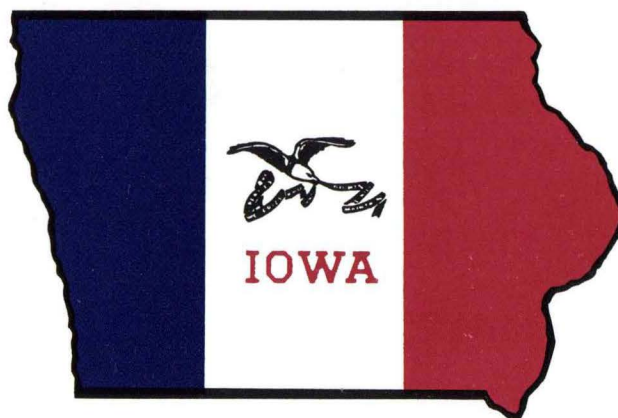


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# **HIV/AIDS IN IOWA**



## **EPIDEMIOLOGIC PROFILE FOR 1998**

**IOWA DEPARTMENT OF PUBLIC  
HEALTH**

**DIVISION OF FAMILY AND COMMUNITY  
HEALTH**

**BUREAU OF DISEASE PREVENTION**

**HIV/AIDS Surveillance Program**

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This document has been subjected to the agency's peer review.

## EXECUTIVE SUMMARY

The U.S. Bureau of Census has estimated that in 1997 there were approximately 2,852,423 persons residing in Iowa. Approximately 41% resided in nine counties, each the site of an urban center. These same counties reported higher levels of unemployment, poverty, uninsured, and increased crime rates. The racial and ethnic composition of the population revealed that 96% were classified as White. The largest racial minority group was Black, accounting for 1.9% of the population. Residents of Hispanic origin accounted for 1.8% of the population. While the numbers of persons in racial/ethnic minority groups are small, the numbers are increasing slightly.

Eighty-five of the 99 counties in Iowa have reported at least one HIV/AIDS infected resident. The nine most populated counties have reported 71% of all new cases according to residence at the time of diagnosis. At the same time, there has been a decline in the number of AIDS cases reported. More importantly, Iowa is experiencing a decrease in the development of opportunistic diseases and the number of deaths attributed to HIV infection. Early initiation and extensive use of combination antiretroviral therapy has contributed to this downward trend, slowing HIV disease progression to AIDS and increasing patient longevity.

The AIDS epidemic in Iowa has more significantly affected men and ethnic minority communities. While males account for 89% of all AIDS cases reported in Iowa, there are increasing numbers of females being diagnosed with HIV infection. The primary mode of exposure among males was men having sex with men (MSM). For females the primary risk factor was heterosexual exposure most often reported as having sex with an injecting drug user (IDU) or having sex with a known HIV infected person. There is support for an emerging heterosexual risk of exposure to HIV based upon the numbers of men and women who initially report no risk factor for the virus other than heterosexual exposure. Data demonstrate a correlation between injecting drug use and HIV infection in both men and women. The proportion of AIDS cases reported for both the IDU and heterosexual exposure categories has increased over the last several years. The percentage of AIDS cases among White males is decreasing across all exposure categories while the rate of occurrence of AIDS is increasing among minority populations. Five-year aggregated data reveals that the percentage of AIDS cases reported in Black and Hispanic males has doubled. The rate of AIDS cases among Blacks was six times higher at 12.5 cases per 100,000 compared to 2.1 per 100,000 for Whites.

In May 1998 Senate file 2161 was signed into law instituting HIV name-reporting effective July 1998. Eighty-four persons were reported, as HIV infected (not AIDS) to the Iowa Department of Public Health during the six months following passage of the law. Persons reported with HIV infection ranged in age from 19 – 71 years. Eighty-one percent (n = 68) were male and 19% (n = 16) were female. The primary mode of exposure for males was MSM. The most frequently reported transmission risks for women were heterosexual contact and IDU.

Utilization of HIV testing at the 22 counseling, testing, and referral sites has demonstrated a decline over the past four years and cannot be attributed to the initiation of the name reporting law in July 1998. Data on those seeking testing will be monitored closely over the next year to examine testing patterns.

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## INTRODUCTION

This document is a statewide profile describing the human immunodeficiency virus (HIV) epidemic in Iowa for the period ending December 1998. The report characterizes the distribution of HIV disease in terms of geography, race, sex, age, and associated causal factors. This epidemiological report has been prepared to assist persons in developing a comprehensive HIV Prevention Community Plan. The description of the HIV epidemic among the various populations in the state will not only identify characteristics of HIV infected persons, but also identify HIV negative persons at high risk who need prevention services. Four key questions will be addressed:

1. What are the socio-demographic characteristics of the population?
2. What is the impact of HIV/AIDS on the population?
3. Who is at risk for becoming infected with HIV?
4. What is the geographic distribution of HIV infection?

### Guidelines to Prevent Misinterpretation of Data

Use all information available for decision making. Decisions about how to allocate limited resources for prevention activities depend, in part, on appropriate interpretation of epidemiologic data. The following guidelines are intended to facilitate proper interpretation of the tables and figures presented in this profile.

- I. Understand what the figure is showing. 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 presented showing the number of cases or a percentage of the total cases? Pie graphs and stacked bar graphs can show total numbers or percents. 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?

- II. Know the limitations of data. This report will present both AIDS case report data and HIV infection case report data. The number of HIV infected reported by name are small (less than 100) and only cover a six-month reporting period. New or emerging trends in HIV infection may not be apparent. AIDS case report data spans 15 years and is relatively complete. There are reporting delays of HIV/AIDS cases to the Iowa Department of Public Health (IDPH). The tables and figures in this profile do not account for these reporting delays. The size of the database used to calculate statistics contained in this report may change based upon these reporting delays. Both HIV and AIDS data are from the entire state of Iowa. Data represents only those individuals living in Iowa at the time of diagnosis. It excludes those individuals who are diagnosed and reported while residing in another state and who subsequently move to or receive care in Iowa.
- III. Do not over-interpret small changes or differences. Comparing one year with another only shows a change, even if the change represented a substantial increase. The change might be in the opposite direction the following years. This is especially important when considering areas with low morbidity and unstable rates. For this reason, data have been grouped into five-year increments where possible to determine patterns or trends. Significant changes over time will be highlighted in the narrative of this document.



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IV. Look for consistencies with other information sources. Different findings should not be discarded, but examined carefully. All data are not created equal and some data sources carry more weight than others.

V. Case rates have been calculated for the 12-month period per 100,000 population. The denominator for calculating AIDS rates is based on post-census 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 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 estimated population for that race/ethnicity, multiplied by 100,000.

#### Exposure Category – Definition of Terms

For surveillance purposes, HIV/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 injecting drug use. They make up a separate category (HIV/AIDS Surveillance Report, 1998). Modes of exposure used in this report are as follows.

- “Men who have sex with men” (MSM) include men who report sexual contact with other men and men who report sexual contact with both men and women.
- “Injecting drug use” (IDU) identifies a person who injects nonprescription drugs.
- “Heterosexual contact” is a person who reports specific heterosexual contact with a person with documented HIV/AIDS, or heterosexual contact with a person at increased risk for HIV infection such as an injecting drug user, hemophiliac, transfusion recipient with documented HIV infection, or bisexual male.

- “Received transfusion” is a person who received blood or blood components (other than clotting factor).
- “Received transplant” is a person who received tissue or organs or artificial insemination.
- “Worked in a health-care or clinical laboratory setting” is a person who worked in a health care agency/setting.
- “No identifiable risk” is a person with no identified history of exposure to HIV through any of the routes listed in the hierarchy of exposure categories. These cases are investigated to identify a risk.
- “Race” denotes a group of people classified together on the basis of self-report. The racial categories used in the HIV/AIDS Reporting System (HARS) are: White, Black, Asian/Pacific Islander, American Indian/Alaska Native.
- “Ethnicity” pertains to a particular cultural group. The ethnic category used in HARS is Hispanic.
- “Case fatality rate” signifies the proportion of persons with a particular disease that die from that disease within a specified period of time.
- “Prevalence rate” is defined as the number of people within a population having a certain disease, disorder or condition at a given point in time (Timmreck, 1994).
- “Incidence rate” is defined as the number of people within a population who develop the disease (new cases) within a specific time period (Timmreck, 1994).

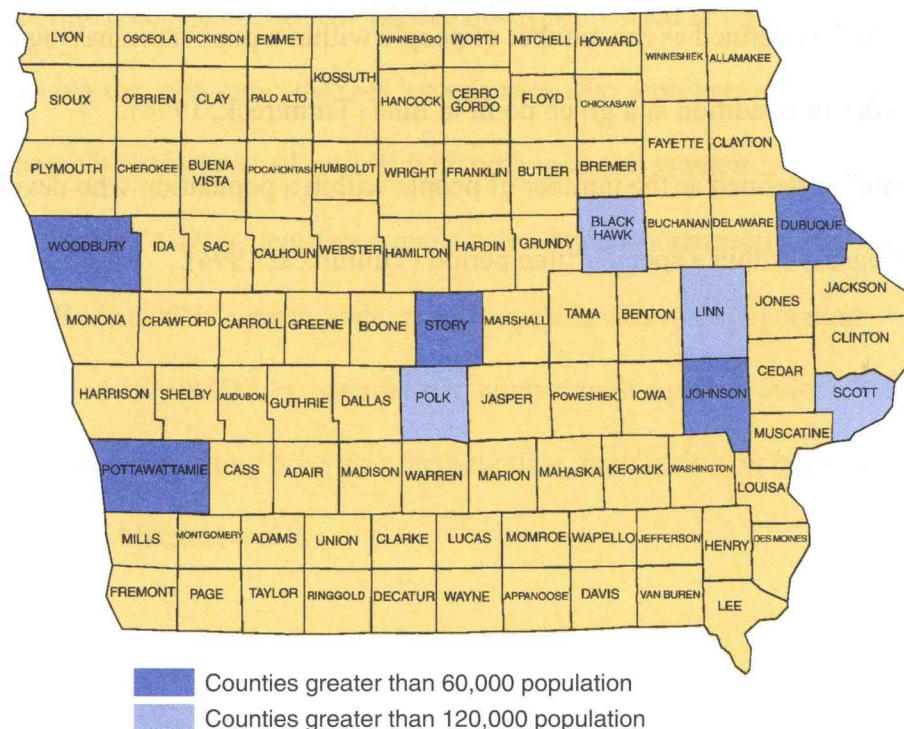


## SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE POPULATION

This section provides background information about Iowa's population. The purpose is to provide a context for assessing the potential impact of HIV/AIDS in Iowa.

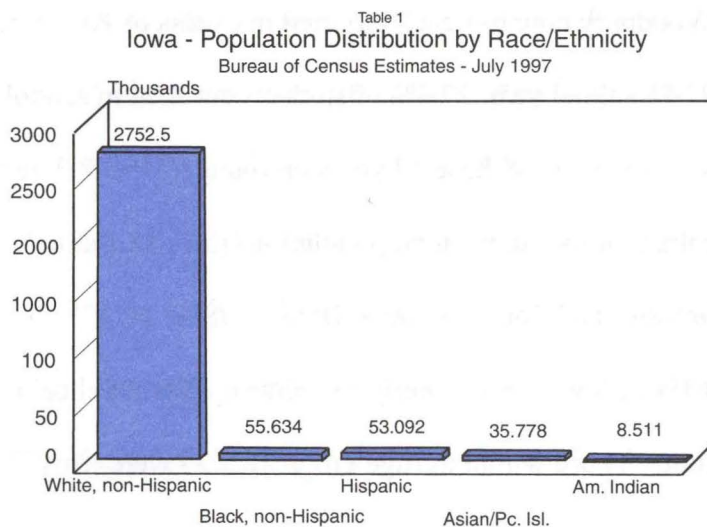
Iowa is primarily an agricultural state, with a land area of 55,875 square miles. Iowa is comprised of 99 counties (Figure 1) with an estimated 1997 population of 2,852,423, ranking it 30<sup>th</sup> in the nation (Vital Statistics of Iowa, 1997; 1997 Iowa Factbook, Legislative Fiscal Bureau; Bureau of Census, 1998). Five of these counties (Dubuque, Johnson, Pottawattamie, Story and Woodbury) report greater than 60,000 population and four counties (Black Hawk, Linn, Polk, and Scott) report greater than 120,000 population. 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. State population growth is expected to reach 2.9 million by the year 2000 and only slightly exceed that total by 2005 (Statistical Abstract of the United States, 1998).

Figure 1  
Iowa  
Most Populated Counties





Iowa's racial/ethnic distribution (Table 1) according to population estimates reveals that approximately 96% (n = 2,752,500) of the total population are White. White, non-Hispanic comprise 94% (n = 2,704,311) of the population and 1.7% (n = 48,189) of the population are White, Hispanic. The largest racial minority group is Black, non-Hispanic residents (n = 55,634) accounting for 1.9% of the population, reflecting a slight increase from the 1.7% of the total reported in 1990. Black Hawk, Polk and Scott counties account for nearly two-thirds (64.8%) of the state's total of Black, non-Hispanic residents. Residents of Hispanic origin (n = 53,092) account for 1.8% of the population. This group has shown the largest increase in growth of any minority group in the state. In 1997, nearly half of the state's Hispanic residents were estimated to live in Muscatine, Polk, Scott or Woodbury counties. Iowa's Asian/Pacific Islander population has experienced increased population growth from 0.9% of the total population in 1990 to 1.3% (n = 35,778) of the population in 1997. More than half (52.2%) of the state's Asian population lived in Johnson, Polk, or Story counties in 1997. The smallest racial population in Iowa is American Indians, which represent 0.3% of the total population. In 1997, the largest numbers of this racial group were reported to live in Woodbury County (Iowa's Counties: Selected Population Trends, Vital Statistics and Socioeconomic Data, 1998).



In general, females outnumbered males in the state in both 1990 and 1997. However, males accounted for over 50% of the population in 1990 and 1997\*in the age group 39 years and younger.

The percentage of persons ages 20 – 64 are expected to increase into the first decade of the next century. Overall, the population is aging. In 1997, it was estimated that a third (33) of Iowa's 99 counties had more residents 65 years of age or older than in 1990. The percentage of the population over 65 will continue to increase with the aging of the baby boomers, while the numbers of youth (under the age of 20) are expected to decrease. The median age of the population is approximately 36.36 years, up from 34.0 years in 1990 (Iowa's Counties: Selected Population Trends, Vital Statistics and Socioeconomic Data, 1998).

According to 1990 census reports, 10.4% of Iowa's population were living below the poverty level, compared to the national average of 13.5%. Recent reports estimate that the number of persons below poverty level for Iowa has dropped to 9.4% of the population (U.S. Bureau of Census, 1998). In Iowa, the highest levels of poverty are reported for residents of the southern counties along the Missouri border. Decatur County reported at least one of every five residents classified as poor/living below the federal poverty level. Black Hawk, Linn, Polk, Pottawattamie, Scott, and Woodbury counties each reported in excess of 10,000 residents living in poverty. During the 1997-98 school year, 27.6% of students enrolled in school received either free or reduced price meals. Moreover, of those 17 years or younger, 15.1% live in poverty. This is substantially higher than for the state's total population (Iowa's Counties: Selected Population Trends, Vital Statistics and Socioeconomic Data, 1998).

Approximately 11.61% of Iowa's non-elderly residents are without health insurance, compared to 15% in the nation. Those within the age group 18 – 24 were least likely of all age

groups to have health insurance (IDPH, Behavioral Risk Factor Surveillance System report, 1998).

Iowa's unemployment rate was reported at 3.3% for 1997, compared to the national average of 4.9%. Based upon the data from the 99 counties, Polk reported the highest number of unemployed (5,600) in 1997, just as it did in 1996 (6,200). In Iowa, men experienced a higher rate of unemployment at 3.5/100,000 compared to the rate of 3.0/100,000 for women. The percent participation rate of men in the labor force is 78.6% and 67.2% for women. The lower unemployment rate for women is partially accounted by women accepting part-time employment, temporary employment, and working out of their homes more often than men (S. Khan, personal communication, June 21, 1998).

The Iowa Criminal and Juvenile Justice Planning Division forecasts that if criminal/incarceration practices remain the same, the prison population is projected to grow by 800 or more inmates each year through fiscal year 2002. The inmate population in Iowa increased by 166.4% from fiscal year 1987 through fiscal year 1998. Iowa had eight correctional facilities until a new one opened in Fort Dodge in July 1998 in response to the expanded demand. Several counties reported a substantial increase in the number of crimes being committed in 1997 as compared to earlier years. These counties were Black Hawk, Polk, Scott, and Woodbury. Upon admission to an Iowa correctional facility each inmate is screened for HIV, TB, and sexually transmitted diseases. This information has particular relevance when describing the impact of HIV/AIDS on the population (Department of Corrections, 1998; Iowa's Counties: Selected Population Trends, Vital Statistics and Socioeconomic Data, 1998).

A significant correlation between substance abuse and HIV infection was reported based upon an analysis of AIDS risk by county performed in 1994 in Iowa. This study revealed a



correlation coefficient of 0.96 between two variables: AIDS rate and substance abuse rate (Olds, 1994). According to the Iowa Department of Corrections, inmate admissions for drug offenses increased 115.5% from FY 1990 through FY 1998. Data from a statewide substance abuse reporting system indicated that in 1996 2,094 persons reported methamphetamine as their primary substance, and 19.14% of them injected the drug. In 1997, this figure rose to 2,649 persons using methamphetamine and 19.93% injecting. As of 1998, 3,176 persons reported methamphetamine as their primary drug and 22.57% reported injection as the primary mode of use (Zwick, 1998).

### Summary of Sociodemographic Characteristics

Estimates of the 1997 population indicates that there are 2,852,423 persons residing in Iowa, ranking it 30<sup>th</sup> in the nation (IDPH, Center for Health Statistics, 1997; 1997 Iowa Factbook, Legislative Fiscal Bureau, 1998). Iowa's racial/ethnic distribution according to population estimates reveals that approximately 96% of the total population are White and 4% are racial/ethnic minority groups. While the numbers of persons in racial/ethnic minority groups are small, the numbers are increasing slightly.

Males account for over 50% of the population 39 years of age and younger. Fifteen percent of youth 17 years or younger live in poverty. Those within the age group 18 – 24 were least likely of all age groups to have health insurance.

The counties of Black Hawk, Dubuque, Johnson, Linn, Polk, Scott, Story, and Woodbury account for 41% of the population and have higher risk factors (poverty, unemployment, uninsured and crime) that have been associated with health related problems than the remaining counties.



Substance abuse throughout the state is increasing. Reports suggest that there is a correlation between substance abuse and risk behaviors associated with the development of HIV/AIDS infection.

## THE IMPACT OF HIV/AIDS ON THE POPULATION

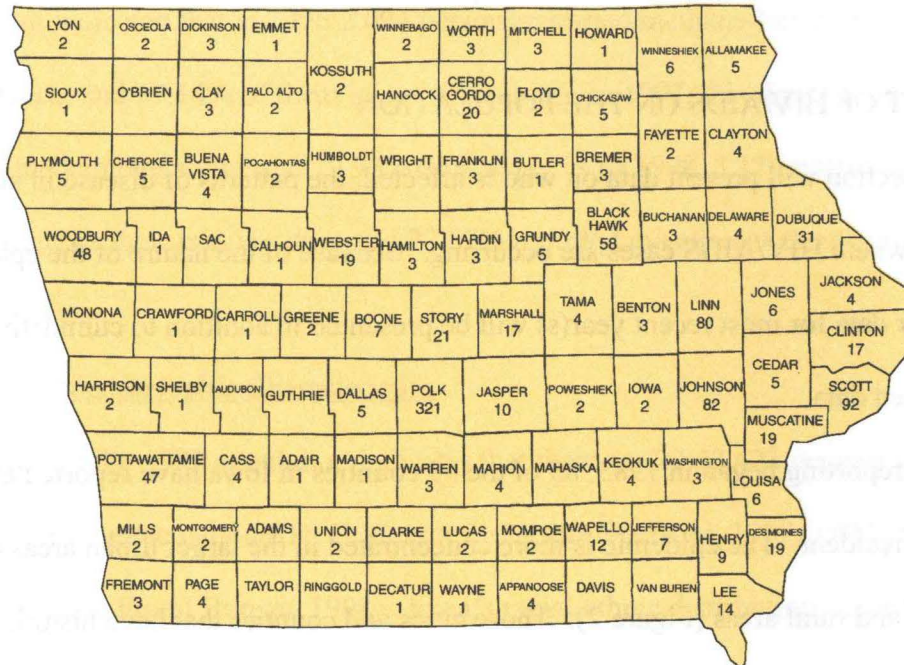
This section will present data on who is affected, the patterns of disease in affected persons, and where HIV/AIDS cases are occurring. Because of the nature of the epidemic, annual data or data for most recent year(s) will be presented in addition to cumulative and five year aggregated data.

Since reporting began in 1983, 85 of the 99 counties in Iowa have reported at least one HIV infected resident. The epidemic is more concentrated in the larger urban areas than in the smaller cities and rural areas (Figure 2). Those cities and counties that have historically reported the greatest number of AIDS cases are Des Moines in Polk County, Davenport in Scott County, Waterloo in Black Hawk County, Iowa City in Johnson County, Cedar Rapids in Linn County and Pottawattamie and Woodbury counties. Several of these cities and counties house large medical centers that care for a large portion of the HIV infected population. While the counties of Dubuque, Johnson, Pottawattamie, Story, Woodbury, Black Hawk, Linn, Polk, and Scott comprise 46% of the total population, they constitute 71% of all cases according to residence at the time of diagnosis.

The numbers used in preparing the first section of this document represent only cases that met AIDS case definition while residing in Iowa. The total number of cases do not include the 360 cases of AIDS diagnosed in persons while residing in another state but later moving to Iowa or receiving care in Iowa.

Figure 2

Iowa AIDS Cases by County of Residence  
February 1983 - December 1998

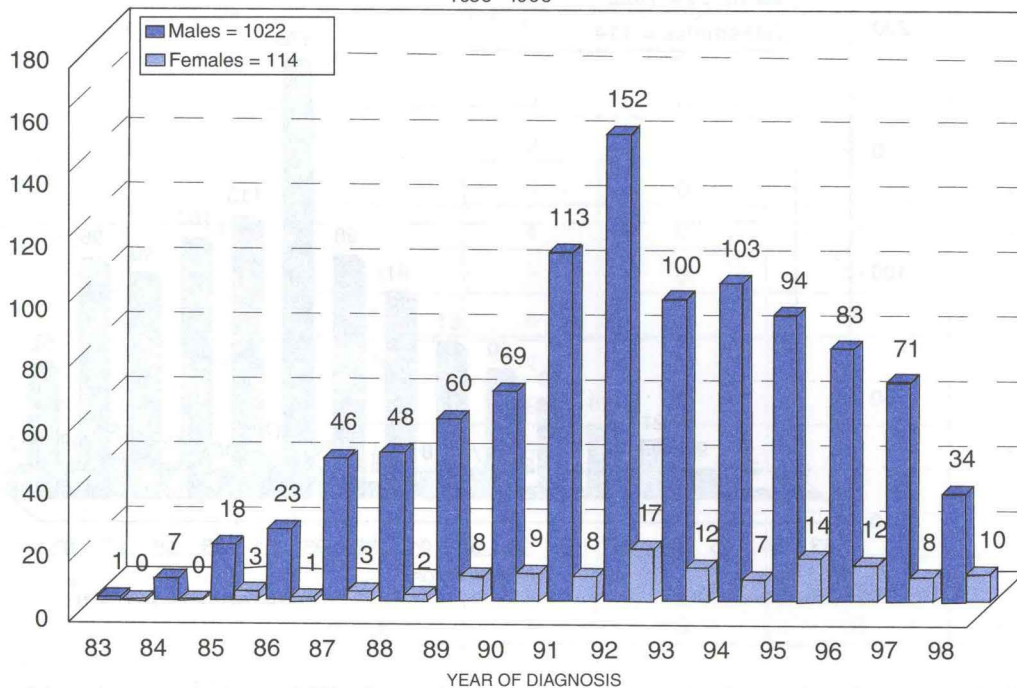


n = 1136 (2 cases missing field -residence at diagnosis)

The number of AIDS cases (based upon the date a case was first diagnosed as meeting the current AIDS case definition) by date of diagnosis is presented in Table 2. Using year of diagnosis instead of year of report minimizes artifacts of reporting.

“After the AIDS surveillance case definition for adults and adolescents was expanded on January 1, 1993, the number of cases reported substantially increased. The increase predominantly reflected the reporting of persons with HIV-related conditions diagnosed before that date who were not eligible for reporting until their conditions were added to the AIDS surveillance case definition.”  
(Suggested Guidelines for Developing and Epidemiologic Profile for HIV Prevention Community Planning, 1995).

Table 2  
Iowa AIDS Cases by Sex and Year of Diagnosis  
1983 - 1998\*



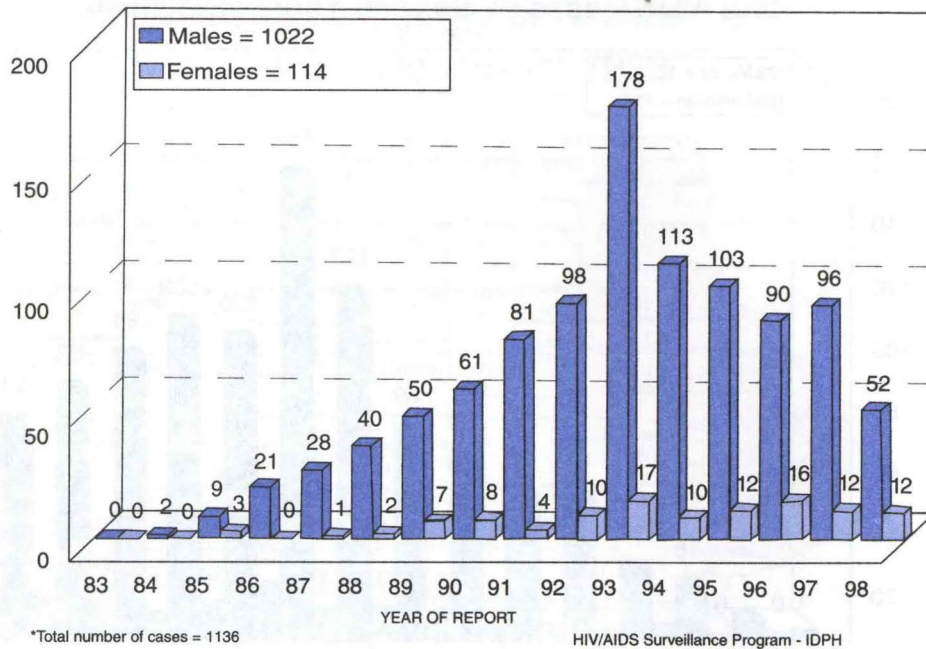
\*Total number of cases = 1136

HIV/AIDS Surveillance Program - IDPH

The epidemic curve of total AIDS cases by year of diagnosis in Iowa residents illustrates the number of cases diagnosed and subsequently reported to the IDPH each year since 1983 (Table 3). The number of AIDS cases reported appears to have peaked in 1993 and has dropped off since then. This trend is reflective of the changes in the AIDS case definitions in 1987 and 1993 and subsequent reporting of backlogged cases. Delays in case reporting have not been taken into account. All cases diagnosed in 1998 may not have been reported when this graph was completed.



Table 3  
Iowa AIDS Cases by Sex and Year of Report  
1983 - 1998\*



Following the substantial increase in the number of AIDS cases reported in 1993 as a result of the changes in case definition, there has been a decline in the number of cases reported. This most probably represents a decline in the actual number of AIDS cases. A factor contributing to this downward trend is the early initiation and extensive use of combination antiretroviral therapy to slow HIV disease progression to AIDS and improve patient longevity. AIDS incidence increasingly represents persons who were not diagnosed with HIV infection early in their illness, oftentimes entering the health care system at the time of an acute episode most frequently reflecting an illness by an opportunistic organism. In 1998, the total number of reported AIDS cases in Iowa was 64, down 41% from the 108 cases reported in 1997. The annual rate of reported AIDS cases per 100,000 population was 2.19 (using 1997 population estimate). This reflects a drop in the case rate of 3.7 from the previous year. Table 4 presents the cumulative incidence of AIDS among adult, adolescent, and pediatric cases by sex, age at



**Table 4**  
**AIDS Cases by Sex, Age at Diagnosis, and Race/Ethnicity**  
**1983 - 1998**

**Male**

Age at Diagnosis	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian/Pacific Islander	Am Indian/Alaskan Native	Total
Under 5	4	2	0	0	0	6
5 - 12	1	0	0	0	0	1
13 - 19	5	1	0	0	0	6
20 - 24	26	4	4	0	0	34
25 - 29	142	4	8	0	0	154
30 - 34	220	30	6	3	0	259
35 - 39	199	20	4	0	0	223
40 - 44	122	13	6	0	1	142
45 - 49	83	9	3	1	0	96
50 - 54	50	3	0	0	0	53
55 - 59	21	0	0	0	0	21
60 - 64	9	1	1	0	0	11
65 or older	12	3	1	0	0	16
Male Subtotal	894	90	33	4	1	1022

**Female**

Age at Diagnosis	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian/Pacific Islander	Am Indian/Alaskan Native	Total
Under 5	1	0	0	0	0	1
5 - 12	1	0	0	0	0	1
13 - 19	1	0	0	0	0	1
20 - 24	3	1	0	0	0	4
25 - 29	19	5	0	0	0	24
30 - 34	21	2	0	0	0	23
35 - 39	18	2	1	0	0	21
40 - 44	13	3	0	0	0	16
45 - 49	4	1	0	0	1	6
50 - 54	2	3	1	0	0	6
55 - 59	5	0	0	0	0	5
60 - 64	1	0	0	0	0	1
65 or older	4	0	1	0	0	5
Female Subtotal	93	17	3	1	0	114
<b>Total</b>	<b>987</b>	<b>107</b>	<b>36</b>	<b>4</b>	<b>2</b>	<b>1136</b>

diagnosis, and race/ethnicity reported through December 1998. Seventy percent of all males diagnosed between 1983 – 98 were in the age 30 – 49 year age group. Whereas, 74% of all AIDS cases reported in women were diagnosed in the 25 – 44 year age group. Eighty-eight percent of all cases to date have been reported in the 20 – 49 year age group. These years represent a significant portion of one’s productive work life.

Of the 1,136 total AIDS cases reported through 1998 the racial/ethnicity breakdown was as follows (Table 5). Eighty-seven percent (n = 987) were identified as White, non-Hispanic persons, 9% (n = 107) were reported as Black, non-Hispanic persons, 3% (n = 36) were in Hispanic persons, four in persons of Asian/Pacific Islander descent, and two were American Indian persons. The latter two comprised the remaining 1% distribution.

**Table 5**  
**AIDS Cases by Race/Ethnicity**  
**1983 – 1998**

Race	1983 – 1987		1988 – 1992		1993 – 1997		1998		1983 – 1998	
	#	%	#	%	#	%	#	%	#	%
White Non-Hispanic	64	100	331	92	537	83	55	86	987	86.9
Black Non-Hispanic	0		18	5	82	13	7	11	107	9.4
Hispanic	0		10	2.8	24	3.7	2	3	36	3.2
Asian/Pacific Islander	0		1	0.3	3	0.5	0		4	0.4
Am. Indian/Alaskan Native	0		1	0.3	1	0.2	0		2	0.2
Total	64	100	361	100	647	100	64	100	1,136	100

Percent totals may not equal 100 due to rounding of numbers

An analysis of data by five-year aggregates reveals that between 1983 – 1987 all 64 cases were reported in White, non-Hispanic persons. Between the years 1988 – 1992, there were a total of 361 AIDS cases reported. Five percent (n = 18) were reported in Black, non-Hispanic, 2.8% (n = 10) Hispanic, and 0.6% (n = 2) in the Asian/Pacific Islander and American Indian/Alaskan Native populations. Between the years 1993 – 1997, 13% (n = 82) of the total AIDS cases

(n = 647) were in Black, non-Hispanic, and 3.7% (n = 24) in Hispanic. Less than one percent (n = 3) were reported in the Asian/Pacific Islander population. One case (0.2%) was reported in American Indian/Alaskan Native group. When examining the population according to the racial/ethnic distribution, the percentage of Iowa AIDS cases among White males is decreasing across all exposure categories, while the rate of occurrence of AIDS is increasing among minority populations. While the overall numbers remain small, there has been an upward trend in the proportion of cases reported in Black, non-Hispanic persons. Black, non-Hispanic persons and Hispanic persons are over-represented in the percentage of AIDS cases when compared to the racial composition of Iowa's population. In 1997 the case rate for White, non-Hispanic was 3.0 per 100,000 population as compared to Black, non-Hispanic at 35.9 and Hispanic at 7.5. In 1998 the case rate for White, non-Hispanic was 2.1, compared to Black, non-Hispanic at 10.8. AIDS case rates were not calculated for Hispanic since fewer than 3 cases were reported in 1998. See Table 6.

**Table 6**  
**Specific AIDS Case Rates by Race/Ethnicity**

Race/Ethnicity	1997		1998	
	Rate	Number	Rate	Number
White, non-Hispanic	3	82	2.1	55
Black, non-Hispanic	35.9	20	10.8	7
Hispanic	7.5	4	*	Fewer than 3 cases reported

Denominator based on 1997 Population Estimate – Census Data  
Per 100,000 population

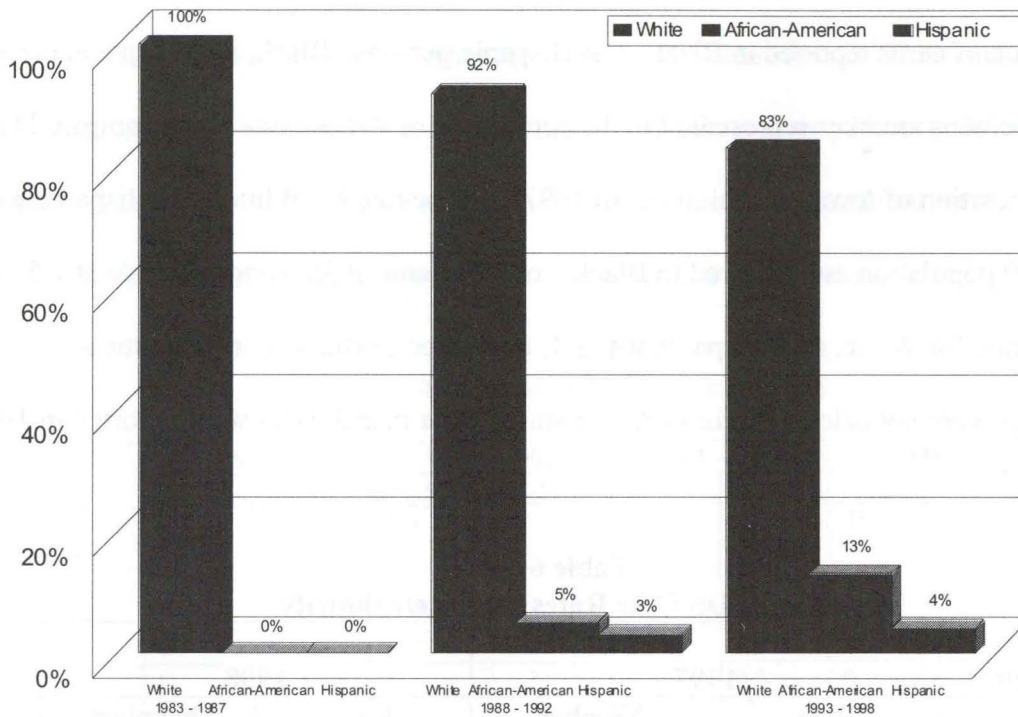
\*Rate may be unstable

Although the racial group most affected by the epidemic continues to be White, non-Hispanic an analysis by five-year aggregates reveals that the numbers of HIV infected within



racial minority groups have increased (Table 7). In 1998 86% (n = 55) were White, non-Hispanic, 11% (n = 7) were Black, non-Hispanic, 3% (n = 2) were Hispanic. There were no reported AIDS cases for any persons in either the Asian/Pacific Islander or American Indian racial groups in 1998.

Table 7  
**AIDS Cases by Race/Ethnicity**  
 Five-year Aggregated Data 1983 - 1998



Males (n = 1022) account for 90% of all AIDS cases reported in Iowa, while females (n = 114) account for 10%. The breakdown of AIDS cases by race and gender for the period 1983 - 1998 shows that men are disproportionately affected across races (Table 8). Seventy-nine percent (n = 894) of the total cases occurred in White, non-Hispanic men, compared to 8.2% (n = 93) in White women. Eight percent (n = 90) of the cases were reported in Black, non-Hispanic men versus 1.5% (n = 17) of women of the same race. In the Hispanic population,



2.9% (n = 33) of the total AIDS cases were reported in men and 0.3% (n = 3) in Hispanic women.

**Table 8**  
**AIDS Cases by Race/Ethnicity and Gender**  
**1983 – 1998**

Race	Male		Female		All Cases	
	#	%	#	%	#	%
White Non-Hispanic	894	78.7	93	8.2	987	86.9
Black Non-Hispanic	90	7.9	17	1.5	107	9.4
Hispanic	33	2.9	3	0.3	36	3.2
Asian/Pacific Islander	4	0.4	0	-	4	0.4
Am. Indian/Alaskan Native	1	0.1	1	0.1	2	0.2
Total	1,022	90	114	10	1,136	100

Percentage totals may not equal 100 due to rounding of numbers.

The increasing numbers of females diagnosed with AIDS shows a slow upward trend.

Examination of the data in five-year aggregates demonstrates that 6.7% (n = 4) of the total number reported between 1983 - 1987 were women, compared to 9.2% (n = 31) between 1988 – 1992 and 11.4% (n = 67) between 1993 – 1998. The number of women reported with an AIDS diagnosis increased by over a 100% during this five-year period. In 1998 the number of AIDS cases reported in females was 19% (n = 12) out of a total of 64 new cases reported. Refer to Table 9 and Table 10.

**Table 9**  
**AIDS Cases by Age at Diagnosis**  
**Females, 1983 – 1998**

	1983 – 1987		1988 – 1992		1993 – 1997		1998		All Cases	
	#	%	#	%	#	%	#	%	#	%
Under 5	0	-	0	-	1	2	0	-	1	1
5 – 12	0	-	0	-	1	2	0	-	1	1
13 – 19	0	-	0	-	1	2	0	-	1	1
20 – 29	2	50	7	23	17	25	2	17	28	25
30 – 39	0	-	13	42	25	37	6	50	44	39
40 – 49	1	25	5	16	13	19	3	25	22	19
50 – 59	1	25	2	7	7	10	1	8	11	10
60 – 64	0	-	1	3	0	-	0	-	1	1
Over 64	0	-	3	10	2	3	0	-	5	4
Total	4	100	31	100	67	100	12	100	114	100

Percent totals may not equal 100 due to rounding of numbers.

**Table 10**  
**AIDS Cases by Age at Diagnosis**  
**Males, 1983 – 1998**

	1983 – 1987		1988 – 1992		1993 – 1997		1998		All Cases	
	#	%	#	%	#	%	#	%	#	%
Under 5	1	2	3	1	2	0.3	0	-	6	0.6
5 – 12	0	-	1	0.3	1	0.2	0	-	2	0.2
13 – 19	1	2	0	-	4	0.7	0	-	5	0.5
20 – 29	14	23	72	22	96	17	6	12	188	18
30 – 39	31	52	149	45	272	47	30	58	482	47
40 – 49	9	15	77	23	139	24	13	25	238	23
50 – 59	3	5	18	6	50	9	3	6	74	7
60 – 64	0	-	6	2	5	1	0	-	11	1
Over 64	1	2	4	1	11	2	0	-	16	2
Total	60	100	330	100	580	100	52	100	1,022	100

Percent totals may not equal 100 due to rounding of numbers.

To date, the largest proportion, 46% (n = 526) of AIDS cases have been reported in the 30 – 39 year old group (Table 11). Forty to forty-nine year olds have accounted for 23% (n = 260) of the total number of AIDS cases reported. Nineteen percent (n = 216) of all AIDS cases reported have been in the age group 20 – 29 years. Less than one percent (n = 7) have been reported in children under five years of age and six cases in the age group 13 – 19. When

aggregating the data into five-year reporting intervals for the periods 1983 – 1987, 1988 – 1992, and 1993 – 1998, the data reveal that persons between the ages 30 – 39 have consistently accounted for the majority of AIDS cases reported. In 1998, 56% of all cases (n = 36) continue to be reported in the age group 30 – 39. Twenty-five percent (n = 16) were reported in persons 40 – 49 years old and 13% (n = 8) in those ages 20 – 29. Data does reveal a gradual increase in the age at which AIDS cases are first diagnosed and reported. In 1998, there were no AIDS cases reported for persons under 19 years of age.

**Table 11**  
**AIDS Cases by Age at Diagnosis**  
**All Cases, 1983 – 1998**

	1983 – 1987		1988 – 1992		1993 – 1997		1998		All Cases	
	#	%	#	%	#	%	#	%	#	%
Under 5	1	2	3	0.8	3	0.5	0	-	7	0.6
5 – 12	0	-	1	0.3	2	0.3	0	-	3	0.3
13 – 19	1	2	0	-	5	0.8	0	-	6	0.5
20 – 29	16	25	79	22	113	18	8	13	216	19
30 – 39	31	48	162	45	297	46	36	56	526	46
40 – 49	10	16	82	23	152	24	16	25	260	23
50 – 59	4	6	20	6	57	9	4	6	85	8
60 – 64	0	-	7	2	5	0.8	0	-	12	1
Over 64	1	2	7	2	13	2	0	-	21	2
Total	64	100	361	100	647	100	64	100	1,136	100

Percent totals may not equal 100 due to rounding of numbers.

Although the economic status of persons diagnosed with HIV/AIDS is not reported on the confidential AIDS case report form, a variable that is collected is the reimbursement source/insurance for medical treatment. According to 1998 AIDS case report data, 38% of persons reported either no coverage or public forms of payment for their medical care, compared to 30% reporting private insurance coverage. This item was left blank on the remaining 32% of the case report forms submitted to the HIV/AIDS Surveillance Program.



A report published by the U.S. Department of Justice, National Institute of Justice, and the Centers for Disease Control and Prevention (1998) 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. According to a recent report from the Iowa Department of Corrections, there were 36 HIV infected inmates housed in correctional facilities throughout the state; nine of the 36 had been diagnosed with AIDS. There have been 14 inmates diagnosed HIV positive in the Iowa Department of Corrections in 1998, compared with 18 in 1997. Aggregating the data over a five-year period reveals that the number of AIDS cases reported from corrections facilities has increased 400% from two cases reported between 1988 – 1992 to 10 cases reported between 1993 – 1998. There were no new AIDS cases reported in 1998 from Iowa's correctional facilities, compared to four new cases reported in 1997.

Statistics in Table 12 (AIDS cases by age group, exposure category and sex reported through December 1998) depict the epidemic in which greater than 80% (n = 894) of AIDS cases reported in adult/adolescent males are related to three exposure categories: MSM, IDU, or a combination of both.



**Table 12**  
**AIDS Cases by Age Group, Exposure Category and Sex Reported Through December 1998**

Adult/Adolescent	Males				Females				Totals			
	1998	(%)	Cumulative Total	(%)	1998	(%)	Cumulative Total	(%)	1998	(%)	Cumulative Total	(%)
Exposure Category												
MSM	41	(79)	726	(72)					41	(69)	726	(65)
IDU	3	(6)	100	(10)	2	(17)	25	(22)	5	(7)	125	(11)
MSM & IDU	2	(4)	68	(7)					2	(3)	68	(6)
Hemophilia	0		38	(4)	0		1	(.9)	0		39	(4)
Heterosexual Contact	2	(4)	32	(3)	8	(67)	67	(60)	10	(15)	99	(9)
Sex w/IDU					3		20					
Sex w/Bi-male					1		17					
Sex w/person w/hemo					0		6					
Sex w/transfusion rec.					0		1					
Sex w/HIV infected person					4		22					
Receipt of blood transfusion	0		14	(1)	0		10	(9)	0		24	(2)
Other/risk not reported	4	(5)	34	(3)	2	(17)	9	(8)	6	(7)	43	(3)
Adult/Adolescents Subtotals	52	100	1012	100	12	100	112	100	64	101	1124	100

Pediatric (<13 years)	Males				Females				Totals			
	1998	(%)	Cumulative Total	(%)	1998	(%)	Cumulative Total	(%)	1998	(%)	Cumulative Total	(%)
Exposure Category												
Hemophilia/coag. Disorder	0		4	40	0				0		4	33
Mother w/risk for HIV	0		5	50	0				0		5	42
IDU	0		0		0		1	50	0		1	8
Sex w/IDU	0				0		1	50	0		1	8
Sex w/Bi-male	0				0				0			
Sex w/person w/hemo	0				0				0			
Sex w/transfusion rec.	0				0				0			
Sex w/HIV infected person	0				0				0			
Receipt of blood transfusion	0				0				0			
Has HIV infect risk ns	0				0				0			
Receipt of blood transfusion	0		0		0				0			
Risk not reported	0		1	10	0				0		1	8
Pediatric Subtotal	0		10	100	0		2	100	0		12	100

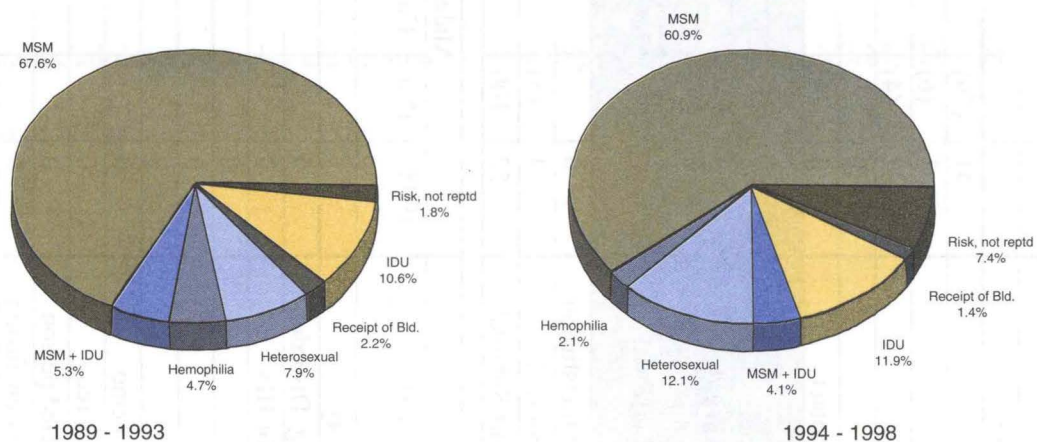
  

<b>Total</b>	<b>52</b>		<b>1022</b>		<b>12</b>		<b>114</b>		<b>64</b>		<b>1136</b>	
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\*Percent may not total 100 due to rounding of numbers

Figure 3 provides a comparison of AIDS cases by mode of exposure for two time periods, 1989 – 1993 and 1994 – 1998. The primary mode of exposure for AIDS cases reported in Iowa is men having sex with men. Over the course of the epidemic (since data collection began in 1983), this exposure category has remained the most frequently reported, averaging about 60% - 70% of total cases reported each year. When comparing the time period 1989 – 1993 to 1994 – 1998 the percentage of cases reported by the exposure category men having sex with men exhibits a slight decrease. AIDS cases attributed to IDU increased 26% (from 53 cases reported between 1989 - 1993 to 67 cases reported between 1994 - 1998). This, in part, may be attributable to the increasing availability and use of methamphetamine within the state. Persons reported with no risk factors other than heterosexual exposure have increased from almost 8% of the total to 12% of the total. The number of cases reported as no identifiable risk has gone from 1.8% of the reported cases in 1989 – 1993 to 7.4% of the cases in 1994 – 1998.

Figure 3  
AIDS Cases by Mode of Exposure  
5 Year Aggregated Data





Since the epidemic began, the established risk factors for HIV infection among women have been intravenous drug users (IDUs) and heterosexual contacts with high-risk partners. The proportion of cases among women has increased since 1993, now accounting for 10% of the total number of cases reported since 1983. This increased proportion of AIDS cases among women in recent years indicates that a greater percent of new HIV infections are occurring among women compared with earlier years. Graham (1997) cites evidence of greater numbers of women initially reported as being without risk who have been exposed through injecting drug use, through heterosexual transmission, or who are unaware of the risk behavior of their sex partners and are therefore unaware of their risk of exposure.

Adult/adolescent AIDS cases by sex, exposure category, and race/ethnicity through December 1998 are presented in Table 13. Among males, men having sex with men is the primary exposure for all reported races and ethnic groups. For females, 60% of all cases have been related to heterosexual exposure through sexual relations with either an intravenous drug user, a bisexual male, a known HIV infected person or a transfusion recipient. Of the 125 adult/adolescent AIDS cases attributed to injecting drug use as the primary transmission mode, 68% (n = 84) were reported in White non-Hispanic persons and 32% (n = 41) for persons in racial minority groups. Higher proportions of Black, non-Hispanic and Hispanic males report injecting drug use as their mode of exposure than White, non-Hispanic males, but overall numbers of persons reporting IDU as their mode of exposure remains low among all race and ethnic groups. Because the numbers of minority females reported with AIDS are relatively low, differences in modes of exposure between racial/ethnic groups are difficult to examine and interpret.

**Table 13**  
**Adult/Adolescent AIDS Cases by Sex, Exposure Category, and Race/Ethnicity**  
**Male**  
**1983 - 1998**

Mode of Transmission	White Non-Hispanic	Black non-Hispanic	Hispanic	Asian/Pacific Islander	Am Indian/Alaskan Native	Total
MSM	667	39	17	2	1	726
IDU	67	27	6	0	0	100
MSM & IDU	59	8	1	0	0	68
Adult Hemo	37	1	0	0	0	38
Heterosx	21	6	5	0	0	32
Trnfu, Trnpl	13	0	0	1	0	14
Risk not specified	22	7	4	1	0	34
Male Subtotal	886	88	33	4	1	1012

**Female**

Mode of Transmission	White Non-Hispanic	Black non-Hispanic	Hispanic	Asian/Pacific Islander	Am Indian/Alaskan Native	Total
IDU	17	7	1	0	0	25
Adult Hemo	1	0	0	0	0	1
Heterosx w IDU	15	4	1	0	0	20
Heterosx w Bi Male	16	1	0	0	0	17
Heterosx w Hemo	5	1	0	0	0	6
Sx w Trnfu Rec	1	0	0	0	0	1
Sx w person w HIV/AIDS	20	0	1	0	1	22
Trnfu, Trnpl	9	1	0	0	0	10
Risk not specified	6	3	0	0	0	9
Confirmed Oth	1	0	0	0	0	1
Female Subtotal	91	17	3	0	1	112
<b>Total</b>	<b>977</b>	<b>105</b>	<b>36</b>	<b>4</b>	<b>2</b>	<b>1124</b>

Legend: MSM – Homosexual, bisexual male  
Heterosx – Heterosexual  
Trnfu, Tranpl – Transfusion, transplant  
Hemophiliac (adult)  
Sx w – Sex with

Percent of adult/adolescent AIDS cases by exposure category by five-year aggregates is presented in Table 14. Since data collection began in 1983, the exposure category men having sex with men has remained the one most frequently reported, averaging 60% to 70% of the total cases reported each year. Five-year aggregated data also shows that the proportion of AIDS cases attributed to IDU has increased 200% (from 29 cases reported between 1988 – 1992 to 87



cases reported between 1993 – 1997. Cases attributed to heterosexual exposure have also continued to rise in number. There were a total of 28 AIDS cases noting heterosexual exposure during 1988 – 1992 as compared to 64 cases during 1993 – 1997 (128% increase). Cases attributed to hemophilia, and transfusions have demonstrated a decline over the years, accounting for two cases in 1998.

**Table 14**  
**Percent of Adult/Adolescent AIDS Cases by Exposure Category by 5-Year Aggregates and for 1998**

	<b>1983 – 1987 (n = 63)</b>	<b>1988 – 1992 (n = 357)</b>	<b>1993 – 1997 (n = 640)</b>	<b>1998 (n = 64)</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
MSM	68	71	60	65
IDU	6	8	13	7
MSM/IDU	14	5	5	3
Hemophilia	6	4	3	0
Heterosexual	0	7	11	15
Transfusion	5	3	1	0
NIR/Other	0	1	7	7
Total	100	100	100	100

Data from the blinded serosurvey of all infants born in Iowa, between the summer of 1989 and summer of 1995, found that 42 of 242,228 (rate of 0.173/1000) women giving birth were HIV positive. In 1998 there were 12 perinatal surveillance sites in the state. These sites were established to provide counseling and voluntary testing for all pregnant women seen at their respective facilities. Over 2,000 HIV tests were performed on women seen at these perinatal sites in 1998, compared to approximately 1,500 reported in 1997. No positive western blot results were reported for either year on the women tested.

There have been 12 pediatric AIDS cases (patients <13 years of age at time of diagnosis) reported in Iowa since 1983. The primary exposure risk has been mother at risk/has AIDS/HIV, noted in seven of the 12 cases reported (Table 15). Four cases of AIDS were noted to have occurred in children diagnosed with hemophilia. No identifiable risk was reported in one case.

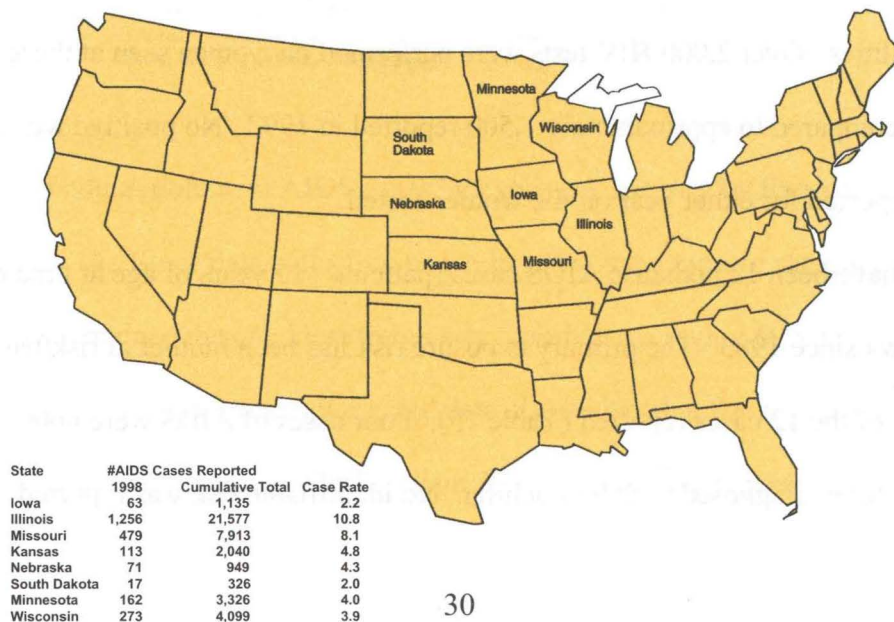
In 1998, the IDPH did not receive reports of any newly diagnosed cases of AIDS in children 12 years of age and under.

**Table 15**  
**AIDS Cases with Pediatric Exposure**  
**1983 – 1998**

Exposure Category	Males		Females		All Cases	
	#	%	#	%	#	%
Hemophilia	4	40	0		4	33
Mother at-risk/has AIDS/HIV	5	50	2	100	7	58
Transfusion with blood/ Blood products	0		0		0	
NIR/other	1	10	0		1	8
Total	10	80	2	20	12	100

The following map and table (Figure 4) provides the 1998 and cumulative total number of AIDS cases reported for Iowa and its contiguous states by state of residence through 1998. At the close of 1998 (based upon an estimated 1997 population of 2,852,423) Iowa's AIDS case rate was 2.19 per 100,000 population, down from 3.78 per 100,000 reported for 1997 and 3.72 per 100,000 for 1996. U.S. annual case rates are in sharp contrast to Iowa's. The annual rate per 100,000 population for AIDS cases reported in the U.S. in 1998 was 21.7; 21.8 in 1997; and 25.1 in 1996 (HIV/AIDS Surveillance Report, 1999).

**Figure 4**  
**AIDS Cases for Iowa and Contiguous States**



In 1998 there was a significant decrease in the number of deaths reported in persons diagnosed with AIDS; three deaths reported in 1998 compared to 15 deaths reported for 1997. Table 16 provides data on reported deaths by date of AIDS diagnosis. Reported deaths are not necessarily resulting from HIV-related disease. There have been a total of 624 deaths reported for all AIDS cases diagnosed in adults and adolescents reported to the IDPH since 1983 (Table 17). The Vital Statistics report prepared by the Center for Health Statistics (IDPH) lists HIV infection and AIDS disease deaths within the category 'other infective and parasitic diseases.' According to the Center for Health Statistics, deaths attributed to AIDS has been ranked among the top five for the years 1993 – 1996 among the 24 – 44 year age group, but did not reach the top ten in years 1997 and 1998.

**Table 16**  
**AIDS Cases by Year Diagnosed and Current Status**  
**1983 – 1998**

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Cases	2	7	21	24	49	50	68	78	121	169	112	110	108	95	79	44
Deaths	2	6	19	24	47	46	60	61	93	111	63	46	23	17	2	3

1983 – Includes one case diagnosed and deceased before 1983

This table differs from data entered by year of report.

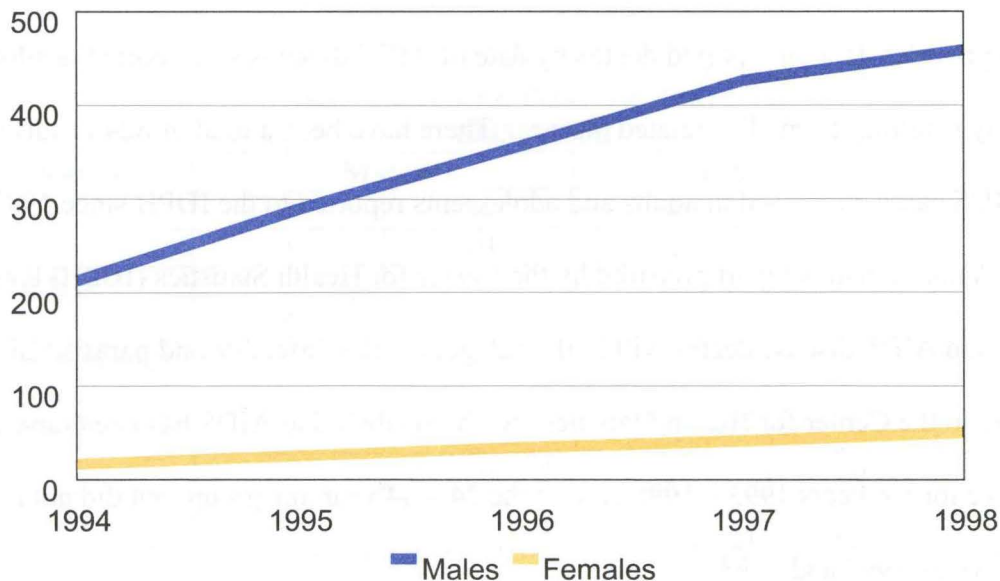
**Table 17**  
**Adult/Adolescent AIDS Cases - Deaths Reported**  
**1983 – 1998**

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Deaths	0	1	12	20	29	36	53	60	74	86	106	61	46	22	15	3

The decline in AIDS related deaths contributed to a continued increase in the number of persons living with an AIDS diagnosis. In terms of prevalence, there were approximately 510 persons reported to be living with AIDS in 1998, compared to 468 in 1997 and 392 in 1996. Prevalence data over the past five years for males and females is provided in Figure 5.



**Figure 5**  
**Number of Persons Living With**  
**AIDS**      **1994 - 1998**



### HIV Infection

In May 1998 the Governor of Iowa signed into law Senate file 2161 – instituting HIV name reporting effective July 1998. The intent of this legislation was to address the increasing limitations of AIDS case surveillance, to provide HIV surveillance data reflecting the early stages of the epidemic, and to facilitate contact tracing and counseling. HIV case reports received by the surveillance office for the first six months (July – December 1998) of reporting are represented in this section.

The number of HIV infection cases for adolescents/adults (>13years) (based upon the date a case was first diagnosed as meeting HIV case definition) by sex, age at diagnosis, and race/ethnicity is presented in Table 18. There were 84 persons first reported as HIV infected during the period July – December 1998. Sixty-three (76%) were reported as White, non-Hispanic, 14 (17%) were Black non-Hispanic, four (5%) Hispanic. The race/ethnicity was reported as ‘unknown’ for three cases.

**Table 18**  
**HIV Cases by Sex, Age at Diagnosis, and Race/Ethnicity**  
**July – December 1998**

**Male**

Age at Diagnosis	White Non-Hispanic	Black non-Hispanic	Hispanic	Asian/Pacific Islander	Am Indian/Alaskan Native	Total
13 – 19	0	0	0	0	0	0
20 – 24	2	0	1	0	0	3
25 – 29	10	2	1	0	0	13
30 – 34	11	5	2	0	0	18
35 – 39	12	0	0	0	0	12
40 – 44	10	0	0	0	0	10
45 – 49	4	0	0	0	0	4
50 – 54	3	0	0	0	0	3
55 – 59	0	0	0	0	0	0
60 – 64	0	0	0	0	0	0
65 or older	1	0	0	0	0	1
Male Subtotal	53	7	4	0	0	64

**Female**

Age at Diagnosis	White Non-Hispanic	Black non-Hispanic	Hispanic	Asian/Pacific Islander	Am Indian/Alaskan Native	Total
13 – 19	1	0	0	0	0	1
20 – 24	1	0	0	0	0	1
25 – 29	1	0	0	0	0	1
30 – 34	2	4	0	0	0	6
35 – 39	1	2	0	0	0	3
40 – 44	1	1	0	0	0	2
45 – 49	2	0	0	0	0	2
50 – 54	1	0	0	0	0	1
55 – 59	0	0	0	0	0	0
60 – 64	0	0	0	0	0	0
65 or older	0	0	0	0	0	0
Female Subtotal	10	7	0	0	0	17
<b>Total</b>	<b>63</b>	<b>14</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>81</b>

3 cases race reported as unknown = total of 84 cases

Persons reported with HIV infection ranged in age from 19 to 71 years. One person in the 13 - 19 year age group was reported with HIV infection. Seventeen (20%) were between the ages of 20 - 29 years. The majority of HIV infected cases (n = 42) were between 30 - 39 years of age. Fifty percent of the men and women reported were in this age group. Twenty (24%) were between the ages of 40 - 49 years. Four (5%) persons were reported to be over the age of 49 years. No HIV infected cases were reported in persons under 13 years of age.

Of the 84 HIV infected persons reported, 68 (81%) were male and 16 (19%) were female. Overall, the mean age for males reported with HIV infection was 36.2 years and 35 years for females.

Data on HIV cases by age group, exposure category and sex reported through December 1998 are exhibited in Table 19. The primary mode of exposure for 72% of the males (n = 49) was MSM. One male was reported with dual exposure: MSM and IDU. Five (7%) HIV infected men reported (viral) exposure related to IDU as the primary mode, and six (9%) reported exposure through heterosexual contact. Of the six men indicating heterosexual risk, three reported having sex with an IDU and three as having sex with an HIV infected person. Seven men indicated no exposure risk other than having heterosexual relationships.



**Table 19**  
**Adult/Adolescent HIV Cases by Exposure Category, and Sex**  
**July – December 1998**

Exposure Category	Males		Females		Totals	
	1998	%	1998	%	1998	%
MSM	49	72	N.A.		49	58
IDU	5	7	7	44	12	14
MSM & IDU	1	2	N.A.		1	1
Adult Hemophilia	0		0		0	
Heterosexual Contact	6	9	7	44	13	16
Sex w IDU	3		3			
Sex w bi-male	N.A.		1			
Sex w person w hemoph	0		0			
Sex w transf. Recipient	0		0			
Sex w HIV infect. Person	3		3			
Receipt of Bld. Transf.	0		0		0	
Other risk, not reported	7	10	2	13	9	11
Total	68		16		84	100

The most frequently reported transmission risks in women were injecting drug use and heterosexual contact. IDU was reported for seven (44%) of the females reported with HIV infection. Seven (44%) of the sixteen HIV infected women reported exposure through heterosexual contact. Three of the seven women reported sexual exposure with an IDU, one reported sexual exposure with a bisexual male, and three reported sexual exposure with a person with AIDS or documented HIV infection.

No exposure mode was reported or identified for seven (10%) of the males reported with HIV infection and two (13%) of the females reported. The percentage of HIV infected persons with risk not reported or identified was higher than for those reported with AIDS; 11% of the total reported as HIV infected compared to 4% of the total AIDS cases reported.

Where individuals receive testing provides important information on incentives to seek care and needed services. Out of 1,136 AIDS cases reported to the IDPH over the course of 15 years, 28% (n = 318) have originated from private physician practices. Twenty-two percent (n = 247) of the 1,136 AIDS case reports were diagnosed at the time of a hospital stay. Source of report data was not collected on 32% of these 1,136 cases. The remaining 18% of cases were reported from a variety of sources such as correctional facilities, laboratories, HIV clinics and other reporting sites.

In 1998, 31 (37%) of the 84 HIV case reports were submitted by physician practices. Laboratories around the state submitted twelve (14%) HIV infection reports on persons tested at their facilities. Seven (8%) HIV infection reports originated from persons who were tested as a donor through a blood bank and blood plasma center. Reports of HIV infected persons donating through blood banks/plasma centers were younger than those coming through other HIV test sites. More importantly, it has been found that persons who were tested through blood banks and plasma centers may be less likely to undergo counseling and behavior modification (MMWR, 01/29/99). The remaining 34 HIV positive reports were sent in from a variety of health care facilities such as HIV counseling and testing sites, sexually transmitted disease clinics, family planning clinics, and hospital outpatient facilities.

The mean age of HIV infected persons was 27 years of age compared to 35 years of age for persons diagnosed with AIDS. Six (7%) HIV infection reports originated from the Department of Corrections on new inmates whereas 22 (26%) case reports originated from private physician practices.

Of the 84 HIV infected persons reported to the health department during the July – December time frame, six (7%) converted to an AIDS diagnosis within six months of report.

Because of the small numbers reported, HIV infection data must be interpreted with caution. Preliminary data analysis reveals that compared to AIDS cases reported, there are more women being reported with HIV infection; persons are generally older; and minorities are heavily represented. The proportion of cases initially reported without risk information is higher in the HIV group, compared to those reported with AIDS. The most frequently reported mode of exposure remains men having sex with men. The second most frequently reported exposure category is heterosexual contact.

An HIV prevalence estimate of approximately 1,040 - 1,440 living infected persons has been calculated for Iowa. This estimate was calculated using a formula established by the Centers for Disease Control and Prevention based on AIDS cases reported by state.

To obtain an HIV prevalence estimate multiply the national prevalence estimate by the proportion of cases that the state has contributed to national AIDS surveillance (for adults/adolescents meeting the 1993 AIDS surveillance definition). Based upon data collected from the Centers for Disease Control and Prevention (CDC), in 1998 Iowa contributed 75 AIDS cases of the total 46,311 cases in the U.S. (CDC includes case report data from other states on Iowa cases diagnosed in the reporting state). This resulted in a figure of .0016 to be multiplied by the current national HIV prevalence estimate of approximately 650,000 to 900,000 living infected persons producing the above estimate (HIV/AIDS Surveillance Report, December 1998; J. Karon, 1996).



## Summary of the Impact of HIV/AIDS on the Population

- Eighty-five of the 99 counties in Iowa have reported at least one HIV/AIDS infected resident. The counties of Dubuque, Johnson, Pottawattamie, Story, Woodbury, Black Hawk, Linn, Polk, and Scott comprise 46% of the total population but constitute 71% of all cases according to residence at the time of diagnosis.
- There has been a decline in the number of AIDS cases reported following the substantial increase in the number of AIDS cases reported in 1993, which in part was associated with the change in case definition. Early initiation and extensive use of combination antiretroviral therapy has contributed to this downward trend, slowing HIV disease progression to AIDS and improving patient longevity.
- Although the numbers reported are small, racial minority groups seem to be disproportionately infected by the HIV/AIDS epidemic in Iowa when compared to the White, non-Hispanic population.
- Persons in the age group 30 –39 constitute the largest proportion of HIV/AIDS cases reported.
- While males account for 89% of all AIDS cases reported in Iowa, there are increasing numbers of females being diagnosed with HIV infection.
- The primary mode of exposure among males was MSM and for females it was heterosexual contact followed by injecting drug use. There is some indication of an emerging heterosexual risk of exposure to HIV based upon the numbers of men and women who initially report no risk factor for the virus other than heterosexual transmission.

- An estimate of HIV prevalence at the state level based upon an extrapolation from national estimates, indicates that there are between 1,040 – 1,440 living HIV-infected persons.

## THOSE AT RISK FOR BECOMING INFECTED WITH HIV

Those who engage in high-risk behaviors with persons in communities with a high prevalence of HIV infection are the persons most likely to become infected with HIV. Data from AIDS cases reported over the past five years and the most recent data on those newly infected can help identify those groups of persons at highest risk for becoming infected.

Black Hawk, Dubuque, Linn, Johnson, Polk, Pottawattamie, Scott, Story, and Woodbury are the nine counties in the state with the highest numbers of reported AIDS cases. These same counties also reported the highest numbers of sexually transmitted diseases in the state for 1998.

There has been a 9% decrease in the number of AIDS cases reported over a five-year period, from 344 cases reported from 1989 to 1993, to 312 cases reported from 1994 to 1998. The age group most frequently reported with AIDS is the 20 – 49 years olds. This age group reflects where the population increase for the state of Iowa is projected to occur over the first decade of the next century. This is also the age group most likely to be underinsured or uninsured and therefore may be less likely to seek out and access health care early in the event of illness. Forty-six percent of all AIDS cases have been reported in the 30 – 39 year old age group.

The AIDS epidemic in Iowa has more significantly affected men and ethnic minority communities. Males are at increased risk of infection. In the general population, they

outnumber females in all age groups up to 39 years of age compared to the older age groups where females predominate.

Men who have sex with men constitutes the predominant exposure category (72%) of AIDS cases. The exposure categories MSM and injecting drug use constitute 82% of AIDS cases. Of the 125 persons with AIDS attributed to the single exposure category IDU, 80% were male. Sixty-eight percent (n = 84) of IDUs were White, non-Hispanic, 27% (n = 34) were Black, non-Hispanic, 5% (n = 7) were in Hispanic, and 87% (n = 108) were between the ages of 25 – 49 years of age.

Five-year aggregated data also shows that the proportion of AIDS cases attributed to IDU has increased 200% (from 29 cases reported between 1988 – 1992 to 87 cases reported between 1993 – 1997. This further reinforces the need to focus on populations at risk for substance abuse when developing community health education programs.

In Iowa, Black, non-Hispanics constitute 1.9% of the population but 9% of all Iowa AIDS cases. The Hispanic population in Iowa constitutes 1.8% of the population, but 3% of the AIDS cases.

There is evidence of an emerging heterosexual risk of exposure to HIV based upon an investigation reported in the American Journal of Epidemiology (Graham, 1997). This study investigated risk of exposure to HIV among almost 2,000 patients aged 13 years or older who reported heterosexual risk or no risk for HIV infection. The authors concluded that about one-fifth of the men and over half of the women who initially reported no risk factors for the virus contracted HIV heterosexually. CDC views those who acquire HIV heterosexually, in the absence of specific risks, as having no identified exposure mode permitting classification according to established risk categories. Persons who fall into this group are categorized as



having no reported risk and require further investigation. This study may alter CDC's current position on assigned risk. Health care providers have voiced concern that heterosexual exposure to multiple partners may lead to HIV infection. The primary mode of transmission reported from persons diagnosed in correctional facilities has been heterosexual contact with multiple sex partners, followed by MSM and IDU (Gesie, 1998).

Of the 99 persons diagnosed with AIDS attributed to heterosexual contact, 68% (n = 67) were female. The racial/ethnic distribution for females in this exposure category revealed that 87% (n = 58) occurred in White, non-Hispanic, 9% (n = 6) were noted to occur in Black, non-Hispanic persons, and 3% (n = 2) in Hispanic. One case was reported in an American Indian/Alaskan Native female.

There were no new AIDS cases reported among adolescents ages 13 to 19 years in 1998. Increased sexually transmitted diseases in teenagers is a marker for early initiation of unprotected sexual intercourse and may also indicate other high-risk behavior that can lead to HIV infection. In 1998, the IDPH's STD program reported an increase in gonorrhea cases among teens ages 15 – 19 and young adults, ages 20 – 24. Thus, there is the potential of HIV infection to develop at a later date in this age group (J. Katz, 1998).

Teenage pregnancy, another marker for early initiation of unprotected sexual intercourse, may also indicate high-risk behavior that can lead to HIV infection. Studies have shown that teenage pregnancy is associated with multiple sex partners and increased risk for STDs. Births to Iowa teenagers (mothers age 19 or younger) numbered 3,922 in 1997, down slightly from 1996 (n = 4,096). More than four of every five births to teens were out-of-wedlock. Polk County reported the highest number of teen births, with Scott County the second highest. Overall, 63 counties experienced an increase in the number of births to teens in 1997; however,

total numbers are small (Iowa's Counties: Selected Population Trends, Vital Statistics and Socioeconomic Data, 1998).

HIV infection rates among Iowa's pregnant women have been reported as low. However, it has been stated that "between three and 12 children are born each year in Iowa to HIV positive mothers" (Atchison, 1996). There were no reports of pediatric HIV infection caused by transmission from infected mothers during 1998. Moreover, there were no new AIDS case reports for children in 1998.

In July 1998 HIV name reporting became law in Iowa. HIV infection surveillance reports for the past six months of data collection includes small numbers of persons tested. An analysis of HIV testing data for the 22 designated counseling, testing and referral sites was conducted to determine the effect of the name reporting law on testing patterns. The analysis of the data revealed that there has been a decrease in the number of HIV, enzyme immunosorbent assay (EIA) tests performed during 1998 (n = 13,230), down from 13,964 in 1997 (Table 20). A declining trend in the number of tests is evident for the reporting years 1994 – 1995 (4.5% decrease); 1996 – 1997 (16.5% decrease); and 1997 – 1998 (5.2% decrease). A comparison of the same fiscal quarter (July – September) for years 1997 and 1998, reveals a decrease of 14.8% in the number of HIV tests performed on persons reporting homosexual/bisexual exposure. This data may mirror the decreasing trend evidenced in the proportion of AIDS cases with MSM as the primary mode of exposure. Increases of 40.8% in the HIV testing of persons reporting injection drug users occurred. Of those persons noted as high-risk heterosexuals, which included persons with sexually transmitted diseases, and those persons whose sex partners were at risk for HIV a 16.6% increase in testing numbers was evident. The proportion of AIDS cases reported for both the IDU and heterosexual exposure categories has increased over the last several years.

This is especially the case in heterosexual exposure, with a 40% increase in cases reported with this mode of exposure during the 1997 to 1998 reporting period.

**Table 20**  
**Number of Tests Performed in Publicly Funded Programs**  
**1994 - 1998**

Year	Total Tested	W. B. Positive	% Increase or Decrease in Tests
1994	16,897	144	
1995	16,127	116	-4.5
1996	16,735	80	+3.6
1997	13,964	87	-16.5
1998	13,230	54	-5.2

A comparison of second fiscal quarters (October – December 1997 to 1998) reveals that while the total number of tests is down, a breakdown by reported risk of exposure in the three major risk groups (MSM, IDU, high-risk heterosexuals) reveals more HIV testing in these exposure categories (Table 21). Based upon these findings, there appears to be no relationship between HIV name reporting and the number of HIV (EIA) tests performed. These data reflect six months of surveillance on those seeking HIV testing. Data used for this report are from The University Of Iowa Hygienic Laboratory and are not all-inclusive of screening tests performed to detect the presence of human immunodeficiency virus type 1 and type 2. Continued surveillance and analysis of data will be conducted during 1999. These data will then be better able to support more rigorous analysis of testing patterns.



**Table 21 A**  
**Effect of HIV Reporting By Name Under The New Law**

Testing Sites	*First Quarter – 1997	*First Quarter – 1998	%Increase or Decrease in Tests
Total No. of Tests	3332	2982	-10.5
No. of positive WB	22	12	
% positive of tested	0.6	0.4	
MSM	135	115	-14.8
No. positive WB	8	2	
% of positive of tested	5.9	1.7	
IDU	97	164	+40.8
No. positive WB	3	0	
% positive of tested	3	0	
HR Heterosexuals	1331	1596	+16.6
# positive WB	10	4	
% positive of tested	0.75	0.25	

\*July – September of each respective year; WB=Western blot

**Table 21 B**  
**Effect of HIV Reporting By Name Under The New Law**

Testing Sites	*Second Quarter – 1997	*Second Quarter – 1998	%Increase or Decrease in Tests
Total No. of Tests	3426	3181	-7.1%
No. of positive WB	26	10	
% positive of tested	0.7	0.3	
MSM	146	148	+1.0%
No. positive WB	11	4	
% of positive of tested			
IDU	119	179	+33.5%
No. positive WB	3	0	
% positive of tested			
HR Heterosexuals	1574	1618	+2.7%
# positive WB	6	5	
% positive of tested			

\*October - December of each respective year; WB=Western blot

## THE GEOGRAPHIC DISTRIBUTION OF HIV INFECTION

This section will summarize the geographic distribution of HIV/AIDS.

The HIV epidemic in Iowa is unevenly distributed across the counties and within populations. Eighty-five of the 99 counties in Iowa have reported at least one HIV infected resident. Nine of the most populated counties account for 71% of all AIDS cases reported. In 1998, most AIDS cases were reported predominantly from counties in the central and eastern areas of Iowa.

When combining variables of interest associated with high-risk behaviors certain counties emerge. Polk, Black Hawk, Linn, Pottawattamie, Johnson, Clinton, Scott, and Woodbury counties report higher numbers of residents diagnosed with AIDS, STDs, and TB. These counties have higher population densities and they are more ethnically diverse. Moreover, they report higher poverty rates, higher unemployment numbers and higher crime rates (associated with increased health related problems and substance abuse) than the remainder of the state.

In general, socioeconomically disadvantaged people have more limited access to health care services. Groups traditionally disenfranchised from the healthcare system have been found to delay early diagnosis and treatment resulting in disease progression and shortened survival times. One such disenfranchised group is persons who use illicit drugs. A pattern of methamphetamine use is becoming a particular problem in this state. The association between drug use and participation in high-risk activities makes this a real danger in the spread of HIV infection. Combining this behavior with increasing rates of sexually transmitted diseases may provide an early warning of the potential for the heterosexual spread of HIV infection.

In conclusion, the epidemiologic profile provides part of the information required for decision-making by health planning groups. These data are a starting point for needs assessment

and gap analysis to guide health-planning groups in setting priorities and making decisions for targeting HIV prevention activities.

Based upon the data presented, a list of high incidence groups and areas for further consideration is provided. Groups substantially affected by HIV/AIDS and those that are less affected but have a substantial prevalence of high-risk behavior have been clearly delineated.

Some major population groups that demonstrate high HIV risk and incidence and should be considered in community prevention programming are

- men who have sex with men in all racial/ethnic groups;
- racial and ethnic minority populations within a county;
- persons with sexually-transmitted diseases within a county;
- substance abusers (IDU/methamphetamine) users within a county; and
- socio-economically disadvantaged groups within a county.



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