Part B

Chapter 3:

Epidemiological Profile

EXECUTIVE SUMMARY

EPIDEMIOLOGY OF HIV, AIDS, AND STDS IN IOWA

There were 114 HIV diagnoses in 2005, more than in any year since Iowa began reporting HIV cases in 1998. This was a 6% increase over 2004 and a 23% increase over 2003. The increase in diagnoses over the past two years was primarily among white, U.S.-born males. Nearly 75% of these males reported sex with males as their risk. The median age of the males was 41 years (range was 20 to 60 years), but all age groups (13-24, 25-44, 45 and over) saw an increase in diagnoses. Nearly 80% were residents of the 10 most populous counties in Iowa, particularly the counties of Polk, Johnson, Linn, Scott, and Pottawattamie.

HIV diagnoses among black, non-Hispanic persons decreased from 2002 and 2003 levels, but remained above the 10-year average in 2004 and 2005. Twenty-two percent of the HIV diagnoses in 2005 were among blacks, although they make up only 2% of Iowa's population. Seventeen of the 25 black, non-Hispanic persons diagnosed with HIV in 2005 were U.S.-born.

HIV diagnoses among Hispanics fell for the fourth straight year. Hispanic persons accounted for 6% of HIV diagnoses in 2005, down from 11% in 2004.

AIDS diagnoses also increased in 2005. Seventy-nine persons were diagnosed with AIDS in 2005, up from 70 in 2004. Black, non-Hispanic persons and females made up larger proportions of persons with AIDS diagnoses than of persons with HIV diagnoses, reflecting the increase in HIV diagnoses among white, non-Hispanic males. One-fourth of the AIDS diagnoses were among black, non-Hispanic persons.

The state continues to improve on getting people diagnosed early in the course of the infection. The percentage of persons diagnosed with HIV in 2004 that received an AIDS diagnosis within a year (i.e., late testers) was 45, down from 50% for persons diagnosed in 2003. This indicates that, compared to persons diagnosed in 2003, people diagnosed with HIV in 2004 were probably not infected as long before seeking testing, or that they accessed care sooner after testing, or their treatment was more successful.

There were 23 deaths among persons with HIV/AIDS, the lowest number since 1998. After reaching a low of 17 in 1998, the number of deaths increased to 34 in 2002. Since then, deaths have again been declining.

The most significant feature of Iowa's HIV epidemic is the continual increase in the number of persons living with HIV and AIDS. Steady diagnoses of HIV infection, combined with widespread use of highly active, antiretroviral therapies that have delayed the onset of AIDS and decreased the number of deaths among persons with HIV/AIDS, have increased the number of persons living with HIV disease to unprecedented levels and have taxed limited resources for care and treatment. On December 31, 2005, there were 1,340 Iowans reported to be living with HIV or AIDS, and another 499 are estimated to be infected but not diagnosed, bringing the total number of infected persons to 1,839 persons.

Other significant points include:

- There has been a gradual trend toward a more urban distribution of HIV infection and other STDs in Iowa. Seventy-five percent of persons diagnosed with HIV between 2000 and 2005 were living in one of Iowa's ten most populous counties: Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury. These counties contain 48% of Iowa's population, but over 70% of new chlamydia infections and nearly 90% of new gonorrhea infections.

- On average, females with HIV who were diagnosed in 2005 were 28 years old and males were 39 years old. Fifty-nine percent of females and 56% of males were 25 to 44 years of age at time of diagnosis. The median age of persons diagnosed with AIDS in 2005 was 41 years of age.

- The population of Iowa is 92% white, non-Hispanic; 2% black, non-Hispanic; 4% Hispanic; and 2% other races and ethnicities. However, only 69% of HIV diagnoses in 2005 were among white, non-Hispanic persons, illustrating a significant disparity in diagnoses among some racial and ethnic minorities. Twenty-two percent were among black, non-Hispanic persons, 6% were Hispanic, and 3% were other races. The HIV diagnosis rate in 2005 was 37.7 cases per 100,000 population for black, non-Hispanic persons, 6.4 for Hispanics, and 2.9 for white, non-Hispanic persons in Iowa.

- Forty-nine percent of persons living with HIV or AIDS on December 31, 2005, reported male-to-male sexual contact (MSM) as their primary risk. Heterosexual contact was reported for 18% of persons living with HIV or AIDS, 11% were injection drug users (IDU), and 8% reported both IDU and MSM. An additional 2% were transfusion or transplant recipients, and 1% reported hemophilia. Twelve percent had no risk identified.

- Chlamydia is the most frequently reported sexually transmitted disease in Iowa, with 8,393 cases reported in 2006. The incidence of chlamydia increased in 2006 to reach a 10-year high. The incidence of gonorrhea has increased 72% since 1996. The incidence of syphilis remains very low in Iowa, but there was a 3-fold increase in cases of late latent (more than one year since infection) syphilis in 2006.

- The male-to-female ratios for chlamydia and gonorrhea differ significantly between minority populations and the white, non-Hispanic population. White, non-Hispanic females with gonorrhea diagnoses outnumber white, non-Hispanic males by 3 to 1, while black, non-Hispanic males outnumber black, non-Hispanic females 1.2 to 1. This may indicate that minority females are not being screened for asymptomatic infection at the same rate as other women in the state, or it may reflect other as yet undetermined differences.

INTRODUCTION

This statewide profile describes the epidemiology of HIV and AIDS in Iowa through 2005, and other reportable sexually transmitted diseases (STDs) through 2006. The report characterizes the distribution of these diseases in terms of geography, race, gender, age, and associated causal factors. This epidemiological profile has been prepared to assist in developing a comprehensive HIV/AIDS prevention and care plan. This description of the HIV epidemic in the state will serve to guide prevention and service efforts, to quantify unmet need for prevention and care programs, and to evaluate programs and policies in Iowa. Five key questions will be addressed:

1. What are the sociodemographic characteristics of Iowa's population?

2. What is the epidemiology, including the geographical distribution, of HIV, AIDS, and other sexually transmitted diseases in Iowa?

3. Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?

4. What are the patterns of utilization of HIV services throughout the state?

5. What are the number and characteristics of persons who know they are HIV-positive, but who are not receiving primary medical care?

DATA SOURCES

Data were compiled from a number of sources to present the most complete picture of the epidemic as possible. However, because few behavioral or supplemental surveillance projects are available in Iowa, core surveillance data will be utilized heavily. Each data source has strengths and limitations. A brief description of each source follows.

1. Core HIV/AIDS Surveillance

AIDS Case Surveillance

AIDS has been a reportable disease in Iowa since February 1983. Only persons diagnosed with AIDS, reported in Iowa, and for whom last name, date of birth, race and ethnicity, gender, date of AIDS diagnosis, and living status (living or deceased at time of report) are known are included in this report. Cumulative AIDS cases include all reported cases, living or deceased.

The definition of AIDS has been modified several times since the original 1982 case definition. That original definition included a list of opportunistic infections and diseases in persons with no known cause for diminished immunological functioning. At that time, no tests for HIV or for antibodies to the virus were available to confirm the diagnosis. The definition was first updated in 1985 to reflect new tests that detected either antibodies to the virus or the virus itself. The 1985 revised definition included several more medical conditions, when the conditions were accompanied by a positive serological or virological test for HIV. Another revision occurred in 1987, adding three more conditions, including wasting syndrome. The most substantial revision occurred in 1993, when immunological conditions were added to the definition. A CD4+ cell count less than 200 cells per microliter or less than 14% of total lymphocytes was included as AIDS-defining, even in the absence of specific physical symptoms. Three additional conditions, pulmonary tuberculosis, recurrent pneumonia, and invasive cervical cancer were added to the list of 23 clinical conditions that met the criteria for AIDS as well. This revision, and particularly the inclusion of CD4+ cell counts as AIDS defining criteria, substantially increased the number of HIV-infected persons who were diagnosed with AIDS in 1992 and reported from 1992 to 1993. Each revision may affect the number of diagnoses in that year and in subsequent years, and may make assessing trends in the numbers of new cases more difficult.

HIV Case Surveillance

HIV became reportable by name in Iowa on July 1, 1998. Anonymous testing in Iowa ceased at that time except for those tests performed through home-collection kits. Persons older than 18 months were considered to be HIV infected if they had at least one confirmed positive test (antibody or antigen), a detectable quantity of virus or viral nucleic acid isolated (viral culture or polymerase chain reaction), or had a diagnosis of HIV infection documented by a physician. Only cases reported in Iowa and for whom last name, date of birth, race and ethnicity, gender, date of first HIV diagnosis, and living status (living or deceased at time of report) are known are included in this report. Persons diagnosed with HIV before July 1, 1998, but who have not had a viral detection test or CD4+ count completed since July 1, 1998, may not have been reported to the Iowa Department of Public Health. HIV diagnosis data include persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also included are persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

Diagnosis Date and Completeness of Surveillance Data

Data will be presented by the year the case of either HIV or AIDS was diagnosed (regardless of when it was reported). Many cases reported in a given year will have been diagnosed in some previous year but not reported immediately. In 2005, 96% of HIV cases and 96% of AIDS cases were received within 6 months of diagnosis date.

Evaluations of the surveillance system indicate that 98% of diagnosed HIV/AIDS cases have been reported. Persons diagnosed before July 1998, when HIV reporting by name began in Iowa, and persons not in care are the most likely not to have been reported. For the most part, the data represent diagnosed cases well. They do not, however, include persons who have been infected but who have not been diagnosed.

Delays in reporting will mean that the number of cases in the most recent year will be a minimum estimate. Reporting delays may vary among exposure, geographical, racial/ethnic, age, and gender categories. To minimize the effects of reporting delays, case reports received through June 30, 2006, will be used. These reports include only those diagnoses made through December 31, 2005.

All data are provisional and are subject to change as further information becomes available.

Surveillance Exposure Categories

For surveillance purposes, HIV and AIDS cases are counted only once in a hierarchy of exposure categories. Persons with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy, except for men with both a history of sexual contact with other men and a history of injection drug use. They make up a separate category (Centers for Disease Control and Prevention, HIV/AIDS Surveillance Report, 2001). The modes of exposure are categorized in this report according to the following hierarchy:

- **"Men who have sex with men and inject drugs" (MSM/IDU)** includes men who inject nonprescription drugs and report sexual contact with other men or who report sexual contact with both men and women.
- **"Men who have sex with men" (MSM)** includes men who report sexual contact with other men, and men who report sexual contact with both men and women.
- **"Injection drug use" (IDU)** includes persons who inject nonprescription drugs.
- **"Hemophilia/Coagulation disorder"** includes persons who received Factor VIII (Hemophilia A), Factor IX (Hemophilia B), or other clotting factors.
- **"Heterosexual contact"** includes persons who report specific heterosexual contact with a person with documented HIV infection, or heterosexual contact with a person at increased risk for HIV infection, such as an injection drug user, person with hemophilia, transfusion recipient with documented HIV infection, or bisexual male. A person who reports heterosexual contact with partners whose specific HIV risks and HIV status are unknown is considered to have "no risk reported or identified" (NIR). Adults and adolescents born, or who had sex with someone born, in a country where heterosexual transmission was believed to be the predominant mode of HIV transmission (formerly

classified as Pattern-II countries by the World Health Organization) are no longer classified as having heterosexually acquired HIV. Similar to case reports for other persons who are reported without behavioral or transfusion risks for HIV, these reports are now classified (in the absence of other risk information that would classify them in another exposure category) as "NIR" (MMWR 1994:43:155-60).

- **"Transfusion"** includes persons who received blood or blood components (other than clotting factor).
- **"Received transplant"** includes persons who received tissues, organs, or artificial insemination. These cases have been combined with "transfusion" cases in this report because of the low number of cases in Iowa in each category alone.
- **"No risk reported or identified (NIR)/other"** includes persons with no identified history of exposure to HIV through any of the routes listed in the hierarchy of exposure categories. These cases are investigated further over time to identify a risk. In addition, the category includes persons whose exposure history is incomplete because they died, declined to be interviewed, or were lost to follow-up. It also includes persons who had no risk other than working in a health-care or clinical laboratory setting. There has been one confirmed case of transmission in a health-care or clinical setting in Iowa.

2. Behavioral Surveys

Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a state-based random-digit-dialed telephone survey of adults that monitors state-level prevalence of the major behavioral risks associated with premature morbidity and mortality. Respondents to the BRFSS questionnaire are asked about their personal health behaviors and health experiences. A sexual behavior module was included only in 1994, 1995, 1996, 1998, and 2000. In this module, adults (ages 18 to 49 years) were asked about their number of sex partners, condom use, and treatment for STDs. Data from the BRFSS survey are population based; thus, estimates about testing attitudes and practices can be generalized to the adult population of a state. Because BRFSS respondents are contacted by telephone, the data are not representative of households that do not have telephones.

Iowa Youth Risk Behavior Survey (YRBS)

The YRBS is a self-administered questionnaire given every two years to a representative sample of students in grades 9 through 12 in regular and alternative high schools. The YRBS collects information on six categories of behaviors; sexual behaviors that contribute to unintended pregnancy and STDs, including HIV infection, constitute one category. Questions are also asked about exposure to HIV prevention education materials, sexual activity (age at initiation, number of partners, condom use, past drug or alcohol use), contraceptive use, and pregnancy history. Because the YRBS project relies upon self-reported information, sensitive behavioral information may be underreported or overreported. Also, because the YRBS questionnaire is administered in school, the data are representative only of adolescents who are enrolled in school and cannot be generalized to all adolescents. For example, students at highest risk, especially those in upper grades, may be more likely to be absent from school or to drop out of school and may be underrepresented in this survey. The questionnaire does not include questions about homosexual or bisexual behavior.

3. STD Surveillance

STD Case Reporting

The Iowa Department of Public Health's STD Prevention Program conducts statewide surveillance to determine the number of reported cases of STDs, to monitor trends in the epidemics, and to offer voluntary partner counseling and notification services. Chlamydia, gonorrhea, and syphilis cases are reportable. STD surveillance data can serve as surrogate markers for unsafe sexual practices and may demonstrate changes in behavior among specific populations that increase their risks for HIV infection. Because of a shorter time from infection to symptomatic disease, STD diagnoses may better indicate recent unsafe behavior and/or changes in community norms. In addition, certain STDs can facilitate the transmission of HIV infection. The quality of the data is highly dependent on whether the provider is public or private and may be incomplete. Women may be routinely screened whereas men are more likely to be tested only if they are symptomatic. Other data limitations are discussed in the profile.

4. HIV Counseling and Testing Data

Counseling and Testing System (CTS)

The Iowa Department of Public Health supports 19 free, confidential HIV testing and counseling sites in Iowa. Risk assessments are completed by participants as part of a visit or during outreach. In August 2005, a new web-based data collection and reporting system was implemented and the risk assessment tool was changed. For that reason, complete data on risk assessments are not available for 2005. Data from risk assessments completed in 2004 will be presented in this profile. In 2004, risk assessments were completed for 12,937 individuals. All persons who completed assessments received HIV prevention counseling, and 10,702 were tested for HIV. Twenty-three percent of these tests occurred as part of outreach testing (i.e., not in a clinic). Fifty-six persons tested positive (0.52%). Because the CTS collects information only from persons who seek counseling and testing services, data are not representative of all persons who engage in high-risk behaviors.

5. Vital Statistics Data

Birth and Death Data

The Iowa Department of Public Health collects information on all births and deaths in Iowa. The birth certificate form includes demographic information on the newborn infant and the parents, prenatal care, maternal medical history, mode of delivery, events of labor, and abnormal conditions of the infant. Death certificates include demographics, underlying cause of death, and factors contributing to the death. Annually, the surveillance program electronically matches data with death and birth databases to ascertain deaths of persons with HIV/AIDS and births to HIV-infected women.

6. Population Data

U.S. Census Bureau

The Census Bureau collects and provides timely information about the people and economy of the United States. The Census Bureau's Web site (http://www.census.gov) includes data on demographic characteristics (e.g., age, race, ethnicity, and sex) of the population, family structure, educational attainment, income level, housing status, and the proportion of persons

who live at or below the poverty level. Summaries of the most requested information for states and counties are provided, as well as analytical reports on population changes, age, race, family structure, and apportionment. State- and county-specific data are easily accessible, and links to other Web sites with census information are included.

7. HIV Care Data

Ryan White Title II Data

Since 1993, the HIV/AIDS Program of the Iowa Department of Public Health (IDPH) has collected data on persons served by the Iowa Ryan White Title II Program. To be eligible for Title II services, a person must have HIV, be a resident of Iowa, and have an income that is equal to or less than 200% of the current year's federal poverty level. Title II services include case management, oral health care, outpatient medical care, transportation, and emergency financial assistance. Each service provider maintains his/her own database. Information collected from the service providers includes basic demographic and risk information, eligibility verification data (current address, current income, HIV diagnosis date, Iowa Medicaid number), the type of services received, the date and quantity of services received, the cost of these services, and other pertinent information (history of substance abuse or mental health treatment, veteran status, current pregnancy status). The data indicate which Ryan White resources are being used, how often, and by whom. However, these data only reflect persons who (1) know their HIV serostatus, (2) are currently seeking care and treatment services from Ryan White Title II-funded providers, and (3) are financially eligible to receive services. For 2005, only aggregate data from the annual summary CARE Act Data Report (CADR) are available. Persons who switched services providers during the year may be counted more than once.

AIDS Drug Assistance Program (ADAP)

The AIDS Drug Assistance Program provides antiretroviral drugs and a limited number of other medications to persons who qualify for Ryan White Title II services and who are not fully covered for medications through Medicaid or other insurance plans. Although part of Ryan White Title II funding, a separate database is kept at IDPH for the ADAP Program. These data are, therefore, unduplicated, client-level data. Information collected in the database is limited to basic demographic information on each client, eligibility verification data, and laboratory information at the time of application.

Ryan White Title III Data

Ryan White Title III funding provides for ongoing medical care, oral health care, psychosocial services, nutritional, and other care services for persons with HIV infection. Funding goes directly to providers of medical care, and patients are charged fees according to a sliding scale. There are four Title III providers in Iowa. Each has a different method of collecting and storing data. Annual Care Act Data Reports (CADR) are submitted to the Health Resources and Services Administration (HRSA), and IDPH has access to these summary reports. The CADR data are in aggregate form only. Clients who used more than one provider in a year may be counted more than once. Currently, it is not possible to unduplicate the data. In addition, Ryan White Title III data cannot be generalized to all HIV-infected persons living in the state because they are collected only for persons who (1) know their HIV status and (2) are currently seeking care and treatment services from Title III-funded providers.

GUIDELINES TO PREVENT MISINTERPRETATION OF THE DATA

Decisions about how to allocate limited resources for prevention and care services depend, in part, on appropriate interpretation of epidemiological data. The following guidelines are intended to facilitate proper interpretation of the tables and figures presented in this profile.

1. **Carefully examine the entire table or graph.** Read the title of the table or figure and look closely at the type of information presented on the vertical and horizontal axes. Are the data showing the number of cases or a percentage of the total cases? Pie graphs and stacked bar graphs can show total numbers or percentages. Examine how the graphs are scaled. Does the number of cases increase by 5, 10, 100, or some other factor? What is the time period covered? Have any data been excluded from total counts?

2. **These data have certain limitations.** This report will present both AIDS case-report data and HIV infection case-report data. The first AIDS case reported in Iowa was diagnosed in 1983. Reporting of HIV-infected persons in Iowa began July 1, 1998. The number of HIV-infected persons reported by name is relatively small and covers a reporting period from July 1, 1998 – June 30, 2006. HIV surveillance reports may not be representative of all infected persons because not all infected persons have been tested or reported. AIDS case-report data span 23 years and are relatively complete. However, because HIV infection may take many years to develop into AIDS, AIDS case reports may not represent current or emerging trends in the HIV epidemic. There are also reporting delays of HIV and AIDS cases. The tables and figures in this profile do not account for these reporting delays. Both HIV and AIDS data are from the entire state of Iowa, but data represent only those individuals living in Iowa at the time of diagnosis. State and county of diagnosis do not change even if a person later changes counties or moves out of state. Individuals who are diagnosed and reported while residing in another state and who subsequently move to or receive care in Iowa are included only in Section 2 (Ryan White CARE Act) of the profile.

3. **Be careful not to over-interpret** small changes or differences from year to year. Comparing one year with another year may be misleading, particularly given the low numbers of cases reported in Iowa annually. Significant changes over time will be highlighted in the narrative of this document.

4. **Look for consistencies with other information sources.** Different findings should be examined carefully. All data sources are not equivalent in their generalizability to the population of Iowa. In particular, scientific studies should be examined for their purposes and for the population studied. Where scientific studies are presented, their limitations will be included in the discussion.

5. **Case rates** have been calculated for 12-month periods per 100,000 population. The denominator for calculating rates is based on 2005 population estimates from the U.S. Bureau of Census. The numerator is the number of cases reported during the 12-month period. This number is divided by the population estimate and multiplied by 100,000. Race-specific rates are the number of cases reported for a particular racial/ethnic group during the preceding 12-month period divided by the projected population for that race/ethnicity, multiplied by 100,000.

ORGANIZATION OF THE PROFILE

The epidemiological profile is organized into two main sections, within which six key questions are addressed.

Section 1: Core Epidemiological Questions

This section provides the reader with an understanding of the characteristics of the general population of Iowa, the distribution of HIV disease in the state, and a detailed look at who is most at risk for infection. The section is organized around three key questions:

Question 1: What are the sociodemographic characteristics of Iowa's population? Orients the reader to the overall demographic and socioeconomic characteristics of the general population in Iowa. May be used to establish a baseline for comparison to other states and other populations.

Question 2: What is the epidemiology, including the geographical distribution, of HIV and AIDS in Iowa?
Examines the magnitude and distribution of the disease in the state by gender, age, race/ethnicity, and associated risk factors. Changes over time will be highlighted. Intended to be used by prevention providers to plan and evaluate their work.

Question 3: Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?
Provides a detailed look at high-risk populations using direct and indirect measures of high-risk behavior. Counseling and testing data, STD data, and other survey data will be used to examine this question.

Section 2: Ryan White CARE Act Special Questions and Considerations

This section focuses on questions pertinent to care planning. It describes access and use of medical care services by persons with HIV infection in Iowa. It is organized around three key questions:

Question 1: What are the characteristics of persons living with HIV/AIDS who receive HIV services in Iowa?
Describes Ryan White Title II and Title III care services and examines the characteristics of persons who accessed these services.

Question 2: What are the patterns of utilization of HIV services by persons with HIV in Iowa?
Characterizes the patterns of use of HIV primary medical care and support services by persons with HIV/AIDS.

Question 3: What are the number and characteristics of persons who know they are HIV positive, but who are not receiving HIV primary medical care?
Estimates the number of persons out of HIV primary medical care for a year or more and describes the characteristics of those persons.

Section

1

CORE EPIDEMIOLOGICAL QUESTIONS

Question 1: **What are the sociodemographic characteristics of Iowa's population?**

Question 2: **What is the epidemiology, including the geographical distribution, of HIV and AIDS in Iowa?**

Question 3: **Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?**

Question 1

What are the sociodemographic characteristics of Iowa's population?

This section provides background information about Iowa's population. The purpose is to provide a context for assessing the potential impact of HIV, AIDS, and other sexually transmitted diseases in Iowa.

Section Highlights

- The 2005 population estimate from the U.S. Census Bureau indicates that there are 2,966,334 persons residing in Iowa, ranking it 30th in the nation in population. Just over 91% of the total population is white, non-Hispanic, and approximately 9% percent are members of racial or ethnic minority groups. The Hispanic population is growing the fastest, increasing by 153% since 1990. They now account for the largest minority population in the state.

- The counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury account for 48% of the total population of Iowa. These counties also report higher rates of poverty, unemployment, uninsured persons, and crime than other counties.

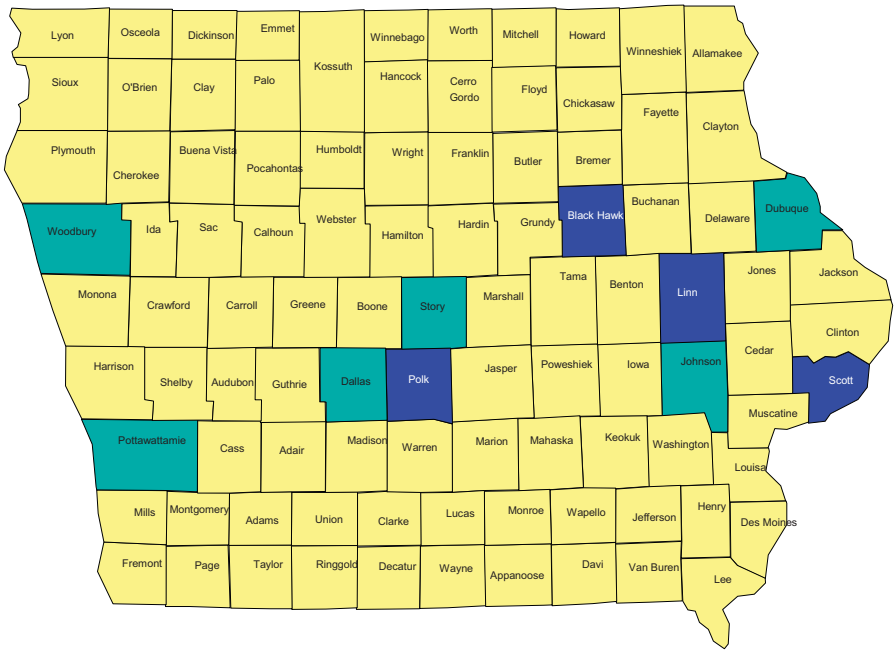
- Approximately 11% of Iowa's population lives below the poverty level, but 13% of youth 17 years or younger live in poverty. Those within the age group of 18 to 24 years were least likely of all age groups to have health insurance. Increases in inmate admissions for substance abuse and in persons seeking treatment for drug addictions have been reported since the early 1990's.

DESCRIPTION OF IOWA'S POPULATION

Iowa is an agricultural state, with a land area of 55,875 square miles. Iowa is comprised of 99 counties (Figure 1), with an estimated 2005 population of 2,966,334 persons. The state ranks 30th in the nation in population. Six counties (Dallas, Dubuque, Johnson, Pottawattamie, Story, and Woodbury) have between 50,000 and 120,000 people, and four counties (Black Hawk, Linn, Polk, and Scott) have more than 120,000 people. In 2000, Clinton County was the 10th most populous county, with just over 50,000 persons. Since then, the population is estimated to have declined to just under 50,000. In 2005, Dallas County surpassed Clinton County to become the 10th most populous county in the state.

Iowa's population has shifted over the past ten years from rural to urban centers with the most significant growth occurring in and around the capital of Des Moines and in the Interstate-380 corridor between Iowa City and Cedar Rapids. The state population is expected to exceed 3 million by 2010 (Statistical Abstract of the United States, 2007).

Figure 1
Iowa's Most Populous Counties

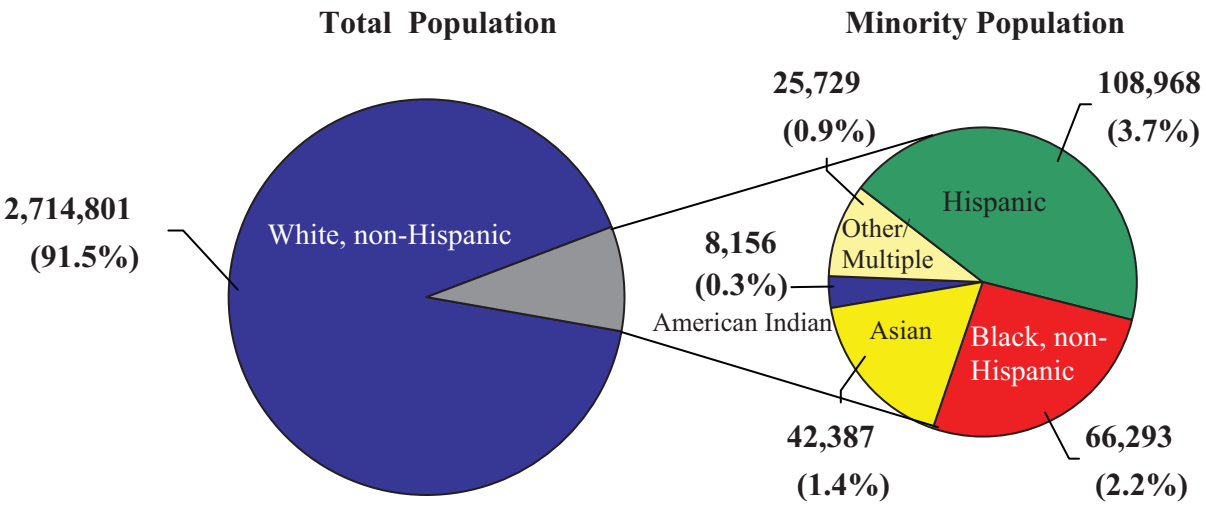


Racial and Ethnic Distribution

Ninety-two percent of Iowa's population is white and non-Hispanic (Figure 2, Table 1). Hispanic residents were estimated to have become the largest minority population in Iowa for the first time in 1998. Residents of Hispanic origin are now estimated to account for 3.7% of the population, slightly larger than that for black, non-Hispanic residents. The Hispanic population increased 153% since 1990, the largest increase of any minority group in the state. At the time of the 2000 Census, nearly one-half of the state's Hispanic residents lived in Marshall, Muscatine, Polk, Scott, or Woodbury counties.

The next largest minority group is black, non-Hispanic residents, accounting for an estimated 2.2% of the population and reflecting a slight increase from 1.7% in the 1990 census. Black Hawk, Polk, and Scott counties account for nearly two-thirds (61%) of the state's total of black, non-Hispanic residents.

Figure 2
Population by Race and Ethnicity
Iowa, Estimated Population 2005



Source: U.S. Census Bureau

Iowa's Asian population increased from 0.9% in 1990 to 1.4% in 2005. More than one-half (51%) of the state's Asian population lived in Johnson, Polk, or Story counties in 2000. American Indians constitute the smallest ethnic population in Iowa, making up 0.3% of the total population. In 2000, the largest numbers of this ethnic group lived in Tama, Polk, and Woodbury counties.

Net *inmigration* (i.e., net movement of foreign and/or domestic persons **into** Iowa) was 5,148 persons from 1995 to 2000, when individuals moving to and from Iowa from other countries were included in migration counts. Otherwise, net migration from *within* the United States was negative. In other words, more people moved out of Iowa than moved into the state from elsewhere in the U.S. This means that the increasing diversity in Iowa's population is mainly the result of persons moving into Iowa from other countries rather than an influx of minorities from elsewhere in the U.S. (Office of Social and Economic Trend Analysis, Iowa State University, 2004).

Table 1
Iowa's Population by Race, Ethnicity, and Gender
Population Estimate, 2005

Race and Ethnicity	Females		Males		Total	
	#	(%)	#	(%)	#	(%)
White, non-Hispanic	1,385,175	(92)	1,329,626	(91)	2,714,801	(92)
Black, non-Hispanic	32,025	(2)	34,268	(2)	66,293	(2)
Hispanic	49,997	(3)	58,971	(4)	108,968	(4)
Asian	21,383	(1)	21,004	(1)	42,387	(1)
Am. Indian/Alaska Native	4,155	--	4,001	--	8,156	--
Native Hawaiian/ Pac. Islander	518	--	502	--	1,020	--
Multiple Races	12,332	--	12,377	--	24,709	--
Total	**1,505,585**		**1,460,749**		**2,966,334**	

Source: U.S. Census Bureau

Age Distribution

Iowa's population is aging. The median age of the population is 38.0 years, up from 34.0 years in 1990. By year 2020, the median age is expected to climb to 42.4 years (Iowa's Counties: Selected Population Trends, Vital Statistics and Socioeconomic Data, 1999). With 15% of its population 65 years or older, Iowa ranks 5th in the nation in the percentage of elderly persons residing in the state. The percentage of the population over age 65 is expected to increase from 15% in 1990 (Table 2) to 21% by 2020; the percentage of youths (under the age of 20) is expected to decrease from 29% in 1990 to 24% by 2020. The percentage of persons ages 20 to 64 years is expected to increase into the first decade of the century, though not as dramatically as the 65 and older age group.

Table 2
Iowa's Population by Age and Gender
Population Estimate, 2005

Age group (yrs)	Females	Males	Total	
	#	#	#	(%)
Less than 2	36,224	37,978	74,202	3
2 – 12	192,376	202,283	394,659	13
13 – 24	250,570	261,744	512,314	17
25 –44	388,662	401,162	789,824	27
45 –64	382,164	377,951	760,115	26
65 or older	255,589	179,631	435,220	15
Total	**1,505,585**	**1,460,749**	**2,966,334**	

Source: U.S. Census Bureau.
Percentage totals may not equal 100 due to rounding of numbers.

Poverty, Health Insurance, and Employment

According to 2004 model-based estimates from the U.S. Census Bureau, 10.5% of Iowa's population was living below the poverty level, compared to the national average of 12.7%. This was an increase of 1.4% from 2002 estimates for Iowa residents. However, 13.1% of Iowa's youth 17 years or younger live in poverty, up from 10.9% in 2002.

Approximately 11% of Iowa's residents are without health insurance. Those within the age group 18 to 24 years were least likely of all age groups in Iowa to have health insurance, and males were 1.5 times as likely as females in that age group to be without insurance. Twenty-five percent of those between the ages 18 and 24 were without insurance but 30% of males had no insurance (Table 3).

Table 3
Percentage Uninsured by Age
2005

Age group (yrs)	% Uninsured		
	Females	Males	Total
18-24	19.4	29.9	24.8
25-34	9.8	17.1	13.6
35-44	8.5	13.7	11.1
45-54	8.1	11.7	9.9
55-64	8.5	7.4	8.0
65-74	0.4	1.4	0.8
75 and over	1.3	2.9	1.9
Total adults	**8.3**	**13.3**	**10.7**

Source: Behavioral Risk Factor Surveillance System, Iowa Department of Public Health.

Iowans who report lower household incomes are more likely not to have health insurance. Of people who reported an annual income of less than $15,000, 26% reported having no health insurance coverage. Only 3% of people who reported an annual income of $75,000 or more did not have health care coverage (IDPH Behavioral Risk Factor Surveillance System, 2005).

Iowa's unemployment rate was reported at 4.6% for 2005, up from 2.8% in 2000, and compared to 5.1% nationally in 2005 (2006 Factbook, Legislative Fiscal Bureau, State of Iowa). Iowa was ranked 20th lowest in the nation in unemployment. In Iowa, men experience a higher rate of unemployment than women. The lower unemployment rate for women is due, in part, to women accepting part-time employment, temporary employment, and working out of their homes more often than men (Kahn, Iowa Workforce Development). Minority workers experience an unemployment rate that is two to three times higher than for white, non-Hispanic workers. In 2005, blacks in the state had an unemployment rate of just over 15%, American Indian/Alaska Natives were at 12%, and Hispanic persons had an unemployment rate of 10%. Native Hawaiian/Pacific Islanders experienced the highest unemployment rate in the state at just over 20%.

Corrections

Iowa has nine state correctional facilities and a community-based correctional system. The prison inmate population at the nine correctional facilities increased by 209% from 1987 through 2005. There were 8,577 state inmates at the end of fiscal year 2005. Nearly 6,500 offenders were released into the community during that year. The Criminal and Juvenile Justice Planning Division predicts that if criminal/incarceration practices remain the same, the prison population is projected to reach 10,329 inmates by 2015. The population of prisoners is projected to be 139% of design capacity at that time (Department of Corrections; Iowa Legislative Factbook, 2006).

The community-based correctional system has 17 residential facilities, 3 work release facilities, and an OWI (operating a motor vehicle while intoxicated) facility. On July 1, 2005, the community-based population was 29,923. This population increased 86% from 1987 to 2005.

Substance Abuse

The state has reported increasing numbers of drug offenses. Drug-related offenses accounted for 27% of new prison admissions in FY 2006 (July 1, 2005 to June 30, 2006), up from 22% in FY 1999. According to the Department of Corrections, inmate admissions for drug offenses increased 106% from FY 1996 through FY 2006. Methamphetamine use, in particular, has been increasing. Data from publicly funded substance abuse treatment facilities show that the number of persons treated for drug addictions increased from FY 1992 to FY 2005 (Table 4). Throughout that time period, the percentage of persons who identified alcohol as their primary drug decreased from 85% to 56% while the percentage identifying other drugs like marijuana, methamphetamine, and crack increased from 15% to 44%. Over one-fourth of persons admitted for methamphetamine use reported injecting the drug as their primary mode of use.

Table 4
Primary Drug for Clients in Publicly Funded Treatment Programs
Iowa, FY 1992 – FY 2005

Fiscal Year	Primary Problem – Type of Drug						Total Clients[1]
	Alcohol	Marijuana	Methamphetamine	Crack	Heroin	Other	
1992	85%	7%	1%	5%	.5%	1.5%	22,471
1993	82%	9%	1%	5%	.7%	2%	22,567
1994	78%	11%	2%	6%	.8%	4%	25,328
1995	69%	14%	7%	6%	.8%	3%	29,377
1996	64%	18%	9%	6%	.5%	2%	33,269
1997	63%	19%	10%	6%	.6%	2%	38,297
1998	60%	20%	12%	6%	.5%	2%	38,347
1999	63%	20%	8%	6%	.5%	1%	40,424
2000	62%	21%	9%	5%	.5%	1.5%	43,217
2001	61%	22%	11%	5%	.5%	1.5%	44,147
2002	59%	23%	12%	4%	.5%	1.8%	42,911
2003	58%	22%	13%	5%	.6%	1.9%	40,925
2004	56%	23%	15%	5%	.6%	1.8%	42,449
2005	56%	22%	14%	5%	.6%	1.9%	43,692

Source: Iowa Department of Public Health, Division of Health Promotion, Addiction, and Addictive Behaviors

[1] In some instances, screens/admissions may be double counted if a client is screened and later admitted for different substances.

Question 2

What is the epidemiology, including the geographical distribution, of HIV and AIDS in Iowa?

This section will present data on who is infected, how they became infected, where HIV and AIDS cases are occurring, and how this may be changing over time. Data will be presented by year of diagnosis, regardless of year of report (see Core HIV/AIDS Surveillance under Data Sources at the beginning of this chapter). Unless noted, all data are from case surveillance data from the HIV/AIDS Program at the Iowa Department of Public Health. HIV and AIDS cases diagnosed through December 31, 2005, will be presented. Data were collected through June 30, 2006, to allow for reporting delays.

Section Highlights

- There were 114 HIV diagnoses in 2005, more than in any year since HIV reporting began in 1998. This was a 7% increase over 2004 and a 24% increase over 2003. The increase in diagnoses over the past two years was primarily among US-born, white, non-Hispanic males. Diagnoses among foreign-born individuals declined from 2002 to 2005.

- Since 1996, the number of Iowans living with AIDS has more than doubled, increasing from 358 persons in 1996 to 809 persons in 2005. There were 1,340 Iowans diagnosed and living with HIV or AIDS on December 31, 2005. Another 499 persons are estimated to be undiagnosed and/or unreported, bringing the total to 1,839 infected persons.

- Median age at diagnosis of HIV fell from 38 in 2004 to 35 in 2005. This reflects an unusual increase in HIV diagnoses among those 15 to 24 years of age in 2005.

- Hispanic and Black, non-Hispanic persons are disproportionately affected by HIV and AIDS when population size is taken into consideration. In 2005, the HIV diagnosis rate among Black, non-Hispanic persons was 13 times that of white, non-Hispanic persons. The HIV diagnosis rate among Hispanic persons was more than twice that of white, non-Hispanic persons.

- Differences in modes of exposure are evident between racial and ethnic groups. The most common exposure among white, non-Hispanic persons was men who had sex with men, accounting for just over half of all cases. In contrast, persons with no identified risk accounted for the highest proportion of cases, 40%, among black, non-Hispanic persons, followed by heterosexual contact (29%), and then MSM (17%). Fifty-two percent of HIV cases in Hispanics were in MSM. Black, non-Hispanic persons and Hispanic persons are much more likely to have unidentified risks than are white, non-Hispanic persons.

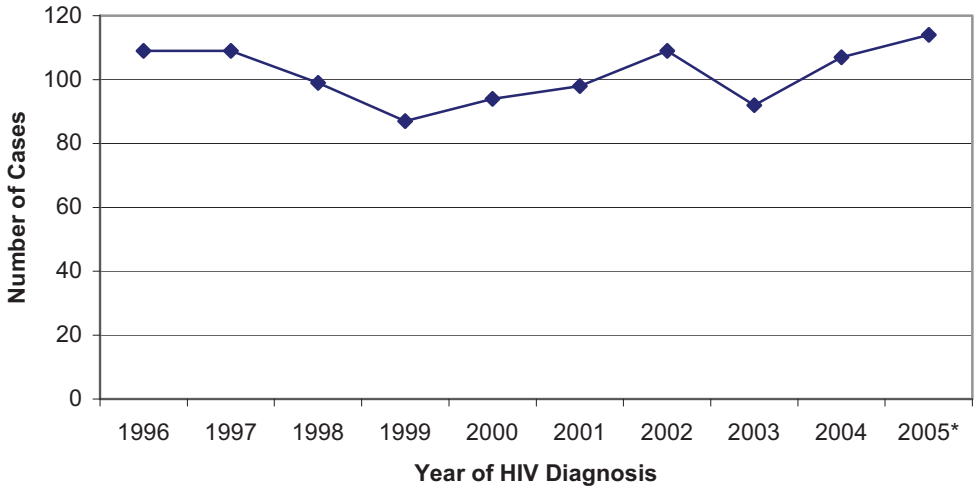
DIAGNOSES OF HIV AND AIDS

Diagnoses of HIV Infection

Figure 3 shows the number of HIV diagnoses in Iowa since 1996. Graphical presentations of HIV diagnoses over time show the date of the first documented HIV test or detectable viral load for all persons reported to have tested positive for HIV while a resident of Iowa, regardless of their current diagnosis (HIV or AIDS). Also included in these data are persons who were diagnosed with AIDS while residents of Iowa, but for whom residence at time of HIV diagnosis was not reported. Therefore, diagnoses of HIV infection over time are an inexact representation of the total number of new HIV diagnoses in the state each year. Persons with AIDS who were diagnosed with HIV in Iowa are included here and in sections that present AIDS data.

HIV diagnosis date has been collected for all persons reported with AIDS since 1992, and for persons reported with HIV infection since July 1, 1998. Because all persons with HIV who were in a physician's care (not just persons with new diagnoses) were reportable on July 1, 1998, retrospective plots of diagnosis trends should be fairly complete, at least as far back as 1993. Evaluations of the surveillance system indicate that case reporting is 98% complete. Persons not actively in medical care since HIV reporting was initiated are less likely to have been reported. Diagnoses for 2005 may be incomplete due to reporting delays. With these limitations in mind, Figure 3 indicates that diagnoses of HIV infection in Iowa have been relatively steady at just over 100 persons each year for the past 10 years. In 2005, however, there was a 7% increase in diagnoses when compared to 2004, and a 24% increase when compared to 2003.

Figure 3
HIV Diagnoses[1] for All Iowa Cases
1996 – 2005



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

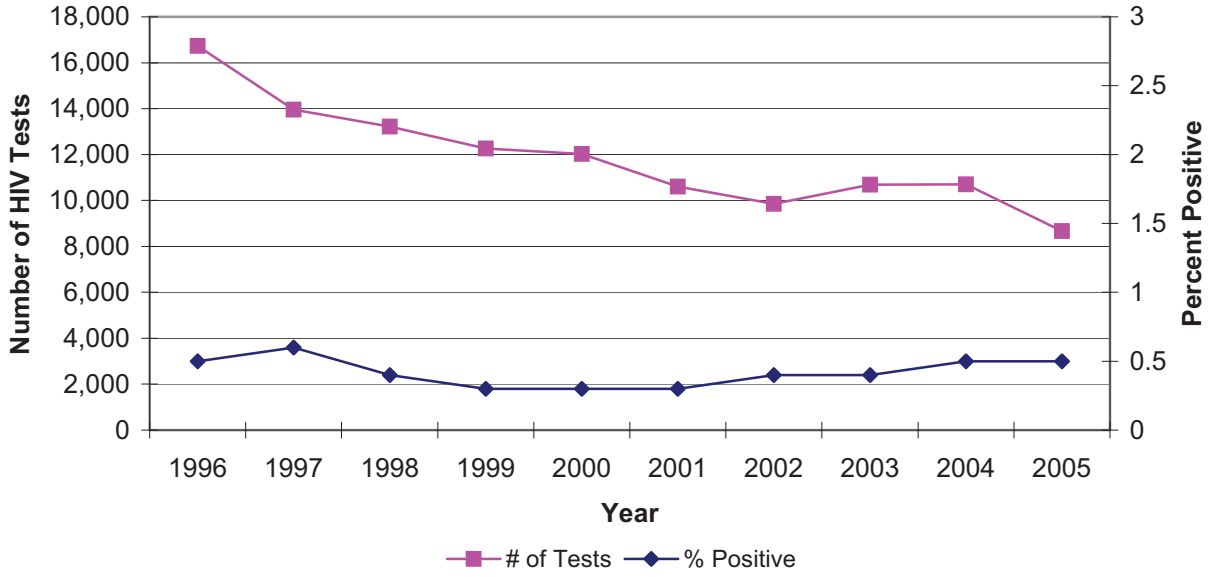
Factors Affecting the Number of Diagnoses

Although HIV *diagnoses* are one indication of HIV *infection* rates, many factors may affect when a person decides to get tested for and, therefore, diagnosed with HIV infection. A steady number of diagnoses may not be indicative of a constant rate of new infections. Changes in the number of persons getting tested or in the average length of time between infection and diagnosis may affect the number of diagnoses. Immigration of HIV-infected persons into the state may also increase diagnoses without reflecting an increase in new infections among Iowans. These factors will be discussed below.

Number of HIV Tests Performed

Figure 4 shows the number of HIV tests conducted at IDPH-funded counseling, testing, and referral sites, and the percentage of those persons who tested positive.

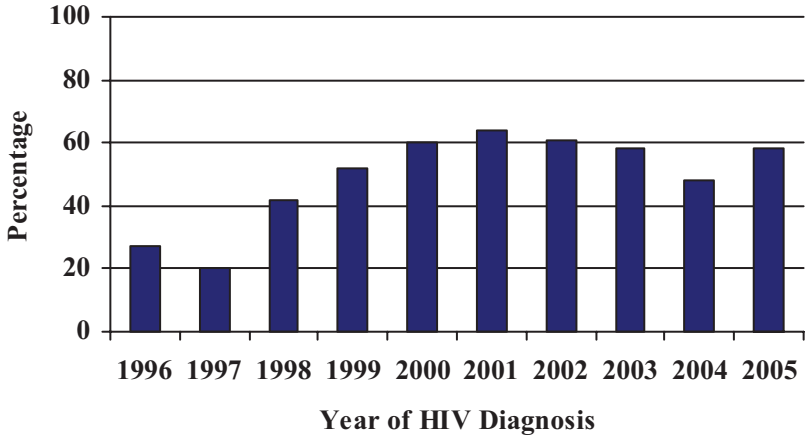
Figure 4
HIV Tests and Percent Positive Tests at IDPH-funded Test Sites
1996 – 2005



The number of tests has generally been declining since 1996, when 16,735 tests were performed. In 2005, 8,660 tests were conducted. Despite the declining number of tests, the rate of positivity has been relatively constant since 1999 at 0.3% to 0.5%. Many factors may be influencing the decline in testing, including an increase in targeted testing; that is, a concerted effort to test only those at highest risk. In 2005, 43 persons were identified as positive at the sites, 10 fewer than in 2004.

Not shown in Figure 4 are the numbers of tests performed at other public sites, such as STD clinics and correctional facilities, or at other privately funded sites, such as physician's offices, clinics, blood banks, plasma centers, and hospitals. Figure 5 shows that the number of diagnoses coming from these private sites has increase since 1996, when they accounted for just over a quarter of new diagnoses. In 2005, nearly 60% of HIV diagnoses were reported from private testing sites.

Figure 5
Percentage of HIV Diagnoses from Private Test Sites
1996 - 2005



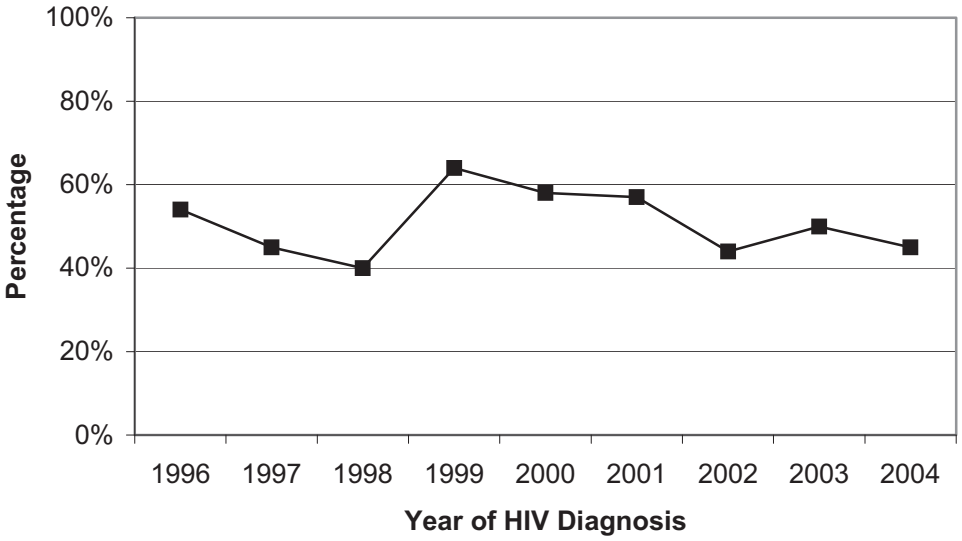
Changes in testing patterns at these private sites may also affect the overall number of diagnoses in the state, but data on the total number of tests performed are not available from these sources. A shift in testing to these sites could explain decreases seen at IDPH-funded sites.

Delays in Testing

Although time of infection is generally not known, the length of time between HIV diagnosis and AIDS diagnosis can be used to give a general idea of how far along in the course of the disease a person is when the first HIV diagnosis is made. A short period of time between HIV diagnosis and AIDS diagnosis suggests that a person may have been infected for some length of time. People with early HIV diagnoses (i.e., soon after infection) generally have longer time spans between HIV diagnosis and AIDS diagnosis. People who get into treatment quickly, respond well to therapy, and/or are adherent to treatment regimens would also have a longer time from HIV diagnosis to AIDS diagnosis.

Figure 6 shows the percentage of people who were diagnosed with HIV in a given year and who received an AIDS diagnosis within the next 12 months. A high percentage suggests that many people are being diagnosed with HIV late in the course of their infection; a low percentage suggests that they were diagnosed early in the course of infection or that they received treatment promptly and did not progress to AIDS within that year.

Figure 6
Percentage of HIV Cases[1] Diagnosed with AIDS within 1 Year
1996 - 2004



[1] Percentage of all persons diagnosed with HIV each year that received an AIDS diagnosis within 12 months of HIV diagnosis. Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

From 1996 to 1998, the percentage of persons with less than one year from HIV diagnosis to AIDS fell from 55 to 40. This may be due to people seeking testing earlier in the course of their infection and/or to the effect of antiretroviral therapies that first became available in 1995.

In 1999, the percentage of persons with short intervals between HIV and AIDS diagnoses increased to nearly 60% but has been decreasing slowly since then, and has nearly returned to pre-1999 levels. Forty-five percent of persons diagnosed with HIV in 2004 were late testers. The amount of time from initial infection with HIV to meeting a definition of AIDS is 9 to 10 years, on average, when the infection is untreated. Given the relatively low numbers of diagnoses in Iowa, there may be significant variation from year to year in the percentage of people with late HIV diagnoses. Nationally, 43% of persons diagnosed between 1994 and 1999 were late testers.

Although the proportion of late testers has decreased over time, the number of late testers remains a concern in Iowa, especially for minorities. Across the United States, African Americans are much less likely to access health care in a timely manner and often enter the system when their medical conditions are more complicated and pronounced.[1] Late testing is associated with poorer health outcomes and earlier deaths. Late testers benefit less from antiretroviral therapy, and have more opportunities to spread HIV to partners. According to a

[1] *African Americans in Iowa: A Snapshot of Health Disparity Issues,* University of Northern Iowa Project EXPORT and New Iowans Program.

CDC study, late testers are more likely to be heterosexual, have lower education levels, and be members of racial and ethnic minorities.[2] In Iowa, minorities also tend to be late testers more often than white, non-Hispanic persons. From 2003 to 2005, 45% of white, non-Hispanic persons were late testers. This compares to 47% for Black, non-Hispanic persons, 53% for Hispanic persons, and 52% for foreign-born persons.

Immigration of HIV-Positive Persons to Iowa

Immigration of persons with HIV to Iowa may also affect the number of diagnoses of HIV in Iowa. Diagnoses of HIV infection that occur outside of the United States or its territories are not recognized by the surveillance system, according to CDC guidelines. Persons with previously documented diagnoses are counted by the place of residence at time of first test or treatment *within the United States*. Therefore, immigration of HIV-positive persons to the United States may have a substantial impact on data trends and interpretation of those trends.

There are a number of different types or classes of immigrants assigned by the U.S. Department of Justice's Immigration and Naturalization Service. These classes include immigrant, naturalized citizen, refugee, asylee, nonimmigrant, and undocumented immigrant. Nonimmigrants include foreign government officials, visitors for business and for pleasure, aliens in transit through the United States, treaty traders and investors, students, international representatives, temporary workers and trainees, representatives of foreign information media, exchange visitors, fiancé(e)s of U.S. citizens, intracompany transferees, NATO officials, religious workers, and some others.

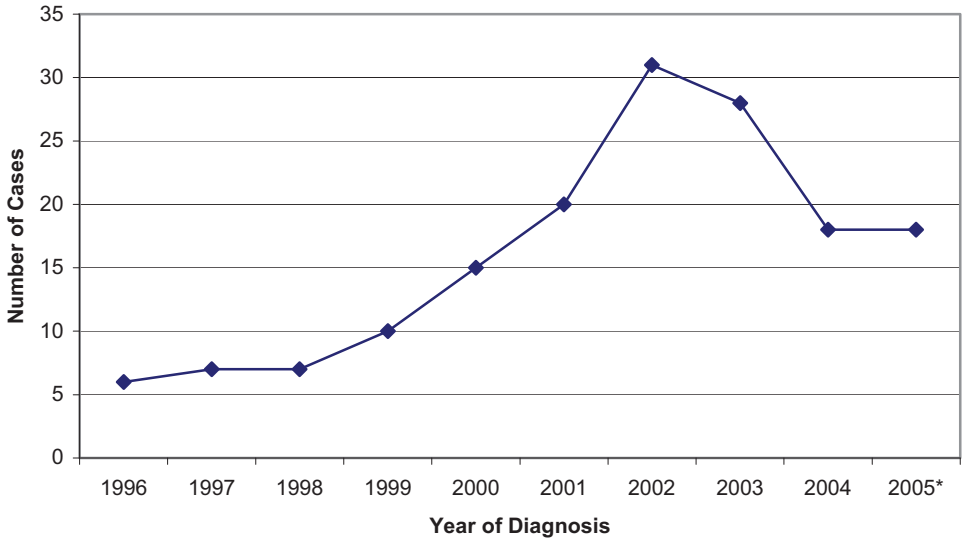
Section 212(a)(1)(A)(i) of the Immigration and Nationality Act renders inadmissible any applicant for a visa or admission to the United States who has HIV. However, a number of waivers of inadmissibility are available for humanitarian and family unit concerns. In addition, some classes of immigrant and nonimmigrant (including students) are initially admitted without an HIV test. A change in immigration status within the U.S., however, does require an HIV test as part of a physical examination. Persons admitted without HIV tests may also be tested in the U.S. for reasons other than a change in immigration status, including seeking the test on their own. These people may, therefore, be diagnosed as residents of Iowa. Illegal or undocumented immigrants may be diagnosed as residents of Iowa as well. Immigration status is not collected on case report forms or in interviews.

Refugee/asylee is another class of people who immigrate to the U.S. Refugees and asylees are defined as persons who are outside their countries of nationality and are unable or unwilling to return to those countries because of persecution or a well-founded fear of persecution. A refugee seeks asylum from outside the U.S. whereas an asylee requests it once he or she is in the U.S. HIV-infected refugees may be resettled in the United States if a humanitarian waiver is obtained. Despite previous diagnoses of HIV infection, the refugee will be considered to be diagnosed in the place of resettlement when he or she first receives testing or treatment.

[2] Late Versus Early Testing of HIV – 16 Sites, United States, 2000 – 2003. CDC. MMWR 2003;52(25);581-586.

Figure 7 shows the number of diagnoses of HIV infection for persons in Iowa who were born in foreign countries. Country of origin is collected on the confidential case report form and can be used as an imperfect predictor of who is an immigrant. Between 1996 and 2002, the number of diagnoses among foreign-born persons in Iowa increased 417%. In 2002, foreign-born persons accounted for nearly 30% of all diagnoses in Iowa. After 2002, the trend began to reverse. In 2005, there were 18 foreign-born persons diagnosed in Iowa, accounting for 16% of all diagnoses.

Figure 7
Diagnoses of HIV Infection[1] to Foreign-born Persons in Iowa
1996 – 2005



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Outside of HIV-positive refugees, it is not clear how many foreign-born persons immigrated with HIV or how many may have become infected while in the United States. Immigrant populations from areas in the world where HIV is more prevalent may also have higher rates of infection within the United States, if one assumes that they would be more likely to interact with persons from their country of origin than would a U.S.-born person, and that prevalence of HIV in the immigrant population reflects that in their home country.

Region of origin for foreign-born persons diagnosed with HIV between 2000 and 2005 is shown in Table 5. Forty-three percent were of Hispanic origin, 47% were African, and 6% were Southeast Asian. More than 54% of foreign-born males were of Hispanic origin, but 73% of females were of African descent.

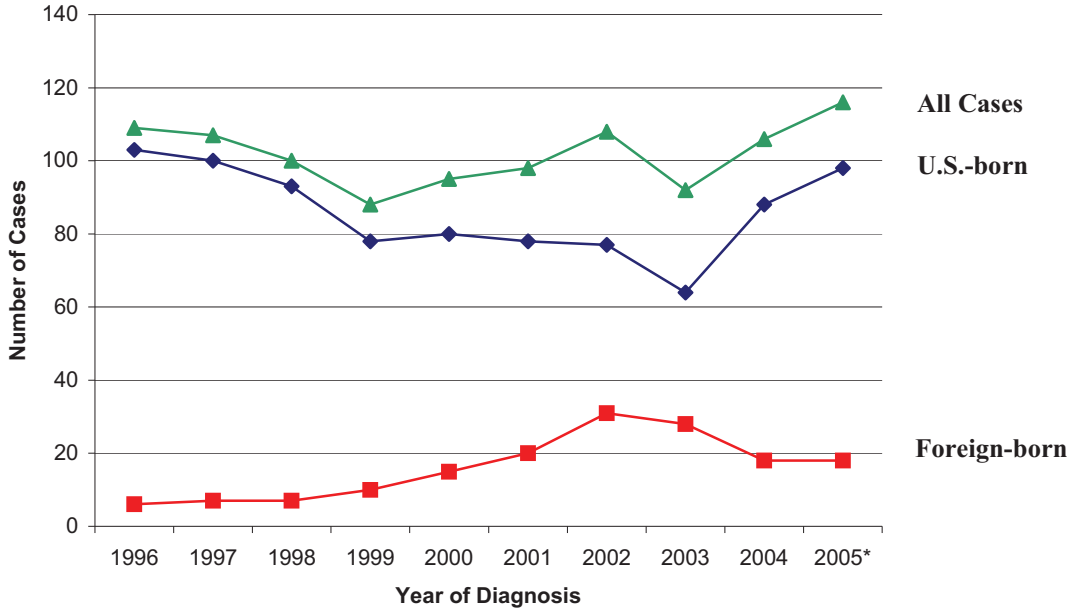
Table 5
Region of Origin for Foreign-born Persons Diagnosed in Iowa
2000 – 2005

Region	Regional Totals		
	Males	Females	All
Central/South America/ Caribbean	44	12	56
Africa	25	36	61
Southeast Asia	8	0	8
Other	4	1	5
All regions	**81**	**49**	**130**

The past increases in diagnoses among foreign-born persons have had some significant impacts on the interpretation of epidemiological data in Iowa. Most obviously, numbers of diagnoses among U.S.-born persons may be misinterpreted, particularly those of African Americans and U.S.-born Hispanics. If the number of new diagnoses among foreign-born individuals remains constant or continues to decrease, the effect on the interpretation of the epidemic among U.S.-born persons in Iowa will be less significant.

Figure 8 demonstrates how the diagnosis curve for Iowa differs if foreign-born persons are plotted separately from U.S.-born persons. Increases seen in the number of new diagnoses in Iowa from 1999 to 2002 were due to increases in diagnoses among foreign-born persons. Diagnoses among U.S.-born persons declined continuously throughout this period. Increases in diagnoses since 2002 have been exclusively among U.S.-born persons, however.

Figure 8
Diagnoses of HIV Infection[1] in Iowa by Place of Origin
1996 – 2005



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

If foreign-born persons diagnosed in Iowa differ substantially than U.S.-born persons in terms of gender, race and ethnicity, risk, or age, then they will affect trends in overall diagnoses among these strata. For that reason, this profile will examine diagnoses among foreign-born persons separately as part of the interpretation of trends.

Summary of Statewide HIV Data

- The number of newly diagnosed HIV infections increased 7% since 2004 and 23% since 2003. These increases are largely due to increases in cases among U.S.-born persons.

- Between 1996 and 2002, the number of diagnoses among foreign-born persons in Iowa increased 417%. Since then decreases in the number of new diagnoses have been observed. Since 2000, 90% of foreign-born persons with HIV emigrated from Africa or Central and South America.

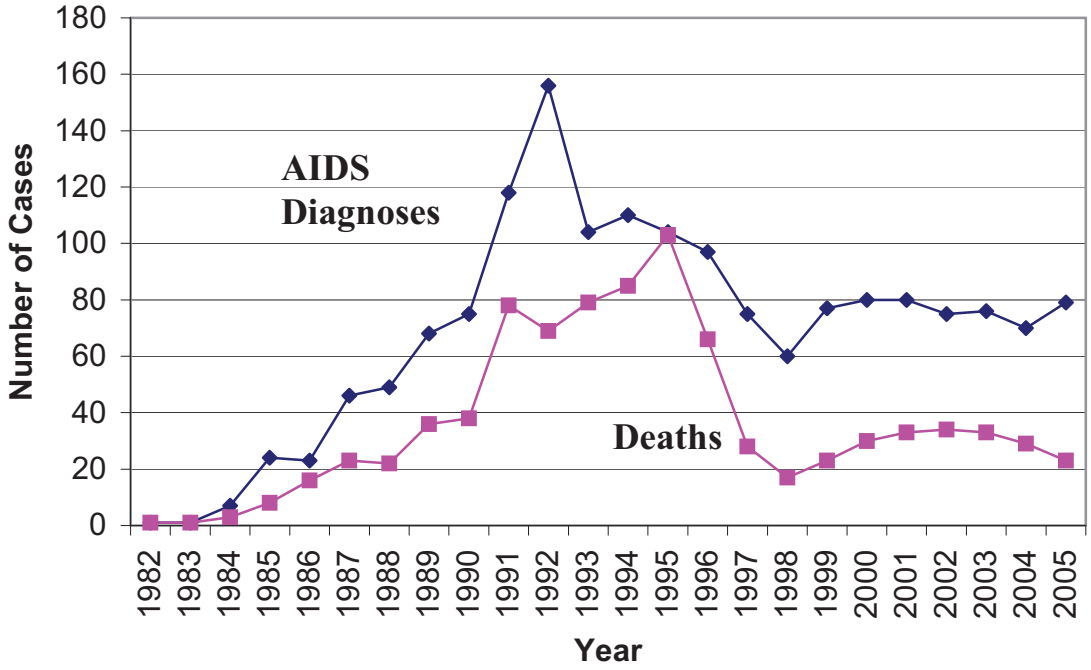
- Forty-five percent of all persons diagnosed with HIV in 2004 were subsequently diagnosed with AIDS within the following year. This may indicate that initial diagnosis is occurring years after infection. Minorities also tend to be late testers more often than white, non-Hispanic persons. From 2003 to 2005, 45% of white, non-Hispanic persons were late testers. This compares to 47% for Black, non-Hispanic persons, 53% for Hispanic persons, and 52% for foreign-born persons.

- The number of HIV tests conducted at IDPH-funded test sites has generally been declining since 1996. At the same time, the proportion of new diagnoses that are occurring at private test sites has been increasing.

Diagnoses of AIDS

The number of Iowa's AIDS cases, based upon the date that a case was first diagnosed as meeting the AIDS case definition, and the number of deaths of persons with HIV/AIDS are presented in Figure 9 and Table 6.

Figure 9
Iowa AIDS Diagnoses and Deaths of Persons with HIV/AIDS from All Causes
1982 – 2005*



* Data for 2005 were reported through June 30, 2006. Because of reporting delays, 2005 data may be incomplete.

In Iowa, AIDS diagnoses peaked in 1992 (Figure 9). Changes in the definition of AIDS occurred in 1985, 1987, and 1992 (see Core HIV/AIDS Surveillance under Data Sources at the beginning of this chapter). Each change in definition increased the number of diagnoses that year. The major increase in diagnoses in 1992 is largely explained by the inclusion of CD4+ cell counts below 200 cells per microliter of serum (or less than 14% of total lymphocytes) as AIDS-defining conditions, but it also represents a peak in the epidemic. This is indicated by a continuous decrease in the number of cases diagnosed through 1998.

This decrease probably represents an actual decline in the number of AIDS cases rather than an artifact of reporting or a consequence of the change in definition described previously. A factor contributing to this downward trend was the use of combination antiretroviral therapy to slow HIV disease progression to AIDS. The decrease in AIDS diagnoses did not correlate with a significant decrease in new HIV diagnoses, and is, therefore, due almost entirely to treatment advances rather than to a decrease in new infections of HIV.

Table 6
Iowa AIDS Diagnoses[1] and Deaths of Persons with HIV/AIDS[2]
by Year of Diagnosis or Death

Year	AIDS Diagnoses	Deaths
1982	1	1
1983	1	1
1984	7	3
1985	24	8
1986	23	16
1987	46	23
1988	49	22
1989	68	36
1990	75	38
1991	118	78
1992	156	69
1993	104	79
1994	110	85
1995	104	103
1996	97	66
1997	75	28
1998	60	17
1999	77	23
2000	80	30
2001	80	33
2002	75	34
2003	76	33
2004	70	29
2005	79	23
Total	**1,655**	**878**

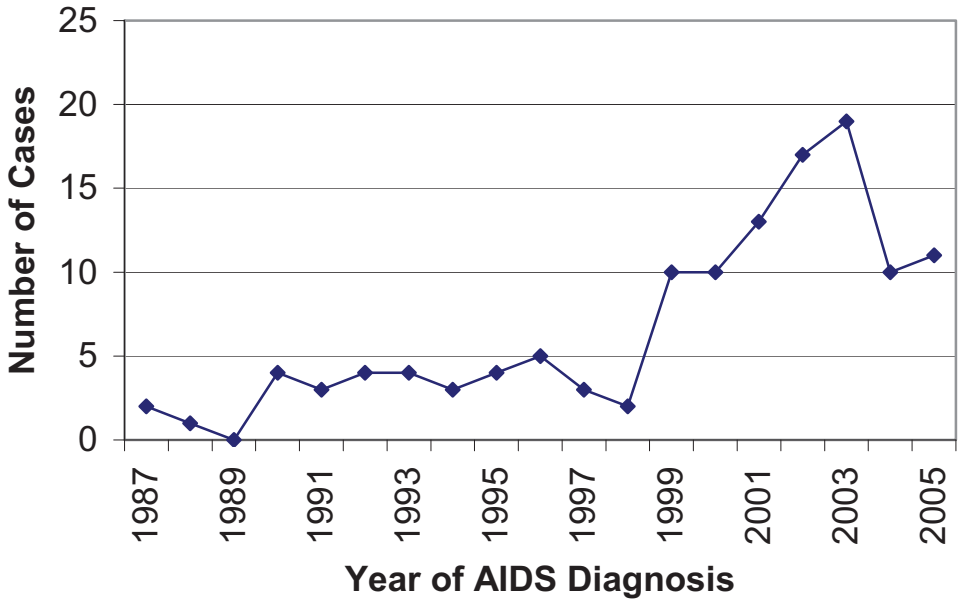
[1] Diagnoses and deaths for 2005 were reported through July 1, 2006. Because of reporting delays, 2005 diagnoses and reports of deaths may be incomplete.
[2] Reported deaths of persons with HIV/AIDS. Deaths were not necessarily related to HIV infection. Deaths of persons with HIV (not AIDS) are included.

Since 1999 the number of AIDS diagnoses has been stable at nearly 80 cases annually. In 2005, there were 79 new diagnoses of AIDS, an increase of 13% from 2004, but in line with the 9-year average of 77 cases. This may indicate that persons diagnosed with HIV are engaged in primary medical care and are receiving highly active antiretroviral therapy (HAART).

The sharp decline in deaths of persons with HIV/AIDS after 1995 (Figure 8) also indicates the success of HAART. Deaths declined until 1998, when 17 deaths were reported. Deaths rebounded somewhat after 1998 but peaked in 2002 at 34. This rebound may indicate that while HAART therapy was initially effective for some people, it may have only delayed death for a period of time for those who were late in the course of the disease.

There was a dramatic increase in the number of foreign-born persons who were diagnosed with AIDS in Iowa from 1998 to 2003. Figure 10 shows the number of diagnoses of AIDS among foreign-born persons in Iowa since 1987. In 2005, 14% of all AIDS diagnoses were among foreign-born persons. Since 1999, 80 foreign-born persons have been diagnosed with AIDS in Iowa. Fifty-one (64%) of these people were male. The majority of the males diagnosed with AIDS (63%) were of Hispanic descent, whereas 66% of females were of African descent.

Figure 10
Diagnoses of AIDS to Foreign-born Persons in Iowa
1987 – 2005*



* Data for 2005 were reported through June 30, 2006. Because of reporting delays, 2005 data may be incomplete.

Summary of Statewide AIDS Data

- Diagnoses of AIDS peaked in 1992, coinciding with the change in definition of AIDS to include CD4+ cell counts less than 200 cells/microliter or 14% of total lymphocytes. The advent of highly active antiretroviral therapy (HAART) sparked a dramatic decline in diagnoses of AIDS from 1995 – 1998.

- After reaching a low in 1998, the number of diagnosed AIDS cases increased to an annual average of 77 cases through 2005.

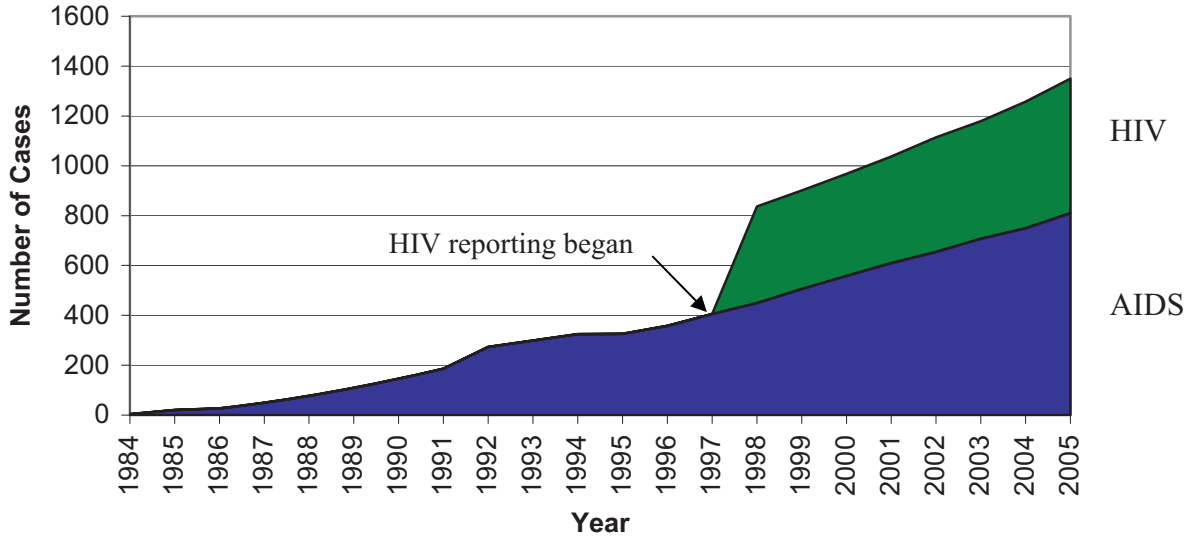
- Deaths of persons with HIV/AIDS declined from 1995 until 1998, when 17 deaths were reported. The number of deaths rebounded somewhat after 1998 but peaked in 2002 at 34. This rebound may indicate that while HAART therapy was initially effective for some people, it may have only delayed death for a period of time for those who were late in the course of the disease.

- The number of foreign-born persons diagnosed in Iowa with AIDS increased substantially between 1998 and 2003. Most of these persons were male (64%) and of these, most were of Hispanic origin. Among the foreign-born females, most (66%) were of African descent.

PREVALENCE OF HIV/AIDS

The decrease in deaths of persons with AIDS after 1994, combined with a relatively steady number of HIV diagnoses, have contributed to an increase in the number (prevalence) of persons living with HIV infection and AIDS (Figure 11). Since 1996, the number of Iowans living with AIDS has more than doubled, increasing from 358 in 1996 to 809 in 2005. There were 531 persons living with HIV at the end of 2005 for a total of 1,340 persons living with HIV/AIDS on December 31, 2005.

Figure 11
Number of Iowans Living with a Diagnosis of HIV or AIDS[1]
on December 31 of Each Year

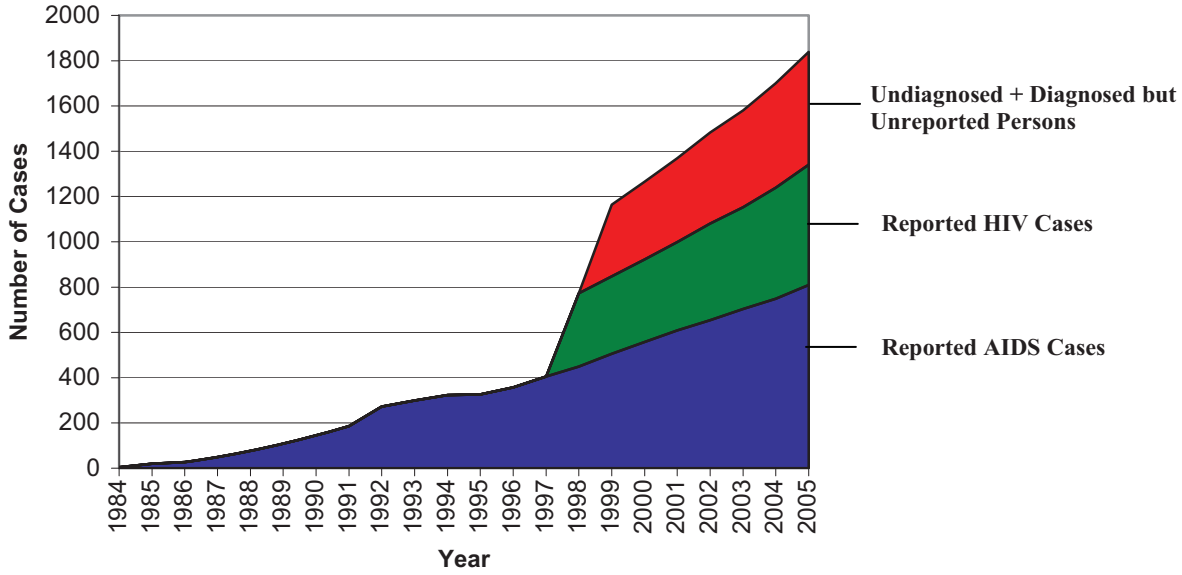


[1] Persons reported through June 30, 2006, as having HIV or AIDS and living in Iowa at time of diagnosis. Reporting of HIV infection began July 1, 1998. A person may be counted only once (as either HIV or AIDS) in a given year. All deaths may not have been reported.

Estimated Prevalence

Not shown in Figure 11 are persons who are diagnosed but have not been reported, and persons who may be infected with HIV but who have not yet been tested. Evaluations of the surveillance system indicate that HIV data are 96% complete and AIDS data are 98% complete. That is, there may be an additional 22 persons diagnosed with HIV and 17 persons diagnosed with AIDS who have not been reported. The Centers for Disease Control and Prevention estimate that, nationally, 25% of HIV-infected persons have not yet been diagnosed. That would mean that there are an additional 460 infected Iowans who have not been diagnosed yet. Adjusting the data for the 499 unreported and undiagnosed persons gives an HIV/AIDS prevalence estimate of 1,839 living infected persons for the state (Figure 12).

Figure 12
Estimated Number of Iowans Living with HIV or AIDS[1]
on December 31 of Each Year



[1] Persons reported through June 30, 2006, as having HIV or AIDS and living in Iowa at time of diagnosis. Reporting of HIV infection began July 1, 1998. A person may be counted only once (as either HIV or AIDS) in a given year. All deaths may not have been reported.

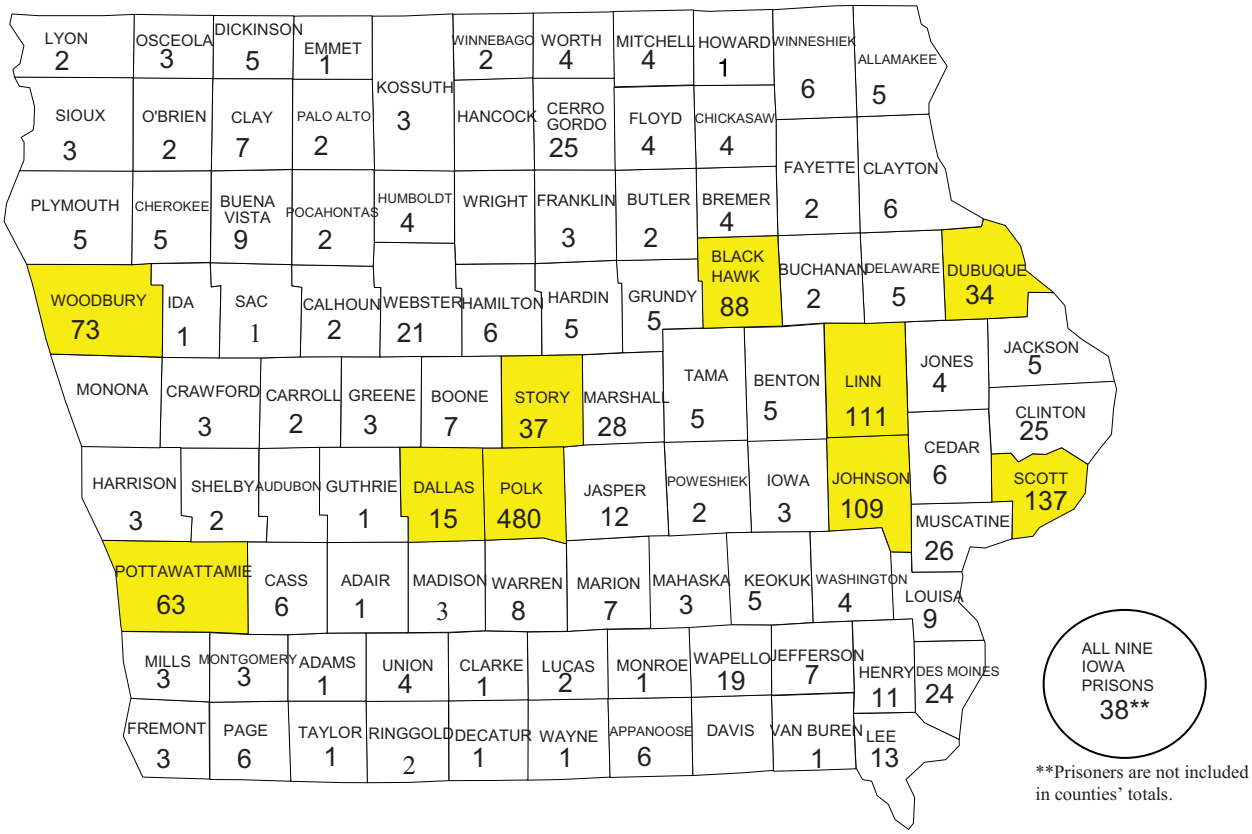
Geographical Distribution of HIV and AIDS

Since reporting began in 1983, 96 of the 99 counties in Iowa have reported at least one HIV or AIDS case. While the ten most populous counties of Black Hawk, Dallas[3], Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury account for 48% of the total population, 65% of persons living with HIV/AIDS were diagnosed as residents of these counties (not including persons diagnosed in state correctional facilities).

Figure 13 presents the geographical distribution of cumulative AIDS cases in Iowa. All persons diagnosed with AIDS while a resident of Iowa since 1983 are shown. The ten most populous counties are shaded.

[3] In 2005, the U.S. Census Bureau estimated that Dallas County's population (pop. 51,762) exceeded that of Clinton County (pop. 49,717) for the first time.

Figure 13
Iowa AIDS Cases by County of Residence at Time of Diagnosis
February, 1983 – December, 2005

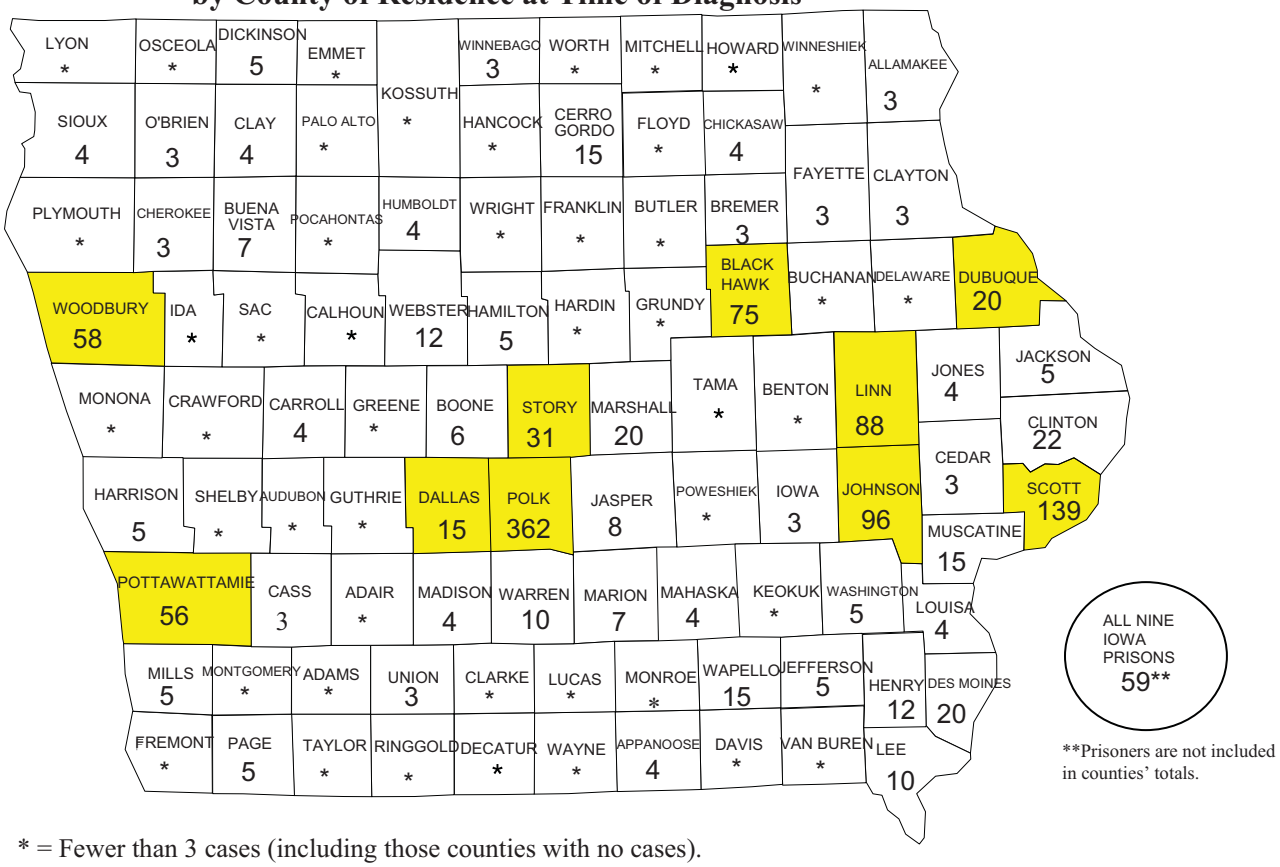


Total = 1,655 cases. Numbers indicate both living and deceased persons. Persons diagnosed within the Iowa Department of Correction's nine prisons are shown separately. The ten most populous counties are shaded.

Because Figure 13 represents only persons with AIDS, some of whom may have been diagnosed many years ago, it may not accurately reflect the geographical distribution of new or existing cases of HIV infection. By removing persons who are no longer living and adding persons who are living with HIV (not AIDS) to the map, a better picture of HIV infection in Iowa emerges.

Figure 14 shows the distribution of all prevalent cases of HIV disease; that is, all living persons with HIV or AIDS on December 31, 2005. Cases are plotted according to county of residence at time of diagnosis of AIDS, for AIDS cases, or of HIV, for non-AIDS cases.

Figure 14
Living HIV and AIDS Cases on December 31, 2005
by County of Residence at Time of Diagnosis

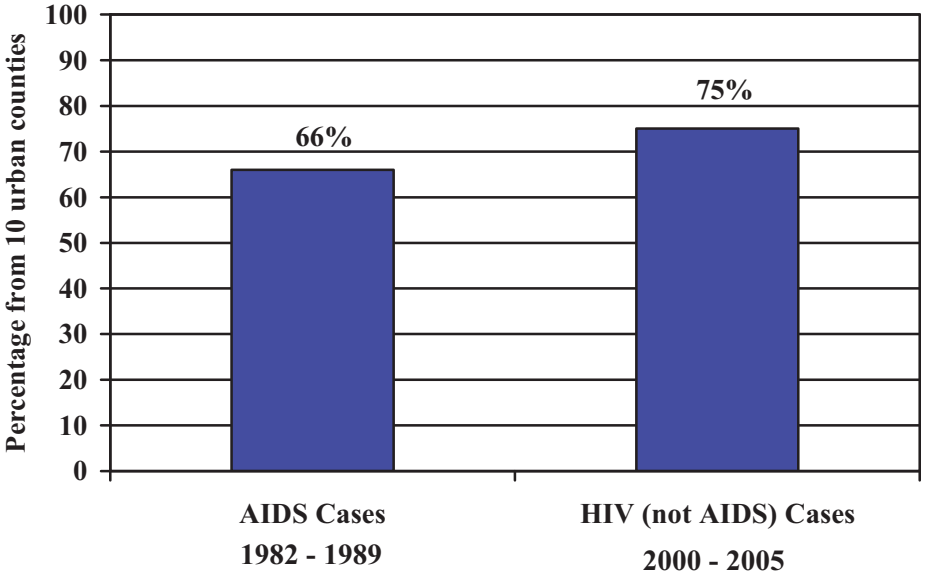


* = Fewer than 3 cases (including those counties with no cases).

Total = 1,340 cases (835 AIDS and 505 HIV cases). All deaths may not have been reported. Persons diagnosed within the Iowa Department of Correction's nine prisons are shown separately. The ten most populous counties are shaded.

Recent reports of HIV diagnoses indicate that an increasing concentration of diagnoses is being made for residents of the ten most populous counties in Iowa. Using AIDS cases diagnosed between 1982 and 1989 as an indication of where early infections were occurring, and comparing their residence of diagnosis with persons who were recently diagnosed with HIV but not AIDS (to capture cases that are more likely to be the result of recent infections), it becomes evident that there has been a gradual trend over time toward a more urban distribution of HIV infection in Iowa (Figure 15). Of recent diagnoses, 75% were among persons living in the ten most populous counties whereas only 66% of AIDS cases diagnosed between 1982 and 1989 were among residents of those counties.

Figure 15
Percentage of 1982 - 1989 AIDS[1] Cases and 2000 – 2005 HIV[2] Cases from Ten Most Populous Counties According to Residence at Time of Diagnosis



[1] Diagnosed between January, 1982 and December, 1989.
[2] Diagnosed between January, 2000 – December, 2005, and were not diagnosed with AIDS within a year of their HIV diagnosis.

The concentration of infection in the most populous counties is further illustrated by comparing the number of cases per 100,000 persons in each of the counties. Table 7 and Figure 16 show the prevalence of HIV infection (persons living with HIV or AIDS) on December 31, 2005, by county, for those counties with more than five cases. The statewide prevalence of persons living with HIV or AIDS is 45 cases per 100,000 persons. The ten most populous counties have a prevalence that is 3 times the average of the other 89 counties.

Polk County, with the capital city of Des Moines, has the highest prevalence at 90.3 persons per 100,000 population. Scott County, with the major cities of Davenport and Bettendorf in eastern Iowa, ranked second at 86.3 cases per 100,000 population. Johnson County, the location of the largest university in the state and the Iowa City/Coralville metropolitan area, has the third highest prevalence of persons living with HIV and AIDS at 82.0 cases per 100,000 persons. Polk, Johnson, Scott, Black Hawk, Pottawattamie, and Woodbury counties have the highest prevalences among the ten most populous counties.

Based on 2005 Census estimates, Dallas County overtook Clinton County as the tenth most populated county in Iowa. Comparisons to previously reported statistics regarding the 10 most populous counties should be done with this note in mind.

Table 7
Prevalence[1] of HIV and AIDS by County[2] and for 10 Most Populous Counties on December 31, 2005

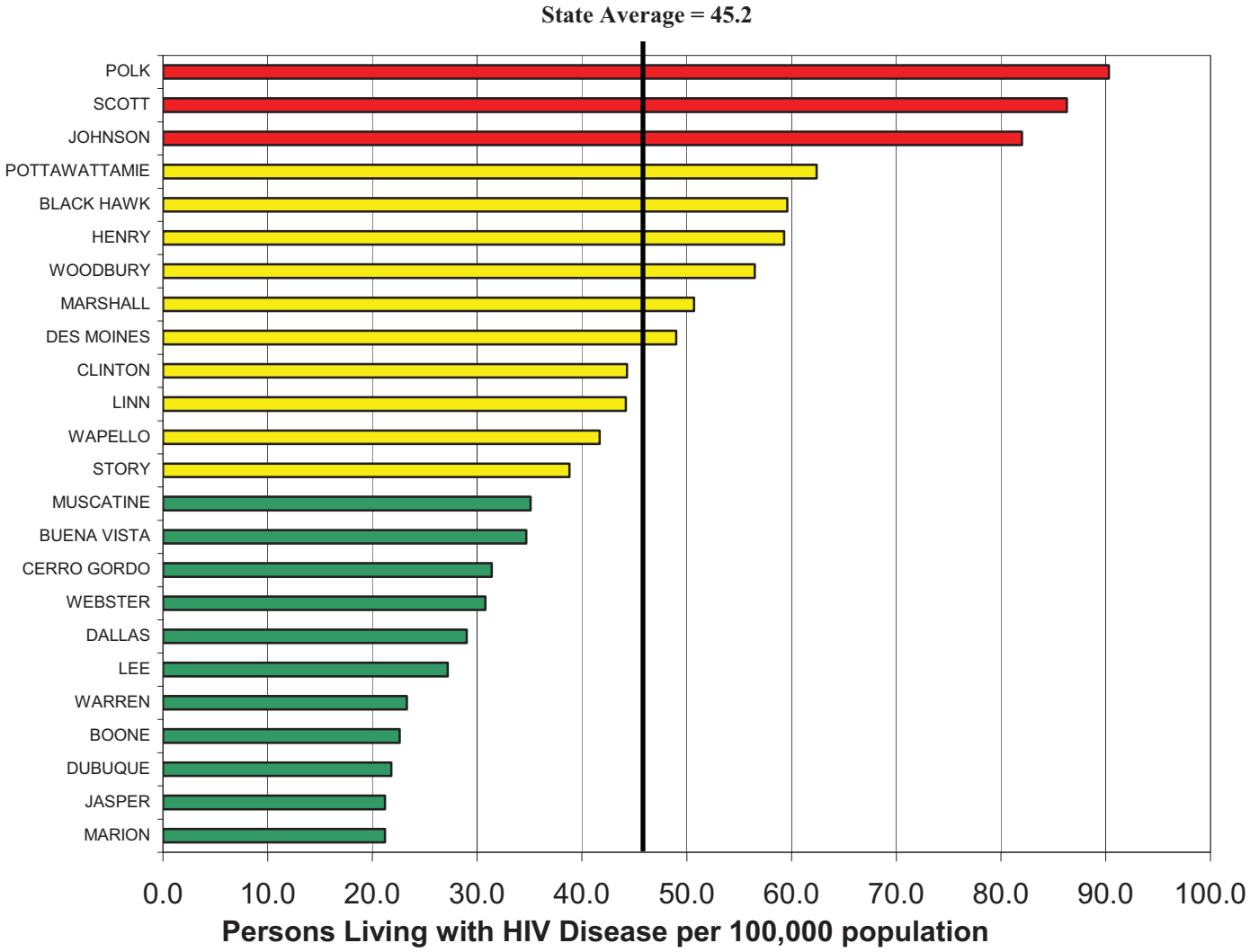
County	# Living Cases	2005 Estimated Population	Prevalence (per 100,000 pop.)
Polk	**362**	**401,006**	**90.3**
Scott	**139**	**160,998**	**86.3**
Johnson	**96**	**117,067**	**82.0**
Pottawattamie	**56**	**89,738**	**62.4**
Black Hawk	**75**	**125,891**	**59.6**
Henry	12	20,246	59.3
Woodbury	**58**	**102,605**	**56.5**
Marshall	20	39,418	50.7
Des Moines	20	40,810	49.0
Clinton	22	49,717	44.3
Linn	**88**	**198,903**	**44.2**
Wapello	15	35,965	41.7
Story	**31**	**79,952**	**38.8**
Muscatine	15	42,756	35.1
Buena Vista	7	20,151	34.7
Cerro Gordo	14	44,645	31.4
Webster	12	39,003	30.8
Dallas	**15**	**51,762**	**29.0**
Lee	10	36,705	27.2
Warren	10	42,981	23.3
Boone	6	26,602	22.6
Dubuque	**20**	**91,631**	**21.8**
Jasper	8	37,674	21.2
Marion	7	32,984	21.2
Counties with ≤6 cases	163	---	---
Prison System	59	---	---
Total – ten most populous	**940**	**1,419,553**	**66.2**
Total – all other counties[3]	**341**	**1,546,781**	**22.0**
All Cases Total	**1,340**	**2,966,334**	**45.2**

[1] Persons living with diagnoses of HIV or AIDS. All deaths may not have been reported.
[2] Only counties with more than five cases are included. The ten most populous counties are italicized.
[3] Fifty-nine persons were diagnosed while in correctional facilities. These cases are listed under the Prison System and are included in the All Cases Total, but are not included in the county data or the county totals.

Story, Linn, Dallas, and Dubuque counties differ from the other six most populous counties in that their prevalences are lower than the state average of 45.2 persons per 100,000 population. Counties with five or fewer cases are not shown. Rate calculations in counties with a small number of prevalent HIV or AIDS cases should be interpreted with caution as the rates are considered to be unstable.

Nine counties have prevalence rates higher than the state average. Of these, eight counties reported more than 20 persons living with HIV/AIDS.

Figure 16
Prevalence[1] of HIV and AIDS by County[2] on December 31, 2005



[1] Persons living with diagnoses of HIV or AIDS per 100,000 population. All deaths may not have been reported.

[2] Only counties with more than five cases are included.
Fifty-nine cases were diagnosed at correctional medical facilities. These cases are included in the state average, but are not included in county totals where the correctional facilities are located.

Summary of HIV/AIDS Prevalence Data

- Since 1996 the number of Iowans living with AIDS has more than doubled (from 358 in 1996 to 809 in 2005). There were 1,340 Iowans living with HIV or AIDS on December 31, 2005.

- Adjusting the data for those unreported and undiagnosed persons gives an HIV/AIDS prevalence estimate of 1,839 living infected persons for the state, based on the CDC estimate of 25% of persons having an undiagnosed infection.

- There were 45 persons living with HIV or AIDS per 100,000 population in Iowa in 2005. This was an increase of 8 persons per 100,000 from 2002. This is due largely to a slowing in AIDS deaths and recent increases in the number of newly diagnosed HIV disease cases.

- Newer diagnoses are more often from urban areas. Seventy-five percent of persons diagnosed with HIV (not AIDS) from 2000 to 2005 were living in one of Iowa's ten most populous counties compared to only 66% of AIDS cases diagnosed from 1982 - 1989. Only 48% of Iowans live in those 10 counties.

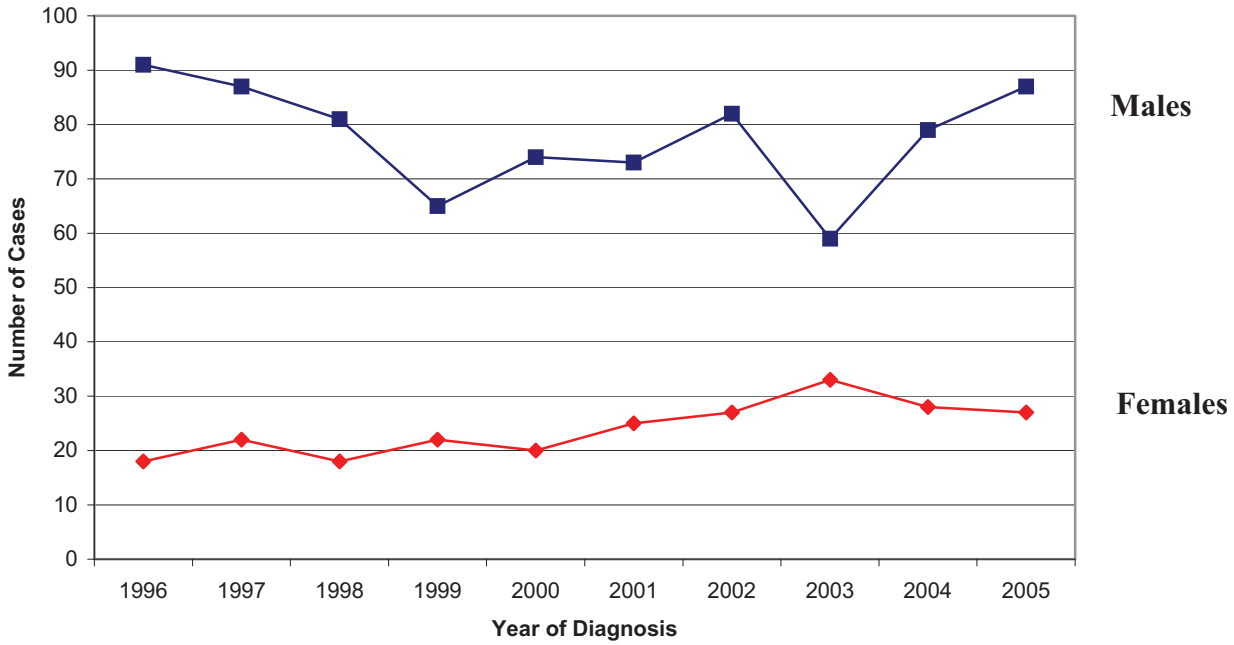
- Among the ten most populous counties, Polk, Scott, Johnson, Black Hawk, Pottawattamie, and Woodbury counties have the highest prevalences of persons living with HIV or AIDS. Linn, Dallas, Dubuque, and Story counties have prevalences below the average for the state. Clinton County is no longer in the top ten most populous counties, and caution should be used when comparing data to previously reported statistics.

GENDER AND AGE

Gender – HIV Diagnoses

Figure 17 shows the number of HIV diagnoses by gender. Males have historically accounted for the largest proportion of new cases, and they continue to do so. Trends among males and females differ significantly, however. The number of newly diagnosed HIV cases in males generally decreased from 1996 to 2003, but increased sharply in 2004 and 2005. Diagnoses among females slowly increased from 1996 to 2003 but decreased somewhat after 2003. Most importantly, the recent increases in HIV diagnoses overall (Figure 3, page 17) are explained by increased diagnoses among males.

Figure 17
HIV Diagnoses[1] for All Iowa Cases by Gender
1996 – 2005*

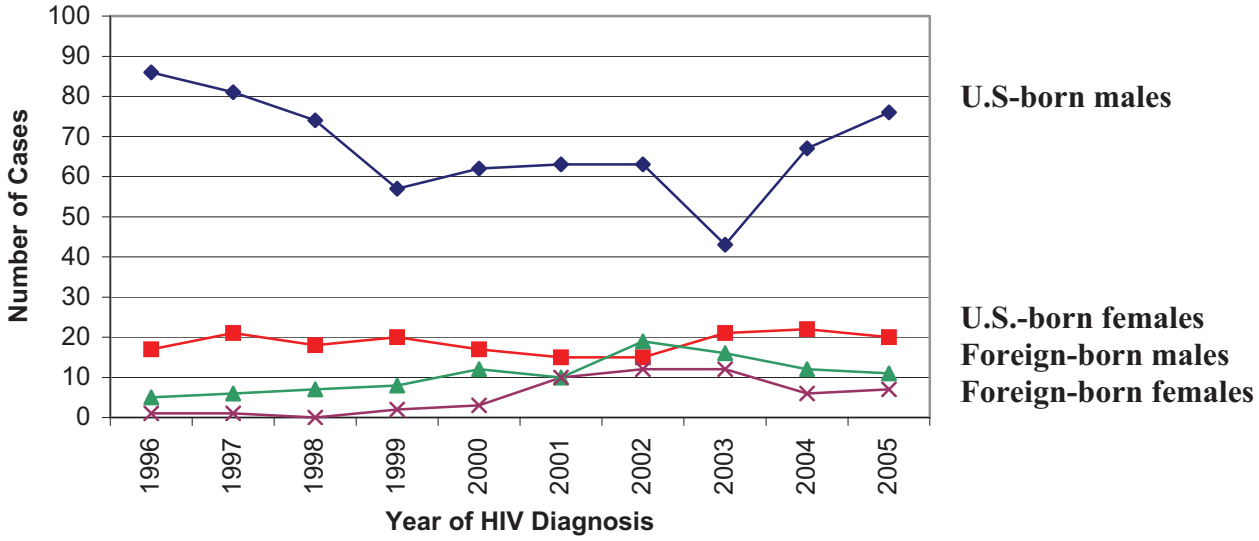


[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

An increased number of foreign-born persons being diagnosed with HIV in Iowa had an impact on the trends in diagnoses by gender. Diagnoses of HIV among U.S.-born and foreign-born persons by gender are shown in Figure 18.

Figure 18
HIV Diagnoses[1] by Gender and Country of Origin
1996 – 2005*



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Separating U.S.-born cases from foreign-born cases makes the interpretation of trends a bit easier. The decline in diagnoses among U.S.-born males was fairly large from 1996 to 2003. The increase in diagnoses among all males in 2002 was due to increases in diagnoses among foreign-born males. However, the significant increases in diagnoses among males in 2004 and 2005 are exclusively among U.S.-born males.

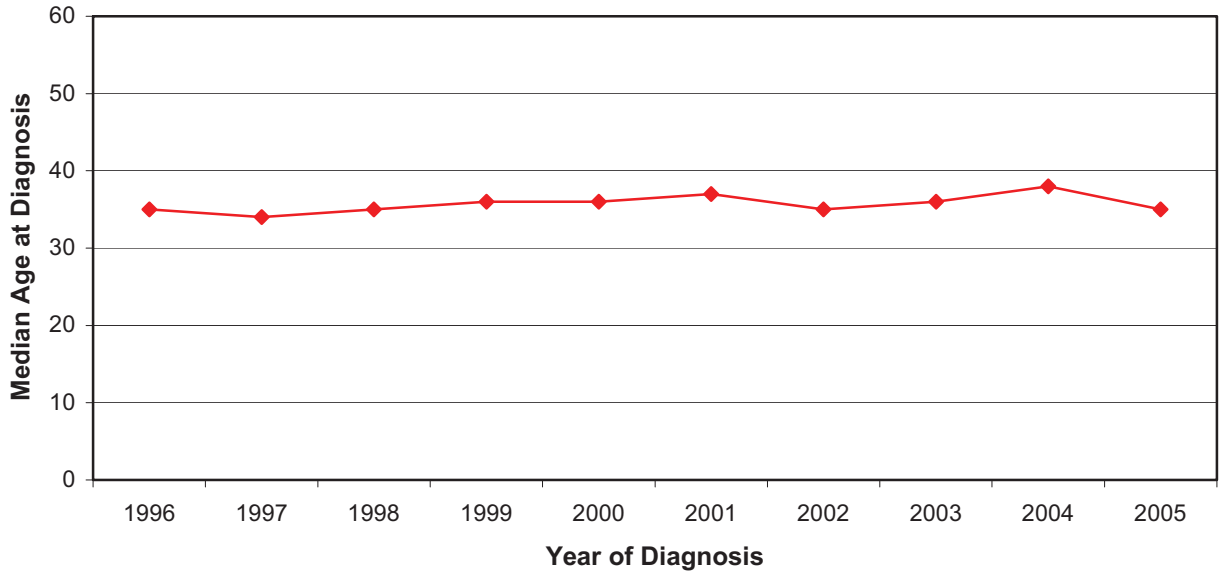
Among U.S.-born females, it is evident that diagnoses have been fairly steady over the past 10 years. Changes in the number of diagnoses among all females have largely been due to fluctuations in the number of foreign-born females being diagnosed. Diagnoses among foreign-born females increased after 2000 but decreased again after 2003.

In summary, diagnoses of HIV infection among foreign-born persons have affected trends among males and females. Diagnoses among U.S.-born males were decreasing from 1996 to 2003 but have increased substantially in the past two years. Diagnoses among U.S.-born females have remained level for the past 10 years. While diagnoses among foreign-born individuals increased after 2000, they declined after 2003.

Age – HIV Diagnoses

A look at median age at HIV diagnosis in Iowa for the past ten years shows that the median age at diagnosis has remained relatively steady, ranging from 34 to 38 years of age (Figure 19). The low of 34 was in 1997 and the peak of 38 was reached in 2004. Median age at diagnosis of HIV fell from 38 in 2004 to 35 in 2005. This reflects an unusual increase in HIV diagnoses among those 13 to 24 years of age in 2005 (see Figure 20).

Figure 19
Median Age at Time of HIV Diagnosis[1] for All Iowa Cases
1996 – 2005*



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

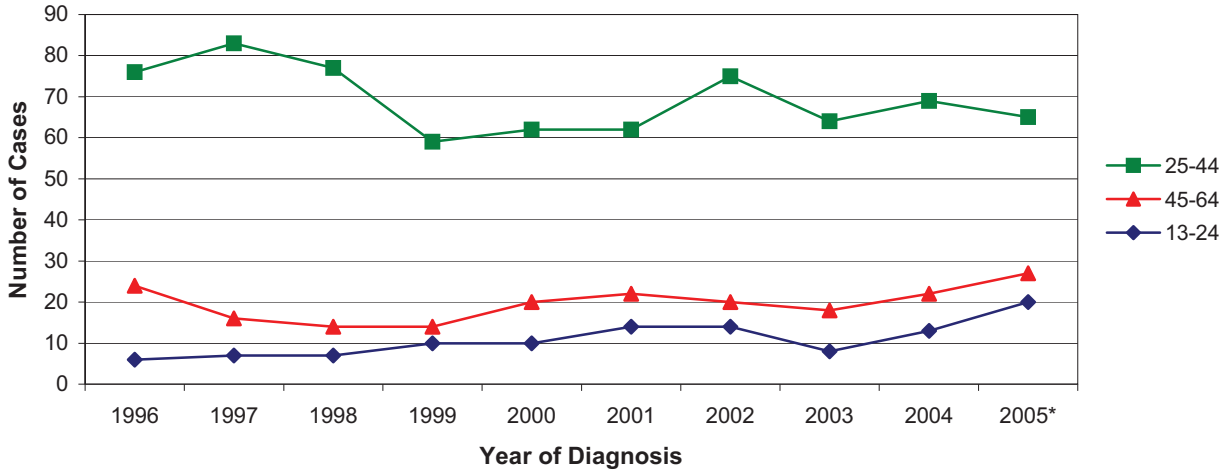
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

The number of persons diagnosed with HIV infection in each of three age groups is shown in Figure 20. Persons 25 to 44 years of age have consistently accounted for the largest number of new diagnoses. Diagnoses among persons in this age group decreased from 1997 to 1999, but have remained fairly level or slowly increasing since then. Since 2003, the number of cases reported in persons 45 to 64 and 13 to 24 years of age has increased annually. Diagnoses among those persons less than 13 years and older than 64 years were too few to plot. In 2005, there was one case diagnosed among persons older than 64 years and one case diagnosed in a person less than 13 years of age.

While the numbers of persons diagnosed between 13 to 24 years of age has generally been low, the number of cases diagnosed in 2005 is more than double the total in 1996 (Figure 20). There were 5 persons who were between the ages of 16 and 19 diagnosed in 2005, an unusual and alarming situation. Table 8 below shows that 26% of females fell into this younger cohort compared to only 15% of males. Several of these cases were related and involved youth who were dating people out of their cohort. This trend will bear watching in the future.

It should also be noted that the number of cases diagnosed in persons aged 45 to 64 years has increased nearly two-fold since 1998. These persons tend to be males.

Figure 20
Age[1] at Time of HIV Diagnosis[2] for All Iowa Cases
1996 – 2005*



[1] There were too few cases among age groups "0-12" and "Over 64" to plot.
[2] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

HIV cases by age and gender are shown in Table 8 for persons diagnosed in 2005. Females diagnosed with HIV were considerably younger than males, with respective median ages of 28 and 39 years at time of diagnosis.

Table 8
Iowa HIV Diagnoses by Age at Diagnosis and Gender
Diagnosed in 2005[1]

	Males		Females		Total	
median age[2]→	**m= 39 years**		**m = 28 years**		**m = 35 years**	
Age at diagnosis	#	(%)	#	(%)	#	(%)
0-1	1	--	0	--	1	--
2-12	0	--	0	--	0	--
13-24	13	(15)	7	(26)	20	(18)
25-44	49	(56)	16	(59)	65	(57)
45-64	24	(28)	3	(11)	27	(24)
65 and over	0	--	1	--	1	--
Total	**87**		**27**		**114**	

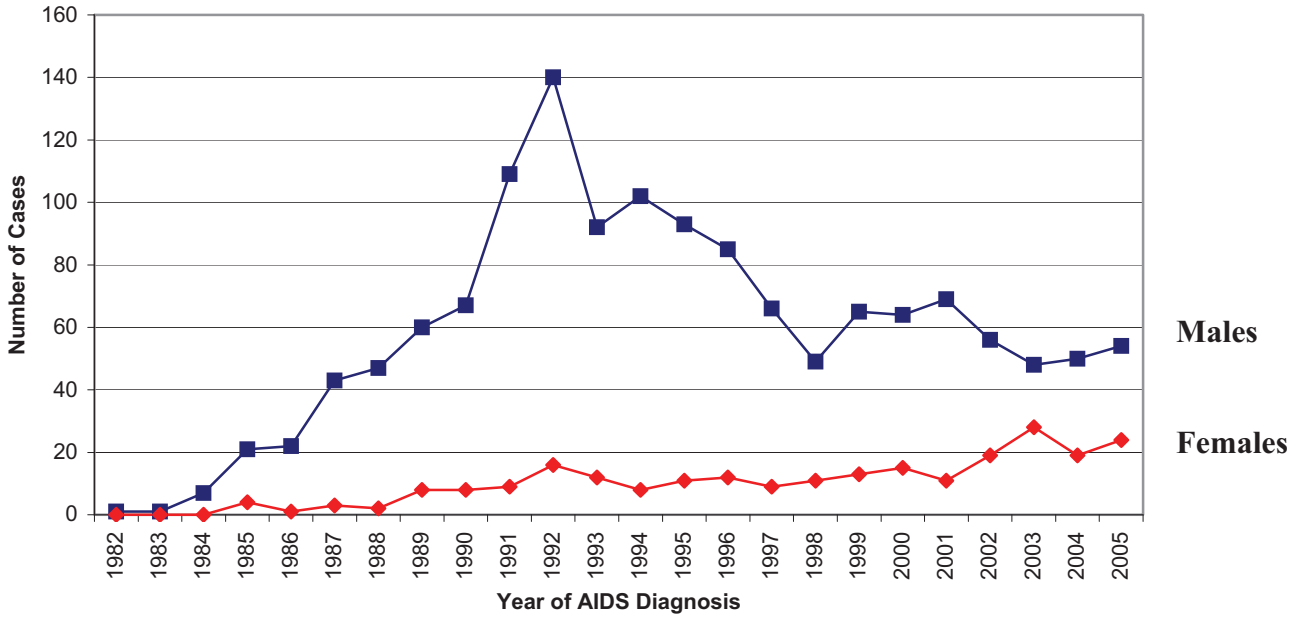
[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown. Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.
[2] m = median age of cases for that time period.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Gender – AIDS diagnoses

Females have historically accounted for a small proportion of Iowa's AIDS cases (Figure 21). From 1982 to 2005, there were 244 AIDS cases reported among females, or approximately 15% of all cases. Diagnoses among females have gradually been increasing, but the increase is most pronounced after 2001. In 2003, there were more than 20 females diagnosed with AIDS for the first time. Since then, the number has remained at or above 20.

Diagnoses of AIDS among males peaked in 1992 at 140 and have decreased substantially since then due to the effectiveness of antiretroviral therapies. However, after reaching a low in 1998, diagnoses again increased through 2003. Some of this increase may indicate that the effectiveness of antiretroviral therapies could not be sustained for some people, perhaps those who already had some significant immune system damage before therapies were begun. Some of the increase in diagnoses after 1998 may also be explained by an increase in diagnoses among foreign-born persons.

Figure 21
Diagnoses of AIDS[1] by Year of Diagnosis and Gender
1982 – 2005*

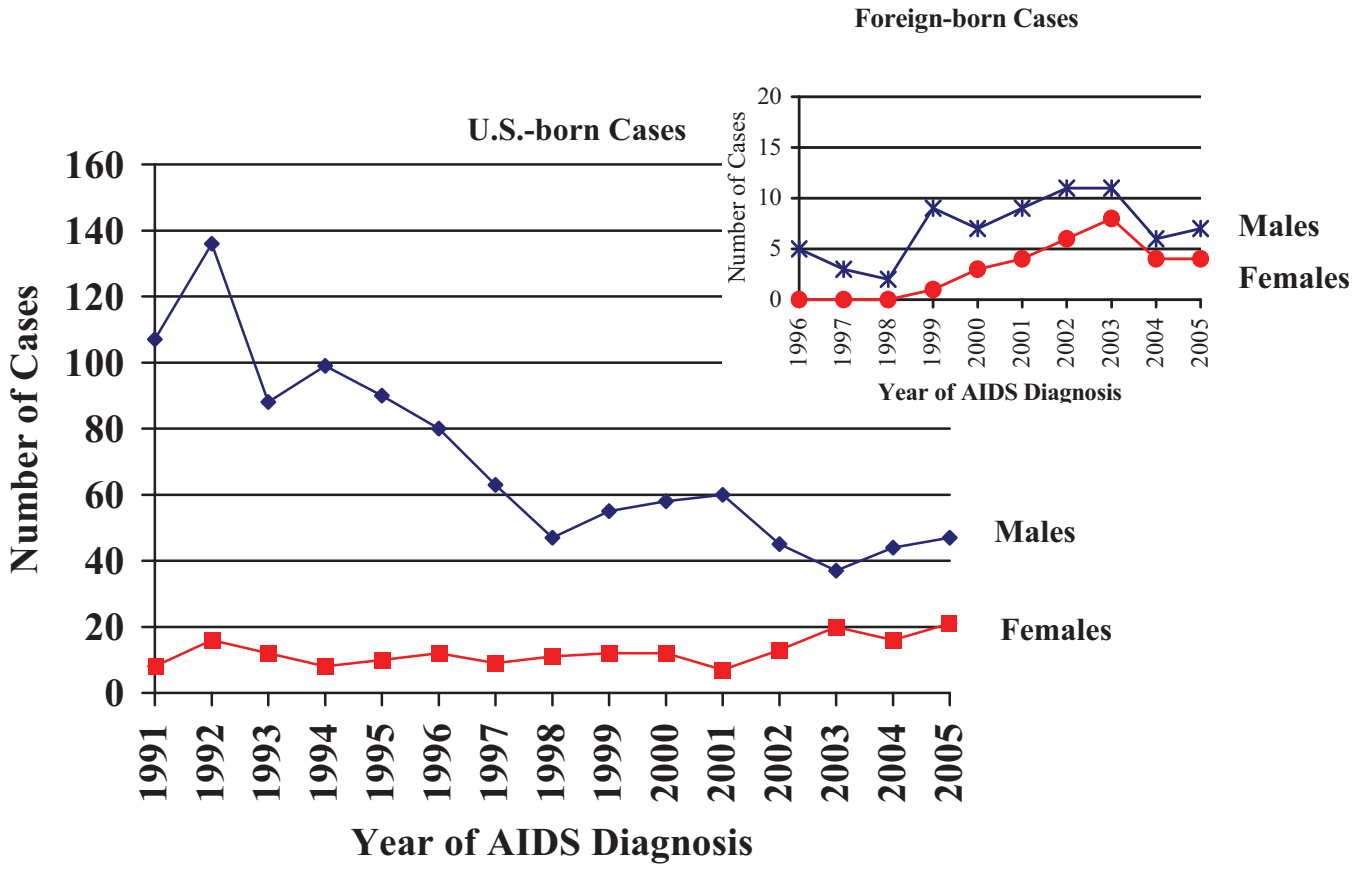


[1] Includes all persons who were diagnosed with AIDS while residents of Iowa.
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

AIDS diagnoses by gender and country of origin are shown in Figure 22. The inset shows that diagnoses of AIDS among foreign-born persons did increase after 1998. While there are still some increases in diagnoses among both male and female U.S.-born persons, the increases are not as prominent as when foreign-born persons are included in the trends.

The annual number of AIDS diagnoses among US-born males has decreased by 65% since the peak in 1992. There were two consecutive years of increases since 2003, however. While AIDS diagnoses among US-born females have been fairly consistent during this period, diagnoses increased somewhat after 2002. Though relatively few AIDS cases have been diagnosed in foreign-born males and females, these diagnoses explain much of the increases seen among all males and females after 1998.

Figure 22
Diagnoses of AIDS[1] by Year of Diagnosis, Gender, and Country of Origin
1991 – 2005*

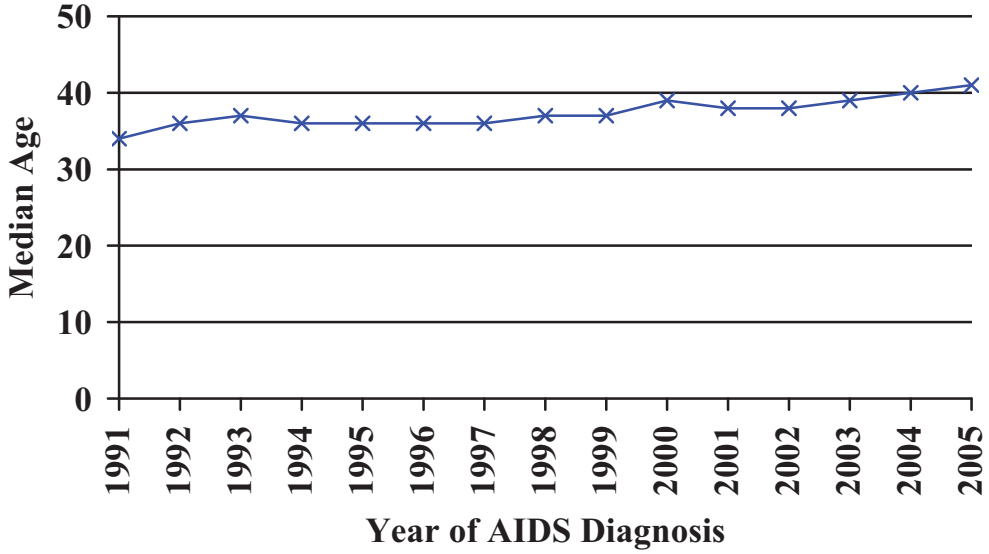


[1] Includes all persons who were diagnosed with AIDS while residents of Iowa.
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Age – AIDS Diagnoses

Figure 23 shows the median age at diagnosis of AIDS for residents of Iowa. The median age increased from 34 years in 1995 to 41 in 2005, probably reflecting both the increased time from infection to AIDS because of better treatments and the increased HIV diagnoses among those 45 years of age and older (see Figure 20). The decrease in AIDS diagnoses among foreign-born individuals in 2004 and 2005 may have also contributed to the increase in median age at time of AIDS diagnosis since 2003, as foreign-born individuals tend to be younger at AIDS diagnosis.

Figure 23
Median Age at Time of AIDS Diagnosis[1]
1991 – 2005*

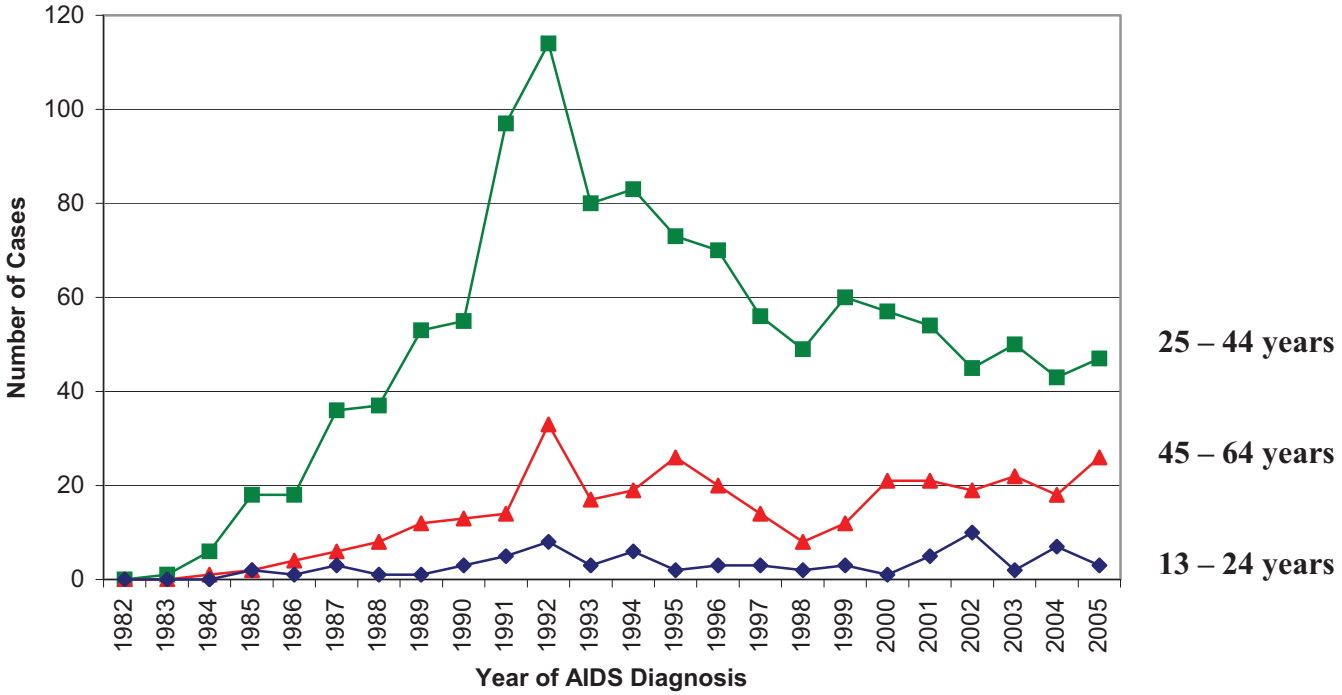


[1] Includes all persons who were diagnosed with AIDS while residents of Iowa.
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Diagnoses of AIDS for each of three age groups are shown in Figure 24. Most persons diagnosed with AIDS were 25 to 44 years of age. This age group has also seen the largest decreases in diagnoses since 1992.

All age groups saw a peak in diagnoses in 1992 followed by substantial decreases. However, two age groups saw increases in AIDS diagnoses more recently. Diagnoses increased after 1998 among persons 45 to 64 years of age and have remained level or have increased since that time. Because successful antiretroviral therapy should delay the progression to AIDS and the age at diagnosis of AIDS, increased diagnoses among this group should be expected. Increased diagnoses after 2000 among persons 13 to 24 years of age are most likely due to the immigration of HIV-positive youth into the state. The increases among persons in these two age groups should not be cause for alarm.

Figure 24
Age[1] at Time of AIDS Diagnosis[2]
1982 – 2005*



[1] There were too few cases among age groups "0-12" and "Over 64" to plot.
[2] Includes all persons who were diagnosed with AIDS while residents of Iowa.
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Iowa AIDS cases by age and gender are shown in Table 10, for cases diagnosed in 2005 and cumulatively. Males and females do not differ in median age at time of AIDS diagnosis, although males had a larger range of ages and more variation in ages in 2005. Cumulatively, nearly three quarters of all persons diagnosed with AIDS were between the ages of 25 and 44. In 2005, the percentage of cases between the ages of 25 and 44 had dropped below 60 as increasing numbers of people over the age of 44 were being diagnosed with AIDS.

Median ages at time of HIV diagnosis (Table 8) and AIDS diagnosis (Table 9) cannot be directly compared because these are not mutually exclusive categories. Persons diagnosed with HIV and AIDS within the same year would be counted in each category, and would bring the two medians closer together.

Table 9
Iowa AIDS Cases by Age at Diagnosis and Gender
Diagnosed in 2005[1] and Cumulative Cases[2]

	2005						Cumulative					
	Males		Females		Total		Males		Females		Total	
median age[2]→	**m= 42**		**m = 41**		**m = 41**		**m= 37**		**m = 36**		**m = 36**	
Age at diagnosis	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
0-1	1	--	0	--	1	--	6	--	2	--	8	--
2-12	0	--	0	--	0	--	5	--	2	--	7	--
13-24	3	(6)	0	--	3	(4)	59	(4)	15	(6)	74	(4)
25-44	30	(56)	17	(68)	47	(59)	1,027	(73)	175	(72)	1,202	(73)
45-64	19	(35)	7	(28)	26	(33)	293	(21)	43	(18)	336	(20)
65 and over	1	--	1	--	2	--	21	(1)	7	(3)	28	(2)
Total	**54**		**25**		**79**		**1,411**		**244**		**1,655**	

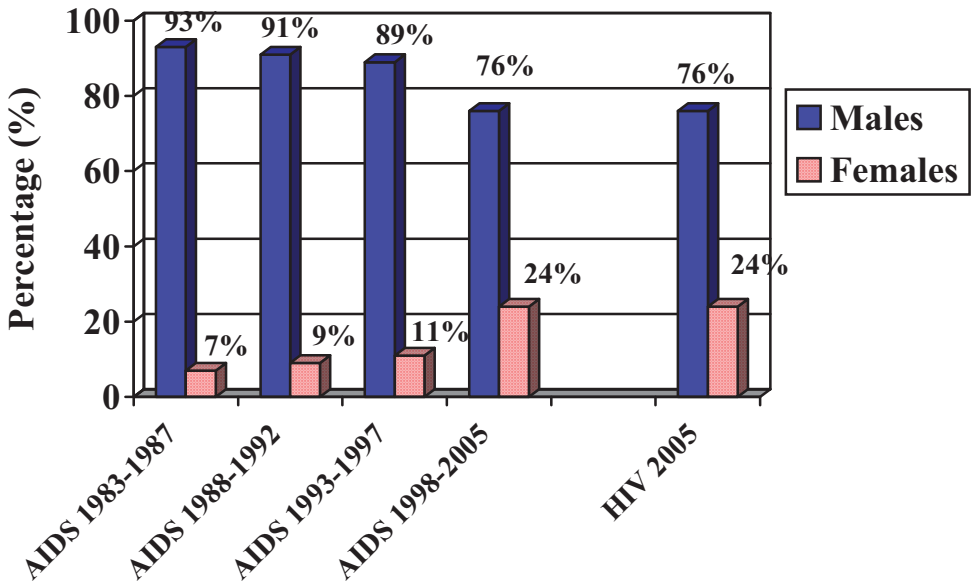
[1] Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting..
[2] Diagnosed from 1982 - 2005.
[3] m= median age of cases for that time period.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Although median age at time of diagnosis of AIDS has increased over time, few diagnoses of HIV infection or AIDS have been among the elderly in Iowa. Only 2% of cumulative AIDS cases were among those 65 years of age or older at time of diagnosis. Two persons over 64 years of age were diagnosed with AIDS in 2005.

The relative changes in numbers of males and females diagnosed with HIV and AIDS have caused significant changes in the proportion of males and females affected since the epidemic began in Iowa. Aggregate data show that the percentage of female AIDS cases increased from 7% between 1983 and 1987 to 24% from 1998 to 2005 (Figure 25). Females only account for 15% of cumulative AIDS cases, but account for 23% of the recently diagnosed HIV cases in Iowa.

As shown in Figure 17 (page 37) and Figure 21 (page 41), however, the numbers of females diagnosed with HIV and AIDS have not changed drastically over time. The changes in proportions are, therefore, largely caused by the decrease in the number of men who have been diagnosed with HIV and AIDS. Changes in proportions over time need to be carefully examined before conclusions about those changes are drawn.

Figure 25
AIDS and HIV Cases by Gender
Diagnosed from 1982-2005



Summary of Age and Gender Data

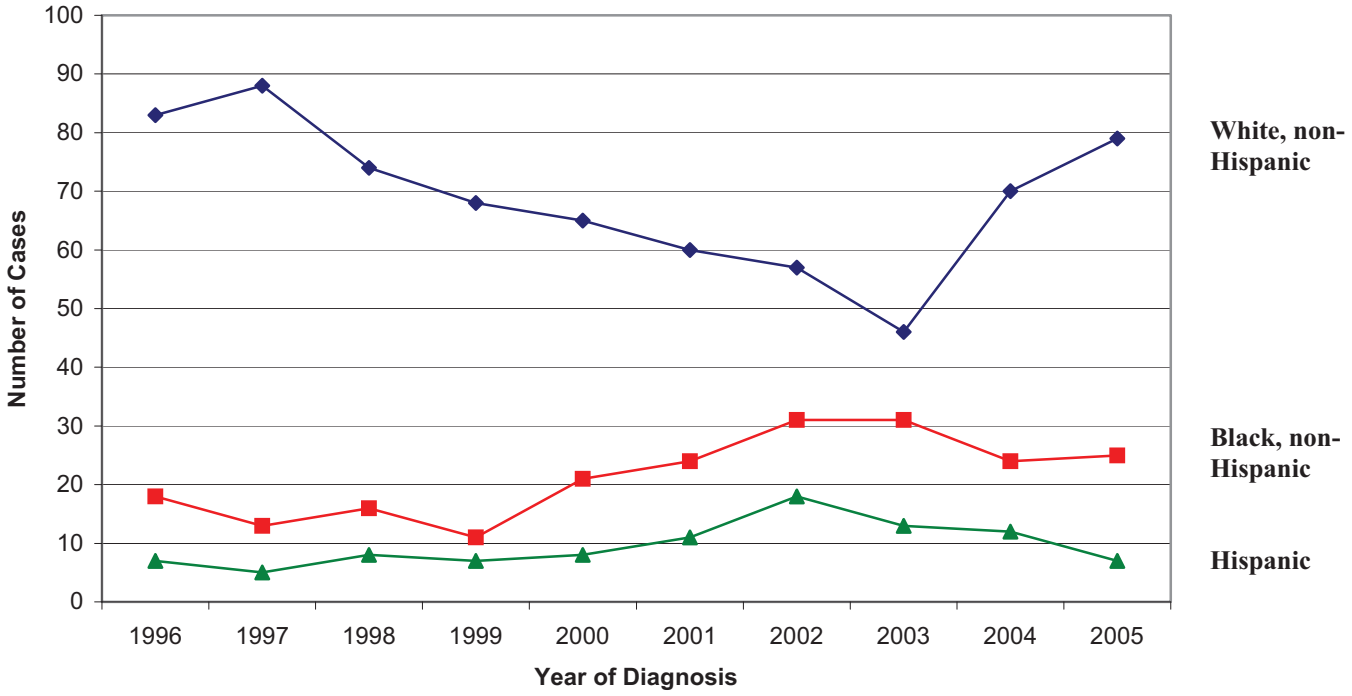
- Diagnoses of HIV among U.S.-born males have increased substantially in the past 2 years after 7 years of level or decreasing diagnoses. No other group has seen similar increases.
- Diagnoses of HIV and AIDS overwhelmingly occur among men and among persons 25 to 44 years of age. In 2005, increases in HIV diagnoses were reported in persons aged 13 to 24 years and 45 to 64 years while diagnoses among those 25 to 44 years of age decreased.
- Median age at diagnosis of HIV fell from 38 years in 2004 to 35 years in 2005. Significant differences were seen in median age at diagnosis among males and females. Median age at HIV diagnosis was 39 years for males and 28 years for females.
- While the percentage of women diagnosed with HIV and AIDS has increased substantially throughout the epidemic, the increase is mostly due to decreases in the number of men being diagnosed rather than because of increases in the number of women being diagnosed.

RACE AND ETHNICITY

Race and Ethnicity – HIV Diagnoses

The increase in HIV diagnoses in 2005 overall (see Figure 3, page 17) was not experienced by all racial and ethnic groups. Figure 26 shows diagnoses among the major racial and ethnic groups in Iowa. Approximately 69% of all HIV diagnoses among residents of Iowa in 2005 were among White, non-Hispanic persons. Following a steady decline in diagnoses in this group from 1997 to 2003, significant increases were reported in 2004 and 2005. Diagnoses among black, non-Hispanic persons and among Hispanic persons remained fairly constant from 1996 to 2000, increased somewhat between 2000 and 2002, but did not experience the sharp increases seen among White, non-Hispanic persons after 2003. In fact, both minority groups experienced a decrease in diagnoses after 2003.

Figure 26
HIV Diagnoses[1] for All Iowa Cases by Race and Ethnicity
1996 – 2005*

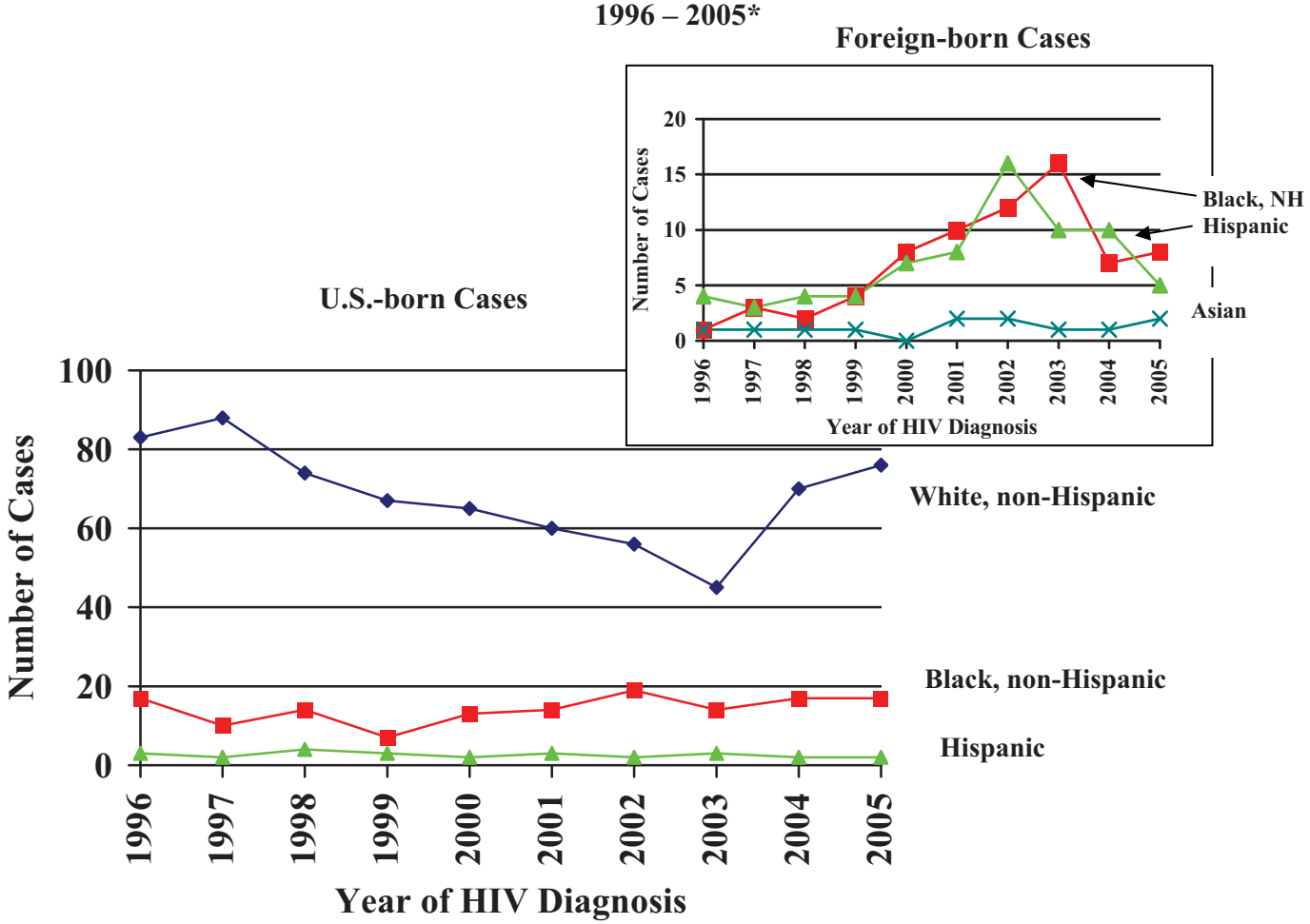


[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

As Figure 27 shows, the increases diagnoses among minorities after 1999 can mainly be attributed to increases in diagnoses among foreign-born persons (see inset). Similarly the decreases in diagnoses after 2002 in minority cases are attributed to the decreased diagnoses among foreign-born individuals. Diagnoses among U.S.-born, black, non-Hispanic persons and U.S.-born, Hispanic persons have been fairly level since 1996. Virtually all the diagnoses among Hispanic persons have occurred among those who were foreign-born, while nearly all of the white, non-Hispanic cases have been US-born.

Figure 27
HIV Diagnoses[1] by Race, Ethnicity, and Country of Origin
1996 – 2005*



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Table 10 shows the numbers of persons diagnosed with HIV in 2005 by race, ethnicity, and place of origin. Rates per 100,000 population are given as well as absolute numbers and percentages. Race-specific rates are the most appropriate way to compare the burden of disease between affected racial and ethnic groups. The rates adjust for the size of the specific racial or ethnic group within the state and make direct comparisons across groups possible.

Greater than two-thirds of the persons diagnosed in 2005 were white and non-Hispanic, 22% were black, non-Hispanic, and 6% were Hispanic. Five of the seven cases diagnosed among Hispanics were in foreign-born persons.

In 2005, the number of cases of HIV infection diagnosed among black, non-Hispanic persons was 37.7 cases per 100,000 population, compared to a rate of 2.9 cases per 100,000 among white, non-Hispanic persons. Black, non-Hispanic persons were diagnosed with HIV infection at a rate that was 13 times that of white, non-Hispanic persons. This demonstrates the disproportionate representation of black, non-Hispanic persons among HIV-infected Iowans. Hispanic persons were also disproportionately diagnosed with HIV. Their rate of diagnosis was more than double the rate for white, non-Hispanic persons.

Table 10
HIV Diagnoses in 2005
by Race, Ethnicity, and Origin

	All Cases			U.S.-born		Foreign-born	
Race and Ethnicity	**#**	**(%)**	**(# / 100,000)[3]**	**#**	**(%)**	**#**	**(%)**
White, non-Hispanic	79	(69)	2.9	76	(79)	3	(17)
Black, non-Hispanic	25	(22)	37.7	17	(18)	8	(44)
Hispanic	7	(6)	6.4	2	--	5	(28)
Asian/Pacific Islander	2	--		0	--	2	(11)
Am. Indian/Alaska Native	1	--		1	--	0	--
Total	**114**		**3.9**	**96**		**18**	

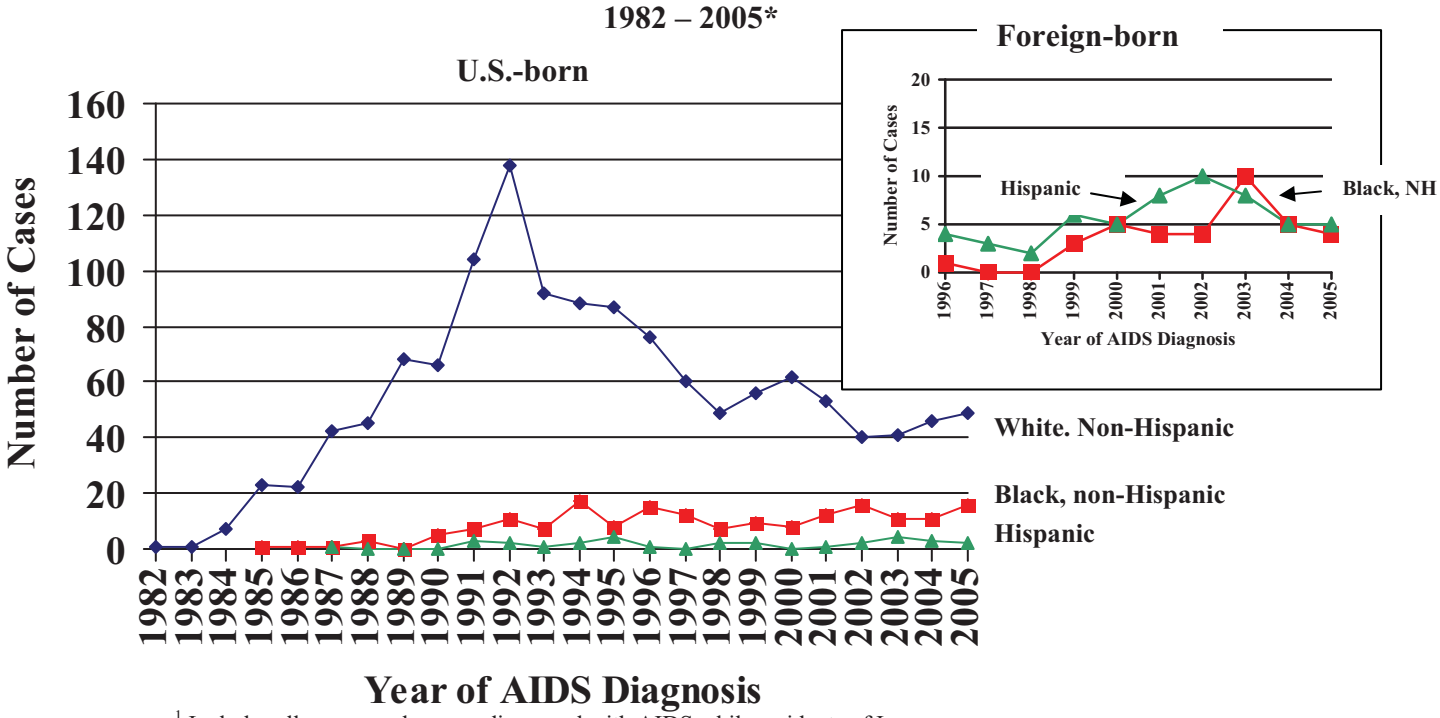
[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown. Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.
[2] Based on 2005 state population estimates from the U.S. Census Bureau.
[3] Prevalence per 100,000 population.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Race and Ethnicity – AIDS Diagnoses

Figure 28 shows the number of AIDS diagnoses by race, ethnicity, and origin. The benefits of antiretroviral therapies that became available after 1995 are most evident among U.S.-born, white, non-Hispanic persons. Diagnoses of AIDS among this group decreased steadily from 1992 to 1998. The increase in AIDS diagnoses in 2004 and 2005, however, were experienced by both U.S.-born white, non-Hispanic persons and U.S.-born black, non-Hispanic persons.

Diagnoses of AIDS among U.S.-born minority populations have remained fairly level since 1996. Nearly all AIDS cases diagnosed among Hispanics are among foreign-born persons. These diagnoses peaked in 2002 (Figure 28 inset) and have decreased since that time. Diagnoses of AIDS among foreign-born black, non-Hispanic persons peaked in 2003 and have declined since then.

Figure 28
Diagnoses of AIDS[1] by Year of Diagnosis and Race/Ethnicity and Origin
1982 – 2005*



[1] Includes all persons who were diagnosed with AIDS while residents of Iowa.
* Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Of the 1,655 AIDS cases diagnosed through 2005 (Table 11), 80% are among white, non-Hispanic persons, 13% are among black, non-Hispanic persons, 6% are among Hispanic persons, 1% are among Asian/Pacific Islanders, and less than 1% are among other groups. In comparing cases diagnosed in 2005 to cumulative AIDS cases, a much higher proportion of 2005 cases are among minorities (37% versus 20%, respectively). It is clear from Figure 28 that this increase in the proportion of cases among minorities since 1992 is mostly due to the substantial decrease in the number of diagnoses among white, non-Hispanic persons rather than to an increase in diagnoses among minorities. However, the increase in diagnoses of HIV and AIDS among foreign-born persons of African and Hispanic descent that occurred between 1999 and 2003 also had some effect.

Table 11
AIDS Cases by Race and Ethnicity
Diagnosed in 2005 and Cumulatively

	2005[1]			Cumulative[1]	
Race	**#**	**(%)**	**(# / 100,000)[2]**	**#**	**(%)**
White, non-Hispanic	50	(63)	1.8	1,323	(80)
Black, non-Hispanic	20	(25)	30.2	216	(13)
Hispanic	7	(9)	6.4	101	(6)
Asian/Pacific Islander	1	--		9	(1)
Am. Indian/Alaska Native	1	--		4	--
Multiple Races				2	--
Total	**79**		**2.7**	**1,655**	

[1] Includes all persons who were diagnosed with AIDS in 2005 while residents of Iowa. Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting. Cumulative data include cases diagnosed through 2005.
[2] Based on 2005 state population projections from the U.S. Census Bureau.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

AIDS diagnosis rates in 2005 demonstrate the over-representation of minorities among AIDS cases. Black, non-Hispanic persons had an AIDS case diagnosis rate of 30.2 cases per 100,000 population, more than 16-times higher than that seen among white, non-Hispanic persons. This is even more striking than the disproportionate diagnoses of HIV infection. This may reflect poorer access to HIV primary medical care, later testing, or poorer responses to antiretroviral therapies among black, non-Hispanic persons.

The AIDS case diagnosis rate for Hispanic persons was more than three times the rate among white, non-Hispanic persons, similar to the increase in HIV diagnoses over that of white, non-Hispanic persons.

Race and Ethnicity – Persons Living with HIV and AIDS

Table 12 presents data on the prevalence of HIV and AIDS by race and ethnicity in Iowa; that is, the total number of persons reported to be living with HIV or AIDS on December 31, 2005. Prevalence indicates which populations have the largest proportions of its members living with HIV/AIDS and are, therefore, most impacted by the disease. Change in prevalence since 2002 is shown to demonstrate which populations are seeing the most dramatic increases in prevalence of HIV/AIDS.

Table 12
Persons Living with HIV and AIDS on December 31, 2005
by Race and Ethnicity

Race	#	(%)	(# / 100,000)[2]	Change[3]
White, non-Hispanic	942	(70)	34.7	+ 5.0
Black, non-Hispanic	267	(20)	403.8	+ 109.3
Hispanic	108	(8)	99.4	+ 18.2
Asian/Pacific Islander	15	(1)	34.6	+ 6.5
Am. Indian/Alaska Native	5	--	--	--
Multiple Races	3	--	--	--
Total	**1,340**		**45.2**	**8.4**

[1]Reported to be living on December 31, 2005, with HIV or AIDS. All deaths may not have been reported.
[2] Based on 2005 state population projections from the U.S. Census Bureau.
[3] Change from 2002 prevalence.
Percentage totals may not equal 100 due to rounding of numbers. Percentages and prevalences are not shown for small numbers.

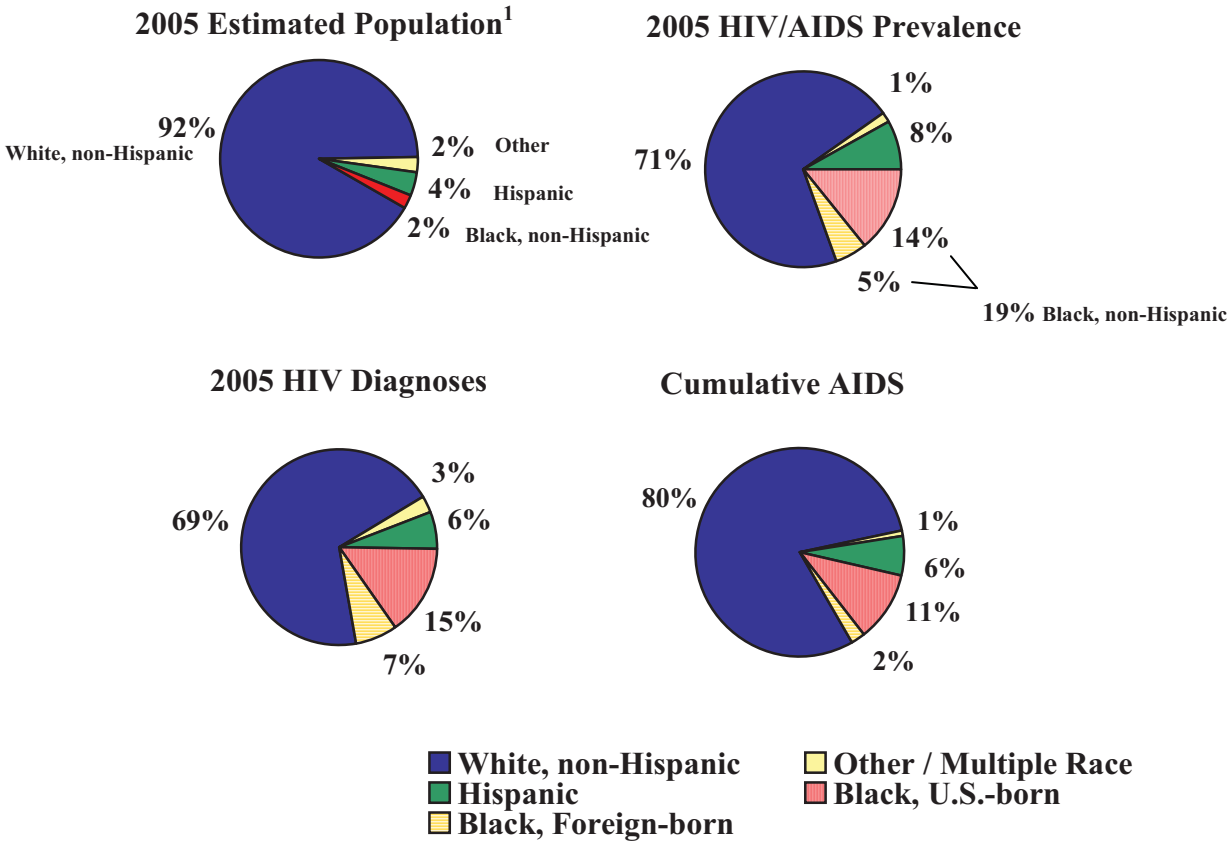
Overall, the state saw an increase of just over 8 persons with HIV or AIDS per 100,000 population from 2002 to 2005, indicating that more persons were newly diagnosed with HIV or AIDS than died during that period of time.

On December 31, 2005, the prevalence of HIV and AIDS for white, non-Hispanic persons was 34.7 living persons with HIV and AIDS per 100,000 population, compared to 403.8 per 100,000 for black, non-Hispanic persons, and 99.4 for Hispanic persons. Black, non-Hispanic persons had nearly a 12-fold higher prevalence per 100,000 population than white, non-Hispanic persons, and Hispanic persons had a three-fold higher prevalence over that of white, non-Hispanic persons.

Black, non-Hispanics experienced substantial increases in prevalence from 2002 to 2005, with a prevalence that grew by 109 persons per 100,000 population. This is more than 20 times faster than that of the white, non-Hispanic population, indicating that the disparity between the groups is increasing. The prevalence among Hispanic persons increased at a rate more than 3 times that of the white, non-Hispanic population.

Although the absolute numbers of minority cases are comparatively small, prevalence data show that HIV and AIDS disproportionately affect minority groups. Figure 29 further illustrates this. Comparing the percentage of cases in a race or ethnic group to the proportion of the total population that belongs to that group will demonstrate disparities. Black, non-Hispanic persons account for approximately 2% of Iowa's population, and Hispanics account for almost 4%. These two populations each account for more than those percentages of HIV case reports, AIDS case reports, and prevalent cases, however.

Figure 29
HIV and AIDS Cases by Race and Ethnicity Compared to Total Population
Iowa



[1] The U.S. Census Bureau estimates that black, foreign-born persons account for less than 1% of Iowa's population.

Figure 29 shows that the over-representation of minority populations is most evident among 2005 HIV diagnoses and among persons living with HIV or AIDS (prevalence). Black, non-Hispanic persons accounted for 22% of HIV diagnoses in 2005, 11 times what would be expected from the size of the black, non-Hispanic population in Iowa. Hispanics accounted for 6% of HIV diagnoses in 2005 and 8% of persons living with HIV/AIDS, yet make up just 4% of Iowa's population.

The fact that the over-representation is most pronounced among the most recent diagnoses of HIV and least pronounced among AIDS cases indicates that disparities in diagnoses among black, non-Hispanic and among Hispanic groups are increasing with time.

Race, Ethnicity, and Gender – HIV Diagnoses

The breakdown of HIV cases diagnosed in 2005 by race, ethnicity, and gender shows that the overrepresentation of minorities extends mainly to three specific groups: black, non-Hispanic males; black, non-Hispanic females; and Hispanic males (Table 13). All three groups have HIV diagnosis rates significantly higher than the general population.

Table 13
HIV Diagnoses in 2005
by Race, Ethnicity, Gender, and Origin

	All 2005 Diagnoses			U.S.-born Only	
Males	**#**	**(%)**	**(# / 100,000)[2]**	**#**	**(%)**
White, non-Hispanic	64	(74)	4.8	62	(82)
Black, non-Hispanic	15	(17)	43.8	11	(14)
Hispanic	5	(6)	8.5	2	--
Asian/Pacific Islander	2	--	--	0	--
Am. Indian/Alaska Native	1	--	--	1	--
Total Males	**87**		**6.0**	**76**	

	All 2005 Diagnoses			U.S.-born Only	
Females	**#**	**(%)**	**(# / 100,000)[2]**	**#**	**(%)**
White, non-Hispanic	15	(56)	1.1	14	(70)
Black, non-Hispanic	10	(37)	31.2	6	(30)
Hispanic	2	--	--	0	--
Asian/Pacific Islander	0	--	--	0	--
Am. Indian/Alaska Native	0	--	--	0	--
Total Females	**27**		**1.8**	**20**	

[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown. Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.
[2] Based on 2005 population estimates from the U.S. Census Bureau.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Black, non-Hispanic males had the highest HIV diagnosis rate at 43.8 cases per 100,000 population; just over 9 times higher than the rate for white, non-Hispanic males in 2005. Black, non-Hispanic females had a case rate of 31.2 per 100,000 population, more than 28 times that of white, non-Hispanic males. Rates among Hispanic persons have decreased substantially since 2002, mostly due to decreases in the number of diagnoses among foreign–born individuals in Iowa, but remain disproportionate nonetheless.

Despite the great disparity in diagnosis rates, white, non-Hispanic males still account for the single largest group of persons being diagnosed with HIV in Iowa. In 2005, they accounted for 55% of all persons diagnosed with HIV.

Race, Ethnicity, and Gender – AIDS Diagnoses

Table 14 shows 2005 and cumulative AIDS cases. Although cumulative AIDS cases are overwhelmingly among white, non-Hispanic persons, AIDS case diagnosis rates show that some minority populations are much more severely impacted.

In 2005, black, non-Hispanic men had an AIDS diagnosis rate of 29.2 cases per 100,000 population, 10 times that of white, non-Hispanic men. Black, non-Hispanic women had a rate nearly 35 times that of white, non-Hispanic women, at 31.2 diagnoses per 100,000 population compared to 0.9 persons per 100,000 for white, non-Hispanic females. Hispanic males, with a rate of 8.5 per 100,000, were also disproportionately impacted, with 3 times more AIDS diagnoses per 100,000 population than that of white, non-Hispanic males.

Table 14
AIDS Cases Diagnosed in 2005 and Cumulatively, by Race, Ethnicity, and Gender

	All 2005 Diagnoses			Cumulative	
Males	**#**	**(%)**	**(# / 100,000)[2]**	**#**	**(%)**
White, non-Hispanic	37	(69)	2.8	1165	(83)
Black, non-Hispanic	10	(19)	29.2	148	(10)
Hispanic	5	(9)	8.5	85	(6)
Asian/Pacific Islander	1	--	--	9	--
Am. Indian/Alaska Native	1	--	--	3	--
Multiple races	0	--	--	1	--
Total Males	**54**		**3.7**	**1,411**	

	All 2005 Diagnoses			Cumulative	
Females	**#**	**(%)**	**(# / 100,000)[2]**	**#**	**(%)**
White, non-Hispanic	13	(52)	0.9	158	(65)
Black, non-Hispanic	10	(40)	31.2	68	(28)
Hispanic	2	--	4.0	16	(7)
Asian/Pacific Islander	0	--	--	0	--
Am. Indian/Alaska Native	0	--	--	1	--
Multiple races	0	--	--	1	--
Total Females	**25**		**1.7**	**244**	

[1] Includes all persons who were diagnosed with AIDS in 2005 while residents of Iowa. Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting. Cumulative data include cases diagnosed through 2005.
[2] Based on 2005 state population projections from the U.S. Census Bureau.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Race, Ethnicity, and Gender – Persons Living with HIV and AIDS

The higher rates of case reports for HIV and AIDS among these minority groups correspond to higher prevalences of persons living with HIV and AIDS per 100,000 population. Although the largest *numbers* of persons living with HIV and AIDS are white and non-Hispanic; black, non-Hispanic males have the highest *prevalence* rate of persons living with HIV or AIDS of any ethnic or racial group (Table 15, Figure 30). There were nearly 473 infected persons for every 100,000 black, non-Hispanic males in the state on December 31, 2005. If all populations experienced this prevalence, there would be more than 14,000 persons living with HIV/AIDS in Iowa.

With a prevalence of nearly 328 persons per 100,000 population, black, non-Hispanic females have the second highest prevalence of persons living with HIV or AIDS per 100,000 population, but prevalence among this group is increasing the most rapidly. In 2002, the prevalence in black, non-Hispanic females was 214 per 100,000 residents. This represents a 53% increase in prevalence in three years. Prevalence of HIV among Hispanic males and females and among Asian males also increased faster than prevalence among white, non-Hispanic persons.

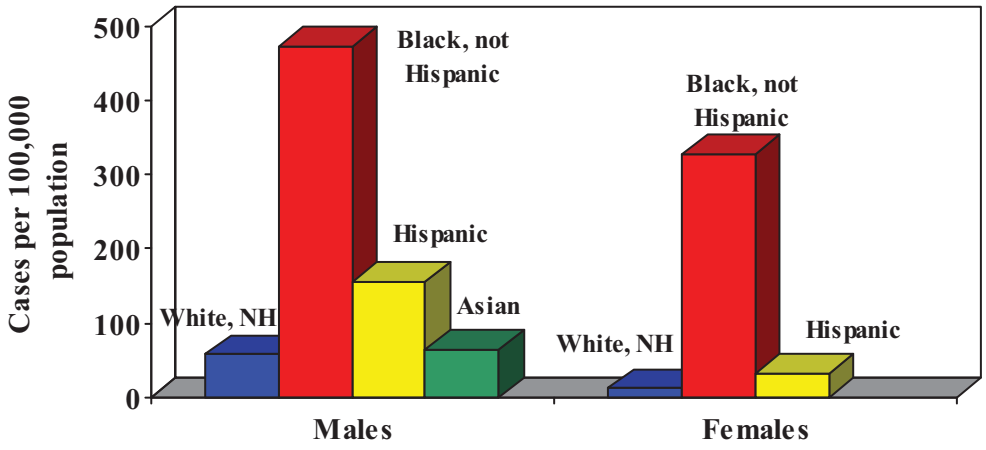
Table 15
Persons Living with HIV and AIDS on December 31, 2005[1]
by Race, Ethnicity, and Gender

Males	#	(%)	(# / 100,000)[2]	Change[3]
White, non-Hispanic	777	(74)	58.4	+ 7.2
Black, non-Hispanic	162	(15)	472.7	+ 107.7
Hispanic	92	(9)	156.0	+ 16.8
Asian/Pacific Islander	14	(1)	65.1	+ 19.9
Am. Indian/Alaska Native	4	--	--	--
Multiple Races	1	--	--	--
Total Males	**1,050**		**71.9**	**+ 11.0**

Females	#	(%)	(# / 100,000)	Change[3]
White, non-Hispanic	165	(57)	11.9	+ 2.8
Black, non-Hispanic	105	(36)	327.9	+ 113.9
Hispanic	16	(6)	32.0	+ 9.9
Asian/Pacific Islander	1	--	--	--
Am. Indian/Alaska Native	1	--	--	--
Multiple Races	2	--	--	--
Total Females	**290**		**19.3**	**+ 5.8**

[1]Reported to be living on December 31, 2005, with HIV or AIDS. All deaths may not have been reported.
[2] Based on 2005 state population projections from the U.S. Census Bureau.
[3]Change from 2002 prevalence.
Percentage totals may not equal 100 due to rounding of numbers. Percentages and prevalences are not shown for small numbers.

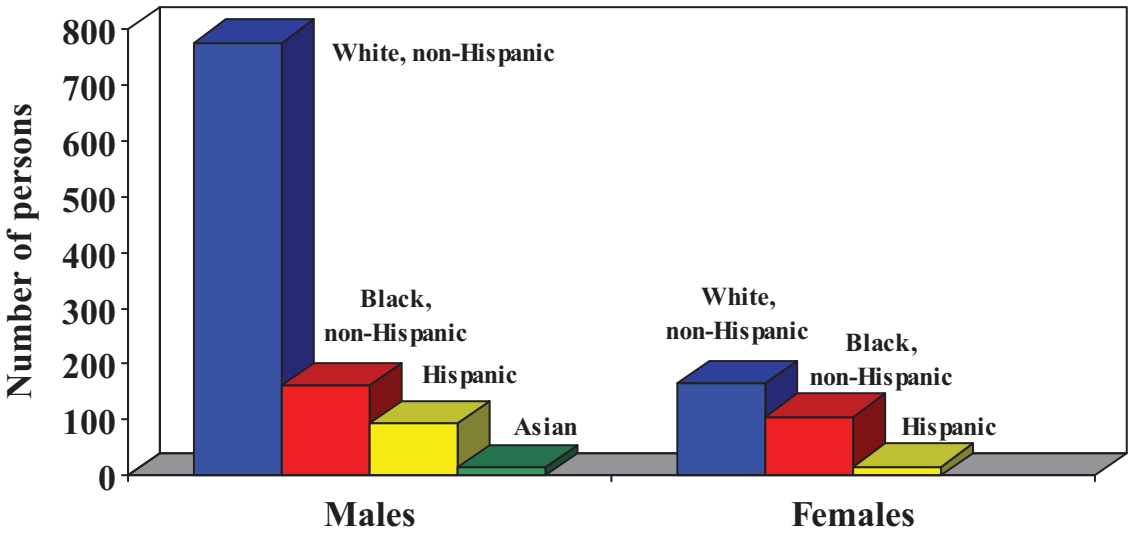
Figure 30
Persons Living with HIV and AIDS[1] per 100,000 Population[2] on December 31, 2005
by Race, Ethnicity, and Gender



[1]Reported to be living on December 31, 2005, with HIV or AIDS. All deaths may not have been reported.
[2] Based on 2005 state population projections from the U.S. Census Bureau.

Despite the disproportionate number per 100,000 population among Black, non-Hispanic persons and among Hispanics; white, non-Hispanic males still account for the largest numbers of persons living with HIV/AIDS in the state (Figure 31).

Figure 31
Numbers of Persons Living with HIV and AIDS on December 31, 2005[1]
by Race, Ethnicity, and Gender



[1]Reported to be living on December 31, 2005, with HIV or AIDS. All deaths may not have been reported.

The comparatively small numbers of minorities in the state explain the seeming paradox of small numbers of cases but high rates of diagnosis and prevalence. Relatively small minority populations in the state result in low numbers of cases when compared to the much larger white, non-Hispanic population. Despite the low numbers of cases, the impact of high infection rates within a small population can be devastating to that population. For that reason, cases per 100,000 population must be considered along with absolute numbers when prioritizing specific populations for prevention and care activities.

Summary of Race and Ethnicity Data:

- Black, non-Hispanic males; black, non-Hispanic females; and Hispanic males are over-represented among HIV and AIDS cases when their population sizes are taken into account. Black, non-Hispanic males have HIV diagnosis rates more than 9 times higher than white, non-Hispanic males. Hispanic males have a HIV diagnosis rate nearly double that of white, non-Hispanic males.

- Black, non-Hispanic females had the second highest rate of diagnosis of any racial, ethnic, or gender group in 2005. Their rate was more than 28 times higher than white, non-Hispanic females. The prevalence for black, non-Hispanic females increased 53% from 2002 to 2005, the largest increase of any population.

- Absolute numbers, rates (per 100,000 population), and changes in prevalence from previous years may need to be considered when prioritizing populations for prevention and care. Despite seemingly low numbers of cases, HIV infection is having a much more severe impact on certain minority populations in the state.

- The effects of high diagnosis rates in small populations can be especially severe. Black, non-Hispanic persons, both males and females, and Hispanic males are experiencing HIV and AIDS at rates unparalleled among white, non-Hispanic persons. If the prevalence of HIV and AIDS seen among black, non-Hispanic males were experienced by all racial and ethnic groups in Iowa, over 14,000 Iowans would now be diagnosed and living with HIV disease in the state.

- Despite the impact of HIV and AIDS on black, non-Hispanic persons and Hispanic males, the overwhelming majority of cases will be among white, non-Hispanic persons. This is explained by the very large white, non-Hispanic population compared to other groups in the state. A significant share of resources for prevention and planning may, therefore, be appropriate. However, targeting limited resources to these disproportionately affected populations should be considered. A comprehensive picture of the epidemic can be presented only by examining both numbers and rates.

HIV AND AIDS BY EXPOSURE CATEGORY

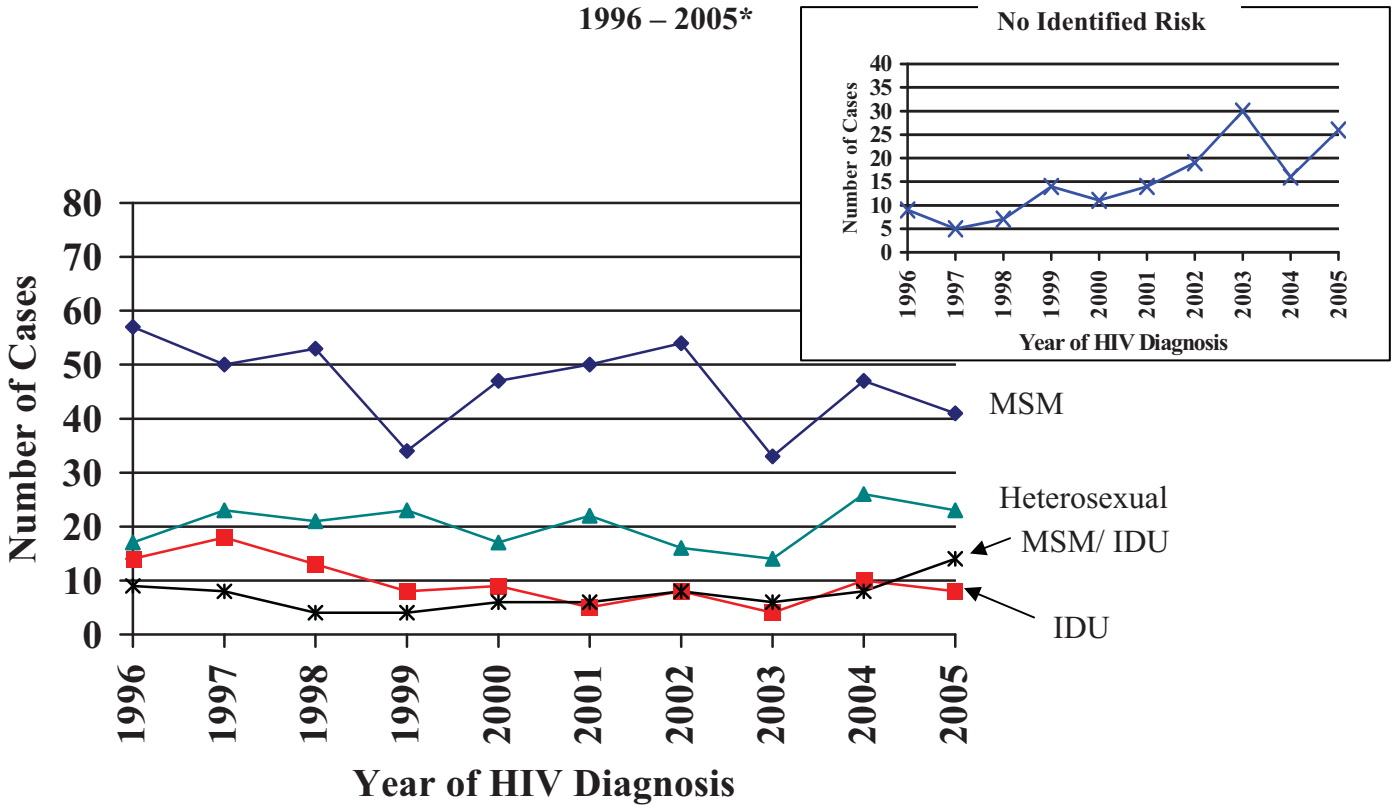
Behavioral and health histories of persons infected with HIV are reported by health care providers and are also collected through interviews with recently diagnosed persons. Behaviors and risk histories are ranked according to probability of HIV transmission, and a new case is categorized according to that probability. Exposure categories include men who have sex with men and inject drugs (MSM/IDU); men who have sex with men (MSM); injection drug use (IDU); heterosexual contact with a person with documented HIV infection; hemophilia; transplant/transfusion recipient; no identified risk; and other risk (e.g., occupational exposures, such as needle sticks or exposures to blood). For surveillance purposes, HIV and AIDS cases are counted only once in a hierarchy of exposure categories. Persons with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy, except for men with both a history of sexual contact with other men and a history of injection drug use. They make up a separate category.

It is important to keep in mind that the category "heterosexual contact" is likely to be underestimated, particularly for women and foreign-born persons. **"Heterosexual contact"** includes persons who report specific heterosexual contact with a person with *documented* HIV infection, or heterosexual contact with a person at increased risk for HIV infection, such as an injection drug user, person with hemophilia, transfusion recipient with documented HIV infection, or bisexual male. A person who reports heterosexual contact with partners whose specific HIV risks and HIV status are unknown is considered to have "no risk reported or identified" (NIR). Adults and adolescents born, or who had sex with someone born, in a country where heterosexual exposure was believed to be the predominant mode of HIV transmission (formerly classified as Pattern-II countries by the World Health Organization) are no longer classified as having heterosexually acquired HIV. Similar to case reports for other persons who are reported without behavioral or transfusion risks for HIV, these reports are now classified (in the absence of other risk information that would classify them in another exposure category) as "NIR" (MMWR 1994:43:155-60). In the future, a category of 'presumed heterosexual transmission' will be allowed for women who have no other risk than heterosexual sex.

Exposure Category – HIV Diagnoses

Figure 32 shows total HIV diagnoses from 1996 to 2005 by mode of exposure. Although there has been a general decline in diagnoses among men who have sex with men (MSM) since 1996, male-to-male sex remains the predominant mode of exposure. Diagnoses among injection drug users, the second most common mode of exposure nationally, have declined in Iowa since 1997. Diagnoses among men who have sex with men and inject drugs have been low, but fairly steady until an increase was observed in 2005.

Figure 32
HIV Diagnoses[1] for All Iowa Cases by Exposure
1996 – 2005*



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS) and whose exposures occurred at ≥ 13 years of age. Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

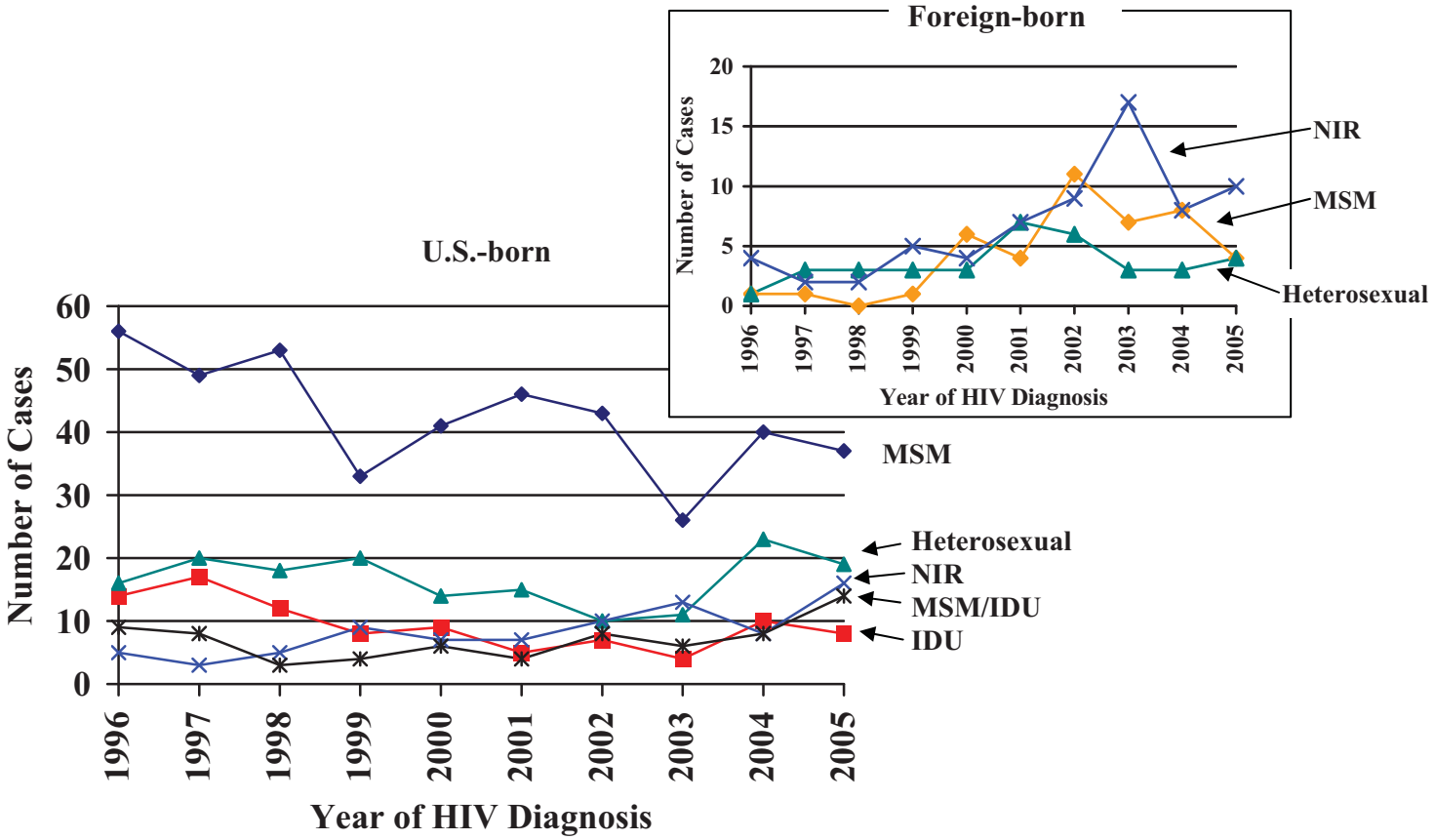
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Diagnoses among persons reporting heterosexual exposure have remained steady throughout this period. Of those with a known mode of exposure, heterosexual contact was the second most common route of infection.

With a notable exception in 2004, persons reported without an identifiable risk have increased annually since 1997 (see inset, Figure 32). Persons with more recent diagnoses are less likely to have a risk identified, but many of these risks may be reclassified over time as more information becomes available. Reclassifying these risks can substantially alter interpretations of trends among other exposure categories.

Because foreign-born persons with HIV are more likely to be females and minorities, exposure categories may also be different than for U.S-born persons with HIV. Figure 33 shows diagnoses of HIV by country of origin and exposure category.

Figure 33
Adult and Adolescent HIV Diagnoses[1] for by Exposure and Country of Origin
1996 – 2005*



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS) and whose exposures occurred at ≥ 13 years of age. Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

The three major exposure categories for foreign-born persons are heterosexual contact, male-to-male sex, and no identified risk. In 2003, foreign-born persons accounted for 57% of all persons without a risk. Nearly two-thirds of the foreign-born persons diagnosed that year did not have a risk identified. Mode of exposure to HIV in foreign countries is more likely to be unknown for several reasons. Poorer access to testing in many foreign countries means that the HIV status of heterosexual partners is not documented, which is needed for categorization into the heterosexual classification. Medical interventions, including injections with contaminated needles, have also been implicated as more frequent sources of exposure in some countries. These interventions are difficult to document and would not qualify as risks in the United States without documentation.

Decreases in diagnoses among US-born MSM from 1996 to 2005 are more evident when the increases in diagnoses among foreign-born MSM from 1999 to 2002 are plotted separately

(Figure 33).

From 1997 to 2003, there was also a general trend of fewer diagnoses of HIV in US-born persons with heterosexual contact. Since then, diagnoses have increased somewhat among this group. It is important to remember that there are still significant numbers of people without risks identified, particularly in more recent years. As risks are identified over time, trends may be different than they appear in these figures.

Table 16 shows the numbers of adults and adolescents (persons exposed to HIV while 13 years of age or older at time of diagnosis) diagnosed with HIV in 2005 by exposure category and origin. Pediatric exposures are presented later in this chapter.

Table 16
Adult and Adolescent[1] HIV Diagnoses[2] in 2005,
by Exposure Category and Origin

	All Cases		U.S.-born		Foreign-born	
Exposure Category	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
MSM	41	(36)	37	(39)	4	(22)
IDU	8	(7)	8	(8)	0	--
MSM/IDU	14	(12)	14	(15)	0	--
Hemophilia	0	--	0	--	0	--
Heterosexual	23	(20)	19	(20)	4	(22)
Transfusion/transplant	1	--	1	--	0	--
NIR/other	26	(23)	16	(17)	10	(56)
Total	**113**		**95**		**18**	

[1] Exposure occurred at ≥ 13 years of age.
[2] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown. Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

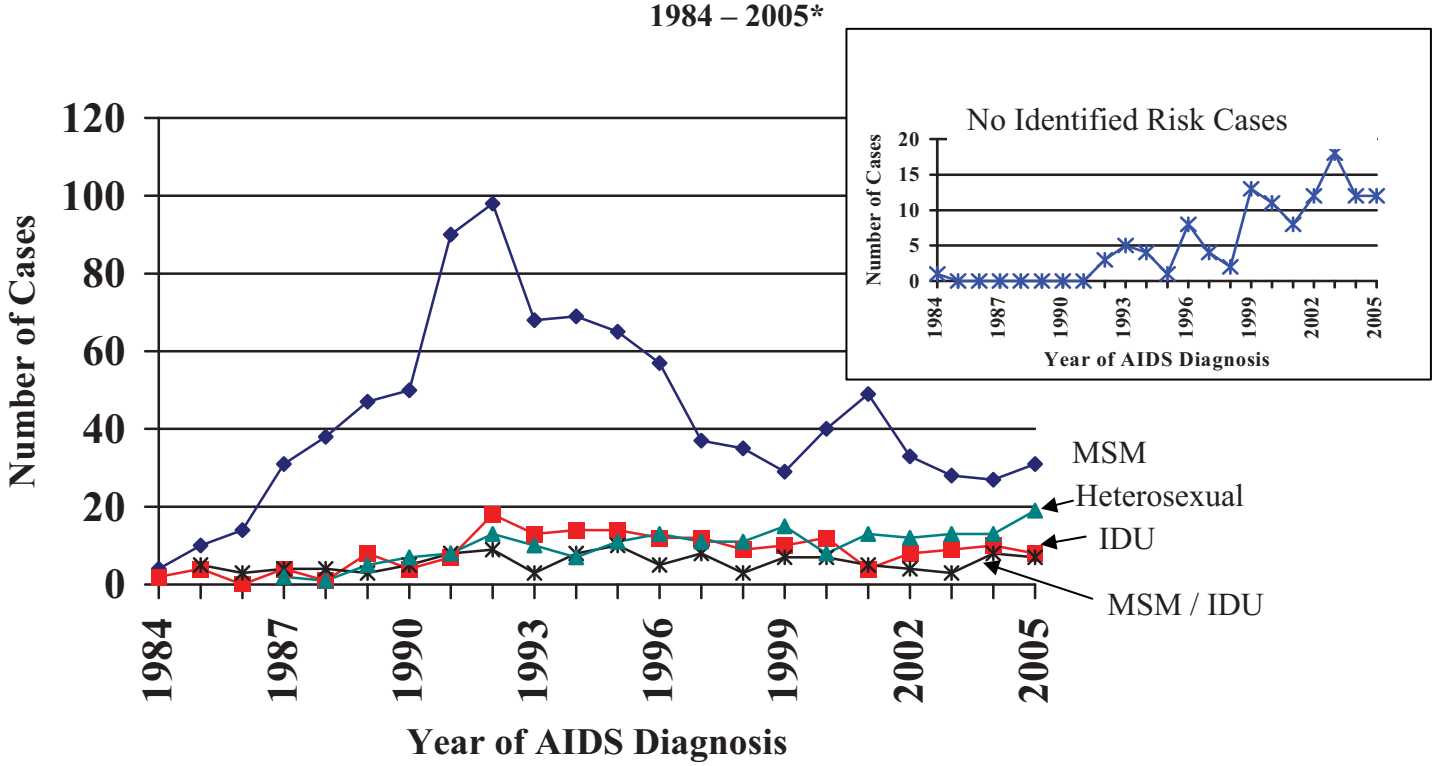
Just more than one-third of all adult and adolescent HIV diagnoses in 2005 were among men who reported male-to-male sexual contact as a risk, with another 12% reporting MSM/IDU. Persons in the "no identified risk" category accounted for 23% of diagnoses overall. Twenty percent were among heterosexuals and 7% of HIV cases diagnosed in 2005 were among injection drug users.

The percentages of cases attributed to heterosexual contact were similar among US-born and foreign-born individuals. However, the majority of cases in foreign-born persons had no known risk at the end of the reporting period. Reclassification of these cases could dramatically change the comparisons made above, but many of these people will probably never have a risk identified.

Exposure Category – AIDS Diagnoses

Men who have sex with men have historically accounted for the largest numbers of adult and adolescent AIDS cases in Iowa (Figure 34). Numbers of diagnoses in this group, however, declined from 1992 to 1999. In 2000, the first increases since 1992 in diagnoses of AIDS among MSM were seen, and a second peak in diagnoses occurred in 2001. Since then diagnoses among this group have continued to decline.

Figure 34
Adult and Adolescent Diagnoses of AIDS[1] by Exposure
1984 – 2005*



[1] Includes all persons who were diagnosed with AIDS while residents of Iowa and whose exposures occurred at ≥ 13 years of age.
* Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Diagnoses of AIDS among injection drug users declined from their peak of 18 in 1992 to a low of 4 cases in 2001. Increases were reported in 2002 to 2004, but remained well within totals reported in the last 15 years.

Diagnoses of AIDS among persons with heterosexual contact have gradually increased since 1984.

Since 1998, 86 AIDS diagnoses have occurred among persons with no known risk. If reclassification of a significant number of these cases occurs, changes in trends among the exposure groups could be expected. Historical trends can be used to redistribute cases among the most probable risk groups and make analysis of trends easier, but the increase in diagnoses among foreign-born persons from 1999 to 2003 renders this technique invalid.
In 2005, 15% of AIDS cases diagnosed had no risk identified (Table 18). This is more than

double the percentage of cumulatively reported AIDS cases. However, it is likely that risk will be obtained over time on many of these individuals.

Table 17 shows some significant differences in proportions between cumulative AIDS diagnoses and diagnoses in 2005. These differences reflect the trends seen in Figure 32; recent decreases in diagnoses among men who have sex with men and increases among heterosexuals and persons with unidentified risks.

Table 17
Adult and Adolescent[1] AIDS Cases Reported in 2005 and Cumulatively, by Exposure Category

	2005[2]		Cumulative[3]	
Exposure Category	**#**	**(%)**	**#**	**(%)**
MSM	31	(40)	950	(58)
IDU	8	(10)	183	(11)
MSM/IDU	7	(9)	119	(7)
Hemophilia	0	--	40	(2)
Heterosexual	19	(24)	192	(12)
Transfusion/transplant	1	--	37	(2)
NIR/other	12	(15)	115	(7)
Total	**78**		**1,636**	

[1] Includes all persons who were diagnosed with AIDS in 2005 while residents of Iowa and whose exposures occurred at ≥ 13 years of age.

[2] Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

[3] Cumulative AIDS diagnoses through 2005.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Exposure Category – Persons Living with HIV and AIDS

Numbers of persons living with HIV and AIDS by exposure category are shown in Table 18. True prevalence, or cases per 100,000 population, cannot be calculated because the population sizes are unknown. That is, there is no census of injection drug users or men who have sex with men in Iowa.

Just under half of all persons living with HIV or AIDS in Iowa are men who have sex with men. Heterosexual exposure is the second most common exposure, with 18% of persons living with HIV/AIDS reporting this risk. Injection drug users account for 11% of all persons living with HIV and AIDS. Twelve percent of persons living with HIV/AIDS had no risk identified.

Table 18
Persons Living with HIV and AIDS on December 31, 2005
by Exposure and Origin, for Adults and Adolescents[1]

	All Cases		U.S. Born		Foreign Born	
Exposure Category	#	(%)	#	(%)	#	(%)
MSM	650	(49)	601	(52)	49	(29)
IDU	146	(11)	141	(12)	5	(3)
MSM/IDU	105	(8)	102	(9)	3	(2)
Hemophilia	12	(1)	12	(1)	0	--
Heterosexual	232	(18)	194	(17)	38	(23)
Transfusion/transplant	22	(2)	14	(1)	8	(5)
NIR/other	156	(12)	91	(8)	65	(39)
Total	**1,323**		**1,155**		**168**	

[1]Exposure occurred at ≥ 13 years of age.
[2]Reported to be living on December 31, 2005, with HIV or AIDS. All deaths may not have been reported.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

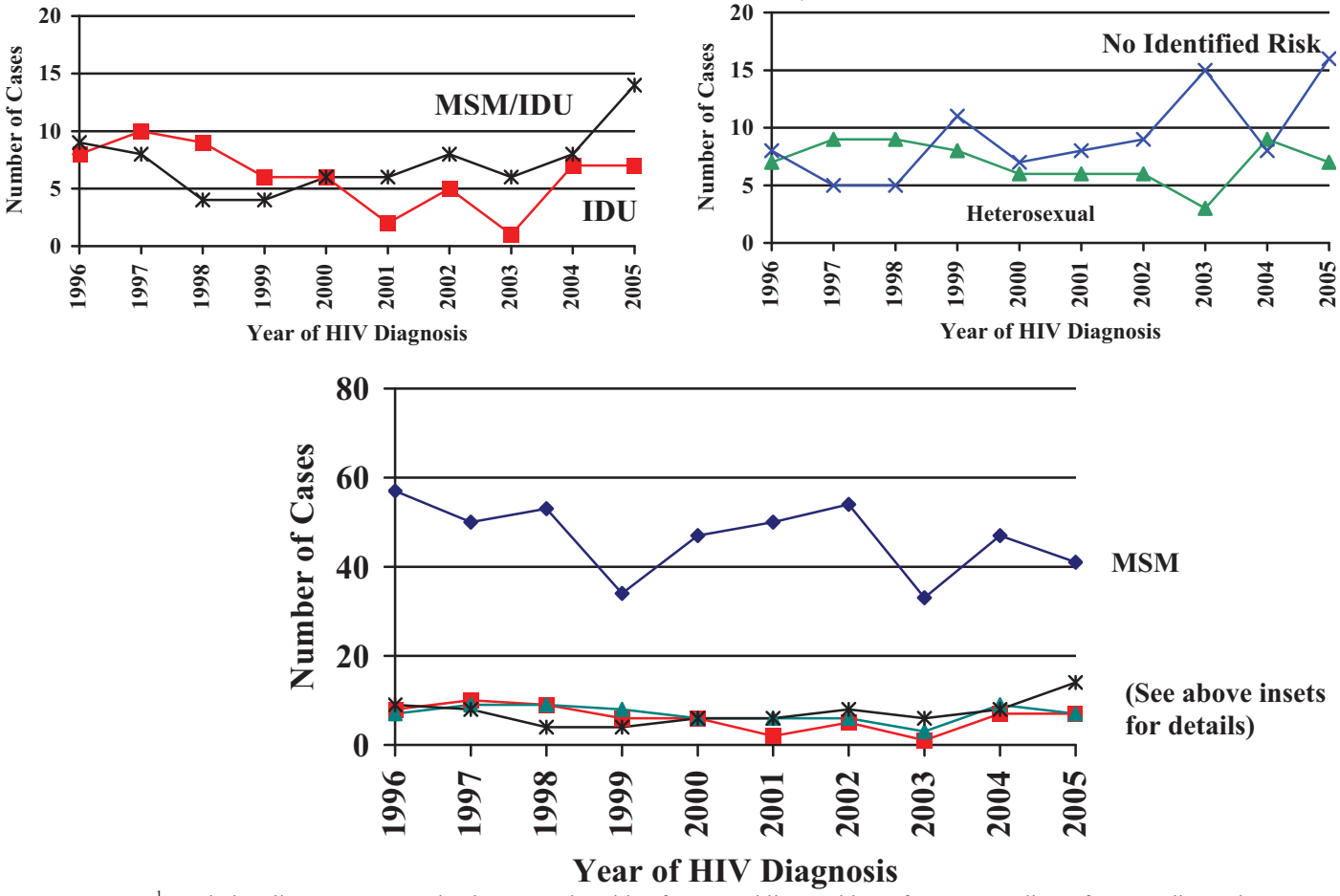
Nearly 40% of foreign-born persons living with HIV/AIDS could not identify a risk, compared to only 8% of U.S.-born persons living with HIV/AIDS. In fact, this is the most common exposure category for foreign-born persons. Men having sex with men is the second most common exposure category for foreign-born persons, followed by heterosexual contact.

Exposure Category and Gender – HIV Diagnoses

Because such a large proportion of all HIV and AIDS cases is attributed to one gender and exposure category (MSM), it is helpful to examine exposure data separately by gender to get a better picture of how other groups are being affected.

Diagnoses of HIV infection for all adult and adolescent males by exposure are shown by year in Figure 35. Insets show exposure groups with small numbers of cases. Diagnoses among nearly all groups were level or decreased from 1997 to 2003. However, all groups saw increases in diagnoses in 2004 except for those with no identified risk. On the other hand, increases in 2005 were limited to MSM/IDU and those without risk. Therefore, the increases in diagnoses among males noted in Figure 17 were not specific to a single mode of exposure. Another year of data may be needed to further analyze the increase in diagnoses among males after 2003. Numbers of men exposed through hemophilia, transfusion, and transplants were very low and are not shown in Figure 35.

Figure 35
HIV Diagnoses[1] for Iowa Cases by Exposure
Adult and Adolescent[2] Males, 1996 – 2005*

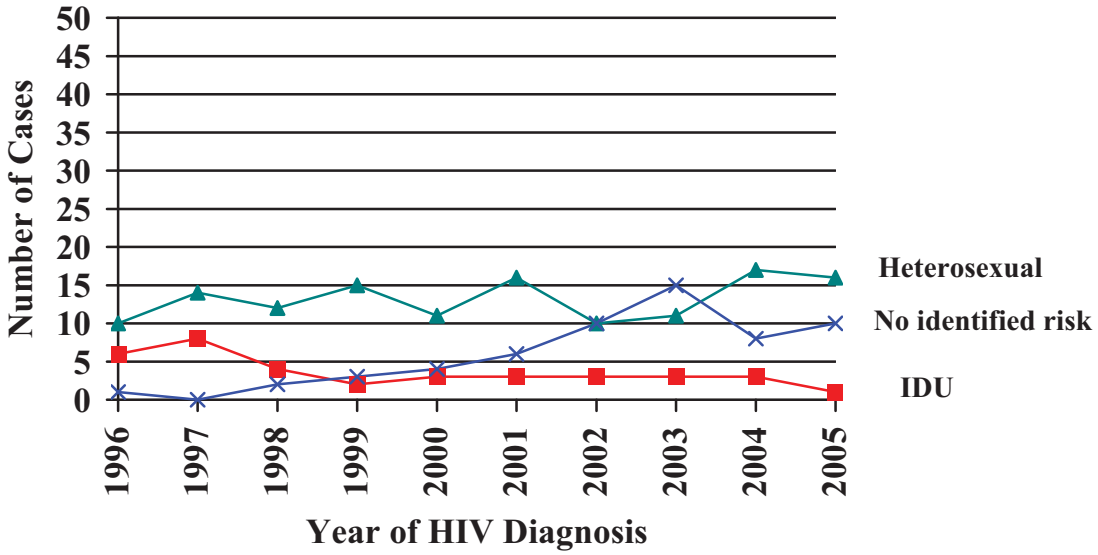


[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.
[2] Exposures to HIV occurred at ≥ 13 years of age.
* Data for year 2005 were reported through June 30, 2006, and may be incomplete due to delays in reporting.

Diagnoses of HIV infection by exposure among females are shown in Figure 36. Heterosexual

contact was the most common mode of exposure from 1996 to 2001, and the number of diagnoses was fairly steady at between 10 and 15 cases during that interval. The decrease in diagnoses in 2002 among heterosexuals could be real but could also be partially explained by the increase in the number of diagnoses among those without an identified risk. In 2004, an increase was reported among heterosexual females, which again made heterosexual contact the most common mode of exposure in females. Fewer than five diagnoses among female injection drug users have been reported in any year since 1996.

Figure 36
HIV Diagnoses[1] for Iowa Cases by Exposure
Adult and Adolescent[2] Females, 1996 – 2005*



[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.
[2] Exposures to HIV occurred at ≥ 13 years of age.
* Data for year 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.

Exposure category by gender and origin for HIV diagnoses in 2005 is shown in Table 19. The largest proportion of cases among adult and adolescent males was among men who have sex with men. Another 16% were among men who have sex with men and inject drugs. Eight percent of the cases diagnosed in males in 2005 reported injection drug use as a mode of exposure. Nearly 20% of males had no identified risk, and nearly half of foreign-born males had no risk identified.

Among females, the largest proportion, 59%, indicated heterosexual contact as their likely mode of exposure, meaning that they could identify a male partner with significant risk factors or with documented HIV infection. An additional 37% had no identified risk factor, but over 70% of foreign-born women had no risk identified.

Table 19
Adult and Adolescent[1] HIV Diagnoses[2] in 2005*
by Exposure and Gender

Exposure Category – Males	All Cases #	All Cases (%)	U.S.-born #	U.S.-born (%)	Foreign-born #	Foreign-born (%)
MSM	41	(48)	37	(49)	4	(36)
IDU	7	(8)	7	(9)	0	--
MSM/IDU	14	(16)	14	(19)	0	--
Hemophilia	0	--	0	--	0	--
Heterosexual	7	(8)	5	(7)	2	--
Transfusion/transplant	1	--	1	--	0	--
NIR/other	16	(19)	11	(15)	5	(45)
Total Males	**86**		**75**		**11**	
Exposure Category – Females						
IDU	1	--	1	--	0	--
Hemophilia	0	--	0	--	0	--
Heterosexual Contact	16	(59)	14	(70)	2	--
Transfusion/ transplant	0	--	0	--	0	--
NIR/other	10	(37)	5	(25)	5	(71)
Total Females	**27**		**20**		**7**	

[1] Exposures to HIV occurred at ≥ 13 years of age.
[2] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.
* Data for year 2005 were reported through June 30, 2006, and may be incomplete due to delays in reporting.

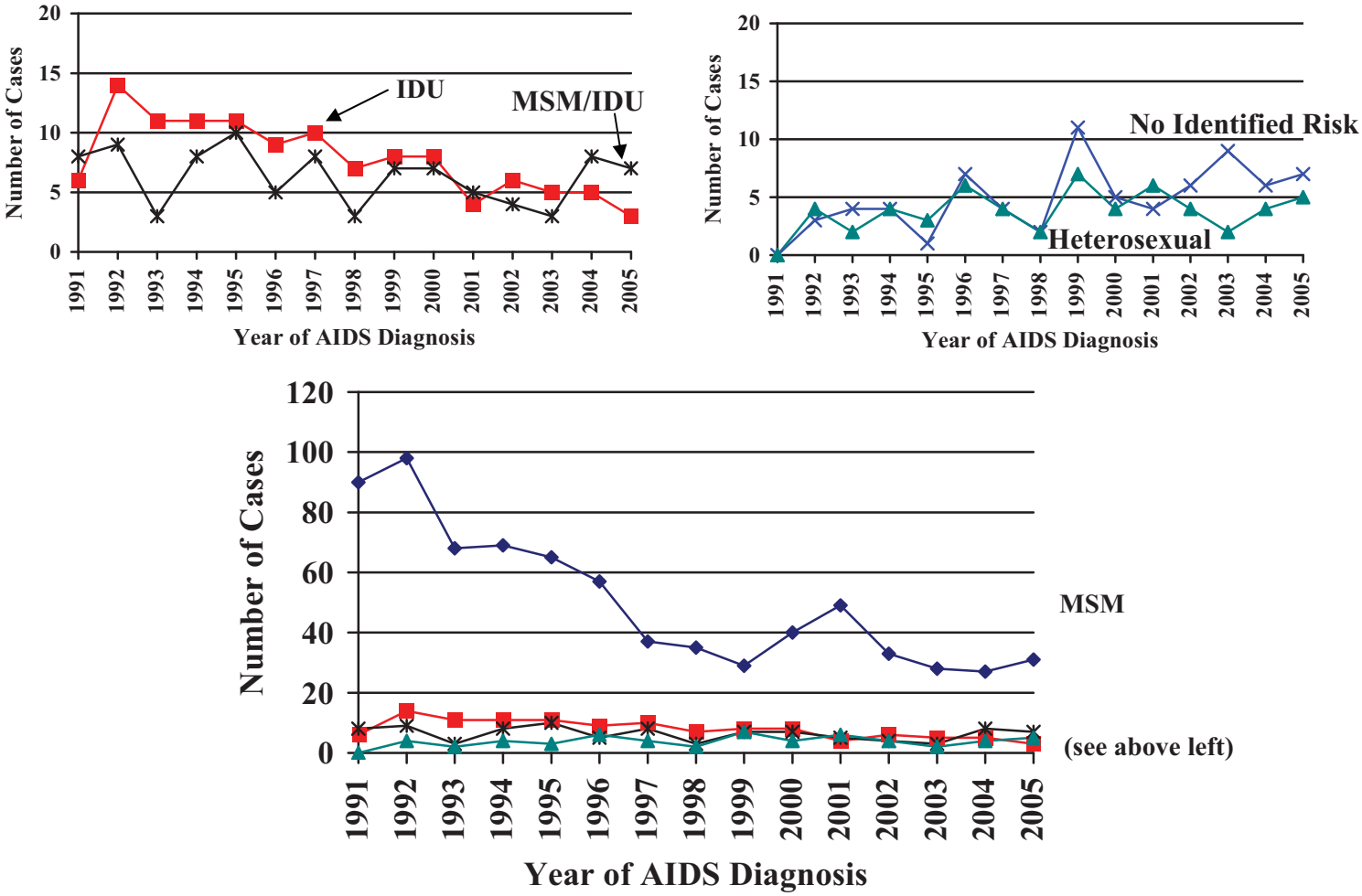
Identifying modes of exposure for persons recently diagnosed with HIV is a priority for the Iowa Department of Public Health. Clearly, trends can be misinterpreted when nearly 25% the recent cases have no risk associated with them. Although it appears from Figures 35 and 36 that the number of persons without identified risk has been increasing, this is only partially true. Some of the cases diagnosed in 2005 without a known risk, particularly those among U.S.-born persons, will have modes of exposure determined in the coming year, as partners are tested and cases are investigated over time. Therefore, the number of NIR cases diagnosed in 2005 will decrease when plotted in subsequent years.

Identifying risks for foreign-born persons, however, is more difficult. Many people do not remember specific medical interventions, may have been unaware of immunizations or other injections with needles that may have been contaminated, or may have had sexual partners in those countries who are unavailable for testing.

Exposure Category and Gender – AIDS Diagnoses

Among male cumulative AIDS cases, 87% report having sex with men and/or injecting drugs as their modes of exposure (Figure 35, Table 20). The number of AIDS diagnoses of males exposed through male-to-male sexual contact alone decreased from 1992 to 1999, as did the number of cases attributed to IDU and MSM/IDU. Diagnoses of AIDS among MSM increased in 2000 and 2001, but fell back to 1999 levels in 2002. Since then the number of cases diagnosed annually has remained generally stable. AIDS cases attributed to heterosexual contact among males have been few in number. Heterosexual exposure accounts for only 4% of all male AIDS cases. Cases among adult and adolescent males with no identified risk have increased recently and accounted for 13% of the cases diagnosed in 2005. Reclassification of many of these cases will likely occur over time.

Figure 35
Diagnoses of AIDS by Exposure
Adult and Adolescent[1] Males, 1991 - 2005



[1] Exposure occurred at ≥ 13 years of age.
* Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting. Transfusion/transplant and hemophilia cases are not shown.

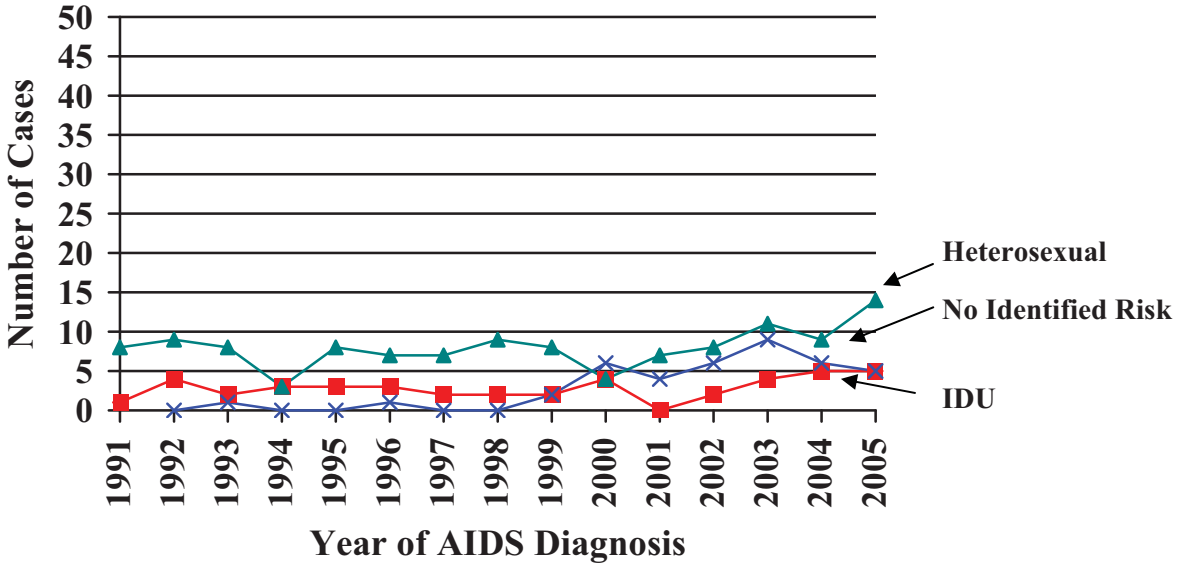
Table 20
Adult and Adolescent[1] AIDS Cases by Exposure and Gender, Diagnosed in 2005 and Cumulatively

Exposure Category – Males	2005[1] #	2005[1] (%)	Cumulative[2] #	Cumulative[2] (%)
MSM	31	(58)	950	(68)
IDU	3	(6)	134	(10)
MSM/IDU	7	(13)	119	(9)
Hemophilia	0	--	39	(3)
Heterosexual	5	(9)	60	(4)
Transfusion/transplant	0	--	20	(1)
NIR/other	7	(13)	74	(5)
Total Males	**53**		**1,396**	
Exposure Category – Females				
IDU	5	(20)	49	(20)
Hemophilia	0	--	1	--
Heterosexual Contact	14	(56)	132	(55)
Transfusion/ transplant	1	(4)	17	(7)
NIR/other	5	(20)	41	(17)
Total Females	**25**		**240**	

[1] Includes all persons who were diagnosed with AIDS in 2005 while residents of Iowa and whose exposures occurred at ≥ 13 years of age. Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting.
[2] Cumulative data include cases diagnosed through 2005.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Among female adult and adolescent AIDS cases, heterosexual contact is the most frequent mode of exposure, accounting for 55% of cumulative AIDS cases (Figure 36, Table 20). Within the category of heterosexual contact, having sex with an HIV-infected person whose risk is not known is the most common mode of exposure (44%), followed by having sex with an IDU (33%), and having sex with a bisexual male (16%, data not shown). With only a couple of exceptions, the number of cases attributed to heterosexual contact was fairly steady between 1991 and 2002. Since then, diagnoses have increased somewhat.

Figure 36
Diagnoses of AIDS by Exposure
Adult and Adolescent[1] Females, 1991 - 2005



[1] Exposure occurred at ≥ 13 years of age.
* Data for 2005 were reported through June 30, 2006, but may be incomplete due to delays in reporting. Transfusion/transplant and hemophilia cases are not shown.

Cases among females who reported injection drug use have numbered 5 or fewer each year since 1990. Overall, injection drug use accounts for 20% of all female AIDS cases. There has been only one female with AIDS infected as a result of hemophilia and only one infected as a result of a documented occupational exposure (classified as 'other'). In 2005, five females diagnosed with AIDS had no risk identified; overall, 17% of females are without risk.

Exposure Category and Gender – Persons Living with HIV and AIDS

Exposure categories by gender are shown in Table 21 for adults and adolescents living with HIV and AIDS. Just over half of all living adult and adolescent females with HIV disease were infected through heterosexual contact. Another 20% were infected through injection drug use. Twenty-two percent of adult and adolescent females living with HIV or AIDS did not have a risk identified. This compares to only 9% of males who have no risk identified. The higher percentage for females can be attributed to the higher probability that a woman will be exposed through heterosexual sex and the requirement that a risk be documented for the partner. In the future, a category of 'presumed heterosexual transmission' will be allowed for women who have no other risk than heterosexual sex.

Among adult and adolescent males living with HIV disease, 63% were infected through male-to-male sex, 10% were MSM/IDU, and 9% were IDU. Nearly 80% of all injection drug users (MSM/IDU and IDU) with HIV/AIDS are male.

Table 21
Adult and Adolescent[1] Persons Reported to be Living with HIV and AIDS on Dec. 31, 2005, by Exposure and Gender

Exposure Category – Males	Prevalence[2] #	(%)
MSM	650	(63)
IDU	90	(9)
MSM/IDU	105	(10)
Hemophilia	12	(1)
Heterosexual	76	(7)
Transfusion/transplant	12	(1)
NIR/other	93	(9)
Total Males	**1,038**	
Exposure Category – Females		
IDU	56	(20)
Hemophilia	0	--
Heterosexual Contact	156	(55)
Transfusion/ transplant	10	(4)
NIR/other	63	(22)
Total Females	**285**	

[1]Exposure occurred at ≥ 13 years of age.
[2]Reported to be living on December 31, 2005, with HIV or AIDS. All deaths may not have been reported.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Exposure Category and Race – HIV Diagnoses After 2000

To examine how mode of exposure differs by race and ethnicity, several years of HIV diagnosis data must be used to accumulate enough cases. For this section, data reported from January 1, 2001, to December 31, 2005 were analyzed. Adult and adolescent HIV diagnoses by exposure category, race, and ethnicity are presented in Table 22.

Differences in modes of exposure are evident between racial and ethnic groups. Among black, non-Hispanic persons, persons with no identified risk accounted for the highest proportion of cases (40%), followed by heterosexual contact (29%), and then MSM (17%). In contrast, the most common exposure among white, non-Hispanic persons was men who had sex with men, accounting for just over half of all cases. Fifty-two percent of HIV cases among Hispanics were in MSM. Black, non-Hispanic persons and Hispanic persons are more likely to have unidentified risks than are white, non-Hispanic persons.

Table 22
Adult and Adolescent[1] HIV Diagnoses by Exposure, Race, and Ethnicity
Diagnosed January 1, 2001 – December 31, 2005

Exposure Category	White Non-Hispanic		Black Non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	166	(53)	22	(17)	32	(52)	5	--	225	(44)
IDU	22	(7)	10	(8)	2	--	1	--	35	(7)
MSM/IDU	34	(11)	4	(3)	1	--	3	--	42	(8)
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	52	(17)	38	(29)	11	(18)	0	--	101	(20)
Transfusion/transplant	3	(1)	5	(4)	1	--	0	--	9	(2)
NIR/Other	34	(11)	53	(40)	14	(23)	4	--	105	(20)
Totals	**311**		**132**		**61**		**13**		**517**	

[1] Exposure occurred at ≥ 13 years of age.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

These data highlight that there are really many epidemics occurring simultaneously in different populations. Therefore, there must be many approaches to prevention. The large proportion of Black, non-Hispanic persons who have no risk identified is problematic in understanding how this community is being exposed to HIV. Nearly one-fourth of all Hispanic cases also had no risk identified.

Just more than 40% of the black, non-Hispanic persons and 80% of Hispanic persons were foreign-born. Modes of exposure within a racial or ethnic group may vary by place of origin as well. Table 23 presents HIV diagnoses since January 1, 2001, separately for foreign- and U.S.-born black, non-Hispanic and Hispanic persons.

Table 23
Minority Adult and Adolescent[1] HIV Diagnoses by Exposure, Race, Ethnicity, and Origin
Diagnosed January 1, 2001 – December 31, 2005

	Black, Non-Hispanic				Hispanic			
	U.S.-born		Foreign-born		U.S.-born		Foreign-born	
Exposure Category	#	(%)	#	(%)	#	(%)	#	(%)
MSM	22	(28)	0	--	6	(50)	26	(53)
IDU	10	(13)	0	--	1	--	1	--
MSM/IDU	3	--	1	--	1	--	0	--
Hemophilia	0	--	0	--	0	--	0	--
Heterosexual	27	(34)	11	(21)	1	--	10	(20)
Transfusion/transplant	1	--	4	(8)	0	--	1	--
NIR/Other	16	(20)	37	(70)	3	(33)	11	(22)
Totals	**79**		**53**		**12**		**49**	

[1] Exposure occurred at ≥ 13 years of age.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Table 23 indicates that among U.S.-born, black, non-Hispanic persons (i.e., African-Americans), heterosexual contact is the most common mode of exposure, but accounts for only about one-third of the cases. Still, this is twice as common as among white, non-Hispanic persons (Table 22). Transmission among black, non-Hispanic MSM accounts for 28% of cases, and injection drug use accounts for 13%. A much lower percentage of cases have risks unidentified than it appeared when foreign-born, black, non-Hispanic persons were included. Twenty percent of African-Americans have no identified risk; almost twice that of white, non-Hispanic persons.

No risk was identified for 70% of cases among foreign-born black, non-Hispanic persons. Heterosexual contact accounts for 21% of cases, and transfusions and transplants account for 8% of cases. Clearly, the difficulties in obtaining risk information from foreign-born persons severely limit our understanding of the epidemic in this population.

Conversely, foreign-born Hispanic persons were less likely to have no risk identified than U.S.-born Hispanics. The two groups were equally likely to have been MSM, but foreign-born Hispanic persons were more likely to have been exposed heterosexually than U.S.-born Hispanic persons.

Exposure Category and Race – Cumulative AIDS Cases

Differences between racial and ethnic groups are also evident among cumulative AIDS cases (Table 24). There is a lower proportion of black, non-Hispanic AIDS cases that are attributed to MSM and a higher proportion that are attributed to injection drug use and heterosexual contact than among white, non-Hispanic persons. The proportion of cases among Hispanic persons attributed to MSM is slightly less than among white, non-Hispanics, but exposure category is unknown for 18% of the cases. There were higher proportions of cases of IDU and heterosexuals than among the white, non-Hispanic population.

Table 24
Cumulative Adult and Adolescent[1] AIDS Cases by Exposure, Race, and Ethnicity
Diagnosed February, 1983 – December, 2005

Exposure Category	White Non-Hispanic		Black Non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	832	(63)	62	(30)	48	(48)	8	(53)	950	(58)
IDU	123	(9)	47	(22)	13	(13)	0	--	183	(11)
MSM/IDU	101	(8)	13	(6)	4	(4)	1	--	119	(7)
Hemophilia	39	(3)	1	--	0	--	0	--	40	(2)
Heterosexual	126	(10)	49	(23)	16	(16)	1	--	192	(12)
Transfusion/transplant	29	(2)	6	(3)	1	--	1	--	37	(2)
NIR/Other	60	(5)	32	(15)	19	(18)	4	(27)	115	(7)
Totals	**1,310**		**210**		**101**		**15**		**1,636**	

[1] Exposure occurred at ≥ 13 years of age.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Comparison of cumulative AIDS cases with HIV diagnoses after 2000 (Table 22) reveals that a lower proportion of HIV diagnoses are among MSM and IDU than for cumulative AIDS cases among white, non-Hispanic persons and black, non-Hispanic persons. This confirms what the trend lines have shown previously; more heterosexual transmission is now occurring than in the past among these racial and ethnic groups, and persons with more recent diagnoses are less likely to have a risk identified.

Exposure Category by Race, Ethnicity, and Gender – HIV Diagnoses After 2000

To examine differences in modes of exposure between racial and ethnic groups for each gender, five years of data were examined. Among males diagnosed with HIV since January 1, 2001, MSM is the primary exposure for all reported races and ethnic groups (Table 25). Overall, 59% of exposures among adult and adolescent males diagnosed with HIV infection since January 1, 2001, involved male-to-male sex. However, less than one-third of black, non-Hispanic men diagnosed with HIV identified as MSM compared to two-thirds of white, non-Hispanic men and 70% of Hispanic males. Higher proportions of black, non-Hispanic males reported heterosexual contact or were unable to identify a risk than white, non-Hispanic or Hispanic males. Thirty percent of black, non-Hispanic males had no risk identified.

Table 25
Adult and Adolescent[1] HIV Diagnoses by Exposure Category, and Race/Ethnicity
Males, Diagnosed January 1, 2001 – December 31, 2005

Exposure Category	White Non-Hispanic		Black Non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	166	(66)	22	(31)	32	(70)	5	(45)	225	(59)
IDU	14	(6)	6	(9)	2	--	0	--	22	(6)
MSM/IDU	34	(13)	4	(6)	1	--	3	(27)	42	(11)
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	10	(4)	17	(24)	4	(9)	0	--	31	(8)
Transfusion/transplant	3	(1)	0	--	0	--	0	--	3	(1)
NIR/Other	25	(10)	21	(30)	7	(15)	3	(27)	56	(15)
Totals	**252**		**70**		**46**		**11**		**379**	

[1] Exposure occurred at ≥ 13 years of age.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

No racial or ethnic group had more than 9% of diagnoses among injection drug users, when IDU is considered as a separate category. Black, non-Hispanic males were only slightly more likely than males of other races and ethnicities to be injection drug users. However, thirteen percent of white, non-Hispanic males reported histories of sex with males and injection drug use. This means that up to 19% of diagnoses among white, non-Hispanic males could have been exposed through injection drug use, compared to only 15% of black, non-Hispanic males and 7% of Hispanic males.

Data from the most recent five years of HIV diagnoses for adult and adolescent females are shown in Table 26. Heterosexual contact was the most common risk for white, non-Hispanic and Hispanic females. Fifty-two percent of black, non-Hispanic females and nearly half of Hispanic females had no risk identified. For this reason, comparisons between racial and ethnic groups are very difficult. Heterosexual transmission is likely to be the most important mode of exposure among all adult and adolescent females.

Table 26
Adult and Adolescent[1] HIV Diagnoses by Exposure Category, and Race/Ethnicity
Females, Diagnosed January 1, 2001 – December 31, 2005

Exposure Category	White Non-Hispanic		Black Non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
IDU	8	(14)	4	(6)	0	--	1	--	13	(9)
Hemophilia	0	--	0	--	0	--	--	--	0	--
Heterosexual	42	(71)	21	(34)	7	(47)	--	--	70	(51)
Transfusion/transplant	0	--	5	(8)	1	--	--	--	6	(4)
NIR/Other	9	(15)	32	(52)	7	(47)	1	--	49	(36)
Totals	**59**		**62**		**15**		**2**		**138**	

[1] Exposure occurred at ≥ 13 years of age.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Exposure Category by Race, Ethnicity, and Gender – Cumulative AIDS Cases

Adult and adolescent AIDS cases by exposure, race/ethnicity, and gender are shown in Tables 27 and 28. Because of larger numbers, comparisons between racial and ethnic groups are more valid using cumulative AIDS cases than with HIV diagnoses. In addition, there are considerably fewer cases with no identified risk, only 5% overall. However, many of these persons were diagnosed a considerable time ago. Therefore, conclusions drawn from the comparisons may not still be valid for more recently infected persons.

Nearly three-fourths of all AIDS cases reported among white, non-Hispanic males were MSM. No other risk category had more than 10% of the cumulatively reported AIDS cases in this group. Among black, non-Hispanic males diagnosed with AIDS, only 43% were MSM. Twenty-one percent reported injection drug exposure, which was more than double the proportion reported in white, non-Hispanic males. Historically speaking, injection drug use has contributed to a larger proportion of AIDS cases among black, non-Hispanic males than among other racial and ethnic groups, but this is not the case for persons more recently diagnosed with HIV infection (Table 25, page 76).

Table 27
Adult and Adolescent[1] AIDS Diagnoses by Exposure Category, and Race/Ethnicity
Males, Diagnosed February, 1983 – December, 2005

Exposure Category	White Non-Hispanic		Black Non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	832	(72)	62	(43)	48	(56)	8	(58)	950	(68)
IDU	92	(8)	30	(21)	12	(14)	0	--	134	(10)
MSM/IDU	101	(9)	13	(9)	4	(5)	1	--	119	(9)
Hemophilia	38	(3)	1	--	0	--	0	--	39	(3)
Heterosexual	30	(3)	22	(15)	8	(9)	0	--	60	(4)
Transfusion/transplant	19	(2)	0	--	0	--	1	--	20	(1)
NIR/Other	41	(4)	17	(12)	13	(15)	3	(25)	74	(5)
Totals	**1,153**		**145**		**85**		**13**		**1,396**	

[1]Exposure occurred at ≥ 13 years of age.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Table 28 shows cumulative adult and adolescent AIDS diagnoses among females by race and ethnicity. Heterosexual risk is the primary risk for all races and ethnicities among females. Nearly one-fourth of black, non-Hispanic females and almost 40% of all Hispanic females diagnosed with AIDS did not have a risk identified. Injection drug use may have played a slightly larger role in the AIDS epidemic among black, non-Hispanic females but the sizable number of women without a risk makes comparisons between racial and ethnic groups very difficult.

Table 28
Adult and Adolescent[1] AIDS Diagnoses by Sex, Exposure Category, and Race/Ethnicity
Females, Diagnosed February, 1983 – December, 2005

Exposure Category	White Non-Hispanic		Black Non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
IDU	31	(20)	17	(26)	1	--	0	--	49	(20)
Hemophilia	1	--	0	--	0	--	0	--	1	--
Heterosexual	96	(61)	27	(42)	8	(50)	1	--	132	(55)
Transfusion/transplant	10	(6)	6	(9)	1	--	0	--	17	(7)
NIR/Other	19	(12)	15	(23)	6	(38)	1	--	41	(17)
Totals	**157**		**65**		**16**		**2**		**240**	

[1] Exposure occurred at ≥ 13 years of age.
Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Pediatric Exposures to HIV

Pediatric (12 years of age or younger at time of diagnosis) AIDS cases have been reportable since February 1983. Pediatric cases of HIV infection were reportable beginning July 1, 1998. Because most pediatric AIDS cases and virtually all new HIV infections in children are perinatally acquired (mother to infant), births to HIV-infected women became reportable on July 1, 1998. Monitoring perinatal exposures allows the Iowa Department of Public Health to assess the efficacy of public health recommendations on the use of medications to decrease perinatal transmission of HIV. It also allows the department to assess any potential adverse consequences of these interventions to the infant.

In 1999, the Centers for Disease Control and Prevention issued a revised surveillance case definition for HIV infection. It included criteria for categorizing perinatally exposed infants as "exposed," "uninfected," or "infected" on the basis of virological tests conducted in the first 18 months of life.

There were 40 births to HIV-positive residents of Iowa from January 1, 2001, to December 31, 2005 (Table 29, Figure 37). Of these, 28 infants were uninfected, 3 were infected, and 9 remain undetermined (i.e., perinatally exposed). Those who remain undetermined may be pending further testing or may have been lost to follow up, usually because they moved from the state with their parent(s) or guardian.

Studies indicate that appropriate prenatal treatment for the mother and prophylaxis for the infant results in approximately 2% of infants becoming infected. Although only three (7%) Iowa infants became infected with HIV from their mothers, this is well above what would be expected when appropriate and timely interventions for the mother are accessed. This may indicate that better prenatal screening of women is needed in Iowa to help lower mother-to-child transmission of HIV.

Table 29
HIV Status of Child for Births to HIV-infected Female Residents of Iowa
2001 - 2005

Year of Birth	# HIV Infected	# HIV Negative	# HIV Undetermined	Total HIV Exposures
2001	0	7	1	8
2002	1	5	1	7
2003	1	7	0	8
2004	0	5	1	6
2005	1	4	6	11
Totals	**3**	**28**	**9**	**40**

Figure 37
Births to HIV-infected Females in Iowa and HIV-infected Infants
1999-2005

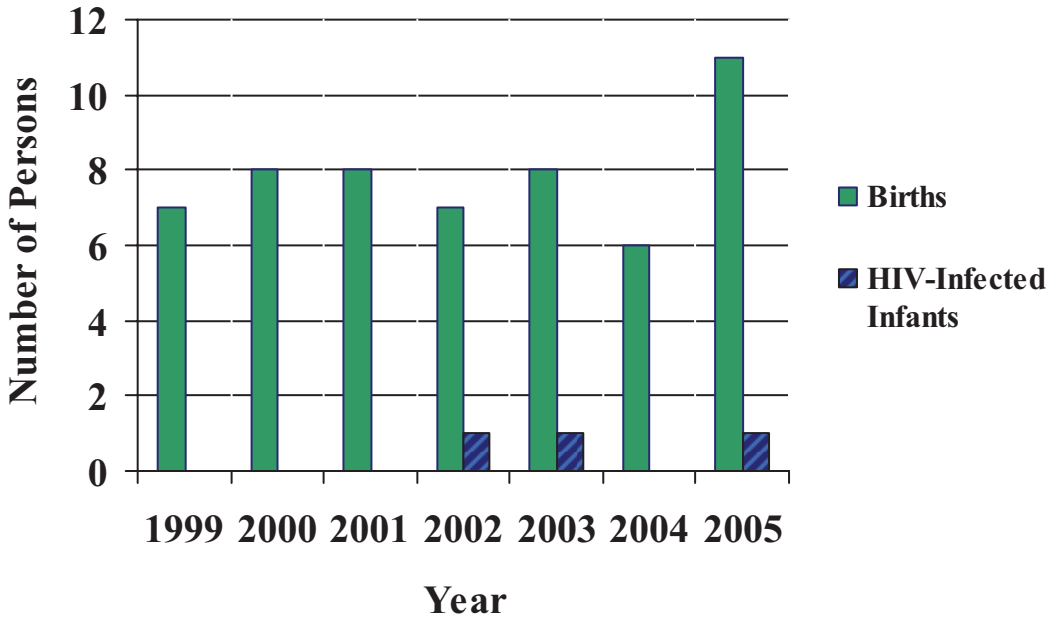


Table 30 shows all HIV diagnoses to persons with pediatric exposures to HIV since AIDS reporting began in 1983. During this period, 24 cases were diagnosed in persons who were exposed to HIV while 12 years of age or younger. In 2005, there was one person with pediatric exposure to HIV diagnosed with HIV infection. Most (57%) of these infants had mothers who were HIV positive or were at high risk for HIV. Eight pediatric cases acquired HIV through treatments for hemophilia.

Table 30
Pediatric Exposures[1]
Cumulative HIV and AIDS Cases Diagnosed through December 31, 2005

Exposure Category	All Cases #	(%)
Pediatric Hemophilia	8	(33)
Mother at risk for HIV	14	(58)
is an IDU	5	
had sex with an IDU	2	
had sex with a bisexual man	1	
had sex with a hemophiliac	0	
had sex w/HIV-positive person whose risk is unknown	4	
has HIV, risk unknown	2	
Transfusion/ transplant	1	--
No identified risk (NIR)	1	--
Totals	**24**	

[1] Includes all persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS) and whose exposure occurred at < 13 years of age. Also includes persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

Summary of Exposure Data:

- MSM remains the predominant risk category among persons diagnosed with HIV, although the trend has been generally downward since 1996. In 2005, 64% of all males diagnosed with HIV reported having sex with other males.
- Diagnoses of HIV infection among persons who reported heterosexual contact generally declined from 1997 to 2003 but increased considerably in 2004. In 2005, heterosexual contact was the third most common mode of exposure for all cases, behind MSM and no identified risk.
- Numbers of persons reported with no risks identified increased with the implementation of confidential HIV reporting by name in July 1998. In 2005, nearly one-fourth of all cases did not have a risk identified. This makes interpretations of trends among exposure groups difficult to make, particularly for the most recent data. Reclassification of these cases over time may alter the interpretations of the data made here.
- As a group, MSM account for just under half of all people living with HIV/AIDS in Iowa. Heterosexual contact was the mode of exposure for 18% of people living with HIV/AIDS, injection drug use was reported by 11%, and a combination of injection drug use and male-to-male sex by 8% of cases. Exposure category is not known for 12% of persons living with HIV/AIDS in Iowa.
- For persons diagnosed with HIV infection between January 1, 2001 and December 31, 2005, differences in modes of exposure are evident between racial and ethnic groups. Among black, non-Hispanic persons, persons with no identified risk accounted for the highest proportion of cases (40%), followed by heterosexual contact (29%), and then MSM (17%). Just over half of all cases in white, non-Hispanic persons were attributed to MSM exposure, but another 11% were MSM/IDU. Fifty-two percent of HIV cases in Hispanics were MSM. Black, non-Hispanic persons and Hispanic persons are more likely to have unidentified risks than are white, non-Hispanic persons. Injection drug use alone accounted for only 7% of all diagnoses in the state, and nearly all were white or black and non-Hispanic.
- Among women diagnosed with HIV between January 1, 2001, and December 31, 2005, heterosexual contact was the most common risk, accounting for just over half of all diagnoses. However, 52% of black, non-Hispanic females and 47% of Hispanic females had no risk identified. Injection drug use accounted for 9% of all diagnoses among females. Comparatively low numbers of diagnoses among females and high proportions of cases without an identified risk make interpretations of trends difficult.
- There were 40 births to HIV-positive residents of Iowa from January 1, 2001, to December 31, 2005. Of these, 28 infants were uninfected, three were infected, and nine remain undetermined (i.e., perinatally exposed). Although only three (7%) Iowa infants became infected with HIV from their mothers, this is well above what would be expected when appropriate and timely interventions for the mother are accessed. This may indicate that better prenatal screening of women is needed in Iowa to help lower mother-to-child transmission of HIV.

Question 3

Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?

This section provides a detailed look at high-risk populations using direct and indirect measures of high-risk behavior. Counseling and testing data, STD data, and other survey data will be used to examine this question.

Section Highlights

- Participants at publicly funded HIV counseling and testing sites reported high levels of unsafe behaviors. One-half indicated that they had sex with two to five partners in the past year. Only 14% used condoms during every sexual encounter in the past six months, while over one-third had not used condoms in the past six months. Nearly three-fourths reported having sex after using alcohol.

- Chlamydia is the most frequently reported sexually transmitted disease in Iowa, with 8,393 cases reported in 2006. The incidence of chlamydia has doubled since 1996 and reached a 10-year high in 2006.

- The incidence of gonorrhea has increased by 72% since 1996. Gonorrhea shows the most disproportionate distribution among racial and ethnic groups of all sexually transmitted diseases. Black, non-Hispanic males have an incidence rate of reported cases of gonorrhea that is nearly 90 times that of white, non-Hispanic males. Black, non-Hispanic females have a rate 26 times that of white, non-Hispanic females. The rate among Native American women is more than 4 times that of white, non-Hispanic women, and Hispanics are more than 1.6 times more likely to be diagnosed with gonorrhea than white, non-Hispanic persons.

- The incidence of syphilis remains low but there was a 3-fold increase in cases of late latent syphilis in 2006. These cases were not the result of recent exposures and they highlight the difficulties in eliminating a disease that can be asymptomatic for long periods of time.

- The male-to-female ratios for chlamydia and gonorrhea differ significantly between minority populations and the white, non-Hispanic population. White, non-Hispanic females with gonorrhea diagnoses outnumber white, non-Hispanic males by 3 to 1, while black, non-Hispanic males outnumber black, non-Hispanic females 1.2 to 1. This may indicate that minority females are not being screened for asymptomatic infection at the same rate as other women in the state, or it may reflect other as yet undetermined reasons.

HIV AND AIDS BY OTHER INDICATORS

Economic status of persons with HIV and AIDS

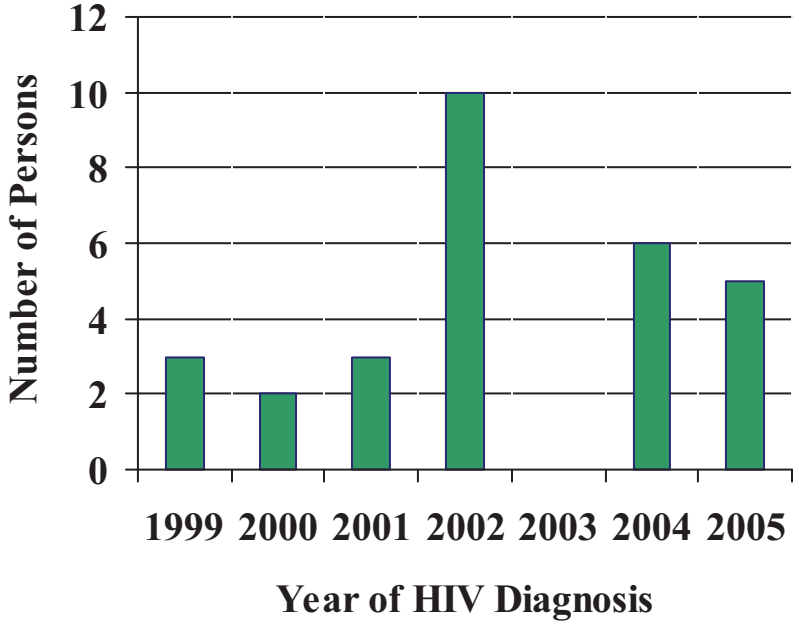
Although the economic status of persons diagnosed with HIV and AIDS is not reported on the confidential case-report form, the reimbursement source for medical treatment is collected. For all persons diagnosed with HIV in 2005, 39% of persons reported either no health insurance coverage or public forms of payment for their medical care, 28% reported private insurance coverage, and the remaining 33% did not report a reimbursement source.

HIV/AIDS in Iowa prisons

A report published by the U.S. Department of Justice, National Institute of Justice, and the Centers for Disease Control and Prevention indicates that persons incarcerated in prisons and jails suffer disproportionately from infectious diseases, substance abuse, and socioeconomic problems. There are more cases of HIV infection, sexually transmitted diseases, and tuberculosis in inmate populations than in the general population (U.S. Department of Justice Report, 1998).

Upon admission to the Iowa Department of Corrections, each inmate is screened for HIV, tuberculosis, and other sexually transmitted diseases. Five newly admitted inmates were diagnosed with HIV infection in the Iowa Department of Corrections in 2005. These accounted for 4% of all new diagnoses in the state. From January 1, 1999, to December 31, 2005, 29 persons were first diagnosed with HIV in the state correctional system (Figure 37). As of December 31, 2005, 165 inmates had tested positive for HIV.

Figure 37
HIV Diagnoses in State Correctional Facilities
1999 – 2005



HIV/AIDS Risk Assessment and Behavioral Data

The Iowa Department of Public Health funds 19 free, confidential HIV testing and counseling sites in Iowa. Participants complete risk assessments as part of a visit or during outreach. In August 2005, a new web-based data collection and reporting system was implemented and the risk assessment tool was changed. For that reason, complete data on risk assessments are not available for 2005. Data from risk assessments completed in 2004 will be presented in this profile.

In 2004, risk assessments were completed for 12,937 individuals. All persons who completed assessments received HIV prevention counseling, and 10,702 were tested for HIV. Twenty-three percent of these tests occurred as part of outreach testing (i.e., not in a clinic). Fifty-six persons tested positive (0.52%). Because the counseling and testing system collects information only from persons who seek counseling and testing services, data are not representative of all persons who engage in high-risk behaviors.

Table 31 presents the gender, race, and ethnicity of the participants. Slightly more males than females completed assessments. Black, non-Hispanic persons represented 17% of the participants, white, non-Hispanic persons made up 68% of the group, and Hispanic persons accounted for 11%. The proportion of Hispanic persons completing risk assessments increased from 8% in 2005.

Table 31
HIV Counseling and Testing Participants by Gender, Race, and Ethnicity
2004

Gender	#	(%)
Male	6,777	(52)
Female	6,156	(48)
Not indicated	4	--
Total	**12,937**	

Race and Ethnicity	#	(%)
White, non-Hispanic	8,846	(68)
Black, non-Hispanic	2,160	(17)
Hispanic	1,385	(11)
Asian/Pacific Islander	182	(1)
Am Indian/Alaskan	141	(1)
Not indicated	223	(2)
Total	**12,937**	

Participant ages are shown in Table 32. Forty-six percent of the participants were 13 to 24 years of age, and another 43% were 25 to 44 years of age. The overall median age was 25 years. This is 10 years younger than the median age of persons diagnosed with HIV in 2005 and 13 years younger than the median age of persons diagnosed in 2004.

A risk group was assigned to participants according to the behaviors they reported on their assessments. Table 32 shows that, in 2004, 83% of the participants indicated heterosexual contact as their major risk, 7% were MSM, and 9% were injection drug users. Since 1999, clients reporting male-to-male sexual contact and/or injecting drug use as risks have increased from 13% to 17% of total clients.

Table 32
HIV Counseling and Testing Participants by Age Group and Risk
2004

Age Range	#	(%)
0-1	0	--
5-12	15	--
13-24	6,006	(46)
25-44	5,570	(43)
45-64	1,196	(9)
65 and over	58	--
Not Indicated	92	(1)
Total	**12,937**	

Risk Group	#	(%)
MSM/IDU	65	(1)
MSM	951	(7)
IDU	1,213	(9)
Heterosexual	10,708	(83)
Total	**12,937**	

The risk behaviors of the participants and of their partners are shown in Table 33. Nearly 60% of the participants had been tested previously, and one-third indicated that they had been infected with an STD at some time in the past. Just over one-half indicated that they had sex with two to five partners in the past year. Only 14% used condoms during every sexual encounter in the past six months, while one-third had not used condoms in the past six months. Nearly three-fourths reported having sex after using alcohol.

The proportions of persons who engage in these risk behaviors have been remarkably consistent since 2002. No response category changed by more than 3 percentage points. In 2002, only 30% of participants said that they had ever had an STD, compared to 33% of participants in 2005. The percentage of participants that said they had been previously tested for HIV increased by 2 percentage points to 59%.

Table 33
Reported Behaviors of HIV Counseling and Testing Participants
2004

Participant Responses	#	(%)
had sex when using alcohol	9,138	(71)
indicated their partner had sex when using alcohol	8,419	(65)
indicated they had been tested before	7,660	(59)
indicated they had sex with 2-5 partners in the past year	6,607	(51)
indicated they used condoms sometimes during the past 6 months	6,213	(48)
had sex when using drugs	4,444	(34)
indicated they had ever had an STD	4,309	(33)
indicated they never used condoms during the past 6 months	4,307	(33)
indicated their partner had sex when using drugs	4,167	(32)
indicated they knew their partner had an STD	2,624	(20)
indicated they used condoms every time during the past 6 months	1,826	(14)
had used drugs with a needle	1,278	(10)
indicated their partner had used drugs with a needle	1,232	(10)
indicated they had sex with 6-9 partners in the past year	921	(7)
had sex in return for drugs, money or favors	682	(5)
indicated they had sex with ten or more partners in the past year	652	(5)
indicated their partner had sex in return for drugs, money or favors	535	(4)
had sex with a person who had HIV/AIDS	306	(2)
indicated their partner had sex with a person who had HIV/AIDS	206	(2)

SEXUALLY TRANSMITTED DISEASES (STDs)

STDs are among the most frequently reported infectious diseases and constitute a significant health problem in Iowa. While STD rates reflect unsafe sexual behavior, they do not necessarily correlate with HIV infection. National data suggest that syphilis rates, especially when related to crack cocaine use or the exchange of sex for drugs, may be more closely associated with HIV risk than either gonorrhea or chlamydia. However, the presence of non-ulcerative STDs, such as chlamydia and gonorrhea, can facilitate the transmission of HIV.

The three bacterial STDs reportable to the Iowa Department of Public Health are chlamydia, gonorrhea, and syphilis. For these diseases, there is generally little difference between time of diagnosis and time of report. There is consequently no need to allow for reporting delays, which means that data may be analyzed soon after the reporting year is complete. For these reasons, STD data in this profile are presented for the 2006 reporting year.

In considering STD data, one should be aware of certain limitations. The quality of STD data is dependent upon which provider or facility is reporting. All cases reported to the STD Prevention Program in 2006 are presented here, including cases for which race, age, or county of residence is unknown. Race was not reported for a large number of cases. In addition, the reported incidence of STDs may reflect the demographics of individuals seeking care at a particular facility or may reflect the practices of certain providers (e.g., only cases with laboratory confirmation of disease are reported) and may not necessarily be representative of the characteristics of all infected individuals.

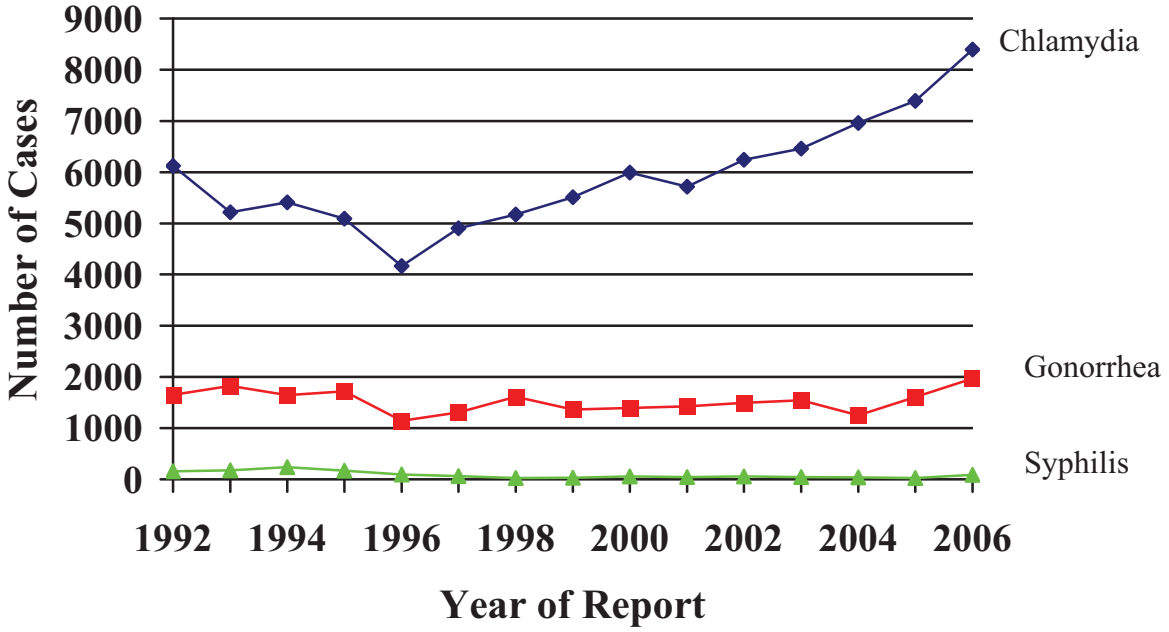
Women are generally reported with STDs more frequently than men. Because of the nature of the specimen collection procedure, women are often tested for STDs as a routine part of a pelvic exam, while men are generally tested only if they have symptoms or are a partner of someone who tested positive. This often results in a higher number of cases diagnosed and reported among females, particularly for those diseases where men are likely to be asymptomatic (e.g., chlamydia and gonorrhea).

Iowa is part of the Region VII Infertility Prevention Project. Federally funded screening has been done in Iowa since 1994. The main purpose of the National Infertility Prevention Project is to implement prevention strategies, including screening, that will reduce the complications caused by *Chlamydia trachomatis.* From the beginning, women have been targeted by the project. The complications associated with women are more costly, women access services more readily, and by screening women, partners can be treated. Approximately 85% of those tested as part of the Project in Iowa are female. Testing for chlamydia is offered to all sexually active women who are 25 years of age or younger. Women over age 25 can receive the test if they have certain risk factors, such as new or multiple partners in the last 90 days, contact with an infected partner, or clinical signs or symptoms of disease.

There are currently 70 clinics enrolled in the Iowa Infertility Prevention Project (IPP). Most are family planning clinics, but STD clinics, student health centers, correctional facilities, community health centers, a tribal clinic, and non-Title X women's health centers are also included. Seventy-four percent of the testing done for the IPP in 2006 was done in family planning clinics. The IPP reported 4,451 persons with chlamydia in 2006, which is 53% of all reported cases of chlamydia in Iowa.

New cases of three reportable sexually transmitted diseases in Iowa are shown in Figure 38. Chlamydia is the most frequently reported sexually transmitted disease in Iowa, with 8,393 cases reported in 2006. This is the highest number of cases ever reported and comes after 10 years of steady increases. Incidence of gonorrhea had declined slightly after 1995 but returned to previous levels after 2004. The incidence of syphilis remains very low in Iowa with occasional outbreaks in localized areas.

Figure 38
Reported Cases of Bacterial STDs in Iowa
1992 - 2006



In 1998, the state chlamydia and gonorrhea testing programs, in conjunction with the University of Iowa Hygienic Laboratory, began testing with improved amplified DNA probes, which increased the sensitivity of both of these tests and allowed for more cases to be detected. Improved versions of these tests were implemented in 2003 and 2006. While the increased sensitivities of these tests may have increased the number of infections diagnosed in each of those years, trends over many years probably are not greatly affected.

Chlamydia

In the United States, genital infections of *Chlamydia trachomatis* occur frequently among sexually active adolescents and young adults. CDC estimates that 2.8 million people are newly infected annually in the U.S. Asymptomatic infection is common among both men and women. Sexually active adolescents should be routinely screened for chlamydial infection during annual examinations, even if symptoms are not present. In women, untreated chlamydia infection can result in pelvic inflammatory disease, which can cause infertility, ectopic pregnancy, and chronic pelvic pain.

Chlamydia remains the most reported bacterial sexually transmitted disease in the United States and in Iowa. In 2006, there were 8,393 cases (283 cases per 100,000 population) reported to the STD Prevention Program. The increase in cases in 2006 extended to both males and females, but the largest increase was among females. Male cases increased more than 12% from 2005 and females by more than 14% (Figure 39). Females account for the majority of chlamydia cases, accounting for more than 73% of all cases.

Figure 39
Reported Cases of Chlamydia by Gender
Iowa, 1992 - 2006

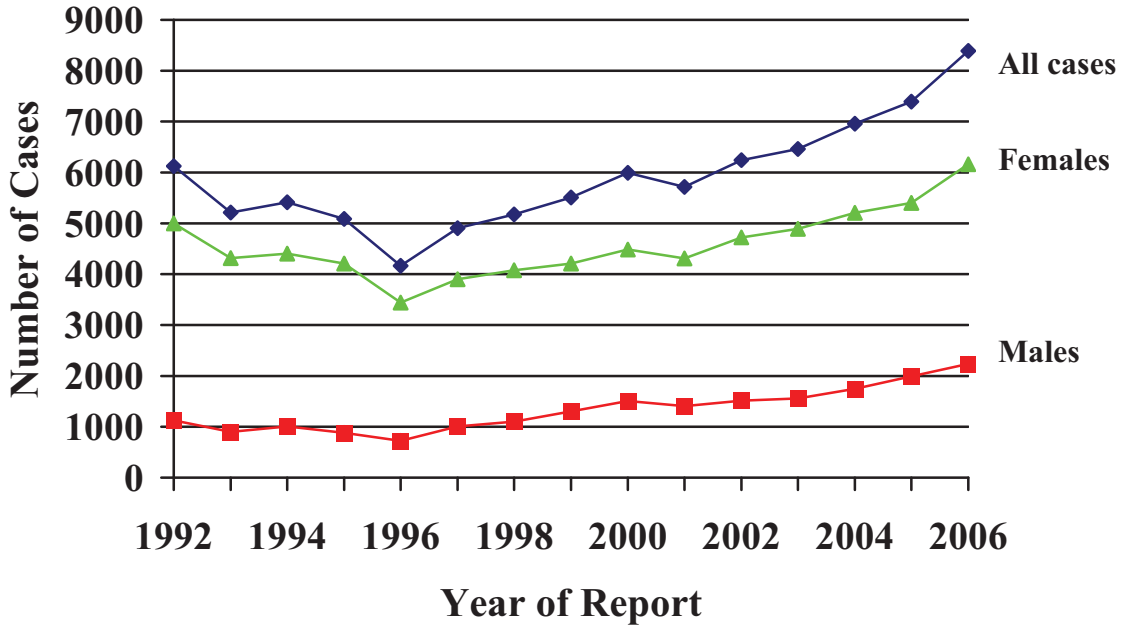
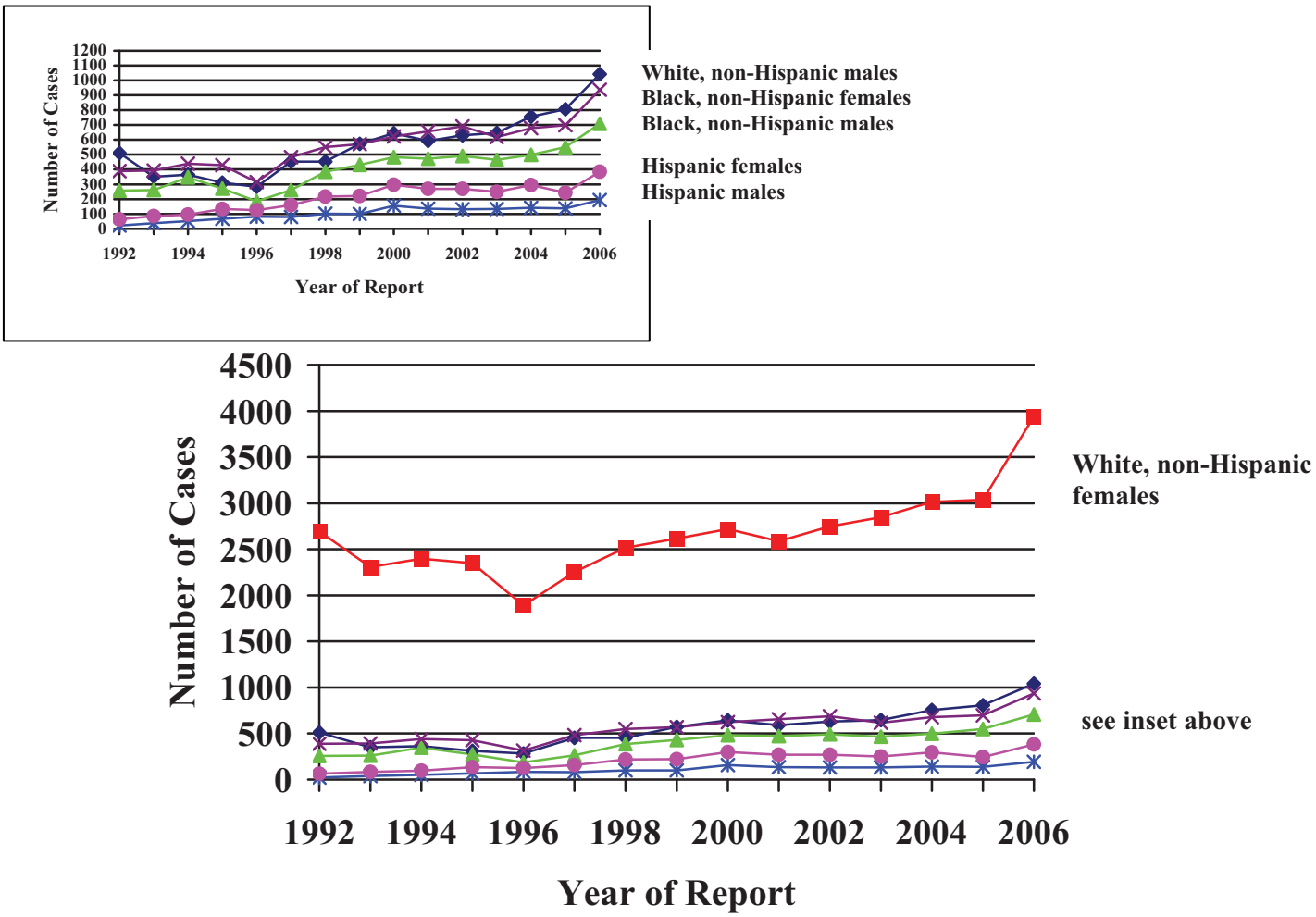


Figure 40 shows the number of reported cases of chlamydia by race, ethnicity, and gender from 1992 to 2006. By far, the largest proportion of cases is among white, non-Hispanic females, and the trends seen in the overall incidence of reported chlamydia cases are due, in large part, to this group. However, all groups had increases in cases in 2006.

Females of all three racial and ethnic groups have higher reported morbidity than males. Despite the vastly smaller population of black, non-Hispanic females compared to that of white, non-Hispanic males, there are similar numbers of cases in the two groups. Despite having the lowest number of cases, Hispanics saw the largest percentage increase in cases in 2006. Cases among Hispanic females increased by 57% while cases among Hispanic males increased by 42% over that seen in 2005.

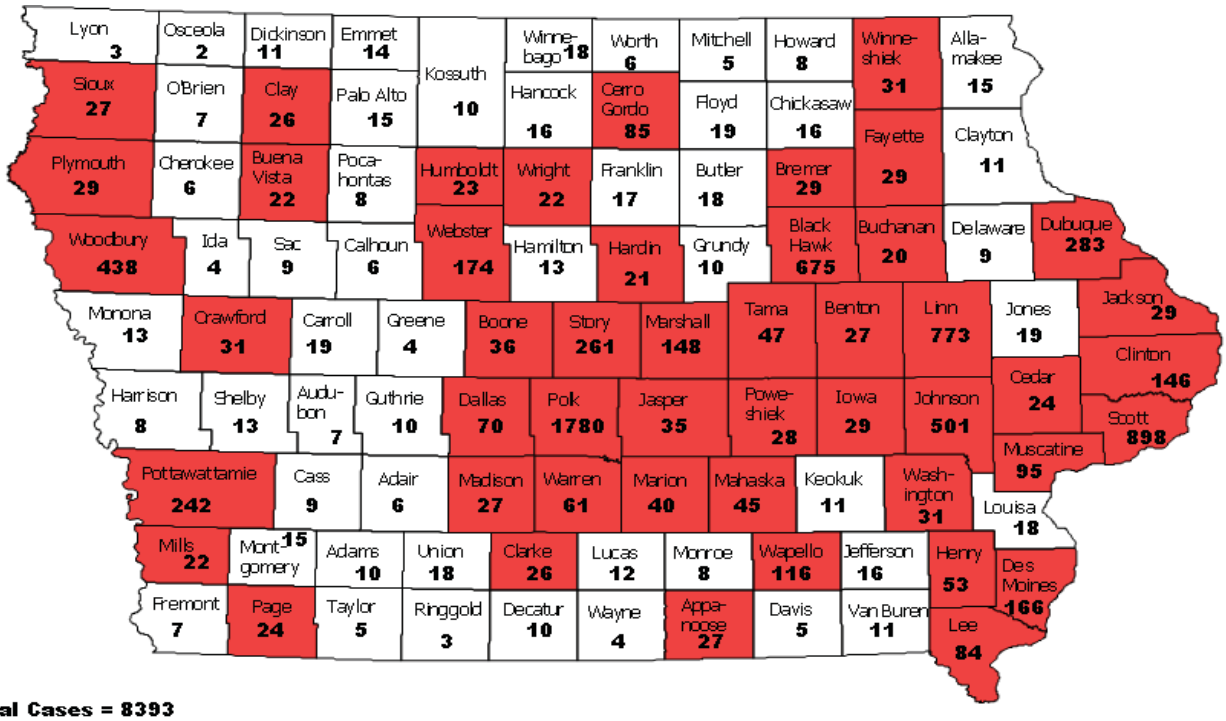
Figure 40
Diagnoses of Chlamydia by Race, Ethnicity, and Gender
1992 – 2006



Among people testing through the IPP, almost 10% were black and non-Hispanic. Nearly 20% of all positive tests were among black, non-Hispanic persons, however.

The geographical distribution of chlamydia cases in 2006 is shown in Figure 41. Seventy-one percent of the cases were reported in the ten most populous counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury. These counties contain approximately 48% of Iowa's population.

Figure 41
2006 Reported Cases of Chlaymdia
by County of Residence



Total Cases = 8393

SOURCE: Iowa Department of Public Health, STD Prevention Program

Counties with 20 or more cases are shaded.

Incidence of chlamydia by county, for those counties that reported at least 20 cases, is shown in Table 34. Counties are ranked according to the highest rate per 100,000 population. Five of the top six counties are among the ten most populous counties. Those ten counties had an incidence rate over 1.5 times higher than all other counties.

The increase in reported cases of chlamydia in 2006 was not experienced by all counties. Polk, Scott, Linn, Black Hawk, and Pottawattamie accounted for the largest increases in absolute numbers of cases. Together, these counties accounted for 61% of the increase in cases over 2005. However, the counties with the largest percentage increase over 2005 were Clarke, Clay, Iowa, Page, and Dallas. In 2006, each of these counties more than doubled the number of cases reported in 2005.

Only two of the ten most populous counties had incidence rates below the state average of 283 cases per 100,000 population. Pottawattamie County was just below the state average at 270 cases per 100,000 population while Dallas County was well below that at 135 cases per 100,000 population.

Table 34
2006 Incidence[1] of Chlamydia by County[2] and for the Ten Most Populous Counties

County	# Cases	Incidence rate (# per 100,000 pop.)	Above State Average
Scott	898	558	√
Black Hawk	675	536	√
Webster	174	446	√
Polk	1780	444	√
Johnson	501	428	√
Des Moines	166	407	√
Linn	773	389	√
Marshall	148	375	√
Story	261	326	√
Wapello	116	323	√
Dubuque	283	309	√
Woodbury	317	306	√
Clinton	146	294	√
Clarke	26	284	√
Pottawattamie	242	270	
Henry	53	262	
Tama	47	262	
Humboldt	23	231	
Lee	84	229	
Muscatine	95	222	
Mahaska	45	201	
Appanoose	27	198	
Cerro Gordo	85	190	
Crawford	31	184	
Iowa	29	181	
Madison	27	178	
Wright	22	161	
Clay	26	154	
Page	24	148	
Poweshiek	28	148	
Winneshiek	31	146	
Mills	22	144	
Washington	31	144	
Jackson	29	143	
Warren	61	142	
Fayette	29	136	
Boone	36	135	
Dallas	70	135	
Cedar	24	131	
Bremer	29	122	
Marion	40	121	
Hardin	21	117	
Plymoth	29	116	
Delaware	20	109	
Buena Vista	22	109	
Benton	27	100	
Jasper	35	93	
Sioux	27	84	
All Counties[2]	**8,393**	**283**	

[1]Based on 2005 population estimates from the U.S Census Bureau.
[2]Only counties with 20 or more reported cases are shown. All counties are included in total. The ten most populous counties are italicized and bolded.

Table 35 shows the number of reported cases of chlamydia by age, race, ethnicity, and gender. Seventy-three percent of all cases were female. Older adolescents and young adults (age groups 15 to 19 years and 20 to 24 years) shared the burden of disease, with 78% of all female cases and 63% of all male cases occurring in these two age groups. Males, on average, tended to be older than females. The majority of cases (59%) occurred among white, non-Hispanic persons. Black, non-Hispanic persons accounted for 20% of the cases even though they make up only 2% of Iowa's population. Hispanic persons accounted for 7% of the cases. Thirteen percent of cases did not have a race or ethnicity reported.

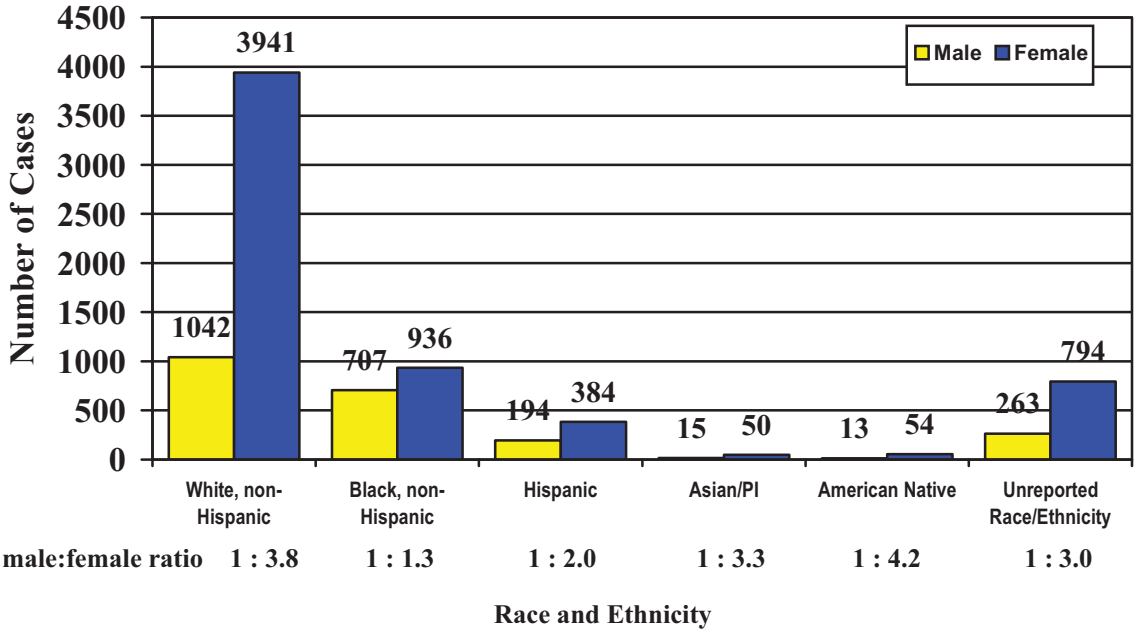
Table 35
Reported Cases of Chlamydia by Age, Race, Ethnicity, and Gender
Iowa, 2006

Age Groups (Years)	White not Hispanic		Black not Hispanic		Hispanic		Asian/ Pacific Islander		American Native		Unknown		Total		All[1]
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
00 - 04	2	2	1	0	0	0	0	0	0	0	1	0	4	2	6
05 - 09	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
10 - 14	0	40	4	31	1	7	0	0	0	2	4	12	9	92	101
15 - 19	199	1449	184	401	39	128	1	8	4	16	59	256	486	2258	2744
20 - 24	475	1697	266	309	90	144	4	13	4	20	93	339	932	2522	3454
25 - 29	213	511	132	135	28	69	2	15	3	15	59	107	437	852	1289
30 - 34	82	125	66	40	19	22	3	10	1	0	24	42	195	239	434
35 - 39	36	58	38	14	10	6	3	3	1	0	12	19	100	100	200
40 - 44	13	26	9	3	5	5	1	1	0	0	5	3	33	38	71
45 - 54	12	18	7	3	2	3	1	0	0	1	3	9	25	34	59
55 - 64	3	5	0	0	0	0	0	0	0	0	3	1	6	6	12
65 +	3	0	0	0	0	0	0	0	0	0	0	0	3	0	3
Unknown	3	10	0	0	0	0	0	0	0	0	0	6	3	16	19
Totals	**1042**	**3941**	**707**	**936**	**194**	**384**	**15**	**50**	**13**	**54**	**263**	**794**	**2234**	**6159**	**8393**

[1] Total of 8,393 includes 10 persons of unknown race/ethnicity and age.
M = males; F = females

Figure 42 illustrates the ratio of male-to-female cases. Females outnumbered males for all races and ethnicities, but the ratio of males to females varied for the different racial and ethnic groups. Among white, non-Hispanic persons, more than three females are reported with chlamydia for every male. This is also true among Asian/Pacific Islanders and American Indians/Alaska Natives. Among Hispanic persons, however, females outnumbered males by only two to one. Even more striking, the number of black, non-Hispanic females was very close to the number of black, non-Hispanic males, with a ratio of 1.3 to 1.

Figure 42
Diagnoses of Chlamydia by Race, Ethnicity, and Gender
Iowa, 2006



The disproportionate distribution of chlamydia among minority groups is illustrated in Table 36. Asian/Pacific Islander is the only minority group that is not disproportionately affected by chlamydia. When standardized for population size, black, non-Hispanic males have an incidence rate of reported cases of chlamydia that is more than 26 times that of white, non-Hispanic males. Black, non-Hispanic females have a rate that is 10 times that for white, non-Hispanic females. The rate among American Indian/Alaskan Natives is nearly 4.5 times that of white, non-Hispanic persons and the rate among Hispanics is nearly 3 times that of white, non-Hispanic persons.

Table 36
Incidence Rates[1] for Chlamydia by Race, Ethnicity, and Gender
Iowa, 2006

Race and Ethnicity	Males (# / 100,000 males)	Females (# / 100,000 females)	Total (# / 100,000 pop.)
White, non-Hispanic	78	285	184
Black, non-Hispanic	2,063	2,923	2,478
American Native, non-Hispanic	325	1,300	821
Asian/PI, non-Hispanic	70	228	150
Hispanic	329	768	530
All Cases	**153**	**409**	**283**

[1]Based upon 2005 population estimates by race and ethnicity from the U.S. Census Bureau

Gonorrhea

In the United States, CDC estimates that there are 700,000 new infections of *Neisseria gonorrhoeae* each year. Most infections among men produce symptoms that cause them to seek curative treatment soon enough to prevent serious sequelae (i.e., conditions resulting from the disease), but this may not be soon enough to prevent transmission to others. Many infections among women do not produce recognizable symptoms until complications (e.g., pelvic inflammatory disease (PID)) have occurred. Both symptomatic and asymptomatic cases of PID can result in tubal scarring that leads to infertility or ectopic pregnancy. Because gonococcal infections among women often are asymptomatic, an important component of gonorrhea control in the United States and Iowa continues to be the screening of women at high risk for STDs.

The number of reported cases of gonorrhea in Iowa increased sharply from 2004 to 2006 (Figure 43). Diagnoses among females increased most significantly, particularly in 2006. In contrast to chlamydia, females only slightly outnumber males reported with gonorrhea.

In 2006, there were 1,967 reported cases of gonorrhea (66 cases per 100,000 population), up from 1,606 reported cases (48.6 cases per 100,000 population) in 2001. Case numbers have increased for two consecutive years, and have reached a 15-year high.

Figure 43
Diagnoses of Gonorrhea by Gender
Iowa, 1992 - 2006

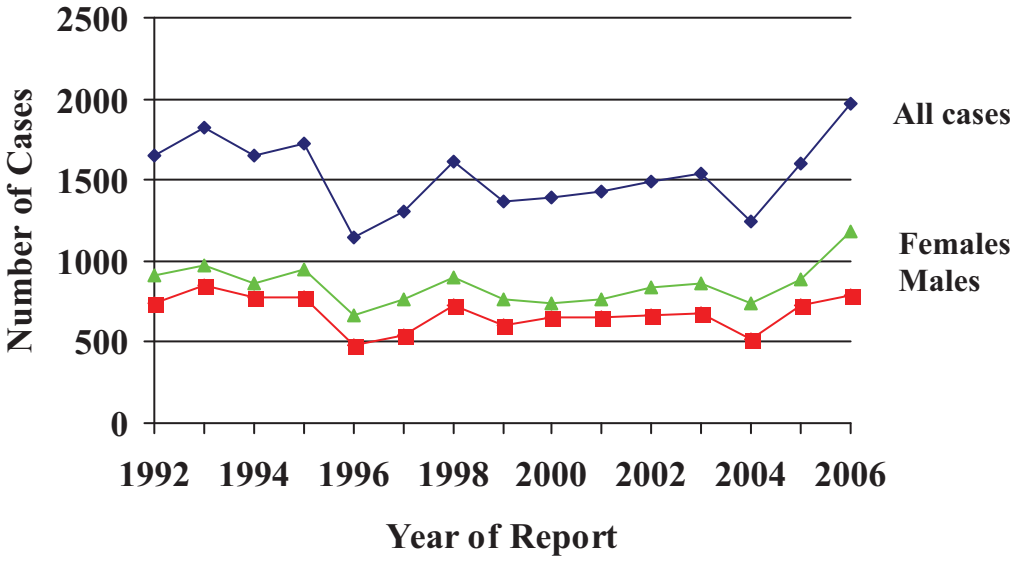
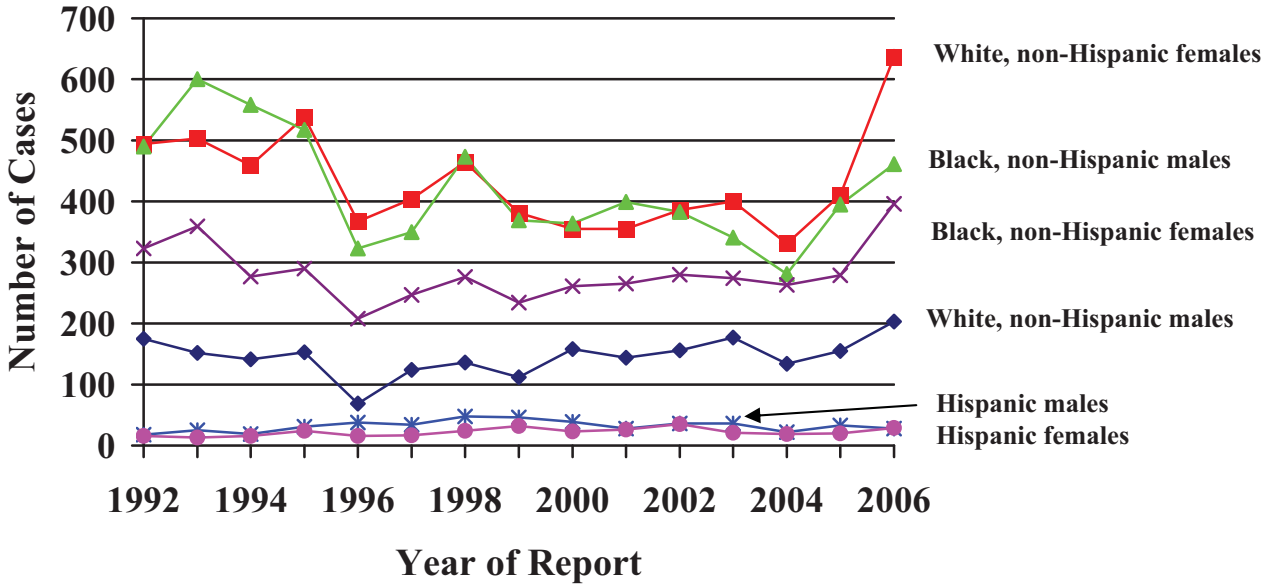


Figure 44 shows the incidence of gonorrhea by race, ethnicity, and gender from 1992 to 2006. All groups except Hispanics saw a gradual decrease in cases from 1992 to 1999. All groups had fairly steady diagnoses from 1999 to 2004. The increases in diagnoses in 2005 and 2006 are most pronounced among white, non-Hispanic females, but black, non-Hispanic males and females also saw dramatic increases these years.

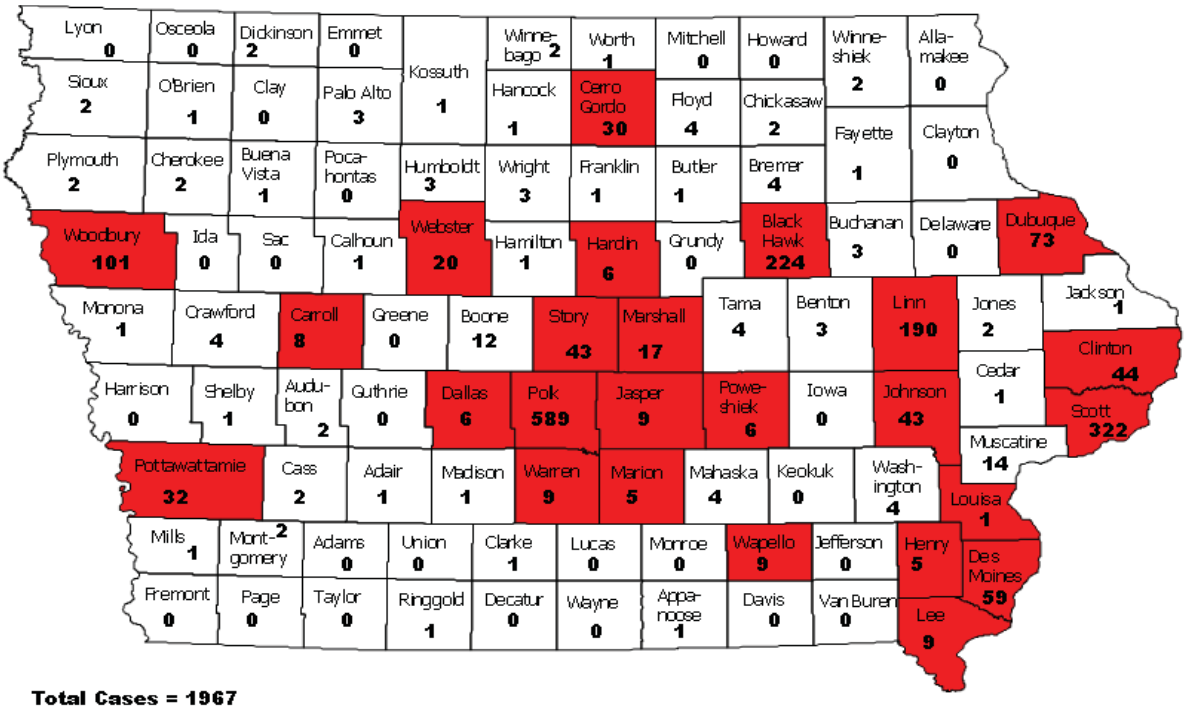
Black, non-Hispanic males and white, non-Hispanic females account for the largest proportions of reported cases. Black males have consistently outnumbered black females. This is the reverse of what is generally expected and of what is seen with chlamydia. Since 2000, nearly equal numbers of Hispanic males and females have been diagnosed.

Figure 44
Diagnoses of Gonorrhea by Race, Ethnicity, and Gender
1992 - 2006



The geographical distribution of gonorrhea cases in 2006 is shown in Figure 45. As for HIV and chlamydia, the ten most populous counties contributed a disproportionate number of cases. Almost 88% of gonorrhea cases were reported from these ten counties. These counties contain just 48% of Iowa's total population.

Figure 45
2006 Reported Cases of Gonorrhea, by County of Residence



Total Cases = 1967

SOURCE: Iowa Department of Public Health, STD Prevention Program

Counties with 5 or more cases are shaded.

Incidence rates by county, for those counties with at least five reported cases, are shown in Table 37. Counties are ranked according to the highest rate per 100,000 population.

Incidence in the ten most populous counties is more than five times higher than in the other counties. The largest increases in absolute numbers of cases were seen in Polk (increase of 223 cases), Dubuque (+39 cases), Scott (+36 cases), Clinton (+28 cases), and Story (+21 cases) counties. Des Moines and Cerro Gordo counties are the only counties with above-average incidence that are not among the 10 most populous counties in the state.

Des Moines County is located in southeastern Iowa, along the Mississippi River, and contains the city of Burlington. Despite a population of just over 41,000 residents, Des Moines County ranked first in incidence of gonorrhea in 1999 and 2000. The county's incidence of gonorrhea fell by 25% from 2005 to 2006, however.

Table 37
Incidence[1] of Gonorrhea by County[2] and for the Ten Most Populous Counties
2006

County	# Cases	Incidence rate (per 100,000 pop.)	Above State Average
Scott	322	200	√
Black Hawk	224	178	√
Polk	589	147	√
Des Moines	59	145	√
Woodbury	101	98	√
Linn	190	96	√
Clinton	44	89	√
Dubuque	73	80	√
Cerro Gordo	30	67	√
Story	43	54	
Webster	20	51	
Boone	12	45	
Marshall	17	43	
Carroll	8	38	
Johnson	43	37	
Pottawattamie	32	36	
Hardin	6	33	
Muscatine	14	33	
Poweshiek	6	32	
Henry	5	25	
Lee	9	25	
Wapello	9	25	
Jasper	9	24	
Fayette	5	23	
Warren	9	21	
Marion	5	15	
Dallas	6	12	
All Counties[2]	**1,967**	**66**	

[1]Based on 2005 population estimates by county from the U.S. Census Bureau.
[2]Only counties with 5 or more reported cases are shown. All counties are included in total.
The ten most populous counties are italicized and bolded.

Table 38 shows the incidence of gonorrhea by age, race, ethnicity, and gender. Sixty percent of all cases were female. Older adolescents and young adults (ages 15 to 29 years) shared the burden of disease, with over 88% of all female cases and over 75% of all male cases occurring among persons of these ages. Males, on average, tended to be older than females. Black, non-Hispanic persons, though only 2% of the population, had the largest burden of disease among all racial groups, with 44% of the cases. White, non-Hispanic persons accounted for 43% of cases and Hispanics accounted for 3%. Race and ethnicity were not identified for 10% of the cases.

Table 38
Reported Cases of Gonorrhea by Age, Race, Ethnicity, and Gender
Iowa, 2006

Age Groups (Years)	White not Hispanic		Black not Hispanic		Hispanic		Asian/ Pacific Islander		American Native		Unknown		Total		All[1]
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
00 - 04	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
05 - 09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 - 14	0	5	2	9	0	2	0	0	0	0	0	3	2	19	21
15 - 19	32	238	114	184	4	10	0	1	0	4	14	39	164	476	640
20 - 24	83	220	143	106	16	11	0	2	0	3	24	30	266	372	638
25 - 29	37	111	98	66	4	5	3	1	1	0	16	12	159	195	354
30 - 34	15	30	54	19	2	1	1	1	0	1	15	12	87	64	151
35 - 39	7	16	28	7	1	0	1	0	0	0	12	6	49	29	78
40 - 44	13	8	15	4	1	0	0	0	0	0	3	2	32	14	46
45 - 54	13	6	7	1	0	0	0	0	0	0	3	1	23	8	31
55 - 64	2	1	0	0	0	0	0	0	0	0	1	0	3	1	4
65 +	1	0	0	0	0	0	0	0	0	0	1	0	2	0	2
Unknown	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	**203**	**637**	**461**	**396**	**28**	**29**	**5**	**5**	**1**	**8**	**89**	**105**	**787**	**1180**	**1967**

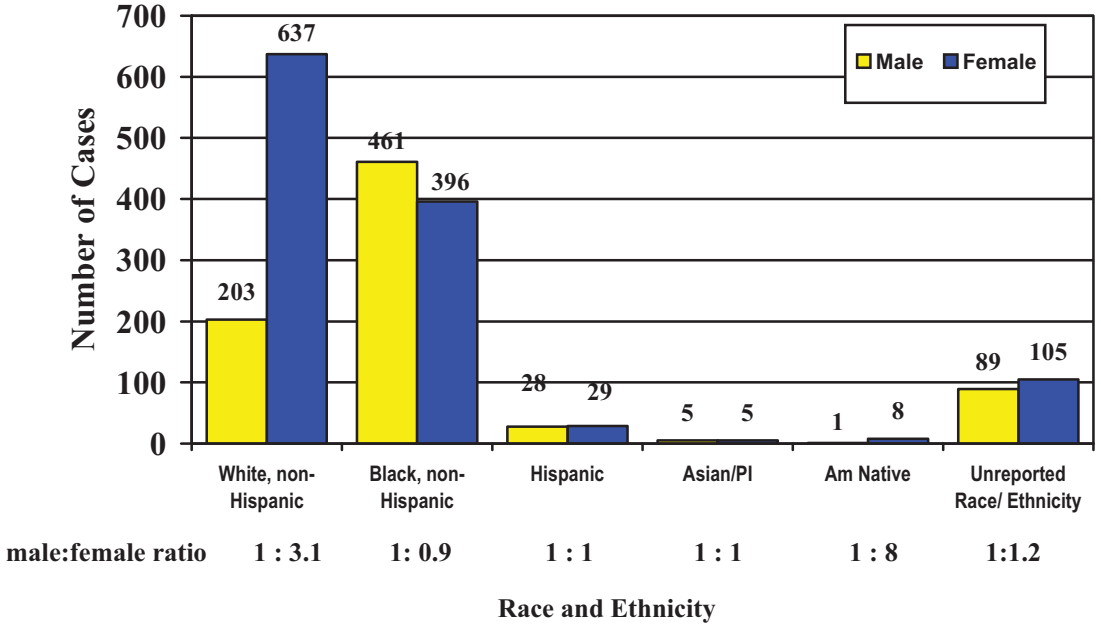
[1] Total of 1,967 includes one person of unknown race/ethnicity and gender.
M = males; F = females.

Figure 46 illustrates the ratio of male-to-female cases by race and ethnicity. There is a marked difference in the relative numbers of males and females between the white, non-Hispanic group and the black, non-Hispanic group. Among white, non-Hispanic persons, females outnumbered males 3 to 1; among black, non-Hispanic persons, males outnumbered females 1.2 to 1. Male-to-female ratios are not only different between racial and ethnic groups, but the ratios are very different from the male-to-female ratios seen for chlamydia.

A number of different factors may contribute to differences in male-to-female ratios between racial groups and diseases. For example, minority females may lack the access to routine screening that is seen among white, non-Hispanic females. In that case, asymptomatic infections may not be diagnosed among minority females. Because gonorrhea is more often symptomatic than is chlamydia, particularly among males, more males may seek care for gonorrhea than for chlamydia. Together, these factors may explain some of the differences described here.

It is also not known whether there are differences in the prevalence of chlamydia and gonorrhea in certain risk groups, such as men who have sex with men. This could potentially cause differences in male-to-female ratios as well. Risk information data were not collected from persons reported with STDs in 2006. If the diseases differ in how prevalent they are among men who have sex with men, or if the diseases affect MSM of one racial or ethnic group more than other groups, the male-to-female ratio may increase for that disease or group.

Figure 46
Diagnoses of Gonorrhea by Race, Ethnicity, and Gender
Iowa, 2006



The disproportionate distribution of gonorrhea among minority groups is illustrated in Table 39. When standardized for the population size, black, non-Hispanic males have an incidence rate of reported cases of gonorrhea that is nearly 90 times that of white, non-Hispanic males. Black, non-Hispanic females are also disproportionately represented, with a rate more than 26 times that of white, non-Hispanic females. The rate among Native American women is more than 4 times that of white, non-Hispanic women, and Hispanics are more than 1.6 times more likely to be diagnosed with gonorrhea than white, non-Hispanic persons.

Table 39
Incidence Rates[1] for Gonorrhea by Race, Ethnicity, and Gender
Iowa, 2006

Race and Ethnicity	Males (# / 100,000 males)	Females (# / 100,000 females)	Total (# / 100,000 pop.)
White, non-Hispanic	15	46	31
Black, non-Hispanic	1,345	1,237	1,293
American Native, non-Hispanic	25	193	110
Asian/PI, non-Hispanic	23	23	23
Hispanic	47	58	52
All Cases	**54**	**78**	**66**

[1]Based upon 2005 Population Projections by Race and Ethnicity from the U.S. Census Bureau

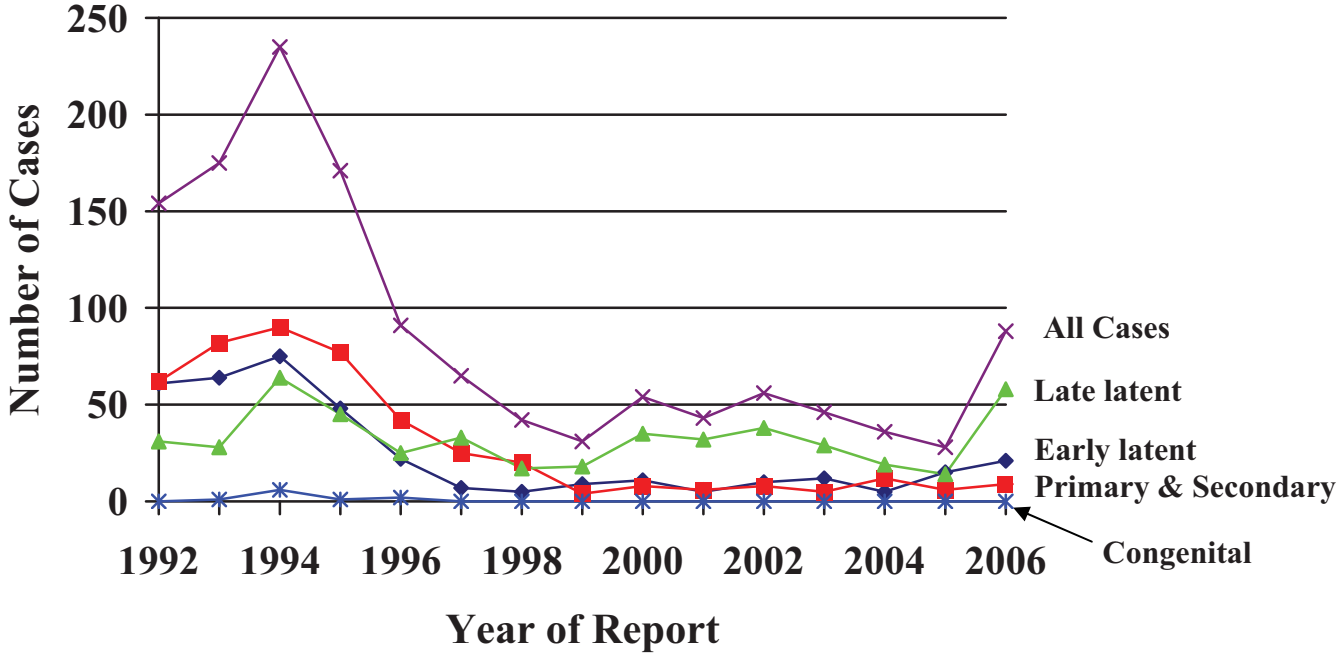
Syphilis

Syphilis is a systemic disease caused by the bacteria *Treponema pallidum.* People with syphilis may seek treatment for signs or symptoms of primary infection (e.g., ulcer or chancre at the infection site), secondary infection (e.g., manifestations that include rash, mucocutaneous lesions, condyloma latum, and adenopathy), or tertiary infection (e.g., cardiac, neurologic, ophthalmic, auditory, or gummatous lesions). Neurosyphilis occurs when there is evidence of central nervous system infection with *T. pallidum*; this can occur in any stage, especially in persons infected with HIV. Infections also may be detected by serological testing during the latent stage. Latent syphilis is a term used to describe the period after infection when patients are seroreactive but demonstrate no other evidence of disease. Latent syphilis acquired within the preceding year is referred to as *early latent syphilis*; all other cases of latent syphilis are *late latent syphilis*. The term *total early syphilis* refers to the sum of primary, secondary, and early latent syphilis.

Cases of syphilis reported to the Iowa Department of Public Health are prioritized for follow up by a disease prevention specialist. One of the more important reasons for syphilis case follow-up is the prevention of congenital syphilis, which arises as a result of transmission from a pregnant woman to her unborn fetus. Congenital syphilis can manifest as stillbirth or as a full range of severe medical problems that can last an entire lifetime. Other reasons for case reporting include the prevention of tertiary syphilis or neurosyphilis and, of course, the prevention of spread to others.

In 2006, there were 19 primary and secondary, 6 early latent, 43 late latent, and no congenital cases of syphilis reported to the STD Prevention Program. Total early syphilis morbidity in Iowa is at its lowest level since the disease became reportable in the late 1940's. The total number of cases decreased from 1994 to 1999. Increases in total cases in 2000, 2002, and 2005 were the result of increases in diagnoses of late latent syphilis (Figure 47). These cases were the not the result of recent exposures and they highlight the difficulties in eliminating a disease that can be asymptomatic for long periods of time.

Figure 47
Diagnoses of Syphilis
Iowa, 1992 - 2006



Among the 18 total early syphilis cases (i.e., recent infections) reported in 2006, 6 were 20 to 29 years of age, 6 were 30 to 39 years, and 11 were 40 years of age or more.

Syphilis, like other sexually transmitted diseases, reflects an over-representation of minority populations. In 2006, nine total early syphilis cases (36%) were reported among black, non-Hispanic persons, 11 (44%) were among white, non-Hispanic persons, and 12% were among Hispanic persons.

Section

2

RYAN WHITE CARE ACT SPECIAL QUESTIONS AND CONSIDERATIONS

Question 1: What are the characteristics of persons living with HIV/AIDS who receive HIV services in Iowa?

Question 2: What are the patterns of utilization of HIV services by persons living with HIV in Iowa?

Question 3: What are the number and characteristics of persons who know they are HIV positive, but who are not receiving HIV primary medical care?

This section describes the characteristics of persons living with HIV in Iowa who receive Ryan White services, their patterns of use of HIV primary medical care and support services, and a description of who is not receiving HIV primary medical care. The information presented includes a description of the Ryan White Program and its services; a breakdown of program participants by age, gender, race/ethnicity, income, housing status, and medical insurance provider; and a summary of the utilization of Ryan White Title II and Title III services. The information may be used by care planning groups to identify gaps in services or to help target services to specific populations of HIV-positive persons.

Section Highlights

- Iowa receives Ryan White Title II and Title III funds for the delivery of essential services to individuals and families with HIV disease. In 2005, 11 providers served 861 people with Title II services (not including ADAP), including case management, emergency financial assistance, transportation services, food bank/meals, and other support services. Case management was the most utilized Title II-funded service.

- The AIDS Drug Assistance Program (ADAP) provided medications to 356 persons living with HIV/AIDS in 2005. Since 2000, the average number of clients receiving drugs each month has increased faster than federal funding for the program. Due to this funding shortfall and the increase in demand of the program, the ADAP was closed for enrollment from May 4, 2004, to June 30, 2005. The addition of state funding allowed the program to open to new enrollees and eliminated the waiting list on July 1, 2005. This allowed the 108 people who were on the waiting list to access the program.

- Three community health centers and one university-based health clinic receive Title III funds in Iowa. In 2005, Title III providers assisted 1,012 people with outpatient HIV primary medical care. An additional 74 Iowans living with HIV received services at the University of Nebraska Medical Center in Omaha. Beyond assistance with primary medical care, case management and treatment adherence counseling were the services most utilized.

- In general, persons utilizing Title II and Title III services were similar in demographics to persons living with HIV, as presented earlier in this profile. However, higher proportions of Hispanic persons utilized the AIDS Drug Assistance Program compared to persons living with HIV in Iowa.

- Twenty-seven percent of all persons living with HIV/AIDS in Iowa in 2005 did not receive HIV primary medical care during that year. HIV primary medical care is defined as a viral load, a CD4+ cell count, or antiretroviral therapy. Those most likely to be out of care included persons with HIV diagnoses (but who have not received AIDS diagnoses), minorities, persons aged 20-39 years, injection drug users or persons without a known risk, foreign-born persons or those whose place of birth was unknown, and those diagnosed with HIV for five years or more.

RYAN WHITE CARE ACT SERVICES

In 1990, Congress enacted the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act to provide emergency assistance to localities that are disproportionately affected by HIV and to make financial assistance available to states and other public or private nonprofit entities. The funds are for the development, organization, coordination, and operation of more effective and cost-efficient systems for the delivery of essential health and support services to individuals and families with HIV disease. Funding for the Ryan White CARE Act is administered by the Health Resources and Services Administration (HRSA) through cooperative agreements with states and other agencies.

Congress reauthorized the CARE Act in 1996 and 2000 to support funding for Titles I through IV, Special Projects of National Significance (SPNS), HIV/AIDS Education Training Centers, and the Dental Reimbursement Program. Iowa receives funding for Titles II, III, and an AIDS Education Training Center.

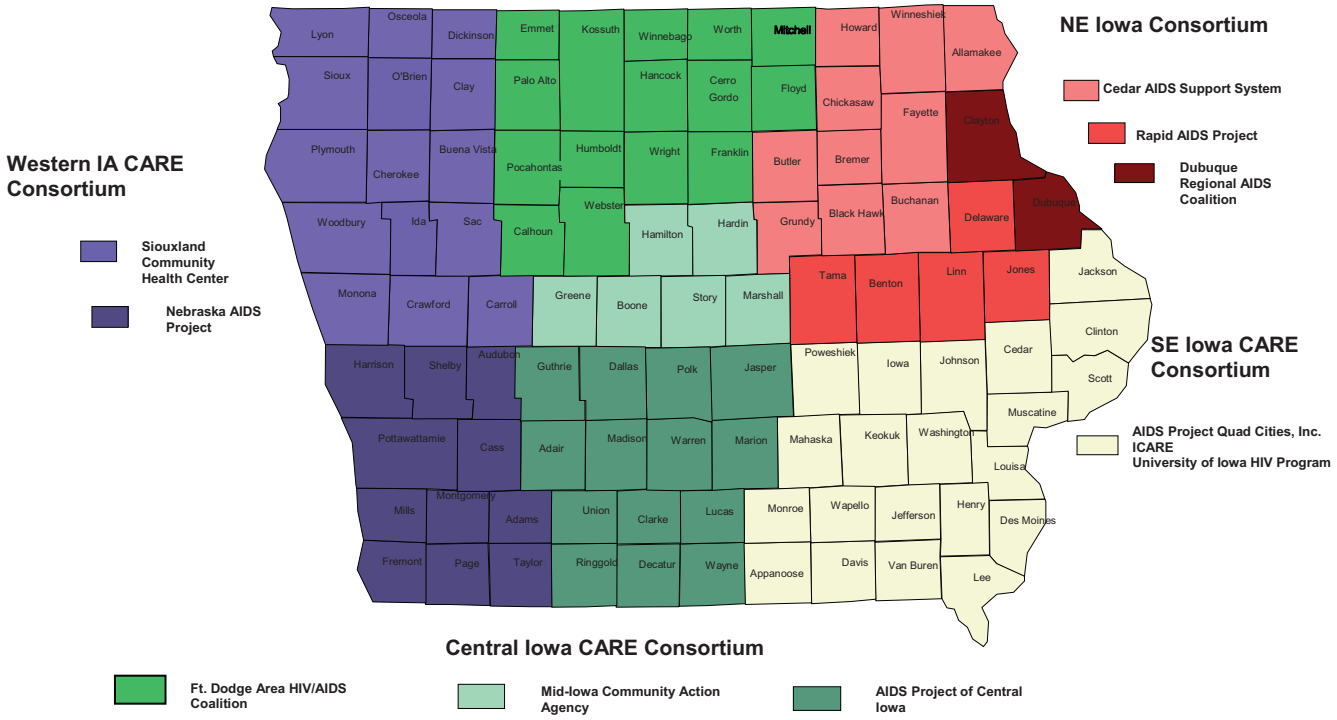
Title II Program

Title II funding is provided by HRSA to improve the quality, availability, and organization of health care and support services for low-income individuals and families with, or affected by, HIV disease. Funding is also available for low-income individuals to provide access to pharmaceuticals through AIDS Drug Assistance Programs (ADAP).

The Title II program, which includes ADAP, serves as the payer of last resort for persons living with HIV (PLWH) who are uninsured or who have inadequate insurance and cannot cover the costs of care on their own. In other words, clients must be ineligible for all other resources, including Medicaid, before being enrolled. In 2005, 861 Iowans received support services through the Ryan White Title II program and 356 persons received prescription drugs through the AIDS Drug Assistance Program.

Iowa has four HIV CARE consortia, consisting of 11 service providers that serve all counties of the state (Figure 48). These consortia provide essential health and support services, such as case management, emergency financial assistance, food banks, housing assistance, and counseling to eligible clients living with HIV. Each consortium has its own planning group that determines which Title II support services will be provided within their service area and the amount of funding necessary for these services.

Figure 48
2005 Ryan White CARE Consortia



AIDS Drug Assistance Program

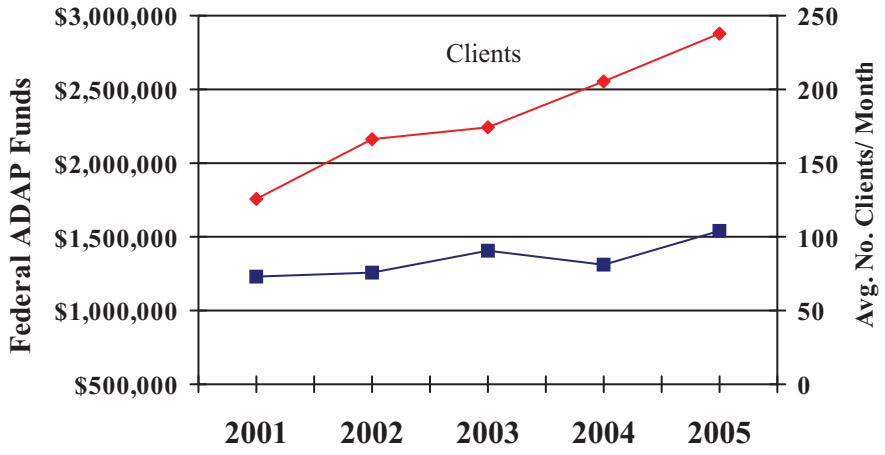
The AIDS Drug Assistance Program, or ADAP, is funded under Title II of the Ryan White CARE Act and provides HIV-related prescription drugs to uninsured and underinsured persons living with HIV/AIDS. To qualify for assistance, individuals must make less than 200% of the Federal Poverty Level.

The ADAP is administered by IDPH and uses a centralized pharmacy that distributes drugs to clients statewide. The Ryan White ADAP Advisory Committee provides periodic review of ADAP, including the ADAP formulary. Thirty-nine HIV-related medications are provided to low-income individuals with HIV. The categories of drugs include nucleoside analogues, non-nucleoside reverse transcriptase inhibitors, nucleotide reverse transcriptase inhibitors, protease inhibitors, fusion inhibitors, PCP prophylaxis medications, antifungals, anti-mycobacterials, general antivirals, and an anti-neoplastic medication.

In 2005, 356 individuals received ADAP assistance, with an average of 188 individuals receiving medications per month. This figure could have been higher in 2005; however, new enrollment to ADAP was closed for six months of the year. Since 2000, the average number of clients enrolled in ADAP has increased faster than the funding for the program. In Fiscal Year (FY) 2004, there was an increase of 17% in the number of people using the program. However, Iowa only

received $1.3 million in federal funding, which was a 1% decrease in available funds from FY2003. Due to this funding shortfall and the increase in demand of the program, ADAP was closed for new enrollment from May 4, 2004, to June 30, 2005. There were 108 people waiting to enroll in the program as of June 2005. With the addition of a state allocation of $375,000, the program opened to new enrollees and eliminated the waiting list on July 1, 2005. Figure 49 presents the average number of clients receiving medications each year from 2001 to 2005 and the total amount of funding ADAP received those years.

Figure 49
Total Federal Funding and Average Number of Clients per Month Receiving Medications from the AIDS Drug Assistance Program 2001 – 2005



Title III Early Intervention Services Program

Title III funds are provided directly to clinics to support primary medical care and other services for low-income people living with HIV disease. There are six Title III clinics that are accessible to low-income, HIV-positive Iowans. Three of these are community health centers located in Davenport, Des Moines, and Sioux City, Iowa. The remaining three clinics are the University of Iowa Hospitals and Clinics in Iowa City, Iowa, the University of Nebraska Medical Center (UNMC) in Omaha, Nebraska, and Mayo Clinic in Rochester, Minnesota. Data from the Mayo Clinic in Minnesota were not available for this profile.

Clinics reported all Title III-eligible clients who utilized services, not just those clients whose services were paid with Title III funds. Client-level data were not available, so there may be duplication of clients among the clinics, given that clients occasionally change clinics or move within the state. Additionally, these data include many non-residents. In particular, the community health center in Davenport, Iowa, serves many Illinois residents and the center in Sioux City serves Nebraska and South Dakota residents. However, UNMC in Nebraska reported only client data for Iowa residents. In 2005, the four clinics located in Iowa received a total of approximately $1.6 million. The five reporting Title III clinics served a total of 1,102 clients in 2005.

Title III services include:

- Medical evaluation, clinical care, antibody testing, and risk-reduction counseling;
- Antiretroviral therapies; protection against opportunistic infections; and ongoing medical, oral, nutritional, psychosocial, and other care services for HIV-infected clients;
- Case management to ensure access to services and continuity of care for HIV-infected clients; and
- Attention to other health problems that occur frequently with HIV infection, including tuberculosis and substance abuse.

Question 1

What are the characteristics of persons living with HIV/AIDS who receive HIV services in Iowa?

CHARACTERISTICS OF TITLE II SUPPORT SERVICE CLIENTS

Primary Demographic Characteristics

Table 40 shows the primary demographic characteristics of Title II support service clients, by consortium, in 2005. The central consortium, which serves Polk County, has the most clients. They provided support services to 36% of all Title II support service clients. The southeastern consortium served just over 25% of clients, and the remaining two consortia served about 20% of all clients.

Demographically, clients served are very similar to the demographic breakdown of persons living with HIV/AIDS as presented earlier in this profile, with the exception of sex. A higher proportion of Title II support service clients were female, 26%, than are HIV-infected persons in the state, 22%. This indicates that females are more likely to access the services offered by Title II.

There are some notable differences in clients served between the consortia. The largest proportions of black, non-Hispanic clients were served by the consortia in the central and northeast parts of the state, where at least 25% of the clients were black, non-Hispanic persons compared to 20% of persons living with HIV/AIDS in the state being black, non-Hispanic. The western consortium had the highest proportion of Hispanic clients at 15%, compared to 8% of persons living with HIV/AIDS in the state being Hispanic. Only 10% of their clients were black and non-Hispanic.

The central consortium served the highest proportion of men, 75%, while all the other consortia served approximately 28% women.

There were not large differences in the age distributions of the clients between the consortia but the central consortium had slightly older clients while the southeastern consortium's clients were slightly younger overall.

Table 40
Primary Demographic Characteristics of Title II CARE Act Clients[1] by Consortium
2005

	Consortium									
	Western [2]		Central		Northeast		Southeast		Total	
Race/ Ethnicity	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
White, non-Hispanic	120	(71)	196	(64)	115	(70)	161	(73)	592	(69)
Black, non-Hispanic	16	(10)	79	(26)	41	(25)	43	(19)	179	(21)
Hispanic	26	(15)	25	(8)	4	(2)	14	(6)	69	(8)
Asian	1	--	3	(1)	2	(1)	2	(1)	8	(1)
Nat. Hawaiian/ Pac. Isl	0	--	0	--	0	--	0	--	0	--
Am. Indian/ Alaska Nat.	1	--	1	--	0	--	0	--	2	--
More than one race	2	--	4	(1)	1	--	1	--	8	(1)
Unknown race	2	--	0	--	0	--	0	--	2	--
Sex	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
Male	119	(71)	232	(75)	117	(71)	160	(72)	628	(73)
Female	49	(29)	75	(24)	45	(27)	59	(27)	228	(26)
Transgender	0	--	1	--	2	(1)	2	(1)	5	(1)
Unknown/not reported	0	--	0	--	0	--	0	--	0	--
Current Age (yrs)	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
<2	0	--	1	--	0	--	0	--	1	--
2-12	1	(1)	2	(1)	1	(1)	1	--	5	(1)
13-24	3	(2)	13	(4)	4	(2)	8	(4)	28	(3)
25-44	99	(59)	171	(56)	96	(59)	136	(62)	502	(58)
45-64	61	(36)	118	(38)	61	(37)	73	(33)	313	(36)
65 and older	4	(2)	3	(1)	1	(1)	3	(1)	11	(1)
Unknown/not reported	0	--	0	--	0	--	0	--	0	--
Totals	**168**		**308**		**164**		**221**		**861**	

[1] Counts could not be unduplicated. Clients who received services in more than one consortium will be counted more than once. All clients that utilized a service eligible for Title II funding are included (not just clients that met Title II guidelines for eligibility).
[2] Siouxland Community Health Center, in the Western Consortium, received both Title II and Title III funds. Client counts could not be unduplicated.

Since 2002, there has been an increase in the percentage of Title II clients who are black and non-Hispanic. Eighteen percent of all clients were black, non-Hispanic persons in 2002 compared to 21% in 2005. This increase in black, non-Hispanic clients was most pronounced in the central consortium. There has also been an increase in the percentage of female clients. In 2005, 26% of clients who accessed Title II support services were women, compared to the 20% in 2002. This increase in proportion of clients who were female was most pronounced in the western consortium. Finally, the percentage of clients 45 to 64 years of age increased from 2002 to 2005. In 2002, 30% of clients were 45 to 64 years of age. In 2005, 36% of the clients served were 45 to 64 years of age. This increase was not as evident in the northeast consortium as it was in the other three consortia.

Economic Indicators for Title II Support Service Clients

In 2005, additional client data collected included income, medical insurance provider, and housing status. Table 41 shows these indicators for clients who were served by Title II support service providers in 2005.

Ten percent of clients were not living in permanent housing in 2005. The central consortium had the highest proportion of clients living in non-permanent housing (13%) while the northeast consortium had the lowest proportion of clients living in non-permanent housing (6%).

Fifty-two percent of all clients served had an income equal to or less than the federal poverty level (FPL) in 2005. Despite having the lowest proportion of clients in non-permanent housing, the northeast consortium has the highest proportion of clients (63%) who had incomes that were at or below the federal poverty level. Income levels for 20% of clients in the western consortium were unknown, and that should be kept in mind when comparing the income of their clients to those of other consortia.

Table 41
Economic Indicators for Title II CARE Act Clients[1] by Consortium
2005

	Consortium									
	Western [2]		Central		Northeast		Southeast		Total	
Living Arrangement	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
Permanent Housing	129	(77)	263	(85)	152	(93)	201	(91)	745	(87)
Non-permanent Housing	19	(11)	39	(13)	10	(6)	17	(8)	85	(10)
Institution	5	(3)	2	--	2	(1)	2	(1)	11	(1)
Other	0	--	0	--	0	--	1	--	1	--
Unknown	15	(9)	4	(1)	0	--	0	--	19	(2)
Income	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
Equal to or below FPL[3]	59	(35)	161	(52)	104	(63)	128	(58)	452	(52)
101-200% FPL	53	(32)	105	(34)	33	(20)	71	(32)	262	(30)
201-300% FPL	11	(7)	26	(8)	15	(9)	16	(7)	68	(8)
Greater than 300% FPL	9	(5)	6	(2)	11	(7)	6	(3)	32	(4)
Unknown/not reported	36	(21)	10	(3)	1	(1)	0	--	47	(5)
Medical Insurance	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**	**#**	**(%)**
Private	37	(22)	63	(20)	41	(25)	38	(17)	179	(21)
Medicare	6	(4)	26	(8)	23	(14)	35	(16)	90	(10)
Medicaid	44	(26)	92	(30)	56	(34)	53	(24)	245	(28)
Other Public Provider	4	(2)	17	(6)	10	(6)	8	(4)	39	(5)
No Public or Private Insurance	55	(33)	105	(34)	28	(17)	69	(31)	257	(30)
Other	0	--	4	(1)	5	(3)	14	(6)	23	(3)
Unknown/not reported	22	(13)	1	--	1	(1)	4	(2)	28	(3)
Totals	**168**		**308**		**164**		**221**		**861**	

[1] Counts could not be unduplicated. Clients who received services in more than one consortium will be counted more than once. All clients that utilized a service eligible for Title II funding are included (not just clients that met Title II guidelines for eligibility).
[2] Siouxland Community Health Center, in the Western Consortium, received both Title II and Title III funds. Client counts could not be unduplicated.
[3] FPL = Federal Poverty Level

Statewide, 74% of clients did not have medical insurance, utilized other public insurance providers, or utilized Medicaid or Medicare to pay for medical services in 2005. The central consortium had the highest proportion of clients that did not have health insurance. Just over a third of their clients did not have insurance. The southeast consortium had the highest proportion of clients who used Medicare as their medical insurance provider (16%) and the lowest proportion of clients who had private medical insurance (17%). Finally, clients in the northeast consortium had the highest proportion of clients who utilized Medicaid to pay for medical services (34%), the highest proportion who utilized private medical care coverage (25%), and the lowest proportion of clients who did not have health insurance (17%).

CHARACTERISTICS OF AIDS DRUG ASSISTANCE PROGRAM CLIENTS

Primary Demographic Characteristics

Table 42 shows the characteristics of clients enrolled in ADAP in 2005. With the exception of ethnicity, ADAP clients did not differ significantly from persons living with HIV/AIDS in the state on basic demographic characteristics. There were higher proportions of Hispanic persons enrolled in ADAP (13%) compared to persons living with HIV/AIDS in the state (8%).

Table 42
Primary Demographic Characteristics of AIDS Drug Assistance Program Clients
2005

Characteristic		
Race/ Ethnicity	**#**	**(%)**
White, non-Hispanic	232	(65)
Black, non-Hispanic	72	(20)
Hispanic	45	(13)
Asian	6	(2)
Nat. Hawaiian/ Pac. Isl	0	--
Am. Indian/ Alaska Nat.	1	--
More than one race	0	--
Sex	**#**	**(%)**
Male	282	(79)
Female	72	(20)
Transgender	2	(1)
Age (yrs)	**#**	**(%)**
<2	0	--
2-12	2	--
13-24	9	(3)
25-44	224	(63)
45-64	118	(33)
65 and older	3	(1)
Total	**356**	

The proportions of Hispanics enrolled in ADAP also differed from Title II and Title III programs. Thirteen percent of those served by ADAP were Hispanic, compared to 8% of Title II support services clients (Table 40) and 7% of Title III clients (Table 43). Since 2002, there has been a slight increase in the percentage of Hispanic clients enrolled in ADAP. Eleven percent of clients enrolled in ADAP in 2002 were Hispanic compared to 13% in 2005.

There were no significant differences between the proportion of black, non-Hispanic clients enrolled in ADAP and the proportion of black, non-Hispanic persons served through the Title II support services and Title III programs.

CHARACTERISTICS OF TITLE III EARLY INTERVENTION SERVICES CLIENTS

Primary Demographic Characteristics

Primary demographic characteristics of Title III clients seen at the four Title III clinics in Iowa and for Iowa residents seen at the University of Nebraska Medical Center are shown in Table 43. Title III clients did not differ significantly from persons living with HIV/AIDS in the state on these basic demographic characteristics.

Table 43
Primary Demographic Characteristics of Title III Early Intervention Services Clients[1]
2005

	Location of Provider											
	Sioux City[2]		Des Moines		Iowa City		Davenport		Omaha		Total	
Race and Ethnicity	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
White, non-Hispanic	45	(58)	111	(55)	304	(73)	182	(74)	68	(92)	710	(70)
Black, non-Hispanic	12	(15)	62	(31)	81	(20)	50	(20)	5	(7)	210	(21)
Hispanic	19	(24)	20	(10)	23	(6)	11	(4)	0	--	73	(7)
Asian	1	--	3	(1)	3	(1)	0	--	0	--	7	(1)
Nat. Hawaiian/ Pac. Isl	0	--	1	--	0	--	1	--	0	--	2	--
Am. Indian/ Alaska Nat.	0	--	2	--	3	(1)	0	--	1	--	6	(1)
More than one race	1	--	2	--	0	--	0	--	0	--	3	--
Unknown race	0	--	0	--	0	--	1	--	0	--	1	--
Sex	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Male	64	(82)	148	(74)	333	(80)	185	(76)	54	(73)	784	(77)
Female	14	(18)	50	(25)	77	(19)	58	(24)	20	(27)	219	(22)
Transgender	0	--	3	(1)	4	(1)	2	--	0	--	9	(1)
Age (yrs)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
<2	0	--	0	--	0	--	0	--	0	--	0	--
2-12	1	--	0	--	0	--	1	--	0	--	2	--
13-24	1	--	6	(3)	20	(5)	7	(3)	2	--	36	(3)
25-44	50	(64)	131	(65)	228	(55)	141	(58)	44	(59)	594	(59)
45-64	26	(33)	61	(30)	157	(38)	90	(37)	26	(35)	360	(36)
65 and older	0	--	3	(1)	9	(2)	6	(2)	2	--	20	(2)
Totals	**168**		**201**		**414**		**245**		**74**		**1,102**	

[1] Clients who attended more than one clinic are counted more than once.
All clients that utilized a service and are eligible for Title III funding are included.

The five clinics differed in the proportions of black, non-Hispanic and Hispanic clients served (Table 43). In Des Moines, 31% of clients were black, compared to 20% in Davenport, 20% in Iowa City, 15% in Sioux City, and 7% in Omaha. In Sioux City, 24% of clients were Hispanic, compared to 10% in Des Moines, 6% in Iowa City, and 4% in Davenport. There were no Hispanic Iowans served by the University of Nebraska Medical Center.

Economic Indicators for Title III Clients

Income level, housing status, and insurance status were also collected for Title III clients in 2005. As illustrated in Table 44, 6% of Title III clients were living in non-permanent housing in 2005, while housing status was unknown for another 2%. Sioux City had the highest proportions of clients who lived in non-permanent housing in 2005 at 11%. Only 2% of clients in Davenport were in non-permanent housing.

Forty-one percent of all Title III clients had an income equal to or less than the federal poverty level (FPL) in 2005. Despite having the lowest proportion of clients in non-permanent housing, the community health center in Davenport had the highest percentage of clients at or below the federal poverty level. Over half of their clients were at or below the federal poverty level. Slightly fewer than 50% of clients in Des Moines were at or below the federal poverty level. However, income level was unknown for sizable proportions of clients in Sioux City, Des Moines, and Iowa City, and this may affect comparisons between these clinics.

Clients with private medical insurance varied widely between the clinics. Statewide, 65% of clients did not have private medical insurance, utilized other public insurance providers, or utilized Medicaid or Medicare to pay for medical services in 2005. The clinic in Des Moines served the highest proportion of persons without private health insurance (60%) while Iowa City and Omaha had approximately 10% of their clients without private health insurance. Iowa City had the highest proportion of clients who used Medicare as their medical insurance provider (26%). Clients receiving services in Sioux City were the most likely to have Medicaid as their payer of medical services (26%). Nearly half of the clients in Davenport had private medical care coverage providers. They also had the lowest proportion of clients who used Medicaid to pay for medical services.

Compared to Title II service providers, Title III providers had more clients living in permanent housing and more clients who had private medical insurance providers and Medicare; Title II providers had more clients that use Medicaid. There were no differences between Title II and Title III providers in the proportion of clients who had no medical insurance.

Table 44
Economic Indicators for Title III Clients[1] by Provider
2005

	Location of Provider											
	Sioux City[2]		Des Moines		Iowa City		Davenport		Omaha		Total	
Living Arrangements	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Permanent Housing	129	(77)	188	(94)	353	(85)	236	(96)	70	(95)	976	(89)
Non-permanent Housing	19	(11)	13	(6)	29	(7)	6	(2)	3	(4)	70	(6)
Institution	5	(3)	0	--	24	(6)	3	(1)	1	(1)	33	(3)
Other	0	--	0	--	2	--	0	--	0	--	2	--
Unknown	15	(9)	0	--	6	(1)	0	--	0	--	21	(2)
Income	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Equal to or below FPL[3]	59	(35)	93	(46)	151	(36)	129	(53)	21	(28)	453	(41)
101-200% FPL	53	(32)	49	(24)	90	(22)	66	(27)	41	(55)	299	(27)
201-300% FPL	11	(7)	8	(4)	29	(7)	15	(6)	11	(15)	74	(7)
> 300% FPL	9	(5)	5	(2)	24	(6)	20	(8)	1	(1)	59	(5)
Unknown	36	(21)	46	(23)	120	(29)	15	(6)	0	--	217	(20)
Medical Insurance	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Private	37	(22)	16	(8)	115	(28)	86	(35)	34	(46)	288	(26)
Medicare	6	(4)	29	(14)	106	(26)	42	(17)	16	(22)	199	(18)
Medicaid	44	(26)	35	(17)	55	(13)	28	(11)	14	(19)	176	(16)
Other Public	4	(2)	0	--	9	(2)	0	--	1	(1)	14	(1)
No Insurance	55	(33)	121	(60)	50	(12)	89	(36)	8	(11)	323	(29)
Other	0	--	0	--	1	--	0	--	0	--	1	--
Unknown	22	(13)	0	--	78	(19)	0	--	1	(1)	101	(9)
Totals	**168**		**201**		**414**		**245**		**74**		**1,102**	

[1] Counts could not be unduplicated. Clients who received services at more than one Title III clinic will be counted more than once. All clients that utilized a service eligible for Title II funding are included (not just clients that met Title II guidelines for eligibility).
[2] Siouxland Community Health Center, in the Western Consortium, received both Title II and Title III funds. Client counts could not be unduplicated.
[3] FPL = Federal Poverty Level ($9,570 Annually)

Question 2

What are the patterns of utilization of HIV services by persons with HIV in Iowa?

UTILIZATION OF RYAN WHITE TITLE II SUPPORT SERVICES

Utilization of Ryan White Title II support services is shown for each consortium in Table 45. Services are listed from most to least utilized. There are significant differences between the consortia, which reflect the priorities set by each consortium's planning group.

Case management was the most heavily utilized service in 2005. Over 92% of clients accessed this service at least once. Clients averaged over 11 visits for case management in 2005, but the number of visits varied greatly by consortium. Clients in the western, central, and northeast consortia averaged from 12 to 14 visits, whereas clients in the southeast consortium averaged only six visits. This may indicate differences in utilization, but could also reflect differences between the consortia in what constitutes a case management "visit."

The other most utilized services included emergency financial assistance, transportation services, food bank/meals, day or respite care, housing services, outpatient medical care, and health education/risk reduction. No service, other than case management, was used by more than 24% of the 861 Title II clients.

The least utilized Title II services were oral health care, mental health services, buddy/companion services, referral for health care/support services, client advocacy, and psychosocial support services.

Table 45
Utilization of Ryan White Title II Services[1] by Consortium
2005

Service	Consortium									
	Western[2]		Central		Northeast		Southeast		Total	
	# clients	Visits per client[3]	# clients	Visits per client	# clients	Visits per client	# clients	Visits per client	# clients	Visits per client
Case management services	164	11.6	283	13.9	152	12.4	216	6	796	11.3
Emergency financial assist.	--	--	118	*	85	*	--	--	203	*
Transportation services	--	--	61	*	47	*	56	*	164	*
Food bank/meals	--	--	153	*	1	*	--	--	154	*
Day or respite care - adults	--	--	140	*	--	--	--	--	140	*
Housing services	--	--	61	*	55	*	--	--	116	*
Outpatient medical care	85	8.2	--	--	8	2.3	--	--	93	7.7
Health ed./risk reduction	--	--	6	*	70	*	--	--	76	*
Oral health care	43	2.4	--	--	6	1.5	8	2.5	57	2.3
Mental health services	34	5.4	--	--	3	1.0	--	--	37	5.1
Buddy/companion service	4	*	20	*	1	*	--	--	25	*
Ref. for health care/supp. services	--	--	--	--	23	*	--	--	23	*
Client advocacy	--	--	--	--	23	*	--	--	23	*
Psychosocial support services	--	--	--	--	16	*	--	--	16	*
Other services	--	--	--	--	--	--	13	*	13	*
Total Clients	**168**		**308**		**164**		**221**		**861**	

[1] Counts could not be unduplicated. Clients who received services in more than one consortium will be counted more than once. All clients that utilized a service eligible for Title II funding are included (not just clients that met Title II guidelines for eligibility).

[2] Siouxland Community Health Center in the Western Consortium received both Title II and Title III funds. All services could not be separated by type of funding.

[3] Visits per client were only reported for certain categories.

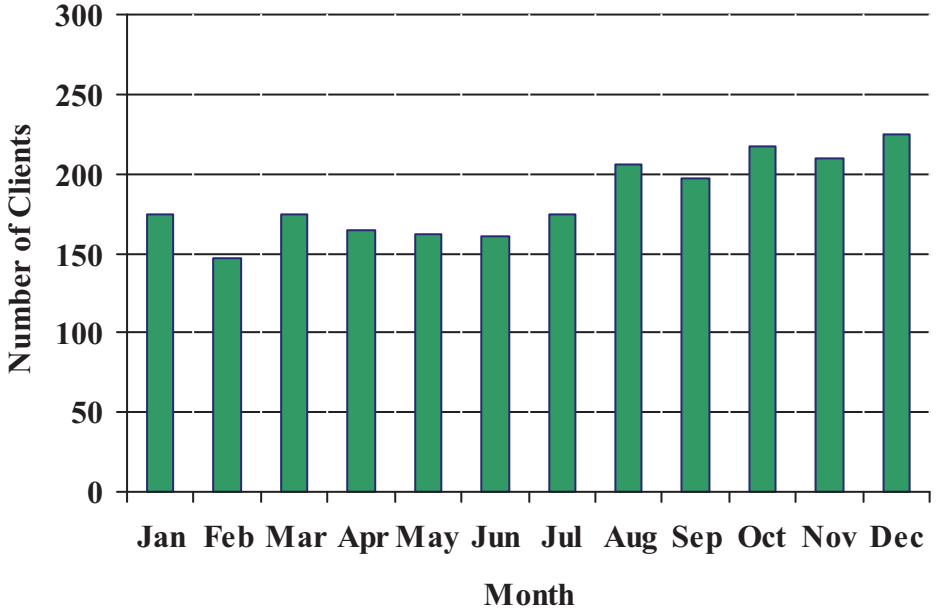
[*] Services were provided but number of visits was not tracked.

Since 2002, there has been an increase in the utilization of six Title II support services: emergency financial assistance, transportation services, food bank/meals, day or respite care, oral health care, and mental health services. Emergency financial assistance was utilized by 31% of clients in 2005, compared to 29% of clients in 2002. Transportation services were utilized by 25% of Title II clients in 2005, compared to 19% of clients in 2002. The use of food banks/home-delivered meals rose from 17% in 2002 to 23% in 2005. An increase in day or respite care also occurred. In 2002, less than one percent of clients utilized the service, compared to 21% in 2005. Nine percent of clients were provided assistance with oral health care in 2005, compared to 4% in 2002. Finally, six percent of Title II clients utilized mental health services in 2005, compared to less than one percent in 2002.

UTILIZATION OF AIDS DRUG ASSISTANCE PROGRAM

In 2005, 356 individuals received ADAP assistance, with an average of 188 individuals receiving medications per month. Figure 50 illustrates the monthly utilization of the ADAP for 2005. As mentioned earlier, enrollment in ADAP was closed for the first six months of 2005. This explains the rise in utilization of the ADAP after June.

Figure 50
ADAP Utilization
2005



UTILIZATION OF TITLE III EARLY INTERVENTION SERVICES

Services provided by Title III clinics are shown in Table 46 in order of most utilized to least utilized services. Outpatient medical care was the most heavily utilized service in 2005. Of the 1,102 clients served in 2005, 90% received outpatient medical care. Case management was the most utilized service other than outpatient medical care.

The other most utilized services included treatment adherence counseling, client advocacy services, oral health, and mental health services. No service, other than outpatient medical care, was used by more than 49% of the clients. All five Title III clinics provided outpatient medical care, mental health services, and oral health care.

The least utilized services were health education/risk reduction, transportation, nutritional counseling, referrals to clinical research, rehabilitation, and out-patient substance abuse services.

Table 46
Utilization of Ryan White Title III Services[1] by Provider
2005

	Location of Provider											
	Sioux City[2]		Des Moines		Iowa City		Davenport		Omaha		Total	
Service	# clients	Visits per client[3]	# clients	Visits per client	# clients	Visits per client	# clients	Visits per client	# clients	Visits per client	# clients	Visits per client
Outpatient medical care	85	8.2	180	4.9	411	2.7	245	6.3	74	NA	995	4.3
Case mgmt. services	164	11.6	201	13.5	98	10.5	--	--	74	NA	537	10.5
Treatment adherence counseling	--	--	104	*	149	*	--	--	54	*	307	*
Client advocacy	--	--	--	--	287	*	--	--	--	--	287	*
Oral health care	43	2.4	44	2	97	3.4	16	2.4	6	1.5	206	2.7
Mental health services	34	5.4	11	6.3	61	2.3	35	3.1	7	1	148	3.4
Health ed./ risk reduction	--	--	--	--	21	*	--	--	66	*	87	*
Transportation services	--	--	59	*	--	--	--	--	--	--	59	*
Nutritional counseling	--	--	--	--	19	*	2	*	4	*	25	*
Ref. to clinical research	--	--	--	--	11	*	--	--	--	--	11	*
Rehabilitation	--	--	--	--	10	2.1	--	--	--	--	10	2.1
Early intervention services Title I and II	--	--	9	*	--	--	--	--	--	--	9	*
Outpatient sub. abuse services	--	--	1	NA	3	10.6	--	--	--	--	4	8
Total Clients	**168**		**201**		**414**		**245**		**74**		**1,102**	

[1] Clients who attended more than one clinic are counted more than once. All clients that utilized a service eligible for Title III funding are included.
[2] Siouxland Community Health Center in the Western Consortium received both Title II and Title III funds. Services could not be separated by type of funding.
[3] Visits per client were only reported for certain categories.
* Visits per client were not reported.
NA means that these data were not reported by certain providers.

Since 2002, there has been an increase in the utilization of two Title III services: Client advocacy and transportation. Client advocacy was utilized by 26% of clients in 2005; transportation services were utilized by 5% of Title III clients in 2005. Neither service was utilized in 2002.

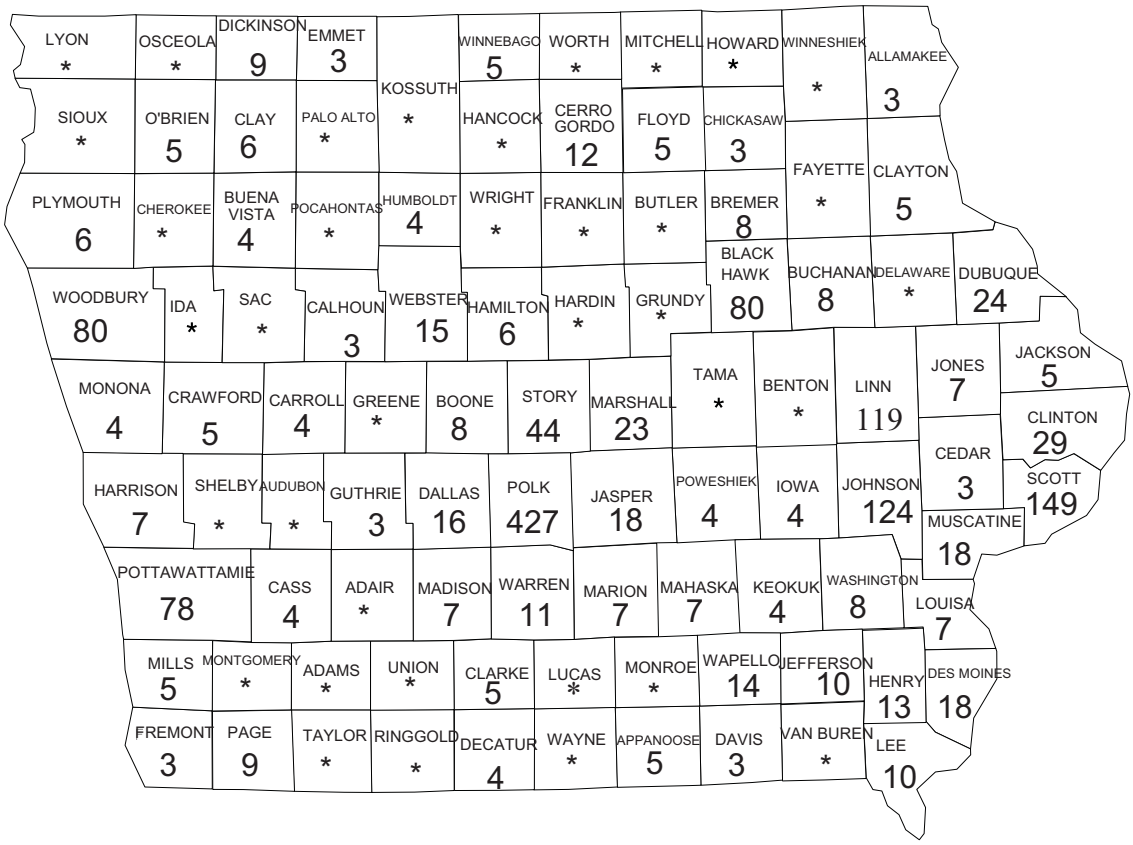
Question 3

What are the number and characteristics of persons who know they are HIV positive, but who are not receiving HIV primary medical care?

This section presents information about Iowa's efforts to measure unmet need for HIV primary medical care among persons who are HIV positive. For this analysis, all persons who were living with HIV in Iowa were included, not just those diagnosed in the state. For this reason, the numbers presented here will not match the prevalence data presented earlier in this profile.

Figure 51 shows the number of persons living with HIV or AIDS in Iowa by last known county of residence in 2005. There were 1,597 persons living with HIV/AIDS in Iowa on December 31, 2005, regardless of their states of residence at time of diagnosis. Persons who were diagnosed in Iowa but who were not living in Iowa in 2005 have been removed from this analysis. For comparison, there were 1,340 persons who were Iowa residents at the time of diagnosis and who were living on December 31, 2005.

Figure 51
All Persons Living with HIV/AIDS in Iowa on December 31, 2005
Regardless of State of Diagnosis
by Current County of Residence



State prisoners are included in the county where the prison is located.
* Indicates fewer than 3 persons, including those counties with no persons living with HIV/AIDS.

Measuring Unmet Need for HIV Primary Medical Care by Using Laboratory Data

Measuring unmet need for HIV primary medical care involves quantifying the number of individuals who know that they are HIV positive, but are not receiving HIV-related care. It is intended to reflect how quickly people get into care after testing positive for HIV and whether they continue that care. The CARE act requires grantees to carry out needs assessments focusing on people living with HIV who are not receiving care, to estimate the number of people who are HIV positive but not in care, to learn the characteristics of this population, to assess their service needs, and to determine how to address those needs.

Surveillance data can be used to assess unmet need for HIV primary medical care. Persons in care are defined as any HIV-positive person who has had at least one viral load or CD4+ cell count in the past year, or who has received antiretroviral therapy in the past year. This requires complete reporting of all viral loads and CD4+ cell counts, an ability to estimate the completeness of reporting, and/or cooperation of medical providers in the state. Access to ADAP registry is also essential.

Beginning January 1, 2005, Iowa law required reporting of all viral loads, including those below the level of detection, and all levels of CD4+ cell counts. Previously, only detectable viral loads and CD4+ cell counts below 400 and 30% of total lymphocytes were reportable. The change in the law allowed the calculation of unmet need directly from surveillance data without needing to contact individual health care providers for missing surveillance data. Ryan White Title III clinics were asked for information on their clients to ensure that the system was working well.

No statistical adjustment was made for out-migration. Routine interstate duplicate review (RIDR), a process through which the Centers for Disease Control and Prevention (CDC) facilitates the reconciliation of potential duplicate cases between state surveillance programs, allows for regular removal of cases from HIV/AIDS Reporting System (HARS) when they are later reported in other states. Nevertheless, persons with HIV who move away from the state may appear to be out of care unless or until they enter care in another state and that state contacts the surveillance program for information. Therefore, the number of persons out of care is likely to be overestimated.

A CDC-provided program was used to select persons in and out of care. All persons living with HIV/AIDS for any part of 2005 and residing in the state were selected. This includes people who had been diagnosed in other states but who later moved to Iowa.

Results of Unmet Need for HIV Primary Medical Care Analysis

Table 47 presents the results of the unmet need analysis. Of the 1,597 people reported to be living with HIV/AIDS in the state, 1,169 (73%) received HIV primary medical care during the specified time period, while 428 (or 27%) had no evidence of HIV primary medical care in 2005. HIV-infected persons who had not yet been diagnosed with AIDS were more likely to be out of care. Among 993 people with AIDS, 241 (24%) were out of care, while among 604 people with HIV (non-AIDS), 187 (31%) were out of care in 2005.

Table 47
HIV-positive Persons Not in Care
Iowa, 2005

	Persons Not in Care	Total HIV Positive	% Not in Care
Diagnosis			
HIV	187	604	31**
AIDS	241	993	24**
Sex			
Males	345	1,255	27
Females	83	342	24
Race and Ethnicity			
White, non-Hispanic	268	1,131	24***
Black, non-Hispanic	98	312	31***
Hispanic	52	124	42***
Other	10	30	33***
Current Age			
<13	1	9	11
13-19	2	11	18
20-29	42	146	29
30-39	138	446	31
40-49	162	645	25
Over 49	83	340	24
Mode of Exposure			
MSM	194	754	26**
IDU	66	197	34**
MSM/IDU	53	167	32**
Heterosexual	47	256	18**
No Identified Risk/Other	68	223	30**
Country of Origin[3]			
US and dependency	331	1,371	24***
Other	68	180	38***
Years HIV Positive[3]			
Up to 5 years	113	511	22**
Five or More Years	313	1,084	29**
Total	428	1,597	27

[1] Being in HIV primary medical care is defined as receiving at least one viral load or CD4+ cell count in a given year and/or being on anti-retroviral therapy at any point during that year.
[2] Significance levels * 0.05 **0.01 ***0.001
[3] There were missing data for this variable.

Those most likely to be out of care include persons with HIV diagnoses (but who have not received AIDS diagnoses), minorities, persons aged 20-39 years, injection drug users or persons without a known risk, foreign-born persons or those whose place of birth was unknown, and those diagnosed with HIV five years or more.

Because those out of care are more likely to have HIV diagnoses than AIDS diagnoses and yet have been diagnosed five years or more, these data suggest either that people are not getting linked into care immediately after diagnosis or that they leave care soon after their diagnoses.

In 2005, IDPH conducted a needs assessment of HIV-positive persons who were in care (see Chapter 5) to elicit the most important reasons people occasionally left care. Respondents were asked, "At any time since your diagnosis, have you ever decided not to receive HIV-related medical care for a year or more?" Congruent to the analysis presented here, 25% answered "yes" to this question. Respondents were asked to mark their reasons for not receiving care. The top reasons were that they could not afford care (45%); they did not want to deal with their HIV status (45%); they had no insurance (41%); they didn't feel ill (41%); and the medications made them ill (37%).

There are also differences according to county of residence. The differences by county are not accounted for by county population size or by proximity to a public HIV clinic. Table 48 presents unmet need for HIV primary care by county for those counties who had at least 5 residents living with HIV/AIDS.

The percentage of persons out of care ranged from 0 in Madison County to 67 in Page and Clay counties. Polk County has the most persons out of care with 101 persons out of 429 persons living with HIV/AIDS. The top five counties have HRSA-funded clinics located within the county or, in the case of Pottawattamie, in the adjacent county.

Table 48
HIV-positive Persons Not in Care[1] by County of Residence[2]
2005

County	Total HIV+	# Not in Care	% Not in Care
Polk	429	101	24
Scott	149	34	23
Johnson	124	34	27
Pottawattamie	78	32	41
Woodbury	80	30	38
Linn	119	28	24
Black Hawk	80	16	20
Story	44	11	25
Dubuque	24	7	29
Jasper	18	7	39
Marshall	23	6	26
Webster	15	6	40
Page	9	6	67
Clinton	30	5	17
Wapello	14	5	36
Cerro Gordo	12	5	42
Dickinson	9	5	56
Des Moines	18	4	22
Henry	13	4	31
Clay	6	4	67
Muscatine	18	3	17
Warren	11	3	27
Jefferson	10	3	30
Boone	8	3	38
Bremer	8	3	38
Buchanan	8	3	38
Harrison	7	3	43
Jones	7	3	43
Clarke	5	3	60
Winnebago	5	3	60
Dallas	16	2	13
Washington	8	2	25
Marion	7	2	29
Hamilton	6	2	33
Appanoose	5	2	40
Mills	5	2	40
Lee	10	1	10
Louisa	7	1	14
Mahaska	7	1	14
Plymouth	6	1	17
Clayton	5	1	20
Crawford	5	1	20
Floyd	5	1	20
Jackson	5	1	20
O Brien	5	1	20
Madison	7	0	0

1 Being in HIV primary medical care is defined as receiving at least one viral load or CD4+ cell count in a given year and/or being on anti-retroviral therapy at any point during that year.
2 For those counties with 5 or more persons living with HIV/AIDS.