accessing IDWC services, 22 (4%) were pregnant. Fifteen of the 22 pregnant women (68%) began receiving prenatal care in the first trimester of pregnancy. An additional 5 pregnant women began receiving prenatal care in the second trimester. All 22 pregnant women received antiretroviral medication to prevent transmission of HIV to their children. In total, 18 infants were born to the 22 pregnant HIV-positive females; none of the 18 children were HIV-positive.

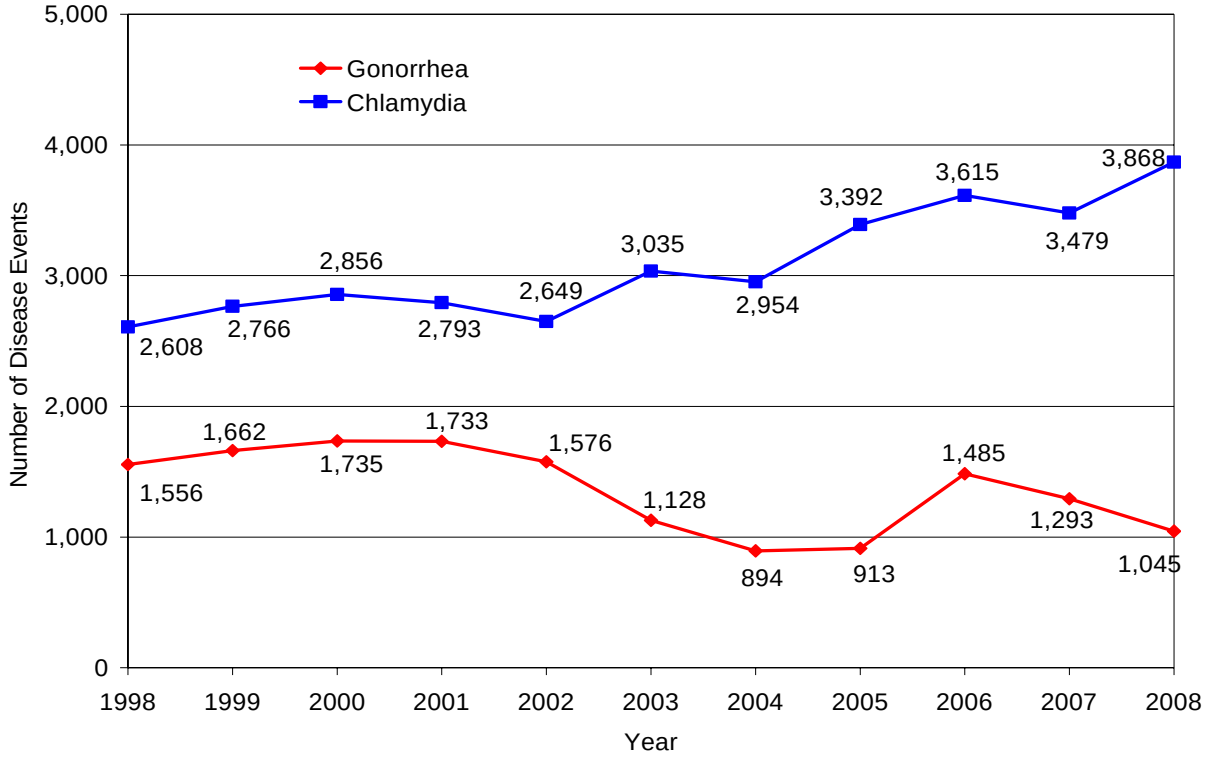
7. Sexually Transmitted Infections (STIs) among Delawareans

In the field of HIV/AIDS prevention, concurrent sexually transmitted infection (STI) data are helpful for identifying populations at increased risk for transmission of the HIV virus. Like STIs, the HIV virus can also be transmitted through unprotected sexual contact. Furthermore, the presence of an STI can facilitate HIV transmission both by increasing viral load and providing ulcerations through which the HIV virus can enter the body.

In Delaware, STI data (including data related to gonorrhea, chlamydia, and primary and secondary syphilis) are collected by STI clinics, private physician offices, correctional facilities and outpatient facilities. Data are reported to the Delaware Division of Public Health (DPH). DPH compiles the data and generates statewide STI data for surveillance purposes. Individuals may be diagnosed with an STI more than once during a reporting period; recurrent cases may reflect infection recurrence and/or treatment failure. Therefore, the total number of STI cases may be greater than the total number of individuals diagnosed with an STI.

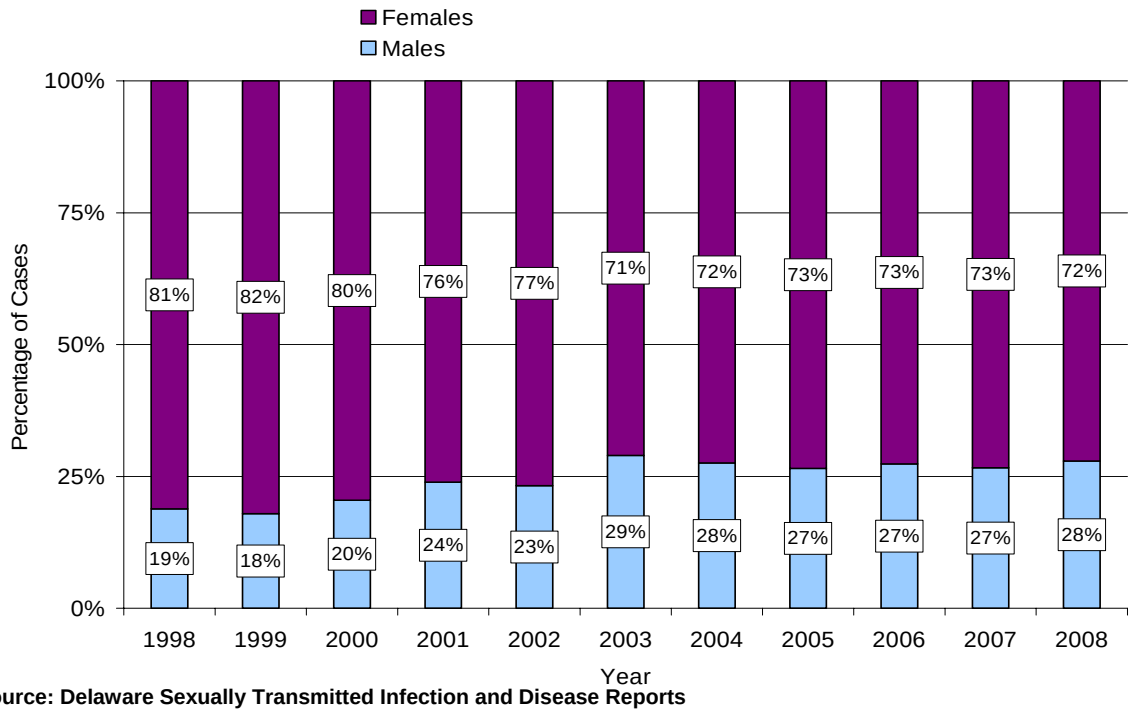
Data from 1998-2008 indicate that Delaware's STI burden has remained fairly stable. While the annual number of gonorrhea cases diagnosed among Delawareans has declined in recent years, the annual number of chlamydia cases has sharply increased (Figure 18, next page). In 1998, 2,608 cases of chlamydia were diagnosed statewide. In 2008, this number had increased 48% to 3,868. Chlamydia continues to be an especially salient public health problem among Delawarean females. As shown in Figure 19 (next page), female Delawareans accounted for the vast majority of chlamydia cases diagnosed each year from 1998-2008. Data from 1998-2008 also indicate no clear trend in the number of annual syphilis cases diagnosed statewide (Figure 20, page 38).

Figure 18: Annual Number of Chlamydia and Gonorrhea Disease Events among Delawareans: 1998-2008



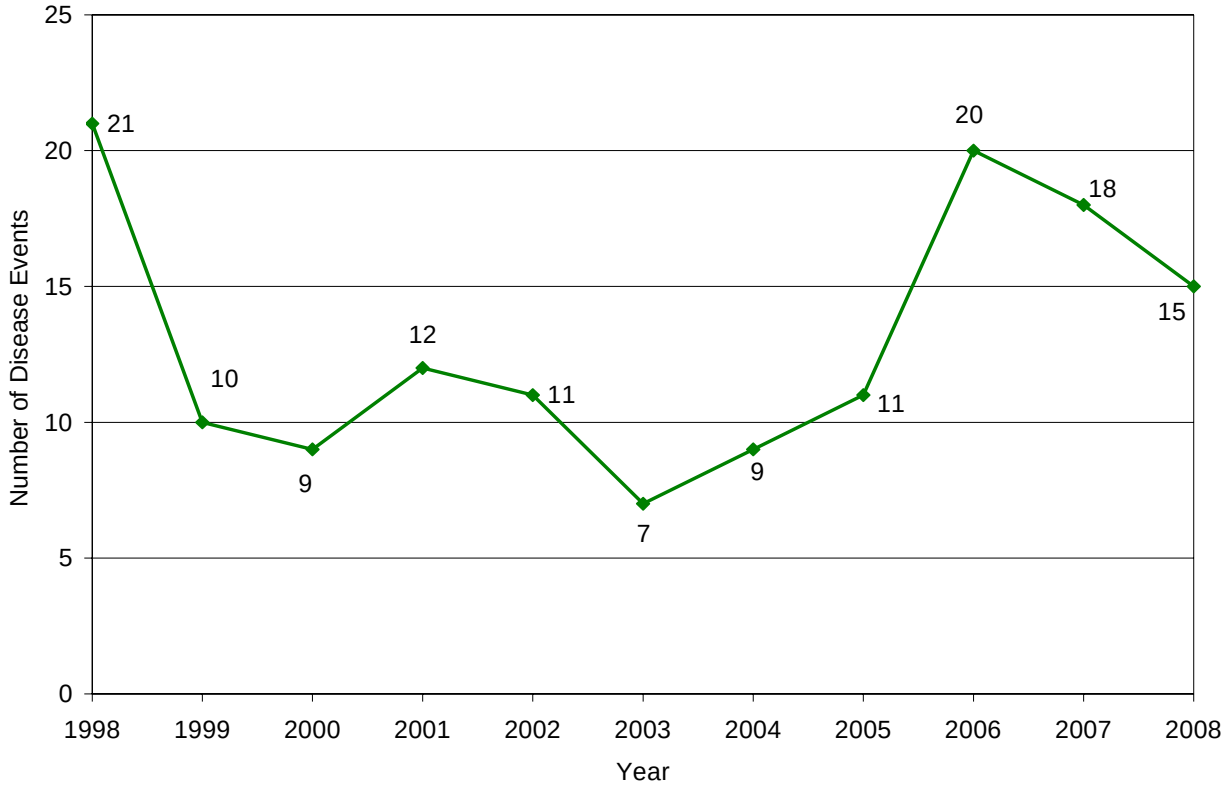
Source: Delaware Sexually Transmitted Infection and Disease Reports

Figure 19: Annual Number Chlamydia Cases among Delawareans, by Gender: 1998-2008



Source: Delaware Sexually Transmitted Infection and Disease Reports

Figure 20: Annual Number Syphilis Disease Events among Delawareans: 1998-2008



Source: Delaware Sexually Transmitted Infection and Disease Reports

8. Risk Factors among Delaware Youth

To investigate HIV/AIDS risk factor patterns among Delaware youth, DPH accessed data from the Youth Risk Behavior Survey (YRBS). YRBS represents an ongoing surveillance effort by the CDC with the overall goal of identifying risk factor trends among youth (e.g., nutrition patterns, substance use, accidents, sexual behaviors, and delinquency). These data are then used to explore the relationship between risk behaviors and health.

YRBS uses self-administered, anonymous questionnaires to collect data from high school students in odd-numbered years. The Delaware Department of Education oversees the implementation of YRBS. In 2007, a total of 2,639 Delaware youth from 38 Delaware public high schools participated in YRBS. YRBS data are representative of all Delaware students in grades 9-12.

Delaware-specific YRBS results, in terms of the percentage of Delaware youth respondents partaking in health risk behaviors, are as follows:

Alcohol Use

- 75.2% had at least one drink of alcohol in their lifetime
- 27.5% had their first drink of alcohol before age 13
- 45.3% had at least one drink of alcohol on one or more of the past 30 days
- 27.0% had five or more drinks of alcohol in a row at least once in the past 30 days

Other Drug Use

- 43.1% used marijuana at least once in their lifetime
- 10.1% tried marijuana for the first time before age 13
- 25.4% used marijuana one or more times during the past 30 days
- 6.4% used one or more forms of cocaine at least once in their lifetime
- 3.1% used one or more forms of cocaine at least once in the past 30 days
- 13.1% sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high at least once in their lifetime
- 4.1% sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high at least once during the past 30 days
- 2.2% used heroin at least once in their lifetime
- 4.0% used methamphetamines at least once in their lifetime
- 2.1% used a needle to inject any illegal drug into their body at least once in their lifetime
- 22.2% were offered, sold, or given an illegal drug on school property by someone during the past 12 months

Sexual Behaviors

- 58.1% had sexual intercourse at least once in their lifetime
- 21.4% had sexual intercourse with four or more people during their lifetime
- 43.6% had sexual intercourse with one or more people during the past three months

Of students who had sexual intercourse during the past three months:

- 22.4% drank alcohol or used drugs during last sexual intercourse
- 66.2% used a condom during last sexual intercourse
- 15.8% used birth control pills during last sexual intercourse
- 8.1% had been pregnant or gotten someone pregnant one or more times

Conclusion

Despite medical advances and disease prevention efforts, HIV/AIDS continues to have a devastating impact on the health and well-being of Delawareans. Recent EHARS data indicate that there are approximately 964 HIV-positive Delawareans who have not received care within the past 12 months. The need to reach HIV-positive Delawareans earlier in disease progression has never been more urgent. Ensuring continuous medical treatment for Delawareans with HIV/AIDS is nothing short of a life-saving effort. Interventions must address at-risk populations and tailor intervention efforts to each population's unique cultural, economic, religious and sexual context.

It is our hope that the data contained in this report will help to prevent future cases of HIV/AIDS among Delawareans by identifying populations most at risk for the disease and tailoring HIV services accordingly.

Acknowledgements

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APPENDIX A
Delaware Epidemiologic Profile Feedback

The purpose of this form is to provide the HIV/AIDS Surveillance staff with feedback from their end-users regarding the ease of use and applicability of this profile to prevention care planning activities.

Please complete this feedback form and send it to the HIV/AIDS Surveillance Office, Delaware Division of Public Health, Thomas Collins Bldg, Suite 12, Rm 203L, 540 S Dupont Hwy, Dover, DE 19901

1. Of which planning group are you a member?

☐ Delaware HIV Planning Council ☐ Formulary Committee ☐ Policy Committee

2. Was the epidemiologic profile easy to read?

☐ Yes ☐ No ☐ Somewhat

3. How were the findings of the epidemiological profile communicated to you?

☐ Print Copy Only
☐ Profile Writers presented epidemiologic profile to planning group
☐ Other _____

4. Were the findings of the epidemiologic profile clear to you?

☐ Yes ☐ No ☐ Somewhat

If not, explain why.

_____

_____

5. Was the epidemiologic profile useful to your planning process?

☐ Yes ☐ No ☐ Somewhat

If not, explain why.

_____

_____

6. Describe how you used the epidemiologic profile in your planning activities?

_____

_____

7. How can next year's profile be improved?

_____

_____

7a: What specific questions could be included in the next profile?

_____

_____

8. Do you want to receive the quarterly HIV/AIDS statistical report?

☐ No

☐ Yes, I already receive the report

☐ Yes, please send the report to me by:
Include your contact information, as appropriate

☐ Email _____
☐ Fax _____
☐ Mail _____

9. Data from this epidemiological profile is helpful to me as I conduct my job.

☐ Yes ☐ No

If yes, how do you use the data?

☐ Grant writing

☐ Proposal development

☐ Resource for presentations

☐ Other, _____